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PREHISTORIC HUMAN ECOLOGY IN THE WESSEX CHALKLANDS

with special reference to evidence from valleys

by

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ABSTRACT

FACULTY OF ARTS

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- WITH SPECIAL REFERENCE TO EVIDENCE FROM VALLEYS

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The concept that valley zones in chalkland Wessex were as important to settlement and land use strategies in prehistory as they have been during the historic period has never commanded much attention or indeed appeared demonstrable. Because prehistoric earthworks and other remains are much less obtrusive in valleys than on the higher downland the former areas have usually either been ignored by past research or have been dismissed as zones of destruction.

The thesis presented here is that valley zones were as important in prehistory as they have been since; that the evidence for valley occupation can be retrieved and that this evidence permits us to view upland data in a rather different way.

Starting with a re-appraisal of the weaknesses in post depositional and retrieval theory which have so hampered valley research in the past (Part 1), the thesis then systematically reviews the surprisingly considerable evidence for prehistoric valley occupation (Part 2). In part 3 valley and upland data are brought together to present a new view of chalkland prehistory. Part 4 (Appendices) contains reports of fieldwork specifically undertaken in support of the thesis.

In putting the case for the importance of valleys in prehistory it is argued that the inception of farming within the region was a largely indigenous process; that the secondary environments it created imposed a crucial phase of socio-economic adaptation and that prior to the later first millennium bc transhumance , with all its attendant social and tenurial complexities, was widely practised in Wessex.

PREFACE

The research leading to this thesis has its origins in a number of fortuitous discoveries of prehistoric valley sites in 1976 and 1977 whilst undertaking fieldwork in the Wylye valley on behalf of Wiltshire County Council. Several years elapsed before circumstances allowed follow up work to begin and this eventually took the form of the Wylye Valley Research Project. Its pilot study started in March 1981 with backing from Wiltshire County Council but in September 1981 work transferred to Southampton University to be managed as a post-Graduate research project.

The results of the pilot study and the changed base of operations led perhaps inevitably to an almost total redesign of the project. Less emphasis was placed on time consuming individual fieldwork, more on theoretical issues and the use of existing data and the spatial framework was greatly expanded to allow the demonstration that prehistoric occupation of valleys was not something peculiar to the Wylye valley.

Some mention should be made here of these parameters. Although the title uses the term "prehistoric" the actual chronological scope of this thesis encompasses only the period 6000 - 500bc. It avoids the very poorly documented earliest Mesolithic presence and the somewhat confused and confusing state of affairs in Wessex during the later Iron Age. Similarly, evidence is drawn from a number of areas, such as Sussex and the lower Kennet valley which would not normally be regarded as parts of the classic Wessex chalklands. But to have ignored these areas would have been to present only a partial picture of prehistoric human ecology in the Wessex chalklands because, as will be demonstrated, transhumance between core and periphery persisted throughout much of the period under review.

Clearwood 27th January 1985

CONTENTS

LIST OF ILLUSTRATIONS

ACKNOWLEDGEMENTS

The completion of this thesis is a tribute to the enthusiasm and conscientiousness of my research supervisor Dr Steven Shennan, who ensured that I never lacked the sense of purpose to carry it through, and my research advisor Mr Arthur ApSimon, who ensured that my more wayward ideas were eventually tempered by sounder judgement. I would also like to thank Dr Shennan for unselfishly allowing access to unpublished survey data from East Hampshire and for providing an opportunity to collaborate with him in the Avon Valley research project. I am similarly indebted to Mr Roger Mercer and Dr Martin Bell for the opportunity to collaborate with them in the exploration of valley prehistory in the vicinity of Hambledon Hill, Dorset - a venture which has culminated in the series of excavations mounted in Everley Water Meadow.

It will be evident that much of the field data presented here is derived from the Wiltshire Sites and Monuments Record which has proved a veritable mine of useful information. It is a pleasure to acknowledge the debt I owe Roy Canham and staff of the Wiltshire County Council Archaeology Department, not just for allowing access to the material, but for actively encouraging its use, answering interminable questions, tolerating my monopolisation of their library and providing a congenial working environment during what proved to be a very lengthy visit.

Finally, I would like to thank all those individuals who have helped through discussion of my work but particularly those upon whose ideas I have freely drawn - Martin Bell, Richard Bradley, John Evans, Peter Fowler, Christopher Taylor, Paul Waton and Alasdair Whittle. Their influence has perhaps been greater than either they or I would care to admit.

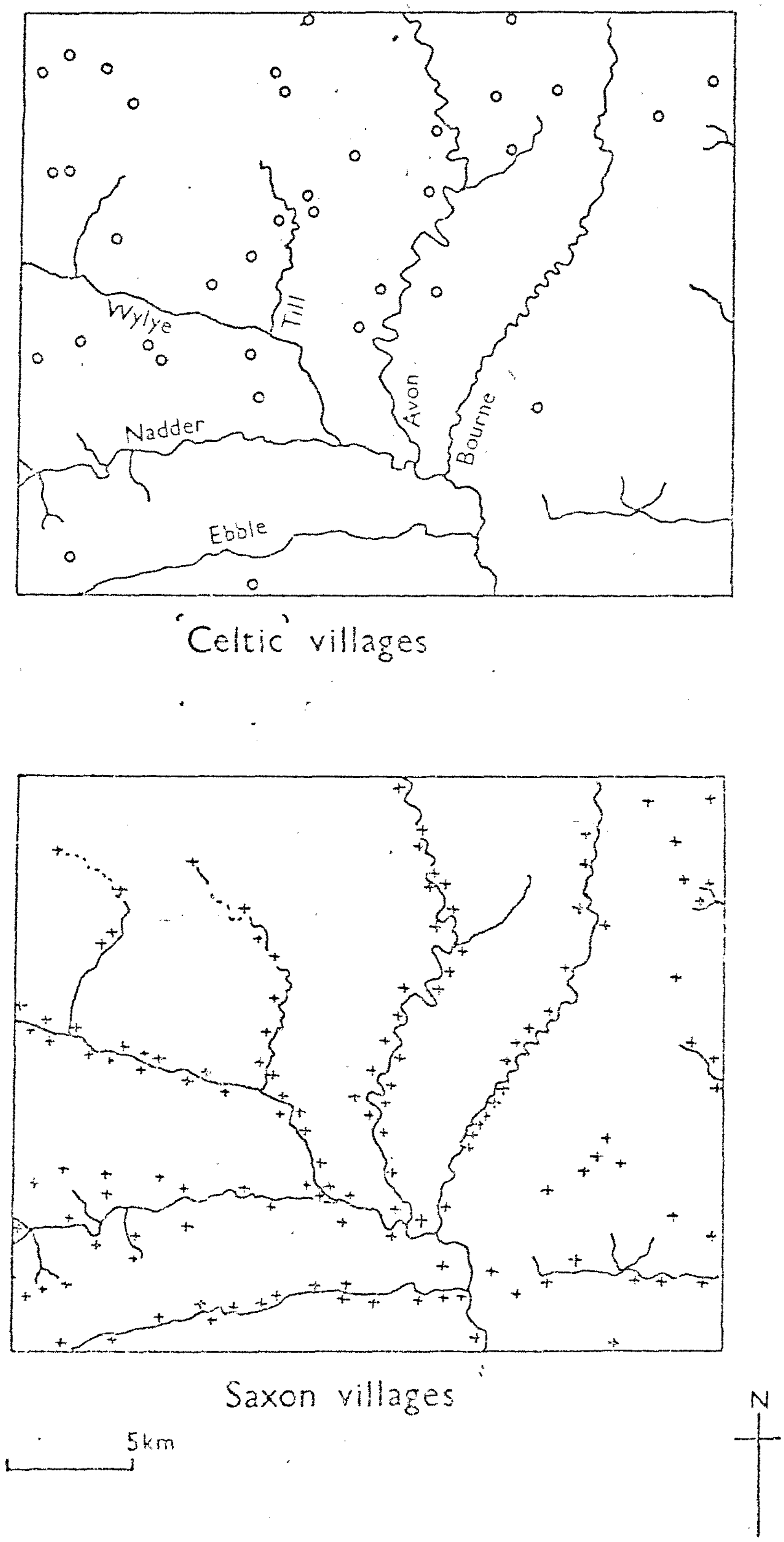
Chapter 1 INTRODUCTION

The higher downland of Wessex contains an exceptionally rich archaeological landscape. Its hillforts, barrows, enclosures and field systems have survived in such abundance that they have often, in the past, been regarded as a complete record of prehistoric activity in these areas. By contrast, evidence for prehistoric occupation of the valleys was, until recently, almost non-existent. It was this dichotomy that led Crawford (1924) to hypothesise that valley based patterns of settlement and land use did not exist prior to the Saxon arrival (Figure 1). Overlooking Crawford's obvious and perhaps unnecessary manipulation of the distributional data (note how rivers are extended in the 'Saxon' map) his concept does appear to be a logical appraisal of the evidence then to hand and it has since proved difficult to refute. But, as is so often the case, time has transformed the hypothesis into an accepted fact even though there has never been a serious attempt to test it by systematically exploring the apparently blank prehistoric valley record.

Symptomatic of the pervasive influence this concept has had on subsequent archaeological thinking is Piggott's (1954, 18) conclusion that Neolithic chalkland farmers shunned the 'oak tangled' ... 'undrained morasses' of the river valleys. Few other reviewers have been this forthright in rejecting valley occupation but it is clear from even a cursory study of the literature that most past research into chalkland prehistory has, consciously or not, ignored the potential role played by valley areas.

It is not difficult to see how this situation has evolved. Superficially, valleys <u>are</u> largely devoid of readily recognisable prehistoric sites and monuments. Thereis little within them to recommend costly investigation when the same funds might be more productively expended in excavating

Figure 1 Crawford's analysis of early settlement patterns on Salisbury Plain



'Celtic' villages

Saxon villages

an upland site whose location and layout is more instantly recognisable. It may also be reasoned that blanks in distributional data are to be expected and as archaeologists we have learned to cope with the problem. There is no denying that valley research has been a singularly unattractive proposition.

Explicit dissent with Crawford's concept of an essentially upland pattern of prehistoric activity can be traced back to 1966. At this time Bowen and Fowler, both actively engaged in landscape survey within the Wessex chalklands, concluded that during the later prehistoric and Roman periods the valleys were actually <u>more</u> intensively settled and cultivated than the uplands. Their statement stemmed from the crucial recognition that it is only the lack of large scale historic exploitation of the uplands which has preserved evidence of earlier occupation on what has perhaps always been more marginal land (Bowen and Fowler 1966, 62). Thus, the valley-upland dichotomy was seen to be the product of differential erosion of the landscape in which valleys had fared far worse than the uplands.

The Bowen and Fowler concept seems to have made little impact on archaeological thinking at the time, or indeed for several years after. It does not emerge again until Taylor, a collegue of theirs engaged in similar field research, publicly discussed the problems of reconstructing pre-Saxon patterns of settlement and land use (Taylor 1972 and see Figure 2). He endorsed the view that such patterns probably were valley based but went on to suggest that historic erosion had transformed valleys into 'zones of destruction' within which there was little hope of reconstructing the early arrangements.

Detail of the exceptional Piddle Valley fieldscape

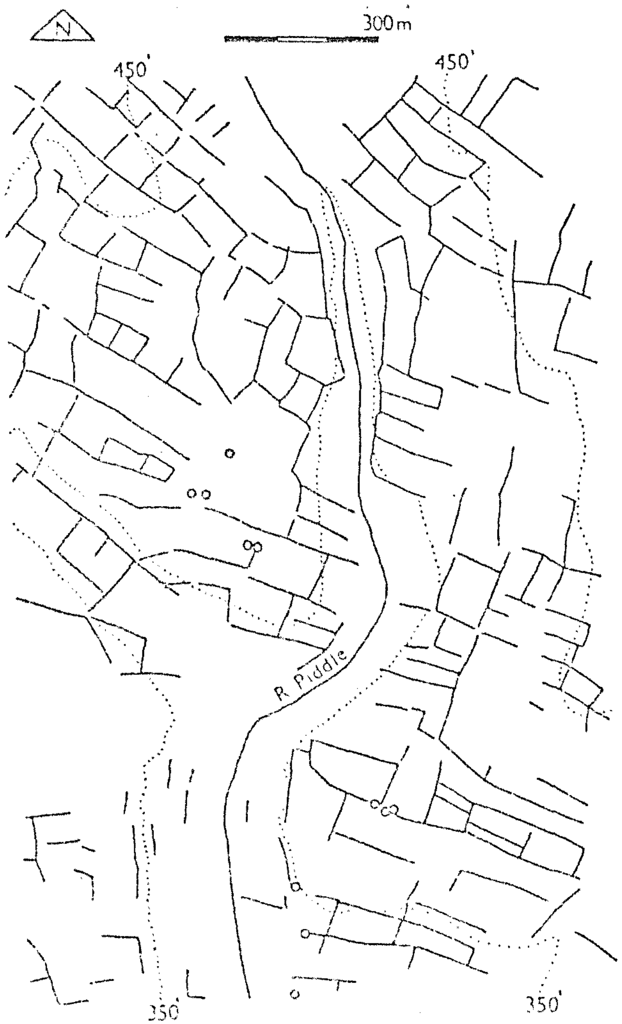
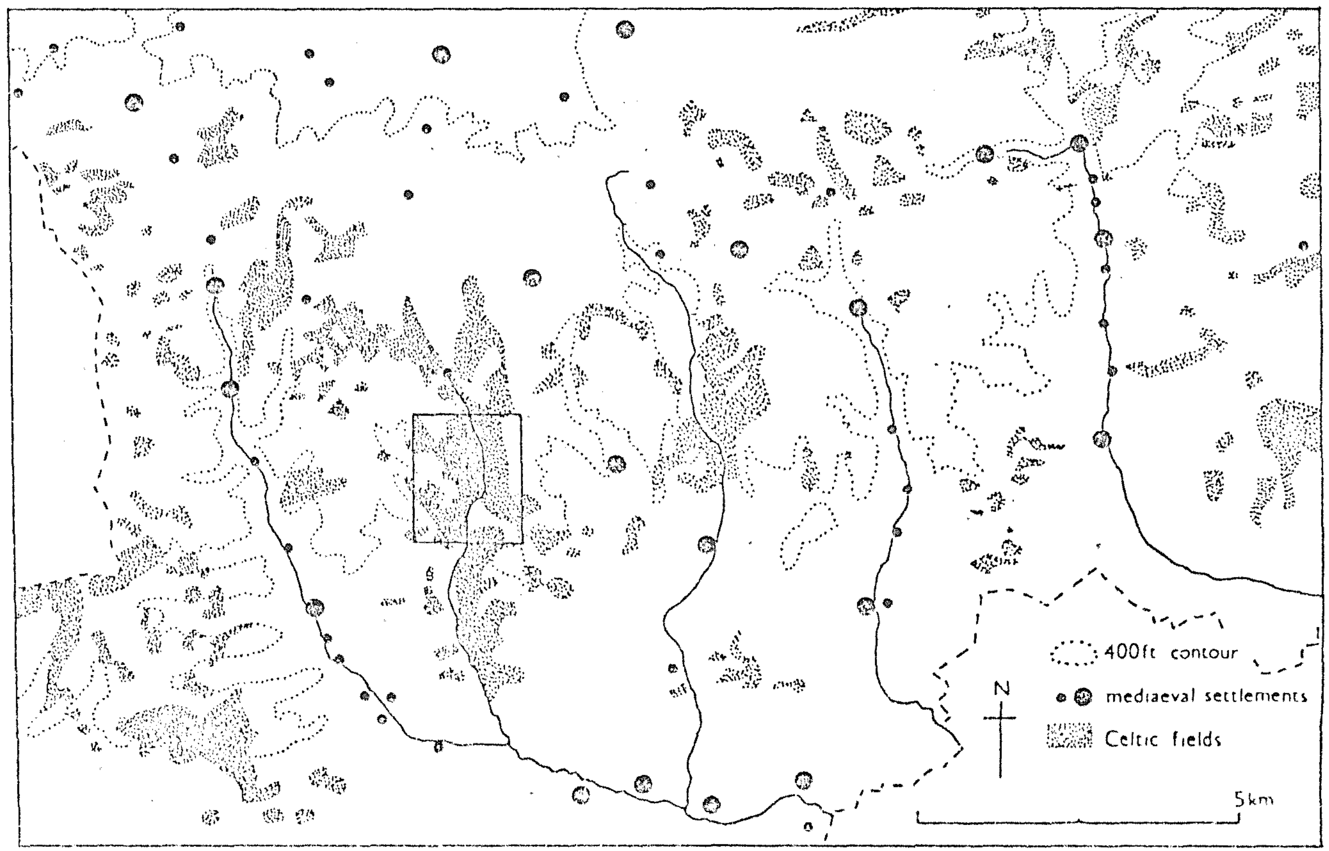


Figure 2 TAYLOR'S (1972) ZONE OF DESTRUCTION CONCEPT: AS ILLUSTRATED BY PATTERNS OF MEDIAEVAL SETTLEMENT AND CELTIC FIELD SURVIVAL IN CENTRAL DORSET

source: RCHM 1970



In the decade since Taylor's surprisingly gloomy and negative appraisal of the situation our knowledge of how the archaeological record formed has improved considerably,chiefly because of fresh interest in post-depositional processes and the other factors which influence survey efficiency (eg. Clarke 1968, 1972, 1973; Foley 1981; Schiffer et al 1978). It is now possible to see that the term 'zone of destruction' as applied to chalkland valleys is both misleading and too simplistic. For example, ploughing is a major agency of erosion yet it also has the capacity, through the process of colluviation, to protect archaeological horizons by redepositing sediment over them. Similarly, since field survey relies heavily on surface inspection techniques, the prevalence of sedimentary accumulations and patterns of unhelpful modern land use (villages, woods, orchards, permanent grassland etc) in valley floors militates against efficient survey of these areas.

There is most certainly a dearth of evidence for valley occupation in prehistory but there is now no necessity to seek to explain it cultural or behavioural terms. It can instead be seen to be a reflection of the weaknesses in the post-depositional and retrieval theory that has underpinned past research in the chalklands. As Clarke (1968, 16) has pointed out - depositional, post-depositional and retrieval theory are all integral parts of archaeology and these aspects of theorising and experimentation must be complete before moving on to attempts at data analysis and interpretation of behaviour. It seems we have been guilty of jumping the gun!

Assuming that theoretical approaches can be suitably revised and re-oriented it needs to be emphasised that there are still daunting practical problems involved in researching valley zones. But, there are also many potential compensations. From the limited number of valley excavations to have taken place so far (reviewed in Chapter 2 and elsewhere in section 3) it emerges that stratified occupation sequences, often containing abundant palaeoenvironmental evidence, are by no means uncommon, yet they are rarely encountered in upland excavations. Not only is there a real prospect of obtaining data of higher quality there is also a potential to record hitherto 'missing' elements of the prehistoric settlement record. There is, for example, the well known dearth of Neolithic and Bronze Age settlements to set alongside the abundant funerary monuments, a lacuna which intensive upland research has done little to improve. Ironically, it is perhaps the failings of upland research which provide the strongest stimulus to valley research.

Clearly, the hypothesis of valley based patterns of prehistoric settlement holds considerable promise and as such it deserves to be rigourously tested, just as Taylor's (1972) 'zone of destruction' concept deserves to be challenged. This programme of research approaches the task by seeking answers to the following questions:

a) How do post-depositional and retrieval factors influence study of the prehistoric archaeological record of the Wessex chalklands?
b) What is the evidence for valley occupation in prehistory?
c) How does the valley evidence relate to the more familiar patterns of prehistoric activity already recorded within upland areas?

Chapter 2 WEATHERING AND SEDIMENTARY PROCESSES

Strictly, sedimentary processes should not be viewed in isolation from their systemic context because they are fundamentally linked to broader developments within the ecosystem. However, for convenience the topic may be considered within the artificial framework comprised of three inter-related processes - solution, colluviation and alluviation.

2·1 Solution

On calcareous rocks dissolution of calcium carbonate under the influence of rainwater and the acids of organic materials present in the lithosphere proceeds much more rapidly than does attack on other rock forming minerals (Limbrey 1975, 129). Chalk is itself porous but it also has joints and bedding planes which facilitate percolation leading ultimately to wetting of the entire mass. Solution widens cracks sufficiently for plant roots to penetrate and the organic acids they exude contribute to further dissolution. Essentially, the process lowers the land surface without contributing more than a very small percentage of its volume to the soil (Limbrey 1975, 170).

The phenomenon of surface lowering in relation to ancient living horizons,as highlighted by Darwin (1881), was first discussed in detail by Atkinson (1957) who deduced, from a variety of field observations, that weathering of the chalk may have led to the lowering of the Neolithic land surface by as much as 50cm. In considering whether lowering occured at a constant rate he noted a phase of rapid weathering dateable to the Iron Age and suggested that increased rainfall could have been responsible.

Since solution losses are proportional to the amount of water percolating through the chalk climate could clearly be an important factor. But, the relationship cannot be a straightforward one because precipitation is merely one element in the overall water cycle. Of equal importance are evapo-transpiration rates and, by inference, soil condition and vegetation cover. Atkinson (1957, 229) suggested that cultivated soil, by virtue of its greater evaporation surface, was less prone to solution loss than uncultivated soil. But, this is only true if the uncultivated soil is totally devoid of vegetation - a most unreal situation within the context of post Glacial Wessex. Even a patchy cover of vegetation provides for more efficient cycling of water than would be the case under cultivation because with more of the surface water being transpired less is potentially available for percolation. Providing subsoil porosity is constant solution losses and hence surface lowering will occur at a more rapid rate on devegetated arable than it would if the same area was in non-arable use. However, subsoil porosity <u>is</u> highly variable - well drained land may become virtually impermeable during freezing weather and changing land use regimes can induce corresponding changes in drainage properties.

It is against this complex background that broader fluctuations in precipitation must be considered. Clearly, climate does play an important role in the process of surface lowering but so too do other factors such as vegetational disturbance and soil condition - both frequently linked to human activity, particularly clearance and cultivation.

So closely is the phenomenon of surface lowering apparently tied to purely local factors that it is probably unwise, if not impossible, to separate its effects from those caused bu other related processes such as plough erosion and colluviation. However, at least one important generalisation may be made. With regard to spatial variations in the magnitude of surface loss one would expect shallow, calcareous rendzinas to be less resistant than the deeper and more neutral loams of valley floors. This certainly seems to be the case at Hambledon Hill in Dorset where 30-40cm of chalk has been lost from the flat hilltop under the combined influence of solution and ploughing, despite the fact that it has only been pressed into arable use within the past two or three decades (Mercer 1980, 23). Indeed, in sloping parts of the site up to a metre or more may have been lost (Mercer pers. comm.). By contrast, Bronze Age surfaces, stratified beneath alluvium in the Iwerne valley directly below the hill, remain intact although they do show some signs of decalcification (Appendix 1).

2·2 Colluviation and Slope Processes

Colluvium is unsorted or poorly sorted sediment, transported largely by the force of gravity, which builds up, often by gradual increments but sometimes during major episodes, at the foot of a slope. Essentially, any process that causes particle movement on a slope will incorporate a downslope component. Ofter such movements are individually very small but their cumulative effects are significantly large. Examples are: raindrop splash action, wetting and drying, freezing and thawing, animal burrowing, worm casting and most important of all tillage (Bell 1982, 127). It should be noted at this point that terms 'ploughwash', 'hillwash', 'rainwash' and colluvium are not strictly synonymous although it is often difficult to distinguish between them in published accounts or in simple field observations.

Accumulations of colluvial sediment tend to occur at the boundaries of cultivation and at pronounced breaks of slope (Bell 1981a). Such formations commonly seen in the chalklands of Wessex are: (see figure 3)

a) Plateau edge deposits - sometimes lending a distinctive angular appearance to hilltops that would normally have a rounded profile.

b) Lynchets - both strip and 'Celtic' type (Bowen 1961).

c) Floodplain edge banks - typically at the point where cultivation has ceased. They may accentuate pre-existing features such as low bluffs, river cliffs or terraces but are not geomorphologically related to them. In some circumstances alluvial deposits will be interleaved within the colluvium.

d) Footslope accumulations - giving a rounded profile to what would otherwise be a more angular break of slope.

e) Dry valley fills - creating a gently rounded or flat bottomed profile in a naturally vee sectioned valley.

The history of research into colluvial processes is a short one and rather surprisingly it is only in very recent years that causative influences have been rigourously investigated. Indeed, controversy still surrounds the extent to which colluviation should be linked to human activity. In the Mediterranean area research opinion has always favoured a climatic explanation (eg. Vita-Finzi 1969). In Britain rather more emphasis has been put on anthropogenic factors (eg. Kerney et al 1964; Evans 1966). This trend culminates in a series of research papers recently published by Bell which have clearly demonstrated a good correlation between colluviation and humanly induced environmental disturbance, particularly clearance

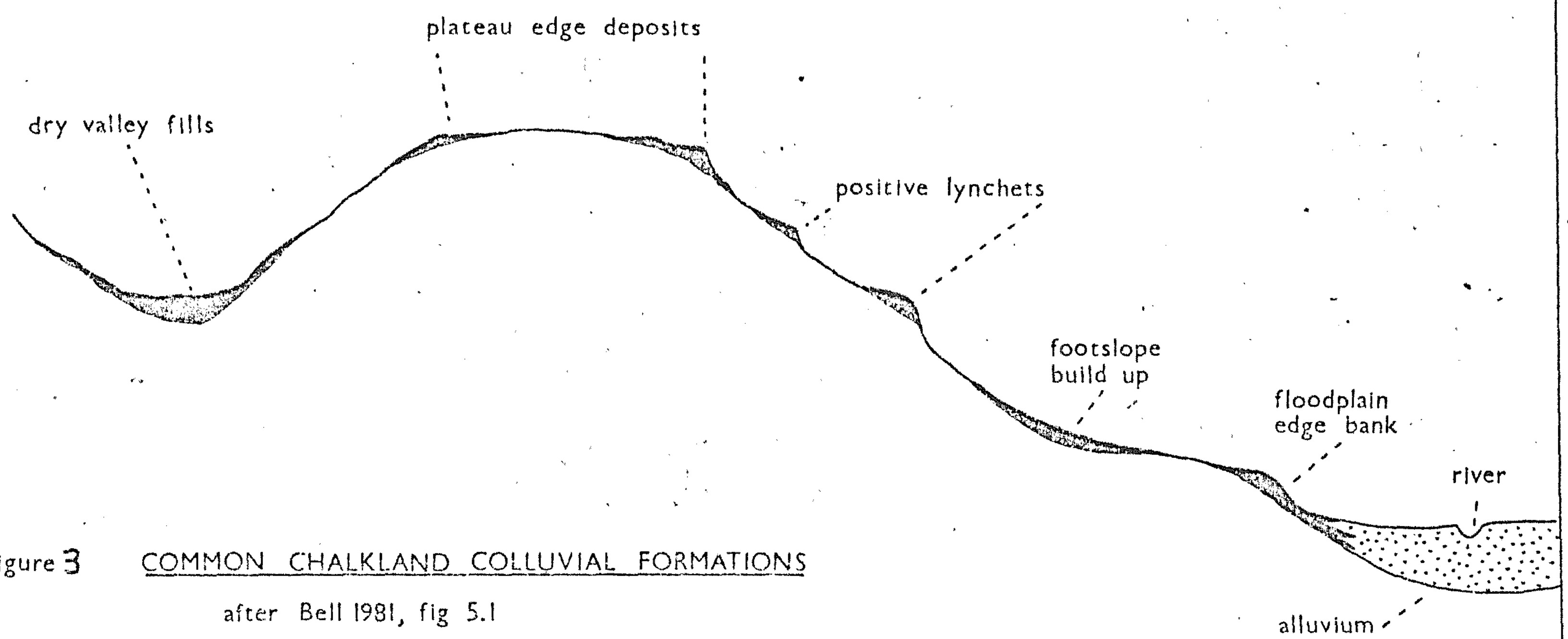


Figure 3 COMMON CHALKLAND COLLUVIAL FORMATIONS

after Bell 1981, fig 5.1

and cultivation (Bell 1981a, 1981b, 1982 and 1983). This is not to say that other natural agencies such as climate are unimportant but rather that human activity selectively and often dramatically acts to exaggerate or inhibit processes which are fundamentally 'natural' in character.

Before investigating the relationship between past land use and associated landscape erosion it is necessary to briefly discuss the various circumstances in which colluvial formations have been observed to occur. The examples quoted are, unless otherwise stated, drawn from Bell's research or from work referenced by him.

Lynchets: as with other colluvial manifestations, lynchet formation continues today and may in some circumstances even be accelerating. In recent controlled experiments at the Butser Ancient Farm a lynchet 30cm high has formed at the edge of a new field in just eight years. Conversely, at Bishopstone in Sussex a plateau edge lynchet 1·8m high took at least 3000 years to form.

Dry Valleys: there is no regular correspondence between the size or shape of dry valleys and the depth of colluvial fill within them. In trenching across a major dry valley in Hampshir (Chalton A) Bell found only 50cm of colluvium, mostly of Roman or later derivation. Yet in one of its minor tributary valleys (Chalton B) the floor was choked with sediment up to 1·8m deep. In the case of Chalton A it was suggested that seasonal stream flows (now extinct) had flushed sediment out of the valley floor. Whilst colluvium can attain a depth of 3m or more in some circumstances it would be misleading to suggest that it exists in all dry valleys. Bore hole investigation in the Lambourne valley of Berkshire failed to find any such deposits (Bradley and Ellison 1975, 181) and they are very thin or altogether absent from dry valleys in the Stonehenge area (info, Julian Richards).

Footslopes: in monitoring road widening operations at Chalton, in the Avon valley near Salisbury, the writer was able to record, in a machine cut section, a body of hillwashed sediment 1·2m deep resting on a buried ploughsoil with Victorian pottery scattered at the junction. On further investigation it became clear that at some time in the 19th century, possibly at the time of Enclosure, ploughing of the adjoining slope was re-oriented. A contour following system, producing characteristic strip lynchets, was superceded by up and down slope cultivation. This not only broke down the lynchets which had been acting as sediment traps it also released the stored sediment and facilititated its movement downslope where it eventuaaly impinged on a roadside hedgeline.

It will be evident that colluviation effects are unevenly and often unpredictably distributed not only in terms of space but also in terms of chronology. Reasonably well dated examples of colluvial activity within the Wessex chalklands are listed in Figure 4. Contrary to recent speculation (eg. Bradley 1978, 123) the accumulation of 'ploughwash' in valleys did not begin in the Iron Age and neither can we even be sure that it is predominantly a feature of later prehistory. There is clear evidence that colluviation was underway during the Neolithic and several hints from beyond the chalklands that Mesolithic disturbances may also have initiated small scale slope erosion (eg. Iping - Keef et al 1965; Ballynagilly - Smith 1981, 149). What may have led some writers to assume it is basically a later prehistoric phenomenon is possibly the contrast between the non-calcareous, flinty silt loams often found beneath classic chalky hillwash deposits in colluvial formations. Bell (1982, 138) suggests both deposits are of basically similar origin

Figure 4 DATED COLLUVIAL ACTIVITY IN AND AROUND THE WESSEX CHALKLANDS

(source: Bell 1982 with stated additions)

and the contrast between them is probably a reflection of thinning soil profiles in later prehistory leading to the erosion of a higher proportion of chalk granules.

In order to better understand how, when and where slope erosion occurs it is necessary to consider each of the mechanisms or factors potentially involved and the extent to which human activity modifies their influence.

a) Slope - erosion should increase with slope length and angle as the velocity and volume of surface water run off also increases. But, in practice this does not always occur because steeper slopes are less likely to be de-stabilised by clearance and cultivation. Indeed they may actually be more stable than shallow inclines denuded of vegetation. The deliberate or coincidental formation of lynchets and slope terraces has the effect of compartmentalising long slopes thereby slowing surface water flows and arresting entrained sediment. Since continued erosion serves to increase the development and effectiveness of lynchets prolonged slope cultivation within such a system actually increases slope stability. Conversely, break down of lynchets, as may occur in reorganisation of a field system, would not only promote an increase in the velocity and volume of surface water run off it would also feed large quantities of fine sediment into the erosion cycle.

b) Vegetation - rainsplash is a much underestimated agency of slope erosion. Foliage has the effect of dissipating the kinetic energy of raindrops before they impact on the soil surface. Obviously, newly ploughed surfaces are particularly prone to this form of erosion. Furthermore, the root mat beneath the vegetated slopes can increase their resistance to shearing or land sliding by a factor of two or three (Selby 1979). In the south west of England Carson and Kirkby (1972, 217) have shown that removal of grassland is likely to increase soil movement by a factor of about 400! In woodland communities deep rooting trees not only stabilise and anchor the root mat they also add leaf litter to the surface soil and recycle leached nutrients, both processes greatly enhancing long term stability of soil structure. Much reduced rates of colluviation have been demonstrated following afforestation in Luxembourg (Kwaad 1977).

c) Soil structure - organic matter is a vital prerequisite of good soil structure. Cropping can be damaging in this respect by depleting the organic content of soils and by compacting their structure, thereby promoting the risk of erosion by surface run off. Bell (1981b) notes that Sussex soils of the Icknield series typically contain 7 - 11% organic matter under natural vegetation but only 2·5 - 4% under cultivation. Arable soils also transpire moisture less efficiently than pastoral ones which can accelerate the onset of saturation and surface run off. Of particular interest in the context of the prehistoric chalklands is the structural character of early loess containing soils. Catt (1978) has stated that silty loessic soils are especially prone to breakdown and erosion under the influence of rainsplash, windblow, trampling and cultivation. Ostensibly their inherently weak structure could have led to quite large scale erosion episodes in the wake of primary forest clearance.

d) Soil permeability - outwardly chalk soils, being founded on permeable bedrock, ought not to suffer drainage problems but of course the various clayey drift deposits occuring within the chalk lands must be taken into account. Bearing in mind that the mapped distribution of London Clay, Reading Beds and Clay-with-Flints etc refers only to more substantial drift deposits clayey soils are more extensive than is immediately apparent. Naturally clayey soils tend to become saturated more rapidly and therefore reach the threshold at which run off occurs more frequently. However, even on normally free draining soils permeability can be greatly reduced in circumstances of drought (when the surface becomes baked hard), freezing weather, lessivation and compaction during cultivation. Erosion associated with poor soil permeability can therefore occur in virtually any area regardless of its geological character.

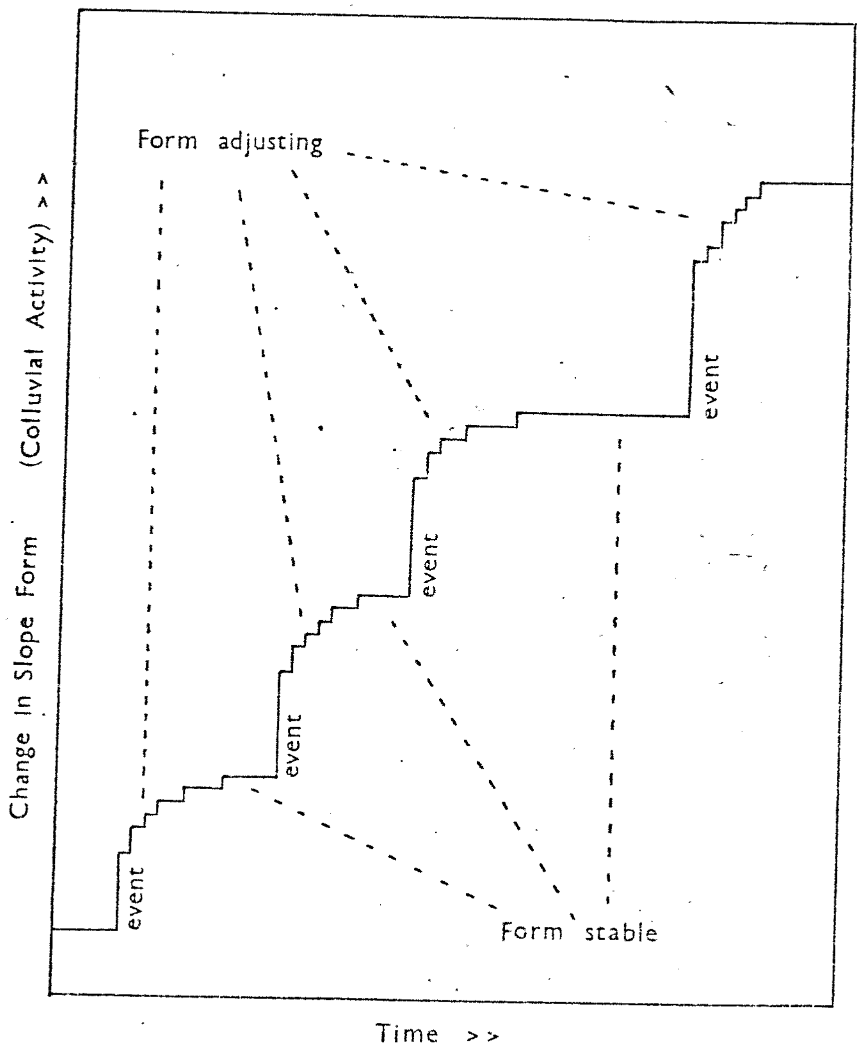
e) Rainfall - on denuded slopes rainsplash detaches small particles which are incrementally moved downslope often forming a carpet of fine silt contributing to and facilitating erosion associated with overland flow. Sheet erosion of chalk soils is common but rilling and gulleying are rather rare. It does seem, however, that severe rainstorms are the most effective agents of change on hillslopes (Selby 1979, 116). Against a background of virtually continuous, small scale movements there are infrequent but major erosion events (Figure 5). In a two year study of sandy soils in Bedfordshire it was estimated that 99% of the observed slope erosion occured during ten major storms (Morgan 1977). Clearly, within mature and rounded chalkland topography these events will not be as spectacular as the massive landslips occuring in more rugged or immature terrain but they can nevertheless lead to rapid and substantial redeposition of sediment in valley floors. Bell (1982) reports having witnessed two such storm related events in the Wessex chalklands; one of sufficient severity to involve mass movement of silt down the axis of a dry valley causing structural damage to a bungalow. In this instance an important contributory factor was the coincidence of exceptionally heavy rain falling on arable land made hard and compact by the drought conditions of 1976. One may predict the same result when a rainstorm impinges on land brought to saturation point by a prolonged rainy period - typically winter conditions. Thus it is the distribution and type of rainfall which has most bearing on slope erosion; annual totals matter less.

f) Wind - windblows contribute to denudation and may have been of some importance in moving loess after early overcropping had damaged soil structure but the role played by wind in colluviation is negligable.

g) Faunal agencies - downslope soil movement directly associated with worm casting, burrowing or hoof damage will normally be slight and very localised. But, overgrazing does have the capacity to make large areas susceptible to erosion by other agencies and in this respect it should be regarded as of potential importance.

h) Land husbandry - deterioration of soil structure arising from overgrazing and overcropping has already been discussed; it will suffice to note here that both are symptomatic of bad husbandry or land pressure. Lessivation, leading to impaired drainage, is often assumed to be associated with clearance and cultivation but this is not necessarily so. Fisher (1982) has argued that some early chalkland sols lessivé formed under climax forest. Similarly, it must not be assumed that slope cultivation automatically moves soil downhill. With a mouldboard plough it would have been possible to turn the slice uphill and similar though less efficient soil husbandry could have been achieved even with the more primitive ard, if it was tilted (Aberg and Bowen 1960). However, such practices

Figure 5 SLOPE FORMATION MODEL (Selby 1979, figure 7.8)



are not without operating penalties and it is probable that mechanical downslope movement of soil was a regular feature of prehistoric cultivation. Perhaps the most serious consequences of slope cultivation are that it inherently destroys residual root mats, removes protective surface cover and exposes the soil to erosion by other agencies. Up and downslope cultivation can be particularly disasterous (p. 13), especially if it represents a change from the status quo. Indeed most forms of change in the agrarian landscape seem to be potential causes of substantial erosion. Reorganisation of fiels systems, involving lynchet levelling, not only destroys their effectiveness in trapping mobile soil, it also releases large quantities of formerly stable fine sediment back into the active surface layer. A change from spring to autumn sowing may also encourage erosion, as was suggested in the context of the Severn Valley by Shotton (1978). The assumption involved is that autumn sown fields are devoid of vegetation throughout the period of winter storm activity whereas spring sown fields may be in fallow at this time.

The range of factors which have potentially contributed to slope erosion is bewildering but the situation can be clarified by distinguishing between those that are normally associated with minor, localised soil movements and those that promote extensive or sudden erosion episodes. The former may be viewed as being instrumental in bringing about a threshold situation whereas the latter are typically responsible for pushing slope systems over that threshold where they become highly vulnerable to storm activity. The model proposed here comprises a multitude of slope conditioning processes and a relatively small number of threshold triggers, the operating principles being illustrated by the following examples:

	CONDITIONING BACKGROUND	THRESHOLD TRIGGER
PASTORAL REGIME	Pasture becoming progressively overgrazed - soil suffers humus depletion and loss of structure placing increasing reliance on rootmat for stability and surviving foliage for rainsplash protection.	Put to plough - either for re-seeding or to encourage new growth. Root mat and foliage destroyed, soil structure incable of resisting denudation by wind, rain and run off.
ARABLE REGIME	Overcropped arable - deficient in humus and nutrients - becoming unstable. Poor productivity prompts reorganisation of system	Field system restructured - cross baulks levelled to create longer fields suited to more efficient cultivation techniques. Vast sediment store unlocked.
WOODLAND REGIME	Primary woodland cleared to pasture - relict woodland root mat decays but grass root mat holds silt laden soil in conditional stability.	Clearing cultivated - root mat and protective foliage destroyed - silt released - no established lynchets to slow surface run off or trap entrained sediment.

It will be evident that this review of chalkland slope erosion places great emphasis on the human factor. Indeed, it could be argued that substantial erosion is only associated with intensive land use.

For this reason it probably matters little that slope erosion is a localised phenomenon - it is more than mere coincidence that colluvium frequently contains artefact material. If there was intensive activity on a slope we may be fairly confident that it will have generated colluvial formations and that those formations are likely to contain artefacts or ecofacts illustrating the nature and date of that activity. Where erosion has been particularly severe such traces may be the only evidence to survive. Typically, colluvially buried valley floors should contain a stratified but derived sequence of whatever artefact material was originally discarded on the slopes above but they may also contain stratified in situ settlement horizons.

It is not yet possible to assess how common such survivals are chiefly because so little archaeologically oriented investigation of colluvial formations has taken place. One is reminded that prehistoric sites buried in these circumstances frequently have no surface indications to commend them to investigators. With the notable exception of Bell's series of dry valley excavations (Bell 1981a) virtually all other discoveries of stratified prehistoric occupation sites may be fairly described as chance encounters.

A classic and important example is provided by a geomorphological research project investigating the post Glacial history of a dry valley system at Brook, Kent (Kerney et al 1964). Early work encountered colluvium up to 3m deep in the head of the valley. Stratified within it were Neolithic flint flakes and sherds of pottery thought at the time to be of late Bronze Age or Iron Age affinity. A possible link between human disturbance of the environment and the onset of colluviation was suggested at the time but it is only recently that the full archaeological significance of the sequence has been recognised (Burleigh and Kerney 1982). Mollusca from the colluvium show that deposition began in circumstances of Neolithic disturbance of the valley's natural woodland cover. Occupation of the site, attested by a stratified sequence of flintworking debris, sherds of plain Neolithic bowls and animal bone, occurs soon after, and is distributed through 50cm of the deposits indicating that erosion of the adjoining slopes continued during the life of the settlement. A major clearance horizon is associated with the end of the occupation sequence which, on the basis of a single radiocarbon date, was soon after 2590 $\pm$ 105bc (BM-254). Mollusca then indicate a new environment of grass land but Pomatias elegans, a species favouring broken ground, is consistently common and colluviation continues so it is likely that arable activity also continued, albeit intermittently. It need hardly be emphasised that the site holds considerable archaeological promise for, as the investigators observe, interpretation of the Neolithic occupation is entirely based on finds made in cleaning back a machine cut section. Controlled excavation in open plan of such a well preserved site could well permit reconstruction of a Neolithic settlement and its landscape in unprecedented detail.

The Brook discovery may appear to be something of an unrepeatable fluke but this is not so (Figure 6). Martin Bell (1981a) recorded a Beaker settlement when trenching across the Kiln Combe dry valley in Sussex, one of only three he investigated, all devoid of prehistoric surface evidence. In this instance the occupation floor lay more than 2m below ground level. It is the depth at which these sites are buried that presents the most daunting problems to would be investigators but surely the message emerging from the work of Bell and others is that deep colluvium is almost always rewarding. Colluvium can be mapped by means of systematic augering and its presence can usually be predicted from direct field observation. Clearly, recognition that much evidence of prehistoric settlement and land use can be derived from colluvial formations does not solve the problems of valley searching but it is an encouraging step in the right direction.

2.3 ALLUVIATION AND RIVER PROCESSES

Having already discussed the circumstances and consequences of slope

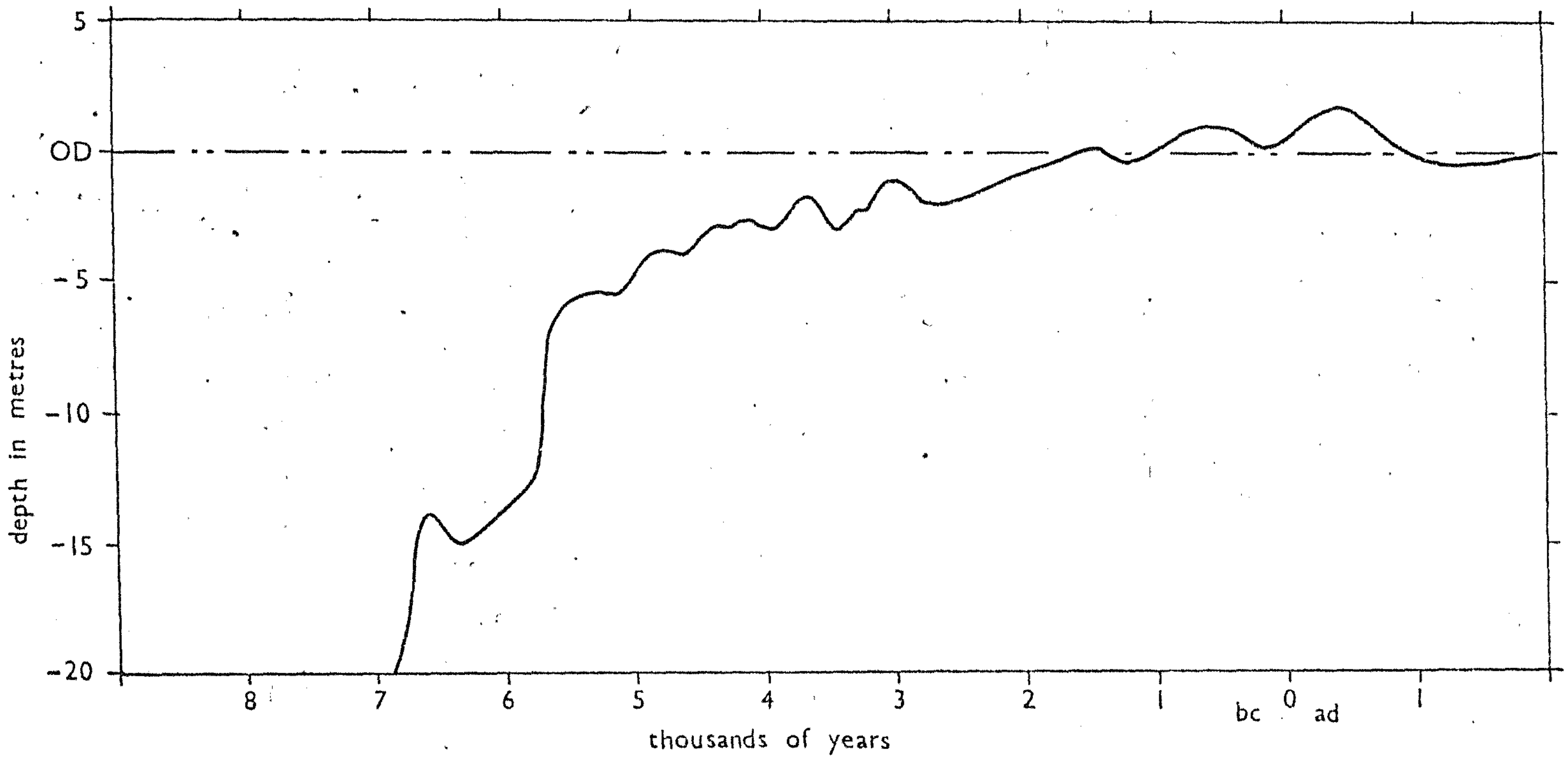
Figure 6: PREHISTORIC CHALKLAND SETTLEMENTS BURIED BENEATH COLLUVIUM

Site	Date and character	Depth and Stratigraphy	Landscape context	How found
West Kennet Avenue (Smith 1965)	Late Neolithic pits, postholes and occupation debris (including mid-Neolithic residual material). Predates Avenue construction. Colluvium entering open tops of Grooved Ware pits.	Up to 30cm of colluvium over site. Stratigraphic quality unknown but tops of pits intact.	footslope of Waden Hill	By chance in searching for Avenue stone holes.
Kiln Combe (Bell 1981 a)	Beaker floor - dense scatter of Beaker pottery; sherds in fresh condition. No later material inter-stratified.	Beaker deposits span 20 -30 cm at an average depth of 220 cm.	dry valley floor	In sectioning dry valley sediments.
Brook, Kent (Burleigh and Kerney 1982)	In-situ flintworking floor and scatter of plain middle Neolithic bowl sherds, animal bone etc. Occupation starts on stable Atlantic soil and continues as colluvium accumulates on site. Occupation ceases before 2590 ± 105bc(BM254).	Occupation layer at 80 - 130 cm depth. Colluvium nearby reaches 300 cm in depth. Stratigraphic preservation apparently excellent.	head of dry valley floor	Chance in sectioning dry valley sediments.
Durrington Walls (Wainwright & Longworth 1971)	Southern Circle - late Neolithic, Grooved Ware associated timber building. Contemporary floors, pits etc. survive intact. Second phase building dated to 1950 ± 90bc (BM395).	Colluvium reaches max. depth of 150 cm.	floor of small riverside combe	Rescue excavation ahead of road building through henge.
All Cannings Cross (Cunnington 1923)	Classic early Iron Age pit and post hole settlement - apparently unenclosed.	Some floors preserved at a depth of 10 - 55 cm.	Marlborough Downs footslope	Dense scatters of 'hammerstones' noted in overlying soil.
Cherhill (Evans et al 1978)	Mesolithic springhead settlement, 5280 ± 140bc (BM447). Possible middle Neolithic house site, flintwork, pottery etc. 2765 ± 90bc (BM493). Site ploughed in late Neolithic times.	Neolithic horizon at 35 - 55 cm depth. Mesolithic surface 75 cm deep below tufa formation.	footslope springhead	Chance exposure during building development.

it remains now to consider what happened to sediment that was not deposited as colluvium but nevertheless travelled into valleys.
We are here concerned with material transported into river systems by overland flow and to a lesser extent with material eroded by the river itself from its various channels and beds. Deposition will take place when the amount of sediment in the system exceeds the competance of the river to transport it and when velocity falls below that required to keep particles in motion. In practice, particles of different size are laid down at different velocities such that alluvium is normally, to some extent, sorted.
Of the factors which influence alluviation most are potentially prone to modification by man, some directly, others indirectly:

a) <u>River channel competance</u> - artificial constraints such as weirs, water mills, embankments etc can alter the flow character of a river but they are largely irrelevant to prehistory. Of more interest is the long term effect of post Glacial sea level recovery. A very rapid rise of approximately 15m between c.6800 and c.5600bc (Simmons 1981, 3·1 - reproduced here as figure 7) would probably have outpaced any tendency towards natural re-adjustment and substantial aggradation of coastal river valleys must have ensued. Scaife (1982) reports this phenomenon in relation to the Ouse and Cuckmere valleys in Sussex. But, in discussing the deposition of "substantial thicknesses of largely inorganic sediments" in the upper Medina valley (I.o.W) he prefers to envisage slope erosion associated with Mesolithic forest burning as a more likely explanation.
Clearly, the lower reaches of chalkland river valleys were rapidly aggrading during the Boreal and continued to do so more slowly throughout most of prehistory. It therefore seems reasonable to

Figure 7: POSTGLACIAL CHANGES IN MEAN SEA LEVEL (after Tooley 1981, figure 3.1)



expect that this effect permeated back inland with direct consequences on the competance of rivers to transport entrained sediment. Erosion associated with Mesolithic and later vegetational disturbances should then, perhaps, be seen as contributing to what was essentially a natural consequence of post Glacial sea level recovery.

The delay between coastal inundation and inland aggradation is difficult to quantify but the chronology of flooding of Mesolithic sites in the Kennet valley suggests the two were virtually simultaneous. At Thatcham, 60cm of flood laid marl was deposited on the edge of an occupied terrace between 7890±160bc(Q 651) and 7540±160bc (Q 652) and there are signs that the site had become completely untenable due to permanent flooding by c.6000bc (Churchill 1962). Further up river, but otherwise in similar circumstances, 77cm of flood laid silt was deposited on the lower terrace site of Wawcott III during its occupancy, for which a date of 4170±134bc (BM 767) refers to a mid point in the sequence (Froom 1976). If the Kennet evidence is typical of other Wessex valleys there was substantial aggradation of inland rivers long before the inception of agriculture with its attendant increase in landscape erosion (Figure 8).

b) Water input - the amount of water reaching a river channel is obviously most directly influenced by rainfall patterns - storms being very relevant. However, factors such as groundwater levels, subsoil permeability, vegetstion cover and topography exert an important influence on the rate at which precipitation actually reaches the river bank. Limbrey (1978, 25) has suggested that deforestation of valleys would be accompanied by rising water tables possibly leading to widespread seasonal or even permanent waterlogging of low lying situations previously dry.

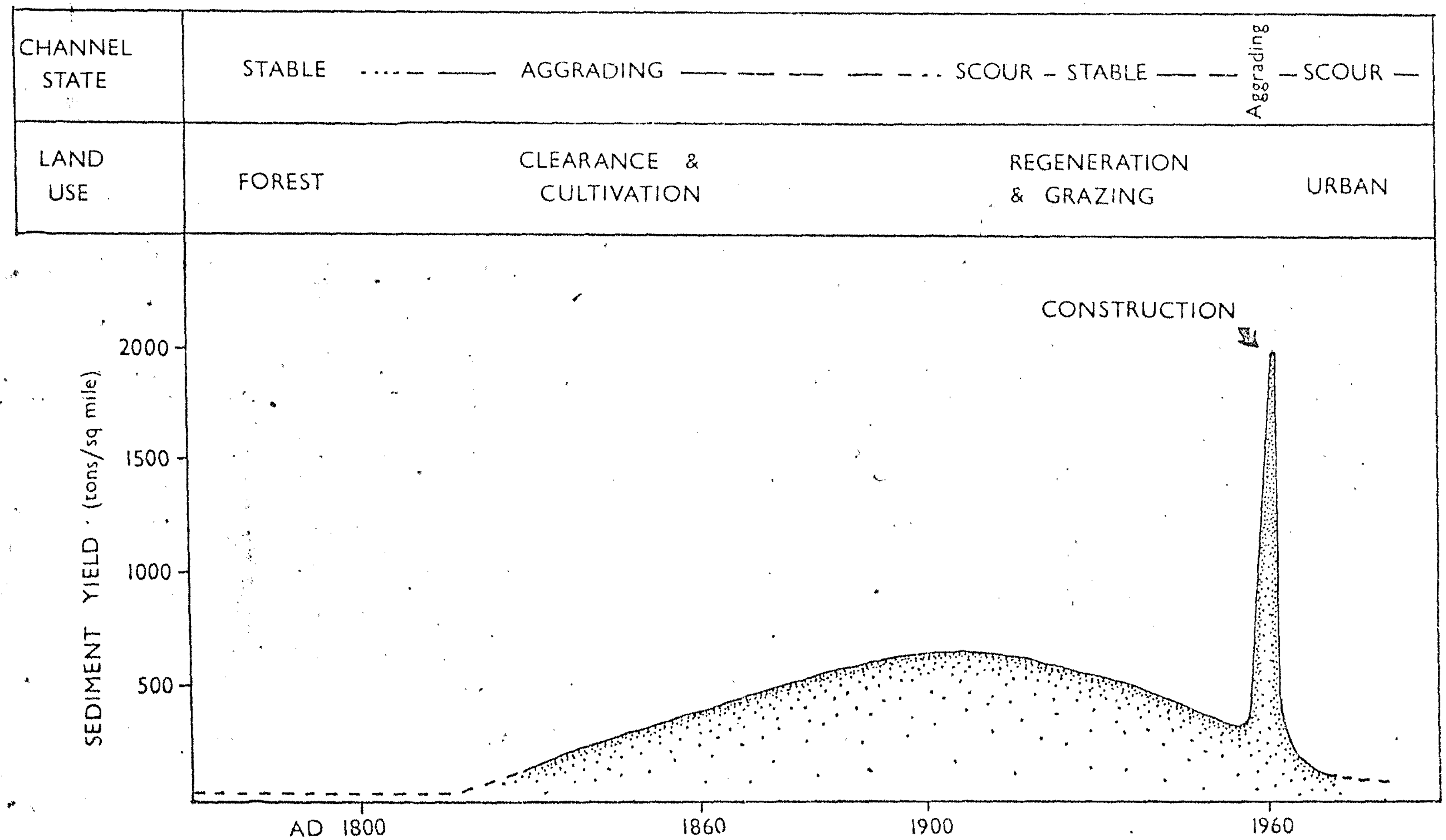


Figure 8: <u>HUMAN INFLUENCE ON SEDIMENT LOADING OF A MARYLAND RIVER SYSTEM</u>

(Gregory 1979, Wolman 1967)

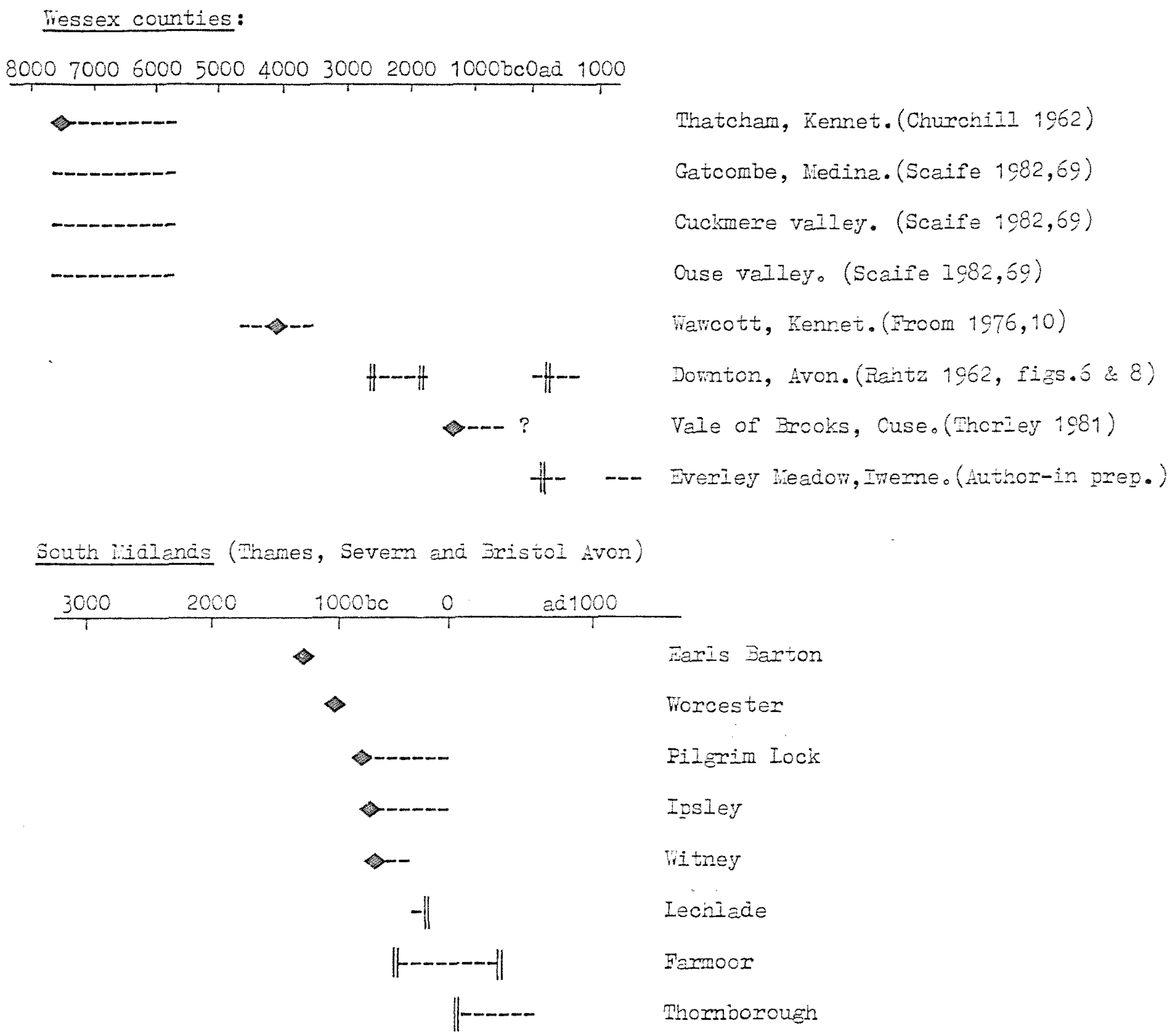
Human interference with soils and vegetation cover has already been discussed in relation to slope erosion and the points need not be restated here. It will suffice to recall that the onset of surface run off is reached more rapidly and more frequently in catchments extensively devegetated or otherwise altered by agriculture. However, unless substantial amounts of eroded sediment have been brought into the river track an imbalance between water input and channel competence (overbank flooding) will not necessarily lead to alluviation although it may promote changes in channel morphology. Indeed, by forming new channels and scouring existing ones a river may in time adjust quite naturally to conditions of imbalance. As Gregory reminds us, one should not overlook the negative feedback mechanisms operating in river systems (Gregory 1979, 128).

c) Sediment input - there can be no doubt that human activity in a river catchment greatly influences the amount of sediment made available for river transport (figure 8). Limbrey has recently stressed the role played by agriculture - "Whatever might be the causes of arable expansion its effects are clear, ... soil begins to arrive in river valleys in large quantities. Complementary to the alluvial history is accumulation of massive amounts of colluvial soil on lower slopes, in dry valleys and against field boundaries. The colluvial soils merge and interfinger with floodloam at the floodplain margins ..., channels become confined to simple meander belts and subject to regular overbank flooding.."(Limbrey 1978, 25).

One should not assume however that arable activity automatically promotes alluviation because in an environmentally stable catchment, which may include a well managed agricultural regime, erosion of sediment by surface runoff will typically be of minor proportions and within the competence of the river to transport it downstream. Substantial alluviation is conditional on sediment being available in substantial quantities, a situation most commonly encountered in changes of land use. Even then there may be negative feedback mechanisms which operate so as to prevent or delay sediment entering the watercourse. When Bell (1982) reviewed the dating evidence for alluviation he observed that it seemed to occur somewhat later in prehistory than colluviation although he also pointed out that his two sets of data were drawn from two different regions and their agricultural development need not have been synchronous. In figure 9 Bell's south Midlands data have been supplemented with data from Wessex river valleys. The delay factor is less obvious but may still have been operative. One of the clearest indications of this effect is provided by Brown's (1982) research in the Severn valley where closely detailed palynological and sedimentary analysis demonstrated that the entry of colluvium into the flood plain at Ripple Brook did not occur until some appreciable time after the adjoining lower terrace woodlands had been cleared.

As was argued for the occurence of rapid colluviation, the circumstances surrounding the onset of substantial alluviation imply the crossing of a stability threshold (figure 10). Thus under the influence of human vegetational disturbances, particularly agriculture, a river's catchment area may be conditioned towards instability by the progressive build up of colluvium and other freely available silts. In effect, some silt leaks into watercourses and is conducted away but most is laid up in storage only being released in a major erosion event. For this reason if substantial alluviation occurs within a mature environment it will almost

Figure 9 DATED ALLUVIAL EPISODES IN THE RIVER VALLEYS OF SOUTH AND MID ENGLAND
(source: Bell 1982 a, figure 1, with stated additions)

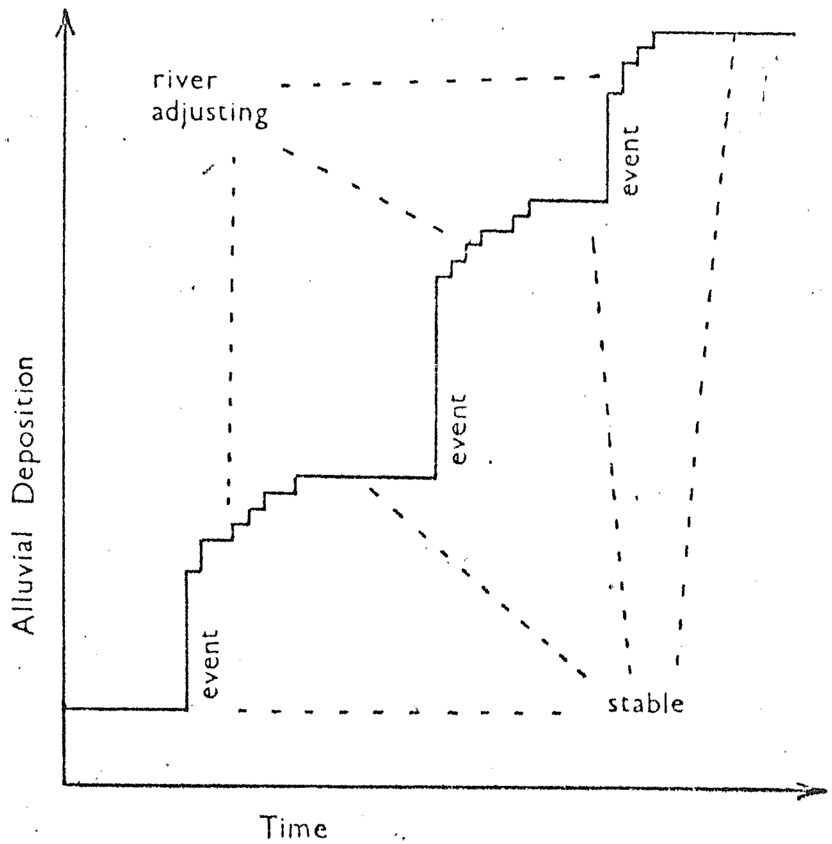


‖ Occupation horizon related to alluvial sequence
◆ Radiocarbon dated layer related to alluvial sequence
----- Dated by bio-stratigraphic means

Note:
Alluvium is here defined as any largely inorganic accumulation of river laid silt, acknowledging that in the earlier stages of deposition such sediments may be relatively rich in organic material. It is often impossible and perhaps unwise to distinguish where the changeover occurs in what is outwardly a continuous sequence of deposition.

Figure 10: STEP MODEL FOR ALLUVIAL DEPOSITION

(adapted from Selby 1979, fig. 7·8)



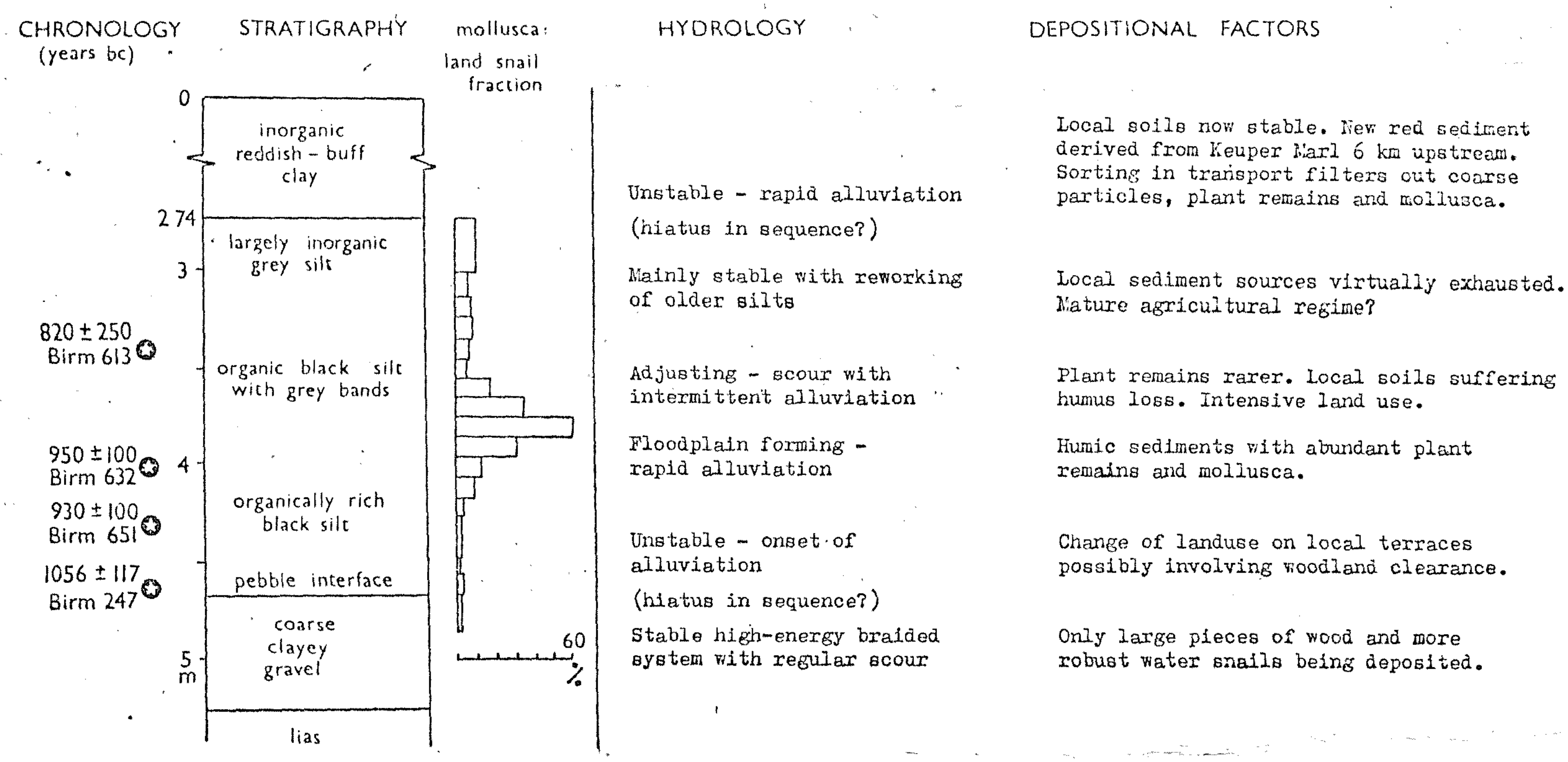
certainly be due to major reorganisation or interference with the status quo.

The point can be illustrated by reconsidering Shotton's (1978) influential study of alluviation at Pilgrim's Lock on the Warwickshire Avon (figure 11). Contrary to his implication that the sediments were laid at a uniform rate the evidence could well illustrate a sequence of two 'events' each followed by episodes of diminishing deposition. The earlier of the two is certainly of later Bronze Age date but the reddish buff clay, which was the focus of Shotton's attention, remains undated. Another aspect of alluvial process seen in the Pilgrim's Lock sequence is the long term depletion of humus and free silt in the contributing catchment area.

Discussion

Having examined the processes by which alluviation occurs it remains to consider its overall effect on the geomorphology and environment of river valleys and the broader implications for preservation of archaeological horizons. The model of floodplain development outlined by Limbrey (1978, 22) suggests that in pre-agricultural and forest dominated landscapes rivers flowed in broad, shallow, braided channels barely able to shift the inherited bed load and only nibbling at the low terraces and valley sides. Shifting sandbanks carried a transient cover of grass and herbs, whilst seasonally flooded backswamps were dominated by peat communities and alder carr. Low groundwater levels confined wetlands to the extent of the braided channel systems and their associated backswamps. Hence, even the lower terraces would have been relatively free draining and capable of supporting rich and stable plant communities. But, with the first major inroads into the forest this pattern began to change. Water tables rose, run off increased, backswamps and

Figure 11: THE ALLUVIAL SEQUENCE AT PILGRIM'S LOCK (source Shotton 1978)



seasonal channels became choked with silt progressively constraining the river first to its major braids and eventually to a single channel. The floodplains as we currently know them are therefore a by-product of this process.

For archaeology this model holds much interest because it indicates that during earlier prehistory much of the area now covered by alluvium would have been sufficiently well drained and ecologically rich to make settlement not only possible but positively attractive. Whilst there are important, if local, variations in the chronology of floodplain development most alluvium has probably been laid since the Iron Age and preservation of archaeological horizons would therefore tend to favour prehistoric research.

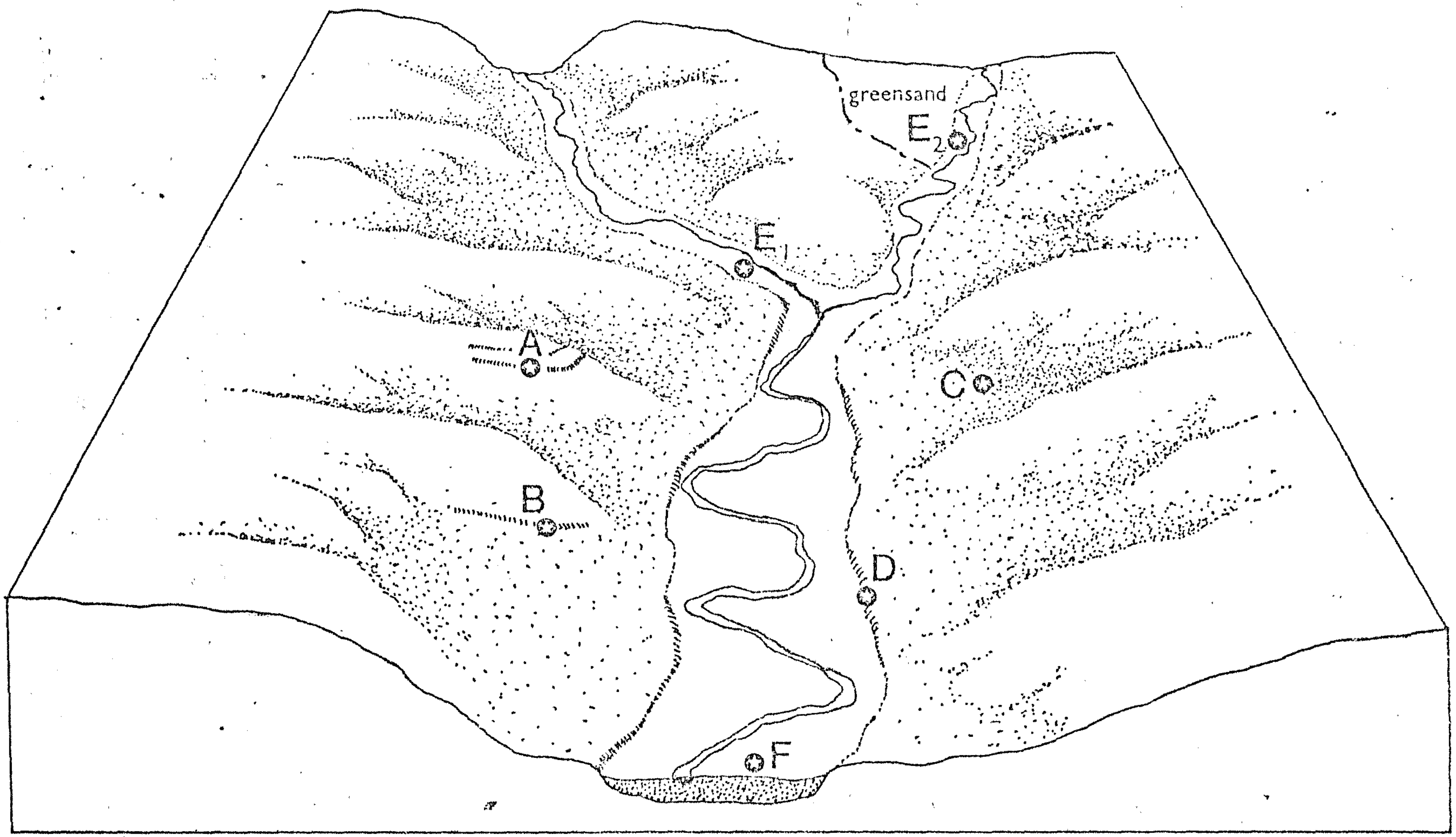
Archaeological research within chalkland floodplains has barely begun so it is difficult to assess their potential. But, if recent excavations at Everley Water Meadow, Dorset are a guide then the potential is considerable (see Appendix 1). The site, first identified as a scatter of late Neolithic/early Bronze Age worked flint on valley gravels bordering the river Iwerne, was excavated in 1982 - 3. Trial trenching followed by open area excavation revealed a long sequence of settlement and land use evidence stratified within the filling of a palaeochannel. At the base Neolithic flint work lay buried beneath reworked gravel above which was a later Bronze Age occupation horizon containing a mass of burnt flint, a pit feature, domestic refuse and traces of bronze casting. The channel was progressively aggrading throughout this occupation and by late Iron Age and Roman times was regularly bursting over its banks to lay alluvium across the former settlement area. Later during the Roman period the channel had become so choked with silt that it became practicable to plough over it. Alluvium continued to be deposited but it was again ploughed in the 13th and 14th centuries AD and had been in arable use for some time prior to the 1982 excavation season. The palaeochannel is now only traceable as a very weak topographic feature although being still prone to winter flooding and difficult to cultivate it does stand out as a band of weed infested ground.

Alluviation in relation to early settlement horizons occured very late in prehistory at Everley Water Meadow but this is not always the case as data in figure 9 show. Even when dealing with the same river system there would appear to be marked differences in the date of onset as is illustrated by research along the Thames gravels. At Farmoor, in the middle Thames, alluviation was already in progress when the floodplain began to be seasonally occupied in the middle Iron Age but it accelerated soon after and had virtually come to a standstill by the 4th century AD, by which time it had buried the Iron Age settlement (Lambrick and Robinson 1979, 118). Conversely, at Lechlade in the upper Thames valley, alluvial deposition had ceased <u>before</u> middle Iron Age and Roman settlements were established on the floodplain (Bell 1981b). These trends reinforce the observation made by Limbrey (1978, 25) that the history of floodplains involves a great deal of local variation which the larger river systems smooth over by integrating the effects of their many tributary elements.

<u>Chalkland Sediment Sampling Strategies</u>

Having reviewed sedimentary processes relevant to chalkland prehistory and lamented the lack of research into them it would be appropriate at this stage to offer some suggestions towards their future study. The starting premise is that whilst slope erosion or colluviation tends to be locally specific, alluviation is essentially an area related phenomenon. Separate investigation of either form

Figure 12a : A PERSPECTIVE ON CHALKLAND SEDIMENT SAMPLING



SAMPLE LOCATION	SAMPLE CONTEXT	POTENTIAL CONTRIBUTING AREA	SCOPE AND LIMITATIONS
A	minor upland lynchet, eg. 'Celtic field'	individual field (½ha - 2ha)	Very localised reference - ideal for studying agrarian developments within the context of individual fields. But the colluvial sequence will typically contain many chronological and depositional gaps. Slight lynchets are particularly prone to reworking by modern cultivation and in extreme cases their original stratigraphy can be inverted by this process.
B	major footslope lynchet	hillslope sector (2 - 5ha)	Sediments likely to refer to broader developments within the field system. But, it is essential to consider how other lynchets, at a higher level in the system, have influenced the direction of sediment transport on the slope. Being generally quite substantial footslope lynchets are more likely to contain a deep and well-preserved sequence than those above them.
C	dry valley floor	dry valley floor and adjoining slopes (tens of hectares)	Wide sphere of reference - possibly the optimum context for studying past land use trends associated with previously identified upland settlements. However, artefacts and ecofacts may not survive lengthy transport down slopes and Atlantic age surfaces (ie. later Mesolithic/earlier Neolithic) may have been scoured out by extinct, seasonal stream flows (Bell 1981a, 81).
D	floodplain edge bank	terrace and hinterland (up to 100ha)	Sediments probably derived overwhelmingly from terrace and hence an ideal source for valley floor land use data. Trends should ideally be correlated with those from upland contexts (eg. A,B and C) and also with those from any alluvial bands interleaved within the colluvial sequence.
E1	floodplain and minor palaeochannel	small tributary catchment (hundreds of hectares)	More spatially specific than F and possibly the optimum context for sampling alluvium. But, land erosion products often go into storage (eg. lynchets) for some time before entering the river. Thus, the sequence, if it escapes disruption by scour and meander action, may only register later land use changes. Relatively short transport means ecofact survival should be good, especially in the vicinity of Greensand outcrops (prospect of polleniferous peats and silts rather better). eg. context E2.
E2	Greensand derived alluvium		
F	floodplain and major palaeochannel	major catchment (thousands of hectares)	Generally, only a broad overview of major changes in land use within the catchment. Long distance transport does not favour artefact/ecofact survival and it is not normally possible to identify sediment sources unless part of the catchment contains distinctively different soils, eg. E2.

of deposit will yield valuable data on past land use and environment but clearly it is more meaningfull to seek correlations between the two by means of co-ordinated investigation.

The choice of sampling contexts is reviewed in figure 12. Selection will obviously be determined by the type of question one wishes to answer but there are certain guidelines that would apply to any scheme. Above all it is probably better to operate within the context of smaller tributary catchments if seeking good resolution in alluvial/colluvial correlations. Aerial photographic survey is almost an essential prerequisite not only to identify the distribution of early cultivation traces but also to help locate colluvial formations. It may also be possible to locate areas of palaeochannels and backswamps in riverside gravels. Such features are certainly discernable on Wiltshire County Council aerial photographs of the Avon and Wylye valleys where they show as swirls and ribbon-like patches in arable fields adjoining the floodplain.

Chapter 3 EROSION IN THE CONTEXT OF HISTORIC SETTLEMENT AND LAND USE PROCESSES

Central to Taylor's (1972) "zone of destruction" concept is the assumption that historic settlement and land use has almost totally devastated traces of earlier valley occupation. The fundamental fallacy of this view is that it treats erosion as a self contained process, which it patently is not. Erosion invariably has a depositional sequel and destruction is therefore most unlikely to be total. Afurther point to consider is whether it was at all necessary for historic settlers to completely rework the organisational structure of their predecessor's landscape.
The purpose of this review is to ascertain just how much damage to prehistoric landscapes has ensued from historic activity. It will consider typical situations and show that in some areas much of the original structure of prehistoric settlement and land use organisation does survive in recordable form.

3.1 Villages and Built environments

In the execution and reporting of area surveys villages are customarily discounted as holes in the fabric of the early landscape, partly because of the assumed high level of destruction but mainly one suspects because of the practical difficulties of searching them. One recent departure from this procedure is the experimental use of door to door questionnaires in the east Hampshire survey (Shennan forthcoming). Of 65 houses visited in the village of Farringdon replies were obtained from 44; three were positive but only one specifically refered to finds made within the village itself. Shennan concluded that since the exercise only took two people one short working day to complete it was not labour intensive and could be regarded as worthwhile in picking up one or two finds that would otherwise not be recorded. However, as a search technique door to door questioning relies totally on the perceptiveness of individual householders and bearing in mind the insubstantial and inconspicuous nature of prehistoric occupation evidence it would be most unwise to put any trust in negative replies. There is no substitute for searching by experienced eyes.

Chalkland architecture has always made great use of cob, a chalky, marl based paste with straw or dung reinforcement. Unlike brick or stone cob does not lend itself to re-use and readily breaks down when not protected from weathering by thatch or limewash. Thus given that most chalkland villages have been continuously occupied for at least a millennium repeated levelling and rebuilding on the same site will have created miniature 'tells' on favoured residential stances - the house platforms commonly encountered in field survey. One must also consider the long term effects of heavy continuous refuse disposal. The volume of foodstuffs, fuel and raw materials drawn into a village from its territory and processed or consumed there is enormous. Some residues were undoubtedly recycled back onto arable land as manure but equally a significant proportion must have remained in the settlement to be discarded in pits, dumped on middens or scattered over gardens and vegetable plots.

Villages may be areas of intense disturbance but they are areas of intense deposition. In general the earliest occupation horizons will tend to become progressively buried although settlement activity such as rebuilding, pit digging or mere trampling is unlikely to leave them intact. Associated vetical displacement of artefacts should mean that some, although by no means all, phases of earlier occupation will be represented in uppermost horizons.

The recent establishment of county based Sites and Monuments Records with an interactive link to the redevelopment of built environments promises to improve the rigour with which village archaeology is recorded but it will be some time before reliable trends emerge. For the moment we still rely on individual case studies of the type which is now discussed.
Between 1977 and 1981 the writer undertook a study of the village of Boreham, near Warminster, Wilts (details incorporated in the Wiltshire SMR). In most respects it is a typical chalkland village although for reasons which have yet to be determined its early centre was abandoned in the later medieval period leaving a pattern of well developed house platforms, holloways and tofts now fringed by modern houses and gardens. Thus, somewhat unusually, part of the early village is readily accessible to archaeological inspection.

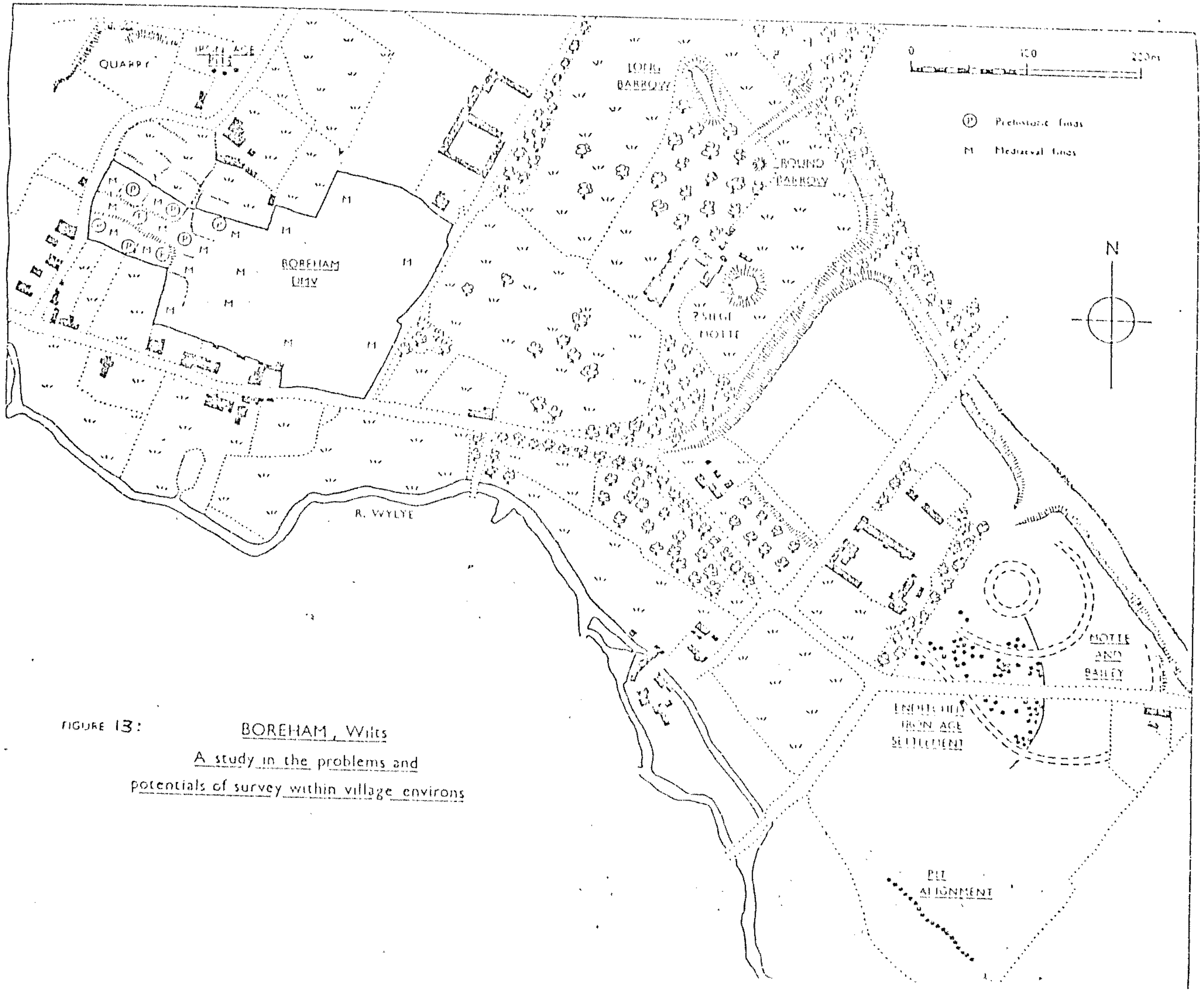


FIGURE 13: BOREHAM, Wilts

A study in the problems and potentials of survey within village environs

Systematic surface collection within a 10m grid revealed a discrete scatter of Mesolithic and Neolithic flintwork together with a hand full of rolled prehistoric pottery confined to that part of the site where village earthworks were most developed. Medieval occupation debris extended over a much wider area, reaching out to well beyond the earthworks. The medieval distributions fit a distance-decay model of deposition very well but the prehistoric pattern does not. It remains to be tested by excavation but the evidence does suggest that prehistoric material, possibly from an extensive settlement horizon, has only been brought to the surface in areas of intense medieval subsoil disturbance.

This is not the only evidence for prehistoric occupation of the village horizons. Approximately 50m to the west (figure 13) several small Iron Age pits were revealed when builder's trenches cut through an area disturbed by post-medieval stone quarrying, the pits having been partially buried by quarry spoil. Similarly, 600m to the east and adjoining a modern farmstead, a second and more substantial Iron Age settlement first noted as a cropmark in the exceptional drought of 1976 was positively identified by trial pitting in 1981. A pattern of a hundred or more pits, partially enclosed by a light ditchwork, had had the earthworks of a Norman motte and bailey castle superimposed on it (see Appendix 2). Although all earthworks have now been levelled by ploughing the later ones clearly played an important role in preserving traces of the earlier settlement even if they did make their recognition more difficult.

All these sites lay within what would often be regarded as a no-go area for field survey because of the constraints imposed by modern settlement and the frequency of woodland pasture. However, it is difficult to escape the conclusion that had Boreham been studied with the same intensity as the adjoining uplands (containing such well known sites as Battlesbury, Scratchbury and Longbridge Deverill Cow Down) its prehistoric origins would have been recognised long before 1977.

It may be observed that the pattern of small paddocks and enclosures that typically surround most chalkland villages offer a rather better preservation environment than do the more distant common fields or their modern equivalents. Unless substantial settlement reorganisation has occured one may expect many early landscape

features to survive in these largely non-arable areas. So few modern villages have been studied from this viewpoint that it is impossible to say how common such survivals are. But, at Faccombe, Hants it has been demonstrated that the earthworks of a prehistoric and Roman fieldsystem provided the basic structural layout for the establishment of a Saxon settlement - the pattern being preserved as property boundaries (Fairbrother - research seminar given at Southampton University in 1982).
This highlights what is perhaps one of the biggest obstacles to village survey ie. the natural temptation to regard all earthworks as elements of Saxon and medieval occupation. That close inspection frequently shows this to be untrue is a reminder that efficient recording of prehistory in these areas probably requires a revision of approaches more than a methodological breakthrough.

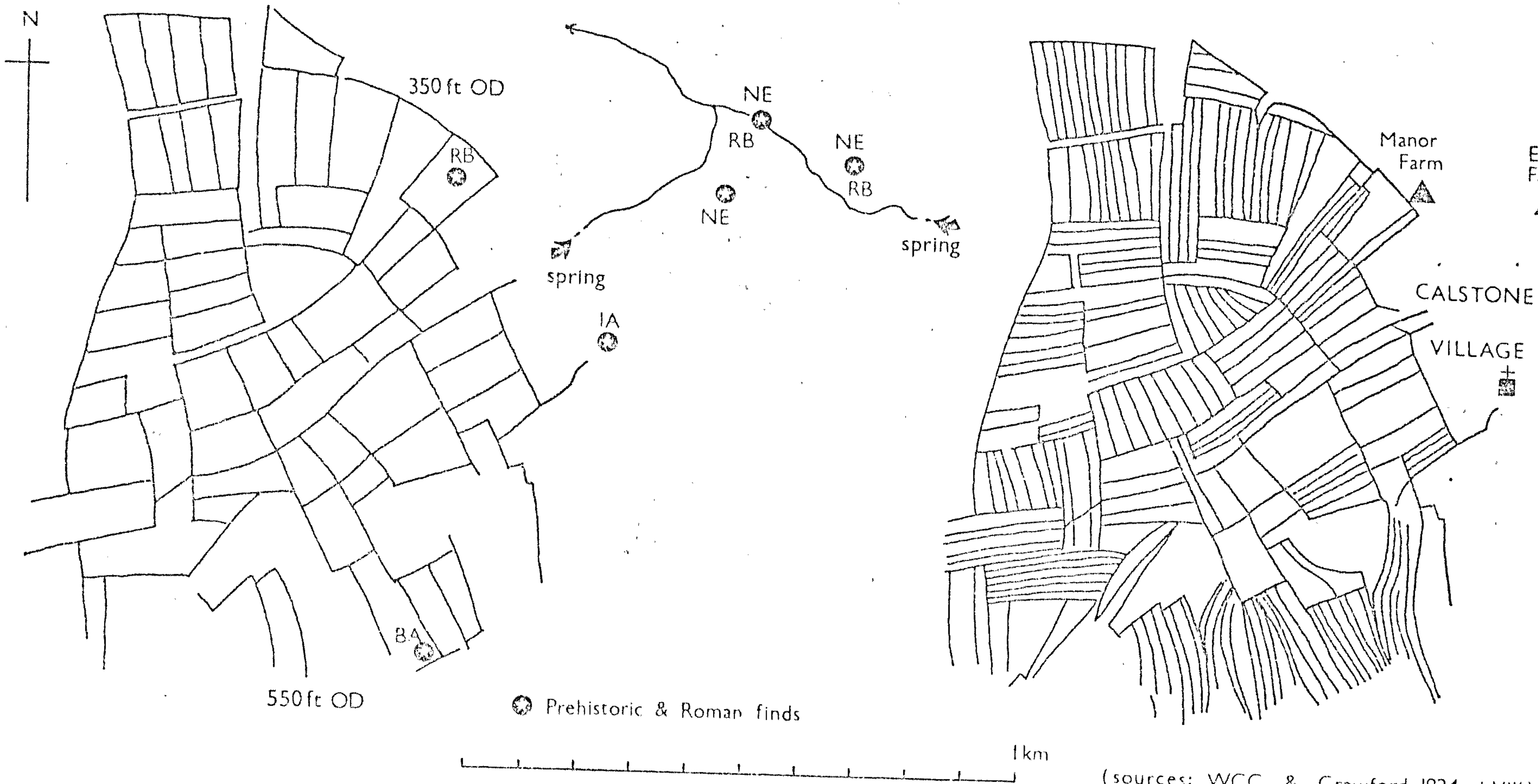
3.2 Arable environments

It is generally assumed, certainly in historically oriented accounts of landscape evolution, that the emergence of open field farming systems during the Saxon period marked a complete break with earlier traditions and that pre-existing field systems were swept away.
For the chalklands at least there is now evidence to suggest that this simply is not so. Open field systems can often be seen to be the product of piecemeal modification of earlier layouts and because of this survival of prehistoric landscape organisation features will be a good deal more common than is usually appreciated.
The point may be illustrated by field patterns around the Wiltshire chalkland village of Calstone. Figure 14 b shows the medieval and early post-medieval pattern of small strips as portrayed in an early 18th century estate map. Figure 14 a shows the same system stripped to its skeleton - a plan that would be perfectly acceptable as a 'Celtic' field layout. Ironically Crawford (1924) deliberately selected this system at Calstone as an illustration of what a typical Saxon field layout should look like!
At the heart of the problem is past confusion over the nature of Saxon impact on the landscape they found - a topic admirably covered by Taylor (1975, 63 - 70) the details of which need not be restated here save to highlight the more important points.
Firstly, open field strip farming as known in medieval times cannot be proven to have existed before the later Saxon period. Indeed,

FIGURE 14: THE SOUTH FIELD OF CALSTONE WILTS

a. THE BASIC STRUCTURE

b. 18TH CENTURY LAYOUT (pre – Enclosure)



(sources: WCC & Crawford 1924 pl VIII)

recent work on the Continent, in the Saxon homelands, shows that they were cultivating small rectangular fields very similar to our 'Celtic' fields. Secondly, the evolution of strip fields does not start with the Saxon arrival but can be seen to have its origins in later prehistory. Essentially, earlier prehistoric fields tend to be of short rectangular plan and small in size, a configuration apparently well suited to contemporary farming techniques. But, by the late Iron Age and certainly during Roman times, there was a trend towards longer rectangular fields which is probably linked with the adoption of heavier ploughs and longer draught teams. Such fields were sometimes constucted on the edge of earlier systems and sometimes created by amalgamating two or three smaller fields through removal of their intervening cross baulks. Obviously one cannot expect that these developments necessarily occured every where or at the same time but the crucial point is that the chalk lands <u>already</u> contained some patterns of long strip like fields at the beginning of the Saxon arrival.
One has only to consider the complexities surrounding Parliamentary enclosures of the 18th and 19th centuries to conclude that wholesale reorganisation of field systems will be a rare occurrence and piece meal modification is the norm. Much planning and bureaucratic activity took place before boundaries were drawn, long established tenurial arrangements were broken down, access rights changed and in the final analysis someone had to bear the cost of erasing obsolete boundaries and creating new ones

The argument put forward here is that not only did prehistoric and Roman field layouts survive long after the Saxon arrival but also that they could be and were readily modified to accommodate subsequent changes in tenurial and husbandry arrangements without losing their basic structure. However, whilst one may now expect survival of prehistoric boundaries to be relatively common within arable environments, proving the case is far from easy. Apart from rare instances where relative precedence of a boundary and some dateable monument can be directly observed dating normally relies on excavation and field boundaries are notoriously difficult to date this way. Even if they have an artefact content it may be residual or referable to subsequent manuring activity rather than initial phases

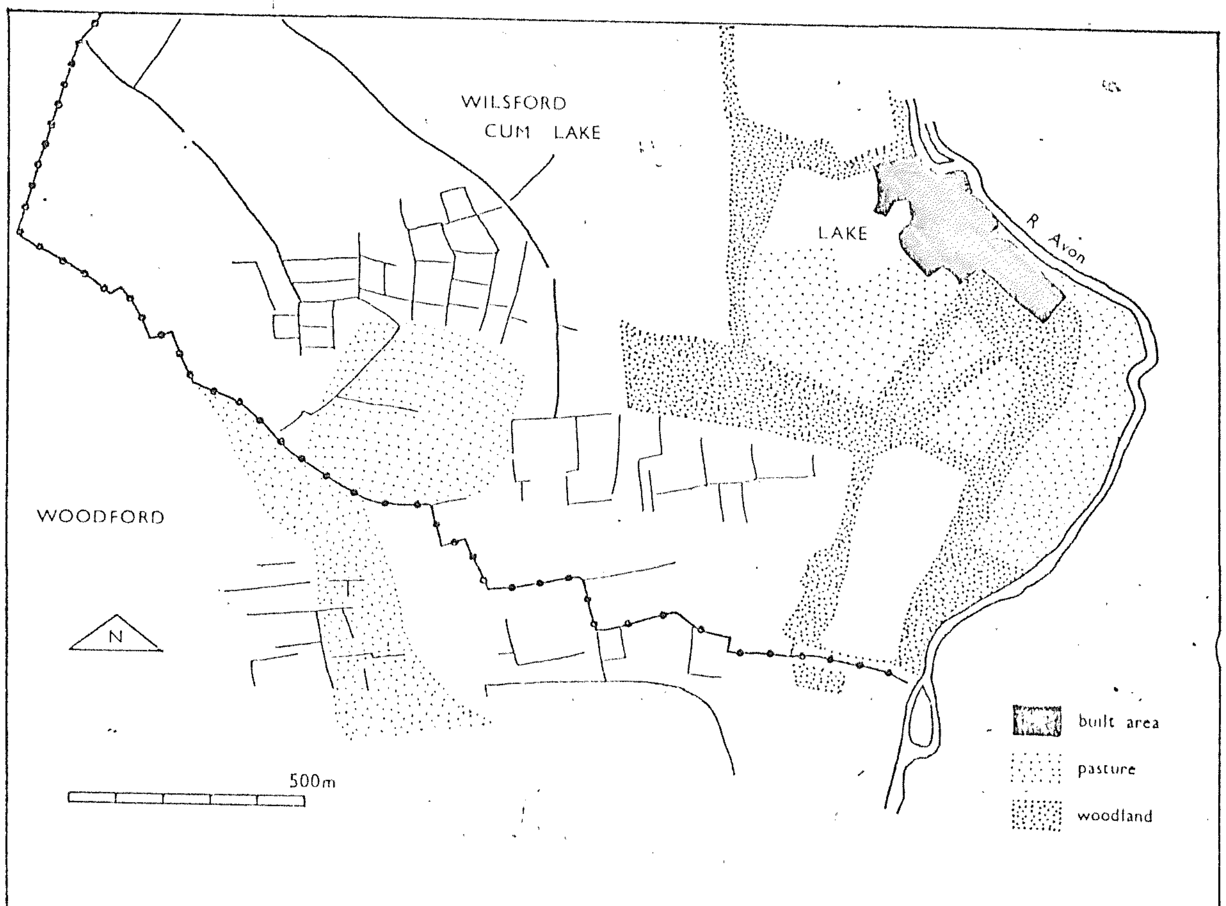


Figure 15: A Sawtooth Parish Boundary and its relationship with pre-Medieval land allotment features

of cultivation. What is really needed are more projects of the type carried out on Fyfield and Overton Downs (Fowler 1967) though preferably designed around valley areas rather than uplands.

One category of landscape organisation feature which deserves to studied more closely is the parish boundary - features even less prone to casual reorganisation than field systems. A case in point is the 'sawtooth' pattern common in the chalklands and else where and usually interpreted as the effect of two medieval open field strip systems meeting at a shared parish boundary during times of intense land pressure (Taylor 1975, 75 and figure 9a). Such an explanation may be valid in some cases but as figure 15 shows, the exact course of a boundary may be influenced by much earlier landscape features. This is not to say that the boundaries are themselves prehistoric boundaries it merely serves to prove that early features can be and often are preserved intact within what appears to be entirely historic land allotment arrangements.

Chapter 4 RETRIEVAL PROCESSES

Under the deceptively simple title of 'Retrieval Processes' this lengthy chapter attempts to review how the archaeological record of chalkland Wessex has come into being, so that biases operating selectively on valley zones can be identified. It has necessarily involved a critical re-examination of some of the most basic precepts underlying data retrieval methods currently in use in Wessex. To understand why information from valleys is so difficult to acquire one must first understand the weaknesses inherent in data retrieval methods and whilst some progress has been made in this direction within the chapter that follows, the last word has yet to be said.

4.1 THE SCREENING EFFECTS OF MODERN LAND USE

Archaeological survey relies very heavily on surface inspection techniques, of which aerial photography and fieldwalking are the most important. Current land use patterns therefore have a considerable influence on survey by dictating where and with what efficiency surface inspection may be carried out. Arable land is probably the most amenable survey environment because it offers excellent prospects for recording crop, soil and shadow sites from the air and allows sites detected in this way to be systematically fieldwalked afterwards. Pasture areas do not normally reveal archaeological features to aerial inspection quite so readily unless substantial earthworks are involved. But, differential grass growth rates and discoloration at times of high soil moisture deficit do sometimes betray the presence of major subsoil disturbances, particularly stone foundations. Short, well-maintained grassland may sometimes repay fieldwalking but the rank, dense vegetation one encounters in mature downland precludes this option. Personal experience has shown that these old grasslands are only susceptible to aerial survey for a brief period in late January to early February - after winter weather has killed off and beaten down the old growth but before new growth has started to emerge.

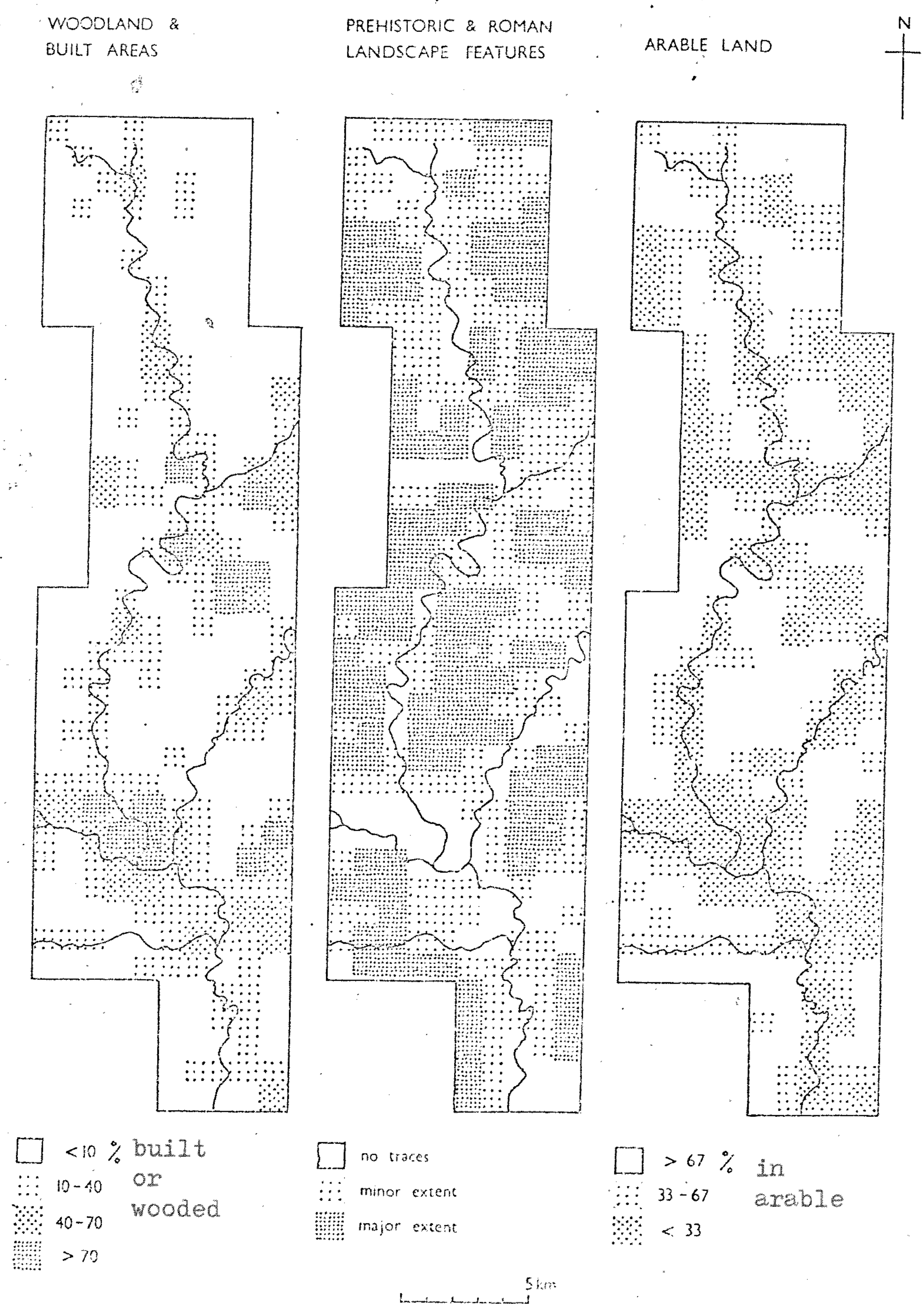
Woodland presents all manner of difficulties. Aerial inspection is ruled out and although ground inspection may reveal earthworks it is notoriously difficult to achieve an accurately surveyed plan of them. Within extensive, as opposed to intensive, area surveys built environments may be regarded as dead ground because of the prohibitive labour penalties incurred in inspecting them.

But, before looking at land use patterns in the chalklands it is worth emphasising two points. Firstly, all land use regimes are potentially searchable if one is prepared to accept that even coverage demands a different level of survey effort in different regimes. This may complicate subsequent statistical analysis of the resulting patterns but it is not an insuperable problem. The problem, if it exists, is in reconciling oneself to the concept of spending, for example, 10 hrs searching built areas for every hour spent fieldwalking open ploughsoils, just to achieve a balanced average.

The second point is that land use patterns are constantly changing. Fields in pasture one year may be arable in the next, woodland may be cleared etc. On this basis, if survey is spread over several years some of the land use constraints can be minimized.

However, a dominant feature of the chalklands is that there is a high degree of constancy in the way land is used. Floodplains form continuous corridors of permanent grassland. Villages cluster along the valley floor usually with copses and paddocks arranged around them. Valley pasture is rarely converted to arable but upland areas frequently undergo a change of use. It is these factors which have particularly

Figure 16: ARCHAEOLOGY & LAND USE IN THE AVON VALLEY



militated against valley exploration whilst promoting survey in the more open uplands.

To investigate the problem further, and obtain a more objective understanding of chalkland land use patterns, the Avon valley from its headwaters in the Vale of Pewsey, south through Salisbury, to the Wiltshire/Hampshire boundary was surveyed using Wiltshire County Council's 1981 census survey air photographs (Figure 16). The basic unit of analysis is a 1km grid square. From left to right, the first chart underlines the point that the distribution of woodland and built areas focusses generally on valley floors, effectively precluding or seriously handicapping air survey and fieldwalking in these areas. The major blindspots in an otherwise visible landscape are Salisbury, at the confluence of three rivers, and the large military establishments of Bulford and Boscombe Down sited atypically on the uplands. In the south east remnants of Clarendon Forest form a dense and relatively continuous screen. The centre chart illustrates the recorded extent of prehistoric and Roman landscape features, information almost entirely derived by air survey. Heavy tones indicate where traces, typically of field systems and enclosures, extend across most of the grid square. Predictably, these relatively unbroken patterns are distributed away from the heavily obscured valleys and, as the right hand chart confirms, they lie in the upland expanses of open arable.

Thus, even before aspects of survival and destruction are brought into consideration it may be seen that modern land use patterns can alone produce the type of archaeological distributions we are accustomed to in chalkland research. Seen in this perspective valleys may more aptly be described as 'zones of masking' than as 'zones of destruction'.

4.2 SURFACE COLLECTION

Surface collection, in the sense of systematic or random artefact collection from ploughed fields, is probably the most widely employed and yet most misunderstood field recording technique available today. Uncritical acceptance of the results it produces is prevalent throughout archaeological literature. It is only in the past decade or so that serious attempts have been made to consider the status and meaning of surface evidence. The common belief would appear to be that meaning can be derived from sophisticated analysis of the pattern itself and by comparing one pattern with another. This morphological approach may well be misguided for in concentrating on surface patterns the question of what they are derived from has been largely ignored. As long ago as 1970 Redman and Watson wrote: "Few attempts have been made to discover just how closely one can predict from detailed knowledge of surface distributions what he will find if he digs" (Redman and Watson 1970).

Some progress towards resolving this crucial question has been made by field research in North America (Flannery 1976, 51-62; Schiffer et al 1978, 1) but in Britain it occasions little interest. The tragedy, for it is indeed a tragedy, is that the necessary information is not especially difficult to acquire. Any excavation of ploughed sites could potentially start by studying surface distributions - so that they could be correlated with sub-surface contexts. But, as Haselgrove (1978) and others have lamented - the opportunity is almost always thrown away when machinery is used to strip the ploughsoil before recording begins. An illustration of the information to be gained from excavating rather than stripping ploughsoils is provided by the work of Gingell and Schadla-Hall (1980) at the Bronze Age settlement on Bishop's Cannings Down, Wiltshire (Figure 17). In controlled excavation of what is essentially a typical ploughed downland site, 90% of the finds came from the ploughsoil rather than the underlying features. Furthermore, it was observed that the ploughsoil

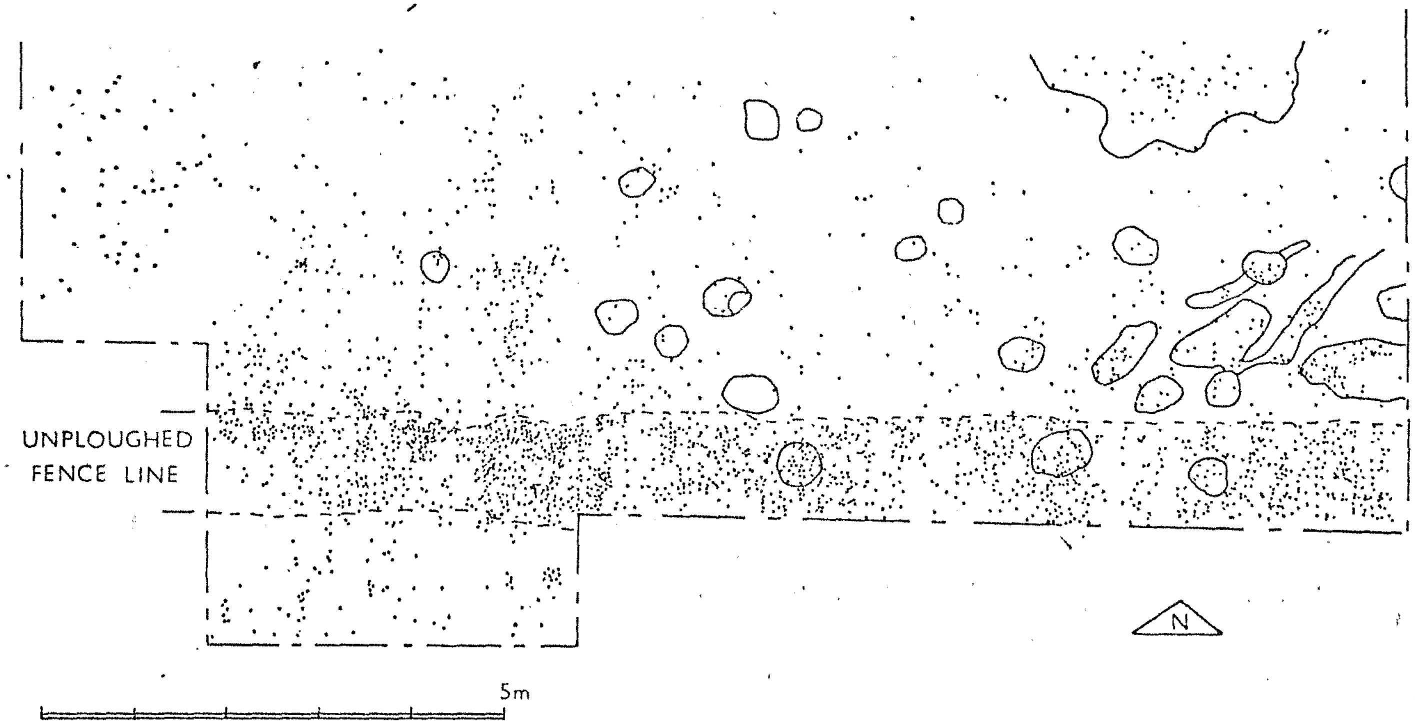


Figure 17: BISHOPS CANNINGS DOWN - Finds distribution below ploughsoil contrasted with that in unploughed zone

(after Gingell & Schadla-Hall, 1980. figure 38) artefacts were still spatially associated with the features they derived from and hence their provenance could be reconstructed.

The question of how surface evidence is derived from subsurface contexts is of course only one of the issues which might be considered here and, important though it is, it should not be allowed to distract from the other considerations which are reviewed sequentially below:

4.2.1 Spatial distribution of arable land - Patterns derived from fieldwalking will have a first level correlation with modern land use strategies and capabilities. One should query whether the arable land available for search provides adequate coverage of the type of micro-environments one would expect the target population to occupy. Within most landscapes, and certainly within the chalklands, some potentially important micro-environments are consistently unavailable for surface sampling. Others will be seriously under-represented unless positive steps are taken to select in their favour.

4.2.2 Retrieval procedures - One area of concern has been the extent to which patterns recorded in surface collection are distorted by recovery variables such as lighting, soil type, tilth state and fieldwalker experience etc. Shennan (forthcoming) addressed this very problem in his recent east Hampshire survey by rigorously recording such variables and statistically analysing their effects. It was concluded that whilst they are difficult to control their aggregate effect is, in most cases, of relatively minor significance.

Rather more important is the collecting strategy itself which, if it is a poor fit on the real distribution of ploughsoil artefacts, can easily introduce totally spurious patterns within the sampled evidence. The critical factors are abundance and clustering (see Schiffer *et al* 1978, 4-6 for detailed discussion). If the strategy involves total surface coverage the problem is disposed of because all types of distributions are accommodated. But, as soon as one moves towards partial collection by transect or grid walking strategies so there will be a tendency for rare types or those that occur in small clusters to be erratically retrieved. This may not materially affect the actual detection of 'sites' but it will certainly lead to misinformation about their character.

The problem hinges largely on an ability to predict the spatial and material character of the targets one wishes to find or expects to encounter. Ideally, retrieval strategies would then be designed around these predictions. But, in practice prediction is a risky business and in the final analysis one can rarely afford to walk with just one target in mind. Surface collection projects are almost invariably designed around the principle of collecting whatever evidence is available - they are therefore compromise designs. Some targets will be efficiently recorded, others will not and it is not always possible to quantify the scale of information that is being missed. Unless one opts for total surface coverage or can afford to walk for just one target at a time there is no solution to the problem other than to be aware of it.

Taking a typical field walking strategy - the use of 30m spaced transects, Figure 18 illustrates how the distributional behaviour of different targets bears on the consistency with which they are recorded. The data are derived from repeat field walking, in two successive years, of four fields within the east Hampshire survey (Shennan forthcoming).

Amongst the rare artefact groups Roman and medieval pottery were recorded at much the same rate each year. If they represent thin scatters of manuring debris, as seems most likely, then because they are relatively evenly distributed 30m spaced transects are an efficient way of sampling the population. The same is apparently true of post-medieval and modern pottery. Modern building materials were by far the most frequent find but there were some relatively marked differences in the rate at which they were recovered in

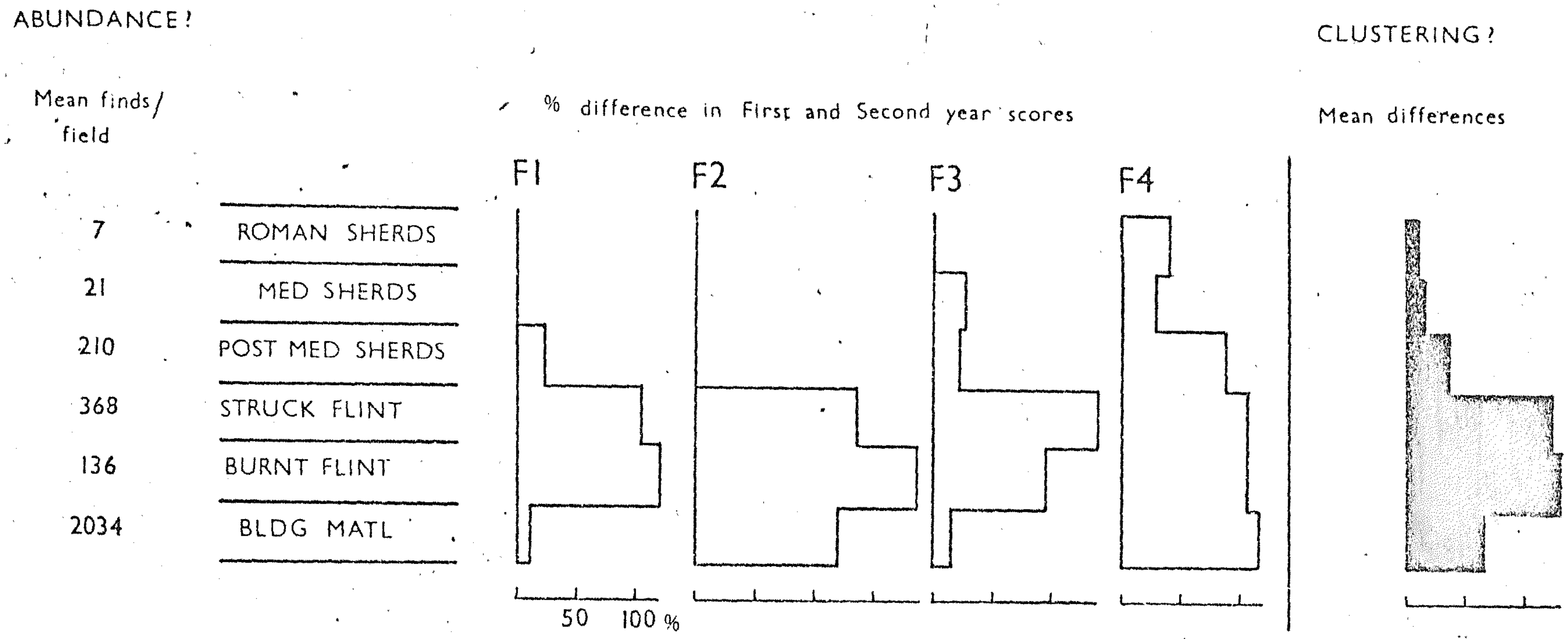


Figure 18: RETRIEVAL DATA FROM THE EAST HANTS REPEAT FIELDWALKING EXPERIMENT (source Shennan) forthcoming

successive years. This perhaps suggests that they are not evenly distributed across the field, possibly having been dumped to make up troublesome soft spots around gateways as well as being more evenly scattered by manure spreading. In all but one of the fields the two artefact categories which display the greatest inter-annual variation are chipped stone and burnt flint. This consistent inconsistency deserves some attempt at explanation. Perhaps the main factor is that in contrast to the other artefacts which could well owe their distribution to manuring activity, the patterns of burnt flint and chipped stone are much more likely to represent in situ prehistoric activity, partly domestic, partly extractive. One may predict that they will be distributed in clusters, often small enough to be missed by the 30m transects. Thus unless the second year transects were aligned on exactly the route of the first year transects there will inevitably be some differences in the rate at which these clusters are recorded and hence in the frequency with which individual pieces are collected.

One must allow that some of the observed inter-annual variations are due to factors such as the use of different fieldwalkers, different lighting conditions etc., but it is difficult to escape the conclusion that the retrieval strategy is itself the most important factor. Ostensibly, it was a good fit on some target distributions but not on others. Repeat field walking would therefore seem to be an ideal, economic way of testing both collecting strategy and retrieval procedures. If there are pronounced differences between the first and second samples, especially if both are taken in near identical conditions, there may be a need to critically re-examine the whole design.

4.2.3 Retrieval rates - Field walking, in common with all other data retrieval techniques, entails sampling the available evidence but in the particular case of surface collection it is important to realise that one is sampling at a very low level of intensity. Shennan (forthcoming) has warned against pre-occupation with estimating absolute artefact densities because co-variance is more important. But, there is nevertheless a need to have some idea of what proportion of the total artefact population has been recovered. If the sample fraction is too small the conclusions drawn from it may well be totally unreliable (Asch 1975, 190). Leaving aside, for the moment, those problems generated by deeply stratified sites and areas a basic question to which we ought to have an answer, but don't, is what proportion of a given ploughsoil population is potentially recoverable at the surface? One approach is to excavate a ploughsoil after it has been field walked - so as to compare relative retrieval rates. This procedure was adopted by Parker-Pearson (1977) in the context of south Devon and it was observed that no more than 2% of the total ploughsoil content is actually collectable at any given time. To investigate this relationship further, and specifically within a chalkland setting, the writer recently repeated the experiment in the course of excavating a valley bottom flint scatter at Everley Meadow, near Hambledon Hill, Dorset (see Appendix 1).

The site was first systematically field walked in good conditions using a 10m grid layout and then portions of it were excavated (Figure 19). The surface search (total area <u>scanned</u> = 2500m^2) yielded 100 artefacts (pottery, struck flint, burnt flint, metal objects, building materials, slag). Controlled excavation of five separate blocks of the same ploughsoil (totalling 8.25m^2 in area) produced 91 artefacts of the same categories. In relative terms controlled excavation would appear to yield, on average, 275 times as many artefacts as surface searching of the same given area. On this basis the sampling fraction inherent even in total surface collection cannot be larger than 0.36% and bearing in mind that some artefacts could have been missed in excavation the fraction could well be even smaller.

Whilst it would be unwise to generalise too widely from these two small scale studies it does seem that the low retrieval rate

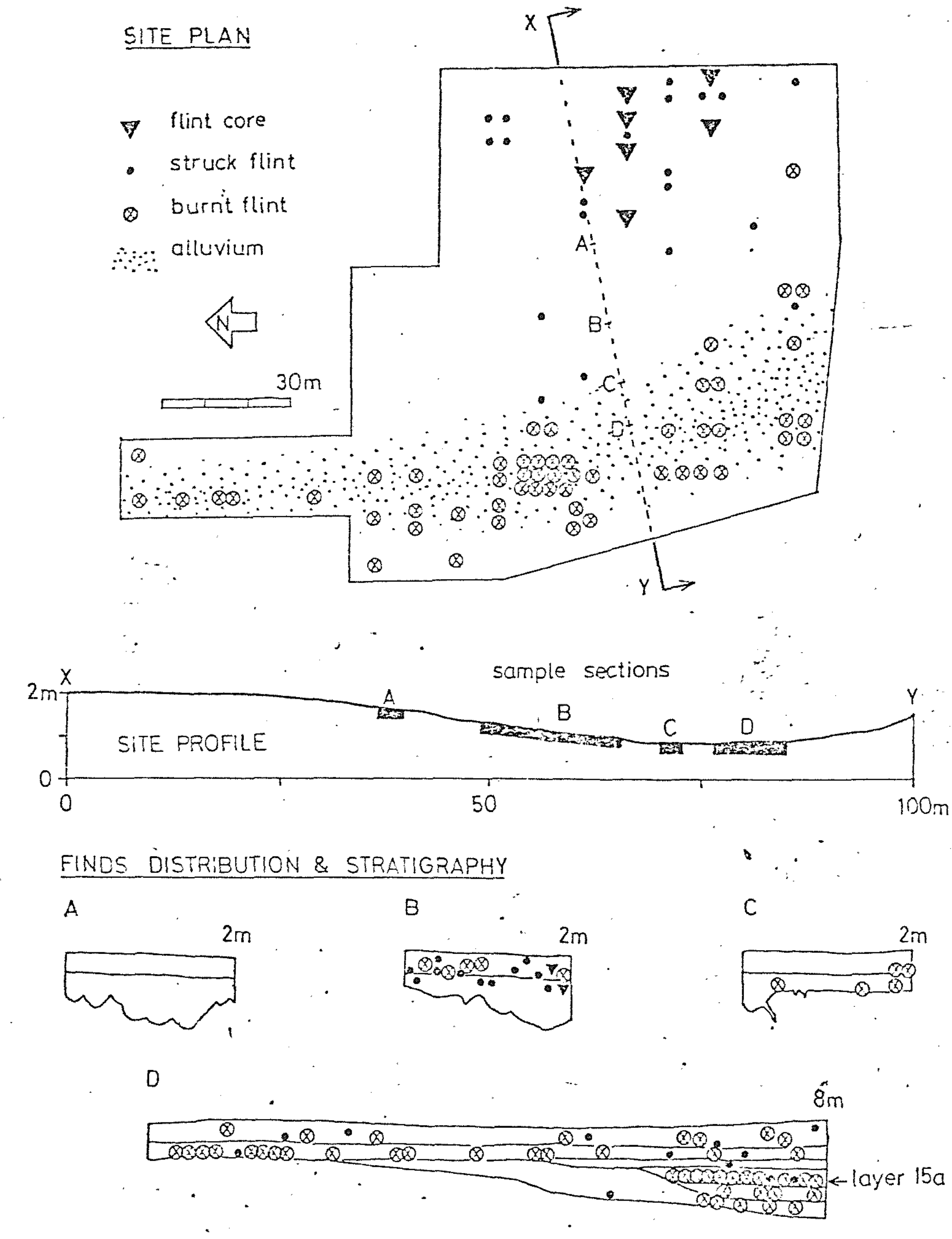


Figure 19: EVERLEY WATER MEADOW an alluvial recording context

associated with field walking could be a more serious problem than is normally appreciated. This is particularly so when dealing with rare materials such as the diagnostic elements in a flint scatter. At best the analyst will be confronted with assemblages that defy classification - a familiar situation as anyone with survey experience will vouch. At worst too much emphasis will be put on the few diagnostic pieces that do emerge which, given that ploughsoils are open contexts, may be largely unrelated to the main bulk of the surface assemblage.

There seems no practical solution to the problem that fieldwalking inherently involves sampling at very low intensity. But if the objective is simply to study broad spatial trends of artefact populations which are relatively abundant, homogeneous and readily identifiable at the level of individual units this limitation is unimportant. If, for example, one wished to map the distribution (within modern arable land!) of Roman buildings with mosaic floors, the fact that at each site only 50 tesserae are recovered out of a total of 10,000 does not matter at all. It is a reasonable assumption that the target has been found and the objective achieved. The same would be true if one wished merely to study the distribution of prehistoric flintwork (again, in modern arable) without regard to its cultural affinity, date or function. Where low retrieval rates do become critically important is when the observed trends can only be understood in reference to rarely occurring elements of the target population. A classic example is the importance attached to leaf arrowheads and polished axes as an indicator of a Neolithic date for the flint scatter they are associated with. As is discussed in Chapter 5 both are comparatively rare elements in Neolithic assemblages, typically scoring less than 1% of the total - they are therefore not very well suited to the task demanded of them. Bearing in mind that they are also extractive rather than specifically domestic items one wonders how many Mesolithic or Bronze Age flint scatters have been erroneously labelled Neolithic simply because a Neolithic hunter's arrow fell on the site!

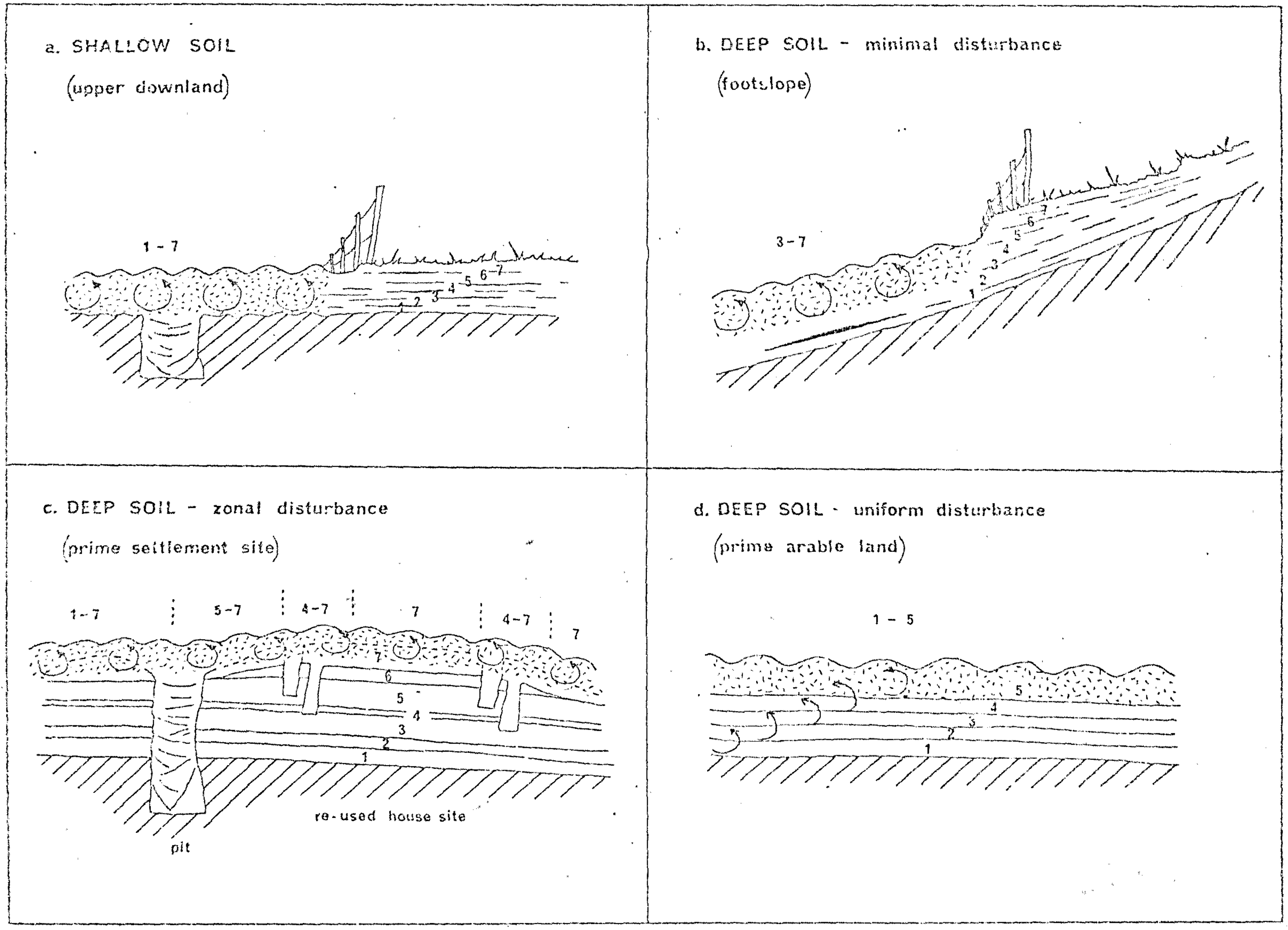


Figure 20 Ploughzone/Surface Assemblage formation model

4.2.4 <u>Surface formation and soil depth</u> - It needs to be emphasised that the application of surface collection to an area about which nothing is known of soil depth and surface formation history invites the collection of very misleading data. To understand surface evidence we need to know how it is derived which really requires an understanding of the subsurface character of the source area. Yet, that is what one tries to infer from surface evidence - the sampling paradox is so difficult to escape. The only way to break into this circle of reasoning is to predict, from the best available comparative information, how surface evidence will respond in the range of recording environments one expects to encounter.

Taking the simplest situation first, it is obvious that if the plough is sampling only the top 20-25cm of a site whose full stratigraphic record extends to 200cm the sample will be a very partial one. Some vertical displacement of artefacts from one horizon to another is always likely, if only through faunal disturbances, but there is no escaping the conclusion that the surface assemblage will bear little relation to that at the base of the stratigraphy. Bell's excavational research in chalkland dry valleys illustrates just how important this factor is. At Kiln Combe, near Eastbourne, Sussex a dense scatter of Beaker occupation debris was recorded in a machine cut section, chiefly at a depth of 250cm. Of the 94 Beaker artefacts recovered from the entire section only three small undecorated sherds were in the modern plough zone. But none of these would have been visible to a surface collector who would only have seen a welter of Roman and medieval sherds (Bell 1981a).

It is perhaps unwise to consider soil depth in isolation from surface formation processes because deeper soils so often have a complex history of formation. To understand the whole one must understand the parts. This was particularly evident in the Everley Meadow study, referred to above, where attenuation effects at the edge of the flint scatter were artificially created by deposition of Roman and medieval alluvium across part of the original pattern. When drier conditions permitted a resumption of cultivation parts of the flint bearing horizon were too deeply buried to be disturbed by the plough. Its true extent, and in some ways, its true character were no longer discernible through surface collection (Figure 19). The only useful dating evidence (Bronze Age pottery and a socketed axe mould) came from layer 15a, deep within the palaeochannel.

If the depth of cultural horizons does not greatly exceed the depth of the plough zone (typically 20-25cm) there should be a good correspondence between surface and subsurface patterns. But as the stratigraphy begins to exceed 25cm so the risk of unrepresentative results increases. However, in practice, this relationship is modified by the effects of post-depositional formation processes such as faunal disturbance, past cultivation episodes, pit digging etc. which can individually or collectively conspire to displace artefacts upwards out of their original context to within reach of modern ploughing. We may therefore take some comfort from the fact that zones of intense subsoil disturbance such as settlements and infield arable areas may still be detectable even when deeply buried.

Clearly surface collection does operate at a disadvantage within zones of deep sediment deposition but that is no reason to dismiss it. Starting from the basic premise that soils deeper than 25cm require special treatment it is often possible to predict in the field where they will be encountered and in cases of doubt augering should be employed. Having identified such areas it would be sensible to delineate them so that the results can either be assessed separately or cross-checked by trial pitting or in really adverse circumstances - discounted, in much the same way that a woodland normally is. The important point is that they should not be treated in the same way as shallow soil zones. Wherever possible trial pits should be used to explore surface formation history.

4.2.5 <u>Artefact obtrusiveness</u> - Since fieldwalking is rarely carried out solely to collect just one type of artefact variations in obtrusiveness are obviously an influence on relative retrieval rates. For example, flint cores and core tools are, by virtue of their large size, much more likely to be seen and collected than tiny microliths. Indeed, in a recent survey of land around the Mesolithic site of Braishfield, Hants., it was found that to stand any real chance of recovering microliths systematically field walking had to be abandoned in favour of field crawling, simply to get the eye nearer the target (Boismier pers. comm.). Given that microliths are frequently used to identify the presence of Mesolithic scatters one cannot help but wonder that any are ever identified in routine field walking.

Similarly, one could draw a contrast between bright red sherds of Samian pottery which stand out prominently in most ploughsoils and blackish brown medieval pottery which frequently matches the soil colour. The essential point is that, even before considering field walker experience, artefact size and colour play an important role in determining the structure of the retrieved assemblage. To some extent, the fact that different field walkers attune to different materials may even out this source of bias - some will tend to show particular skill in recognising drab pottery sherds yet be almost blind to struck flint whilst others may exhibit a contrasting aptitude.

In overall terms variations in artefact obtrusiveness may not therefore be a serious problem although collection of really small or otherwise inconspicuous items may require special handling. It would also be sensible to ensure that all walkers are shown specimen examples of the artefacts they will be asked to collect, and that the collecting policy is fully understood.

4.2.6 Artefact survival - Aspects of artefact survival will be discussed in more detail within Chapter 5 but some mention must be made here of those general points which are relevant to the methods and results of surface collection. Firstly,

PERIOD	TOTAL ASSEMBLAGE	SURVIVAL	COMMENTS
Palaeolithic	WF	WF	Quantities very small except on major undisturbed sites, rare.
Mesolithic	WF,(WS)	WF,(WS)	Fragile flint forms which are easily modified by ploughing. Quantity of flint working debris generally high.
Neolithic	WF,(WS,C)	WF,(WS)	Little information available but nature of pottery makes survival in ploughsoil unlikely.
Early Bronze Age	WF,C,PB,(WS,B)	WF,PB,(WS,B)	
Late Bronze/ Early Iron Age	C,PB,(WF,B,I)	PB,(WF,B,I)	Available evidence indicates that ceramic survival is not good. Flint industry is much smaller than in earlier periods.
Middle-Late Iron Age	C,(B,I)	C,(B,I)	Lack of pottery of this date from study area makes survival seem unlikely.
Roman	C,WS,B,I,BS,T,G	C,WS,B,I,BS,T,G	Quantities of material now large, especially pottery and building materials.
Early-Middle	C,(I,B,G)	?	Total lack of evidence from study area but results obtained from elsewhere indicate quantities of pottery slight, survival doubtful.
Late Saxon	C,WS,B,I,BS,T,G	C,WS,B,I,BS,T,G	Reintroduction of the kiln improves pottery survival. Quantities of all types of material increase throughout medieval and post-medieval periods.

(The occurrence of such organic remains as bone is so linked to soil type that they are not mentioned. Quantity assessment is extremely subjective and will vary greatly from site to site.)

Key: WF = Worked flint; I = Iron; B = Bronze; WS = Worked stone; BS = Building stone; G = Glass; C = Ceramic material (pottery & daub); T = Tile (heavier building ceramics); PB = 'Potboilers' (heavily burnt flint)

Figure 21: Richards' Model of Material Assemblages by Period: Composition and Survival in a Ploughsoil (Richards 1978, Fig.12)

it should be stressed that the ploughsoil is a dynamic context. The structure of the artefact populations it holds constantly changes as materials selectively break and decay or, in some cases, as new artefacts are dragged out of previously undisturbed horizons. It is therefore essential to distinguish between zones of erosion where soil loss and solution conspire to progressively lower the ploughed horizon into the subsoil and zones of deposition where soil accumulation causes an opposite effect (Foley 1981, 171). In zones of erosion prolonged ploughing delves deeper and deeper into subsoil contexts releasing more and more of their artefact content into the ploughsoil where weathering and mechanical damage eventually destroy all but the most durable items. Associated assemblages will typically comprise only lithic or other durable materials concentrated into artificially high densities by stratigraphic deflation. Conversely, those from zones of deposition, especially where sediment has accumulated in sudden episodes rather than progressive movement, will exhibit artificially low densities and friable materials are more likely to survive.

Of all the post-depositional and retrieval factors likely to influence the validity of surface evidence differential artefact survival is probably the most important, yet research into survival behaviour has scarcely begun. Most field walkers will have their own ideas about how this factor operates but there have been very few explicit statements. One exception is Richards (1978, figure 12), who, drawing on the experience of his Berkshire Downs survey, set out in deceptively simple style how the original composition of an assemblage can be radically altered by ploughsoil processes. He also illustrated how survival behaviour operates selectively against assemblages of different cultural affinity (Figure 21). For example, Richards shows that whilst excavated and surface collected assemblages of Mesolithic material are virtually identical in composition those of Iron Age affinity change almost beyond recognition. In general survival of prehistoric pottery is notoriously poor. Speculatively, this is determined by factors such as the hardness or composition of the sherd fabric and by the chemistry of the soil they lay in.

These phenomena need to be better understood, possibly by means of analogue field experiments or a modification of the Overton Down Experimental Earthwork concept, as Reynolds and Schadla-Hall (1980, 117) have suggested. But for the moment it is more relevant to critically reconsider our concepts of what should and should not survive in an active ploughsoil and the limiting effect this has on the specific aims of our surface collection projects.

4.2.7 Conclusions - The rationale for suggesting, at the start of this review, that field walking methodology is still in its infancy is that the technique is so often uncritically regarded as a straightforward data-winning exercise and the results it generates are self-explanatory. As with any data retrieval system the design and execution of field walking projects must start by establishing exactlywhich questions one wishes to address and then deciding if and how surface evidence can provide the necessary answers. It is evident that we frequently launch into field walking on a speculative rather than objective basis and that we ask too much of the data or merely ask altogether the wrong type of questions. The fact that answers are commonly elusive or the information is ambiguous is therefore unsurprising.

To rise above unthinking collection of patterns in surface evidence field walking project design must start with clearly defined objectives and a clear idea of how they will be achieved. It is essential to understand how the target populations will behave in the field and how they will be most economically surveyed. Having designed a strategy it is then essential to test its efficiency before becoming irrevocably committed to it. This could be achieved by applying it to a 'known' population (Schadla-Hall and Shennan 1978, 95-101) or by applying it twice over to the same control area which, as discussed earlier, should show up inherent weaknesses as inconsistencies in the results. Computer based simulations may be another useful way of testing such designs though these depend perhaps too much on our ability to predict the unpredictable and for that reason field testing is preferable.

The many factors which should be considered when designing surface collection projects have already been reviewed but no mention has yet been made of how the results should be analysed, interpreted and reported. Analysis and interpretation are discussed in relation to specific targets within Chapter 5 but one aspect which should be mentioned here is the urgent need for standardised basic recording procedures. One of the biggest obstacles to comparative study of surface evidence is that everyone seems to have a different idea of how results should be reported. Find densities are quoted sometimes in relation to fields, sometimes in relation to lines or grids, sometimes in relation to unit area (i.e. finds/ha). By far the simplest and hence the most unambiguous standard is to quote finds frequency in relation to each 100m walked. This statistic can then be processed to whatever form one desires and overrides the complexities of different collecting systems. I am grateful to Stephen Shennan and Julian Richards for discussing this question with me.

4.3 AIR SURVEY

4.3.1 <u>Development</u> - The Wessex chalklands have been the proving ground for almost every advance that has been made in the development of air survey as an archaeological tool. Initially air photographs were regarded simply as a novel way of illustrating archaeological texts but before long their true potential had been grasped by O.G.S.Crawford. In his 'Air survey and archaeology' (1924) and 'Wessex from the air' (Crawford and Keiller 1928) he graphically demonstrated that air survey photographs consistently revealed site details not normally recordable by any other means - thereby putting the business of site recording onto a new higher level. But, perhaps his most important contribution, as is evident in the choice of title for both books, is that he recognised that aerial reconnaissance would and could promote survey and research to operate on a scale that earth-bound archaeologists would scarcely have contemplated before. He introduced the concept of regional survey not just of selected monument types but of large landscape blocks.

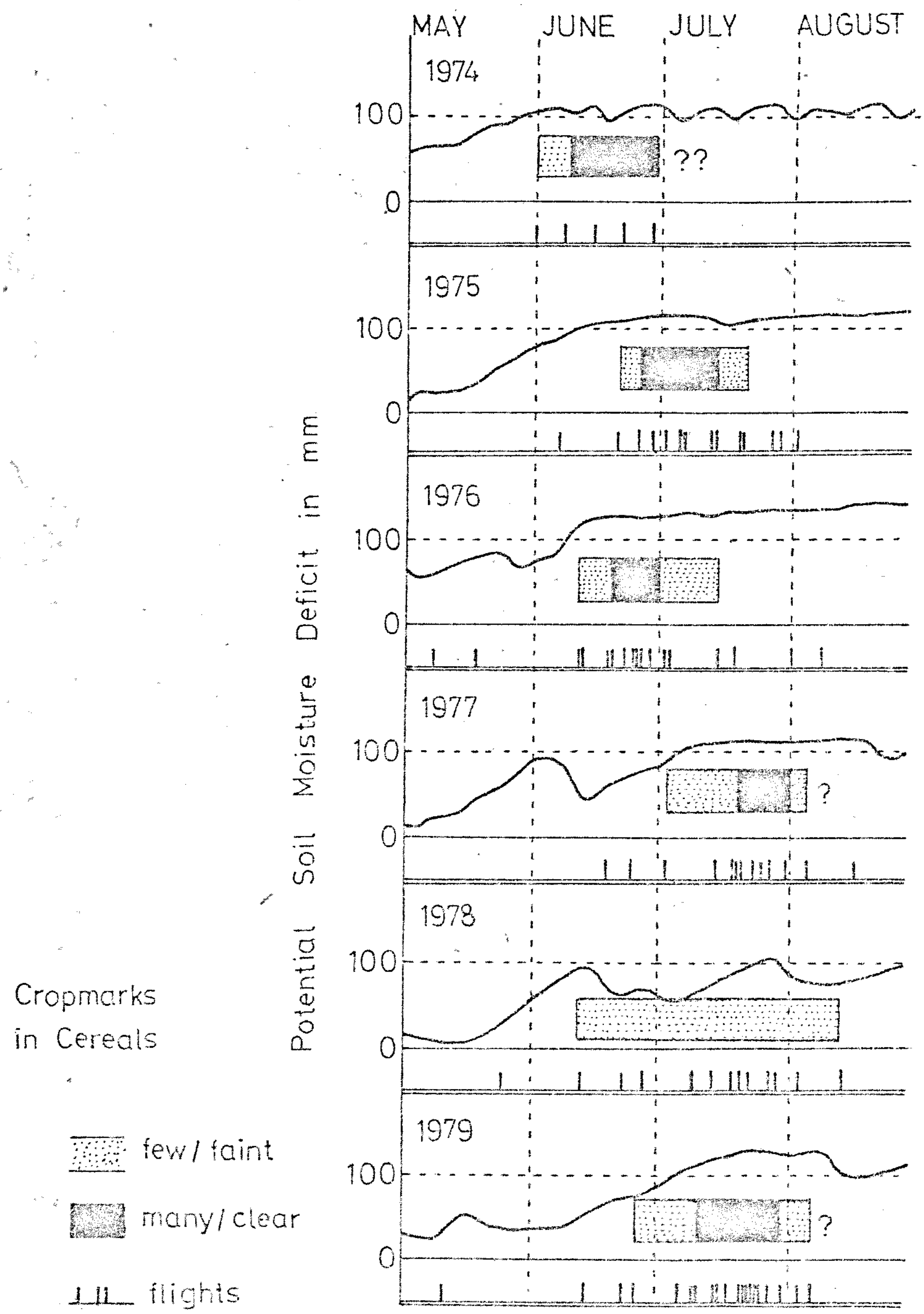
As so often happens, Crawford's new approach languished for several decades and was not fully taken up again until the 1960s when the ascendancy of rescue archaeology forced field workers to find a means of rapidly and accurately assessing the task before them. This was particularly evident in the spate of crop mark flying over the major river valleys where excavation was attempting to keep pace with rapidly expanding gravel extraction. For a time there seemed to be no end to the amount of extra detail that could be derived from air survey and many previously blank sections of the archaeological landscape were found to contain a wealth of new sites.

In some respects the 1960s and early 1970s were the data-winning phase of air survey development - a phase which culminated with the phenomenally successful summer droughts of 1975 and 1976. During this time research tended to concentrate more on methodological or technological issues, like the choice of camera or film, and less on the theory that would be needed to analyse and interpret the evidence. Perhaps inevitably, in view of the mass of air photographs then becoming available, attention did begin to swing towards problems of interpretation in the mid-1970s as is reflected in a major publication which appeared at that time ('Aerial reconnaissance for archaeology' - Wilson 1975). This, the proceedings of a symposium on the current state of the art and its future directions, organised its papers into three sections, respectively concerned with Techniques, Results and Interpretation, Storage and Dissemination. Thus, interpretation was, outwardly at least, recognised as an important research theme in its own right and not merely a question of intuition or experience. However, it is evident that most contributors seem to have regarded interpretation of the patterns they could see as an end in itself. Only one looked beyond the obvious to consider factors such as land use constraints and the limiting effect they have on conclusions derived exclusively from air-observed patterns (Taylor 1975).

In recent years there has been something of a schism in aerial archaeology with research tending to proceed in two different, though overlapping, directions. One is introspective and primarily concerned with accurate, standardised transcription of detail and the use of sophisticated morphological classification techniques to find meaning within the data. The other approach is more outward looking. It recognises that air photographic data are partial information sources and places greater emphasis on researching both the attendant limitations and how other field techniques can be brought to bear on the objective of studying landscapes in an integrated manner.

Representative of the morphological approach is a statement recently made by Riley (1982) - "The process of analysis begins with a first intuitive assessment of the mapped evidence, followed by formal categorisation and re-categorisation until a satisfactory and consistent set of groupings has been obtained... It is also important to note that the reliability of the morphological approach will increase in proportion to the number of attributes of shape, size and location that can be used." Rather different sentiments are expressed by Palmer (1978, 129) - "The problem... is to decide how to extract meaningful information in terms of settlement structure and its distribution over the landscape from a biased, non-random collection of aerial photographs which record archaeological features with a varied and unknowable degree of resolution." Standing somewhere between the two approaches is the seminal work of Wilson (1982) which although very site-oriented manages, nevertheless, to convey the message that "accurate interpretation requires an understanding of the whole landscape."

Figure 22: CROPMARK BEHAVIOUR (after Riley 1979, figure 19)



4.3.2 Current problems - Air survey has opened up so many new and promising research avenues that it is hardly surprising there is confusion over the right direction to take. Efforts to bring about a better understanding of the factors and processes which influence detection must obviously continue. For example, we now have a tolerably good understanding of the behaviour of soilmarks and cropmarks but only on the more responsive soil types such as those on gravel, chalk or limestone (Riley 1979, Jones and Evans 1975). Signs that this research direction will be pursued in other, hitherto neglected, areas are evident in Whimster's (1980) recent outline of a three year research project designed to study cropmark performance in the Welsh Marches. Similarly, it will be important to continue to develop efficient, accurate and standardised techniques for transcribing and reporting the results of air survey. Thanks largely to the work of Palmer (1977) computer-aided transcription now offers what is probably an acceptable level of efficiency and accuracy in plotting although a universally agreed standard for reporting remains as elusive as ever. These problems, whilst not yet resolved, are nevertheless being tackled in a purposeful manner and give less cause for concern than some of the other directions being taken by current research.

More worrying is the widespread preoccupation with morphological classification and the belief that, given enough data and enough time to categorise them, we will somehow find a pattern that explains itself. There are many objections to this viewpoint not least of which is the practical difficulty of deciding which attributes constitute meaningful criteria for classification.

Wilson (1982, 189) succinctly sums up the business of analysing and interpreting aerial photographs as - "What can I see?" and "What do I think it means?" Clearly there is a good deal more to answering these deceptively simple questions than an ability to recognise regularly occurring patterns or shapes. The insights to be gained from morphological classification alone are therefore very limited ones and the morphological approach should now be regarded as something of a red herring. Given the wealth of data available for analysis it was perhaps a natural temptation to seek to structure it this way, especially since computer technology makes the task so much easier, but there are many other equally important aspects to be considered.

Taking the question "What can I see?", the first point to be considered is that the detail observable on an air photograph is normally only a small sample of what might be observed in ideal conditions which is in turn a sample of the total information value of the source area (for a discussion of sampling theory applied to air survey see Palmer 1978). In some respects it is equally relevant to ask "What can I not see?" because one cannot afford to take air photographs at face value. For example, within the same site, a cropmark presentation refers mainly to subsoil arrangements, soilmarks to vestigial ploughsoil features and shadow effects to earthworks which may or may not have a bearing on whatever lies below. Each has a different source for the information it provides - each form of presentation has a stratigraphic connotation. Morphology can only be assessed in terms of what is visible and in classifying a site or area it is important to consider what sort of sample the photograph offers. The sample will obviously be biased, especially towards sites with major subsoil disturbances, and it is possible that there is a range of lightly structured sites, such as unenclosed settlements without storage pits, which are consistently undetectable on air photographs.

It is when one moves on to consider the question "What do I think it means?" that the dangers inherent in morphological classification really come to the fore. Pattern recognition is an essential part of interpretation but in comparing one form with another it is vital to ensure that the comparison is a valid one by bringing attributes other than shape into the analysis. Wilson (1982, 96), writing about the interpretation of ring ditch cropmarks, rightly suggests that the clue to correct identification is siting and association. Thus, for example, a ring ditch associated with extant round barrows located in marginal land is much more likely to be a ploughed barrow than, say, a circular hut gulley. This principle can be extended to other monument and feature categories but evidence of association is often difficult to obtain from photographs alone and the nuances of siting are best appreciated from the ground. Most comparisons are therefore normally made solely on the basis of form. In some circumstances that may be sufficient for interpretation, but as continuing research opens up new possible explanations so the number of exceptions to this rule increases and the need for supporting evidence of association or function becomes more important. The situation can be illustrated by the way approaches to the task of recognising Neolithic enclosures have changed during the past four decades.

4.3.3 Causewayed enclosures - a case study in classification using aerial photographs. As originally classified or observed these monuments were considered to form a well defined and easily recognisable group. Individual members all possessed one or more circuits of interrupted ditch and with some rather 'uncharacteristic' exceptions all were located in high lying situations within the chalk outcrop. But excavation soon began to show that this outwardly orderly group contained some bogus members and that the accepted formula for identifying them was not always successful.

Causewayed enclosures are often associated with or overlain by Iron Age hillforts, as at Hambledon, Rybury, etc. But in two such cases - Scratchbury and Yarnbury, Wilts - irregularly ditched enclosures sited within the hillforts and previously accepted as probable causewayed enclosures were found on excavation to be of Iron Age date (Annable 1957, 17; Cunnington 1933). This raised the first doubts about morphological classification. Subsequently, as cropmark photography impinged on the Midlands river gravels, a new group of monuments appeared. They were identical in plan and constructional technique to the chalkland group (Palmer 1976) but displayed a very different locational strategy by being sited well away from the chalklands and in low-lying riverside situations. Soon afterwards, Palmer (1978) identified a low-lying causewayed enclosure (Crofton, Wilts) actually within the chalklands. With this discovery topographically and geologically deterministic approaches to classification and siting fell into disarray. We now recognise that the known distribution of these monuments is primarily a reflection of the above average responsiveness of chalk and gravel to air photography and that other sites may yet be found on different geological bases and in different topographic settings.

As a spate of recent excavations has shown - "these large enclosures served a variety of purposes...[and]...concentration upon the technique of interrupted ditches may lead one to underestimate the variations in other features." (Whittle 1977, 36). Causewayed enclosures now form a homogeneous group only in the sense that the same technique was used to construct their ditches. In all other respects the range of variability is too great to permit meaningful interpretation from air photographic evidence alone. This is not to say that such sites cannot be recognised from the air but rather that the comparison of one interrupted ditch enclosure with another may not be valid. Indeed it may actually be counter-productive from a research point of view because it inhibits the search for other Neolithic enclosures of a different form which may nevertheless have performed much the same function. For example, the small and rather impoverished causewayed enclosure on Offham Hill, Sussex (Drewett 1977) has much more in common with the continuously ditched enclosure on Bury Hill (Bedwin 1981) than it does with classic sites such as Windmill Hill (Smith 1965). If comparisons must be made it should be on a more meaningful basis than ditching technique. Bury Hill is a perfect illustration of how easy it is to be deceived by appearances because, as its excavator concluded - "Hitherto, such sites are likely to have been classified by their appearance as belonging to the Iron Age; the most important result of the excavations at Bury Hill is that this assumption is no longer valid. It has to be admitted that Bury Hill

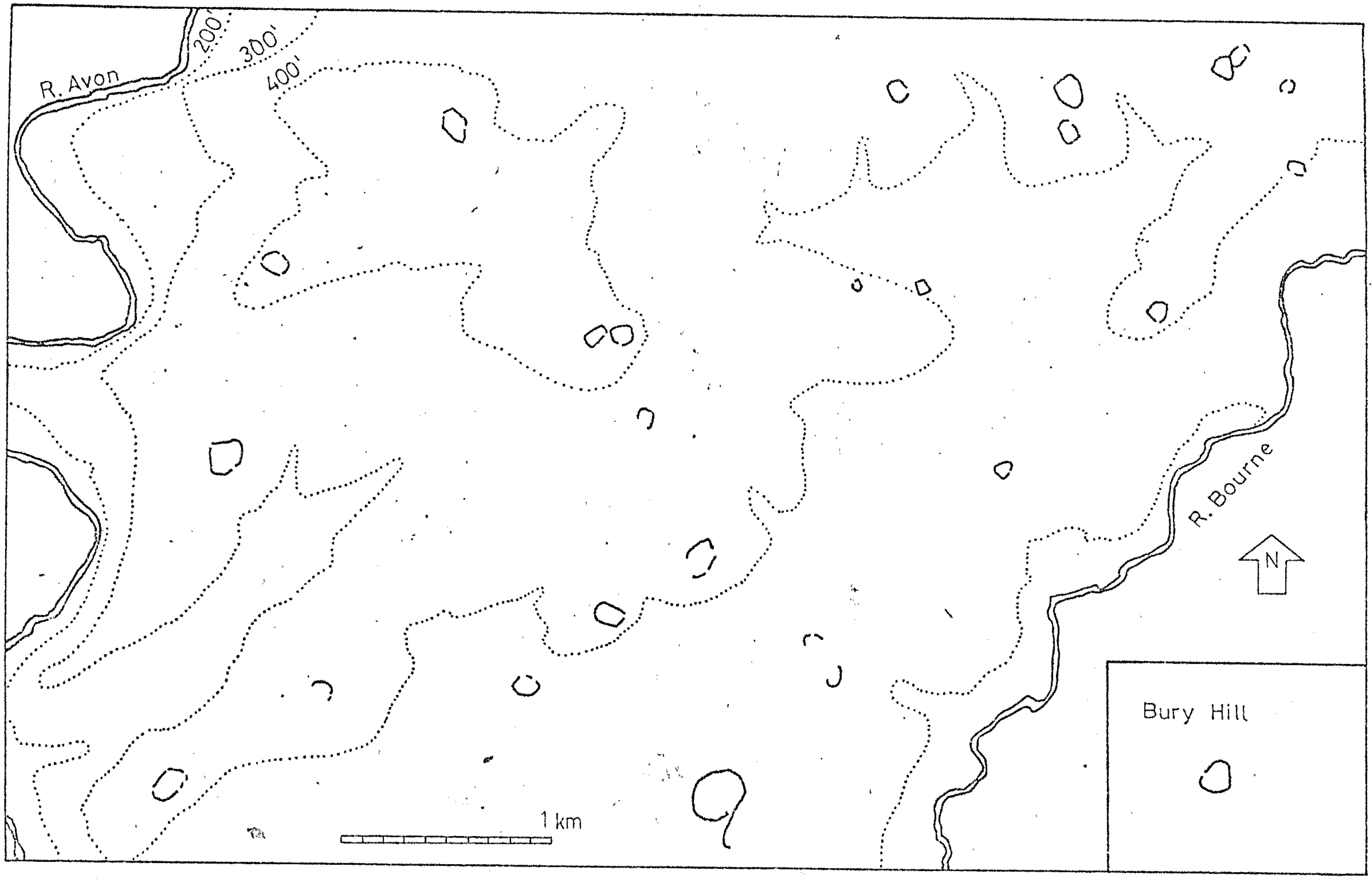


Figure 23: The problems and potentials of comparative morphology - undated enclosures in the landscape north of Salisbury and the Neolithic enclosure on Bury Hill (sources Hampton & Palmer 1977 f7; Bedwin 1981)

itself was excavated in the belief that it was an early Iron Age site." (Bedwin 1981, 77)

This unexpected result has many important implications for future field research. It undermines the confidence with which landscape features can be categorised from air photographs but at the same time it opens up a wealth of tantalising new possibilities. For example, we are perhaps doing ourselves a disservice by continuing to classify the linear earthwork / 'ranch boundary' systems, so common in the chalklands and mapped chiefly from air photographs, as hallmarks of Mid Bronze Age land allotment (Bowen et al 1978, 149). Viewed circumspectly the dating evidence for this assumption is far from secure. In many cases it is circumstantial or inferred from the association of ditches with other features such as field systems which are themselves dated only by tenuous and sometimes unjustified analogy. Some systems may well be earlier, others later - some perhaps very much later than is generally appreciated. The same argument can be extended to other elements of the archaeological landscape as it is understood from the results of air survey. But, for now, it must suffice to make the point that there is considerable scope for taking a fresh look at some of the conceptual structures created from superficial and uncritical ordering of air survey data.

Enclosures and linear earthworks apart, there are numerous other instances where hasty interpretation of air photographs has generated misconceptions. A recent example involved the unfortunate misidentification of four post-medieval rabbit warrens, on Mount Down, Hants, as a group of Saxon long-hall houses, the mistake being compounded by an 'elementary comparative study' (Hampton 1981, 316) of those features and another set of altogether more convincing cropmarks near Malmesbury, Wilts. In this case the error was soon appreciated (though only in excavation) and no real damage done. But before leaving this issue mention must be made of one further example of how the comparative approach to air survey data has generated serious and far-reaching misconceptions. It concerns the interpretation of 'Celtic' fields. The use of the term 'Celtic' is in itself misleading because it carries with it a clear prehistoric connotation, but what really gives cause for concern is the widespread and unwarranted assumption that fields of a generally similar form are of generally similar date. In Bradley's highly influential paper on prehistoric fields (Bradley 1978) the systems he discusses (see Figure 2, this volume, for one example) are multi-period palimpsests and substantial parts of them are as likely to be of Roman date as prehistoric. In reviewing "prehistoric fields and boundaries on the Berkshire Downs" the landscape evidence under analysis is simply a transcription of all 'Celtic' field traces observed in air survey (Bradley and Richards 1978, 53). An important distinction is drawn between "cohesive" (regularly planned) systems and "aggregate" systems (accreted piecemeal layouts) but regrettably no attempt is made to consider whether the fields in question are indeed prehistoric - it is simply assumed that they are because their form is of 'Celtic' type. As suggested earlier, air survey yields data on such an extensive scale that it inevitably promotes broad conceptualising of the prehistoric landscape. This is to be welcomed, but at the same time it is evident that it is easy to tumble into the pitfall of making sweeping and unfounded generalisations which do more harm than good.

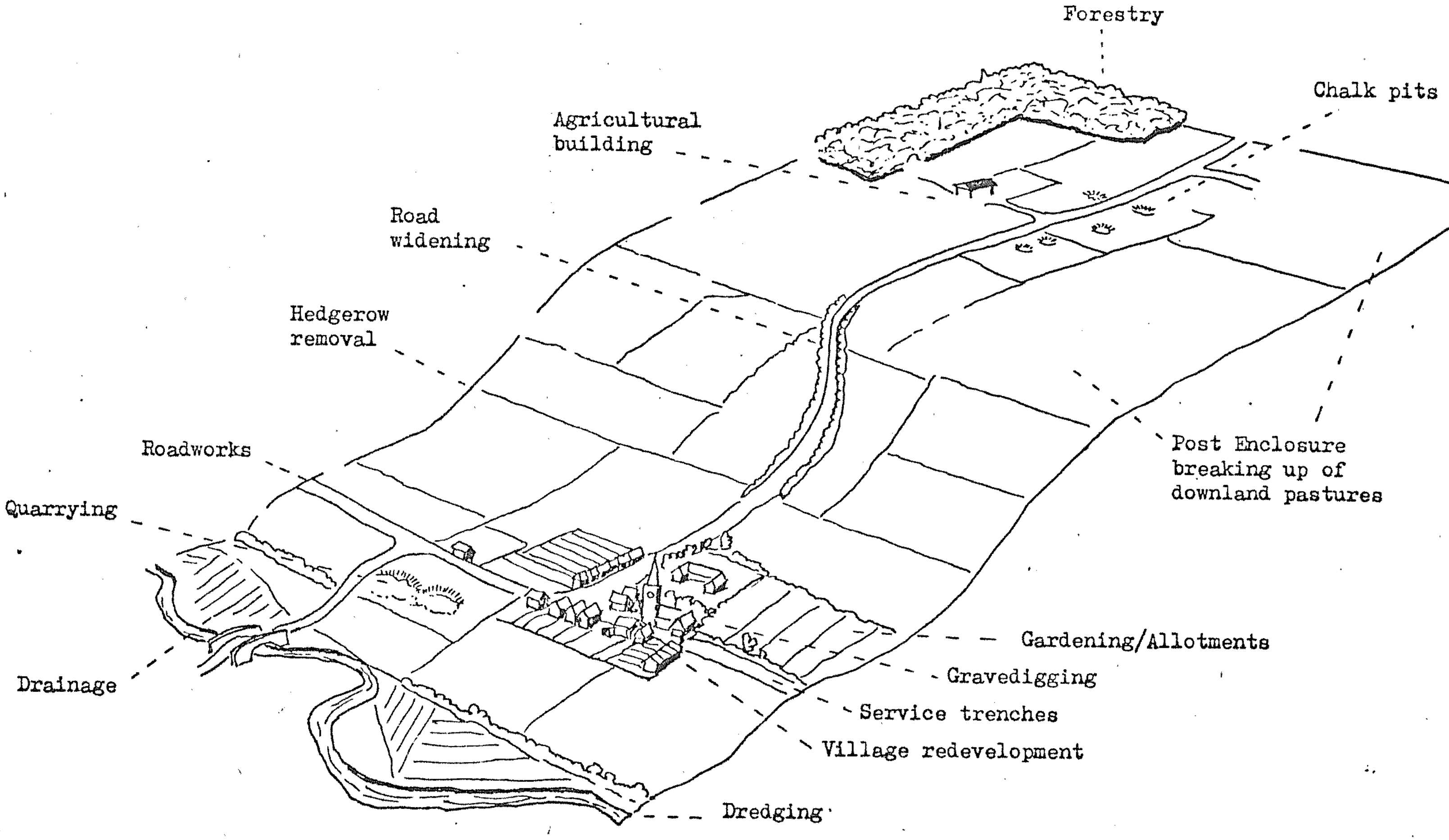
4.3.4 Future approaches - Palmer (1978, 129-131) stresses the need to distinguish between 'aerial photography' - the business of taking, storing and indexing air photographs, and 'aerial archaeology' which he sees as the use of aerial photographs to provide accurate plans of archaeological features and the use of these plans in conjunction with other evidence to study past landscapes in as full a way as possible. The crucial point, which he rightly emphasises, is that aerial archaeology is not a self-contained field,it can only credibly operate as part of a wider approach to landscape research. In this respect there is perhaps a need to be a good deal more circumspect about how much air survey can tell us - to recognise its limitations and to carefully select an alternative survey strategy for areas and problems that it cannot approach. In the early preoccupation with the chalk downland and the recent preoccupation with river gravels it is evident that research strategies are, like the cart before the horse, being designed to answer questions posed by air survey. If our aim is to study landscapes in their entirety, and not just the photogenic parts, the questions should come first and the techniques for answering them later. To ignore this basic rule is to invite confusion.

Increased objectivity is perhaps the most important goal in future applications of air survey and nowhere is this more important than within the particular contexts of chalkland valleys - one of the least photogenic parts of the landscape, yet potentially one of the most informative. Care is needed not only in framing the questions one will ask of air survey but also in deciding what exactly one expects to find and how it will be recognised. A clear idea of what constitutes the air-observable 'signature' of our chosen targets is essential (as is discussed in Chapter 5). It would be pointless to continue to operate on a 'fly and look' principle.

4.4 CHANCE DISCOVERY

4.4.1 Introduction - Farming, building, quarrying, drainage and other aspects of routine development work regularly generate much new archaeological data in circumstances best summarised as chance discovery. Indeed many of the more important Wessex research excavations stem from following up such chance exposures of archaeological material. Excavation of Durrington Walls, the large Neolithic henge complex in the Avon valley, started in response to pipe laying disturbance and finished against a background of road making (Wainwright and Longworth 1971). Similarly, important Mesolithic and Neolithic occupation horizons at Cherhill, Wilts, were only investigated after an observant German schoolboy tourist noticed and reported prehistoric artefacts

24: MECHANISMS OF CHANCE DISCOVERY IN A TYPICAL CHALKLAND PARISH



thrown up in spoil from the foundation trenches of a new bungalow (Evans and Smith 1967). Also, one should not overlook the frequency with which entirely fortuitous discoveries are made in the course of archaeological excavation. A classic example is the way trial trenching of a gravel terrace at Downton, Wilts, though initially designed to investigate the extent of a Roman villa complex, led to the discovery and excavation of Mesolithic and Neolithic occupation sites.

Whether archaeological or non-archaeological agencies are involved there is no doubt that chance discovery has played an important role in shaping and fleshing out the data base upon which our current understanding of chalkland prehistory rests. It is important because the evidence is, in many respects, free of the numerous biases inherent in purposive fieldwork, particularly the bias that operates in selection of sites and areas to be investigated. This chapter starts by reviewing the mechanisms and agencies responsible for chance discovery of archaeological data; it then considers and quantifies the contribution they make and concludes with an assessment of the distributional significance of such finds.

4.4.2 Chance discovery mechanisms (Figure 24) - The history of archaeological investigation in the chalklands closely mirrors the history of landscape development in these areas - a circumstance which is not altogether coincidental. One of the most productive sources of data in the 19th century was the breaking up of downland sheep pastures. This process, variously known as 'paring and burning' or 'burn baking', involved hand stripping of turf which was then stacked, burnt and spread back as ash to fertilise the newly bared earth prior to its initial ploughing. Because it was a manual process disturbance of archaeological horizons concealed beneath the turf line was much more likely to be observed and reported than was the case in later episodes of arable encroachment into pasture which were largely achieved by mechanical means. It is clear that early antiquarians such as Colt Hoare and Cunnington were led to many of the 'British' villages they reported on by labourers who had at various times been employed in paring and burning downland pasture. Similarly, because nearly all 19th century landscape development work was labour intensive, disturbances arising from the construction and maintenance of water meadows and from quarrying of gravel terraces also tended to generate more new archaeological information than they do today where mechanised gravel extraction is the norm.

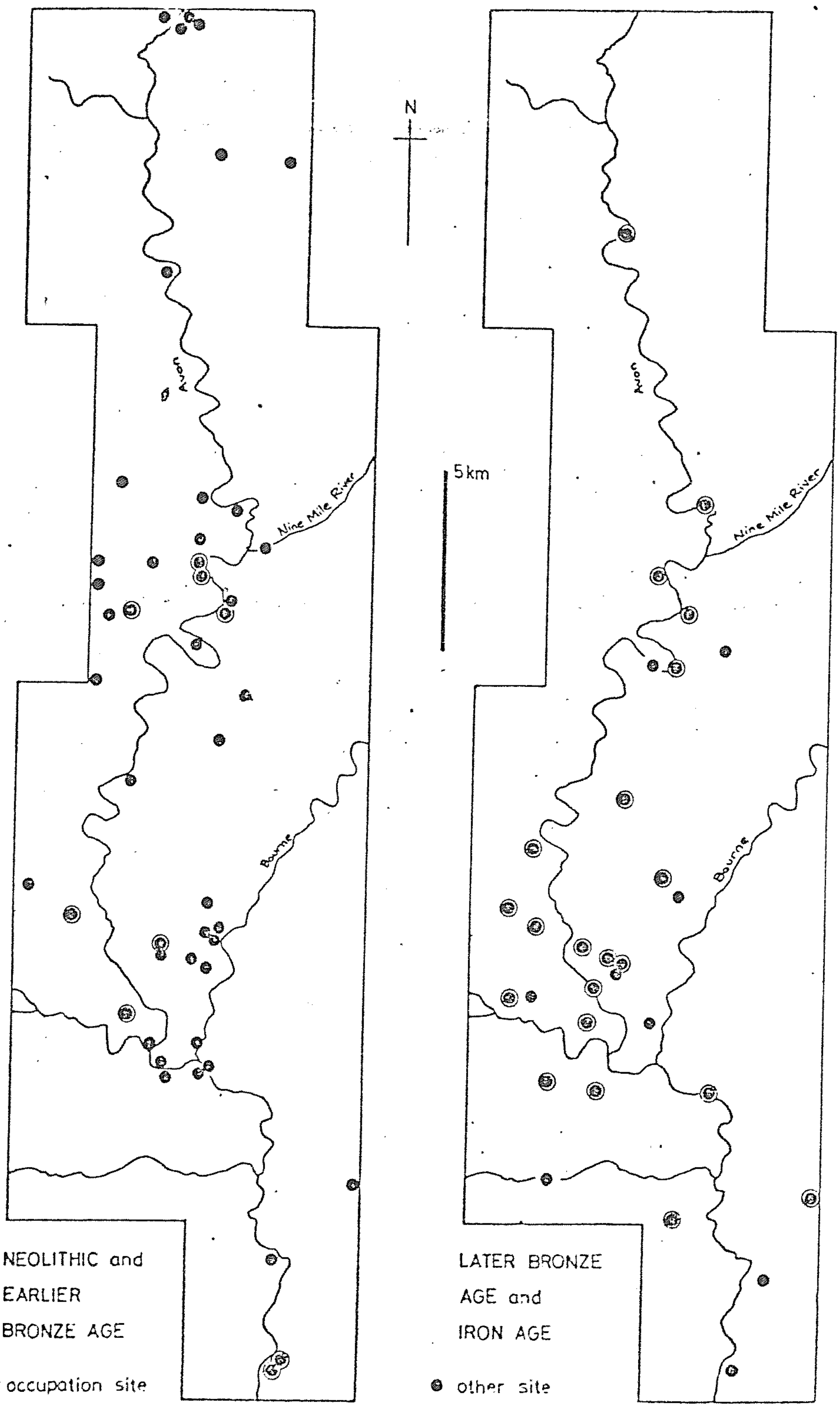
In general the 19th century was a period of considerable landscape disturbance as agricultural improvers sought to increase productivity on their chalkland estates. But, against a background exodus of the rural population to new industrial centres, redevelopment of chalkland villages was largely restricted to small scale and routine renewal of existing buildings and services. By the 1950s this position was beginning to be reversed. In the aftermath of World War 2 agricultural limits either contracted or remained static but as population levels rose and it became ever more fashionable to retire into rural backwaters, so disturbance associated with expansion and redevelopment of villages increased dramatically. Unlike landscape development, which had long before ceased to be labour intensive, village development, road works, upgrading of drainage and other essential services, etc., still involved much manual work. This has tended to promote chance discovery in the valley floor - a trend which counterbalances the earlier tendency for most developmental discoveries to be made away from settlement areas, usually in the higher downland.

In distributional terms the patterning of chance finds in a typical chalkland parish as it currently stands is probably a fairly even one and there are few areas which have not at one time or another been sampled by development processes. However, whereas exposures of archaeological horizons in the downland have typically been of an extensive nature, and hence susceptible to follow up archaeological investigation, those exposures and opportunities that have arisen in the cluttered environs of villages are normally much more restricted. Though finds made in and around villages naturally tend to be relatively uninformative or unspectacular (e.g. features fleetingly seen in a pipe trench; unprovenanced sherds and flints collected by gardeners, etc.), they are nevertheless important for they are often the only form of evidence to emerge from such areas.

4.4.3 The Avon Valley study - To bring chance discovery processes into sharper focus and at the same time attempt to quantify the relative importance of different mechanisms a special study was made of the Avon valley in eastern Wiltshire. The study framework extends to a total area of 324 km^2 and encompasses the entire run of the Avon from its headwaters to the point where it leaves the chalklands. Because of its size and the degree of topographic variability that exists within it one may be reasonably confident that the area presents a generally typical picture of archaeological discovery processes in the chalklands.

The study started by abstracting data contained in the Wiltshire Sites and Monuments Record in order to determine, firstly, which finds and sites represent fortuitous discoveries and, secondly, the precise nature of the discovery circumstances. A distinction was drawn between discoveries which represent entirely new sites and those which merely added to what is known about previously recorded ones. Those in the latter category were ignored. The analysis, as it appears in map form at Figure 25 and in tabulated form at Figure 26 , therefore specifically refers to the effect that chance discoveries have had in extending known patterns of prehistoric activity.

By far the most productive source of new information is the redevelopment of villages and other built areas; more than half of the discoveries stem from disturbances attributable to building activity and updating of main services. More notable finds in this category include flint mines at Durrington and the Grooved ware settlements at Ratfyn and near Old Sarum. Other circumstances which have led to significant discoveries



25: CHANCE DISCOVERIES OF PREHISTORIC SITES IN THE AVON VALLEY

26: <u>ANALYSIS OF CHANCE FINDS OF PREHISTORIC SITES AND MATERIALS IN THE AVON VALLEY</u> (South and East Wiltshire)

How found	Neolithic and earlier Bronze Age	Later Bronze Age and Iron Age	Totals
Building development Service trench etc	21	18	39
Gardening, Horticulture	7	2	9
Ploughing up of grassland	7	1	8
Railway and road building	3	4	7
Gravel quarries, Brick works	3	3	6
Floodplain drainage work	2	2	4
Forestry	1	-	1
Grave digging	1	-	1
Army training	1	-	1
Totals	46	30	76

Source: Wiltshire County Council Sites and Monuments Record are - gardening and horticulture (which located the 'Woodlands' Grooved Ware settlement and the Iron Age settlement at Highfield, Salisbury); railway and roadway construction (the Harnham Iron Age settlement, Salisbury) and quarrying (two further Iron Age settlements).

Though many of the sites mapped in Figure 25 are strictly find sites of unprovenanced artefacts it is evident that there are also numerous discoveries which can only be interpreted as settlement sites. Indeed when one considers the process by which finds are initially made and subsequently handled it is clear that those that do eventually become the subject of archaeological recording and interpretation are but a small fraction of the number that might potentially have been recorded had circumstances been more favourable. A primary factor is the obtrusiveness or curiosity value of whatever evidence is exposed. It is an obvious point but unless the discovery is sufficiently spectacular or unusual to prompt the discoverer into reporting his find it will not be recorded. In practice this means that chance discoveries of Neolithic evidence most frequently centre on stone axes or arrowheads, whilst those of Bronze Age date commonly refer to bronze implements and those of the Iron Age to pits, pottery and burnt stone. Unfortunately, whereas the Iron Age evidence is generally indicative of settlement, unprovenanced flint and metal artefacts that characterise chance discovery of Neolithic and Bronze Age material are not. Due to these different material 'signatures' discovery processes are inherently biased against detection of earlier prehistoric occupation sites. We should perhaps not be too quick to dismiss seemingly unprovenanced and stray implement finds.

A further important factor is whether a trained archaeologist is on hand to receive reports of chance discoveries and if necessary to investigate them further and ensure their publication. Reference to the distribution of Neolithic and earlier Bronze Age finds (Figure 25) reveals two clusters - one at the confluence of the Avon and Bourne, another at the confluence of the Avon and Nine Mile River. Whilst one might expect settlement clustering at river valley junctions the effect has probably been exaggerated by the work of amateur archaeologists active in those areas. Dr.J.F.S.Stone investigated and reported most of the chance discoveries marked at the northerly confluence, which include important late Neolithic occupation sites in the Durrington Walls area (see Wainwright and Longworth 1971). Similarly, the cluster of chance discoveries that occurs at the Avon / Bourne confluence (Salisbury) is mainly attributable to follow up reporting by Salisbury Museum Archaeological Research Group. Beyond these two zones chance finds appear to have been much less common but when one realises that for such finds to be reported at all the finder had to take the object to Devizes or Salisbury Museum the paucity of reports is understandable.

Just how many archaeological finds are not taken or reported to museums or other archaeological agencies is very much an unknown factor. Most fieldworkers will have experienced deliberate suppression of discoveries by contractors who fear that their work schedules will be interrupted should the find be archaeologically investigated. A further worrying factor is deliberate concealment and retention of finds for personal gain. In the author's experience many people who work in road crews or for Water Boards, Gas Boards and agricultural contractors will admit, when pressed, that they possess personal artefact collections.

4.4.4 Conclusions - Bearing in mind the myriad constraints which stand between chance exposure of archaeological sites and materials and their registration in the publicly accessible archaeological record it is clear that we are dealing only with the tip of a potential iceberg of data. It is therefore somewhat surprising that so many chance discoveries have been made in the Avon valley especially since settlement contexts are well represented. This suggests that the density of prehistoric settlement may have been seriously underestimated, as is separately indicated by the rate of discovery along motorway and pipeline developments (see Fowler 1979 for discussion of motorway results and Catherall et al 1984 for pipeline results).

Perhaps the most important aspect of chance discoveries is that they take archaeological investigators into those parts of the landscape which do not normally command much attention. In the Avon valley, as generally within the chalklands, this means the valley floor and village environs. Because data arising from chance discovery are usually the only evidence we have for prehistoric activity off the higher downland it deserves to be given very careful consideration. Having reviewed the mechanisms responsible and the sources of bias inherent in them it may be concluded that whilst the quality of the evidence generated by chance discovery is rather uneven, the fact that rather more settlement contexts were disclosed in the valley zone than on the higher downland has special significance.

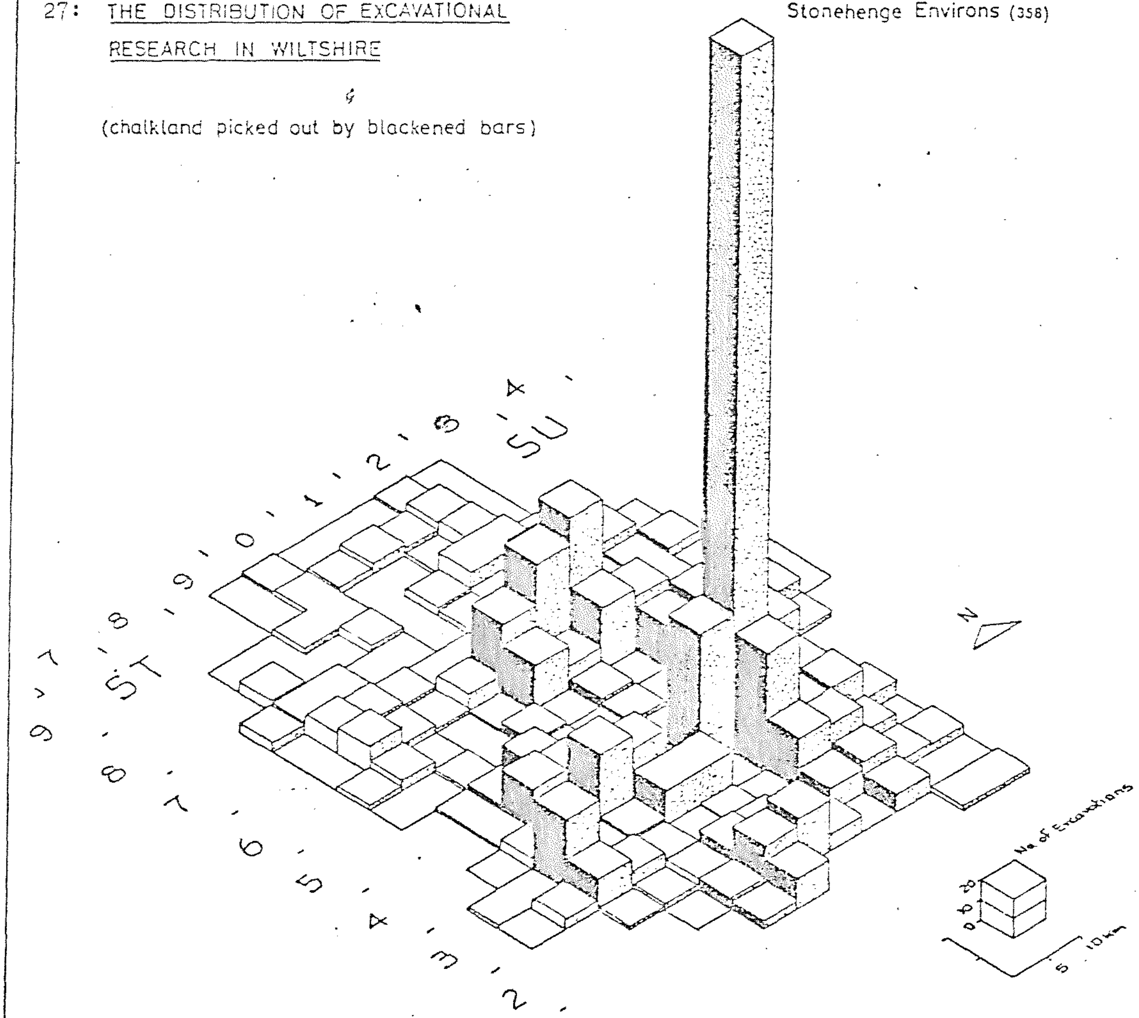
4.5 EXCAVATION

Within the general aim of evaluating sources of bias in excavational research there are two preferred approaches to the problem - the first concerned with spatial bias; the second with what may be called thematic bias. Most archaeologists have fairly clear ideas of how well or how badly their chosen research area or study theme has been served by past excavational research but the opinion is usually based on intuition rather than observation. To put this review onto a rigorous footing data contained in the Excavation Index of Wiltshire's Sites and Monuments Record have been systematically analysed, with the following results.

4.5.1 Spatial bias (Figure 27) - As would be expected, excavations within Wiltshire have been largely confined to the chalklands, almost exclusively so when only considering those mounted on prehistoric subjects. Within Figure 27, which illustrates the incidence of excavations within 25 km^2 blocks, the two major concentrations are located on, to the north, the Marlborough Downs and, to the south, Salisbury Plain. Peaks in the former correspond with the Avebury monument zone whilst

27: THE DISTRIBUTION OF EXCAVATIONAL RESEARCH IN WILTSHIRE

(chalkland picked out by blackened bars)



Source: Wiltshire SMR Excavation Index

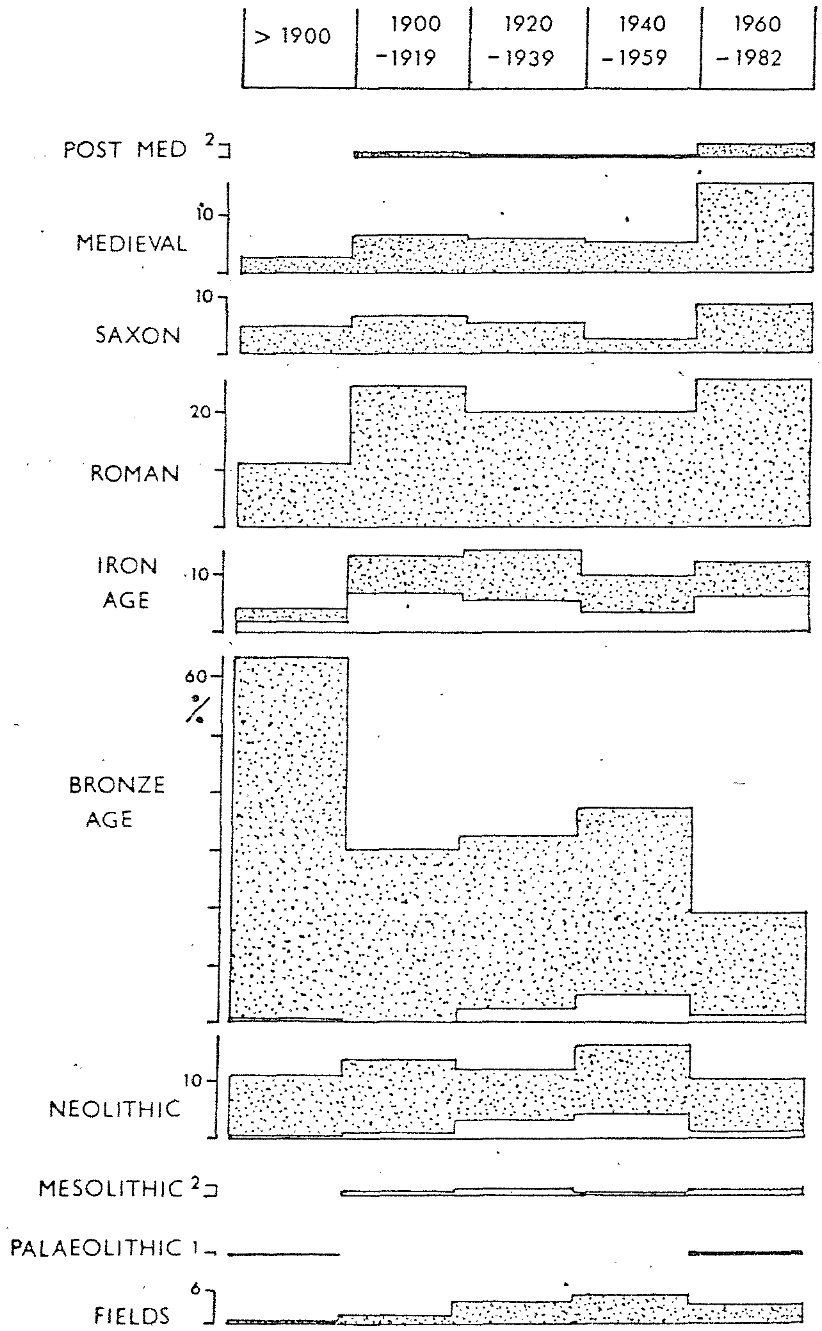
the location of Stonehenge is plainly evident in the latter area. Extensive parts of the clay vale, which runs across the north and west of the county, have never attracted excavation - a serious oversight, as recent and hitherto unsuspected discoveries of Bronze Age occupation sites in the Swindon Western Development Area are beginning to show (Heath pers. comm.). A minor concentration on the extreme north-west fringe is attributable to 'Cotswold' archaeology, and troughs in the chalkland block equate with the Vale of Pewsey and the Wylye, Avon and Bourne river valleys.

It could be argued that the distribution of excavational activity is a fair reflection of relative differences in the wealth of the archaeological record and that it is appropriate that the richly endowed landscapes of the higher downland should have commanded the most attention. But, whilst one would not argue against the manifest importance of areas such as that around Stonehenge, how can we realistically assess the importance of areas which have been largely ignored by past excavators? The 'rich' areas have attracted attention because their potential is obvious; the archaeological landscape is both visible and readily identifiable. Areas with few, and in some cases no, upstanding earthwork monuments constitute a different research environment but they are not of necessity lacking in research potential. In spatial terms research trends set by the early antiquarians have been perpetuated by subsequent excavators who have returned time after time to the higher downland without questioning whether their efforts would not have been better directed towards other parts of the landscape. After two centuries of extensive excavation in the county the potential of the clay vales and river valleys is still as much of an unknown quantity as when the antiquaries first started to dig.

4.5.2 Thematic bias (Figure 28) - Changes in research objectives must be viewed against a background of progressive improvements in our understanding of the past archaeological record. The Mesolithic was, for example, not generally

Figure 28:

EXCAVATIONAL TRENDS IN WILTSHIRE



NB inset histograms refer to frequency of prehistoric settlement excavation

29: EXCAVATIONAL RESEARCH IN WILTSHIRE - data for period/subject trends

Period	Subject	Date of excavation before 1900	1900 -1919	1920 -1939	1940 -1959	1960 -1982	Totals
Post Medieval			1	1	1	7	10
Medieval	settlement	1	2		4	18	25
	monument	14	5	5	3	11	38
	other	7	1	9	9	31	58
Saxon	settlement	1	1	1	1	7	11
	cemetery	37	4	7	3	14	63
	other	2	3	4	4	12	25
Roman	settlement	33	7	11	17	27	94
	villa	29	5	10	6	20	70
	other	44	18	25	38	55	178
Iron Age	settlement	17	8	13	10	24	72
	hillfort	16	5	10	8	7	46
	other	3	3	9	11	16	42
Bronze Age	settlement	1		6	15	6	28
	barrow	597	29	57	84	47	814
	other	12	8	12	14	22	68
Neolithic	settlement	1	1	8	13	6	29
	long barrow	73	4	3	5	8	93
	caus. encl.	1	1	3	3	2	10
	henge	19	6	4	5	8	42
	other	9	5	10	23	16	63
Mesolithic		1	1	3	2	6	13
Palaeolithic		3				2	5
	Field systems	7	2	9	16	14	48
	Unclassified Undated	32	3	12	9	12	68
	Totals	960	123	232	304	398	2017

Source: Wiltshire County Council Sites and Monuments Record (Excavation Index) recognised as a distinct and valid field of study in British prehistory until the 1950s (Clark 1980, 3). Characterisation of pottery, lithics and other artefacts has also been slow to develop and one must consider the difficulties facing early excavators when they encountered artefact assemblages in an unfamiliar context, which, in most cases, would mean one not directly associated with a recognisable extant monument. The apparent early preoccupation with monuments is therefore partially attributable to the difficulties of identifying and classifying material found in excavations beyond them - a problem which would obviously tend to preclude publication of results.

Thematic trends in Wiltshire excavations underline these problems (Figure28). In the period before 1900 almost three-quarters of all excavations focussed on round or long barrows. Amongst prehistoric excavations they accounted for 92%. Early data are clearly very heavily dominated by findings from funerary monuments. Since 1900 interests have broadened somewhat but even in the period after 1960 - the days of the so-called 'New Archaeology' - considerably more effort has been devoted to prehistoric funerary monuments than to the settlements they served. Indeed a surprising proportion of the few Neolithic settlement excavations reported since 1920 stem from following up discoveries made in the course of investigating round barrows, e.g. Snail Down (Annable 1960, 6); Hemp Knoll (Robertson-Mackay 1980) etc. Others, such as the late Neolithic settlement on the West Kennett Avenue (Smith 1965a, 210-216) must also be regarded as fortuitous discoveries. The trends certainly suggest that more attention is now being devoted to the investigation of earlier prehistoric settlement but in truth it is more accurate to say that settlement evidence found during investigation of monuments is now more readily recognised and reported on.

If the apparent trend towards increased interest in settlements and other non-monumental sites is really due to growing confidence in techniques for characterising prehistoric artefact assemblages it is notable that no such trend is apparent in

Roman research where these problems had been largely overcome during the days of the antiquarian excavations. The essential point is that despite improvments in the quality and diversity of results the overall balance of excavational research has scarcely changed at all. It is still directed chiefly towards the monuments and questions relating to settlement or other activity are perforce only tackled within the restrictive framework this provides.

One heartening sign of genuine attempts to broaden research perspectives is the increasing interest in studying land allotment features such as field systems and linear earthworks - a trend chiefly attributable to the work of landscape archaeologists such as Bowen and Fowler. It is a pity that there is not a Bowen or a Fowler to rekindle interest in Mesolithic and Palaeolithic archaeology, which, within Wiltshire at least, has languished to the point of expiry, despite the importance of results obtained at Cherhill (Evans and Smith 1983), Downton (Higgs 1959) and Fisherton (Delair and Shackley 1978).

Circumstances surrounding the detection and excavation of Downton warrant special mention for they epitomise the gulf that separates research policies and archaeological potential. Attention was first drawn to the area when a Roman villa was discovered there. Because of the importance attached to villa research redevelopment of an area adjoining the site was preceded by trial pitting designed to detect the presence of further buildings. In the event Roman features and structures were recorded but of much greater significance were the discovery of a stratified two-phase late Mesolithic (Higgs 1959) settlement partially overlain by occupation levels of mid Neolithic and Beaker date (Rahtz 1962). The Downton site lies in the heart of the Avon valley, an area, like other chalkland valleys, which has never attracted prehistoric research in the manner that the higher downland has (see Figure 27). For such a wealth of earlier prehistoric settlement evidence to derive from what was the first modern excavation, in Wiltshire, of a valley context is surely a strong indicator that we have misjudged the potential of these areas and in consequence misdirected excavational research.

4.5.3 Excavational research in the 1980s - In his survey of Dorset archaeology Groube (1978,) made a pioneering attempt to bring increased objectivity to the decision making that accompanies the drawing up of excavation and preservation policies. By separately considering such issues as rarity, susceptibility to damage, information potential, etc. he was able to assign priority scores to a wide range of possible research targets. So far as prehistoric research is concerned it is notable (if predictable) that round and long barrow excavations were assigned a low priority whilst investigation of Neolithic and Bronze Age settlements was deemed to have a very high priority. His conclusions were accepted by the Wessex Archaeological Committee as being relevant not only to Dorset but to Wessex generally and in their consultative draft, 'Towards a policy for archaeological investigation in Wessex 1980-85' the search for elusive early prehistoric settlement was indeed given a high priority. Few prehistorians would argue with this decision but there must be some disquiet about the strategy for putting it into practical implementation.

Listed as 'Project 1 - Neolithic and Bronze Age settlements and their associated landscapes' the aim of the project is stated to be "to locate and excavate earlier prehistoric occupation and activity sites and to explain their economic and social functions... Suitable sites for detailed investigation will best be defined as a result of fieldwalking projects centring on known monuments of Neolithic and Bronze Age date" (my emphasis). The paper then goes on to recommend specific study areas and themes. Areas around Stonehenge, Avebury, Mount Pleasant and the Knowlton Circle are mentioned and it is suggested that dense concentrations of Bronze Age barrow cemeteries "would produce important evidence relating to domestic sites of the period." The barrow theme continues with the suggestion that "Within Project 1 there should be a special consideration of the problems relating to the fancy barrows of the Wessex Early Bronze Age" - a consideration involving excavation of "one or more fancy barrows."

To be fair, the excavational policies advocated in this document were influenced by the need to act positively on escalating plough and development damage to these monument zones. They should perhaps be seen as a compromise between the dictates of rescue archaeology and the niceties of research archaeology. But it is an unhappy compromise. The outstanding lacuna in chalkland archaeology is the paucity of Neolithic and Bronze Age settlement evidence. If two centuries of intensive excavation of downland monument zones has failed to resolve the problem it is doubtful if renewed attacks on the same targets and areas will lead to any significant improvements.

4.5.4 Conclusions - Whilst not wishing to dismiss altogether the potential sources of bias that begin to operate in retrieval procedures after an excavation has started, the paramount concern of this thesis is to assess bias operating in the initial selection of sites before they are excavated. The history of excavational research in the chalklands is nowhere better documented than in Wiltshire, and, as the foregoing analyses have shown, site selection has hardly deviated at all from the pattern established by early antiquarians. All excavation, to some extent, involves gambling resources against results and in observing that the main weight of modern excavational research continues to fall on downland monument zones one must conclude that the policy of minimal risk holds sway over all other considerations. Modern research strategies emphasise the necessity of seeking out deeply stratified prehistoric occupation sites, especially those with above average prospects for palaeoenvironmental reconstruction, yet financial backing still goes to the low risk investigation of downland sites where these attributes are rarely encountered. There is a yawning gap between what we say we should be doing and what is actually put into practice - a gap that cannot be entirely explained by the rescue imperative.

Ironically, results from the few excavations that have taken place in chalkland valleys are very encouraging - so encouraging that operations in such areas would seem not to be as much of a gamble as is generally thought. Reference has already been made to the important four phase occupation sequence stratified in gravels and alluvium at Downton (Higgs 1959, Rahtz 1962) and mention must also be made of the author's own work at Everley Water Meadow and Bishopstrow Farm (see Appendices). The first significant point is that both sites were initially identified by fieldwork which permitted excavation trenches to be located on occupation horizons and features with the same accuracy as would be possible on typical downland sites. Secondly, both were excavated with the utmost economy - only small areas were opened and running expenses were minimal, yet the quality of the evidence they yielded is extremely high. Everley Water Meadow proved to contain a complex stratified sequence of cultural deposits spanning almost the entire post-Glacial period and including a late Bronze Age industrial settlement - a rare discovery. Bishopstrow Farm was identified as an early Iron Age farming hamlet also with industrial functions. It has yielded not only the earliest evidence for iron smelting in Wessex it also yielded the earliest known pit inhumation in Wessex.

The essential point is that the physical problems associated with selecting and exploiting excavation sites in chalkland valleys are not insurmountable - as experience of these contexts increases so they begin to compare favourably with the operating conditions enjoyed in the downland. But they also promise to be considerably more informative than their downland counterparts.

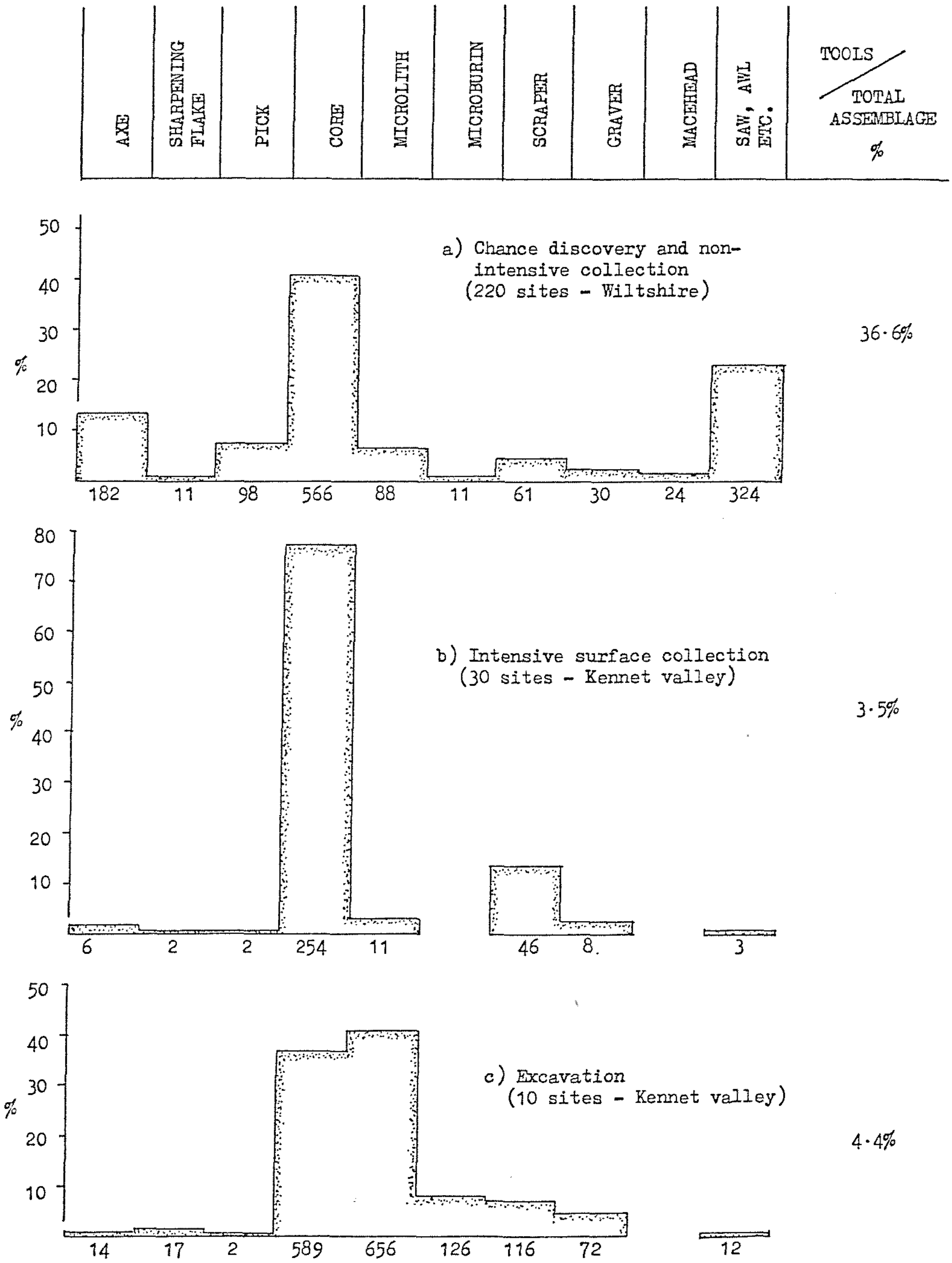
Chapter 5 MESOLITHIC

"The Mesolithic period spans the time between the last disappearance of glacial ice from Britain to the general imposition of Neolithic food-producing economies, c. 8300 to 3500 bc. It is represented by little more than the imperishable flint artefacts and some other tools and weapons of bone and antler ...." (Wymer 1977, vii). This statement aptly sums up the problems associated with Mesolithic research particularly where field survey is involved. The long time span means that settlement patterns have become a blurred palimpsest and the impoverished material inventory does not generally permit the crucial chronological or functional attributes of settlements to be disentangled with any degree of confidence. However, for the purposes of this particular study the Mesolithic period does have one advantage over later periods in prehistory - the importance of valley occupation is already an accepted fact.

5·1 Material Inventory

Ethnographic observation and the occasional fortuitous discovery in excavation demonstrate that non-lithic elements were an important part of the original Mesolithic inventory. But, above all, it is the stone tools and the debris generated during their manufacture which serve as the only consistently recoverable part of the original domestic assemblage and in attempting to characterise the Mesolithic inventory this is the medium one is forced to work with. In the context of the Wessex chalklands lithic assemblages are totally dominated by flint although use of other materials such as chert for edge tools and siltstone, quartzite/sarsen for rubbers and pounders is known.

There are many schemes for classifying Mesolithic flintwork which differ mainly in the depth of detail one is prepared to recognise. For the purposes of this study the simple classificatory framework used and illustrated in the CBA Mesolithic Gazetteer (Wymer 1977, xii - xiii) is considered to be most appropriate because it allows assemblages of mixed derivation to be analysed together. Only one modification is made and that is to ignore statistics for blade/flake counts. Although they permit detail differences in working technique to be observed and can yield valuable insights into



30: THE EFFECT OF RETRIEVAL TECHNIQUE ON THE REPORTED COMPOSITION OF MESCLITHIC STONE ARTEFACT ASSEMBLAGES (souoes: Wilts SMR, Froom 1972a, Wymer 1977) the type of tools made on a site as opposed to those discarded there they are so numerous that their inclusion in basic analyses tends to render more important trends within tool frequencies virtually imperceptible.

Being primarily concerned with the practicalities of field survey it is more relevant at this stage to study how assemblage composition varies with recovery technique than to attempt to see how it varies between different settlement forms. Thus in circumstances of casual or non-intensive collection the relative frequencies of each artefact type are probably a close approximation to the ease with which they can be recognised by non-specialist eyes (figure 30a). Inevitably the larger items such as cores and core tools head the list but, rather surprisingly in view of their small dimensions, microliths are also a relatively frequent find. However, close inspection of the recovery circumstances shows that many of the microliths and other small artefacts were only collected because they were visibly associated with larger, more obtrusive types such as tranchet axes. One may also suspect that the unique form of the microlith plays an important role in ensuring that most, if not all, when brought to museums are confidently categorised and recorded as of Mesolithic affinity. The same cannot be true of less diagnostic forms such as scrapers or gravers.

When recovery is by intensive surface collection, especially if the fieldworker is very experienced (eg. Froom 1972a), the type of assemblage recovered is markedly different (figure 30b). Large core tools begin to emerge as comparative rarities; scrapers are rather better represented, cores especially so, but microliths are still a minor element.

In carefully controlled excavation (figure 30c) where small mesh sieves are used artefact recovery should very nearly be total and the assemblages so derived sufficiently close to the 'true' composition that detailed frequency analysis becomes fully justified. The major trend is the dramatic increase in microliths and microburins which together make up nearly half the total assemblage if blades and flakes are excluded.

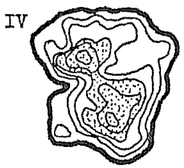
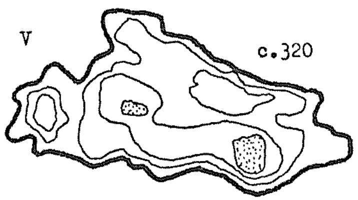
The rationale for making these comparisons is to illustrate that there can be no universal model for a typical Mesolithic site inventory. Assemblage composition varies enormously according to the technique used to recover it. It may be noted that the tranchet axe, although large and distinctive, occurs too infrequently to be a reliable guide to settlement or indeed other sites; they were present on only 20% of sites recorded by Froom (1972 a) in his Kennet valley survey. Similarly, microliths despite their high frequency within settlements are simply too small to be efficiently observed in routine fieldwalking. The artefact type least effected by recovery bias is the microblade core which, probably by virtue of its relatively large size and distinctive form, is consistently the most frequent discovery in intensive or casual collection and second only to microliths in excavation. It was also recorded from 90% of Froom's Kennet sites. Clearly if straightforward recognition of Mesolithic settlement is the primary objective field survey design would do well to pay close attention to core recovery.

5·2 Settlement Forms

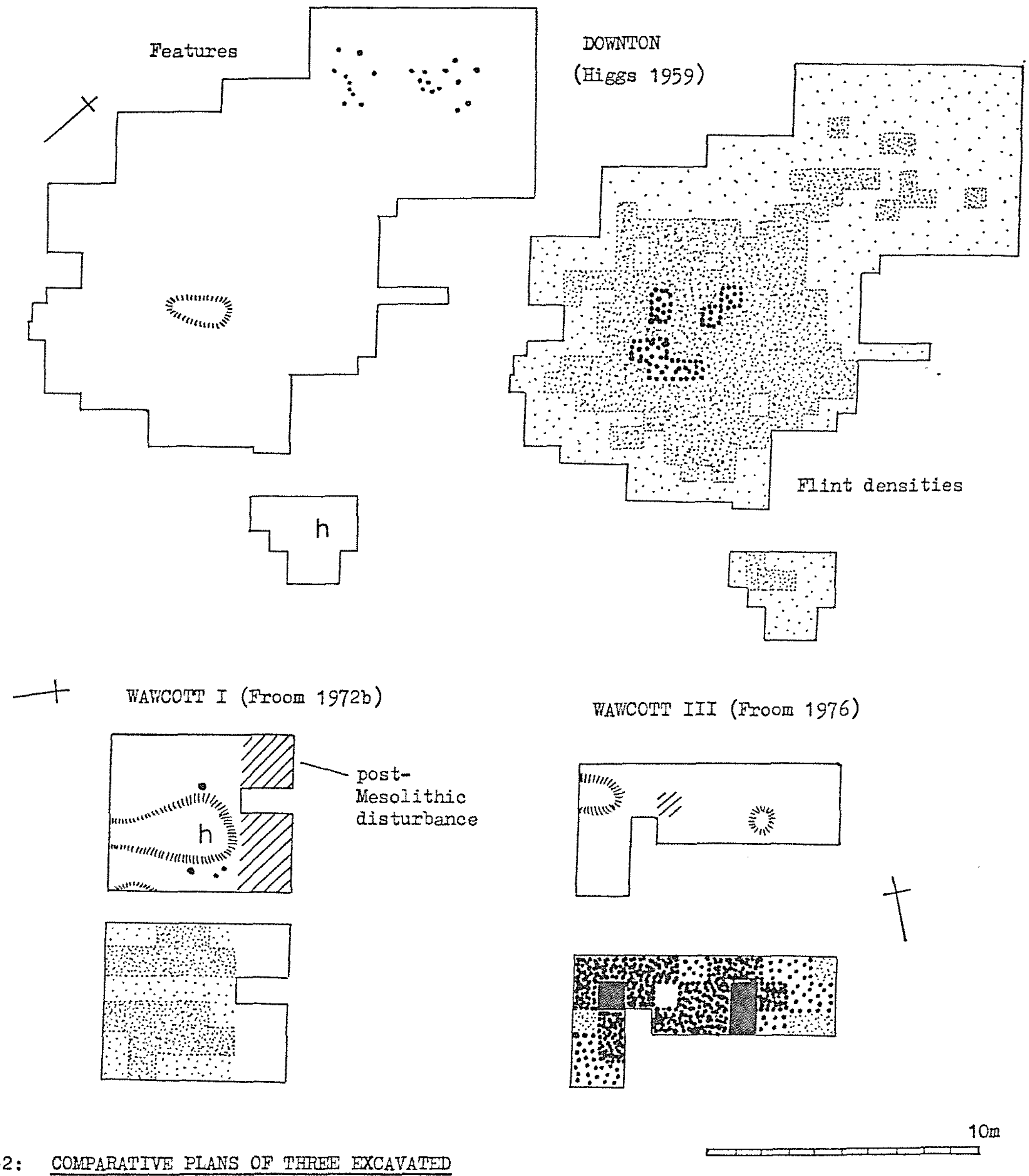
Generally similar schemes for classifying Mesolithic settlements have recently been published by Mellars (1976) and Price (1978). Whereas the former draws on a wide range of British site evidence the latter is specific to an intensive programme of excavation involving no less than twenty five sites in Holland. Both schemes adopt a polythetic approach principally based on attributes of site size, assemblage composition and the presence or absence of habitation features such as pits, hearths or hollows. The particular attraction of Price's scheme is that it yields the quantitative data essential to the task of formulating a scheme relevant to the Wessex chalklands (figure 31).

In seeking to apply Price's settlement criteria to Wessex it must be acknowledged that the available sample of well excavated and fully published sites is pitifully small. The only examples really suitable for further study are: Downton, Wilts (Higgs 1959), Wawcott I, Berkshire (Froom 1972 b), Wawcott III, Berkshire (Froom 1976) and Thatcham, Berkshire (Wymer 1962). Excavator's plans showing details of flint density and habitation features appear in figures 32 and 33 . Other attributes are summarised in figure 34

By far the biggest obstacle to inter-site comparisons is establishing whether a site has been fully excavated. Clearly the two Wawcott plans relate to only a small part of their respective settlements and it is therefore uncertain whether observed attributes such as flint densities or the presence of habitation features are typical

SCATTER PLAN	AREA (m^2)	ASSEMBLAGE TYPE	FEATURES	INTERPRETATION
I 	< 30	< 1000 artefacts (< 25 retouched tools). SPECIALISED eg. microlith dominated.	rare or absent	Small extraction camp - brief specialised activity.
II 	< 30	as type I but no marked predominance of any one tool type - BALANCED.	1 - 9	Small base camp - general purpose maintenance activity by single family group.
III 	c.75	1500-2500 artefacts - full range of tool types - BALANCED.	2 - 6	Medium short term base camp - 2 to 4 family groups in residence.
IV 	c.100	2500-10,000 artefacts - BALANCED - much higher overall density	0 - 23	Medium long term base camp - as type III but occupied for at least twice as long.
V 	c.320	7000 artefacts - full range of tool types but microliths common -- BALANCED overall with SPECIALISED zones. Density not as high as for type IV site.	9	Large aggregation camp - up to 30 individuals in residence. A rare settlement form.

31: THE FORM AND CHARACTER OF MESOLITHIC OCCUPATION SITES IN HOLLAND (after Price 1978)



32: COMPARATIVE PLANS OF THREE EXCAVATED MESOLITHIC OCCUPATION SITES WITHIN THE WESSEX CHALKLANDS

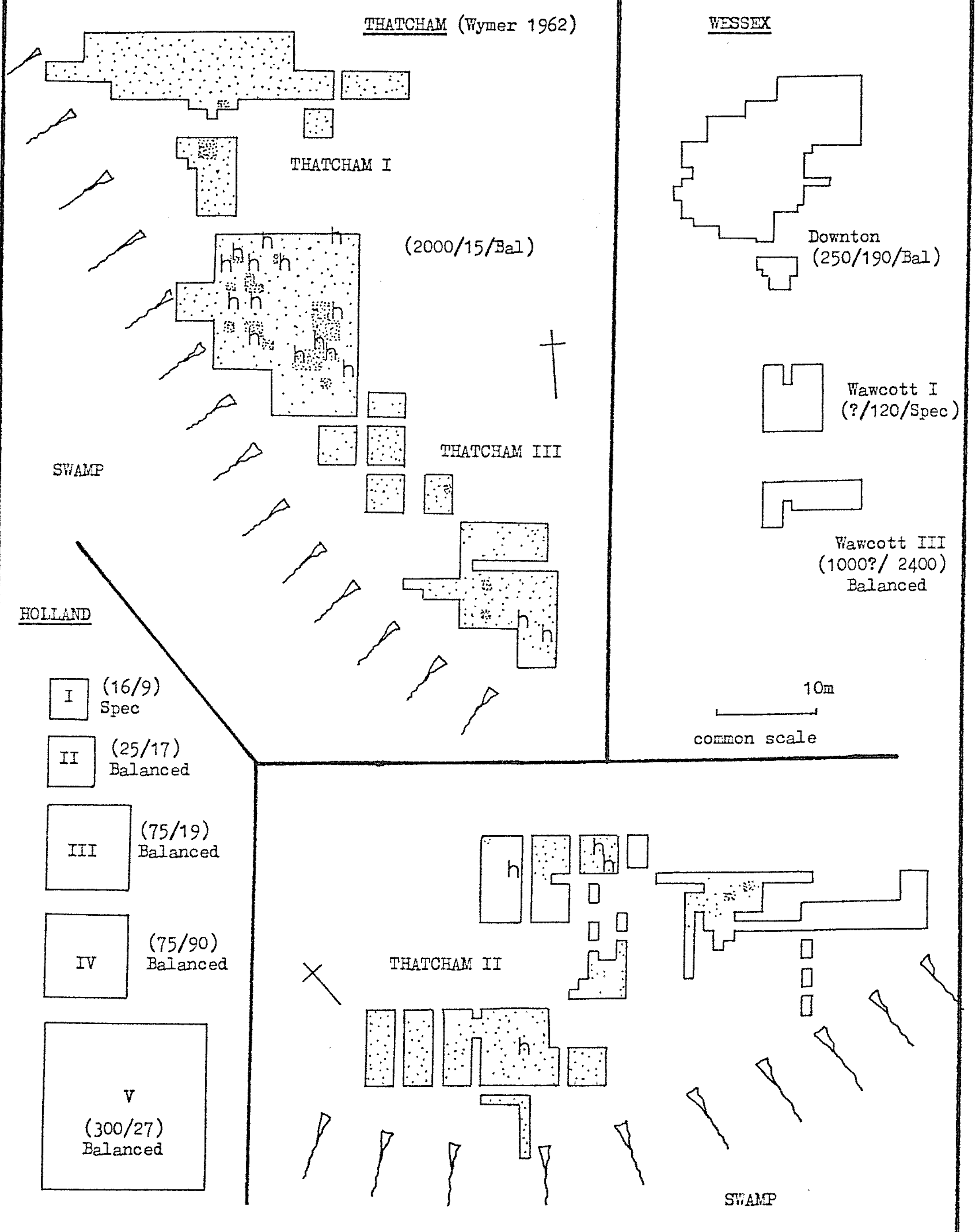
post/stake holes

pit or hollow

h hearth

Densities (struck flints/m^2)

1 - 89 90 - 499 500 - 1499 1500-3999 4000+



33: THATCHAM COMPARED WITH OTHER SITES IN WESSEX AND IN HOLLAND

nb. data within brackets refers to Area(m^2)/Density(flints/m^2)/Assemblage type

SITE	SPATIAL CHARACTER	ASSEMBLAGE CHARACTER (tools only)	Total struck flint x 10^3	Densities (flints/yd^2)			Habitation features						DATE AND SUGGESTED FUNCTION
				Max.	Mean	Mean for 2" spit	Hearths	Cooking holes	Calcined flints	Stake/post structures	Pits	Occupied hollows	
DOWNTON (Higgs 1959)	Oval scatter $250m^2$ in extent with main chipping floor of $80m^2$ centred on quarry pit.	Balanced assemblage overall with some emphasis on heavy maintenance work. 41% scraper 13% microlith	38	1500	190	20	X	X	X	X	X		Long term base camp. Heavy woodworking tools conspicuously common. Assemblage is stylistically 'late'. Two distinct occupation levels - uppermost is overlain by mid Neolithic settlement. Overlap with first farming in area.
WAWCOTT I (Froom 1972b)	Full extent not known but substantially larger than $40m^2$ covered by excavation.	Specialised, possibly towards fishing and fowling. 3% scraper 89% microlith	5	250	120	28	X		X	X	X	X	Density and dwellings suggest base camp - spring salmon runs? 3310± 130bc BM449) on hearth overlain by subsequent occupation ie. used well into Neolithic period.
WAWCOTT III (Froom 1976)	Oval surface scatter $1000m^2$ in extent of which $45m^2$ excavated.	Balanced but high microlith count suggests some emphasis on extraction 14% scraper 70% microlith	10	5500	2380	250	X		X	?	X	X	Very long sequence and phenomenally high rate of flint deposition - long term base camp. 4170± 134bc (BM 767) refers to middle of sequence ie. from c.5500 to c.3000bc?
THATCHAM I/III (Wymer 1962)	Overall - $2000m^2$ with three major and three minor concentrations.	Balanced with good range of maintenance tools. 21% scraper 46% microlith	18	750	< 10	?	X		X	?			Aggregation centre? Very early - main occupation between 7890± 160bc(Q651) and 7540± 160bc(Q652). Site permanently under water by c.6000bc.

34: THE PHYSICAL ATTRIBUTES OF THE WESSEX MESOLITHIC OCCUPATION SITES UNDER DISCUSSION

35: THE CLASSIFICATION OF MESOLITHIC OCCUPATION SITES - using lithic attributes

a) RELATIVE SCHEME (derived from Price's (1978) excavational data)

SITE TYPE	AREA	MEAN DENSITY OF STRUCK FLINTS	MEAN CORE DENSITY	MEAN SCRAPER DENSITY
I	A	D	2% D	too specialised
II	A	2D	4% D	2% D
III	2A	2·2D	4% D	3% D
IV	3A	3·5D	15% D	13%D
V	10A	2D	4% D	1% D

b) ABSOLUTE SCHEME (Scaled to match Wessex excavational data - densities are finds/100m^2)

I	25-50m^2	8500	109	very variable
II	25-50m^2	17000	224	158
III	100-300m^2	19000	208	191
IV	100-500m^2	30000	794	896
V	1000-2000m^2	17000	211	50

c) PROVISIONAL WESSEX SCHEME (adapted for 10m spaced transect surface collection)

Site type	Scatter size m^2	Scatter width m	Area scanned m^2	Total flints		Total cores		Total scrapers		Burnt flint
				avail.	collect.	avail.	collect.	avail.	collect.	
I	25-50	5-7	18	1530	5	20	0	-	-	0?
II	25-50	5-7	18	3042	10	40	1	28	0	1-5
III	100-300	10-17	84	15960	53	175	2-5	160	1-2	20-30
IV	100-500	10-22	120	36000	120	953	15-25	1075	8-12	40-60
V	1000-2000	32-45	410	69700	232	865	15-20	205	1-3	20-30

nb. Table c) attempts to predict what would be found should each of the various site types defined by analysis of excavational data be fieldwalked. It quantifies the surface character of such sites. It is assumed that the reduction ratio for retrieval by surface collection rather than excavation is as follows: for all struck flint - 300:1; cores - 50:1; scrapers - 100:1; burnt flint - 50:1 (based on relative differences in size and obtrusiveness - see text for further explanation).

of the overall layout. Indeed, Wawcott III is a remarkable excavation but it refers to perhaps no more than 4% of a settlement which on surface evidence may extend to an overall area of 1000 m^2. Downton and Thatcham appear to have been more completely excavated but it may be noted that there is considerable disparity between the cut-off densities at which excavation was curtailed. At Downton Higgs elected not to investigate areas where struck flint density consistently fell below $120/m^2$, yet over most of the Thatcham plan densities never reached as high as this. One is left to ponder whether a more extensive excavation at Downton might not have revealed a settlement of Thatcham size, or conversely whether Thatcham is merely an over-excavated Downton. A further concern is that the Downton dwellings lay in a part of the settlement where densities were predominantly less than $120/m^2$. Thus it is quite likely that other unrecorded dwellings might have existed in unexcavated sectors of the chipping floor periphery.

These reservations apart it is evident that the four Wessex settlements under review are all large sites and,with the exception of Thtcham which has a low overall flint density, they appear to have been heavily occupied. With regard to Price's (1978) proposed range of settlement forms Types 1, 2 and 3 seem to be missing from the Wessex sample although there is no reason to suspect that they do not exist in the region. Downton, for example, has all the attributes of a medium to large long term base camp although in terms of absolute scores for flint density and areal extent it is of an entirely different scale to its Dutch equivalents. Similarly, Thatcham which is on most counts convincingly comparable to the Dutch aggregation centre of Rotsterhaule is in spatial terms very much larger (2000 m^2 as opposed to 320 m^2).

Given that factors such as the availability of flint and resource behaviour will inevitably vary from one region to another and thereby influence corresponding variations in the lithic and habitative character of the local settlement range it would be naive to expect Dutch settlements to be directly comparable to Wessex equivalents. If classificatory schemes such as those proposed by Mellars and Price are to be applied to Wessex it is essential to recognise that absolute values for settlement attributes are of less significance than the <u>relative</u> differences between them. Thus figure
35 a presents a modification of Price's scheme in which essential

attributes are expressed in relative terms. Having noted that the Wessex settlement range is a scaled up version of the Dutch range figure 35b sets out a scheme in which proportionally increased absolute values are inserted into the relative scheme. Finally, recognising that the imperative is to devise a method of classifying surface collected data figure 35c converts excavational scores to those that might be attained in fieldwalking. It assumes that the surface will be scanned by 10m transects, a decision based on the oservation that more widely spaced line walking would tend to miss an unacceptably high number of the small sites. If 30m spaced transects are employed, as is commonplace in many surveys, the only settlement type which would be consistently recorded is the large aggregation centre. Even settlements of Downton size could theoretically escape detection.

It should be emphasised that the scheme is entirely untested and makes a number of assumptions which may eventually have to be modified. For example, a crucial question is how surface flint frequency compares with overall site populations. Based on a limited amount of experimental fieldwork involving the excavation of ploughsoils it would appear that, for example, if a unit area of ploughsoil contained 300 struck flints it is likely that only one would be recovered in the course of routine fieldwalking (see Appendix 1 for the relevant data and discussion). The ratio becomes even more unfavourable when dealing with deeply stratified sites where a large proportion of the total flint population is never cycled through the ploughsoil surface. However, size and form will obviously play a role in ensuring that large or distinctive artefacts are recovered at a higher rate and thus items such as cores and scrapers may be expected to be relatively common elements in a surface assemblage. Calcined flints are also considered to be of special significance because although they are not exclusively Mesolithic artefacts they do commonly occur on settlements (average density of $20/m^2$ at Downton) and when associated with Mesolithic flintwork may give some insight into the intensity of site occupation.

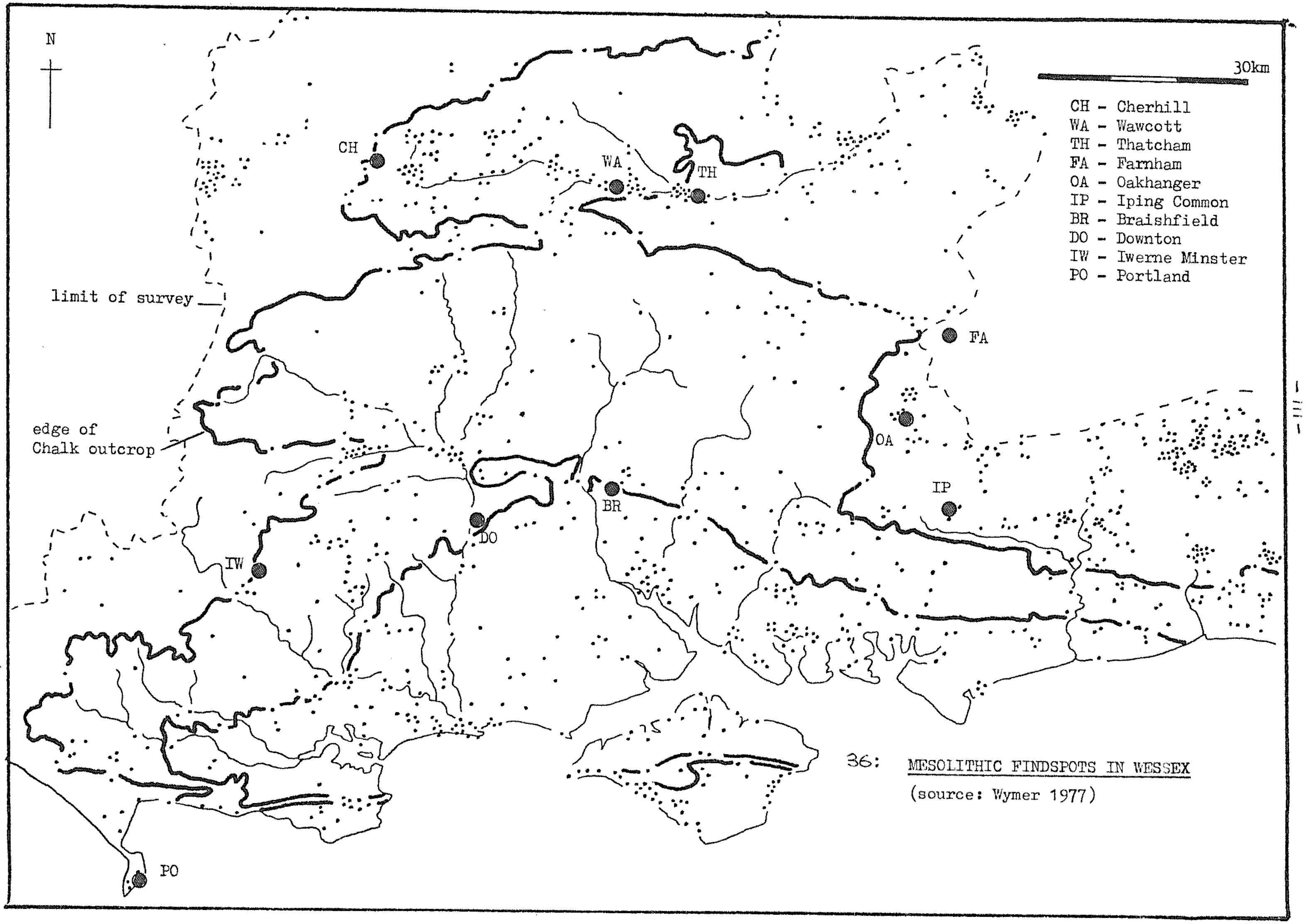
5·3 Settlement Patterns

Within the concept of studying Mesolithic settlements as elements of a wider life system it is generally accepted that resource behaviour is a most important influence on settlement strategies, particularly if seasonal patterning and variation are pronounced. Thus Mellars (1976) proposes a summer/winter model in which, following trends in resource availability, summer settlements tend to be small, suited to a single family group, lightly structured and briefly occupied. In summer the lack of climatic constraints and the wider availability of plant foods in particular permits greater freedom of choice in selecting settlement locations. The associated pattern will typically be wide and dispersed although the exploitive territory around each settlement need only be small. In winter there is comparatively little freedom of choice in location if resources are to be efficiently exploited and if the need for shelter from the worst effects of climate is to be realised. Winter settlements are therefore larger, suited to two or three collaborating family units, more heavily structured and occupied for perhaps several months at a time. The associated pattern should exhibit far fewer sites in occupation and there should be repeated use of the same favoured locations.

In studying recorded distributions of Mesolithic settlements in lowland England Mellars and Reinhardt (1978) observed pronounced concentrations on ecotonal boundaries. Within the Wessex chalklands the only major ecotone is that provided by river valleys although localised deposits of Tertiary sands and clays must also be considered as must ecotones occuring at the edge of the chalk, particularly those across the chalk/greensand/gault configuration. With regard to the richness and diversity of plant and animal communities in ecotones it seems reasonable to expect that larger base camps and perhaps aggregation centres will have been located within one of these three situations.

The extent to which summer settlement expanded across the higher downland is problematical not least because such sites are theoretically difficult, if not impossible to recognise except under the closest scrutiny. As Mellars and Reinhardt point out - the meagre and unpredictable nature of fresh water supplies in these areas would have been an inhibiting factor. Indeed, they further suggest that the downland was in effect a vast reserve area to be exploited as and when special circumstances dictated.

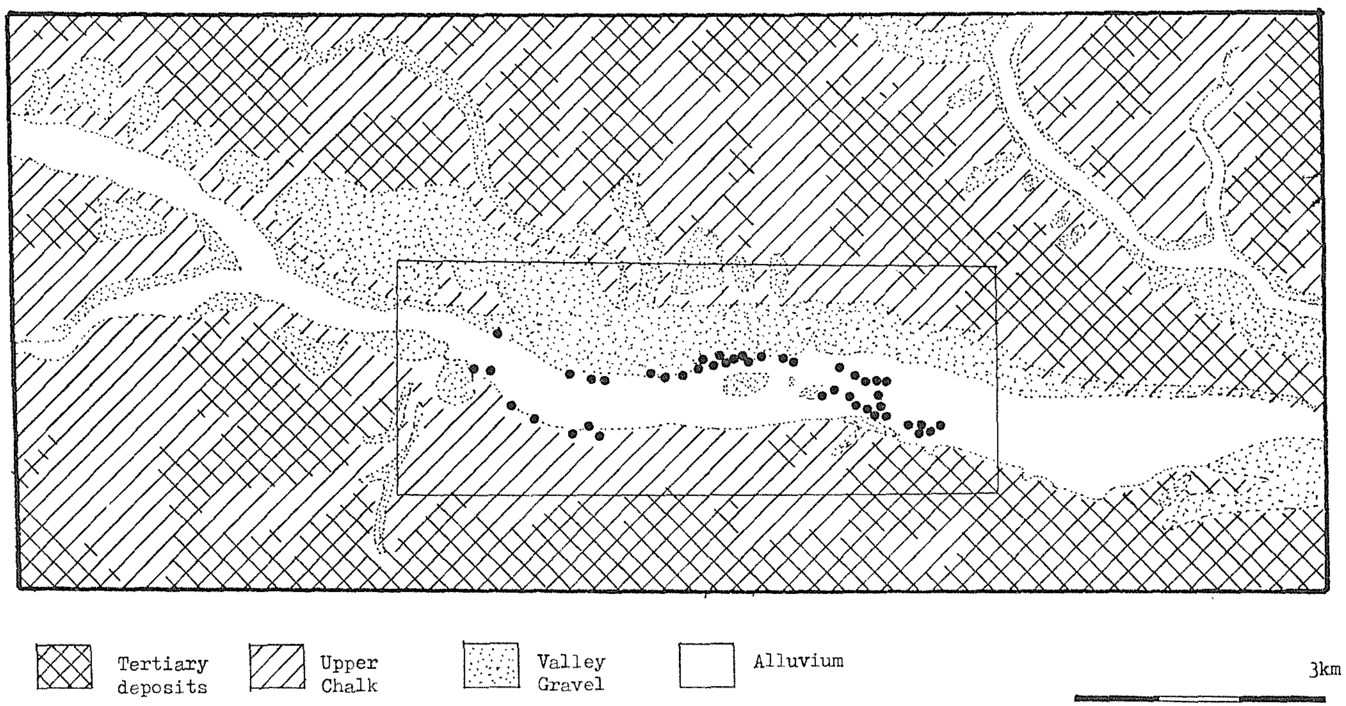
Perhaps the key to understanding chalkland settlement strategies lies in recognising that resources are regularly arranged in linear fashion on the river systems. The strategy, if it can be



36: MESOLITHIC FINDSPOTS IN WESSEX

(source: Wymer 1977)

37: THE GEOLOGICAL BACKGROUND OF F.R.FROOM'S KENNET VALLEY SURVEY



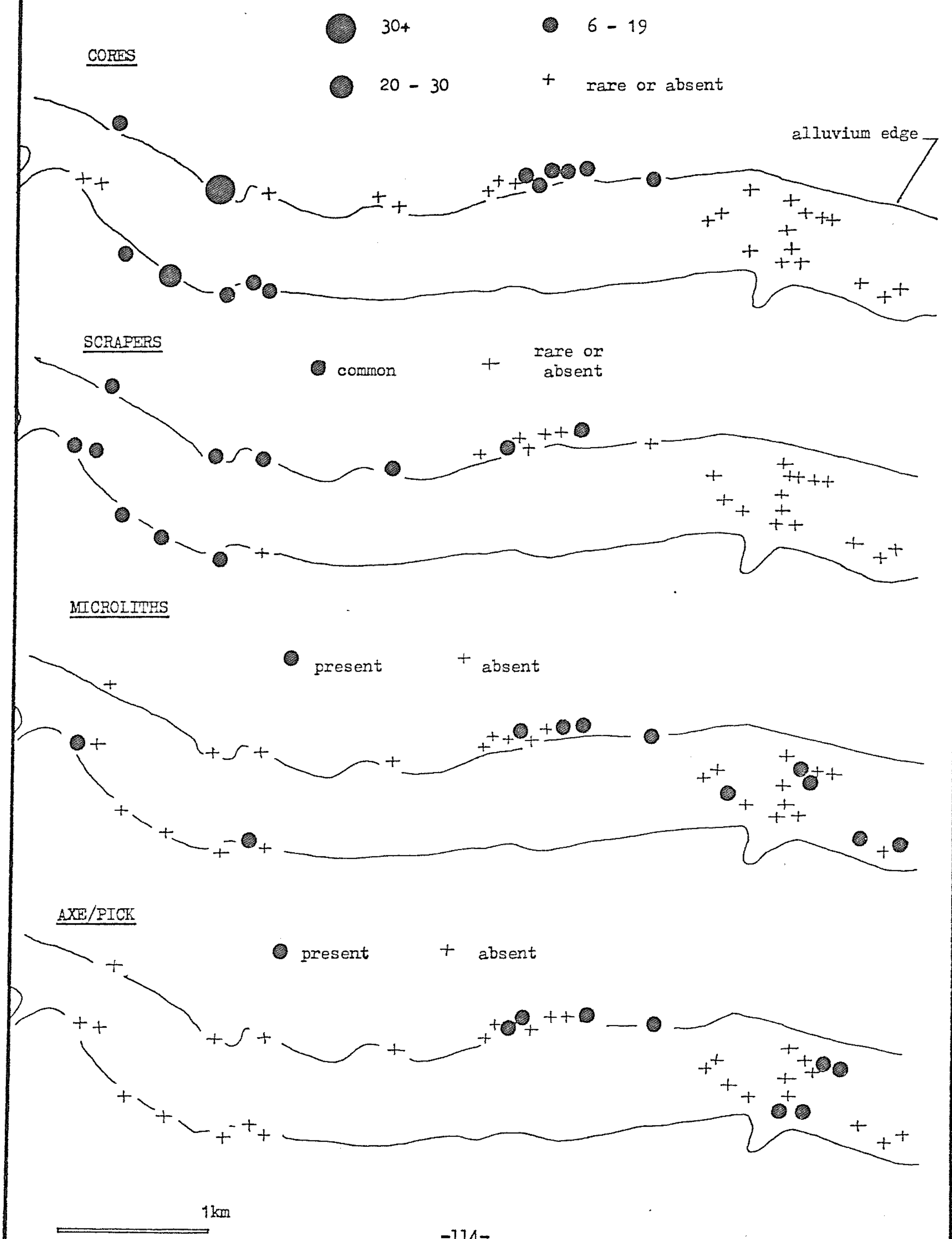
predicted, seems likely to be one of heavy and repetitive use of preferred locations allied to rather limited seasonal mobility with a river frontage providing a constant base line for operations.

Even though the annual range of chalkland communities is likely to have been measured in tens rather than hundreds of kilometres the fact that they were mobile recommends the regional framework for an initial study of settlement patterns. Using data derived from the CBA Mesolithic Gazetteer (Wymer 1977) figure 36 illustrates the distribution of findspots within the Wessex region. As is so often the case a map of this type is more of a guide to the distribution of past research effort than to the actual distribution of Mesolithic activity, but the broad trends it reveals should not be lightly dismissed. There is good correspondence between denser distributions and chalkland ecotones. Most of the larger 'dry' areas of downland such as the Berkshire Downs, central Hampshire and Western Salisbury Plain are largely devoid of finds which accords with Mellars' and Reinhardt's (1978) suggestion that water supply was indeed an inhibiting factor, although given the frequency of finds on Cranborne Chase the water problem cannot have been an over-riding one.

In view of the variable intensity with which Mesolithic Wessex has been surveyed it would be inappropriate to infer too much from the regional disribution map. Of greater value in this role are the more closely controlled surveys on a less ambitious scale such as that undertaken by Froom (1972a) in the Kennet valley. With fifty sites detected along just six kilometres of river frontage the settlement density appears exceptional (figure 37) but as Froom himself points out - his search was restricted to arable within and adjoining the floodplain. Searching of floodplain and terrace pasture and those areas beyond would undoubtedly add many more sites to the tally. In geological terms this part of the Kennet valley is a good deal more complex than the term 'chalk valley' implies but it is not untypical and the ecological framework it provides can be matched within most of the other major Wessex river systems. On this basis a similar density of settlement may yet be recorded in the lower Avon, Stour or Test.

Looking at Froom's distribution map one cannot help but be impressed by the sheer quantity of sites on record; there seems almost to

Figure 38 : ARTEFACT PATTERNS WITHIN SURFACE ASSEMBLAGES (sources: Froom 1972a; Wymer 1977)



be too many were it not for the fact that the pattern is a palimpsest five thousand years in the making. Studies of floodplain sediments and associated polleniferous peat (Churchill 1962) document major changes in local ecology during this time and corresponding changes in the resouce base must also have ensued. But they were perhaps more to do with composition than with distribution. Topography remained constant, as to a lesser extent did hydrology anf if we allow for subsistence adaptation there is no necessity to invoke drastic revision of settlement strategies. Many of the preferred locations occupied in the earlier part of the period would have been no less attractive at the end of it. It therefore seems valid to anticipate regularities within the palimpsest despite the long period over which it formed.

Without doubt the territories of communities living in Froom's riverside settlements extended well beyond his study area. The recorded pattern is but a partial one and although there is no direct way of assessing how much is missing the deficiency is probably not a serious one. As Mellars and Reinhardt (1978) point out - the main weight of Mesolithic settlement and subsistence activity probably always fell on the valleys regardless of season. The full range of settlement forms should be present in Froom's data though not necessarily in the right proportions.

Of crucial importance is the question whether settlement patterns, as opposed to site distributions, are recoverable in field survey by surface collection. As discussed above there is reason to think that high densities of cores and scrapers are indicative of long term base camps. Similarly, higher densities of axes and microliths seem to relate primarily to extraction activity. The distribution of these four key artefact types within Froom's study area is presented in figure 38 . It may be seen that occupation of the floodplain appears to be uniformly short term, probably in connection with hunting or fishing forays and perhaps the digging of flint nodules from the gravel islands. Amongst long term settlements at the edge of the floodplain there is a pronounced concentration at the western end of the valley - a circumstance which will be commented on later.

Thus analysis of the Kennet surface assemblages does identify patterns of activity. Whether they are real or coincidental remains to be tested by excavation although preliminary work by Froom does

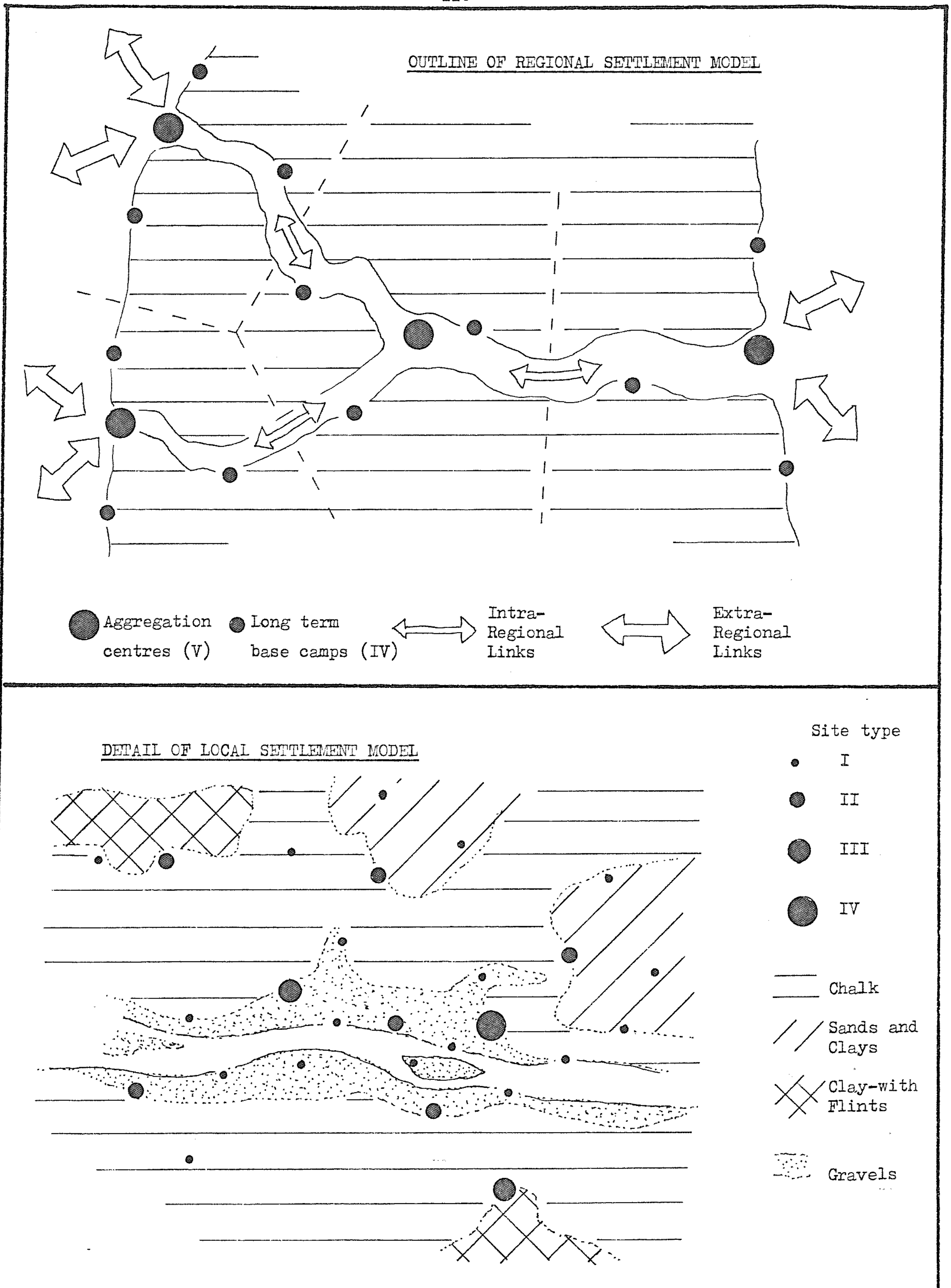


Figure 39 : Price's (1978) scheme for Mesolithic settlement applied to the chalklands

suggest they are real. These results are most encouraging from the view that it may be possible to apply the core/scraper index to other test areas. For example, the hypothesis of minimal exploitation of the higher downland could be tested by surface collection; if the assumption is correct it should be revealed by distinct differences in assemblage composition.
Analysis of the Wessex regional data and Froom's intensive local area study has suggested that regularities in settlement evidence can be identified; this needs to be confirmed. Figure 39 illustrates two settlement models, the first at something approaching regional scale, the second at local scale. The outline model places the large aggregation centres in river valleys either at major confluences or at the edge of the chalk outcrop. Thus, within real landscapes the model would place such centres at, for example, Salisbury, Pewsey, Blandford, Newbury, Dorchester etc. The local model suggests that most activity occurs on the valley floor although the mixed micro-environments of the Tertiary sands and clays would be regularly exploited chiefly during summer and autumn. Undifferentiated chalk would be largely ignored as would larger expanses of clay-with-flints although their margins may have been a useful source of flint, being systematically worked in some circumstances.

These models illustrate some of the basic principles that might be employed in designing an objective field survey but many of the operational problems remain to be considered. Surface collection may be expected to be relatively effective over most parts of the typical modern chalkland landscape, provided of course that suitably distributed arable fields exist in the area. However, within the valley floor the twin processes of colluviation and alluviation will have buried many Mesolithic surfaces beyond the reach of the plough. Froom experienced this difficulty in his Kennet study where sites such as Wawcott XXIII had virtually no surface indications because they lay buried beneath 50 cm or so of alluvium (Froom 1972 a). It is frustrating that the most difficult sites to locate are the ones with the best research potential - the stratigraphy of Wawcott XXIII was virtually untouched by ploughing and contained a rarely encountered assemblage of faunal remains.

Some idea of the complex stratigraphy of these zones can be gained

Figure 40 : THE COMPARATIVE STRATIGRAPHY OF MESOLITHIC OCCUPATION SITES IN WESSEX CHALKLAND VALLEYS (not to scale)

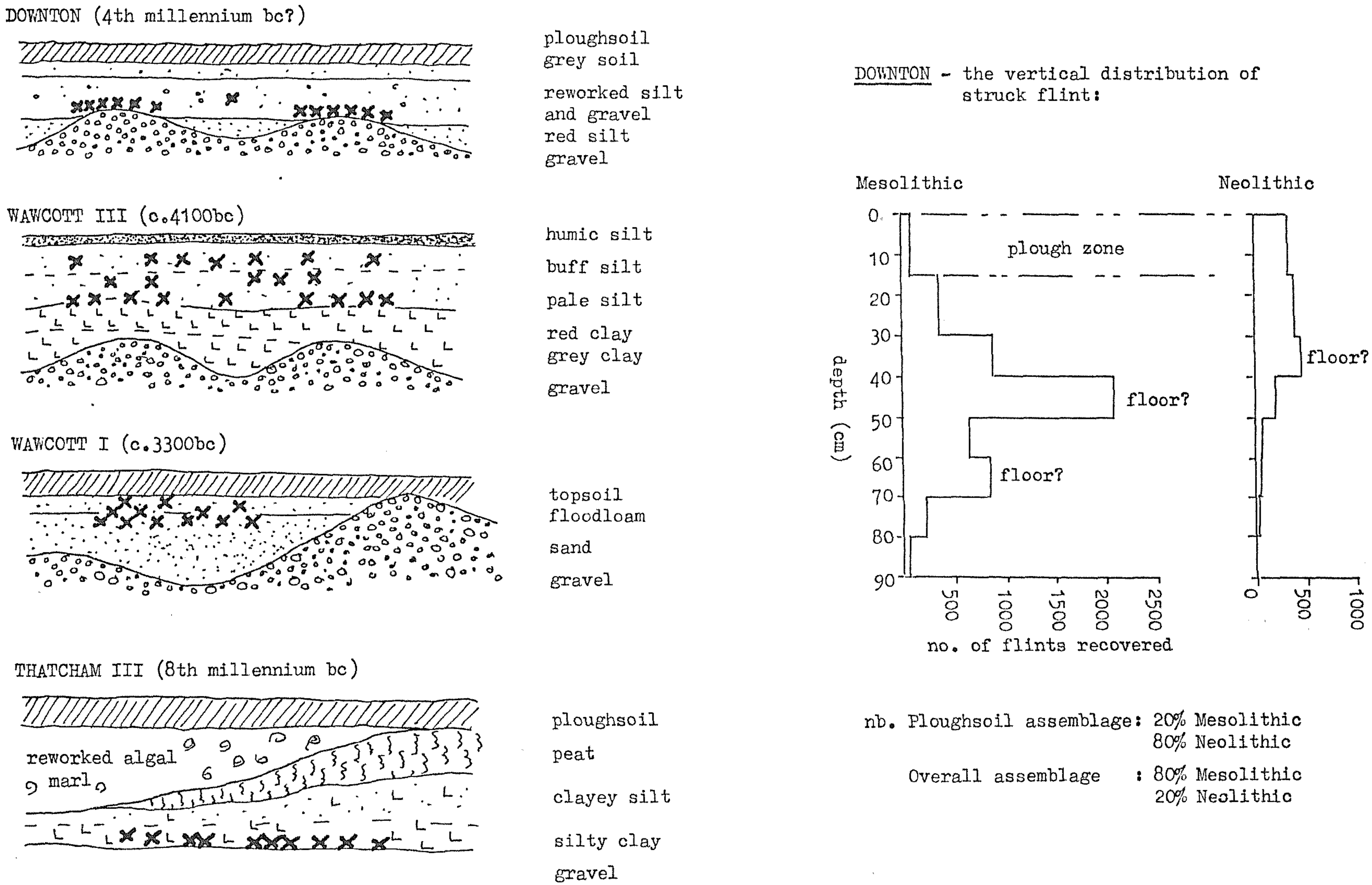
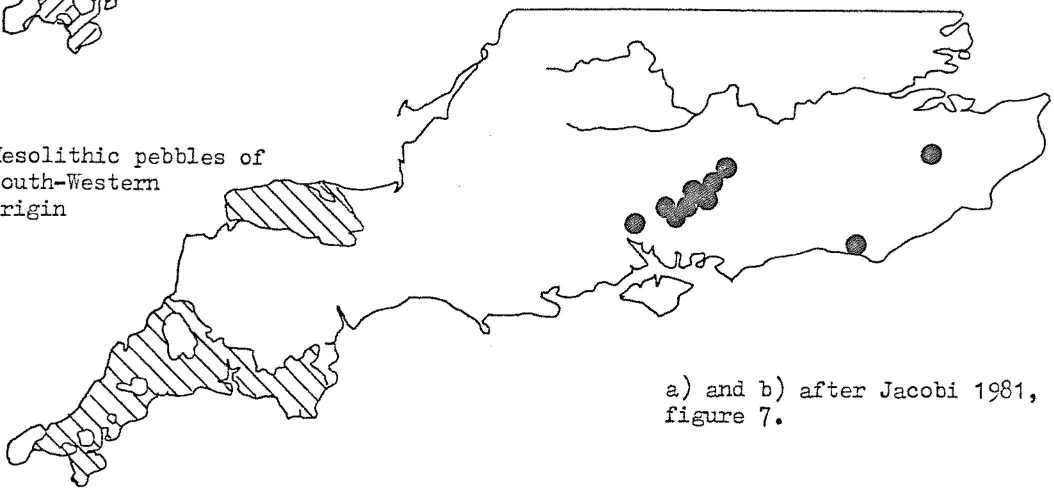


Figure 41 : THE EVIDENCE FOR MESOLITHIC TRAFFIC IN STONE ARTEFACTS FROM THE SOUTH WEST OF ENGLAND - COMPARED WITH THE DISTRIBUTION OF NEOLITHIC GROUP 1/1a PRODUCTS FROM CORNWALL

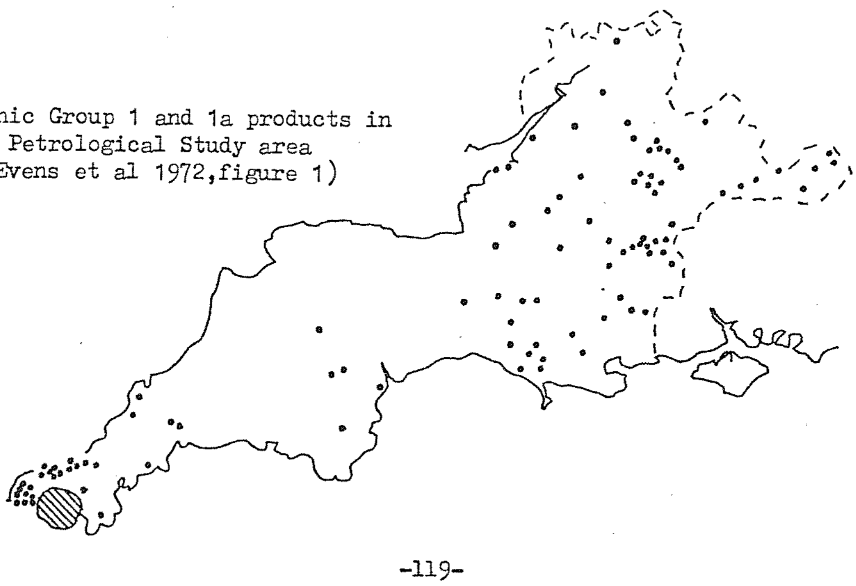
a) Mesolithic Slate Blades

b) Mesolithic pebbles of South-Western origin



a) and b) after Jacobi 1981, figure 7.

c) Neolithic Group 1 and 1a products in the SW Petrological Study area (after Evens et al 1972, figure 1)



from the sequences illustrated at figure 40 , the basic stratigraphy of the four Wessex settlements reviewed earlier. It may be seen that the Downton ploughsoil contained a predominantly Neolithic assemblage even though the overall site population was predominantly Mesolithic. In detail only 81 flints (1·5% of the total Mesolithic assemblage) were actually within the ploughsoil of which obviously only a tiny fraction would be available for collection at the surface. These are daunting problems and a salutary reminder of the limitations of surface collection. But they do not mean that surface collection is inappropriate to valley survey.

5·4 Identification and Discrimination

An ability to discriminate between late Mesolithic and early Neolithic settlements in the course of field survey is essential if trends and patterns at this crucial economic threshold are to be unravelled. But how is it to be achieved? Experience has shown (eg. Richards 1978, 16) that Neolithic pottery and other non-lithic artefacts simply do not survive in an active ploughsoil except in special circumstances. Thus discrimination must be based primarily on observable differences in stone assemblages. Before considering the problem further a number of general observations must be made;

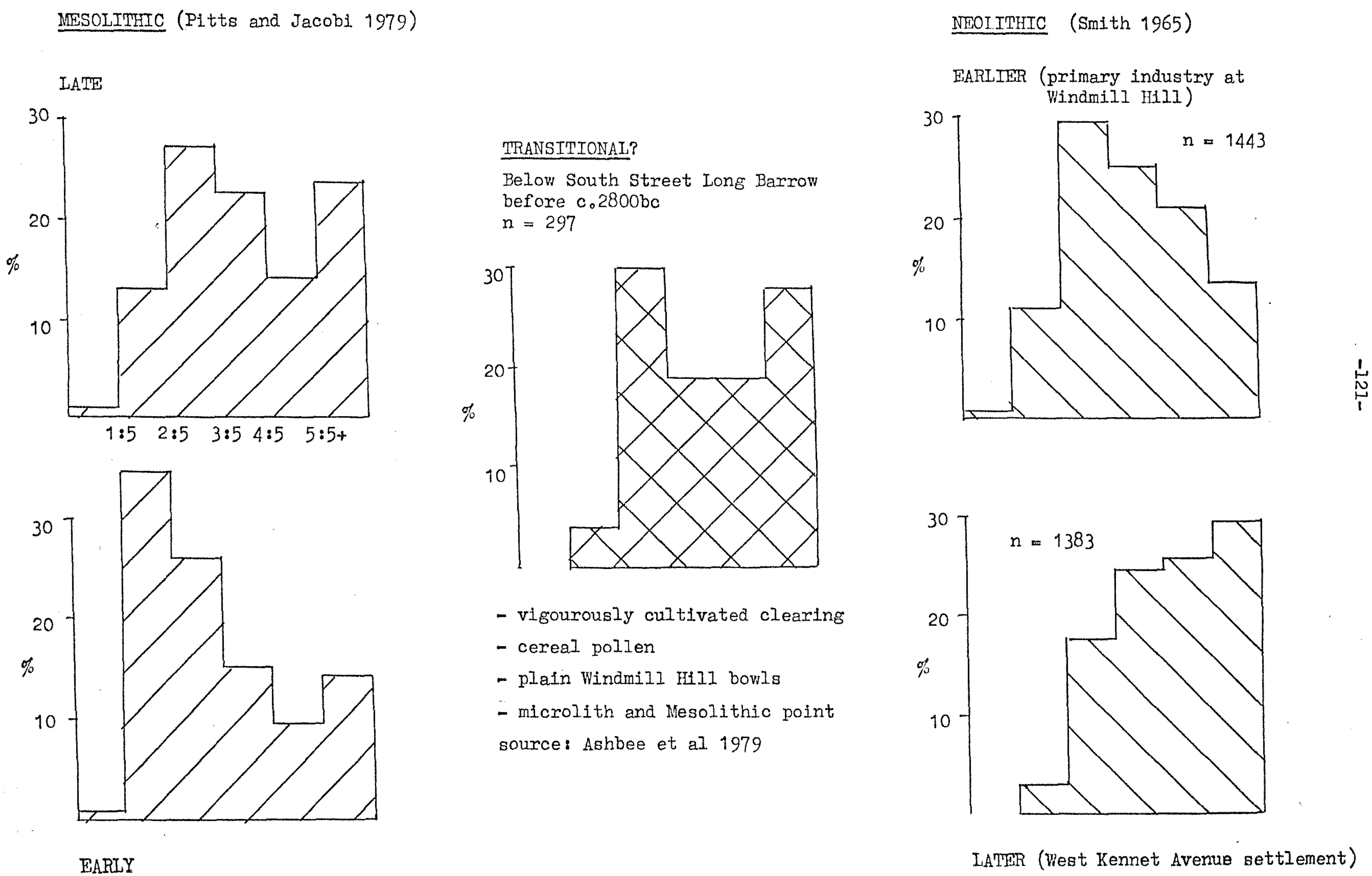
Sample size - Saville (pers. comm.) has suggested that only with an assemblage containing several thousand artefacts can one be confident of correctly identifying its cultural affinities.

Function - functional variation between sites could be a major influence on assemblage composition and is a particularly important consideration where differences are subtle (Pitts and Jacobi 1979).

Procurement - the mechanisms and motives for distant procurement of stone artefacts existed in both periods (figure 41). Care is needed in identifying whether apparently diagnostic types are products of the local tradition or exotics acquired from a distant one.

Waste flakes are by far the most frequent find in surface collected flint assemblages and when metrically analysed (specifically their breadth/length ratio) they do yield information about developments in knapping technique. The tendency for late Neolithic and early

Figure 42 : THE CASE FOR INDUSTRIAL CONTINUITY AS SEEN IN THE BREADTH/LENGTH RATIOS OF WASTE FLAKE ASSEMBLAGES



Bronze Age flakes to be short and squat is well known and is often used as a chronological indicator but it is only recently that systematic analysis of both Neolithic and Mesolithic debitage has been undertaken (Pitts and Jacobi 1979). One outcome of this work has been to invalidate the widely held view that Mesolithic blade industries stand in clear contrast to Neolithic flake industries. There are certainly striking differences between early Mesolithic and late Neolithic debitage but not across the late Mesolithic/ early Neolithic interface where short squat flakes are actually more frequent in the earlier of the two industries, with blades being equally common in both (figure 42). Indeed it is possible to point to some assemblages (eg. pre-barrow South Street, Ashbee et al 1979), which on non-lithic criteria have been labelled Neolithic, but whose waste flake element is metrically Mesolithic.

It is of more than a little concern that waste flakes which often constitute 95% of a surface assemblage cannot be used to achieve site identification. One is left to work with cores, finished forms and microdebitage. As would be expected from waste flake studies cores do not lend themselves to simple classification. Blade cores are common on Neolithic sites just as flake cores are common on Mesolithic ones. At Wawcott III, excavated and published (Froom 1976) as a stratified Mesolithic succession, flake cores were more frequent than blade cores in some horizons.

Turning to finished forms it should be pointed out that many are common to both traditions. Crucial distinctions may be achievable on the basis of relative frequency or morphology but confidence must depend on the size of the assemblage and some prior knowledge of the site's function and the ease with which flint could be procured. Pitts and Jacobi (1979) list burins, serrated blades, punches, scrapers and drilled pebbles as shared types, to which may be added picks (Saville 1977), tranchet axes (Piggott 1954, 283-5) and transverse arrowheads (Green 1980 and see also three examples from Mesolithic contexts at Downton - Higgs 1959, figure 5: 63-5).

Some doubt must surround the wisdom of assigning any of these shared artefact types to a particular tradition and special importance therefore attaches to those that have yet to be considered - polished axes, leaf arrowheads, microliths and microdebitage.

In Whittle's words (1977, 75) - leaf arrowheads are the most distinctive form of an otherwise undistinguished industry. Yet it would appear that neither they, nor polished axes, are at all common in the earlier Neolithic of Wessex. Of those on record most have been identified as imported specialist products rather than integral elements of local industries. The Avebury area boasts one of the highest densities of these types anywhere in the region but amongst stratified earlier Neolithic assemblages they are extremely rare. There is no clear evidence for the presence of hardstone axes and polished flint axes are represented by a solitary flake from the pre-enclosure settlement on Windmill Hill (Smith 1965a). Similarly, although the full sequence at Windmill Hill produced 132 leaf arrowheads (complete, fragments and roughouts) only three fragments could be assigned to the earliest occupation. Two more have been reported from the West Kennet tomb (Piggott 1962, 46) but it is unclear whether these strictly date to the earlier Neolithic. Certainly none of the other barrows in the Avebury area have yielded any form of projectile point from primary features apart from a Mesolithic point found beneath the South Street barrow (Ashbee _et al_ 1979, 270). Leaf arrowheads were also absent from the settlement on Hemp Knoll (Robertson-Mackay 1980). If the Avebury area is typical then polished axes and leaf arrow heads occur too infrequently to be usefully diagnostic at the Mesolithic/Neolithic interface. Their presence is probably significant (although a polished axe fragment was recovered in late Mesolithic levels at Wawcott IV, Froom 1972a) but more importantly their absence is not. We must expect to encounter a good many early Neolithic assemblages lacking any diagnostic forms and hence probably inseperable from late Mesolithic equivalents.

From a Mesolithic perspective it remains to consider the status of microliths and microdebitage. We may be confident that microliths will occur at high frequencies in excavation of Mesolithic settle ments but would not expect them to be universally present in surface collections unless the fieldworker is prepared to crawl on hands and knees across the site. The same is true of microdebitage although microblade cores are large enough to be usefully diagnostic even in normally collected assemblages. If there are any doubts at all about the status of microliths it is whether they can safely be regarded as exclusive to Mesolithic traditions. There seems to be a reluctance on the part of Neolithic researchers to attach any importance to the presence of microliths on their sites. Thus

Smith (1965a, 168) prefers to envisage the Mesolithic flintwork found in the Windmill Hill excavations as having been imported as curios by Neolithic collectors. However, such special pleading does not satisfactorily explain the presence of numerous other items of Mesolithic flintwork elsewhere on the hill (Wilts SMR SU 07 SE). Neither should the microliths at South Street and Horslip be too hastily dismissed as residuals (Ashbee et al 1979). Indeed, during the fouth millennium it was these three sites which appear to have been more substantially cleared and occupied than any others in the Avebury area. Coincidence or not the regular occurence of microliths and other Mesolithic artefacts on the earliest Neolithic settlements argues for careful reconsideration of the evidence.

The concept of a transitional phase between the Mesolithic and Neolithic has found little support in recent reviews of the situation (eg. Whittle 1977). Arguments for am alternative view are put forward later in this study (chapter 6·2). For the moment it will be sufficient to summarise why there are objections to a straight forward division of the lithic evidence.

a. Debitage analysis indicates that the knapping tradition of the late Mesolithic is virtually identical to that of the early Neolithic. There is continuity across the interface rather than a hiatus. Some supposedly Neolithic assemblages show a closer affinity with the Mesolithic tradition.

b. The two most distinctive Neolithic implements - leaf arrowheads and polished axes, occur very infrequently in early assemblages (within the Wessex heartlands) and can often be seen to be items acquired through external contact. The mechanisms and motives for distant procurement existed in both periods and the axis along which slates and other south western rocks were imported into Mesolithic Wessex is strikingly similar to that along which the earliest Cornish axes were moved. The first appearance within the Wessex chalklands of the polished axe and leaf arrowhead may therefore refer to industrial developments beyond the region and not specifically to the heartlands. Their presence does not necessarily imply a change in local flintworking, cultural identity or even economic strategy.

c. Too much emphasis has been placed on the rarity of microlithic elements on Neolithic sites (Whittle 1977, 76). They are rare only in the sense that the fourth millennium settlements on which they might be expected to occur are themselves rare. In the Avebury area it has been shown that microliths or other Mesolithic types are present on all major sites with fourth millennium horizons. That this situation is repeated elsewhere is suggested by Jacobi's study of flint collections from major Neolithic sites in Wiltshire, Hants and Dorset (Jacobi 1976, 75). He found abundant Mesolithic material in all of them.

At a general level of analysis there are fundamental differences between Mesolithic and Neolithic stone assemblages but at the critical interface of the two industrial traditions there is sufficient potential for confusion or misidentification to warrant the employment of an intermediate category to accommodate anomalous assemblages or those lacking clearly diagnostic features. This third category concept would seem to be the only possible conclusion of the review. It does little to resolve the already difficult problem of classifying survey data but it does at least allow genuinely intermediate assemblages to be seen and considered as such. In turn it may be somewhat easier to perceive continuity in settlement patterns and trends.

Chapter 6

NEOLITHIC

6.1. Background

No attempt to review Neolithic exploitation of chalkland valleys can begin without first considering the nature of the evidence available in the chalklands generally. A useful insight into the deficiencies of the data is provided by Whittle's review of southern England where he was able to dispose of 'settlement patterns' in just two paragraphs (Whittle 1977, 49). This highlights the central problem in Neolithic research - the paucity of evidence about the character and distribution of routine settlement activity. With regard to subsistence activity the situation is a little better. But it is clear that much of our current understanding of Neolithic settlement and land use derives not from empiric evidence in the form of directly observed farmsteads and fields but from their observed impact on the environment as measured in snail and pollen sequences. It is therefore to environmental evidence that one should turn for the clearest insights into the valley Neolithic.

A further general problem is the very uneven distribution of past research within the region. Though Neolithic communities appear to have exploited almost every part of the Wessex landscape it is only those landscapes where monuments were built that have been studied in any detail. The received picture of Neolithic lifestyles is therefore specific to those parts of the region which evidently experienced rather different socio - economic pressures than pertained in the region generally. Though we cannot yet characterise it the

Neolithic in areas beyond the monument zone may therefore be expected to contain previously unseen elements and perhaps even a few surprises.

In the short time that has elapsed since Whittle's (1977) review of Neolithic southern England much important new evidence has become available. A number of systematic surveys of areas beyond the monument zones have been started (middle Avon valley) or completed (east Hampshire - Shennan 1981; Bullock Down - Drewett 1982). Bell (1983) has reported his excavational research within chalkland dry valleys and Waton (1982), Thorley (1981) and others have published some remarkable pollen sequences. The significant point is that almost all of this information has yet to be properly assimilated into our understanding of Neolithic settlement and subsistence.

This review attempts assimilation but it starts with the intensively researched headwater area of the river Kennet - the monument studded Avebury area. Arguably it is the only area of Wessex where one can begin to recognise interactive development between sampling sites rather than within them. It provides a window on developments at the local scale. To achieve a better understanding of how this relates to developments elsewhere the perspective of the review moves out first to encompass the Kennet valley as an integral unit and then to the evidence available from other Wessex valleys so as to assess trends within the region generally.

6.2. The Avebury Area

6.2.1. Introduction

Lying at the head of the Kennet valley the Avebury area is a relatively undifferentiated stretch of chalk landscape (Figure 43). What makes it important is firstly the range of Neolithic monuments built there and, secondly, the amount of field research that has been carried out on and around these monuments during the past half century. Thanks largely to the pioneering work of Dimbleby and

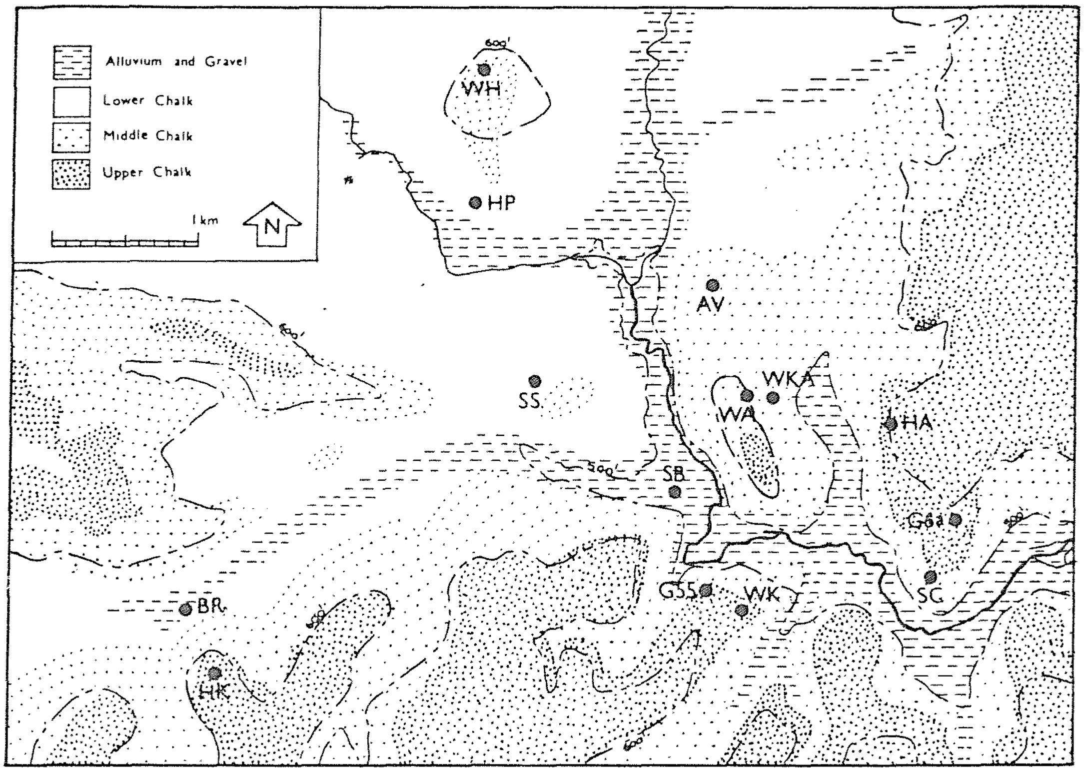


Fig. 43
The sites and their setting

AV Avebury: Henge (Dimbleby and Evans 1974; Smith 1965a: Vatcher and Vatcher 1976)

BR Beckhampton Road: Earthen Long Barrow (Ashbee *et al.* 1979; Dimbleby and Evans 1974)

G.55 Avebury G.55: Round Barrow (Smith 1965b)

G.6a West Overton G.6a: Round Barrow (Smith and Simpson 1964)

HA Hackpen: Occupation Site (Piggott 1937)

HK Hemp Knoll: Round Barrow (Robertson-Mackay 1980)

HP Horslip: Earthen Long Barrow (Ashbee *et al.* 1979; Connah and MacMillan 1964; Dimbleby and Evans 1974)

SA Sanctuary: Building (Cunnington 1931; Smith 1965a)

SB Silbury: Mound (Evans 1972; Vatcher and Vatcher 1976; Williams 1976)

SS South Street: Earthen Long Barrow (Ashbee *et al.* 1979; Dimbleby and Evans 1974)

WA Waden Hill: Occupation Site (Thomas 1956)

WK West Kennet: Chambered Barrow (Evans 1972; Piggott 1962)

WKA West Kennet Avenue: Settlement beneath stone avenue (Smith 1965a)

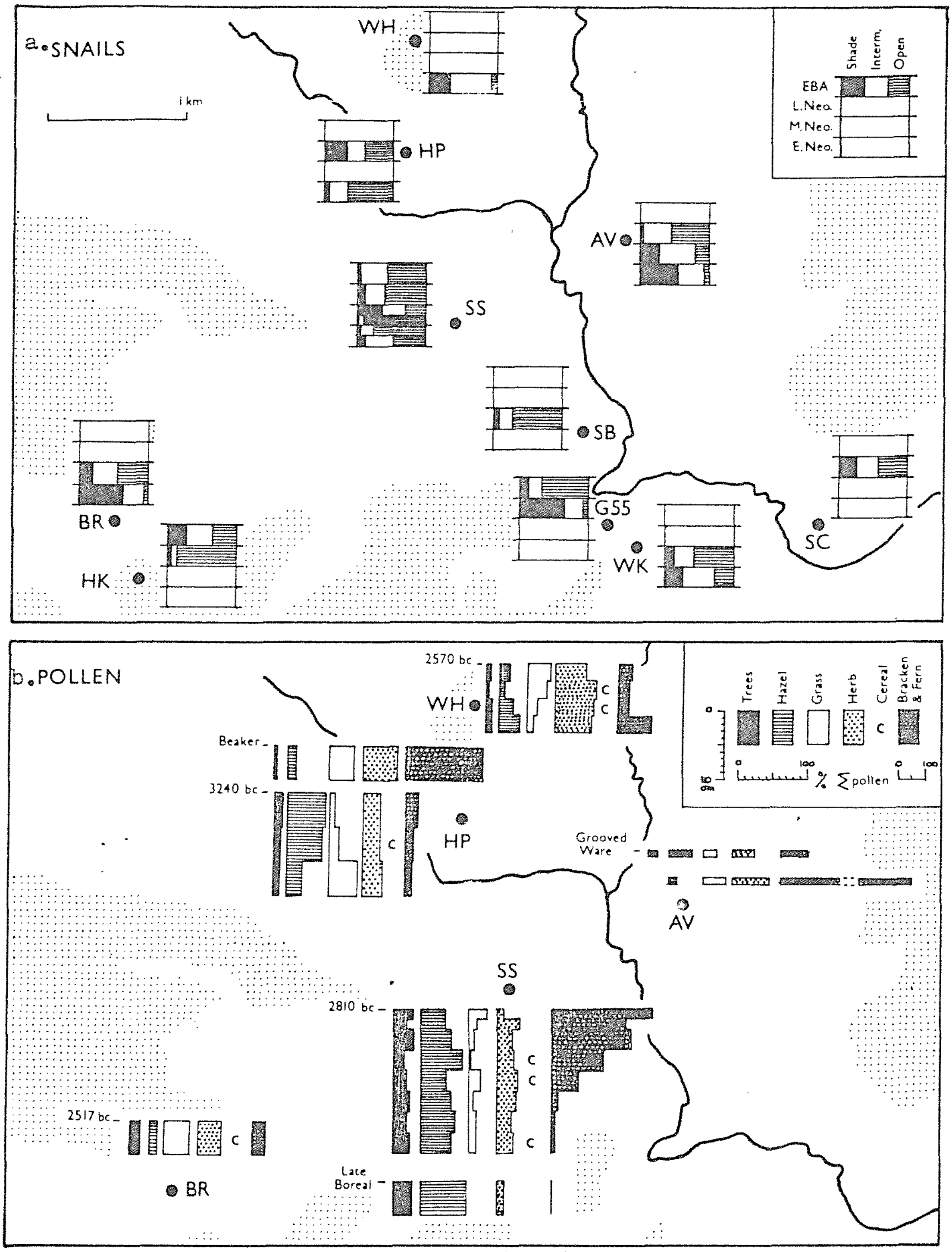
WH Windmill Hill: Causewayed Enclosure (Dimbleby and Evans 1974; Smith 1965a)

Evans (1974) the resulting data incorporate not only a wealth of information about how Neolithic communities organised themselves within the landscape but also a wealth of information about their environment. It is the strength of this combination which makes the area so eminently suitable for reconstructing the ecology of Neolithic farming systems. Evans went some way towards bringing the various strands of evidence together when discussing the excavation of three local long barrows (Ashbee et al 1979, 295-8) and Whittle focussed on the area in his review of earlier Neolithic economy (Whittle 1977, 19-24). But neither made full use of all the potential sources and such is the rate of progress in approaches to environmental reconstruction the data they discussed are now open to rather different interpretation.

The contexts and sources are detailed at Figure 43. One may note that the range of sites under review is dominated by monuments with specialised functions and it could be argued that they have untypical land use histories. But, as will be seen, there is substantial evidence for what can only be interpreted as routine subsistence activity going on around them. As the tillage of South Street before and <u>after</u> barrow construction illustrates, ritual use of a site was often transitory (Ashbee et al 1979).

6.2.2. Environmental Evidence

Snails and pollen from buried surfaces and ditch fills form the primary sources for palaeoenvironment in the Avebury area whilst sediments, seeds, charcoal and faunal remains play a valuable supporting role. Given the time over which the research has taken place it will be appreciated that reporting standards and techniques vary considerably. As a result the task of rationalising the sources has proved every bit as difficult as the task of interpreting the evidence they provide. Generally, this has been achieved by recognising that each source has a different sphere of reference with soils, snails and non-arboreal pollen referring chiefly to local conditions whilst tree pollen, charcoal, faunal remains and seeds



Snail and pollen sequences

usually have a wider sphere of reference. Relative reliability has been evaluated on the basis that long term trends are less likely to be spurious than evidence derived from spot sampling. Another equally important factor is the number of different sources that can be brought to bear on reconstruction of the overall site sequence.

6.2.2.1. Snails (Figure 44a)

The usual criticism levelled at molluscan evidence is that it only refers to highly localised conditions which may be unrepresentative of the overall environment of the area. If analysis is based on a single isolated spot sample this argument would be difficult to counter. But, as Evans (1978, 55-59) and Thomas (1982) affirm - when interpretation is based on long term trends in stratified sequences the sphere of reference extends well beyond the sampling point. Thus, for example, even when dealing with specialised micro-environments such as ditches - if open conditions develop in the surrounding area the trend will be readily seen in the changing composition of the ditch assemblage (Thomas 1982, 158). Trends are modified by local factors but they are not masked out and we must accept that snail sequences can have a wider sphere of reference than is usually credited to them. However, other problems remain to be resolved. With regard to colonising behaviour it is possible that short lived episodes of vegetational disturbance will not be perceptible especially if the destructive mechanism of cultivation is involved. Similarly, clearings at the edge of woodland will be more readily colonised by open country species than openings deeper within the woodland. For snails to colonise a new habitat there must, after all, be routes that are attractive to the venturesome mollusc.

6.2.2.2. Pollen (Figure 44b)

Thanks to Dimbleby's work on buried soils (e.g. Dimbleby and Evans 1974) and Waton's work on peats and floodplain sediments (Waton 1982) palynological analysis has now become an established and accredited research tool in the chalklands even though the assemblages frequently exhibit signs of serious depletion. It was this factor which prompted Dimbleby and Evans to suggest that soil pollen does not survive long enough to become stratified in the manner that snail shells do. They concluded that pollen from buried soils refers only to rain falling at the time of burial and that its apparent stratification is meaningless. Shackley has recently re-affirmed this model, a feature of which is that the frequency of pollen grains should decrease with depth whilst resistant grains such as bracken and fern spores will logically increase in relative frequency (Shackley 1981, 84-85). The model may be appropriate in some circumstances but not all, as is shown at South Street where pollen frequency remains fairly constant throughout the soil profile and decay resistant bracken spores actually decrease with depth. The latter trend also occurs at Horslip and Beckhampton Road. It must also be said that when closely studied these pollen sequences 'behave' in much the same way as those from peat bogs where stratification is accepted. Soil conditions are obviously a crucial factor and in dismissing the concept of pollen survival, and hence stratification, within chalkland contexts we have perhaps ignored the probability that early prehistoric soils were markedly less calcareous than in later prehistory (Bell 1982, 138; Smith 1981, 1945).

Changes in soil status are highly relevant to the 'bracken problem' discussed by Dimbleby and Evans (1974). Worried by the presence of bracken under the South Street long barrow, in a context which snail evidence suggested was a grassland habitat, they argued that the bracken was "ecologically extraneous", possibly being introduced to the site as cattle bedding mucked out as manure during an arable phase. Clearly, the question of whether bracken is here an artefact or genuinely represents in-situ growth is an important issue. The argument that it is an artefact must now be rejected on the following grounds. As Dimbleby and Evans themselves acknowledge - there is no ecological objection to the growth of bracken on calcareous soils. It is rare in the chalklands today but this is probably due to measures taken to purge it from farmland and to changes in soil condition. Bracken spores or charred remains of the plant occur in every Neolithic context in the Avebury area where they have been looked for, even those which lack any hint of an arable phase to accommodate the manuring theory.

There can be no doubt that bracken was a genuine member of local Neolithic plant communities although bearing in mind the relatively high resistance of its spores to decay it will perhaps always tend to be over-represented. Whittle (1977, 19) suggests that bracken invasions form part of a regeneration cycle though looking at the South Street sequence one wonders whether they are not so much a symptom of regeneration as a contributory cause of the site being abandoned in the first place. It would help to resolve the issue if thornscrub development could be traced in pollen sequences. That it cannot is due to the fact that these species are inherently low pollen producers and rely on insect rather than air-borne dispersal (Moore and Webb 1978, 110). In modern chalkland regimes thornscrub plays an important role in regeneration successions, developing within rank grassland and then acting as nurse plant to early arboreal colonisers, particularly ash. It ought to have been important in Neolithic successions and the common occurrence of hawthorn, blackthorn and buckthorn charcoals in contemporary rubbish deposits and clearance fires shows that it probably was.

A more general observation on the use of pollen evidence stems from research into pollen dispersal behaviour in heavily wooded environments (Edwards 1982), where dispersal of grass, herb and other pollen types with a low release height is greatly inhibited by trunk-space and canopy filtering. This means that clearings may not be detectable unless the sampling point is very close to the openings (as close as 30m in some circumstances) and secondly that the size of the clearing has an important bearing on its perceived character. According to the pollen transport model Edwards uses the pollen rain in clearings less than one hectare in size will be predominently locally derived whilst in larger clearings the rain is predominantly non-local. Indeed, when the opening begins to approach the scale of a hundred hectares approximately two thirds of the pollen falling on the sampling point is regionally derived. Clearly, there is scope here for considerable confusion which is why good contextual information, particularly snail evidence, is so crucial.

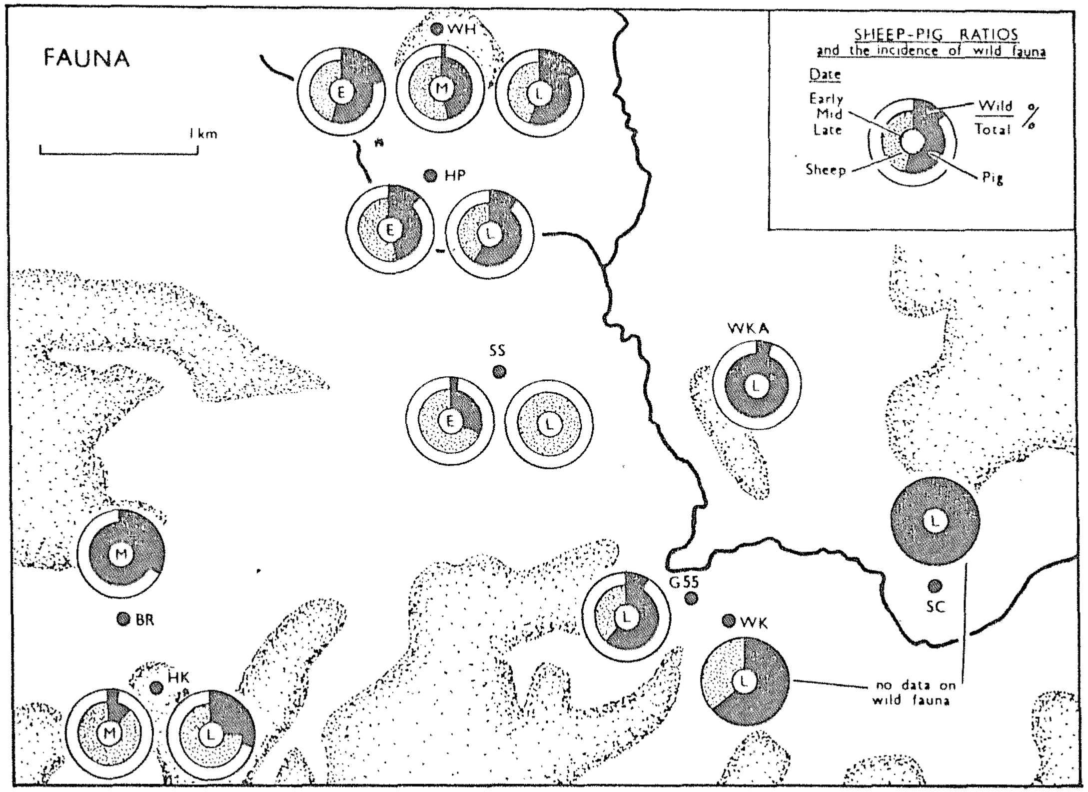


Fig. 45
Faunal remains as environmental indicators: sheep-pig ratios and the frequency of wild faunal remains within the area. Data for West Kennet and the Sanctuary are summary estimates based on fragment counts for individual contexts, all others are fragment counts as originally reported

-134-

6.2.2.3. Faunal remains (Figure 45)

Few would argue that the environment exercised a significant influence on the structure of Neolithic animal populations. However, the influence is not necessarily a direct one, it is modified by husbandry practices, faunal adaptation and when dealing with excavated bone assemblages there are a bewildering number of taphonomic factors to consider. With these problems in mind it became clear that trends observable in the Avebury area faunal remains do not constitute an independent source of environmental data but are rather to be seen as a means of adding to the picture conveyed by other sources.

Since cattle are both browsers and grazers, and hence readily adaptable to wooded or open conditions, they are excluded from this part of the study and attention is focussed on the relative frequency of pig and sheep which have more strict, and to some extent, opposing ecological preferences. The ratio of sheep remains to those of pigs is used as a guide to the amount of mature grassland available within the exploitation territory of the recovery site. A predominance of sheep is taken to indicate a largely open and closely managed setting and a predominance of pig to indicate an environment in which woodland or scrub is more common. To amplify these trends the frequency of wild species within the reported assemblages was also calculated on the assumption that they are more likely to have been taken in the type of habitat favoured by pigs.

That sites with a high pig/sheep ratio consistently have above average representation of wild fauna needs no explanation but variation observed in the three early Neolithic assemblages does call for further comment. They are drawn from Windmill Hill, Horslip and South Street - respectively hilltop, hillside and valley floor settings. Faunal analysis indicates a substantially wooded and undisturbed environment on the hilltop standing in contrast to more open and disturbed conditions in the valley floor with an intermediate situation at Horslip. When the three sites can next be compared (in the late Neolithic) the relative situation is very similar. It would seem that the hilltop area witnessed only one phase of intense disturbance - that associated with construction and use of the causewayed enclosure. For most of the Neolithic it appears to have been a rather wild and marginal land resource, as indeed does the Beckhampton Road/Hemp Knoll area.

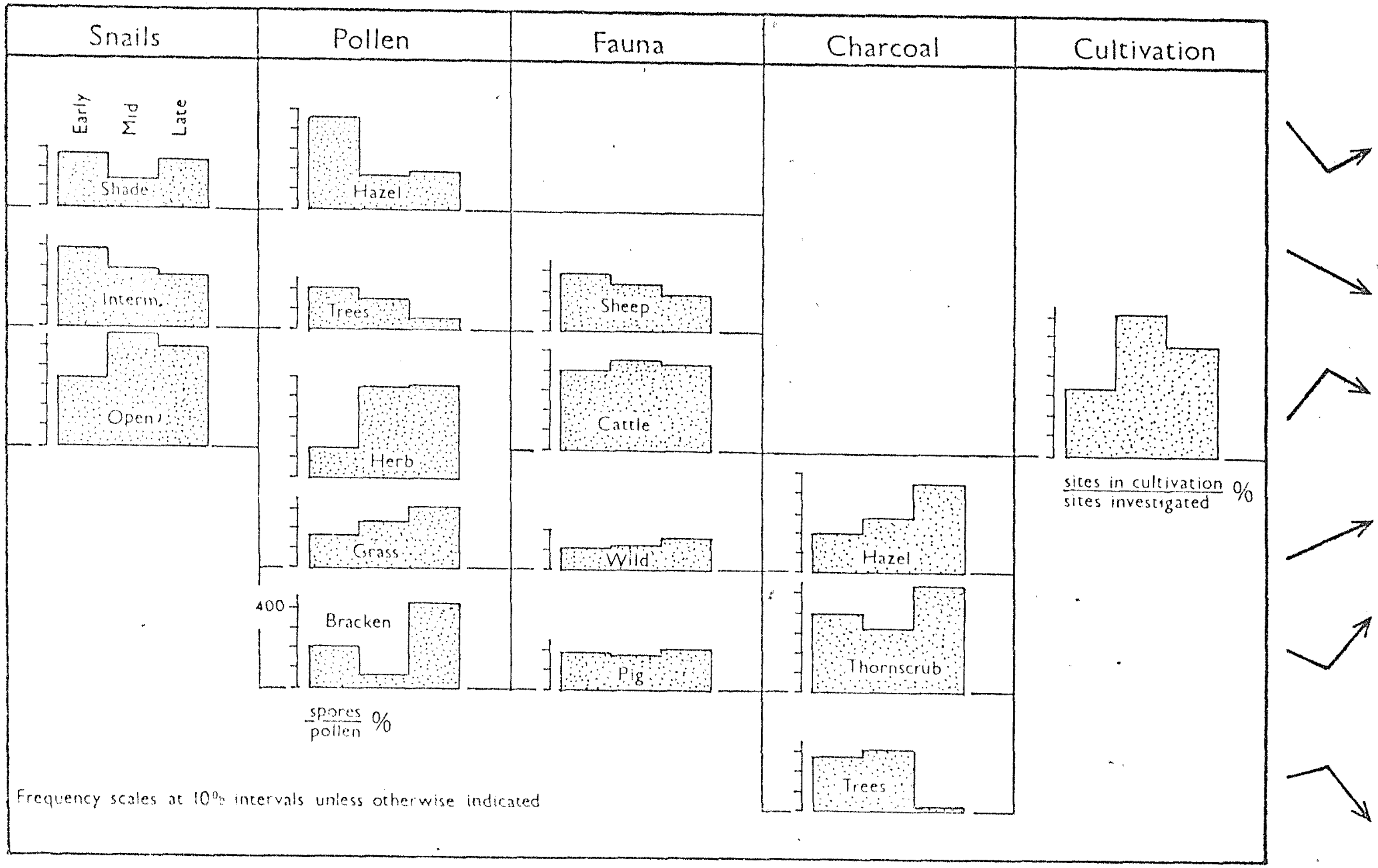
6.2.2.4. Charcoals

As a secondary source of information charcoals are of greatest value in hinting at the pattern of thornscrub development, a phenomenon which would not otherwise be traceable. This is most clearly seen in the case of a late Neolithic settlement found beneath the West Kennet Avenue where hawthorn and hazel were present or predominant in all refuse pits containing charcoal whilst woodland species (oak and elm) occurred once and then in small quantities. Indeed thornscrub charcoal is common in all contexts where charcoal is reported on, being second only to hazel in ubiquity.

One would hesitate to suggest that the frequency with which different woody species occur in charcoal samples is a secure guide to prevailing vegetation but, thornscrub apart, the charcoal data is consistent with pollen data wherever the two can be compared.

6.2.2.5. Soils

The idea that Neolithic farmers frequently abandoned land they had exhausted is an attractive one (Whittle 1978, 39) but it finds no support in the Avebury evidence. Acknowledging that assessing the potential fertility of a palaeosol buried five thousand years ago is a risky business, it must be said that none of the reported soils appear to have been in such a condition as to precipitate abadonment. Nor should they be, for as it is shown at South Street, Neolithic farmers were well aware of the benefits of manuring and fallowing in intensive cropping routines, and, in all probability, most local soils still contained a loessic element enhancing their fertility (Catt 1978). Clearance and cultivation must nevertheless



46: SUMMARY TRENDS arranged according to pattern have had some effect on soil condition and the most usual outcome was humus loss, structural deterioration and finally erosional loss of the fine silt content (Bell 1982, Limbrey 1978).

Bell has shown that colluviation was underway during the Neolithic and there are indeed three instances within the study area where slope erosion may be inferred. Microscopic examination of the South Street buried soil profile revealed a progressive increase in fine mineral content up to the time of its burial - ostensibly colluvial silt washed from the adjoining slope. Similarly, it is clear that very shortly after it was abandoned colluvium began to be deposited over the late Neolithic West Kennet Avenue settlement below Waden Hill for the silts were observed to fill the tops of pits and postholes. On the opposite side of the valley Piggott (1937) encountered earlier Neolithic pottery, struck flint and animal bone within a lynchet at Hackpen. Mention should also be made of a truncated soil profile on Windmill Hill which Dimbleby (1965) attributed to turf stripping but which Smith (1981, 145) has since suggested could well be an erosional effect. Some slopes in the area were obviously experiencing silt loss during the Neolithic and one may envisage that the associated changes in soil status, particularly water retention qualities, began to alter vegetation successions and land use patterns, further accentuating the contrast that already existed between the valley and its hinterland.

6.2.3. Human Activity

In reviewing the environmental evidence frequent reference was made to the role played by Neolithic communities in shaping their ecological setting. It is now necessary to bring this human factor into sharper focus by systematically examining the evidence for settlement, subsistence and structural activity.

6.2.3.1. Settlement (Figure 47 and 48)

The elusive nature of Neolithic settlement is, in no small measure due to the practical difficulty of discriminating permanent occupation sites from those where non-domestic activity was taking place. Ideally one would adopt a polythetic approach to site classification but that would require a far more standardised and comprehensive level of reporting than actually pertains within the Avebury data. In practice pottery is the only element likely to be found in settlements that is anywhere near consistently reported. This discussion of Neolithic settlements therefore hinges on the proposition that pottery is an indicator of permanent or semi-permanent occupation. That it also occurs in non-domestic contexts is acknowledged and pottery directly associated with burials has been ignored.

Post-Neolithic processes of erosion and deposition have undoubtedly made it difficult to recognise the full extent of Neolithic settlement patterns and it is notable that none of the sites mapped in Figure 47 and 48 yielded pottery from a surface context. Indeed of the thirteen instances where settlement horizons or features have been observed all but two owe their survival to the protective covering afforded by colluvium or a subsequent earthwork construction.

It seems we must reconcile ourselves to the fact that an unknown proportion of the pattern has been rendered unrecognisable to normal field survey techniques. This being so one must look to the sample already on record for clues to how the original pattern may have looked. Astonishingly, Neolithic pottery has been found on every site known to have been excavated in the Avebury area (Wiltshire SMR - excavation index). This implies a remarkably dense pattern of settlement even allowing for settlement drift within such a long time span. However, it may also be noted that the excavations from which the evidence is drawn were largely confined to the valley corridor and its fringes and thus all one can strictly say is that settlement appears to have been densely distributed in this part of the landscape. Whether the same density prevailed over the adjoining uplands seems unlikely because of the implied population levels and because the distribution of monuments and lithic finds is conspicuously lighter there. If the assumed valley/upland settlement dichotomy is real it ought to be reflected in the environmental picture, as indeed it is. Information is lacking from truly upland locations but it is notice-

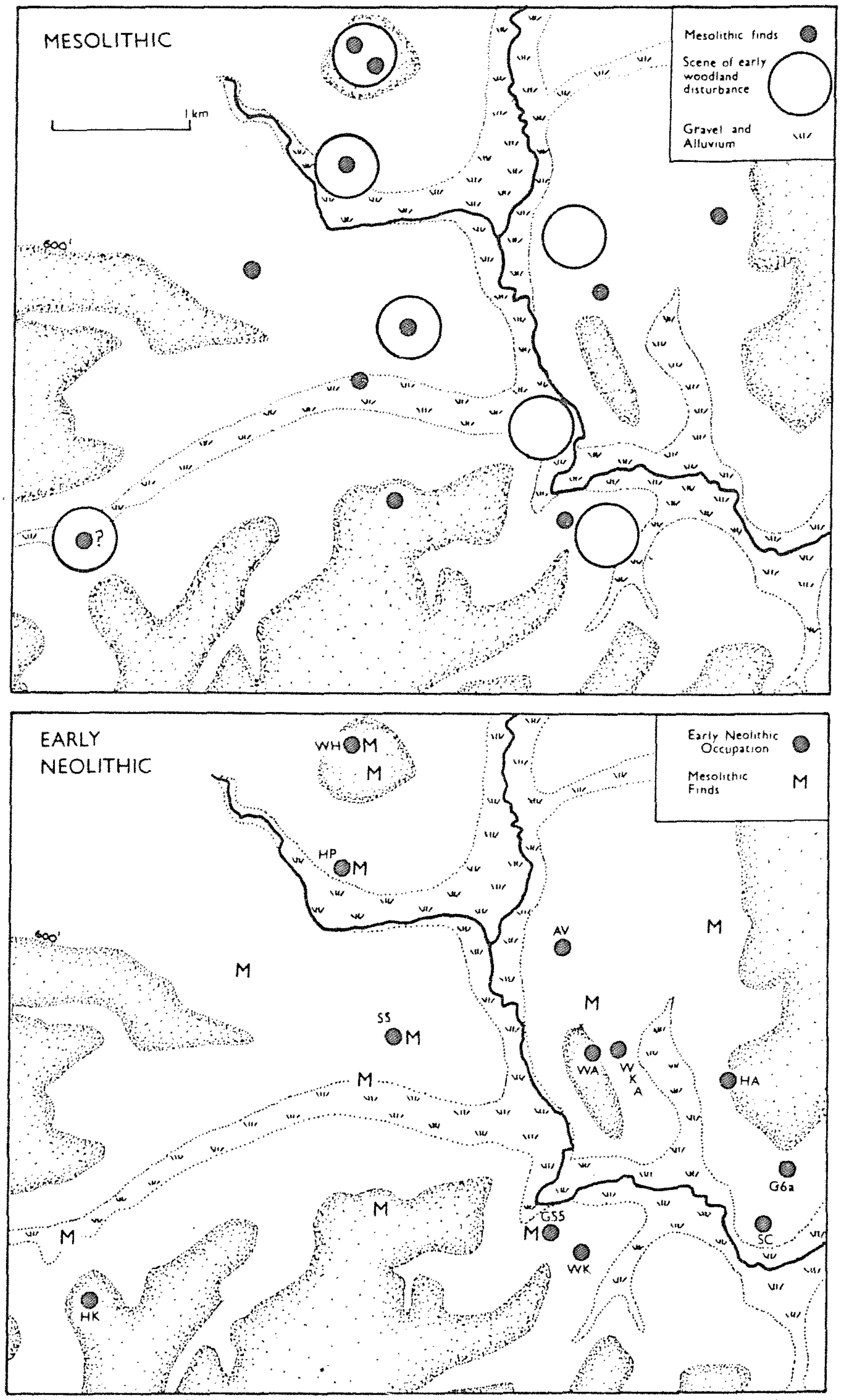
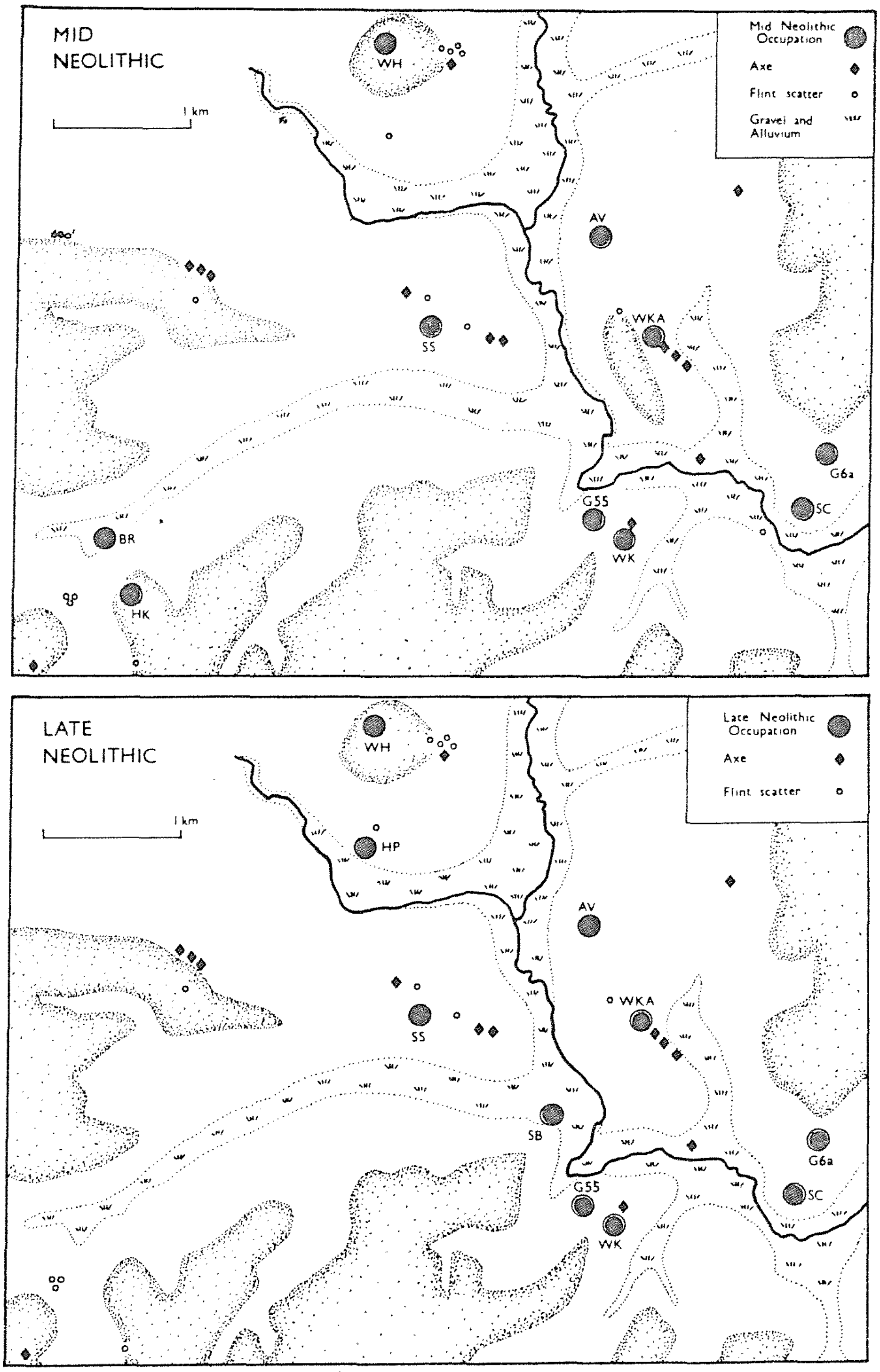


Figure 47: Early Occupational Evidence

Figure 48: Later Occupational Evidence



able that sites in the valley corridor (South Street, Avebury and Silbury) have a much more open aspect by the end of the Neolithic than those on its outer fringes.

Locations favoured by Mesolithic groups continued to stay in favour throughout the Neolithic. Settlement units were, to judge by their environmental impact, generally small in size and closely spaced, often less than one kilometer apart. Few valley sites have significant breaks in their occupational history. But, if sequences from sites such as Hemp Knoll and Beckhampton Road are representative of what was happening on the periphery, settlement here was distinctly intermittent even though associated woodland clearances may in some cases have been quite extensive.

6.2.3.2. Subsistence

Evidence from beneath the Horslip long barrow establishes that cereal growing and stock raising were a part of local subsistence strategies from at least as early as the third quarter of the fourth millenium bc. But, it would be wrong to assume that they were necessarily the dominant element. Hillman's (1981, 189) conclusion that most early agricultural communities were substantially dependent on wild food resources is amply justified in the Avebury area where remains of aurochs, wild pig, red and roe deer occur on every site so far investigated, regardless of its setting, function or date within the Neolithic.

Attention may also be drawn to the remains of hazelnuts, crab apples and sloes in refuse contexts at Windmill Hill, Hemp Knoll and the West Kennet Avenue settlement. As Hillman points out, wild plant foods are for a number of reasons less likely to be preserved in the archaeological record than cereals. We may, therefore, have seriously misjudged the degree to which they were depended on.

Conversion of the wildscape by clearance and cultivation was not only a laborious and time-consuming process it also involved trading off one source of sustenance against another and, initially at least, agriculture was probably the least reliable of the two. Yet farming did develop and expand in the Avebury area so how was inertia in the local ecosystem overcome and what were the respective roles played by man, stock and crops? The first point to note is that the ecological requirements of domestic cattle and pigs are little different from those of their wild counterparts and there is no necessity to envisage clearance being undertaken on their behalf. Sheep, however, can only thrive within fairly extensive openings on well-drained land - much the same conditions required for successful crop production. It is no coincidence then that during the early Neolithic sheep remains are unusually common on the only two sites where in situ cereal growing can be proven - South Street and Horslip, both apparently scenes of extensive pre-agricultural woodland disturbance. As befitted their environmental condition at this time the lesser clearances at Beckhampton Road and Windmill Hill supported an economy more heavily dependent on cattle and wild resources whilst evidence for cereal cultivation is lacking until later in the period. In these observations one can perceive a flexible approach to land use in which some areas were relatively intensively farmed using the full range of available subsistence technology whilst others were exploited in an extensive manner.

Cattle undoubtedly played a crucial role in suppressing regrowth of shrubs and trees in cleared areas and pigs, through their rooting activity, could have helped to carry the conversion of woodland to farmland one stage further by cleaning out troublesome weeds and bracken rhizomes (Rowley-Conwy 1981, 95). One might expect therefore that these two species were used in conjunction with fire and the axe to precondition outfield areas ahead of attempts to farm them more intensively. Evidence from beneath the South Street barrow shows how this final stage of the conversion process was organised.

When the site had already been cleared to rough pasture it was subjected to an episode of very vigorous disturbance by what Reynolds (1981, 102-103) identifies as a rip ard - a deep cutting implement specifically designed to prepare rough ground for arable use by breaking up the root mat and facilitating turf removal. It subsequently experienced two further phases of cultivation, for cereals, by hoes or spades, each separated by a fallow period, before being allowed once more to revert to pasture. There are signs too of manuring, boulder clearance and the use of fire, not only to break up troublesome sarsens but probably also to burn off trash, weeds and turf parings. Clearly the level of energy expended in preparing the site for arable use and in maintaining its condition rules out the notion that this is transient agriculture - it is the type of sequence one would expect to find within a systematically exploited infield.

By mid Neolithic times cereal growing had been extended out to those sites, such as Beckhampton Road and Windmill Hill, which had previously only been used for pastoral purposes. In neither case is there evidence for vigorous ground preparation of the type seen at South Street but they were long standing pastures and use of a rip ard was probably unnecessary because any residual woodland root mat had long since decayed. Dimbleby (1965) suggested that turf paring had taken place on Windmill Hill and this could have been sufficient to prepare the ground for arable use. If these episodes represent outfield activity then it is likely that the infields continued to be located in the valley where cross ploughing or other signs of disturbance of the type seen beneath South Street also occur at Avebury and Silbury (Evans 1972, 364; Whittle 1977, 22).

With the late Neolithic the situation becomes more confused. There is certainly continued cultivation in the valley; the actual mound of South Street barrow is itself defaced by cross ploughing. But, to judge by sediments in ditch fills at Windmill Hill, Horslip, Beckhampton Road and beneath the Beaker barrow on Hemp Knoll a much wider variety of topographic settings was being similarly exploited. In the context of South Street it was argued that the site had regenerated during the mid to late Neolithic and that the Beaker cross ploughing was a transient affair connected with conversion of scrub to pasture rather than cereal growing (Evans in Ashbee et al 1979, 298). Whether this was a general trend is difficult to say because of the lack of suitable pollen data. It has been suggested that some elements of the late Neolithic population relied on pastoralism and did not grow cereal (Wainwright and Longworth 1971,

266) though as more recent research has shown (Jones 1980) this is a rather extreme view. There are, however, a number of trends within the Avebury data that are consistent with the idea of reduced dependence on cereal production.

Wild animal remains are more frequent on late Neolithic occupation sites than at any time before and the procurement strategy changes from selective culling of red deer to indiscriminate hunting. One must also consider why sheep rearing declined in favour of pig keeping; a trend repeated throughout the southern chalklands at this time (Grigson 1982). Pigs have no vital role to play in cereal cropping routines but sheep do.

What then lay behind this change in subsistence strategy? The environment had certainly changed; there was a good deal less woodland and many of the areas previously cleared for agricultural purposes were being steadily colonised by bracken and scrub.

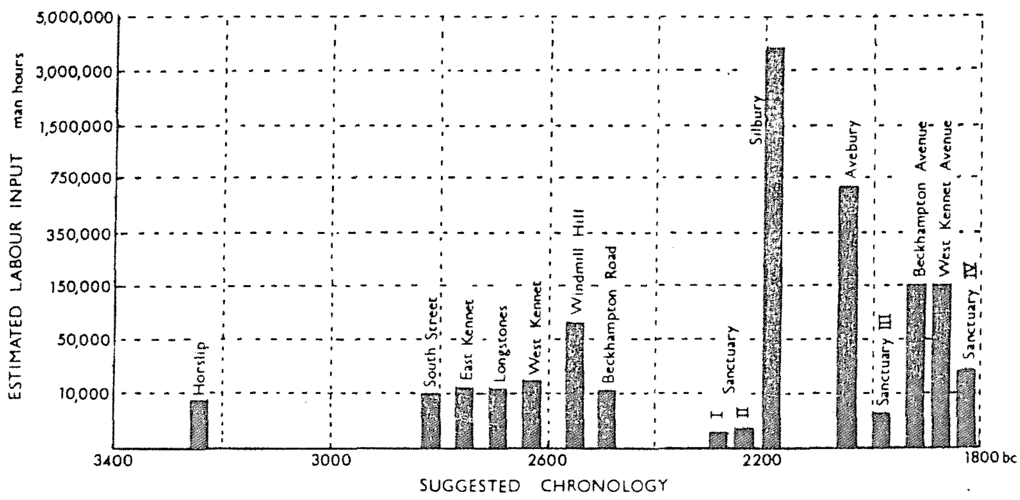
Bracken is poisonous to cattle, sheep and horses (Grigson 1982) but it is also the scourge of arable farmers because the rhizome network of a single plant may extend over tens of square metres supporting hundreds of fronds endowing it with Hydra-like ability to resist extirpation (Wigens 1981, 98). This is well illustrated by Wigen's account of his attempts to clear for cropping a bracken infested chalkland clearing by systematically cutting emerging fronds - to exhaust the root stock. Unfortunately he missed one routine cutting and was, as a result, defeated by the bracken which overwhelmed his crop in a matter of weeks. Neolithic farmers would have been very familiar with the problem but it is difficult to see how they could have countered it. Charred bracken tracheids have been found at South Street but the burning of green plants seems implausible and fresh shoots would have soon re-emerged. Similarly use of a rip ard would have disrupted the rhizome network without destroying the viability of the resulting fragments. If there was a solution it was surely the rooting habits of pig, to whom bracken rhizomes are everyday fare. Indeed the late Neolithic trend towards increased pig rearing may well have been largely determined by a need to reclaim land rendered useless for normal farming by bracken infestation.

6.2.3.3. Structural activity (Figure 49)

For the purposes of this review Neolithic architectural traditions are of lesser relevance than the demands they made on the environment for raw materials. But were these materials specifically procured for the project in hand, or were they merely a by-product of activities unrelated to monument building? For example, what use was made of the timber generated by woodland clearance, or the turf from paring operations, or the sarsen boulders so laboriously extricated from arable plots? The fact that routine subsistence operations regularly generated the material wherewithal for structural enterprises cannot have escaped Neolithic builders and it is difficult to avoid the conclusion that behind each monument lies an episode of vigorous land taking.

Reference to the chronology, spatial distribution and material character of the Avebury monuments (Figure 49) demonstrates that the earlier tradition is in every way different to the later one. The earlier monuments principally employ coppice poles, withies, turf and chalk dump materials, are generally modest in scale and are sited on the south and west side of the Kennet Valley. The later monuments make much greater, and sometimes exclusive, use of free standing sarsens, are altogether more massive in scale and are mostly sited on the north and east side of the valley. One may also note the three to five century long histus in building activity that separates the two traditions. But, rather than attempt to offer over-simplified explanations of these trends it is better to look to individual sites to understand the factors involved.

South Street and Beckhampton Road belong to a landscape that had been managed for several centuries and the heavy reliance on coppice poles to form their fenced bay structure underlines this. Other materials used in these mounds add to the picture - withies cut from pollard willows on the river edge; sarsens pulled from arable plots and stacked on headlands; large quantities of brushwood, possibly the by-product of scrub clearance and hedge management, and turves up to 0.60m long expertly mattocked off in rolls as they would be prior to cultivation. Significantly, large timber is scarce apart from some



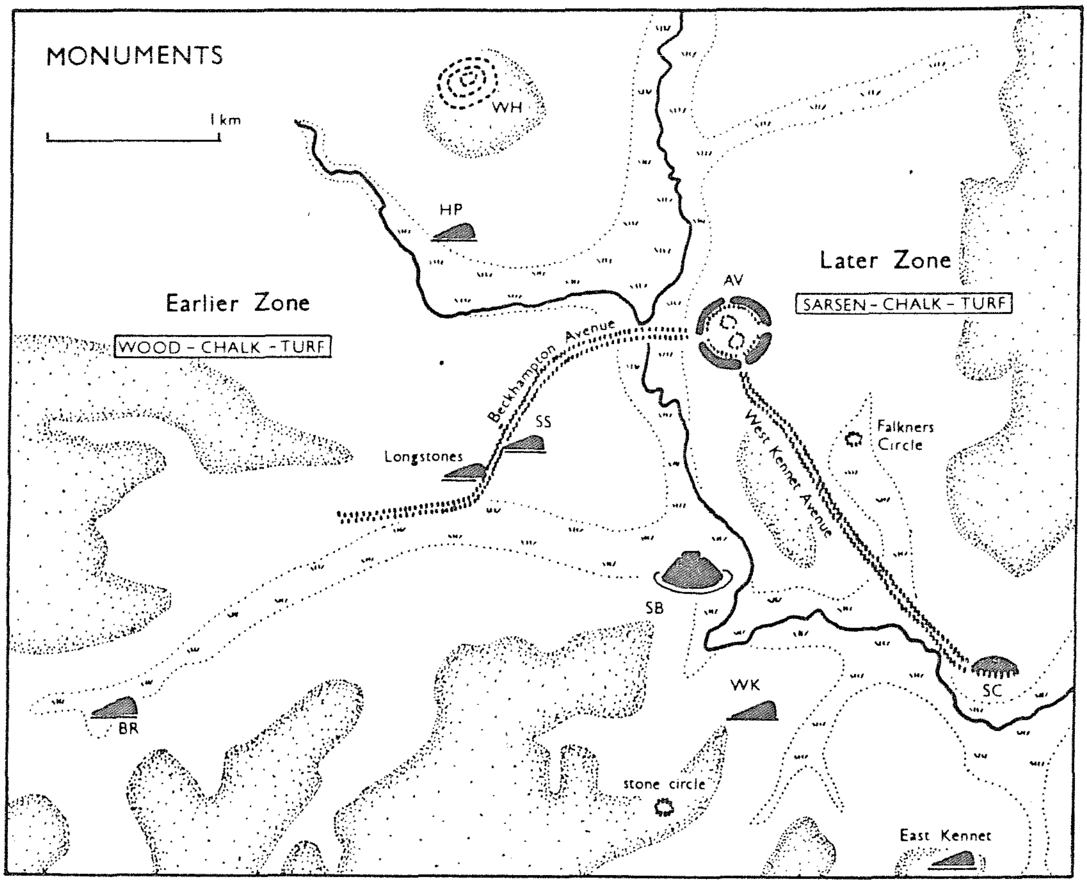


Figure 49: STRUCTURAL ACTIVITY.

Estimated manpower requirements for sarsen monuments are based on experimental data cited by Burl (1979, 68-9), others are taken directly or interpolated from Startin (1982).

possibly reused planks used in conjunction with turf to partially revet the base of the Beckhampton Road mound.

Turves were also a major component of the primary mound under Silbury Hill. Biological analysis have shown that they were stripped from moderately grazed pasture land on nearby slopes whilst the site itself supported a similar environment interspersed by hazel scrub (Williams 1976). It is difficult to see why turf was brought from a distance when the site itself could have produced the required quantity. Paring off land destined for arable use could be an explanation but if the entomological evidence is to be believed these turves were cut out in late July or early August (Vatcher and Vatcher 1976, 26) a time when sensible farmers are contemplating the impending harvest and not cultivation.

Sarsens were used in a rather indiscriminate way at South Street and Beckhampton Road - they were incorporated in the mound because they were on the site at the outset. West Kennet appears to be the first monument to elevate them into a higher role. There is still a central core of smaller sarsens such as might accumulate on a field bank but in constructing the chambers, facade and fore-court large sarsen slabs were skillfully used as a major focal part of the structure. This penchant for large sarsens reappears at Avebury where 227 boulders, up to 90 tons in weight, were arranged upright within the henge and is perpetuated in the Beckhampton and West Kennet Avenues leading from it, each of which probably incorporated 200 stones. In later times large sarsens standing in the way of agriculture were buried or broken up. That Neolithic people chose to stand them upright within meaningful arrangements is no less efficient considering the aesthetic advantages.

A final but important aspect of structural activity is the demand it made on labour resources and hence through subsistence on the environment. Whilst the long barrows were conceivably erected by groups of families in the slack month or so that follows harvest, most of the later monuments could not have been constructed without much larger inputs of full time labour. Startin estimates that the largest of the early monuments (Windmill Hill) required only a labour force of 80 people but of the later ones Avebury needed a team of 250 - 500 and Silbury had a total labour requirement eight times greater than that (Startin 1982). It is inconceivable that such colossal demands for manpower were met solely by the local populace and we must allow that an unknown number of workers were drafted in from other areas. But, if only for logistic reasons, it seems inevitable that the burden of sustaining the workforce did fall mainly on the local economy which must, at times, have been geared almost exclusively to this task.

6.2.4. Synthesis and Reconstruction

Above all, this review is concerned with reconstructing an ancient landscape and the processes that worked on it. Whilst the processes lend themselves to written description the landscape, or at least its conceived appearance, is most explicitly and objectively conveyed by pictorial methods. To provide a backcloth to the discussion Figure 50, 51 and 52 respectively represent visual concepts of how the Avebury landscape might have appeared at the end of the early, mid and late Neolithic. Encircled areas are those for which palaeoenvironmental evidence is available, the remainder of the picture is partly conjectural, and partly based on fieldwalking data (Wiltshire SMR) and observed regularities in the way land was used within the reference areas.

The Kennet valley is one of the few parts of Southern Britain where there is any demonstrable sign that Mesolithic occupation overlaps spatially and temporally with the introduction of farming (Richards 1978, 29). Because of their recognised capacity to modify their environment by forest burning and other subsistence related activities (Smith 1981, 180) it is essential to start this review of ecology in the Avebury area by considering the role played by Mesolithic people in conditioning the shape of subsequent developments.

6.2.4.1. The fourth millenium bc

Direct evidence for environmental condition at the opening of the fourth millenium bc is sparse. Pollen from a tree hole of late Boreal age at South Street shows substantially wooded conditions though associated mollusc remains do indicate some degree of local opening. For broader but less direct insights one must turn to the known distribution of Mesolithic artefact finds (source - Wiltshire SMR) as a guide to contemporary subsistence and occupation patterns. Potentially any of these findspots may have been artificially created clearings though they need not of course have been open in the fourth millenium bc. However, it is surely more than coincidence that Mesolithic occupation debris occurs on or within 200 metres of all known foci of early farming activity. (Figure 47). If permanent clearings had already been created it is logical that early farmers would exploit them.

Some of these Mesolithic occupation sites have been investigated by excavation (Ashbee et al 1979). Horslip yielded micro blades and micro blade cores and would appear to have been a sizable pre-agricultural clearing created during the mid fourth millenium bc but it was being recolonised by hazel woodland when the first evidence for farming occurs in the area. South Street is less easy to date but it too probably constitutes a site of substantial fourth millenium clearance activity - in this case creating a mosaic environment rather than a single clearing. In excavating the pre-barrow soil microliths and a Portland chert flake were found but attention should really be focussed on a spread of occupation debris at the base of the ultimate turf-line and hence deposited long after the site had been brought into agrarian use. Amongst sherds of plain carinated bowls and the bones of domestic sheep and ox was a scatter of flint knapping debris including almost three hundred waste flakes. When metrically analysed this waste assemblage was found to stem from a Late Mesolithic knapping tradition (R. W. Smith unpublished research) and not from the earlier Neolithic tradition as exemplified by assemblages from Windmill Hill (for relevant discussion and comparative data see Pitts and Jacobi 1979 and Saville 1981, 43).

Incongrous though it seems, the hint of Mesolithic participation at Horslip and South Street is matched by evidence from Beckhampton Road, where the long barrow superseded what, on the excavator's inference, may be interpreted as a fourth millenium bc totem-like structure (Ashbee et al 1979). Though the barrow belongs to the mid third milenium bc there is nothing within material from the pre-barrow soil or its primary contexts that demonstrably belongs to the Neolithic tradition. These three barrows are linked in yet another way - all are cenotaphs lacking provision for burials; they are in effect dummy long barrows. Could it be that they were built by people who had glimpsed the Neolithic lifestyle without achieving a proper understanding of its ritual character?

6.2.4.2. Earlier Neolithic (Figure 50)

There can be a little doubt that untouched climax forest, still dominated the early Neolithic scene and though sizable inroads were being made into it over a wide front it is clear that some clearances were only transitory, as at Horslip, or not obviously connected with an agrarian economy, as at Beckhampton Road.

In past research rather too much emphasis has been put on the act of clearance as if this in itself represents the initial step towards farming, which of course it does not. There are many reasons why clearance should have been undertaken and one is reminded that crop production and herd management do not inherently demand open spaces of a scale likely to be consistently detectable in the environmental record (Rowley-Conwy 1982). Rather than dwell on the circumstances of their creation it is more meaningful to focus on how these open areas were exploited for this is where the really significant differences exist.

Beckhampton Road appears to be a modest pastoral clearing, remaining so for many centuries, probably until a settlement became established on nearby Hemp Knoll. That it remained so little changed for such a long time may be explicable if the site lay across a constantly

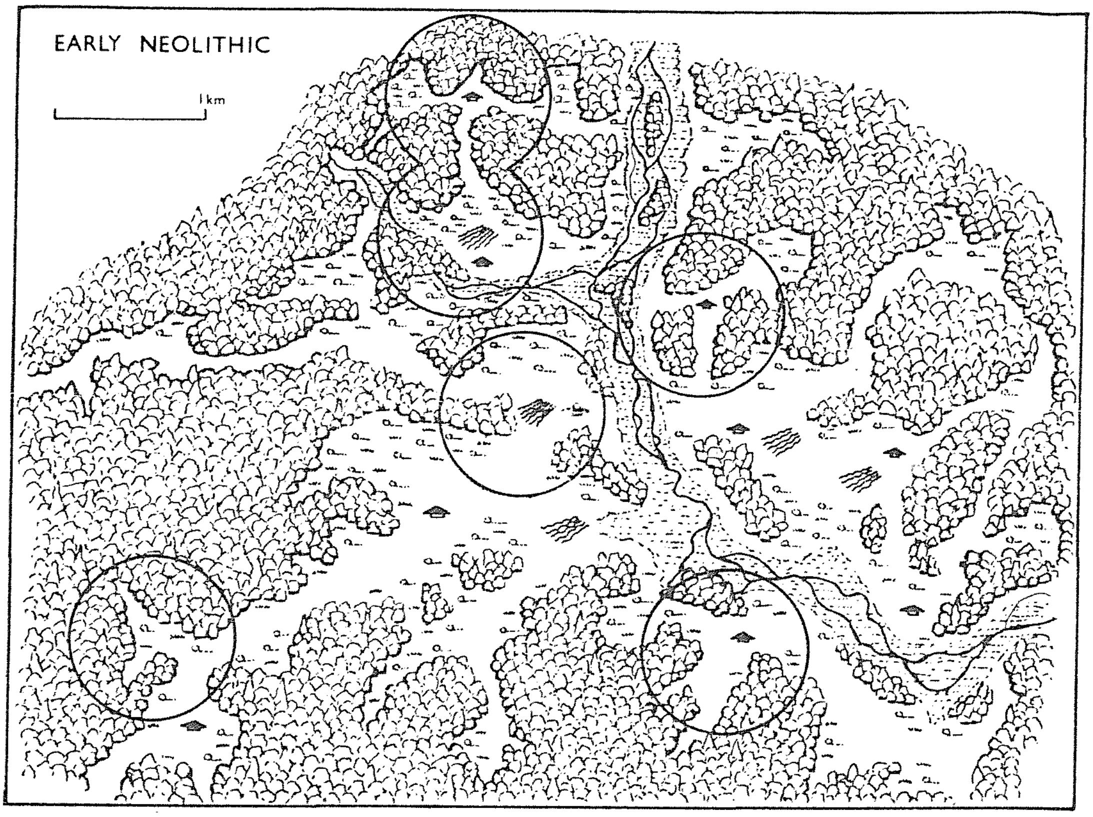


Fig. 50
Schematic reconstruction of the early neolithic landscape of the Avebury region

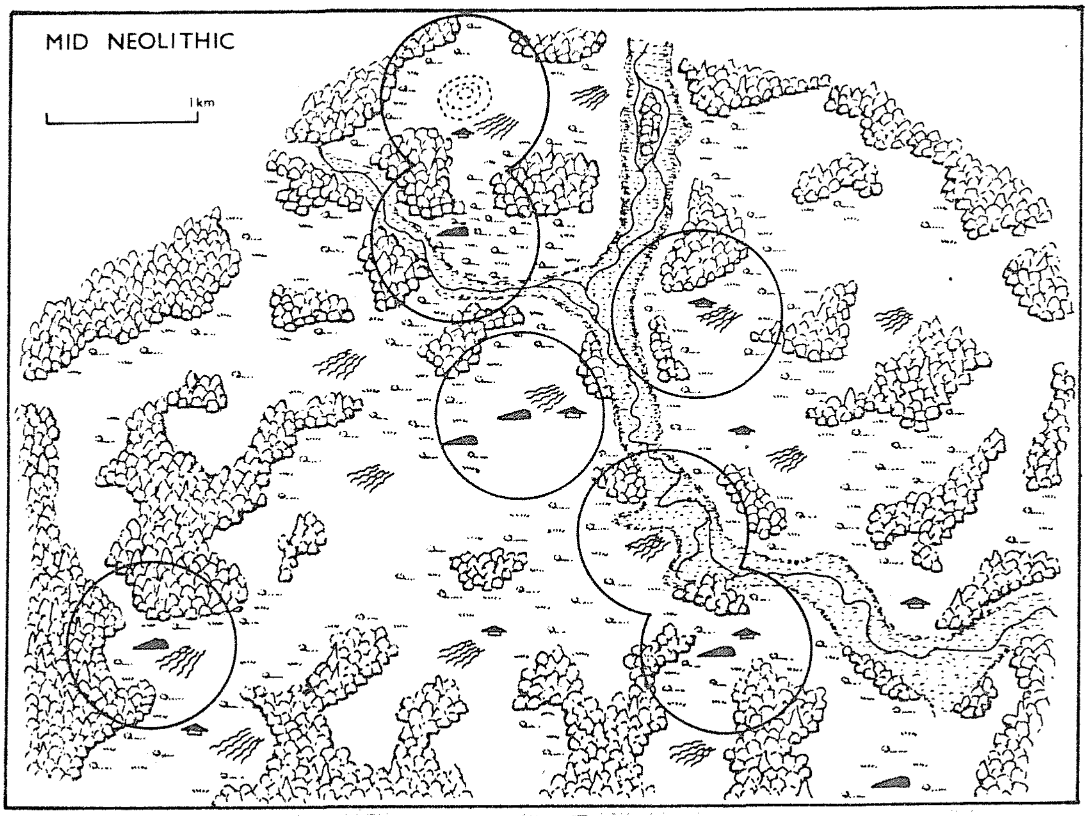


Fig. 51
Schematic reconstruction of the middle neolithic landscape of the Avebury region

used woodland track - perhaps even an important junction. Local topography is consistent with such an idea and what better location could there be for a long barrow cenotaph or the skull totems which preceded it almost a millenium earlier?

At Horslip an early (before 3240$\pm$160 bc, BM 180) but transitory episode of cereal growing may be typical of an extensive agricultural strategy in which cereals formed a type of catch crop without any serious attempt to interrupt regeneration. At South Street, however, one may envisage an area composed of numerous smallish parcels of land each experiencing alternate episodes of arable and long fallow closely tied to the maintenance of a balanced stock population. Rip ards were in use to break new land takings and stubborn old fallow. Stones were picked from the arable to be dumped on headlands and field boundaries and, to judge from the pollen evidence, what woodland remained was being managed for pannage, browse and raw materials. Despite being quite extensively exploited it was, superficially at least, a balanced ecosystem - one that had met with and adjusted to the demands of early farmers. There were, however, unwelcome repercussions stemming from the prevailing land use strategy - developments that would become more significant as time went on. Weed infestation had flared up soon after the first round of cultivation and cropping but had eventually been brought under control by careful, if tedious, husbandry. A rather more insidious problem was posed by the rate at which bracken was invading cleared areas. That it remained unchecked suggests that the knowledge required to deal with the problem was not available or that it was more expedient to clear new plots than to clean up old ones. Snail evidence certainly suggests early Neolithic sites had a rather untidy aspect and for a time when one might expect population levels to be comparatively low there is an unusually large number of sites with evidence for occupancy. The obvious inference is that settlement units were generally small and probably short lived with periodic relocation being principally influenced by mounting land management difficulties arising out of an extravagant and rather wasteful subsistence strategy.

Overall, the region exhibits considerable diversity at this time both in terms of environmental conditions and in terms of how subsistence activities were organised. In the midst of all this diversity there is however a pattern, hinted at by land use trends and confirmed by the distribution of occupation sites. The main weight of settlement and subsistence activity fell upon the valley corridor and its fringes just as it probably had in the late Mesolithic. This does not mean that the valley corridor had been extensively cleared, it had not, but the wooded landscapes of the valley were being exploited in a different way and this is the most crucial point.

6.2.4.3. Middle Neolithic (Figure 51)

A recurring issue in Neolithic ecological research is the phenomenon of mid Neolithic woodland regeneration, a development which Whittle (1978) associated with economic regression after earlier Neolithic populations had stripped out their resource base. Others have hinted that climatic and pedological deteriorations are partly to blame (e.g. Smith 1981, 206). However, pre-occupation with tracing the direction woodland margins were moving in may be something of a red herring for it is more meaningful to look at the way land was used generally than to concentrate unduly on the single aspect of woodland management.

Snail and pollen evidence both point to continued, if uneven, opening up of the region during the mid Neolithic. Selected small clearings on the periphery of the valley corridor were expanded, mainly, one suspects, to increase pastoral resources but some (Windmill Hill and Beckhampton Road) were brought into arable use for the first time. Within the valley corridor there are signs of partial regeneration at South Street and at Horslip, the latter site apparently being altogether abadoned. At the same time Avebury and Silbury take on a more open aspect and are also brought into cultivation. Thus although farming expanded outwards and upwards, pressure was relaxed on two locations within the core area, notably the only two which can be proven to have been cropped earlier for cereals.

What then lay behind these developments? The trend towards agricultural expansion runs counter to the idea of reduced population levels and although the hiatus in monument building with which it is often linked is plainly evident the reason is unlikely to be shortage of manpower to judge by the colossal effort put into Silbury when a new tradition was emerging. The upwards extension of cereal growing also suggests that the onset of wetter conditions observed in raised bog sequences and dated by Aaby (1976) to c. 2700 bc had little, if any, impact on agriculture in the free-draining chalklands of the lowland zone. If mid Neolithic regeneration is allowed to have any significance at all in the Avebury area the causative factors must fit the evidence from South Street.

Is it possible that South Street and other heavily exploited sites had suffered soil exhaustion? There are signs of soil erosion from nearby slopes but it is unlikely that fertility had declined below the level of viability. As Rowley-Conwy (1981) has persuasively argued, the most pressing problem confronting early agriculturalists was not how to maintain soil fertility but how to combat weed infestation. In this respect land recently taken from woodland is probably easier to manage than land subject to periodic arable use and fallowing. The soil seed bank in the former situation will chiefly contain plant species adapted to a transitory floruit when the canopy is not shading them out but in the latter case many of the plants are rapid and tenacious colonisers of broken soil to whom superficial disturbance is an invitation to proliferate.

South Street had been cleared at an early date and it had been progressively tidied up. Strict control of stock grazing, as suggested by the fenceline observed beneath the barrow, would have helped, with pigs acting as gross cleaners and breakers, sheep as detail cleaners and treaders of arable and both adding manure to the soil (Rowly-Conwy 1981, 95). But all these palliative measures were to a greater or lesser degree labour intensive and in the surrender of the site to a bracken invasion followed by construction of a long barrow there (2810±130 bc, BM-356) it seems its users opted to transfer their attentions to a more easily managed part of the local landscape. Traces of vigorous tillage of the type that brought South Street into

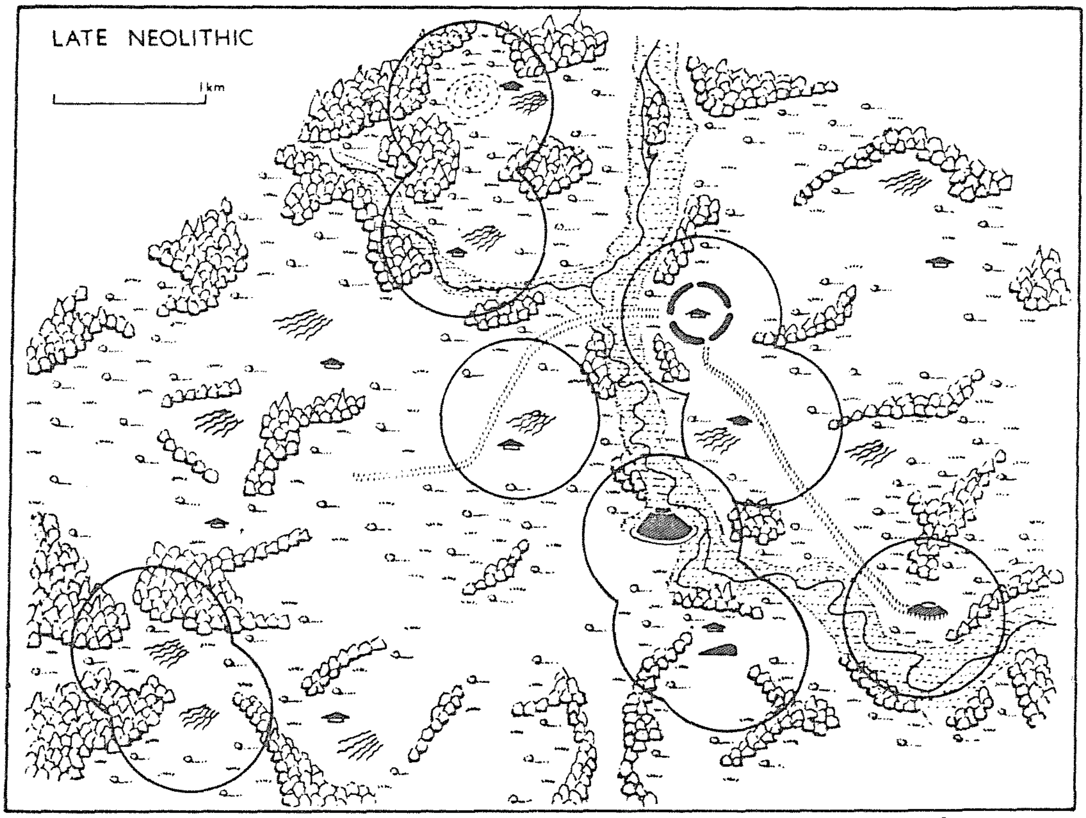


Fig. 52
Schematic reconstruction of the late neolithic landscape of the Avebury region

arable use have tentatively been recorded in mid Neolithic contexts at the neighbouring sites of Avebury and Silbury showing that valley farming remained labour intensive. Although cereal pollen is recorded at peripheral sites such as Windmill Hill and Beckhampton Road, evidence for careful ground preparation is lacking, as if there was never any real intention to keep the land in arable use.

This perhaps epitomises the character of mid Neolithic subsistence and ecology in the area. Of the plethora of relatively small scale clearances that had been established earlier in the period those that had been controlled by grazing lent themselves to further expansion which in some cases involved taking one or two crops off the land. Those that had endured repeated cropping in earlier times were, because of weed infestation and invasion of bracken and scrub, becoming difficult to manage and pressure on them relented to be re-exerted on neighbouring plots of valley land. Viewed overall the approach to resource exploitation is in many respects reminiscent of an infield - outfield system because although farming had been extended beyond earlier limits the settlement pattern appears to have contracted into those areas which experience had shown were most favourable.

6.2.4.4. Late Neolithic (Figure 52)

Late Neolithic pollen assemblages clearly indicate a paucity of woodland yet many cleared areas were, to judge by the upsurge in bracken, hazel and thornscrub, being poorly maintained. South Street is in this respect exceptional - wild fauna and pigs are absent, sheep rearing increased, the rip ard was again in use (late in the period) and its overall environmental character speaks of close management. Elsewhere, subsistence had generally gone into an extensive mode geared to the more difficult secondary environments. Cultivation apparently played little or no part; pigs replaced sheep, sometimes totally, and wild game were freely and perhaps indiscriminately taken. Relaxed grazing pressure may have had some influence on the spread of scrub for it was the task of cattle to check regrowth.

One may note that the turf used in Silbury's construction had been cut from prime valley pasture yet it was only moderately grazed. Bracken infestations would, of course, have deterred cattle and fouled the land for agrarian use. The rising importance of pig could therefore be seen as a measure designed to reclaim this fouled land. One may also note that pigs were most common in the late Neolithic ceremonial complex centred on Avebury, West Kennet and the Sanctuary. The logic of building new monuments on low grade land should not be overlooked but pig keeping offered other advantages to monument builders.

The construction of the massive new monuments must have imposed an awesome burden on the local economy that could only have been met by storing food resources against the eventual demand. Grain and cattle are storable commodities but there is scant evidence for cereal growing and quality beef or dairy herds would take generations to recover from sudden decimation, with dire consequences for those who depended on them. Pigs on the other hand are, by virtue of their short reproductive cycle and large litter size, prolific sources of protein and fat (Grigson 1982). They were ideally suited both to the prevailing environment and to the heavy culling rates necessary to support the temporary population explosions associated with construction and use of the monuments.

The late Neolithic was undeniably a time of dramatic social development. That the economy was able to support it is ample testimony to the success of economic adaptation to what was manifestly a difficult farming environment.

6.2.5. Conclusions

1. Within the study area it is frequently impossible to be sure whether one is dealing with Mesolithic or Neolithic activity. The fault lies not with the evidence, which is as good as could reasonably be expected, but with the convention which insists it should belong to one tradition or the other. In the writer's mind there is no doubt

that transitional forms of socio-economic behaviour genuinely existed in the Avebury area.

2. Piggott's (1954, 18) picture of Neolithic valleys as oak-tangled undrained morasses must now be finally put aside. As Whittle (1977, 25) and others have hinted, and as can now be seen in the Avebury study, valley land was preferred both for agriculture and settlement from the outset. The lack of field research undertaken in chalkland valleys elsewhere makes it difficult to confirm whether this was generally so but it does at least help to explain the elusive nature of Neolithic settlement evidence.

3. Any residual doubts about the growth of bracken in the Neolithic chalklands should now have been dispelled. The plant occurs wherever it has been looked for in the Avebury area and to allow that it was imported would be to countenance bulk transport of the wretched weed over the minimum distances of 5km throughout the Neolithic. With its capacity to overwhelm arable and taint pasture it was a powerful influence on the way land could be used.

4. Neolithic farming systems were highly adaptable, as indeed they needed to be. It was perhaps inevitable that each generation of farmers would, through their efforts to divert the ecosystem out of its natural trajectory, unwittingly create problems for the next. The Neolithic in the Avebury area is a sequence of interactive adaptations and responses between man and his environment. It was only towards the end of the period that the threshold which finally gave farmers the advantage, was crossed. But the study has also shown that within this overall sequence widely different subsistence strategies co-existed. If South Street is typical of infield areas, these were farmed in an uncompromising manner; it was in the outfields that a flexible approach to the land was practised.

6.3. The Kennet Valley (Figure 53)

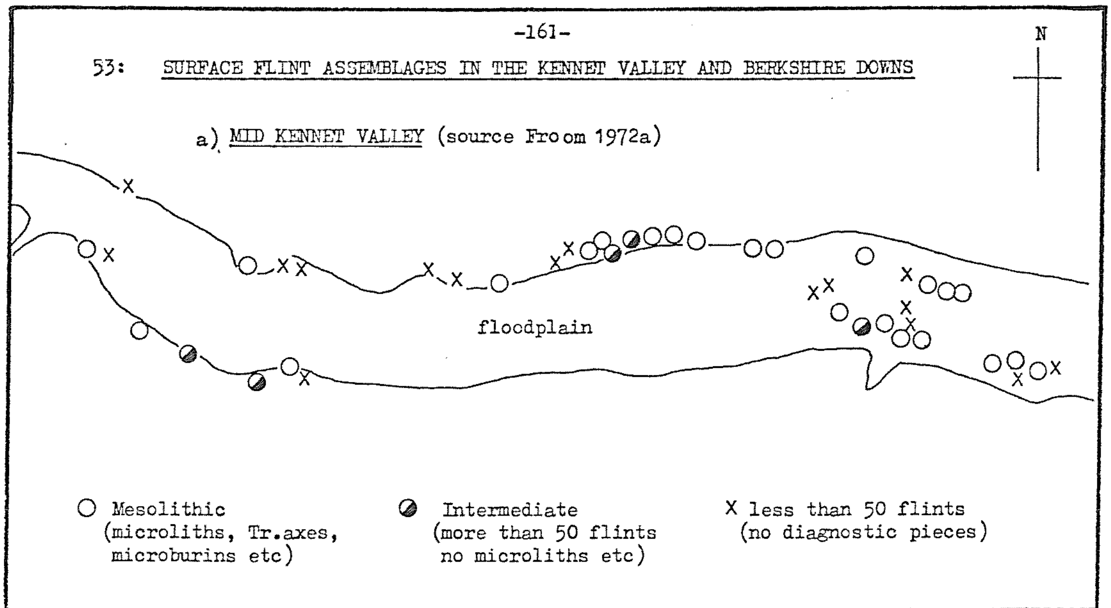
The Avebury study highlighted two points which should be looked for elsewhere. One is the preferential settlement and exploitation of valleys and the second is the case for allowing that there is a form of socio - economic behaviour intermediate between what is conventionally regarded as Mesolithic and Neolithic. In extending the review down the Kennet valley we must turn to the field research of Froom (1972a) and Richards (1978). Froom's paramount concern was Mesolithic settlement of the Middle Kennet, his study being based on surface collection augmented by excavation of selected flint scatters. Within Wawcott Parish three of the excavated settlements have occupation sequences extending well into the fourth millenium bc. Wawcott XXIII and Wawcott I have yielded dates of 3910 ± 113 bc (BM 826) and 3310 ± 130 bc (BM 449) respectively, neither appearing to refer to the end of occupation. Wawcott III, a very long lived settlement, has given a date of 4170 ± 134 bc (BM 767) for a point approximately mid way through its occupation (Froom 1976, 160 - 1). Collectively, the evidence from these three sites point to an apparently Mesolithic adaptation prevailing in the middle Kennet valley during and after the establishment of farming elsewhere in the area. One may note that sheep and cereals were in use at Horslip, in the headwater area of Kennet, before 3240 ± 150 bc (BM 180) and that the Lambourne long barrow had been built in the Lambourne headwater area at circa 3415 ± 180 bc (GX 1178) (Wymer 1966).

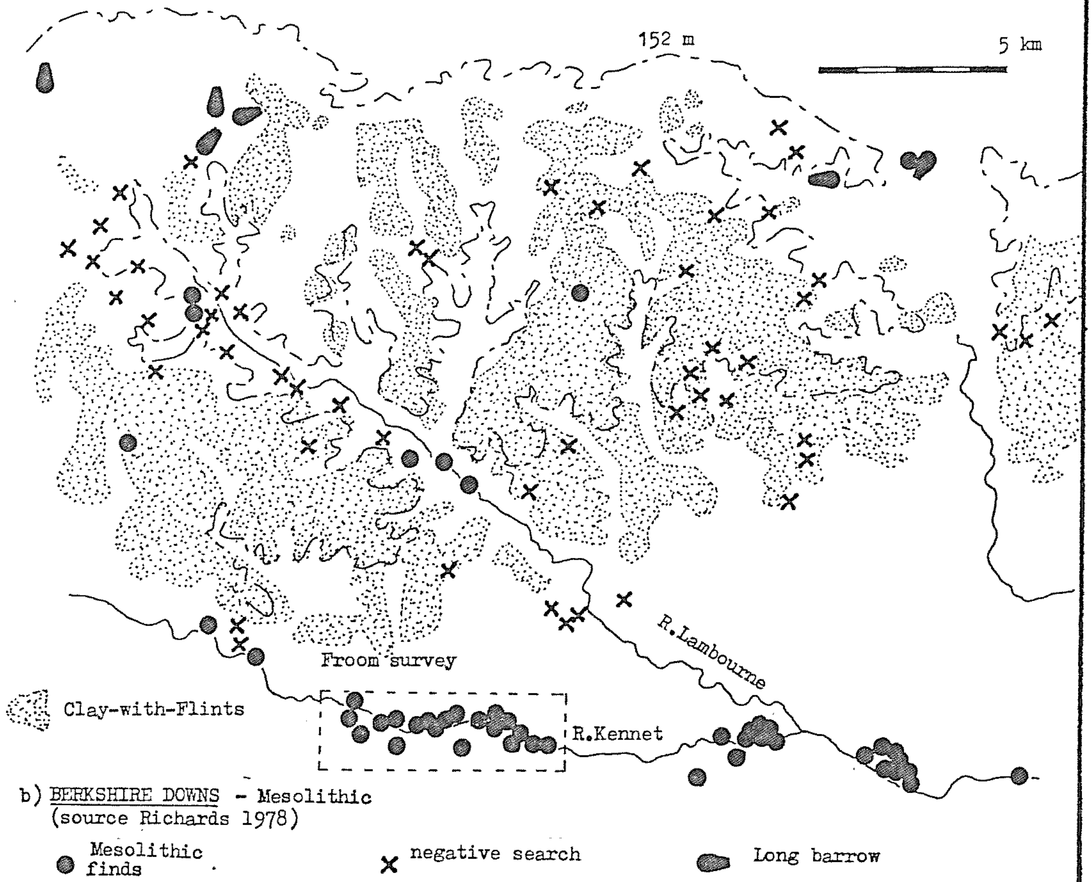
Though one could wish that more than one radio carbon determination was available for the individual sites in question there seems no reason to doubt the overall picture of socio - economic overlap they convey. The inferred situation is that farming and monument building was largely restricted to the headwater areas of the Kennet and its tributaries, whilst gathering, fishing and hunting predominated in the wider middle reaches of the valleys. Within the concept of two different economic strategies co-existing in the one valley system it is perhaps to be expected that farming would develope initially in areas that were of marginal economic potential to gatherer - hunters.

To investigate this situation further survey evidence published by Froom (1972a) and Richards (1978) was re-examined to see if there were any hints as to how the two adaptations interfaced. A particular concern was to establish whether the evidence supported the idea of 'Intermediate' occupation sites as identified in the Avebury case study (6.2 above). Froom's (1972a) data, it will be recalled, are based on surface collection yet he seems not to have seriously

53: SURFACE FLINT ASSEMBLAGES IN THE KENNET VALLEY AND BERKSHIRE DOWNS

a) MID KENNET VALLEY (source Froom 1972a)





b) BERKSHIRE DOWNS - Mesolithic
(source Richards 1978)

considered the possibility that the scatters he analysed were anything but Mesolithic. Many of the assemblages are undoubtedly dominated by typically Mesolithic material but there are some which contain none (assemblages referenced in Gazeteer section of Froom 1972a and detailed in Wymer 1977). In Figure 53a Froom's original data have been re-analysed according to the following convention:-

Mesolithic - assemblages of 50+ flints containing microliths, tranchat axes, axe sharpening flakes, microburins etc.

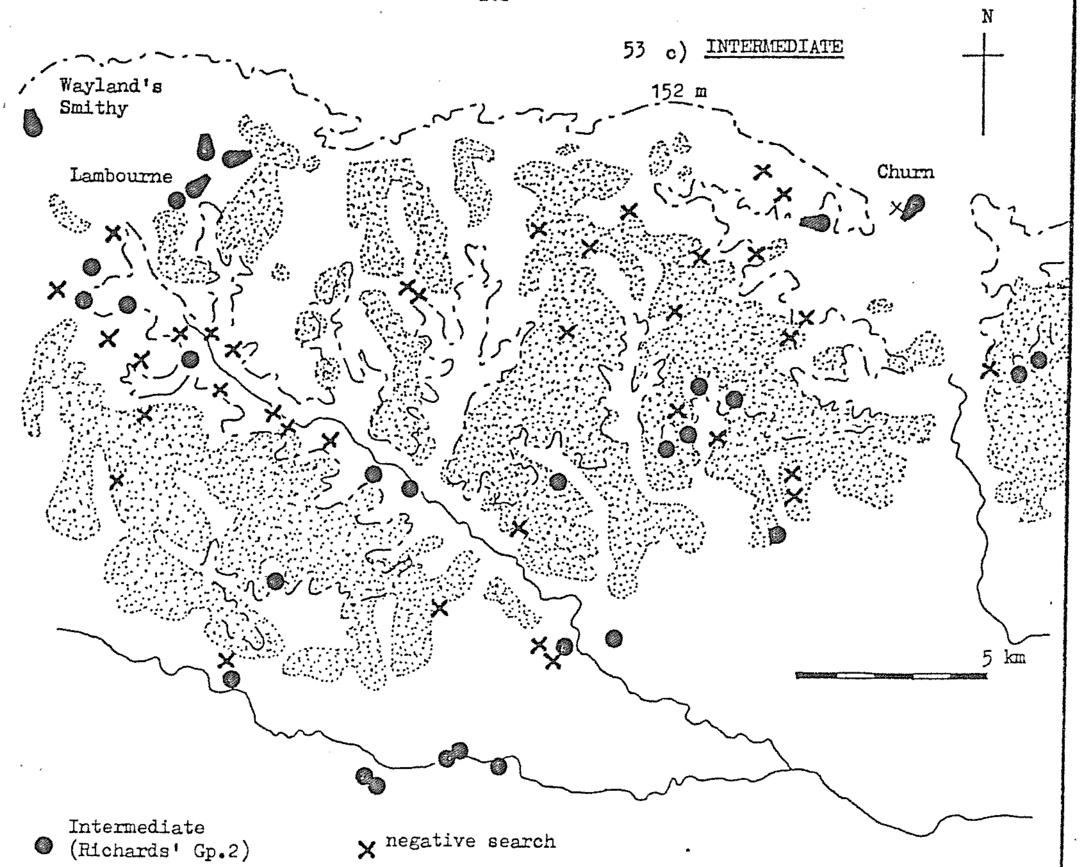
Intermediate - assemblages of 50+ flints lacking any of the above items.

Indeterminate - assemblages of less than 50 flints containing no diagnostic pieces.

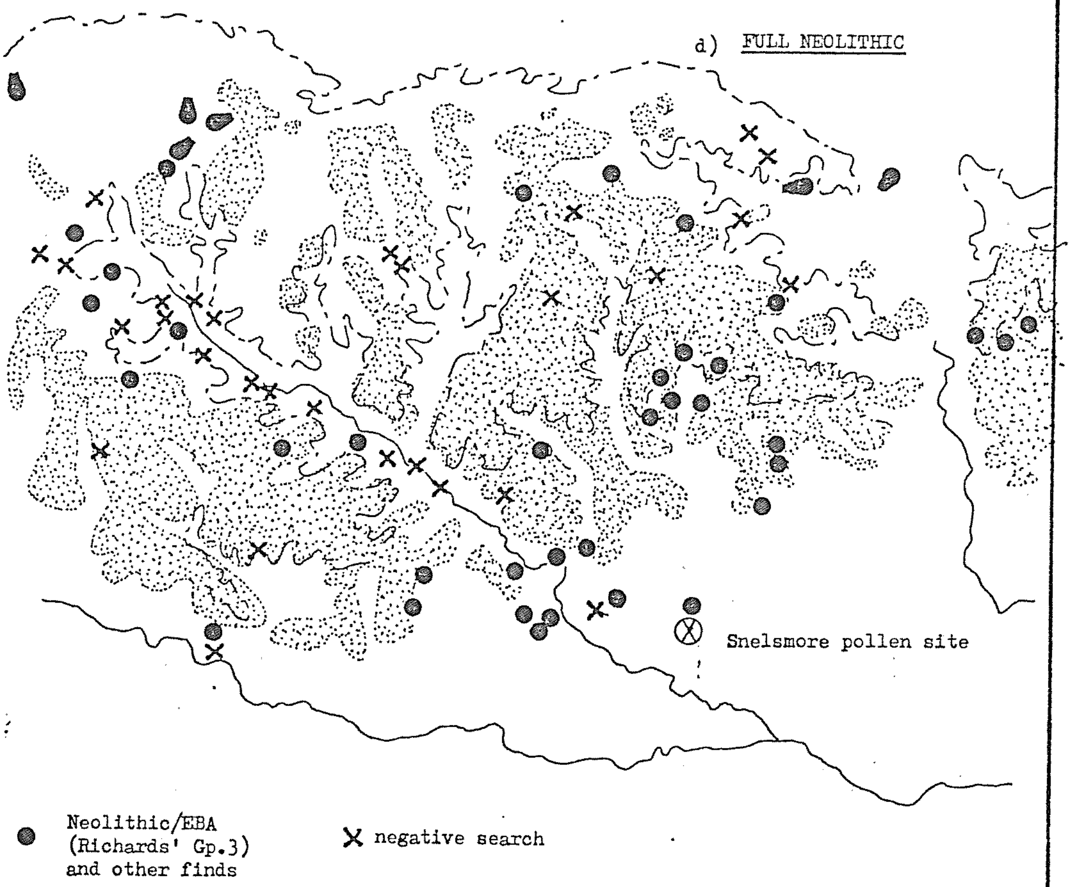
Whist some significance may attach to the general lack of demonstrably Neolithic material within these assemblages the number of sites which fall into an Intermediate category suggests one is not dealing with a strict industrial dichotomy and there is in any case a reworked polished axe fragment reported from the 'Mesolithic' site of Wawcott IV (Froom 1972a, 15).

Richard's (1978) survey of the Berkshire Downs incorporates previously reported finds of Mesolithic and Neolithic artefacts but it is primarily based on the results of his own systematic surface collection project. In analysing the flint scatters he recorded Richards devised a novel classificatory scheme based on recognised evolutionary trends in lithic technology (see Pitts and Jacobi 1979). Four broad groups of lithic material are defined (Richards 1978, Table 3). Group 1 assemblages, identified as Mesolithic, contain microliths etc and a predominance of blades and blade cores. Group 2 assigned to the early Neolithic by Richards, but to the Intermediate category in this review, contain a "large proportion of narrow flakes", whereas in Group 3 (late Neolithic/early Bronze Age) flakes are more broad and squat. The re-labelling of Group 2 assemblages is not just an expedient it is justified by the minimal metrical differences that exist between late Mesolithic and early Neolithic debitage. Indeed, Pitts and Jacobi (1979) noted, with regard to debitage, - "Cluster analysis does not separate out the Mesolithic and Neolithic groups, instead pointing to a main class of site of both periods with

53 c) INTERMEDIATE



d) FULL NEOLITHIC



exceptional outliers". Tool elements ought to provide a means of discriminating Mesolithic from Neolithic but they occur too infrequently in surface scatters to be a useful guide and may in any case be more indicative of how a site was used than of who was using it.

Drawing mainly on Richards' field data Figure 53 portrays a tolerably clear picture of how the Kennet Valley and Berkshire Downs were exploited in earlier prehistory. Though the Mesolithic pattern is skewed by Froom's intensive field work in the Wawcott area there is still a distinct concentration along the gravel terraces of the middle Kennet and to a lesser extent along the tributary Lambourne. Only three find spots occur beyond the valley corridor - one alongside the Churn long barrow, two at the edge of Clay - with - Flints outcrops. London Clay and Reading Beds appear to have been avoided and to judge by the number of negative searches there, so too was a substantial part of the upper Lambourne valley.

Intermediate sites overlap with the Mesolithic pattern but they are also found in new areas, noteably the head of the Lambourne valley and the upper ends of its tributary streams especially in the vicinity of edge deposits of Clay - with - Flints. As Richards himself notes, these particular assemblages probably mark industrial rather than domestic activity but there is no reason to doubt that those retrieved from the floor of the Kennet and Lambourne valleys are associated with settlement. Exploitation of the higher downland appears not to have occured where Clay - with - Flints outcrops form almost continuous expanses. Indeed, the only tangible signs of late Mesolithic/ early Neolithic activity above an altitude of 152m are the long barrows clustering on Upper Chalk at the head of the Lambourne valley and it is clear that they are peripheral to the main settlement areas.

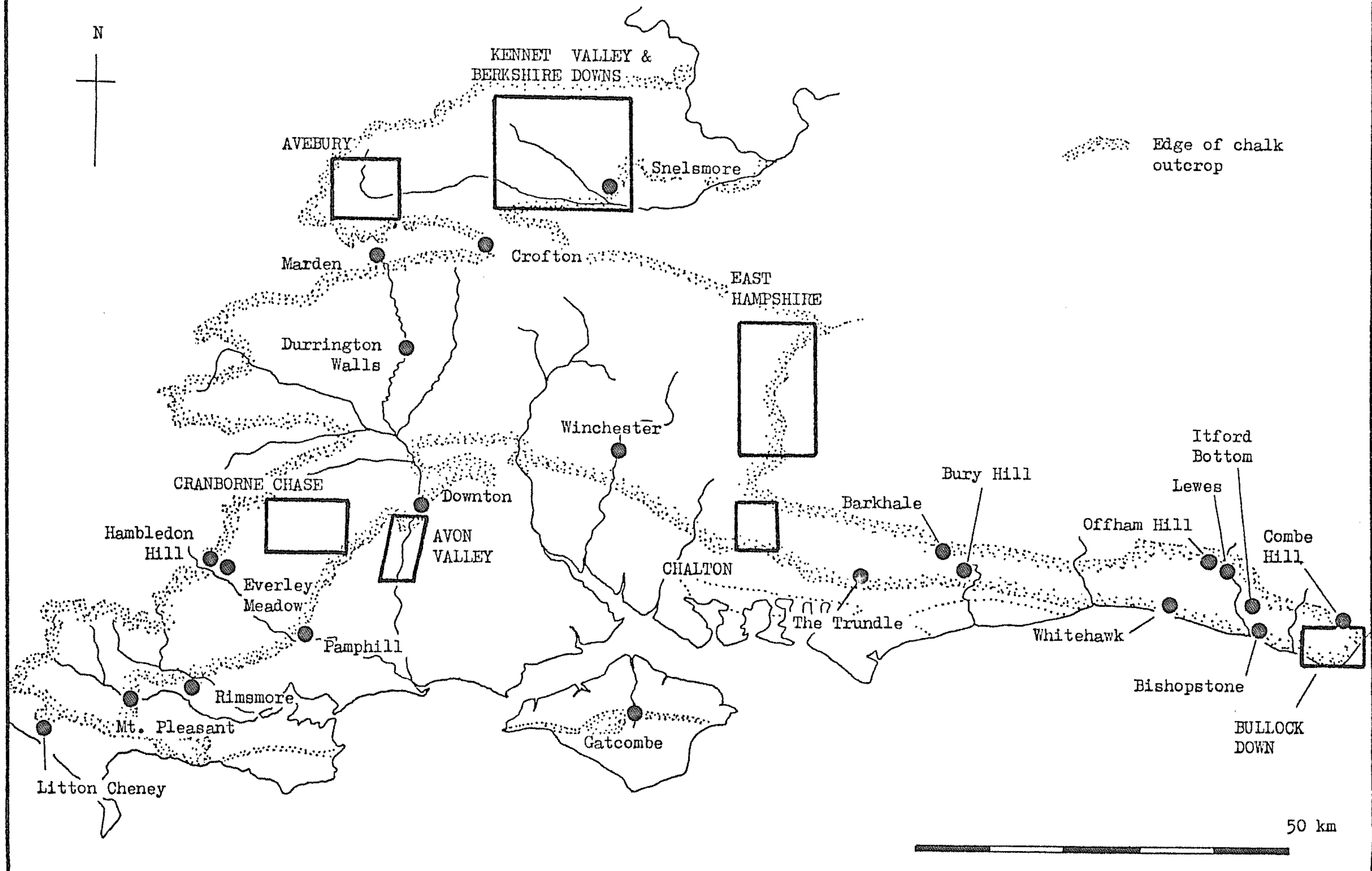
Fully Neolithic and early Bronze Age (Group 3) sites are markedly more numerous (if Froom's intensive study area is discounted) and generally follow the earlier pattern but for the first time there is a significant level of activity in the higher downland. But, as before, Eocene days did not evidently attract exploitation. This conclusion drawn from Richards' survey is reinforced by Waton's (1982) palynological research based on sampling of a small peat bog in Eocene deposits at Snelsmore (SU 463704). The elm decline was only poorly defined and was followed soon afterwards by virtually complete regeneration with minimal subsequent disturbance of the forest cover until 620$\pm$90 bc (HAR - 4241).

In summarising the evidence from the middle Kennet valley several important observations may be made. Firstly, there is substantial, if not preferential, Neolithic settlement and exploitation of tributary valleys and lower downland. The main valley floor presently appears to have supported a continuation of a Mesolithic lifestyle throughout the fourth millenium bc. But it is not impossible, since one is dealing almost exclusively with lithic data, that the dichotomy between the Lambourne and Kennet valleys reflects two different modes of subsistence rather than two different communities. Only when the Kennet gravels have been surveyed in the same objective manner as Richards surveyed the Lambourne gravels will the issue be resolved. Secondly, the earlier Neolithic long barrows are distinctively clustered beyond settlement areas. Yet, surprisingly, they seem to have built in a substantially open environment (Bradley and Ellison 1975, 177) which at the site of Wayland's Smithy had witnessed cultivation (Dimbleby and Evans 1974, 128). One may therefore infer that the early Neolithic subsistence operations had an extensive mode which led to clearance and cropping at some considerable distance from their more permanent settlement areas. Finally, it has been observed that clayey drift deposits (Clay - with Flints, Reading Beds, London Clay), when present in extensive and near continuous outcrops, were largely avoided by both Mesolithic and Neolithic communities. If this was a general phenomenon, careful study of the distribution of such deposits in chalkland Wessex may help to explain how subsistence patterns evolved.

6.4. The Regional Perspective (Figure 54)

Though not as detailed as data from the Kennet Valley important evidence has been retrieved from other valleys of chalkland Wessex and the foregoing studies provide a new perspective from which to view it.

54: THE NEOLITHIC IN THE WESSEX CHALKLANDS: Location of reference sites and survey areas



6.4.1. The Dun Valley (N. E. Wilts)

The river Dun flows through Great and Little Bedwyn before joining the Kennet at Hungerford. Its valley is narrow, steep sided and not obviously of any great significance. But, it does provide the only easily negotiated through-route between the Vale of Pewsey and the Kennet Valley. The importance of this connection is underlined by the routing of several major railway lines and the Kennet and Avon Canal through it. That it was also important in prehistoric is demonstrated by the recently discovered Crofton causewayed enclosure (Palmer 1978) located at its south western end where the valley breaks out into the Vale of Pewsey. Reference to local topography shows that this massive enclosure (at 600m diameter, the largest of its type yet recorded) was built across a natural 'bottleneck', such that all movement up and down the valley had to pass through it. Until the site is more fully investigated further speculation about its role is unwarranted but it does at least serve to indicate that chalkland causewayed enclosures were not restricted to higher downland settings. Since it now has been ploughed beyond recognition as an earthwork and was only discovered as a cropmark in the freak drought conditions of 1976 one wonders how many other similarly unobtrusive Neolithic enclosures await detection in chalkland valleys.

6.4.2. The Avon Valley (Wilts and Hants)

Of the pitifully few major excavations mounted in the floors of chalkland valleys, and conducted to modern standards, three are set in the Avon valley. It may therefore be judged significant that all three revealed a substantial level of Neolithic activity. The northernmost site is the huge Class II henge at Marden which occupies a somewhat marshy expanse of calcareous drift bordering one of the Avon's upper tributaries (Wainwright 1971). Excavations took in only a fraction of the enclosure but they were sufficient to show that after witnessing some form of Mesolithic activity the site had been settled by early to mid Neolithic times. Traces of this occupation survived only where protected from later ploughing by the henge bank. They consisted of a discrete layer of struck flints, plain Windmill Hill potsherds and charcoal to which a date of 2654±59 bc (BM 560) refers.

Evans concluded that clearance was for pastoral rather than agricultural purposes and there is no indication that the site was tilled at all during the Neolithic, as would perhaps be expected given its floodplain setting. The river meadow environment was maintained down to the time of henge construction (1988±48 bc, BM 557). Associated faunal assemblages contain an overwhelming predominance of pig and cattle not all of which were evidently of domestic form.

The sequence at Durrington Walls, a comparable enclosure built on the west bank of the Avon 16km downstream from Marden is rather better documented (Figures 55 - 58). Environmental analysis shows progressive clearance of the valley during the mid Neolithic when cultivation was also taking place. But, as happened in the Avebury area (see Chapter 6.2) the sequel to tillage was a progressive spread of bracken - the trend not being reversed until just before the henge was built (1977±90 bc, BM 398). Since pig remains account for two thirds of the contemporary faunal remains there can be little doubt that here too they were responsible for this reversal.

Traces of the settlements associated with mid Neolithic exploitation of the area have only been recorded where protected by either the henge bank or colluvium which accumulated in the floor of the valley. Since all such contents yielded, on investigation, evidence of occupation one may infer an intense level of settlement activity. Ebbsfleet ware and charcoal dated to 2635±70 bc (Gro 901) was found beneath the south bank and colluvially protected features in the valley floor yielded Mortlake and Windmill Hill pottery and charcoal (2320±95 bc, NPL-192). But the most impressive evidence came from beneath the northern henge bank where an extensive and dense scatter of Windmill Hill pottery, struck flint, animal bone and charcoal (2450±150 bc, NPL-191) appears to be associated with scoops and a substantial post built structure, possibly a house. The spread of the radiocarbon dates and the ceramic sequence both point to continuous occupation of the site throughout the later third millenium bc.

B & S 52	:	Booth and Stone 1952
C 29	:	Cunnington 1929
F 18	:	Farrer 1918
S 49	:	Stone 1949
S P & B 54	:	Stone, Piggott and Booth 1954
W 71	:	Wainwright 1971
W & L 71	:	Wainwright and Longworth 1971

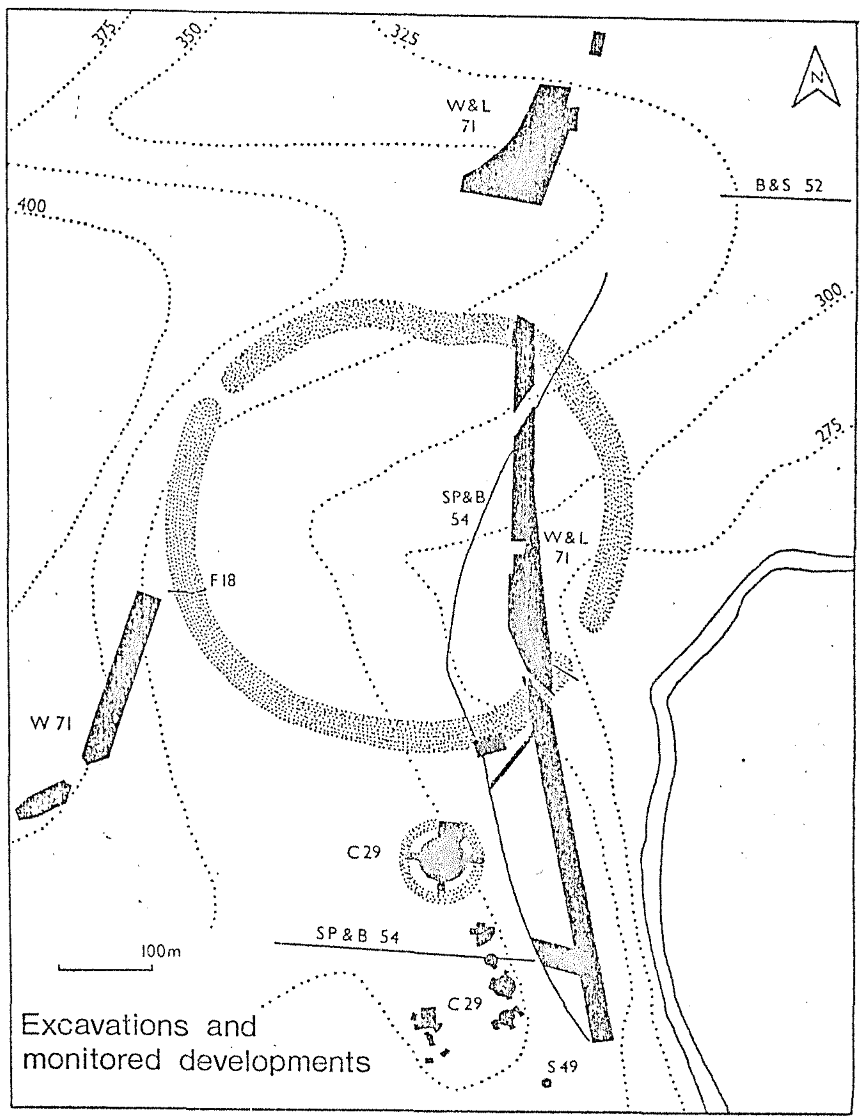


Figure 55 ; DURRINGTON WALLS
- the research framework

Figure 56: DURRINGTON WALLS - Pre Henge Activity

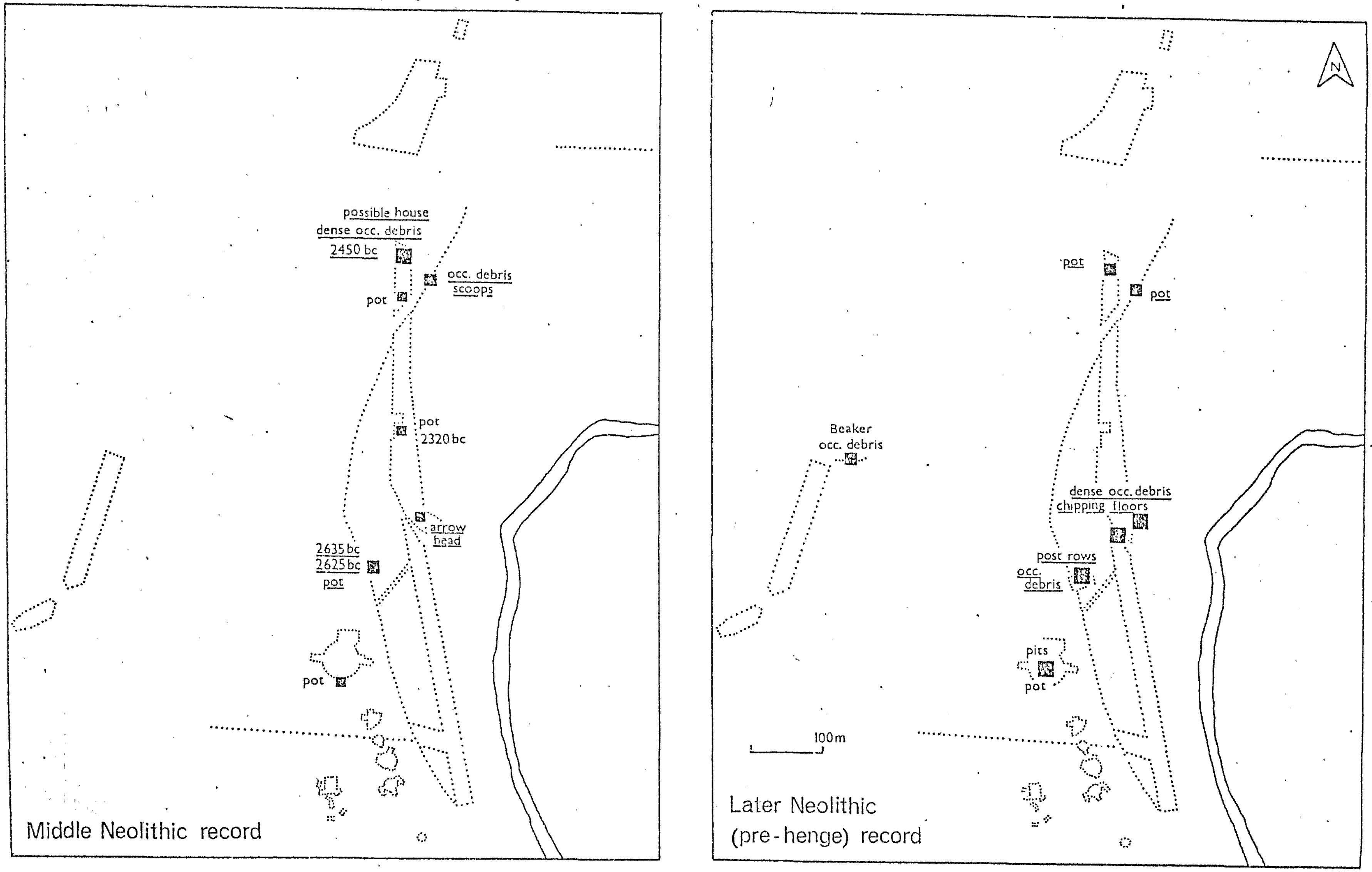


Figure 57: DURRINGTON WALLS - the Late Neolithic Henge Phase

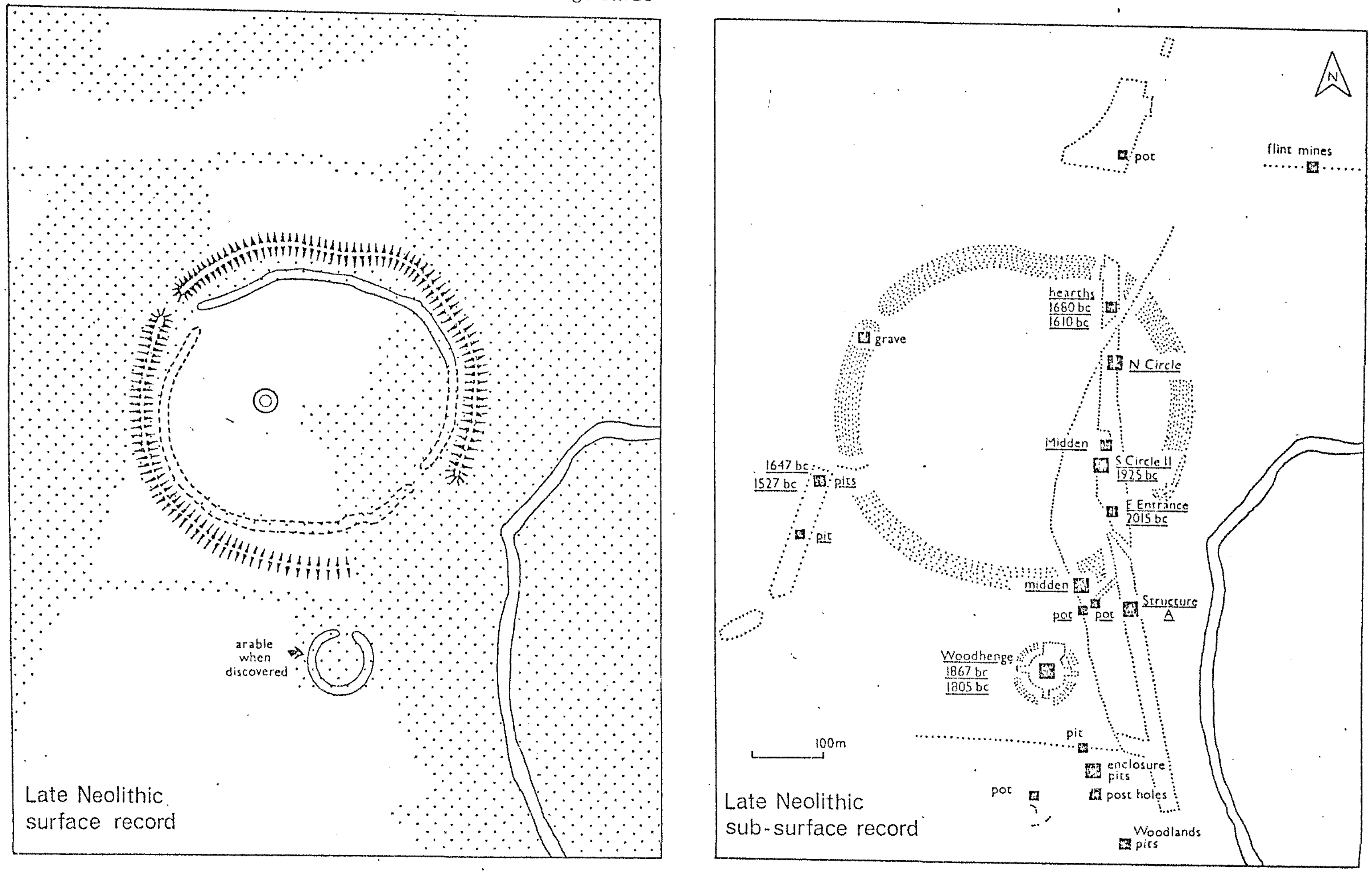
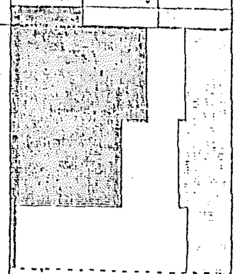
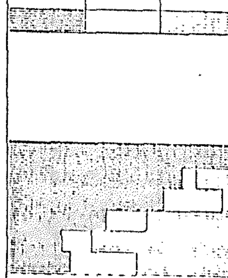


Figure 58: DURRINGTON WALLS - the Ecological Record

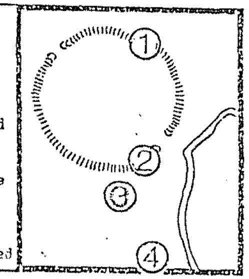
MOLLUSCA (DW II): Shade loving | Open Country | Other



POLLEN (DW II): Trees Shrubs | Herbs Grass | Bracken Ferns



Period	Date		Recorded arboreal species: Hazel	Oak	Lime	Birch	Pine	Buckthorn	Willow	SOILS Buried surfaces and ditch fills: 1	2
PRE HENGE		Climax woodland	X	X	X	X	X	X		cleared? arable occupied	cleared arable
	2635bc	Small clearances, cultivation and settlement by 2450bc	X	X	X	X			X		pasture
		Valley substantially cleared, Bracken and fern peak	X			X	X				
		Some local regeneration?	X	X		X	X				
			X				X				
	2015bc		X	X							occupied



Period	Date	New data sources	CHARCOALS: Structure	Refuse & Hearths	FAUNAL REMAINS: Cattle	Sheep	Pig	Wild fauna	Soils 1	2	3	4
HENGE FLORUIT	2015bc	Durrington Walls built		oak, hazel ash, beech hawthorn	common	rare	predominant	Red deer, Aurochs, Roe deer Fox, Beaver, Pine marten Badger	occupied	occupied	pasture	occupied
	1950bc	Southern Circle phase II	oak									
	1930bc	Woodhenge/Woodlands pits		oak hawthorn	predominant	rare	common	Red & Roe deer, Aurochs Fox, Weasel, Rat, Mole, Vole				
	1647bc	Plantation pits		oak, hazel hawthorn	common	rare	predominant	Red deer, Vole	arable?			pasture
	1610bc	Beaker hearths										
BRONZE AGE		Deverel-Rimbury settlement south of Durrington Walls			?	predominant	?	?	pasture	arable	pasture	occupied
IRON AGE		Plantation pits Packway enclosure Settlement established inside Durrington Walls (long term)			common	common	rare	Red deer	arable pasture arable	? arable	pasture	arable arable
ROMAN		Plantation settlement starts in 2nd century? Main occupation in late 3rd and 4th centuries			common	predominant	rare	Red deer	pasture arable	? arable	arable pasture	arable

The henge phases at Marden and Durrington Walls are sufficiently well publicised to make detailed discussion unnecessary other than to stress that the absorbing social and ceremonial character of these late Neolithic monuments has tended to obscure the fact that they were were built over anciently established settlements and farmland. Without losing sight of their influential roles in late Neolithic Wessex and the importance of the Avon as a connective link we should also be considering how the early to middle Neolithic settlements at these two valley locations relate to the causewayed enclosures and long barrows in neighbouring downland.

The third excavation site to be considered is Castle Meadow, Downton (Higgs 1959, Rahtz 1962). The reports refer to a sequence of late Mesolithic, mid Neolithic and Beaker activity identified in trial trenching a gravel spur projecting into the mid Avon floodplain from its east bank. Mesolithic evidence amounts to long term, semi-permanent occupation which the excavator suggests overlaps with the local estblishment of farming. Though well above the level of the present floodplain it is clear from retrospective study of the stratigraphy, that the habitation site was, in its later stages of tenancy, experiencing periodic flooding - as marked by redeposition of reddish alluvial silt apparently containing a substantial loessic element. It is tempting to equate the change in local conditions with a rise in water table and surface erosion consequent on forest clearance (a comparable sequence is reported at Everley Water Meadow in Dorset - see Appendix I).

One would expect settlement to move to a higher point on the spur and this is indeed the case. Middle and late Neolithic occupation debris is scattered over an area of circa 2000 m^2 which is on average 4 - 5m above the abandoned late Mesolithic site. Even here though flooding continued to be a problem and it is preferable therefore to see the evidence as relating to activity on the lower edge of a habitation area located yet higher on the spur, beyond the area excavated. As such there are horizontally separated Ebbsfleet and Mortlake associated scatters, containing pits and utilised hollows. But, stratified above them, on a gravelly surface which appears to mark a cessation of flooding, traces were found of a post built structure, hearth and other features yielding both coarse and fine-ware B. Beaker pottery. As noted in the report Beaker domestic sites are rarely encountered.

The evidence provided by excavation at Downton has two particular points of significance. Firstly, it reveals the magnitude of ecological change in valley floors consequent upon the first large scale forest clearances. Early alluviation seems to have involved redeposition of mainly clayey/gravelly deposits such as might occur through clearance, erosion and reworking of the terrace. But, sometime before the mid Neolithic occupation phase the erosion product changed to a fine buff coloured sandy silt reflecting perhaps clearance of distant chalk and Eocene edge outcrops upstream. Against this background the formerly stable pattern of braids and seasonally active storm channels separated by gravel dunes seems to have been totally replaced by a marshy, unstable meander belt. Flood levels rose by as much as 5m and a substantial proportion of the area available for settlement on the terrace was lost. Even towards the top of the spur 20m or more of buff alluvium separates the original turf cover on the site and the Beaker settlement established after Neolithic flooding had passed its high water mark (see Rahtz 1962, Figure 8).

The second point of special interest is that the excavations provide a virtually unique window onto the settlement history of gravel terraces in chalkland valleys. It should be stressed that, superficially, there was nothing to commend excavation of the site apart from the prospect of recording outbuildings associated with a previously known Roman villa. It was only when exploratory trenches cut into pre-Roman levels that the full potential was recognised. With two phases of Mesolithic settlement and three of Neolithic date the Downton sequence apppeared to be somewhat exceptional but thanks to the survey work of the Avon Valley Research Group it can no be seen to be typical. In a programme of systematic fieldwalking between Downton and Fordingbridge AVRG have recorded flint scatters in every field so far searched. Analysis of these scatters, with reference to flint densities and tool/waste ratios, indicates that Mesolithic and Neolithic settlements, as opposed to other activity

Research in the upper reaches of the chalkland Stour is dominated by Mercers' (1980) exploration of the Hambledon Hill landscape, the details of which need not be recounted here other than to note Mercers' conclusion (pers comm) that the pupulations who developed and utilised the hilltop complex were mainly visitors resident in the vales and valleys beyond it. Taylor (1970) drawing on his extensive fieldwork experience in Dorset came to a similar conclusion - "Neolithic people were living for part of their lives at least in the river valleys of the county, in a terrain very similar to their Mesolithic predecessors". This was because, at the time he wrote, three of the four confirmed settlements (beyond the monuments themselves) had been found in relatively low lying areas. Pamphill was of course one of these.

Stemming from Mercers' study of Hambledon Hill the author has recently undertaken a survey of the surrounding valleys culminating in excavations at Everley Water Meadow - a site located on an upper tributary of the Stour, the river Iwerne. These excavations are reported at Appendix I. They focussed particularly on the archaelogical and sedimentary sequence observed in buried palaeochannels within the Iwerne floodplain. The sequence shows regular, small scale burning of Upper Greensand woodland in the upstream catchment followed by a much more extensive burning/clearance episode encompassing both Upper Greensand and chalk slopes flanking the valley. The associated erosion deposits are stratigraphically earlier than a surface which yielded a petit tranchet derivative arrowhead in pristine condition. The clearance episode is therefore judged to be of Neolithic age and a date earlier in the period is perhaps most likely though this has yet to be confirmed by awaited radiocarbon determinations.

Before leaving the Stour Valley mention should perhaps be made firstly of the Knowlton ceremonial complex which clusters at the head of the Allen valley (a tributary of the Stour) and secondly the recently published results of a fieldwalking survey on Cranborne Chase (Barrett et al 1981). Though they have yet to be excavated three of the Knowlton Circles have been positively identified as late Neolithic henges (RCHM 1975, 113). Appreciably smaller than the foci, are distinctively arranged along the higher back edges of the gravel terraces especially where they are traversed by tributary streams. In this respect the locational preferences exhibited at Downton are paralleled throughout the explored part of the mid Avon valley (see Appendix 3). Downton was merely one element in a chain of valley settlements.

Taking a retrospective look at Froom's (1972a) Kennet Valley survey one cannot fail to notice that his Mesolithic pattern is derived from searching the floodplain and its edge. Would he have found a complementary pattern of Neolithic sites had he searched the back of the terraces?

6.4.3 Stour Valley (Dorset)

Situated at the south eastern edge of the chalk outcrop on the outskirts of Wimborne Minster the early Neolithic settlement at Pamphill (Field et al 1964) recalls very closely the circumstances discussed above in relation to Downton. It too occupies a gravel spur projecting into the mid Stour floodplain and it was also a chance discovery made in the course of investigating Roman features. Though not as extensively studied as Downton the evidence from Pamphill is nevertheless significant. In exposing a section of Roman roadside ditch the excavators fortuitously exposed a large (3m x 2m) sub rectangular pit .80m below the modern ground surface. Within its fill of dark, charcoal stained occupation soil were found some 180 potsherds from as many as 18 vessels, in three different wares; and a small but diagnostic flint assemblage containing fragmentary examples of a leaf-shaped arrowhead and ground axe. Though this was the only feature investigated the retrieval of other comparable sherds in cuttings elsewhere indicated an occupation site of at least $1000m^2$ extent. In commenting on the pottery Isobel Smith contrasted the Pamphill assemblage with that from the nearby plateau edge site of Corfe Mullen. They are evidently contemporary and both related to the Hembury style but whereas the upland assemblage is typically a plain one, the valley assemblage from Pamphill contains an untypically high proportion of decorated vessels. One wonders if this refers to the relative status of the two sites.

Avebury henge they are nevertheless built in an almost identical topographic setting.

The Cranborne Chase survey, although it deals with an upland area, is relevant because in setting out to reconstruct prehistoric settlement patterns Barrett et al (1981, 210) found themselves faced with a paucity of Neolithic occupation evidence to set alongside the previously defined distribution of long barrows and other monuments. This is reflected in the conclusion that "the main emphasis of earlier Neolithic settlement may not have been upon the chalk, as is so often supposed .." and in their stated intention to extend the survey towards the lower ground of the river valleys. In areas where little or no research of valleys has been undertaken it is the negative evidence from upland areas which serves to support the thesis of a valley Neolithic. This is true in the case of Cranborne Chase and, as will be discussed later, it is also the case in the western Sussex chalklands.

6.4.4. The Frome Valley (Dorset)

A reference point for discussion of the Frome Valley is provided by Wainwright's (1979a) report on excavations at Mount Pleasant, Dorchester - a very large late Neolithic henge comparable to those previously discussed at Avebury, Marden and Durrington Walls. The enclosure occupies a low ridge running east - west between the river Frome (200m distant) and its tributary the South Winterbourne. Which 4 km upstream flows past the earlier Neolithic causewayed enclosure at Maiden Castle. Though it lies within the valley system Mount Pleasant is strictly a hill which it seems originally carried a thin capping of Bagshot sands. It ought therefore to have a different sequence of exploitation than gravel terrace sites such as Downton and Pamphill even though it is not appreciably further removed from the river's edge.

As so often proves to be the case pre-henge evidence survives only in protected contexts - beneath the enclosure bank or as residual material in ditches and other late features. Even so the recovery pattern shows clear distributional trends which probably have nothing to do with differential preservation. Mesolithic activity is not attested but there is important evidence for an early and mid Neolithic presence on the hill. It is therefore rather curious that Wainwright's discussion of pre-enclosure settlement is confined to just eleven lines of text within which it is described as of a transitory nature dateable to the later part of the third millenium bc (Wainwright 1979a, 224). A rather different interpretation may be advanced.

Excluding Beaker material, 37% of all the Neolithic potsherds recovered in excavation belong to the earlier Neolithic Hembury tradition. Sherds of Hembury bowls, together with a few of Ebbsfleet and Mortlake type, occur as a light scatter residual within later contexts over slopes facing onto the Frome valley. But, almost all (326 sherds) of the Hembury assemblages came from a single cutting through the henge bank, on the western fringe of the hill (cutting XXXII). It was this context which also provided the mollusc samples upon which Evans and Jones based their reconstruction of the pre-henge environment - clearance to a pastoral regime with the possibility of early disturbance by tillage (p. 208).

Collectively, the evidence points to exploitation of at least the northern half of the hill, from a farmstead located on its periphery, starting nearly a millenium before henge construction - almost an exact parallel to the situation at Durrington Walls. What perhaps deterred Wainwright from making more of this evidence was the publication of a single radiocarbon date of 2122$\pm$73 bc (BM 644) in reference to charcoal, retrieved with a small group of Hembury sherds, from the pre-henge surface in cutting I. However, since the context was open until henge construction (2098$\pm$54 bc, BM 793) there is no necessity to envisage that charcoal and ceramics were deposited at the same time. Indeed, according to Smith (1974), Hembury pottery had passed out of general usage by 2600 bc.

On this basis settlement probably retreated off the hill in mid Neolithic times although in the maintenance of grassland conditions on the western slopes and the deposition of Ebbsfleet/Mortlake sherds over the northern slopes continued exloitation of its resources at a more limited scale may be envisaged. Had palynological information been available one would expect this development to be associated with bracken infestations, as noted elsewhere in reference to South Street and Durrington Walls. However, unlike these two other sites, substantial clearance of Mount Pleasant did not take place until circa 1700 bc. Incongruous though it seems, the molluscan evidence from three widely separated contexts attributable to primary use of the henge i.e. circa 2100 - 2000 bc, indicate that the enclosure and the timber circle it contains were built in a largely wooded environment which remained little disturbed until a massive timber palisade was erected within the earthwork perimeter several centuries later. Evans and Jones prefer to invoke regeneration as an explanation for the existence of this woodland but only in the vicinity of the postulated earlier Neolithic settlement on the western side of the hill is prior clearance actually demonstrated.

Wainwright estimates that the equivalent of 360 hectares (900 acres) of oak woodland were cleared to provide timber for the palisade development and relatively sudden changes to more open faunas in contemporary parts of the molluscan sequences appear to confirm that some of the timber was taken from the hill. However, since the enclosure extends to little more than 10 hectares a considerable area beyond must have been similarly effected.

This rather brief reappraisal of the Mount Pleasant excavation may be summarised as showing locally intensive earlier Neolithic exploitation and settlement on the slopes facing the Frome valley. But disturbance of woodland on the crest of the hill which significantly was then capped by Eocene deposits appears to have been negligable. Settlement retreated off the hill in the mid Neolithic though its largely wooded slopes continued to be exploited perhaps involving coppicing and grazing of the understorey. Around 2100 bc local communities exploited the commanding position of Mount Pleasant and its proximity to navigable river routes by developing it as a social and ceremonial centre. Since the hilltop woodland was retained one may speculate that the henge enclosed something rather like the sacred groves normally linked with Celtic religion in later prehistory. However, by circa 1700 bc it was deemed necessary to defend the complex with a massive palisade and in procuring the necessary timber approaches to the hilltop were cleared of visual obstructions. The need for defence was subsequently proven but it seems the palisade was inadequate for stretches of it were burnt to the ground and others dismantled.

In attempting to place the Mount Pleasant sequence into perspective there are two pollen sequences from nearby areas which should be discussed. The first, from Litton Cheney (16 km west of Mount Pleasant) derives from sampling of peat deposits at the foot of the chalk escarpment in the Bride valley (Sidaway 1963). It yielded evidence of hazel dominated woodland giving way at the Elm Decline (bio-stratigraphically dated to circa 3000 bc) to more open conditions in circumstances interpreted as artificial clearance.

Rather better documented is the sequence from Rimsmoor (10 km east of Mount Pleasant) which is based on close sampling of an 18m deep peat deposit formed in a solution hollow on Reading Beds at the edge of the chalk outcrop (Waton 1982). In a privately circulated report, which discusses the evidence in more detail than his 1982 article, Waton indicates that the context could well have been a locally important water source in prehistory and this is perhaps the key to understanding the early ecological developments taking place around it. Interpolating from his time - depth curve (based on six internally consistent radiocarbon determinations) the basal deposits date to circa 5600 bc. From this point to circa 4200 bc regular influxes of charcoal into the pond edge peats are associated with a relatively stable environment of open woodland - a situation which could be explained by <u>regular</u> small scale forest burning designed to suppress vegetation around the water source thereby facilitating the culling of visiting game. At circa 4200 bc there is a change in local land use strategies - charcoal influx diminishes and the forest recovers until circa 3500 bc when charcoal re-appears at the start of a period of <u>intermittent</u> fluctuations in tree and grass pollen. These fluctuations culminate in an Elm Decline bracketed between 3210 ± 90 bc (HAR - 3919) and 2740 ± 70 bc (HAR 3920).

Because of the importance widely attached to the Elm Decline, Waton sampled and counted the relevant assemblages very closely and thus reconstructed a remarkably detailed picture of its associations. He deduced. that the first development was the Elm Decline itself which was accompanied by locally significant (but still relatively small scale) woodland clearance in which fire played a role. For circa 50 years the clearing was used for pastoral purposes but during the next 20 - 30 years grazing pressure relented and partial regeneration took place. In a secondary phase, lasting 60 - 100 years, renewed clearance restored the pasture and a certain amount of cereal cropping was undertaken.

This was succeeded by near total regeneration to hazel dominated woodland, the frequency of woody species being markedly higher than they had been at any time previously. In noting that these conditions then persisted for a millenium or so Waton suggests the area may have come under a system of woodland management involving coppicing of hazel. At 1870$\pm$80 bc (HAR - 3921) these ancient coppices, if such they were, experienced renewed clearance in which fire, as before, was employed initially. For about 50 years the clearing was grazed and cropped for cereals, the end of this phase being marked by a Lime Decline and by the formation of a 3 cm thick clay lens in the peat. Both developments could well indicate soil deterioration i.e. Lime failing in response to impoverishment of soil bases and erosion ensuing on loss of soil structure. Significantly, when clearance was renewed it was evidently for pastoral purposes with cereal pollen present only at the end of this second phase, some 80 years after it began. Furthermore cropping was followed by abandonment and regeneration to the type of hazel dominated woodland that previously existed though with a generally higher frequency of grasses and herbs possibly attributable to the changed status of local soils.

Though woodland prevailed through most of the Neolithic the Rimsmoor sequence is important because it portrays in unprecedented detail how less favourable land on the periphery of chalkland valleys was exploited. It also appears to show that the change in local land use strategies which could mark the Mesolithic/Neolithic interface occurred at circa 3500 bc after a period of 700 radiocarbon years during which there is no evidence for activity in the area. Rimsmoor may be put into a clearer perspective by comparing and contrasting it with Waton's (1982) sequence from the floodplain of the river Itchen (near Winchester) - this sequence is reviewed later in the Chapter.

6.4.5. The Medina Valley (I. O. W.)

In their research at Gatcombe, Tomalin and Scaife (1979) have combined evidence from fieldwalking of gravel terrace arable with palynological investigation of an adjoining valley mire to reconstruct a rather unusual sequence of ecological development. Though there are signs of sizable Mesolithic vegetational disturbances upstream from Gatcombe during the Boreal (Scaife 1982), between 4435$\pm$50 bc (SRR - 1339) and 2900$\pm$45 bc (SRR - 1338) the local environment was one of climax decidious woodland containing only minor openings associated with Mesolithic activity on the nearby terrace. At 2900 bc there is a primary elm decline without any substantial clearance and from then until well into mid Neolithic times alternating peaks and troughs of cereal pollen and ruderals convey an impression of ephemeral cropping and grazing in open canopy forest conditions. The establishment of what seems to be a late Neolithic settlement on the terrace is marked in the pollen record by a period of more extensive (but still localised) woodland clearance and a rise in the frequency of herbs and cereal. This regime was not maintained however for eventually the site was abandoned and the area regenerated to secondary woodland.

The Gatcombe sequence is of special interest for it seems to show a form of forest farming persisting throughout the major part of the Neolithic at a time when other chalkland areas were being much more extensively cleared. One may also note that when a clearance effort was mounted it did not result in permanently open conditions. The final point of note is the record of cereal cropping in what appear to be late Neolithic contexts. Such evidence is markedly rare elsewhere in the chalklands.

6.4.6. Ouse and Cuckmere Valleys (East Sussex)

Between 1976 and 1980 the Sussex Archaeological Field Unit undertook an intensive and interdisciplinary survey of Bullock Down - a block of chalk downland lying behind the cliffs of Beachy Head. Their intention was to reconstruct its settlement and land use history from Palaeolithic times to the present. The results prompted Drewett (1982, 208) to conclude "that much of the South Downs should be considered as marginal land, rather than a focus of human activity". In a series of imaginative diagrams (Figures 108 - III) Drewett boldly, and with commendable clarity, sets out his interpretation of the evidence.

Earlier Neolithic colonisation of the area is portrayed as a movement from the west (the Cuckmere valley) leading to the establishment of a settlement in the floor of a dry valley at Belle Tout. It is interesting to note that Mesolithic material on the site has now been re-identified as early Neolithic; 'microliths' have become unfinished arrowheads made by steep retouching and sherds of 'Iron Age' pottery are now recognised as being from earlier Neolithic carinated bowls. Similarly, sherds from a later phase of settlement previously reported as early (AOC) Beaker are now regarded as belonging to Food Vessels. The effect of this courageous reappraisal has been to make Belle Tout the most intensively occupied Neolithic settlement in the study area for apart from the early Neolithic and later Beaker phases there are also hints of a Grooved Ware settlement.

In comparison the evidence available for Neolithic activity over the higher downland indicates only small scale and transitory exploitation and occupation chiefly associated with extraction and knapping of flint in Clay - with - Flints outcrops. One cannot, however, be really sure that the survey really came to grips with valley settlement. As part of the project Martin Bell trenched across the Kiln Combe dry valley and encountered a Beaker settlement horizon buried beneath 2 m of colluvium (Bell 1981, 1983). The important point is that this settlement would not have been detected by fieldwalking or aerial photography. Bell's discovery was fortuitous but it does highlight the strong possibility that other Neolithic settlements exist elsewhere in the valleys of Bullock Down hidden beneath accumulations of post Neolithic colluvium.

Moving westwards, the lower Ouse and Vale of Brooks may now be considered. Scaife (1982, 69) refers to the deposition of inorganic sediment within the Ouse and Cuckmere valleys during the Boreal and hints that it could be due to slope erosion following destabilising episodes of Mesolithic forest burning. These he compares with similar effects seen in the Medina valley (IOW) also of Boreal date. The essential point being that the ecology of these valleys was probably being extensively manipulated from an early date. Subsequent developments in the area are taken up in Thorley's (1981) analysis of pollen and sediment sample recovered from buried palaeochannels of the lower Ouse near Lewes. Starting before 4340±180 bc (Lab. Number not cited) there are repeated minor phases of vegetational disturbance effecting Elm and Lime in particular (species which Thorley suggests were growing in relatively pure stands on the moist and base rich soils of the valley sides). These minor disturbances extend over a lengthy period at the end of which further and more extensive suppression of the Lime/Elm community is associated with the appearance in small quantities of a very diverse range of what are normally regarded as cultivation indicators. At this stage the frequency of ash rises and bracken spores are registered for the first time - both are pioneer colonizers of disturbed habitats. Re-establishment of the woodland cover then ensues (3724±167 bc) - a predominently closed forest environment persisting, into the third millenium bc, when - there is a repeated episode of Lime/Elm suppression with a spread of cultivation indicators. These selective clearances, though more extensive than at any time previously, did not result in conspicuously open conditions. Indeed the first major impact on local woodland did not occur until the middle Bronze Age (1240±125 bc).

Though, as at Rimsmoor, there is a lengthy hiatus (circa 700 years or more) between them Thorley's evidence shows essentially two phases of vegetational disturbance of the <u>same</u> part of the local environment - the base rich valley soils. One may also note Thorley's assertion that soils of the upper downland around the Vale were both deeper and more acidic on the past and carried stands of oak and hazel as opposed to those of Lime and Elm in the valley. She indicates that the spread of bracken evidenced in the sequence is attributable to encrouchment onto the more acidic downland soils. That these trends appear as relatively inconsequential disturbances in the Lewes sequence is referable to the nature of the sampling context. It was not on a well drained river edge terrace, it was within a broad expanse of marsh created by post Glacial marine transgression into the lower Ouse valley. The scale of these disturbances at the edge of the marsh may therefore have been considerably larger than is apparent. This is indeed evidenced by Martin Bell's research at nearby Itford Bottom - a dry valley on the east side of the Ouse (Bell 1981) and at Bishopstone - a chalk spur projecting into the Ouse estuary (Bell 1977).

At Itford Bottom Bell recognised at least two phases of clearance. The earlier (undated) one led to erosion of sufficient intensity that soil on the valley axis was removed; traces of the original woodland cover surviving (as molluscan faunas) only in subsoil hollows. Around 1770 ± 120 bc (BM - 1545) Beaker pottery was being deposited on a secondary soil cover in circumstances which Bell interprets as clearance of isolated trees and shrubs in what was already a fairly open landscape.

In reviewing the evidence for the Lower Ouse Bell (1977, 44) observes that clustering of Mesolithic and Neolithic sites around the periphery of the alluvium and over low lying Clay - with - Flints outcrops may be contrasted with a paucity of finds from the higher downland. This is of course the pattern which could be inferred from Thorley's pollen sequence. Unfortunately the only occupied site so far investigated lies not at the edge of the river system but on a low promontory extending into it - Rookery Hill, Bishopstone (Bell 1977). However there are many aspects of the Rookery Hill evidence which clearly have a relevance to the valley settlements not least of which is the probability that exploitation of the hill, which Bell suggests was only intermittently occupied (probably on a seasonal basis), was regulated from a valley settlement. One may note that, in being flanked on three sides by estuarine marsh, Rookery Hill is an obvious focus for agriculture in an area where land of arable potential was somewhat scarce. It ought to have been cleared and cultivated at an early date and the available evidence suggests it was. Bell recorded contour following ploughmarks within what appears to be a Neolithic field system on the southern slopes of the hill which were cleared before the hilltop - as would be consistent with the idea of expansion from the valley. That these clearances witnessed cereal cropping is beyond question - one of the pits associated with late occupation of the hilltop (2510±70 bc, HAR 1662) yielded carbonised wheat and barley grains, a fragmentary saddle quern and a large number of serrated flint blades with a silica gloss. But, and it is an important point, the same pit yielded no less that 2437 mussel shells. It is difficult to escape the conclusion that Rookery Hill provided the agricultural and pastoral supplement to a local economy that was still heavily reliant on the natural resources of the estuary. Indeed, in noting that the hilltop was only seasonally occupied one may suggest that this was by a specialist group based in the estuary who came to the site to manage and harvest the cereal crop or to oversee stock grazing.

Though each had different objectives and operated in a different way the research by Bell at Itford Bottom and Bishopstone and by Thorley in the Vale of Brooks presents a surprisingly consistent picture of how the lower Ouse valley evolved in earlier prehistory. It would be surprising if this coastal area with its extensive estuarine marshes did not adhere to exploitation of natural resources to which small scale but apparently well organised farming of selected land at the side of the valley provided a supplement. This is perhaps the character of the coastal Neolithic.

Confirmation that the higher downland played only a relatively minor economic role in the Neolithic of east Sussex is provided by Thomas' (1982) analysis of molluscan faunas from the three causewayed enclosures in the area. The Combe Hill enclosure (Thomas 1982, 156) lies just outside the northern boundary of the Bullock Down Survey referred to above. It was constructed (2640±110 bc, 1 - 11 613) in a wooded environment. So too was the "small poor enclosure" (Drewett 1977, 226) on Offham Hill situated on a hilltop west of the Ouse valley and above Thorley's Lewes pollen site. Thomas (1982, 149) reports minor clearance activity associated with construction itself (2975$\pm$80 bc, BM - 1414) but the general environment was woodland and the site regenerated soon after. One may also note that the faunal assemblage contained a predominance of aurochs and deer. Whitehawk (see discussion in Drewett 1977, 226) is rather different in the respect that it appears to have been more intensively used (visited?) but retrospective analysis of molluscan faunas (Thomas 1982, 155) indicates a strong representation of woodland and scrub in the immediate environment. It is noticeable, however, that Whitehawk lies at the edge of the coastal plain, the other enclosures do not.

6.4.7. West Sussex

There are no points of reference from which to directly discuss the valleys of West Sussex. Such evidence as exists concerns the downland enclosures at the Trundle, Barkhale and Bury Hill where as in East Sussex molluscan analysis shows that all three were built in small temporary clearings (Thomas 1982). The Trundle, like Whitehawk, in being located at the edge of the coastal plain, seems to have had a greater importance than the more distant enclosures but that is about the limit of inference.

The deficiency of the Neolithic record in Sussex is plainly evident in Drewett's (1978) review of the subject. As he notes (p. 29) the late Neolithic is virtually a non-event. There are no henges and with the exception of a few sherds of Grooved Ware from the Findon flint mines very little else demonstrably late Neolithic is known from Sussex until the Beaker period. In truth the earlier Neolithic is not much better represented, for apart from Bishopstone (discussed above) wholly convincing settlements on the chalk have yet to be identified. If the downland did indeed serve as a marginal resource to communities mainly resident in the coastal plain and river valleys the lack of settlement evidence is understandable. For this reason it is difficult to accept Drewett's (1978, Figure 13) model of Neolithic territorial organization in Sussex which places the causewayed enclosures at the centre of settlement patterns. In concluding his review of the environmental data from the Sussex enclosures Thomas (1982, 165) suggests "We may even question whether these particular enclosures were central to any territories which may have existed in Neolithic Sussex". His is perhaps a rather extreme view, the enclosures do have a social significance and we must accept that they had discrete connections with contemporary settlement. If the picture conveyed by research in the lower Ouse valley is typical of what was happening elsewhere in Sussex these settlements will not be found in the higher downland.

6.4.8. Chalton (Hampshire)

Moving north west from West Sussex one encounters the Chalton area - an intensively studied block of downland 35 km^2 in extent upon which Cunliffe (1973) based his influential treatise on landscape volution. In retrospect one may question whether this rather non-descript stretch of downland, relieved only by two dry valleys, was a suitable subject for the study of settlement and land use processes. But the evidence it yielded should be considered within this review.

In earlier prehistory the two 'dry' valleys traversing the area probably contained seasonal if not permanent streams and with the exception of industrial working of Clay - with - Flints outcrops on Windmill Down almost all potential occupation sites of Mesolithic and Neolithic date occur within these valleys. There are signs of expansion into areas of higher downland during the Beaker period but nowhere is there any real sign that the area as a whole was intensively exploited in earlier prehistory. Indeed, the only independent research with a bearing on the problem is Bell's excavation within the dry valleys and this work appears to confirm the inconsequential nature of the Mesolithic/Neolithic presence (Bell 1981).

In contrast to his results at Kiln Coombe and Itford Bottom, where substantial deposits of Neolithic and later sediments were found in the valley floor, Bell's trench across the major dry valley (Chalton A) revealed that it was virtually devoid of prehistoric colluvium
One cannot ignore the possibility that seasonal stream flows had flooded the Chalton valley clean of derived sediment. But, a second

trench across a smaller tributary valley (Chalton B), in which streams flows cannot be countenanced, also failed to locate earlier pre historic colluvium. Sediments 1.8 m thick were recorded but the onset of colluviation was dated to circa 1000 bc i.e. the mid Bronze Age.

6.4.9. East Hampshire

Between 1977 and 1978 Shennan (1981) conducted a fieldwalking survey of an area of 150 km^2 located on the interface between the Hampshire chalklands and the Western Weald. It was designed to permit the settlement history of the area to be reconstructed. This was achieved but for the purposes of this study the most remarkable result of the survey was to demonstrate the existence of a complex pattern of Neolithic activity in an area of chalkland where contemporary monuments are conspicuously absent. Prior to the survey there was very little to commend the area to Neolithic researchers and in this respect one wonders whether the same results would be achieved if other outwardly uninteresting areas beyond the monument zone were surveyed with the same rigour.

Shennan increased the recorded number of Mesolithic findspots by a factor of 5 and Neolithic/early Bronze Age findspots by a factor of 6. In so doing he was able to observe that there are significant differences between the distributions of Mesolithic and Neolithic activity within the area. Mesolithic exploitation of the chalk and Clay - with - Flints fringe appears to have been light, the main emphasis being on Wealden greensands to the east. In the Neolithic, however, nowhere was completely devoid of occupation traces although larger expanses of Clay - with - Flints were avoided and there are clear concentrations around Alton in the Wey valley, especially on the Lower Chalk/Upper Greensand boundary and at the edges of Clay - with - Flints. By contrast the Rother valley which runs through Lower Greensand contained few traces of Neolithic activity. There are therefore signs of a major change in settlement patterns with Mesolithic preference for greensand over chalk being reversed in the Neolithic. Factors underlying this change will be discussed later but at this stage it is sufficient to note that progressive Mesolithic abandonment of the greensand had started as early as 6000 bc (Jacobi 1981, 13).

That these results from East Hampshire are potentially of great importance cannot be over-emphasised. This survey, together with the fieldwalking survey of the Avon Valley referred to earlier (6.4.2.), represent the only serious attempts to systematically study chalk-land landscapes beyond the main concentrations of monuments. In recording a hitherto unsuspected density of Neolithic occupation traces they indicate that we have seriously misjudged the character of Neolithic Wessex. It seems large portions of chalkland Wessex were occupied by communities who had no need of monuments. Investigation of these areas has scarcely begun.

6.4.10. The Itchen Valley (Hampshire)

So far as the Neolithic is concerned the archaeological record of the Itchen Valley is like its Hampshire neighbour the Test Valley, virtually blank, or at least it seems to be blank. The first, and so far only, clue that it was occupied and farmed in the Neolithic stems from Waton's (1982) palynological study of a vast peat deposit in the Itchen floodplain - Winnall Moors, near Winchester. Before moving to the data it should be emphasised that the picture it portrays is, by virtue of the size of the sampling context, nor merely of local relevance. Waton estimates that more than 50% of the pollen is non-local and bearing in mind the likely scale of input by water transport much of the distantly derived pollen should refer to environmental conditions prevailing over a large part of the middle to upper Itchen Valley.

The sequence starts in the Boreal, during which tree, shrubs and hazel account for circa 55% of the dry land pollen. This indicates relatively open conditions, certainly more open than at Rimsmoor where in the same period they account for circa 70%. Since contemporary influxes of macroscopic charcoal were recorded at both sites it seems reasonable to assume that the vegetation of the Itchen Valley was being more extensively disturbed (managed?) by Mesolithic communities than was Rimsmoor. The two sites contrast in other ways. Whereas

Rimsmoor witnesses an overall rise in arboreal pollen during the Atlantic, which is a normal development; at Winnall Moors there is an overall decrease. After circa 4500 bc reduction of the woodland is associated with an overall rise in herb values and more pronounced fluctuations in grass values. From circa 4200 bc the forest appears to stage a recovery although herbs continue to increase. However, this recovery is abruptly halted at 3680$\pm$90 bc (HAR - 4342) by a dramatically sudden and extensive clearance event which introduced cereal pollen into the sequence.

Some idea of the magnitude of this event may be gained in noting that pollen values for woody species have <u>never</u> since fallen below their level at this time. It may be thought that such extensive clearance activity was little more than an unbridled assault on the forest but there are interesting clues within Waton's data which suggest it was highly selective. If post clearance frequency values of the more important tree and shrub species are expressed as a percentage of their pre-clearance values, oak was reduced by 59%, elm by 87.5%, lime by 90% and hazel by 98%. Clearly, hazel was virtually wiped out; some no doubt had stood and fallen with the local woodland but since oak, with which it was most likely to be associated, does not behave the same way it is probable that most had been standing in scrub communities within areas disturbed in earlier times by Mesolithic forest burning. In tackling woodland it is obvious that stands of Lime and Elm were particularly singled out for felling (as was the case in the lower Ouse valley - Thorley 1981) whilst there seem to have been attempts to avoid unnecessary destruction of oak.

For the remainder of the Neolithic open conditions were maintained - a distinctive contrast to the sequence at Rimsmoor, Lewes and indeed most other chalkland sites for which information is available. Cereal growing is continuously in evidence until circa 2575 bc with a herb peak at circa 3000 bc indicating perhaps the high water mark of this form of subsistence. After 3000 bc the progressive increase in grasses suggests that the emphasis in the local economy gradually changed from agriculture to pastoralism.

The Winnall Moors sequence is undoubtedly one of the most important and revealing results yet achieved by palynological research. It is a pity therefore that only one radiocarbon date is referable to it. Caution might argue that this date is in error and that the Winnall Moors Elm Decline should be brought forward by 500 years to be consistent with the dates usually given to the phenomenon elsewhere. Even if it was in error by this magnitude it would still be a remarkable sequence but when all the factors are considered there is no real necessity to doubt the dating.

It must first be pointed out that there is no archaeological objection to major clearance at such an early date. Since it is generally accepted that long barrows were built by established farming communities, and no less than three (Lambourne, Horslip, Fussells Lodge) of the dated Wessex long barrows were constructed in the third quarter of the fourth millenium bc, one can scarcely expect the establishment process to have started any later than 3500 bc.

The idea that the Elm Decline is a generally synchronous event restricted to a century or so either side of 3000 bc stems originally from a time when it was attributed to natural factors and as such could be employed as a marker on the Atlantic/sub Boreal Zone boundary (see discussion in Whittle 1977, 17). This concept tended to perpetuate itself when the publishers of undated pollen sequences inferred that the Elm Decline they identified also dated to circa 3000 bc. Such was the case in the report of the Litton Cheney sequence; Sidaways' (1963) original assumption being subsequently accepted without reservation and re-published to a wider readership by Evans and Jones (in Wainwright 1979).

The Elm Decline is now something of a red herring. Though the Winnall Moors date appears to be the earliest yet recorded in Britain there are at least three others which statistically overlap it at one standard deviation and by the same reckoning at least one which could be a millenium later (Smith 1981, 158 - 9). It is not therefore a synchronous event. More importantly it is becoming increasingly difficult to isolate the Elm Decline from anthropogenic suppression of woodland involving other tree species, especially Lime. If Thorley (1981) is correct in suggesting that Lime and Elm formed distinct communities on base rich soils, sudden falls in Elm pollen values may in some circumstances be explained as a feature of earlier prehistoric forest management. As such they need not be regarded as exclusively Neolithic. Indeed selective suppression of the Lime/Elm community was in evidence within Thorley's sequence long before the accepted dates for the introduction of farming.

Though one could have wished for more than one radiocarbon date to tie the chronology of the Winnall Moors sequence there is no reason to believe it is anomalous. It is certainly unusual to record large scale clearance and cereal farming at such an early date but then this is the first time that the environmental history of a major chalk valley has been properly investigated. That the Itchen valley should have been so intensively exploited after the introduction of farming is entirely consistent with the evidence for it being intensively exploited previously. Indeed, it is difficult to escape the conclusion that cereal agriculture may have provided a solution to problems generated by earlier forms of land use.

Chapter 7

BRONZE AGE

7.1 Approaches

Before going on to review the evidence for valley activity in the Bronze Age it is necessary to first consider some of the limitations inherent in our understanding of the period within the more general framework of Wessex itself. An obvious limitation is the very nature of the evidence available for study. Whilst there is a wealth of information about funerary customs and what earlier Bronze Age people took with them to the grave there is little information about where they lived, how they lived or indeed their everyday environment. Similarly within the later part of the period although settlements are slightly less elusive good contextual information is lacking for most of the supporting material either because of the undistinguished character of the funerary rites or because most of the non-funerary evidence lacks useful associations.

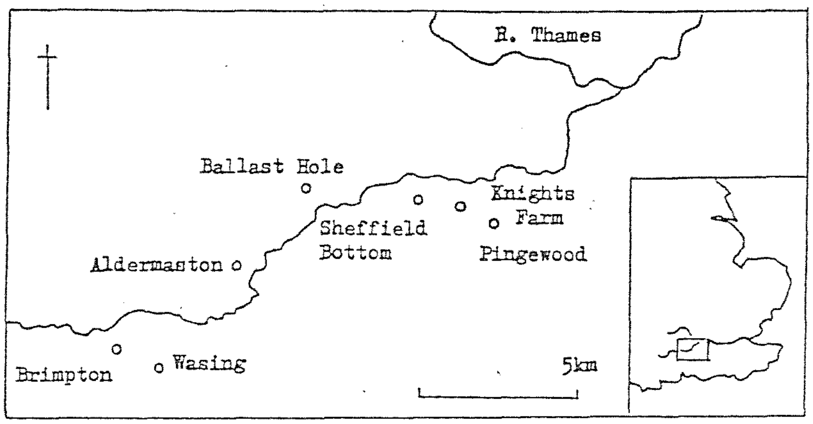
It is perhaps this lack of reliable contextual information which is responsible for the state of flux surrounding Bronze Age chronologies, as recently discussed by Barrett (1980b). Whether one accepts all the proposed revisions is fortunately a problem which need not be considered here. But it is a matter of no small concern that the continuing reshuffiling of data, as for example manifested by the back-dating into the late Bronze Age of material previously assigned to the early Iron Age, makes it doubly difficult to assimilate data published before such schemes were proposed.

Because of the limiting nature of so much Bronze Age evidence and the fluidity of the available chronological frameworks it would be impossible to attempt such a detailed review of the Bronze Age as was attempted for the Neolithic in the preceding Chapter. There is for example no part of the Bronze Age landscape which has been so comprehensively researched that it could serve the same 'window' function that the Avebury region has for Neolithic studies. The nearest equivalent is perhaps the recent research carried out in the lower Kennet valley (e.g. Bradley et al 1980) and it is to these results that the review will turn initially. The character of Bronze Age activity elsewhere within the valley systems of chalkland Wessex is seen to best advantage by returning to those reference sites originally reviewed in the Neolithic Chapter to observe how they developed during the Bronze Age. Not all these contacts provide the necessary information but fortunately there are some crucially important environmental sequences available which help to flesh out the rather skeletal picture of Bronze Age settlement and land use drawn from piecemeal archaeological sampling of the valley record.

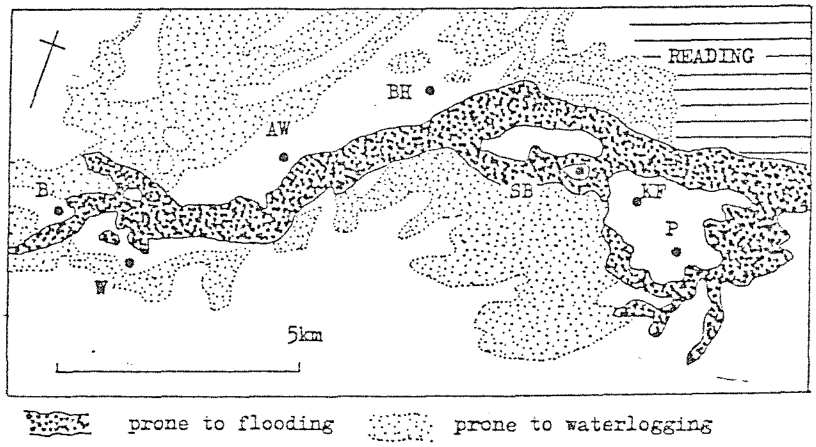
7.2. The Lower Kennet Valley

7.2.1. Introduction

Prehistoric research in the lower Kennet has enjoyed an exceptionally favourable set of recording circumstances during the past two decades. Not only are there extensive gravel formations which are particularly susceptible to crop mark detection from the air there has also been extensive extraction of the gravel which has generated a large number of chance discoveries of artefacts and provided opportunities for archaeological investigation of crop mark sites. Importantly there have, in recent years, been archaeologists working in the area to capitalize on these opportunities. It is perhaps to this last factor that the wealth of important evidence for prehistoric settlement, land use and environment emanating from the lower Kennet is mainly attributable. Thus it may be suggested that the evidence from this area is typical of what might be recovered from other valley landscapes were they to enjoy the same favourable recording circumstances.



(maps based on Bradley et al 1980, figures 1 and 39)



Contexts and Sources: (nb. BAJ refers to summary notes in Berkshire Archaeological Journal)

B - Brimpton - Lobb 1978; Bradley et al 1980.

W - Wasing - BAJ 62, 72.

AW - Aldermaston Wharf - Cowell et al 1978; Bradley et al 1980; BAJ 61,99-102.

BH - Ballast Hole - Bradley et al 1980; BAJ 61, 100.

SB - Sheffield Bottom - Bradley et al 1980; Bradley and Richards 1981.

KF - Knight's Farm - Bradley et al 1980; BAJ 59, 61; BAJ 61, 109; BAJ 65, 109.

P - Pingewood - Bradley et al 1980; BAJ 59, 60.

Figure 59 : BRONZE AGE REFERENCE SITES AND SOURCES IN THE LOWER KENNET VALLEY

Recent research in the lower Kennet is also important for the progress made in refining our understanding of the physical character of prehistoric valley settlement - so aiding its recognition in these notoriously difficult recording environments. The background to this research and the broader conclusions to be drawn from its results were recently discussed in introducing the report of excavation at Aldermaston Wharf and Knights Farm (Bradley et al 1980) - the main points of which are sufficiently important to be restated here.

As Bradley noted - one of the major problems of British prehistory has been the contrast between the mass of late Bronze Age metalwork and the rarity of contemporary settlements in areas like the Berkshire river gravels (p. 217). In the course of excavating a series of gravel sites since 1974 the reasons why Bronze Age settlements has been so elusive have become clear. Because the associated pottery is so friable and flint so rarely used these settlements are not really susceptible to detection in routine fieldwalking. Similarly because most of the features within them are typically small pits less than 50 cm deep they do not generate very obvious cropmarks and are hence unlikely to be detected from the air. Those that do show would be morphologically indistinguishable from Iron Age open sites like those in the Upper Thames Basin. Finally, because of the insubstantial nature of the settlement features many would disappear the moment the site was stripped preparatory to gravel extraction (and of course preparatory to archaeological investigation and recording). Thus unless planning proceeded while the grader was working only the deepest pits would survive to be recorded.

Bearing in mind that the ability to recognise these elusive sites and the rather specialised techniques for recording them have only recently been developed the range of settlement evidence now available for discussion is impressive. It augers well for future valley research.

7.2.2. Contexts and Sources

The reference sites and areas mapped at Figure 59 are in reality palimpsets of prehistoric and later activity in varying stages of record and destruction. The evidence they provide has typically been recovered during fleeting opportunities to investigate finds and features ahead of destruction by gravel extraction. In some cases this amounted to no more than a few hours work - sufficient to identify the context from which prehistoric artefacts had been disturbed. In others crop mark features have been monitored over a number of years so that adequate provision could be made for their investigation when destruction threatened. The complexes at Aldermaston Wharf and Knights Farm fall into this latter category - they therefore serve as pointers to what could have been achieved had circumstances permitted similar treatment of the other sites under discussion. It must also be said that much of the investigative research carried out during the past decade or so has yet to be adequately published. With these limitations in mind the evidence can now be reviewed.

7.2.3. Sequence and Ecology

As will be apparent from Figure 59 and as is discussed in some detail elsewhere (Bradley et al 1980, 285 - 293) drainage and microtopography are crucially important factors in any attempt to understand the distribution and character of prehistoric activity in the study area. Though gravel, which predominates here, is normally thought of as providing a free draining subsoil well suited to agriculture and settlement, the presence <u>within</u> the gravel of lenses and layers of clayey water-laid silt (Cheetham 1980) means its drainage characteristics are not everywhere so favourable. Furthermore, though some 'islands' and areas of better drained land were fully capable of supporting occupation during most of the year, they might well be rendered untenable during winter months by seasonal flooding and waterlogging. To make the situation even more complex the drainage characteristics and hence the land use potential of the area were constantly changing through time. This much is plainly evident in the observation that the gravels upon which the later Bronze Age agricultural farmstead at Aldermaston Wharf was founded (one of the 'driest' of the settlement locations under discussion here) are now capped by between 0.5 and 2 m of flood-laid alluvium (Cowell et al 1978). That similar changes were taking place at an earlier date within the lower Kennet valley is to be expected in view of the evidence from elsewhere (reviewed in Chapter 2.3.) and can to some extent be documented locally. Bradley has, for example, drawn attention to the discovery of Bronze Age pottery and metalwork within what appear to be flood deposits at Brimpton, Bray and Wallingford (Bradley et al 1980, 286). One may also note that the occupation surfaces at Knights Farm were stratified within the 80 cm or so of alluvium covering the site, not at its base.

The precise position of these Bronze Age horizons within the alluvial stratigraphy is important because, if archaeological investigation does not start until the gravels have been stripped of their overburden, as is normally the case, the features on record will obviously be a poor representation of the sites real structure. One suspects that the inconsequential nature of the pits recorded in these settlements, typically averaging only 50 cm in depth, is to some extent a reflection of the degree to which they were truncated before investigation. A further extension of the argument that many Bronze Age surfaces lie within the alluvial sequence is the case for believing that there must have been an earlier episode of significant landscape disturbance for that is the usual background to the onset of alluviation. As will now be discussed this episode appears to date to the late Neolithic.

Almost all of the cropmark palimsests on the lower Kennet gravels contain one or more ring ditches. With one noteable exception at Knights Farm which proved to be a later Bronze Age hut circle (Bradley et al 1980, Figure 29) those that have been excavated have been shown to date to the Neolithic or early Bronze Age. They are normally the earliest features in the visible prehistoric landscape. Most are plausibly interpreted as funerary monuments - usually cremation cemeteries - as at Sheffield Bottom (Bradley and Richards 1981); Englefield/Ballast Hole (BAJ - Berkshire Archaeological Journal 61, 100); Beenham/Aldermaston Wharf (BAJ 61, 99) and Burghfield/Knights Farm (BAJ 65, 55). But within these groups of ring ditches there is often one significantly larger than the rest which is comparable in size with some of the lesser henges found elsewhere in the chalklands e.g. Coneybury near Stonehenge (RCHM 1979, 13). That at Beenham adjoining the Aldermaston Wharf Bronze Age settlement, was approximately 55 m in diameter and yielded Grooved ware and Beaker associated occupation debris from its hastily excavated ditches. A ring ditch of similar proportions at Englefield, near the Bronze Age settlement at Ballast Hole, yielded Windmill Hill, Mortlake, Grooved ware and Beaker pottery together with a minute but intriguing fragment of bronze. There was also a very large ring ditch within the Knights Farm palimpsest although sadly it was destroyed without further investigation.

In these various discoveries and observations there is the hint of pattern which at present finds its clearest parallel in the gravels of the Oxford region (Case and Whittle 1982) but which may eventually prove to be widespread across the valley systems of Wessex. Within this pattern the focus of local occupation of the valley floor during Late Neolithic/Early Bronze Age times is provided by a single large ditched enclosure of henge like appearance but without a predominantly ritual or ceremonial function. These may for convenience be termed 'parish henges' in deference to their role, distribution and cropmark signature. Whether they constitute the centres of autonomous riverside economic units or are alternatively merely a seasonally occupied annex within a larger territory encompassing valley and plateau land need not at this stage be considered. Grouped around them towards the edge of the best land are the associated cemeteries - the smaller ring ditches. As Bradley (1980) has noted, a close spatial relationship ship between cemetery and settlement is a common feature of the later Bronze Age. From the evidence discussed above it appears this configuration has an earlier origin. Indeed when all things are considered the similarities between Late Neolithic and Bronze Age exploitation of the lower Kennet probably outweigh the differences. So far as can be seen one is dealing with selection of the same areas of gravel, for much the same purposes and within a broadly similar structure of social organisation.

An obvious extension of this argument is the question of continuity between the ring ditch phase and that marked by the establishment of open settlements such as Knights Farm. There is certainly much to commend the idea but because too few of the appropriate contexts have been independently dated by radiocarbon determination a lot still depends on how the pottery sequences are approached. The accepted view is that although Deverel - Rimbury emerges in some areas during the currency of Beakers (Barrett 1980a) there is, throughout most of Wessex, an intervening Food Vessel/Biconical Urn phase. But, within the context of the western end of the Kennet system (Marlborough Downs) Gingell (1980) has argued that these wares reflect funerary rather than domestic usage and that there is no real hiatus between Beaker and Deverel - Rimbury settlement and land use (p. 218). This could merely be a local phenomenon but it must be said that Food Vessels and Biconical Urns are on the whole rather too well made to be convincing as everyday domestic pottery.

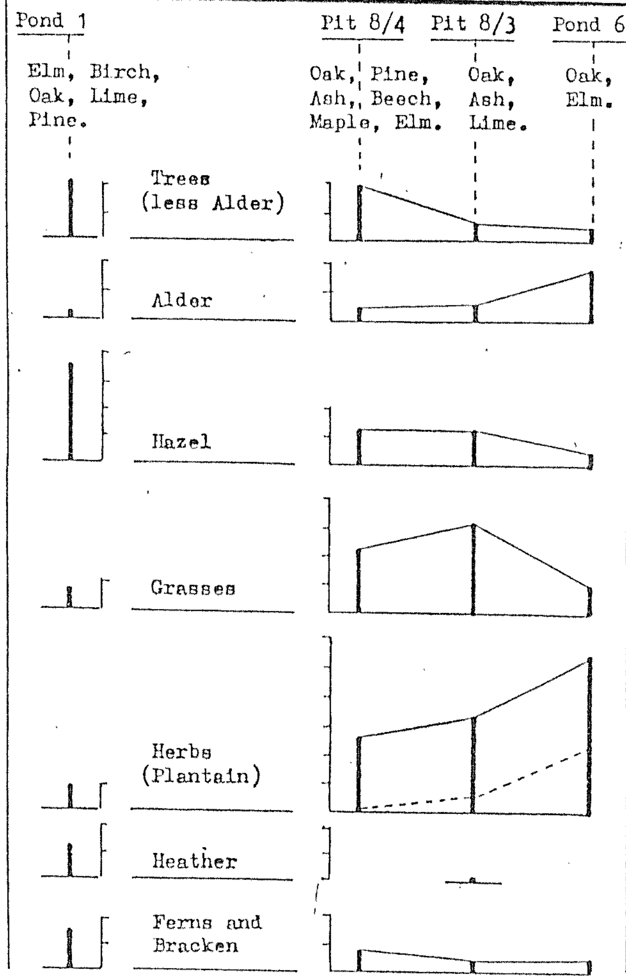
Can such continuity be documented in the lower Kennet valley? In truth it is probably too soon to tell. But one may note that the Beaker-yielding parish henge enclosures at Aldermaston Wharf, Ballast Hole and Knights Farm lie within a hundred metres or so of the known Deverel - Rimbury farmsteads in their respective areas. And, one may further note that at Knights Farm one of the ovens accepted as part of the Deverel - Rimbury settlement yielded a carbon date of 1680 ± 50 bc (BM 1593). If the sample was mature oak as could be the case (Bradley et al 1980, 283) the date is obviously too 'old'. But to subtract two or three centuries if anything reinforces the continuity argument for it would then comfortably overlap with the earliest date for Deverel - Rimbury pottery on the site (1245 ± 95 bc, BM 1594) and the accepted dates for late use of Beakers.

However, the case for continous exploitation of the area through the second millenium should not be overstated. There can be no doubt that the intensity of settlement and land use varied to a considerable degree during the period. On present evidence activity associated with the ring ditches had probably petered out by 1400 bc and yet most of the securely dated contexts within the Bronze Age open settlements fall within the range 1100 - 800bc with outliers at both ends of the scale. Continuity is possible and in view of the similarities in the way exploitation was organised should be accepted. But equally there

ALDERMASTON WHARF	KNIGHT'S FARM

Reconstruction:

The main source of evidence is a pollen sample retrieved from the lower levels of pond 1 - one of the earliest features on the site (c.11th century bc). It therefore illustrates conditions before the agricultural intensification testified by other evidence had properly got underway. The size and diversity of the tree spectrum indicates a fairly substantial clearing within primary? woodland fringed and interspersed by hazel and thorn scrub. The dominant local vegetation would appear to be heather, bracken and ferns, with grasses and herbs being rather poorly represented. This suggests some degree of heathland development in an ancient clearing. The low frequency of Alder and virtual absence of aquatic or marshland plants further suggests the area was relatively well drained.



Reconstruction:

- Late Neolithic/early Bronze Age. Charcoals (fuel?) from Oven (F86) comprise mature hazel, ash, maple, willow, hawthorn and oak. Clearance of secondary woodland or mature, overgrown hedgerows?

- Mid/late Bronze Age. Sequence spans 11th to 8th centuries bc. Trend is clearly one of further clearance within what was already a relatively open landscape. There are signs of closer woodland management possibly involving coppicing of hazel and selective suppression of all but the most useful trees (only oak and elm on record at end of sequence). Why grass values drop between 8/3 and 6/6 when herbs show a substantial increase is at first difficult to explain for there are no real signs of arable expansion, woodland regeneration or heath development. But, if a substantial increase in grazing pressure is invoked, such a trend would be expected - the heavier grazing preventing mature development of grasses whilst encouraging a proliferation of herbs that would otherwise be shaded out in tall tussocky grass.
The increased Alder values could (as Robinson suggests) simply reflect Alder growth around the pond(6) itself. But it could equally reflect a trend towards damper ground conditions and indeed within the analyses of seeds and insect remains aquatic or marshland species are noticeably more frequent in the latest context (6/6) than in the earliest (8/4). Since they lie in close proximity this is more likely to be a genuine chronological trend than an effect of spatial variations in the local water table.

frequency scales at 10% intervals based on % sum total spores and pollen

Figure 60 : THE ECOLOGY OF THE BRONZE AGE SETTLEMENTS AT ALDERMASTON WHARF AND KNIGHT'S FARM, BERKSHIRE.

appears to be a marked slackening of activity in the area between circa 1400 bc and circa 1100 bc. This is to some extent borne out by environmental evidence. The ecology of the ring ditch phase is unclear but the very density of these features in some locations suggests an open landscape, though if cemeteries were located in low grade land as previously suggested there may well have been a good deal of scrub in their vicinity. The intensification of activity in the mid to late Bronze Age therefore shows principally as an episode of scrub clearance.

A scrub clearance horizon in the upper silts of a ring ditch at Sheffield Bottom was dated to 1090$\pm$90 bc (Har 2749) and could be seen to immediately precede re-use of the old cremation cemetery to accommodate a Deverel - Rimbury bucket urn containing charcoal (probably a cremation) which yielded a date of 1110$\pm$100 bc (Har 2754) (Bradley and Richards 1981). Though less securely dated other scrub clearance horizons have been recorded within another ring ditch at Sheffield Bottom and in similar circumstances elsewhere in the area (Bradley and Richards 1981). Within the settlements themselves analysis of pollen, seeds and insects remains enables the process of reclaimation to be seen in more detail (Figure 60).

At around the 11th/12th century bc both Knights Farm and Aldermaston Wharf had the appearance of somewhat derelict farmland. Both sites had evidently been cleared at an earlier date although woodland was never far away. Knights Farm initially had the more pastoral aspect and during the succeeding centuries still more land was cleared, what woodland remained was more closely managed and the meadows surrounding the site experienced greater grazing pressure. Towards the end of the sequence (ostensibly around the 8th century bc) there are signs that the local water table was rising thereby favouring the colonisation of pasture by alder and marshland plants and possibly providing an explanation for the increase in grazing pressure. Aldermaston Wharf was evidently a better drained site as is reflected in the seed and artefactual evidence for an economy based largely on crop production. But if use of Knights Farm was constrained by waterlogging use of Aldermaston Wharf was probably constrained by the somewhat marginal fertility of the local soils and their inherent tendency towards development of heathland when stressed by cropping. There was already some form of heath development on the site before the episode of mid to late Bronze Age arable expansion. The pollen data do not permit us to see what effect this intensive cropping regime had on local ecology but it is surely significant that the associated settlement, despite being on one of better drained sites in the system, was one of the most short lived (Bradley et al 1980, 289).

Since all these sites for which some form of environmental evidence is available exhibit signs of mid Bronze Age reactivation of what was then a rather derelict farmscape it is perhaps reasonable to assume that the same general picture holds true for Brimpton, Ballast Hole, Wasing and Pingewood. That being so their location with reference to drainage and their chronology of occupation should tell us much about their subsequent ecological development. Brimpton, Pingewood and perhaps Wasing appear to be sited where drainage conditions would favour a predominantly pastoral development, as at Knights Farm. But unlike Knights Farm, where the onset of serious waterlogging and flooding can be dated to around the 8th century bc, these other sites appear to have suffered flooding at an earlier date. Wasing and Brimpton have yielded only Deverel - Rimbury material although the latter site was re-occupied in the mid to late Iron Age (Lobb 1978). The Pingewood sequence also terminates not long after Deverel - Rimbury had passed out of use though it too has produced evidence of some form of late Iron Age re-occupation. (Bradley et al 1980, 289). The only site with a 'dry' location comparable to Aldermaston Wharf is Ballast Hole and it also exhibits signs of discontinuous occupation consistent with the idea of periodic abandonment in the face of overcropping and soil impoverishment.

When one considers the overall character of the occupational and ecological sequence of the area it becomes clear that exploitation of the lower Kennet gravels was far from straightforward. This is because farming seems to have had a de-stabilising influence on the environment as manifested either by soil impoverishment and heath development or by a local rise in water table, impeded drainage and an increase in flooding. Such problems were not of course insuperable. In the re-occupation of sites such as Ballast Hole we should perhaps be looking for signs of manuring, crop rotation, long fallowing and use of legumes etc. Similarly, in the apparently delayed onset of flooding at Knights Farm and the re-occupation of Brimpton we should be looking for signs of drainage ditch networks, bank-side revetments and new types of damp-proof settlement structure.

7.2.4. The structural character of the settlements (Figures 61, 62)

The structure of these settlement palimpsests is clearly determined to a large degree by the type of economy they followed. Aldermaston Wharf consists basically of just two neighbouring hut structures each with an adjoining pair of pit clusters (Cowell et al 1978; Bradley et al 1980). Though occupation features occur sporadically beyond this complex they do not alter the overall picture of a small, compact and orderly settlement. The key to understanding how this arrangement developed is given first by the evidence (discussed below) for a heavy reliance on cereal cropping and secondly by the distribution of field system ditches around the site. A crucial factor in dating the origins of this system (and hence its relationship with the settlement) is the problem that as drainage features the ditches would normally be subjected to regular scouring. Limited sectioning of the features is not therefore a reliable way to date their origin and it is difficult to accept the excavators' suggestion that the system dates essentially from the middle Iron Age. Logically the main axial ditches would be cleaned out more regularly than the minor cross baulk ditches. The retrieval of middle Iron Age debris from the former and Bronze Age material from the latter need not therefore be at variance with a Bronze Age date for the basic layout. One may also note how features within the site I late Bronze Age settlement are confined to the west of one of the main ditches.

In view of these observations it seems preferable to conclude that the settlement was inserted into a pre-existing field system as is separately indicated by the environmental evidence for its early setting being one of derelict farmland. Thus this early system although

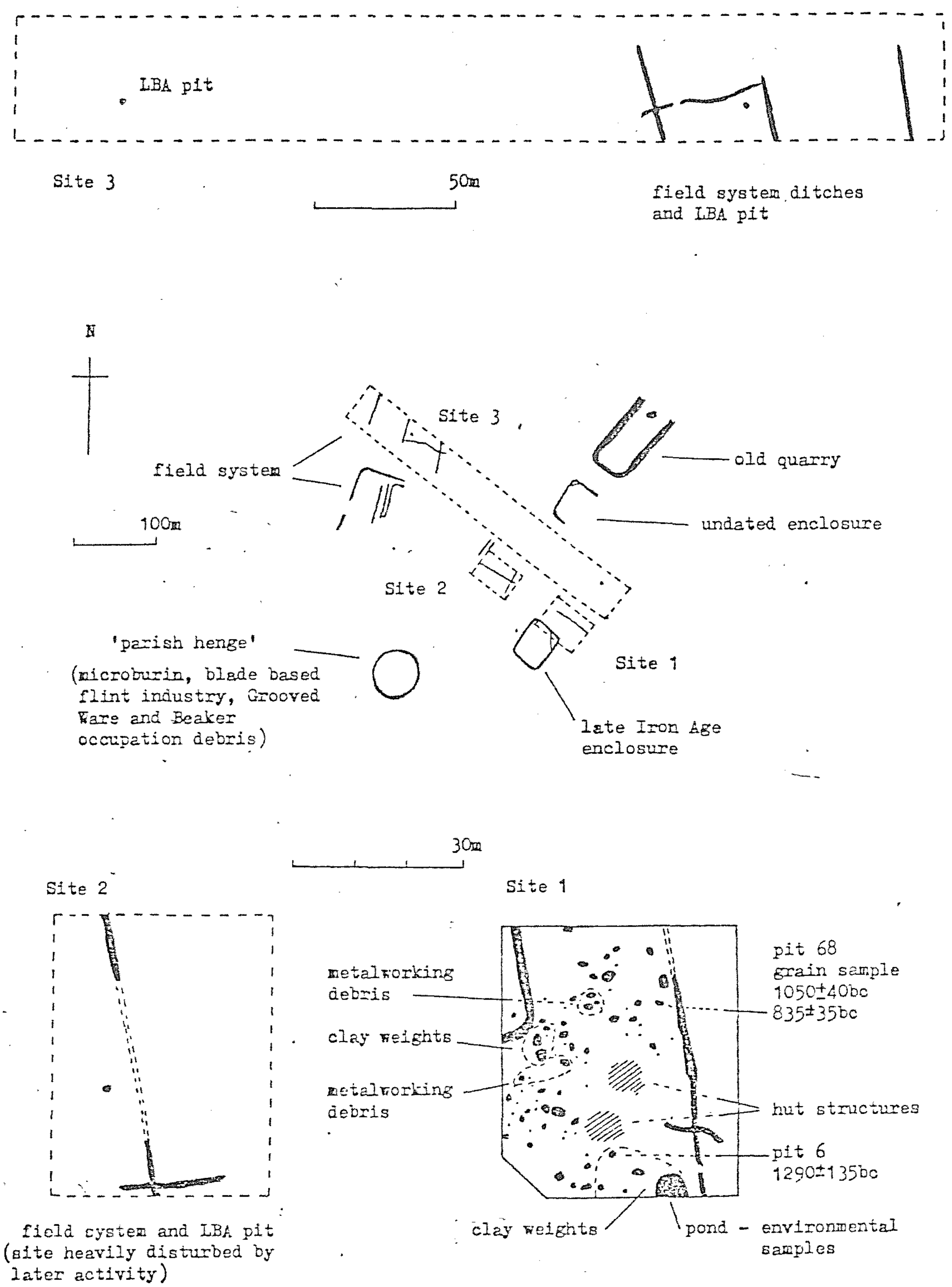


Figure 61 : CROPMARKS, EXCAVATION AREAS AND INTERNAL DETAILS OF THE SETTLEMENT PALIMPSEST AT ALDERMASTON WHARF

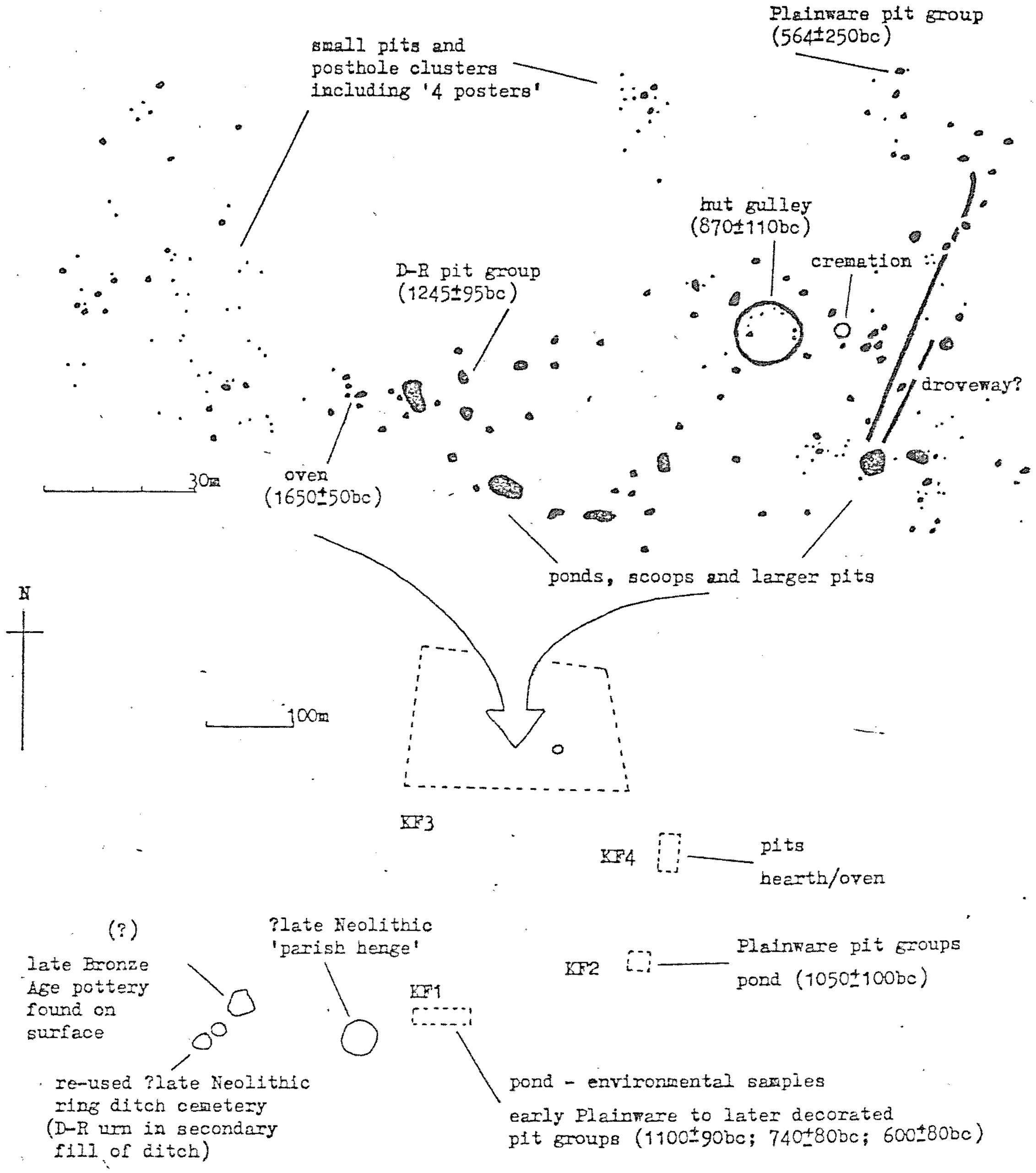


Figure 62 : CROPMARKS, EXCAVATION AREAS AND INTERNAL DETAILS OF THE SETTLEMENT PALIMPSEST AT KNIGHTS FARM, BURGHFIELD

subject to piecemeal modification subsequently continued to influence the organisation of activity long after its primary establishment. It explains the compact nature of the late Bronze Age settlement and it helps to explain the regular rectangular shape of the late Iron Age enclosure intruding on site I which appears to have been superimposed on one of the old fields.

If Aldermaston Wharf is seen as an ancient and closely organised agrarian landscape Knights Farm presents the contrasting picture of a sprawling palimpsest of occupation features scattered across largely untrammelled meadowland. Because the features spread over such a wide area (as much as 10 hectares) and encompass such a wide time span (potentially a millenium or so) it is difficult to define structure within the settlement area but there are some hints of how it was organised. The earliest focus of activity seems to be the network of ovens, ponds and scoops towards the centre of subsite 3 - the droveway may also be an early element. Most of the Deverel - Rimbury pottery and the two earliest radiocarbon dates from the site (1650±50 bc, BM 1593; 1245±95 bc, BM 1594) were derived from this area. Later activity is much more widely dispersed, not only within subsite 3 but also across the other sub sites.

Plainware (i.e. post Deverel - Rimbury) activity in subsite 3, as manifested by clusters of larger pits and post hole structures (including some 4 posters), focusses on the large ring ditch and its small satellite ring. Decorated pottery groups which should generally be even later in the sequence were found mainly towards the western end of subsite 3 in an area of post holes and smaller pits recalling the arrangements at Aldermaston Wharf. Comparable hut structures are not readily recognisable within the posthole patterns but in view of the density of occupation debris in the associated pits it is likely that they were present. Clearly within the evidence for an overall increase in the scale of occupational activity there are signs of settlement drift - each phase and each new location being marked by significantly different combinations of structures. Quite what lay behind these changes is now difficult to assess but the environmental evidence for a gradual rise in local water table could be relevant. Thus the early features (the ponds and oven pits) do indeed seem to reflect relatively dry conditions. The profusion of pits rather than above ground post built structures in the middle part of the sequence tends to confirm the idea that waterlogging was not a serious problem although the ring ditch around the contemporary hut could be seen as a damp proofing measure. Significantly, within the areas of late occupation pits are much less common than above ground structures.

7.2.5. Subsistence economy and industrial activity

As will become clear in this discussion of the economic and industrial evidence from the lower Kennet valley it is important to conceive of these various settlement sites not as segregated, self sufficient farmsteads but rather as interdependent elements of a larger system of production and exchange.

Aldermaston Wharf represents the agricultural element. Quern fragments are common, as are traces of burnt grain analysis of which revealed a consistent predominance of barley (85%) over wheat (15%). In view of the marginal soil fertility at Aldermaston this predominance is to be expected for wheat with its deep root network thrives best on deep, naturally fertile soils and barley with its shallow root network fares better on shallow soils or those where fertility is enhanced by top feeding (manuring). Whether one accepts the excavators' idea that the settlement was producing a grain surplus is debatable for their argument hinges on the proposition that all the pits were available for storage at any one time. Since the settlement cannot have endured for much less than a century or so this would entail the same pits being re-used up to a hundred times. The argument also makes no allowance for other forms of storage such as in post built granaries or even loft spaces over the huts. Equally relevant is the observed lack of crop processing evidence and the complete absence of rachis internodes and glumes which collectively point to the grain being processed elsewhere. Were it not for the apparently extensive and well organised field system around the settlement it could have been interpreted as a consumer rather than a producer of grain. However, the evidence need not be contradictory if one allows that processing was carried out beyond the cramped confines of the settlement, within one of the adjoining fields or paddocks.

Knights Farm, despite its predominantly pastoral aspect, must also have been producing limited quantities of grain (as testified by cereal pollen) and perhaps roots, beans and other vegetables. Unfortunately, because of the non-survival of animal bone, it is not possible to reconstruct the nature of the more important pastoral element of the economy. The local environment would tend to favour cattle above sheep and pigs, and the presence of briquetage on the site could well be related to the salting down of beef for storage or trade. The site also produced a large number of clay weights some of which may have been used as thatch weights on post built stores whilst others are plausible as loom weights suggesting that sheep (or goats) were indeed quite an important part of the stock population.

To judge by the quantity of fine pottery in use at Aldermaston and during the later stages of the occupation at Knights Farm both sites shared in the phase of relative prosperity which enveloped the lower Kennet towards the end of the Bronze Age (Bradley et al 1980, 286 - 290). This is seen chiefly in the metalwork evidence which shows that whilst high statusobjects are not as common in the Kennet valley as in the Thames valley the former was still able to procure and produce sufficient bronze tools and weapons to make continued use of flint unnecessary. Within contemporary settlements on the Berkshire Downs metal objects are rare and flint still very much in use for edge tools. Metalworking is clearly evidenced at Aldermaston by finds of crucibles and mould fragments and similar finds are reported from Pingewood.

Viewed overall the economic and industrial evidence points to the existence of a highly organised system of economic interdependence and exchange. It was this system which allowed the valley land with all its attendant problems of soil impoverishment and waterlogging to be exploited so efficiently. The Knights Farm gravels clearly supported a specialised pastoral regime which made full use of the abundant meadowland in the vicinity even though they could, if required, have supported a more balanced and hence safer mixed economy. To have farmed the land in such a specialised and uncompromising manner the inhabitants must have been confident that they could draw the bulk of their grain requirement from elsewhere. Pingewood seems to have functioned as a satellite to Knights Farm but it was probably to sites such as Aldermaston and Ballast Hole, where the local soils have a better arable capability, that they would have looked for their grain.

All this obviously implies a quite well defined social and settlement hierarchy within which perhaps the long lived settlements such as Knights Farm (note the very large hut here) were served by briefly or intermittently occupied satellites such as Pingewood or Brimpton. Whether Aldermaston Wharf should also be regarded as a satellite is difficult to determine. Its sequence is rather short, its soils not of the best quality and there is evidence for its grain being passed on elsewhere for processing. There could of course be a settlement form above Aldermaston and Knights Farm in the local hierarchy, one with an overall responsibility for managing the complex, interdependent subsistence arrangements for processing and redistributing produce, whether in the ear or on the hoof, and for procuring the ores and other materials needed to keep local craftsmen at work. At the moment much of this picture is based on speculation but it does at least illustrate the sort of arrangements we should be looking for.

7.2.6. A model - the signature of Bronze Age valley settlement.

It remains now to consider how lessons learned in research of the lower Kennet valley can be applied to the less extensively studied landscapes of other valleys in chalkland Wssex. Perhaps the first and most important observation is the ephemeral nature of Bronze Age settlement. It will be recalled that the settlements discussed above do not normally reveal themselves on air photographs or in fieldwalking but instead lie concealed within cropmark palimpsests composed chiefly of ring ditches and vague linear features. However, a striking feature of the Kennet valley evidence is the frequency with which Bronze Age settlements are found in close proximity to these ring ditches, especially the larger ones previously described as parish henges. The pattern is so regular that it seems wherever ring ditches are seen on air photographs one can be fairly sure there is a settlement alongside them. This provides the first clue as to how cropmark evidence in other valleys should be approached.

A second consideration concerns interpretation of the ring ditches themselves. Within the chalklands of Wessex, where the round barrow tradition is particularly strong, it is usually assumed that ring ditches on valley gravels are simply levelled mounds. The Kennet case study suggests this interpretation is far too simplistic and that such features could have performed a wide range of functions not all of which are necessarily related to funerary or ritual activity. Large ring ditches have proven to be Neolithic and Bronze Age occupation sites and smaller versions sometimes represent hut circles rather than cremation cemeteries. It is therefore possible that the ring ditches already identified in so many chalkland valleys have been seriously misjudged and that far from being as elusive as is generally thought many elements of the Bronze Age settlement pattern have been on record for years. One could also profitably take up the idea that in some cases the stake structures found in round barrow mounds started life as domestic huts (Burgess 1980, 189). At all events it is clear we should take a long, hard look at the barrows and ring ditches for they could well provide much of the missing settlement data.

Inevitably, the final element of the model to be considered is the metalwork - typically the chance discoveries of bronze implements made in the course of quarrying, drainage work, dredging and other related forms of valley redevelopment. How may they be interpreted - are they to be dismissed as casual losses or votive offerings or is there now enough evidence to link them with settlement patterns? Again, the Kennet case study indicates most of them probably do derive from occupation horizons even if the exact circumstances of deposition are unclear. Indeed, in areas where little or no excavation has taken place and where ground conditions (i.e. permanent grassland etc.) militate against effective air survey these chance finds of bronzework may be the <u>only</u> clue to the location and distribution of settlement.

7.3. The upper Kennet valley - the Avebury region

Evidence from the Avebury region is chiefly of interest in showing how, following mid to late Neolithic recession, early second millenium bc settlement and subsistence strategies were revitalised within what Barrett and Bradley (1980) have styled the 'Core Areas' of Wessex. The origins of the revival process clearly lie in the late Neolithic phase of monument building which in the Avebury area appears to commence with Silbury at perhaps circa 2200 bc. As discussed in Chapter 6.2 the key innovation, so far as subsistence is concerned, is mastery over scrub dominated secondary environments. But it is only within Beaker age contexts that one can begin to see how this new adaptation worked.

Ostensibly it involved selective reclaimation, working upwards and outwards from pre-existing settlements in the valley corridor, of old scrub infested occupation sites, pastures and fields. One may note, for example, how the criss-cross ard marks associated with the Beaker scrub clearance horizon at South Street have the same orientation as those of earlier Neolithic date sealed beneath the barrow (Ashbee et al 1979) - as if the old valley field layout remained both intact and viable. It is also quite striking how so many Beaker round barrows overlie earlier Neolithic occupation sites (e.g. Hemp Knoll - Robertson - Mackay 1980; Roughridge Hill - Annable 1965; Avebury G.55 - Smith 1965b) indicating perhaps that they were never completely given up even if use during the mid to late Neolithic recession involved nothing more than occasional visits during hunting forays.

Such an interpretation would certainly fit the evidence from Hemp Knoll where refuse associated with reclaimation of the site and the eventual construction of a Beaker round barrow there (1810±60 bc, BM 1585) contains an unusually large proportion of aurochs remains. A further point of interest is that although the primary interment was associated with a classic range of the fashionably new Beaker equipment it was also accompanied by the complete hide (with head and hooves still attached) of an ox - a funerary tradition of considerable antiquity in this area (see Chapter 6.2.). Hemp Knoll stands more remote from the valley corridor than does Avebury G.55 and although both are barrow sites this is reflected in the way they were used before and after barrow construction. Hemp Knoll was occupied only in the earlier Neolithic and thereafter there is little activity until an episode of tillage (probably connected with scrub clearance, as at

South Street, rather than cropping) followed by a grassland phase and barrow building. Afterwards there was secondary funerary use of the barrow but against a background of scrub re-invasion which was not reversed until a boundary ditch system was laid out across the site later in the Bronze Age - ostensibly relieving the old cemetery of its territorial significance.

Avebury G.55, on the other hand, lies in an area that had been occupied, so far as one can tell, continuously in one form or another since the earlier Neolithic (the associated pottery sequence includes Windmill Hill ware, all facies of the Peterborough series, Grooved Ware and Beakers). It was in fact built over a number of Beaker pits and a flat grave which could represent activity at the edges of the settlement clearing. Molluscan evidence shows that the clearing was greatly expanded soon after.

Virtually all the contexts within the Avebury area that have been adequately investigated and reported yield evidence for Beaker age scrub clearance and economic re-activation (see Chapter 6.2. for sites and sources). It is easy to see how this could be interpreted as the arrival of a new, vigorous and more agriculturally oriented population. But, the material associations - the Beaker 'package' - are in this respect misleading for there are numerous indications that one is dealing with a population who had retained tenure of the land since it was first claimed a millenium or more earlier. We have seen how settlement of the valley continued through the mid to late Neolithic recession; how as expansion got underway, local farmers selectively reclaimed the derelict fields, pastures and outlying occupation sites their ancestors had claimed and used, and how, when a method of prescribing access to their land became necessary, they used the same expedient as before - barrow monuments.

This latter point confirms perhaps that these parts of the chalklands were again, to some extent, being exploited on a seasonal basis by transhumant elements of communities who for the most part lived elsewhere. The round barrow cemeteries on Roughridge Hill, Windmill Hill, Hemp Knoll etc. therefore served much the same territorial functions as long barrows had during an earlier phase of intercommoning.

LEWES pollen sequence

(Thorley 1981)

c.1600bc to c.1300bc:
Regular, small scale disturbance of heath and Alder communities on edge of swamp. Wide range of cultivar herbs indicate modest clearances mainly for cropping.

1240±125bc (I 4454)
Progressive, major clearance for arable and pasture but not maintained. Regeneration follows ie. weeds → bracken → heath → birch.

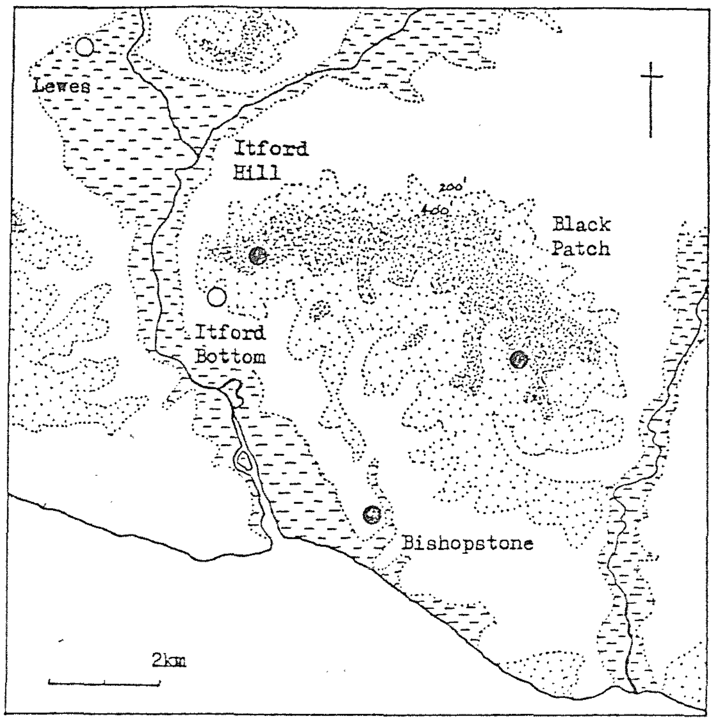
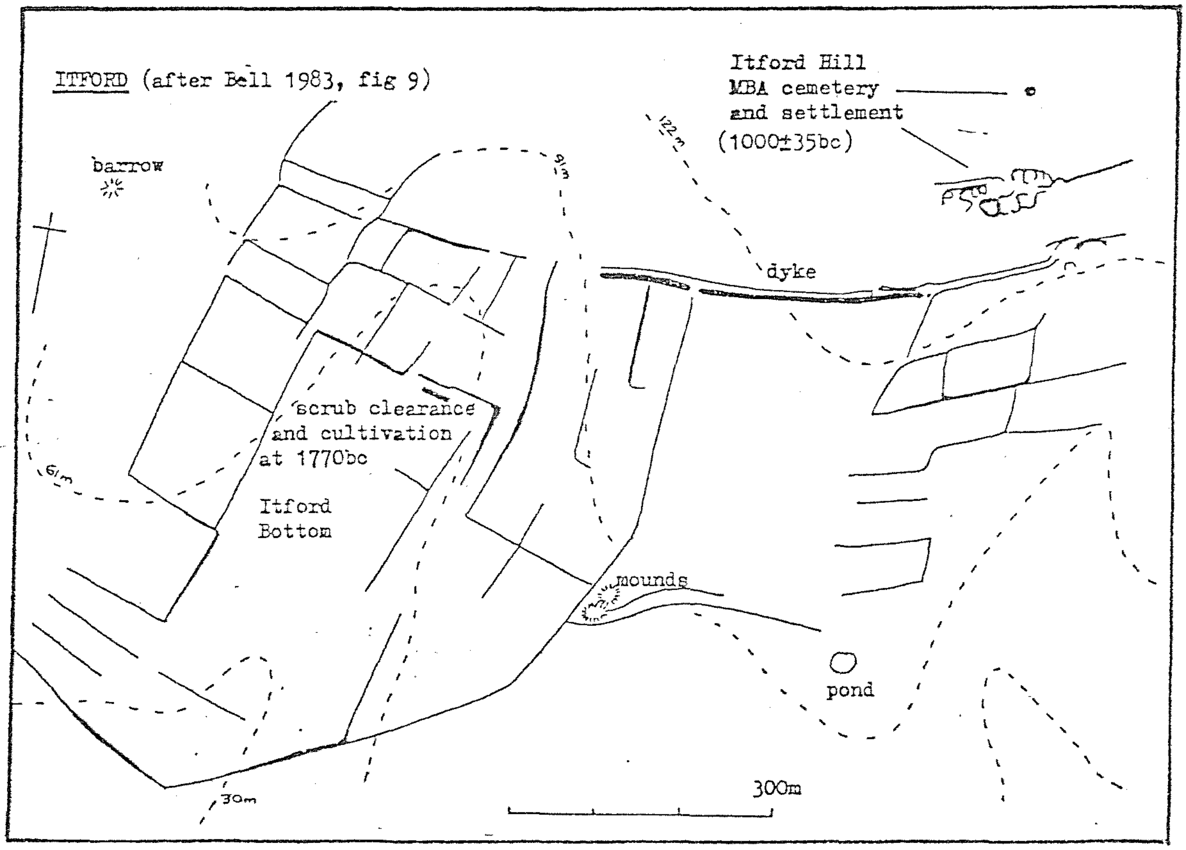


Figure 63 :
REFERENCE SITES IN THE OUSE AND CUCKMERE VALLEYS AND IN THE DOWNLAND INTERFLUVE



They certainly have a similar distribution in the landscape and in one case - Beckhampton Road (Ashbee et al 1979), a round barrow is emphatically superimposed on the long barrow which had itself been superimposed on an earlier totem like marker structure. Nevertheless, one may also note how some barrows or cemeteries (e.g. Avebury G.55) were sited alongside settlements rather than in outfields or transhumance territories - a tradition which perhaps started to evolve during the mid to late Neolithic recession when little activity took place beyond the infield areas. A close spatial relationship between settlement and cemetery is of course a feature of late Neolithic/early Bronze Age activity patterns in the lower Kennet valley and could even be seen as one of the few observable aspects of social behaviour which chalkland communities had in common with those living beyond.

7.4. Sussex - the Ouse and Cuckmere valleys

Some of the most detailed information regarding Bronze Age settlement and ecology in Wessex comes from the comparatively small but well researched downland interfluve between the Ouse and Cuckmere valleys. More importantly the settlements at Itford Hill, Black Patch and Bishopstone can now be linked into an ecological model that encompasses the valleys as well as the higher downland.

Taking first the Ouse valley - Bell's (1983) research in the Itford area shows agricultural re-activiation of the dry valley floors extending off the main Ouse corridor beginning in late Neolithic times (1770±120 bc, BM 1545), long before the middle Bronze Age settlement was established on nearby Itford Hill (Figure 63). This is an important point for it implies that the field system laid out across the relatively deep and stable soils of the dry valley floor served an as yet undiscovered Beaker settlement on the edges of the Vale of Brooks and that Itford Hill was established as a satellite to it when the logistics of managing an expanded territory demanded a new centre on the upland edge. One may note, for example, how the Middle Bronze Age settlement is located at some remove from the Itford Bottom field system which at some stage it appears to have been cultivating (Bell 1983, 143). It lies above the dyke which separates arable and pasture in such a position as to suggest it was an insertion into a landscape that had already been organised and divided.

The close proximity of a barrow which, it has been proven (Holden 1972), served as the Itford Hill cemetery is in itself interesting for it is consistent with the evidence from the lower Kennet for a close spatial relationship between living and burial sites. But the relationship may be even closer. Ostensibly the primary feature of the cemetery is a post built hut which could have started life as a domestic or at least non-funerary structure - perhaps the first upland building to be erected in the colonising drive from the valley below. If so, it would be an obvious focus for later funerary which seems to have taken the form of burials inserted into a platform of flint nodules alongside the hut.

In the palynological data from Lewes at the other end of the Vale of Brooks (Thorley 1981) it may be seen that the phase of Bronze Age land colonisation and reclaimation did not just impinge on the downland. At much the same time as scrub was being cleared in Itford Bottom preparatory to cultivation Heath and Alder communities near the edge of the swamps at Lewes (land derelicted by Mesolithic and Neolithic disturbances - see Chapter 6) were also beginning to be cleared and cropped. The scale of operations is apparently small as indeed it could have been at Itford Bottom - in keeping with the concept of a modest start to the colonising drive. However after several centuries the pace of expansion accelerated. When the satellite settlement on Itford Hill was being founded the Lewes gravels experienced their first major phase of clearance (circa 1240 bc) with arboreal pollen falling to an all-time low of 30%. Herb spectrums indicate that the Lewes clearance was for arable and pasture. But the evidence also indicates that the gravels here did not respond very favourably to exploitation (as appears to have happened at Aldermaston Wharf in the lower Kennet) for this major clearance horizon is evidently followed by almost total regeneration involving an upsurge in weeds, then bracken and heath and eventually birch woodland.

A broadly equivalent sequence may be envisaged for Rookery Hill, Bishopstone where lynchet stratigraphy indicates that the old Neolithic field system on the slopes of the hill was briefly reactivated

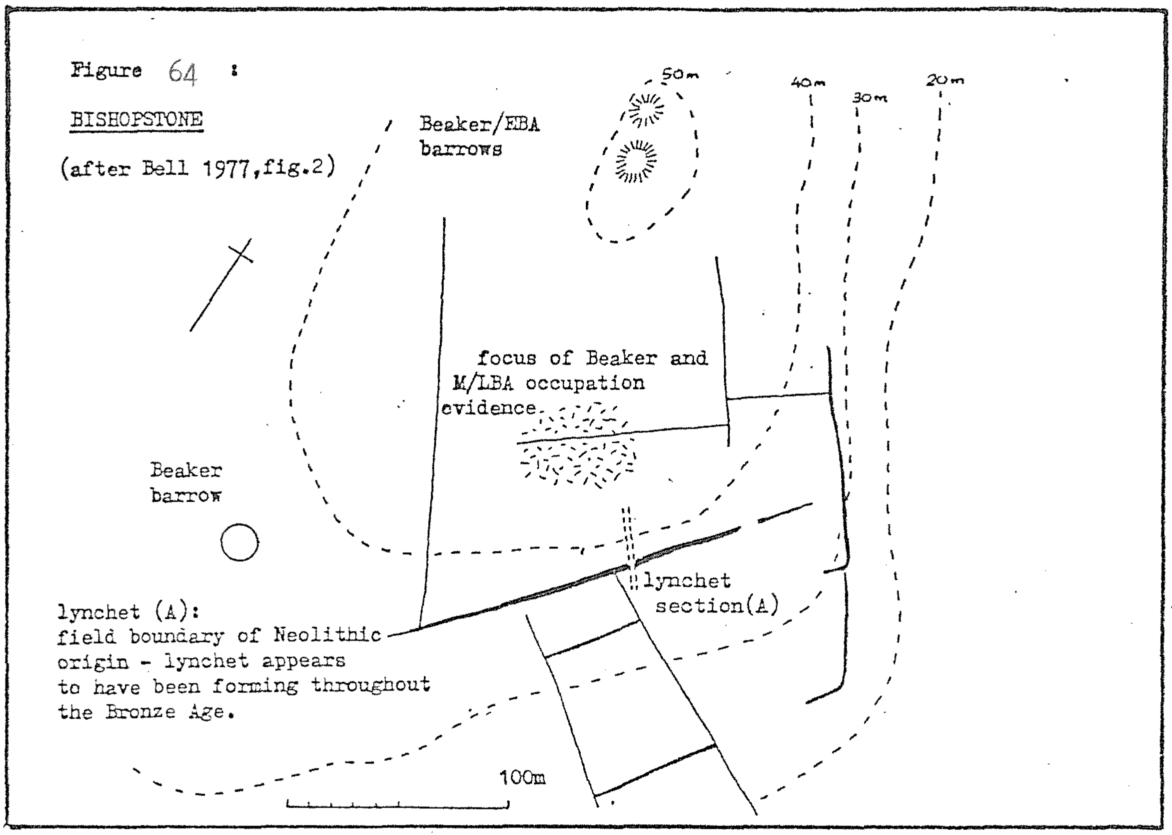


Figure 64 : BISHOPSTONE

(after Bell 1977, fig.2)

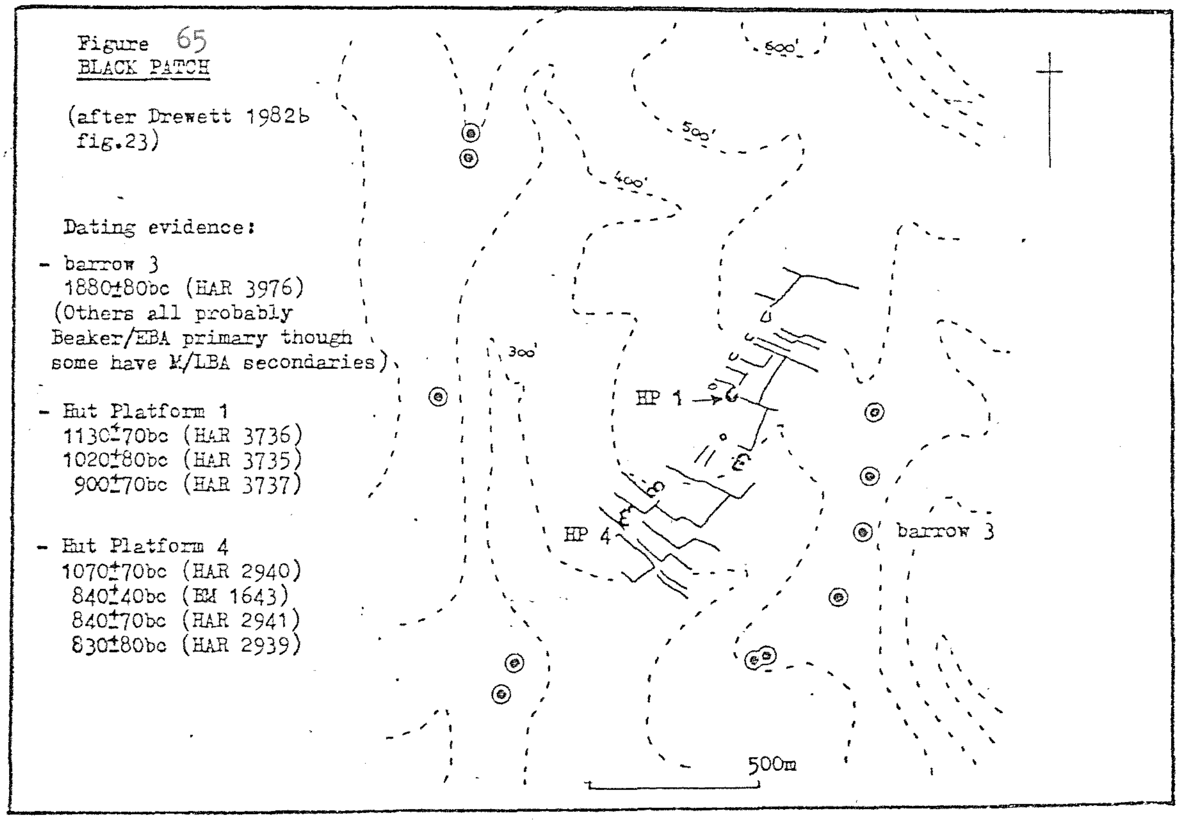


Figure 65 BLACK PATCH

(after Drewett 1982b fig.23)

in Beaker times when the crest itself was given over to pasture and the early elements of a round barrow cemetery (Bell 1977 and see Figure 64). Though the thin scatter of Beaker pottery found above the lynchet might reflect some form of contemporary hilltop occupation there are no associated features and the pottery could well be residual manuring debris. Early Bronze Age activity was probably restricted to further barrow building within the hilltop cemetery and it is not until the mid to late Bronze Age that there are renewed signs of arable activity in the Lynchet sequence and perhaps for occupation nearby on the southern crest of the hill. This time the occupation evidence is again rather meagre, so meagre that it is difficult to imagine how it could have been the settlement from which the adjoining fields were managed and manured for a narrow section across the lynchet yielded quite an impressive assemblage of mid/late Bronze Age debris out of all proportion with the occupational evidence consisting of just a few amorphous scoops and three post holes (Bell 1977, 46). Again the conclusion must be that arable activity on the hillslopes and funereal use of the hilltop cemetery was essentially organised from an undiscovered settlement located on the edge of the estuary below.

Moving across to the Cuckmere valley it is to the recently reported excavations and surveys around Black Patch (Drewett 1982) that one must initially refer. Consistent with the idea of Bronze Age downland colonisation is the evidence for the mid to late Bronze Age settlement being inserted into an area previously reserved for Beaker/ early Bronze Age barrow cemeteries (Figure 65). Indeed since the nearby mid Neolithic barrow on Alfriston Down was itself built in open but thorn scrub infested pasture (Drewett 1975) construction of these later barrows could be seen as the first stage of <u>recolonisation</u> of land left derelict in the later Neolithic. Whilst the settlement is clearly more closely integrated with the associated field system than at Itford Hill the question of priority received scant attention during the excavation. However, since the hut platforms seem to be located on negative lynchets with the back of each hut structure founded in the corresponding positive lynchet the settlement can be seen to be later than at least some of the fields.

Thus once again one may envisage a sequence in which Beaker/early Bronze Age recolonisation of a previously disturbed area is matched by the extension of arable land up the floor of a dry valley and by use of the adjoining downland crests for grazing and as cemetery areas. Later, at the peak of mid Bronze Age expansion, a settlement was inserted into this field system and its occupants re-used some of the nearby barrows to accommodate their dead.

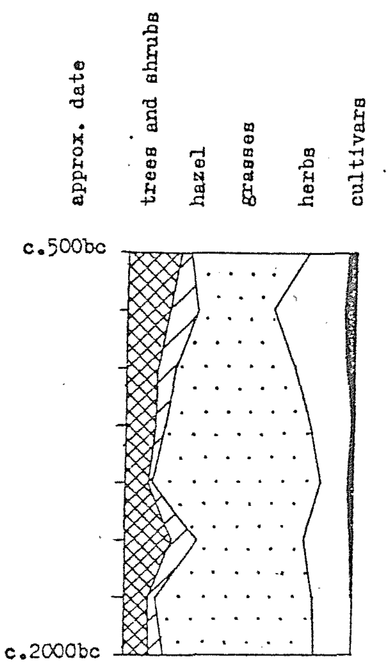
If seen as a satellite or daughter settlement there are a number of clues to where the Black Patch parent was located. Drewett's analysis of the terrain and local resources (1982, Figure 37) indicates Black Patch was linked to a part of the Cuckmere valley where stray finds of bronze artefacts and a middle Bronze Age 'barrow' have already been recorded (Figure 2). As argued previously such apparently insignificant discoveries are now to be seen as the hallmarks of valley settlements. Drewett does not specifically argue for Black Patch being closely linked to a valley settlement but this type of arrangement was probably in his mind when he wrote of economic interdependence between downland and valley sub systems in the later Bronze Age (p. 399). In observing that none of the downland settlements in Sussex practiced bronze working whilst there are hints of such activity in the Cuckmere valley he argues that metal production and distribution was controlled by the valley settlements and it was they who supplied their downland counterparts. Such arrangements are consistent with the idea of a parent/daughter (valley/downland) settlement relationship and may be paralleled in the Kennet valley (Chapter 7.2.5), the Stour valley of Dorset (see Everley Water Meadow appendix - this volume) and the Wylye valley of Wiltshire (see Bishopstrow Farm appendix - this volume).

However, the recovery of a mould from the downland site of South Lodge (Barrett and Bradley 1980, 195) and a mould together with casting waste from Burderop Down, Wiltshire (Grinsell 1980, 215) reveal that in some circumstances downland settlements did have an industrial capacity, and it cannot therefore be assumed that they necessarily served as dependent off-shoots of valley settlements.

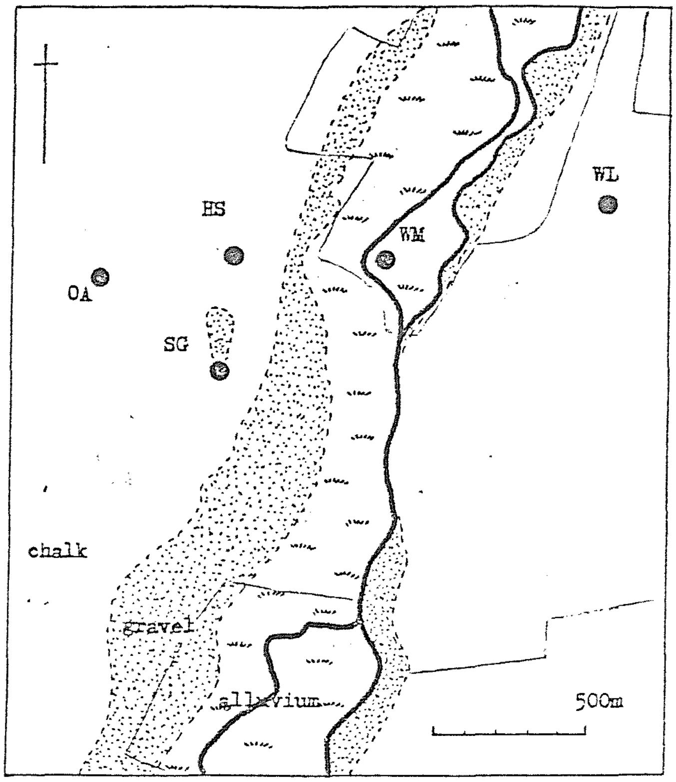
Before leaving Sussex mention should be made of the recently recognised 'marsh camps' distributed along the Sussex coastline from which an unchanging and outwardly 'Mesolithic' form of subsistence was practiced from Neolithic down to Roman times (Drewett - quoted in Selkirk 1983). Obviously any discussion of settlement and economy in Sussex must take into account how these 'marsh camps' (which despite the adopted term may well have been permanent settlements exploiting the rich natural resources of the estuaries and shorelines) relate to the better known downland sites. Bearing in mind how difficult to locate and characterise these sites potentially are they could have been a ubiquitous settlement form. If so it would help to explain the relatively impoverished character of Sussex during the Neolithic and early Bronze Age. It has already been suggested in Chapter 6 that within the coastal Neolithic of Sussex farming constituted only a supplement to the economy which was concentrated mainly on natural resources. It seems this situation prevailed well into the Bronze Age and that the expansion testified at Lewes, Itford, Bishopstone and Black Patch represents the first seriousattempt to apply farming as a mainstay of the local economy. Clearly the development of Sussex in earlier prehistory differs in several important respects from the path followed by the downland core areas of Wessex.

7.5. Hampshire - the Itchen valley

Just as the special circumstances of archaeologically monitored gravel extraction allowed Bronze Age settlements in the lower Kennet valley to be discovered so archaeological monitoring of Winchester's redevelopment has allowed a comparable pattern to be discerned in the Itchen valley. The details are of necessity less clear because whereas the Kennet investigation took place in a virtually open landscape the Winchester investigations are typically in the nature of narrow trial trenches cutting through substantial medieval, Saxon, Roman and Iron Age horizons before they reach the Bronze Age landscape. Indeed, it is perhaps remarkable that in the midst of so many more obvious distractions and faced by so many operating difficulties that Winchester archaeologists have managed to record anything of the Bronze Age landscape. Figure 66 illustrates the distribution and character of the evidence one must work with. As more recent



Winnall Moors pollen sequence
(based on Waton 1982,fig.2)



WM - Winnall Moors pollen sequence illustrated above (Waton 1982).

WL - Winnall Industrial Estate - Deverel Rimbury settlement features found in excavation of Saxon cemetery - pits, fineware pottery, quern, sheep bone and a possible crucible (Chadwick Hawkes 1970).

HS - 82 Hyde Street (SCATS) - deeply buried Deverel Rimbury pit in floor of small stream valley (Collis 1978, 119).

OA - Oram's Arbor - later Bronze Age occupation scatter and posthole structures observed in trial trenching the earthwork (Biddle 1966). Chadwick Hawkes (1970) suggests pottery could be of Deverel Rimbury type.

SG - St. George's Street - hearth and occupation horizon containing LBA/EIA furrowed bowls etc - found at rear of Royal Oak when exploring line of earthwork defences (Cunliffe 1964).

Figure 66 : CHANCE FINDS OF BRONZE AGE OCCUPATION SITES UNDER MODERN WINCHESTER AND THE CONTEMPORARY BRONZE AGE ENVIRONMENT

excavation in and around the city are published the picture will obviously change but for the present the four occupation sites illustrated provide a valuable background to the environmental sequence recovered from the floodplain at Winnall Moors.

This pollen sequence may be interpreted as showing that between circa 2000 and circa 1400 bc the landscape was extensively open and used primarily for pastoral purposes although at circa 1700 bc cereal agriculture was beginning to make a small comeback. The evidence for Beaker age breaking up of the late Neolithic pastoral landscape is of course repeated throughout Wessex and has been discussed in this volume in the specific contexts of the Avebury area, the Kennet valley and east Sussex. From circa 1400 bc through to circa 700 bc cereals and herbs rise to a remarkably high value against a background of modest forest recovery - the two trends being compatible within the concept of an economy moving progressively towards an intensive arable regime from an essentially pastoral one. That arable activity should peak at circa 700 bc, the end of the Bronze Age, and then go into a pastoral phase again is interesting but cannot yet be satisfactorily explained.

The principal attraction of the Winchester evidence is the way it allows ecological trends to be correlated with settlement activity even if evidence for the latter is incomplete. For example, the pollen record indicates a 'sheep and corn' type of economy in the area and indeed the pits at the Winnall settlement yielded a complete saddle quern and a sizeable group of sheep bone. There are also hints that these valley settlements were of comparatively high status. The Winnall pottery assemblage contains all the main Deverel - Rimbury elements but it is significantly rich in handsomely decorated, fine-ware globular vessels - types widely distributed across Wessex but not normally found in large groups. In other words Winnall/Winchester enjoyed a somewhat special position in the pottery supply network of the region. Ostensibly it was also an industrial centre for there are vessels tentatively identified as crucibles found on both sides of the river at Winnall and at St. Georges Street. Thus the little that is known of Bronze Age settlement in and around Winchester accords well with the pollen evidence which itself indicates a comparatively dense pattern of occupation site engaged in a thriving sheep and corn form of economy in a substantially open and managed landscape.

The intensity with which this part of the Itchen valley was being exploited can be put into proper perspective by comparing the Winnall pollen sequence with that retrieved from beneath a barrow at Moor Green, situated 15 km to the south on an outcrop of Bracklesham Beds near the river's mouth (Ashbee and Dimbleby 1974). This records essentially two phases of disturbance to mixed oak forest within which the high proportion of lime may be taken as an indication that it was climax forest for had it been cleared previously one would expect the resultant nutrient loss on these rather marginal soils to have militated against the presence of lime. The first disturbance (undated but probably late Neolithic/EBA), marked by selective suppression of lime, created a small clearing in which grasses, bracken and heather briefly flourished before it was recolonised by hazel and other forest trees. When the clearing had closed over it was subjected to a second phase of clearance, this time of more substantial proportions and with rather more evidence for the use of fire. There are again signs of selective suppression of lime, and a grassland floruit, but the clearing did not regenerate in quite the same way as it did previously. Birch began to replace hazel, oak and lime; bracken and to some extent heather began to compete with grassland species and eventually as bracken and birch reached a peak the clearing was used to accommodate a ditched bowl barrow with a turf core and collared urn primary - one of a group of barrows in the vicinity.

Clearly exploitation of the Moor Green area was both transitory and of limited value. Clearance led quite quickly to permanent ecological damage after which the area was given over to a cemetery. The contrast with what was happening in the Winchester area could hardly be more marked.

7.6. Central Wessex - the Avon and its tributary valleys.

The upper Avon valley flanked as it is by some of the largest

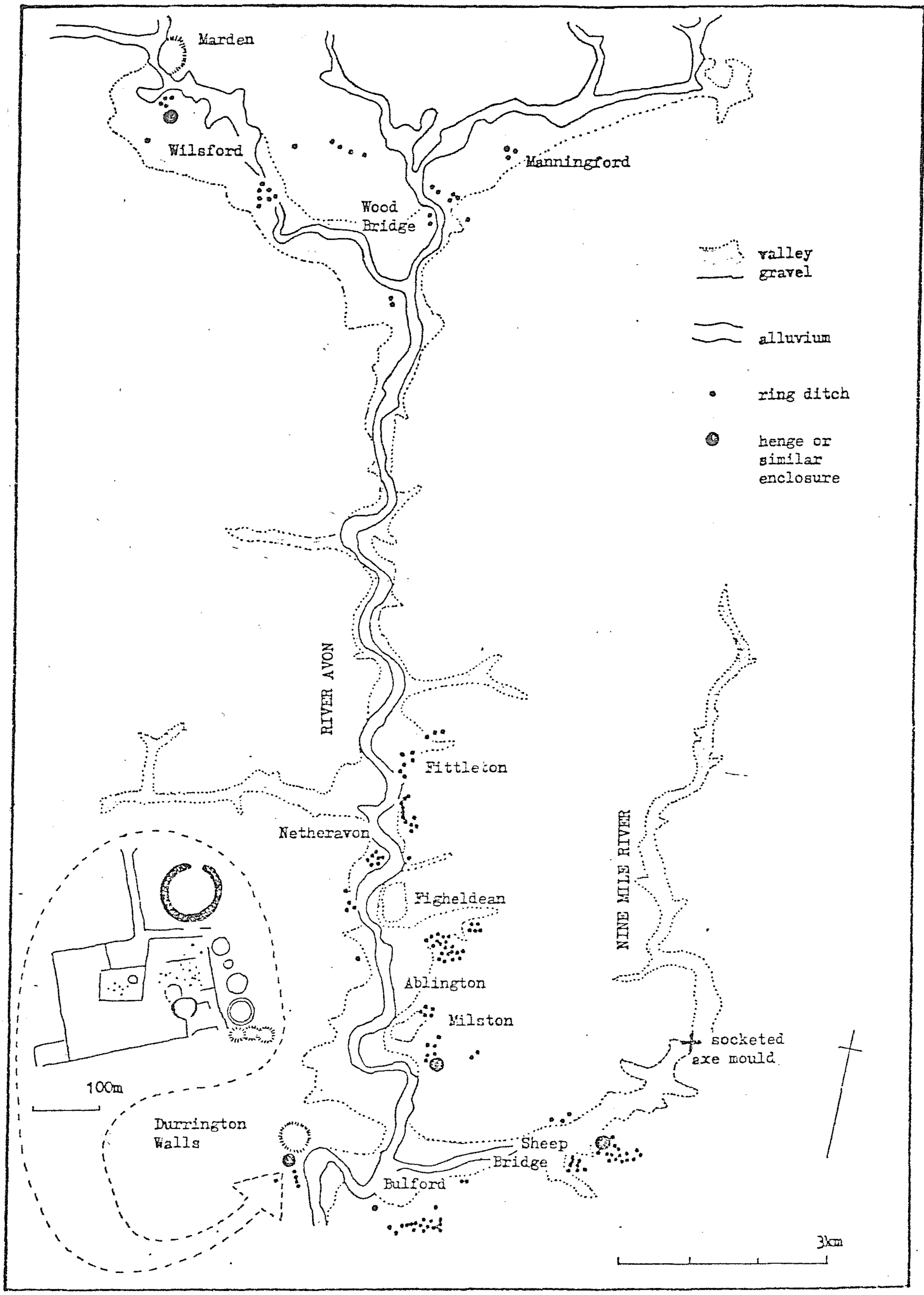


Figure 67 : CROPMARK EVIDENCE FROM THE UPPER AVON VALLEY WITH (INSET) A PLAN OF THE DEVEREL RIMBURY SETTLEMENT SOUTH OF WOODHENGE

and most impressive barrow cemeteries in Wessex ought to have a correspondingly rich record of Bronze Age activity. In practice the valley has received scant attention and one is forced by circumstances to work with crop mark evidence, most of which derives from surveys undertaken during the exceptional drought conditions of 1975 and 1976 (source - Wiltshire SMR). This information is therefore new in the sense that it has yet to be assimilated into Bronze Age research which has always tended to concentrate on the more obvious downland barrow cemeteries and other field monuments in their vicinity.

Figure 67 illustrates the distribution of ring ditches and henge (or henge - like) cropmarks on, or adjacent, to the floor of the Avon valley and its tributary the Nine Mile River. The relevance of ring ditch distributions to Bronze Age settlement research has already been discussed in the context of the lower Kennet. It will suffice here to recap that settlements often integrate with clusters of ring ditches even though they may not themselves be visible as a cropmark and secondly, that ring ditches do on occassion prove to be hut circles rather than levelled round barrows or cremation cemeteries. It was further noted that some ring ditch clusters are associated with larger henge-like ring ditches which have proven on excavation to contain late Neolithic /EBA occupation horizons.

Regarding the Avon cropmarks the Kennet observations do indeed seem to be relevant. There are ring ditch clusters at the northern end of the valley, where the headwater streams gather, and in the reaches below Fittleton where the valley broadens out. Both areas offer relatively broad, level expanses of fertile, riverside land with an obvious potential for settlement and agriculture, as is reflected in the present distribution of villages and hamlets, most of which are demonstrably of ancient foundation. The lack of ring ditches above Fittleton could reflect the difficulty of recording such features on the markedly narrower terraces but it could alternatively be determined by the fact that because the valley floor here is so narrow and flanked by such steep slopes it is inherently less attractive for settlement.

The perceived pattern is one of small ring-ditch clusters inthe headwater area (e.g. Wilsford, Wood Bridge and Manningford) and larger clusters below Fittleton. However they are interpreted, this size contrast does suggest an essential difference in the scale of Bronze Age activity in the two areas which could be related to land use potential. One may also note that clusters in both areas are associated with small henge - like enclosures ("parish henges") - note the examples at Wilsford (near the giant Marden henge); at Milston and at Sheep Bridge. Woodhenge is perhaps too closely linked in spatial and functional terms with Durrington Walls to be regarded as a parish henge if the term is reserved for autonomous local centres but, as will be seen, the area around it does indeed harbour Bronze Age settlement.

Thus it may be seen that with their clustered ring ditches and parish henge type enclosures the cropmark palimpsests of the Avon gravels closely parallel those of the Kennet gravels where a surprisingly intense level of Bronze Age activity has already been documented. The essential difference between the two valley systems is solely that the former has never experienced the extensive gravel extraction which in the latter has generated so many chance finds of bronze artefacts and so many opportunities for archaeological excavation.

There is however one cropmark palimsest in the Avon system which has been investigated - the complex of features immediately south of Woodhenge/Durrington Walls (see inset plan - figure 67). The earliest elements are Woodhenge itself and a palisaded enclosure located beneath (and masked by) the four ring ditches extending in a row south from Woodhenge (RCHM 1979). Both are associated with late Neolithic Grooved Ware assemblages. The four circles are probably of Beaker date and they together with Woodhenge clearly influenced the layout of the enditched paddocks, fields and trackways distributed south and west of them. Integrated within this framework are all the necessary elements of a classic Deverel - Rimbury farmstead - an ovate enclosure (the Durrington "Egg") with a northern annex beyond which lay pit clusters and a small ring ditch. Excavation by Cunnington (1929) and observation of a pipeline passing through the complex (Stone et al 1954) clearly indicates that it is indeed a Deverel - Rimbury farmstead with an integral ring ditch cemetery. Furthermore, mollusca from the

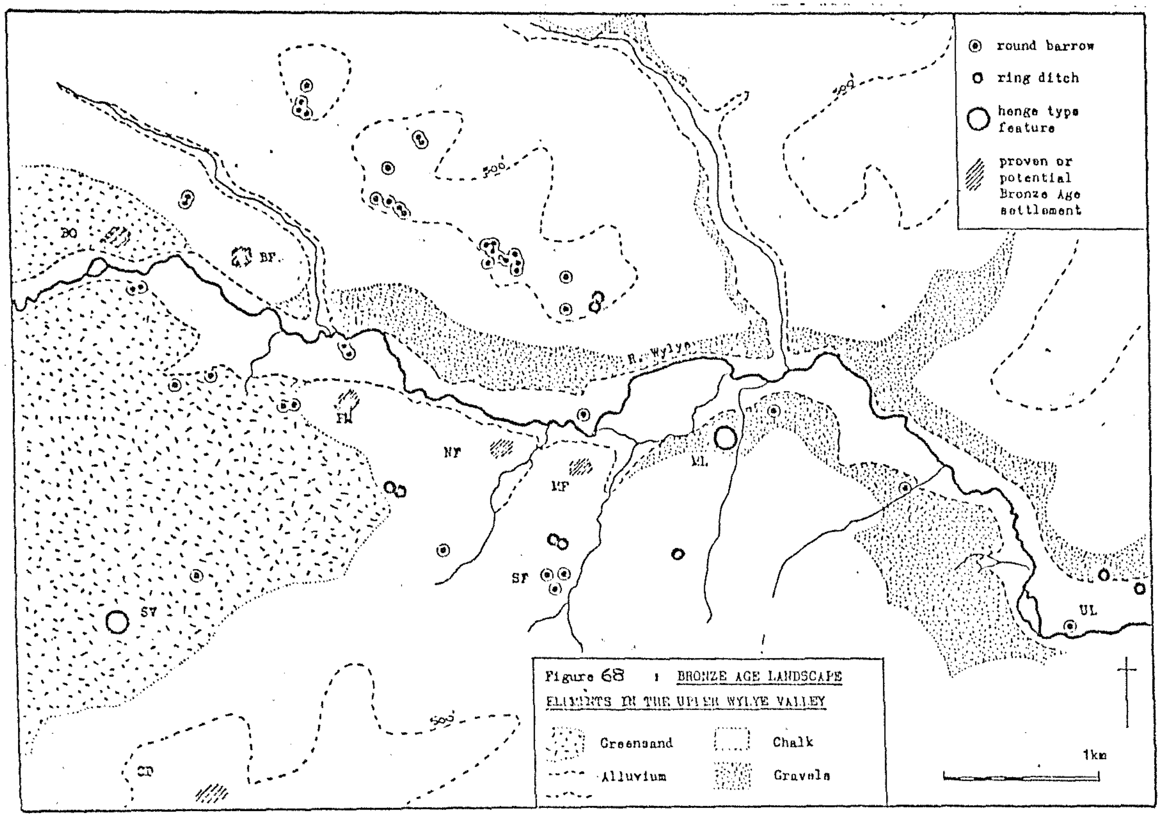


Figure 68 : BRONZE AGE LANDSCAPE ELEMENTS IN THE UPPER WYLYE VALLEY

REFERENCE SITES AND SOURCES

BF - Bishopstrow Farm. Cropmark palimpsest; trial excavation 1981/3 - LBA/EIA pits and ditches; residual material from earlier periods. (Author: Appendix 2)

BO - Boreham. Localised scatter of struck flint and rolled prehistoric pottery found in fieldwalking. (Author).

CD - Longbridge Deverill Cow Down. LBA/Iron Age occupation - 630±155bc (NPL 105). (Hawkes 1961; Barrett 1980b, 310).

MF - Manor Farm, Tytherington. Cropmarks and surface scatter of burnt stone - unexcavated but comparable with Bishopstrow Farm (Author).

ML - Mill Farm, Heytesbury. Cropmark of large, double ring ditch comparable with Mucking South Rings where dated to LBA (Jones and Bond 1980, figure 2). (Wilts SMR ST 94 SW 678).

NF - North End Farm, Sutton Veny. Cropmarks and surface scatter as at BF and MF. Trial pits dug 1981 recover rolled prehistoric sherds from below ploughzone. (Author).

PM - Pit Meads, Bishopstrow. Cropmark palimpsest containing traces of fields, circular enclosures and other occupation features (Wilts SMR ST 94 SW 657).

SF - Sutton Farm. Bell barrow excavated 1964 - primary inhumation in planked coffin on wooden bier; accompanied by miniature vessel, Food Vessel and bronze dagger. (Johnston 1980).

SV - Sutton Veny Common. Circular earthwork enclosure - identified by I.F. Smith as small (c. 76m diameter) Class I henge. (Wilts SMR ST 84 SE 612).

UL - Upton Lovell Golden Barrow. Small bowl barrow excavated by Hoare 1807 - primary cremation with numerous items of gold, amber etc, a classic Wessex grave. (Hoare 1817, 98-9).

ditch of Woodhenge show that the local environment of this farmstead remained open and intensively managed throughout the Bronze Age (Evans and Jones in Wainwright 1979, 194).

Once again the pattern of settlement alongside ring ditches is demonstrated. One can only infer from the regularity with which this occurs that most of the other clusters of ring ditches in the Avon system also adjoin or integrate with Bronze Age settlements. Additionally, attention should be drawn to the chance discovery, on the course of Nine Mile river, of a stone mould designed for casting double looped socketed axes (Passmore 1931). Not only does it lend support to the idea that most industrial activity of this kind was confined to valley settlements it neatly parallels the discoveries of moulds at Everley Water Meadow, in Dorset, and Egham in Surrey both of which proved to derive from riverside settlements (see Appendix I).

Elsewhere in the Avon system the evidence is generally very similar apart from a localised concentration of stray bronze finds in and around Salisbury attributable chiefly to the work of successive museum based archaeologists during a period of extensive urban redevelopment and expansion.

To the west, in the Warminster area, where the upper Wylye valley broadens out into a chalk and greensand vale dissected by spring fed streams, the principal elements of the recorded Bronze Age landscape are much the same as elsewhere though they are distributed in a rather different manner (Figure 68). Most of the ring ditches recorded probably <u>are</u> levelled round barrows which south of the river cluster in small cemeteries whilst north of the river they form into larger groups on the scarp edge overlooking the valley floor. The class I henge on Sutton Veny Common stands somewhat in isolation and could perhaps be regarded as a Neolithic outlier in the valley pattern. Not so the henge type feature on the gravels near Mill Farm, Heytesbury, which finds its closest parallels in later Bronze Age contexts. Indeed, if it can be treated as an occupation site, it conforms well with the general pattern in which those valley sites with some claim to be regarded as settlements are also located on slightly elevated land at the edge of the floodplain and similarly appear to have been in use chiefly in the later part of the period. This pattern of occupation sites spaced at intervals of 1 km or so along the river's edge is so regular that one is tempted to think it may be representative of settlement organisation more generally. However it would also appear to be the case that the formation of this pattern post dates construction and use of the neighbouring barrow cemeteries by a significant margin. Ostensibly one is looking at a late Neolithic/early Bronze Age ritual landscape or extended territory that was not fully and permanently settled until the later Bronze Age.

South of Salisbury the Avon gravels appear to be less responsive to crop mark survey possibly because in these broader reaches of the valley, where there are extensive water meadows, the gravels are covered by deeper deposits of alluvium. Still further south, below Downton, where the Avon gravels are backed by Tertiary sands and clays rather than chalk, crop mark evidence becomes even more elusive although systematic fieldwalking by the Avon Valley Research Group has shown that there is still a Bronze Age presence. The nature of this presence has yet to be adequately defined but continuing excavations at Harbridge indicate that patterns of burnt mounds distributed along relatively minor tributory streams are an integral element (see Appendix 3).

7.7. The Stour Valley and Cranborne Chase

Burnt mounds are also a feature of Bronze Age settlement in the Stour Valley and Cranborne Chase. Fieldwork and excavation at Everley Water Meadow has identified the same pattern of burnt mounds distributed along the banks of the river Iwerne (a minor tributary of the Stour) as noted at Harbridge. More importantly the excavations show that these burnt mounds are associated with a late Bronze Age settlement - one that had been engaging in metalworking (see Appendix I).

It is perhaps in these situations where, because extensive gravel formations are not present and crop mark evidence cannot be expected, that the principal signature of Bronze Age settlement changes to dense scatters of burnt stone - usually calcined flint.

Until work on the Everley site is completed and the necessary specialist reports and carbon dates received little can be added about the settlement beyond that detailed in Appendix I. Suffice it to say that the meadow had evidently witnessed a succession of occupations extending back to the Mesolithic. This contrasts with the sequence from South Lodge (Barrett and Bradley 1980) where occupation only starts in the Bronze Age, after an EBA field system had been imposed on the downland slopes. The settlement enclosure at South Lodge is in effect analogous to the satellite settlements of Black Patch, Bishopstone and Itford Hill, previously discussed in relation to colonisation of the Sussex downland. South Lodge also contained the same type of burnt flint mound found in the valley settlement at Everley Water Meadow. Quite what functions these mounds performed is unclear but the growing body of evidence for their presence in domestic contexts suggests that the traditional interpretation of them as field kitchens used by hunting parties may be erroneous.

7.8. Southern Dorset

Two of the reference sites discussed in the Neolithic Chapter also yield relevant Bronze Age data. The first - Mount Pleasant - situated on a low spur of chalk (capped in places by Bagshot Beds) alongside the river Frome near Dorchester is chiefly of interest because of the molluscan sequences recovered from the slowly accumulating silts of ditches constructed in the late Neolithic henge phase (Evans and Jones in Wainwright 1979a). Three separate sequences obtained from contexts widely spaced across the site reveal that there was an overall episode of woodland and scrub regeneration at the end of the Neolithic henge phase - a trend which could perhaps be linked to destruction of the ultimate late Neolithic structure - the massive timber palisade enclosing the hilltop (Wainwright 1979a, 241). Regeneration is certainly associated with a marked slackening of activity, if not total abandonment, and for a period of perhaps nearly two centuries no serious attempt was made to reclaim the land. Recolonisation of the site appears to have begun at circa 1460$\pm$131 bc (BM - 669). Thereafter, for the remainder of the Bronze Age, the hill remained open under a somewhat relaxed regime of intermittent cultivation and light grazing typical of an outfield area.

The second reference site, the Rimsmoor bog situated on Reading Beds on the Frome - Piddle interfluve, lies at the edge of the Dorset heathlands. Whereas pollen samples from beneath barrows built in these more low lying but ecologically fragile areas of Tertiary sands shows clear signs of extensive clearance and cultivation during the earlier Bronze Age, an environment of managed woodland prevailed at Rimsmoor, as it had throughout most of the Neolithic (Waton 1982).

It was only at circa 1070 bc that the site experienced its first major clearance episode - one which chiefly effected hazel coppice and led to the area being used for pastoral purposes with a hint of intermittent cereal growing in the vicinity. Between circa 900 and circa 600 bc sporadic traces of cereal pollen are associated with fluctuating grass and hazel values indicative of a return to the strategy of coppicing practiced earlier.

Clearly the environment and land use sequence at Rimsmoor, where clearance was delayed until well into the middle Bronze Age, is totally different to that from Mount Pleasant, where vigorous colonisation of derelict farmland was underway during the early Bronze Age. Soil differences are certainly a factor - the clay soils at Rimsmoor being best suited to woodland management and the chalk soils at Mount Pleasant to grazing and agriculture. But, one suspects the close proximity of the latter to the floor of the Frome valley may be equally important. Note, for example, that the evidence for clearance proceeding up the hillslopes is in keeping with the idea of expansion from a valley settlement core area of which the recently excavated Deverel - Rimbury settlement at Poundbury (Barrett and Bradley 1980, 191) may be a constituent member.

A similar phase of Bronze Age expansion out of the valley corridor may be invoked to explain the environmental sequences retrieved from ground surfaces beneath barrows beyond the chalk in what are now the Dorset Heathlands. The barrows in question are all built on Tertiary sands and gravels i.e. Chicks Hill at the edge of the lower Frome valley (Ashbee and Dimbleby 1959); Knighton Heath at the edge of the lower Stour valley (Dimbleby in Petersen 1981) and Turners

Puddle Heath near Rimsmoor (Piggott and Dimbleby 1953). In each instance the site had been extensively cleared and farmed for some appreciable time before barrow construction which is consistently associated with signs of ecological degradation. The interesting feature of this common development is that although all three soil profiles exhibit incipient podsolisation they had not reached a critical stage of depletion and were not true heathland soils at the time of their burial (early Bronze Age at Turners Puddle Heath; circa 1150 bc at Knighton Heath and perhaps a similar date at Chicks Hill). If the act of giving the land over to cemetery uses is interpreted as abandonment of land which was no longer viable for farming the causative factor would appear to be vegetational rather than pedological. The chief culprits are heather and bracken - tenacious and fire - resistant competitors of the more valuable grassland species. At Knighton Heath soil conditions favoured bracken (present at 77.6% of the total pollen and spore count) rather than heather (only 0.3%). At Turners Puddle Heath the situation was reversed (Heather 32%, bracken absent?). At Chicks Hill both were at large (heather 30%, bracken 21%). Whatever their relative values the very high frequencies of these species, as registered at the time of barrow construction, graphically demonstrates how vulnerable grazing resources were in some parts of Dorset and by inference suggests attention may eventually have been directed back towards the less problematical land resources of the adjoining chalklands.

Chapter 8

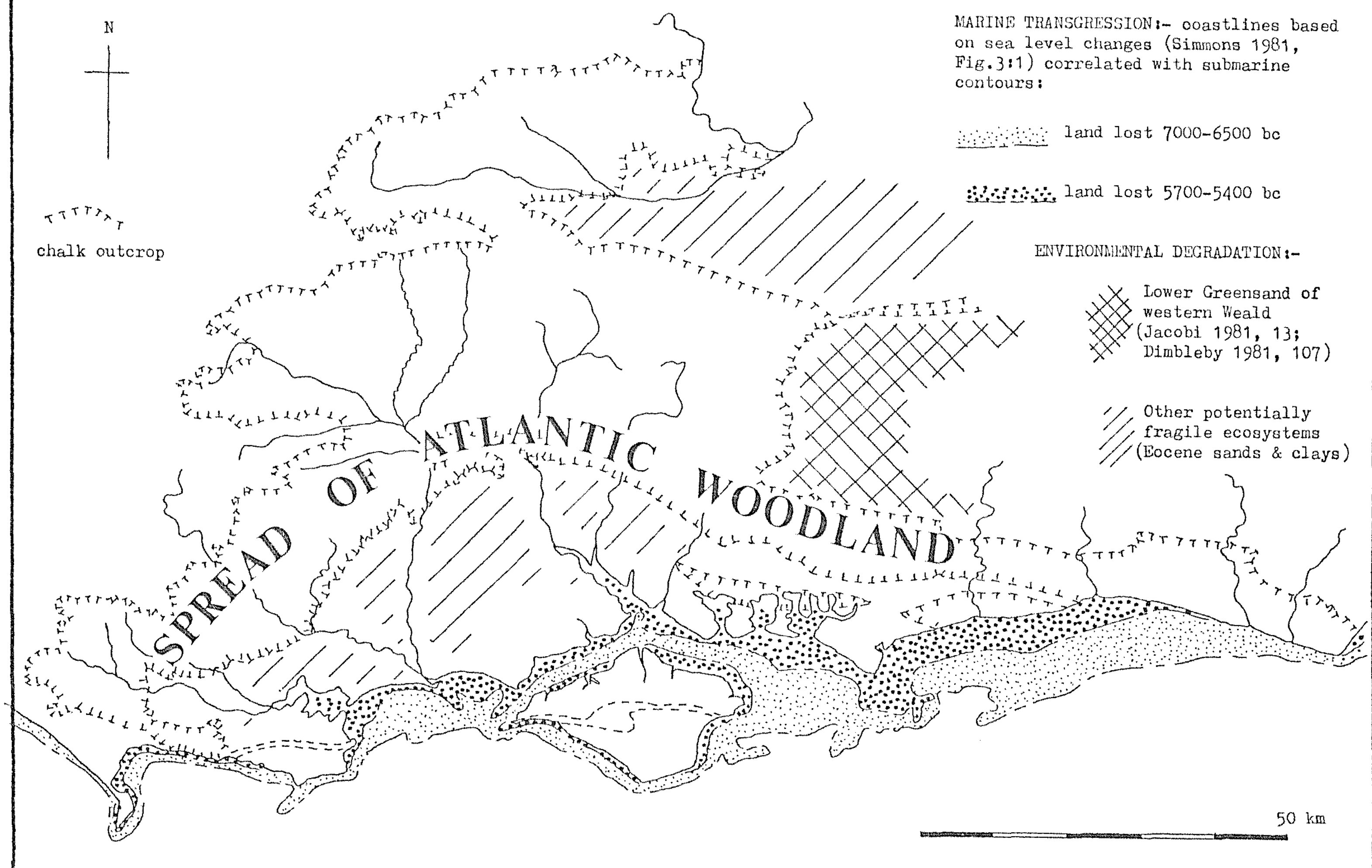
6000 - 4000 bc

Though the trends have still to be more fully documented it is already clear that Mesolithic communities witnessed dramatic ecological changes in the period from 6000 to 4000 bc. To a large extent these changes were the natural outcome of post - Glacial climatic recovery but it would also appear that man himself played a significant role in determining the eventual outcome or effect of what were basically natural processes. Any attempt to understand the socio - economic evolution of late Mesolithic communities in Wessex must therefore start by examining the ecological stresses they had to contend with.

8.1. Ecological Factors and other external stimuli.

Climatic recovery is synonymous with rising sea levels and according to Simmons (1981) the rate of rise was very uneven. Of particular interest is the very rapid rise, by as much as 10 m, between 5700 - 5400 bc. Though this trend was first identified in N.W. England Simmons emphasises that it was probably repeated elsewhere in Britain and notes that "the uneven effects of isostatic recovery appear to be subsumed in a general correlation" (Simmons 1981, 86). It was this rise which resulted in the isolation of Britain from the continent and the inundation of vast areas of coastal land from Yorkshire to Dorset. It has long been recognised that the loss of these prime habitats must have had a profound effect on late Mesolithic subsistence activity but what has been inadequately emphasised before is the rate at which these losses were sustained.

69: THE ECOLOGICAL BACKGROUND TO LATE MESOLITHIC ECONOMIC INTENSIFICATION IN THE WESSEX CHALKLANDS



Throughout the Flandrian it was the south east which suffered the greatest transgression losses and one suspects this may, in part, account for the spectacular density of Mesolithic occupation sites in Wealden areas. But even on the Wessex coastline from east Sussex to Dorset the effect was still considerable - the 10 m rise resulting in inundation of as much as 6 - 10 km of the coastal plain. There was of course a knock on effect inland - the lower reaches of river valleys would have suffered some degree of drowning which would in turn upset the hydrological regime upstream. Thus within just 2 to 3 centuries Mesolithic communities in Wessex had to accommodate not only the permanent loss of a broad chain of highly productive coastal territories but also unfavourable modification of their inland riverine resource base. Bearing in mind the ecological diversity of the areas effected it is not unreasonable to suppose that the total economic potential of Wessex was reduced by 30% or more. It also seems reasonable to assume that within such a short time it would not have been possible for Mesolithic communities to adjust their population levels to maintain a balance with the reduced resource base. Independent of other considerations we would therefore expect the sixth millenium to be a period in which rapid socio - economic development occurred.

This sudden squeeze on Mesolithic subsistence organisation came of course in the midst of a number of other developments which had already been promoting socio - economic change and which would continue to do so afterwards. Sea levels had been rising throughout the period and in the aftermath of the major transgression on the Boreal/Atlantic boundary they continued to rise by a further 5 m (between 5400 bc and 3800 bc). Inland, not only did the extent of forest cover increase substantially its actual character changed from open and dry birch/pine woodland typical of the Boreal to the damper closed canopy conditions associated with mixed oak Atlantic woodland (Dimbleby 1981). There are several ways this could have influenced subsistance strategies. There is little doubt that Atlantic woodland contained a higher usable biomass but at the same time the denser growth would have restricted mobility (Grigson 1981) and the damper conditions reduced the efficiency with which clearings could be created by forest burning. Thus in exploiting the increased economic potential of Atlantic woodland one would expect late Mesolithic communities generally to settle into smaller territories and to use them in a far more intensive manner than did their forebears.

This, however, was not universally possible. In fragile ecosystems the option to intensify simply wasn't available. There are no real signs that the Wessex chalklands had themselves been over exploited but there certainly are in neighbouring areas, particularly the Weald and perhaps in what are now the Dorset heathlands. As Mellars and Reinhardt (1978) point out, the emphasis in Wealden subsistence strategies appears to be very firmly on hunting, much more so than in the chalklands where plant foods may have been the most important resource. Whilst it was certainly expedient, the technique of attracting game concentrations into fired clearings and then moving on when they had dissipated, was also wasteful and ultimately often damaging to the local environment, particularly to soil structure. The classic, example of this is Iping (Sussex) where Mesolithic mismanagement of what had become a fragile ecosystem led to changes in soil conditions which in turn prompted a succession from woodland to hazel scrub and finally to heathland, effectively ruining the economic potential of the area (Dimbleby 1981, 106 - 110).

Lithic research by Jacobi (1981) allows the Iping evidence to be seen not as an isolated case of overexploitation leading to abandonment but rather as part of a much wider phenomenon. He postulates that early Mesolithic communities in the western Weald returned time after time to the same prefered locations but at lengthy intervals (several centuries) relocated their extractive base to an entirely new area. Thus he envisages that the group or groups originally resident within the Iping area eventually moved to the Kingsley area, then to The Slab area (Oakhanger) and so on. Jacobi does not comment on why periodic relocation was necessary but since the initial move was prompted by overexploitation it is not unreasonable to assume that the process was repeated elsewhere and that the cumulative damage to the resource base was considerable.

By 6000 bc this strategy was defunct, and as occupation and exploitation of the western Weald diminished (Jacobi 1981, 17) so increasing emphasis fell on peripheral areas, particularly the chalklands (Shennan 1981, III). Thus in the sixth millenium bc the inland resource base of chalkland Wessex came under pressure not only from coastal communities dispossessed of their territories by rapid marine transgressions but also from communities in adjoining Greensand areas who had stripped out their own resource base. They collectively had to cope with unhelpful hydrological changes in the river valleys and with the changes made necessary by the spread of closed canopy Atlantic woodland.

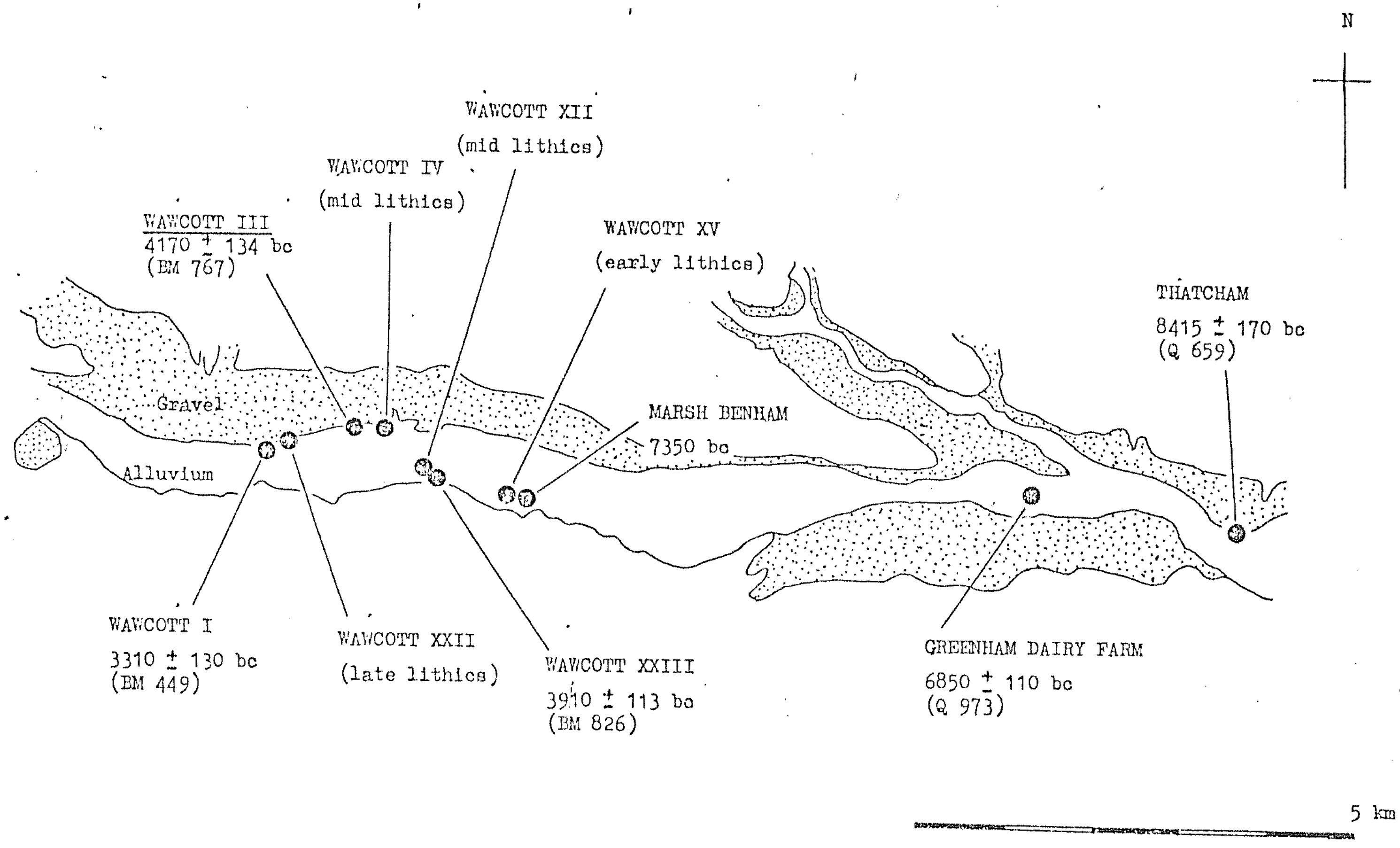
8.2 Pattern and Response in the Kennet Valley

Only in the context of the intensively researched Kennet valley (e.g. Froom 1972a) is it possible to reconstruct in the required detail how Mesolithic exploitation evolved under the influence of the stimuli discussed above. There are however a number of clues within evidence from other valleys which suggest the picture it presents is not untypical.

The first point to note is that evidence for earlier Mesolithic occupation of the upper reaches of chalkland valleys is meagre in the extreme, as would perhaps be expected given their lack of ecological diversity, as contrasted with the middle and lower reaches. It is logical to expect early Mesolithic colonisation of the chalklands to proceed from coastal areas inland ranging progressively further up the valley corridors as subsistence opportunities improved. This process can ideed be seen in the Kennet valley where no doubt colonisation was itself an offshoot of earlier exploitation in the Thames valley.

The earliest occupations on record are those at Thatcham (Wymer 1962; Churchill 1962) - the sequence starting at 8415$\pm$170 bc (Q.659) with rather ephemeral activity. Main use of the site was between 7900 and 7500 bc after which rising flood levels made continued occupation of this swamp bound gravel bluff increasingly untenable. In effect, hydrological changes of the type discussed earlier caused what had obviously been a preferred occupation site to be abandoned. It could perhaps be argued that inundation did not necessarily lead to abandonment and that occupation merely retreated to a higher point on the terrace. But this would be to take a simplistic view of the way Mesolithic groups selected their settlement sites. The Thatcham site

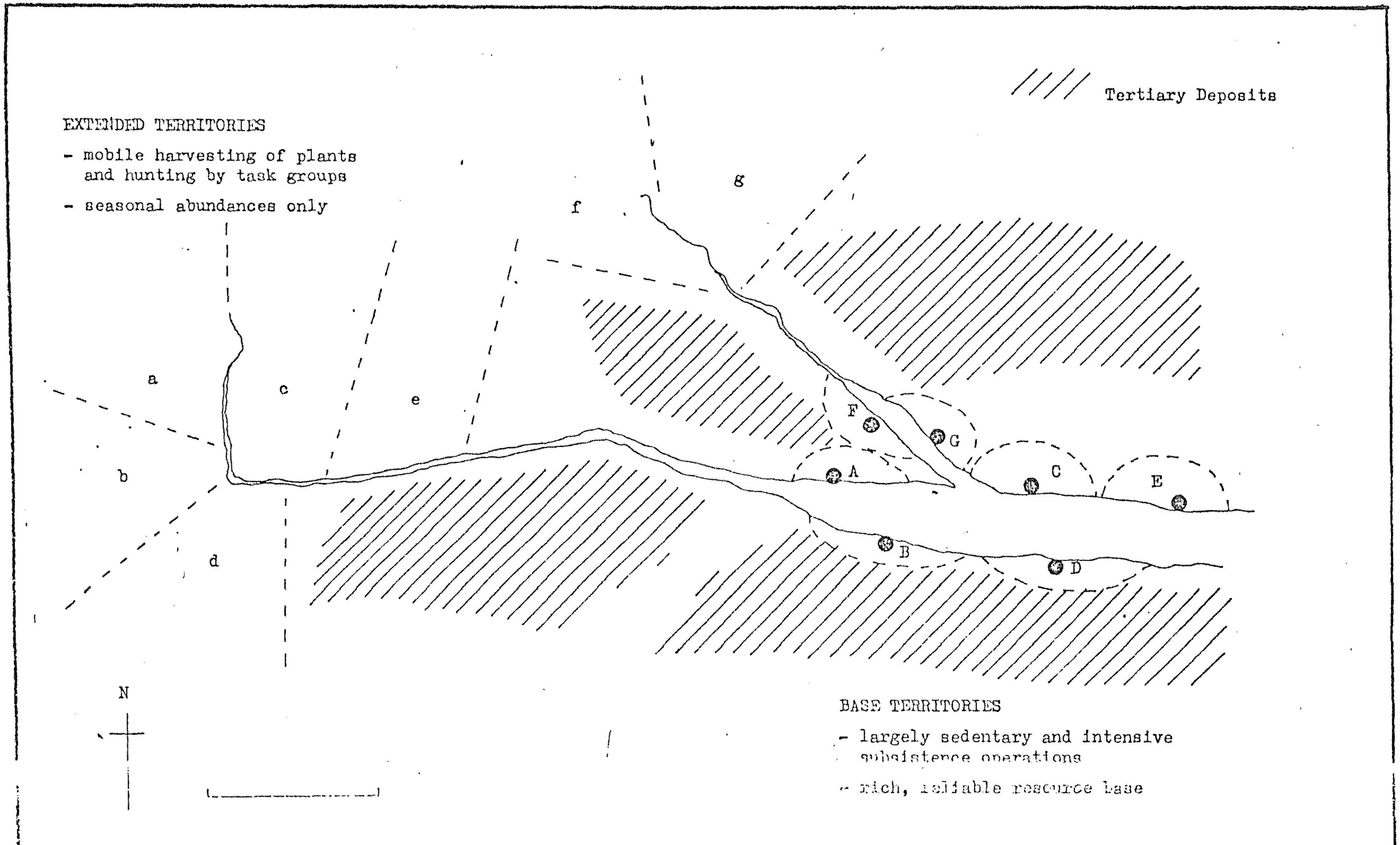
70: DATING EVIDENCE FOR MESOLITHIC OCCUPATION OF THE MIDDLE KENNET VALLEY



was after all located on a natural gravel jetty projecting into the swamps and braids of the river system - as such it had obvious attractions to people who as Wymer (1962, 336) insists could only have arrived by boat.

It cannot now be proven but the arrangement of swamp, lakes and game trails around the Thatcham site may well have been unique locally. Once inundated there was perhaps no choice but to relocate subsistence operations further upriver to similar sites as yet unaffected by rising flood levels. Consistent with the idea of impaired opportunities for occupation and subsistence in the lower valley is the observed trend for later occupation sites to be distributed 5 - 10 km further upstream than Thatcham (Figure 70). Clearly this is unlikely to mean that lower reaches were abandoned; in all probability subsistence task groups continued to range the length of the valley. But it does suggest that there was a significant shift in base camp type activity. Though it is impossible to empirically reconstruct how subsistence was organised it can at least be shown that this colonising movement of the upper valley was associated with increasingly specialised exploitation of fauna. Working with six separate faunal assemblages from the middle Kennet, Carter (1976) has identified a clear trend away from generalised culling of pig, elk, red deer, roe deer, cattle, etc. as evidenced at Thatcham, towards increasing dependence on the largest ungulates i.e. cattle and red deer - "which was to end in domestication for one and extinction for the other".

There are numerous reasons why cattle should become increasingly important in late Mesolithic economics not least of which is the fact that because they were both browsers and grazers they were better equipped than other species to cope with the spread of Atlantic woodland (Grigson 1978). They also offered a substantially greater meat yield and because of their tendency to aggregate into moderate sized herds they were easier to cull selectively and hence manage than for example pig and to a lesser extent red deer (Bay - Peterson 1978). So far as faunal resources are concerned it seems inevitable that the economy of densely occupied areas such as the middle Kennet valley would become heavily dependent on cattle. This need not have been a general trend however.



71: A MODEL FOR LATE MESOLITHIC SETTLEMENT AND LAND USE IN THE KENNET VALLEY

Within the settlement model proposed by Mellars (1976) areas like the middle Kennet probably served to accommodate winter base camps from which at least part of the resident group moved out during spring to take advantage of seasonal abundances of plant foods and game elsewhere within their territory. Thus there would be two modes of subsistence activity - intensive and specialised in winter, extensive and generalised in summer. The distribution of Eocene deposits, which it has been observed were largely avoided by Mesolithic people (6.3), would appear to have had quite a strong influence on these seasonal movements. The middle Kennet and Lambourne valleys are in effect corridors through Eocene deposits and one would therefore expect the 'extensive' summer territories to be located at their upper ends where such deposits thin out. Even in valley systems where Eocene outcrops are not a significant factor one would still perhaps expect a similar pattern of seasonal movement if only because the unreliable nature of water supply on the higher downland would similarly inhibit ranging too far from the river edge (Mellars and Reinhardt 1978).

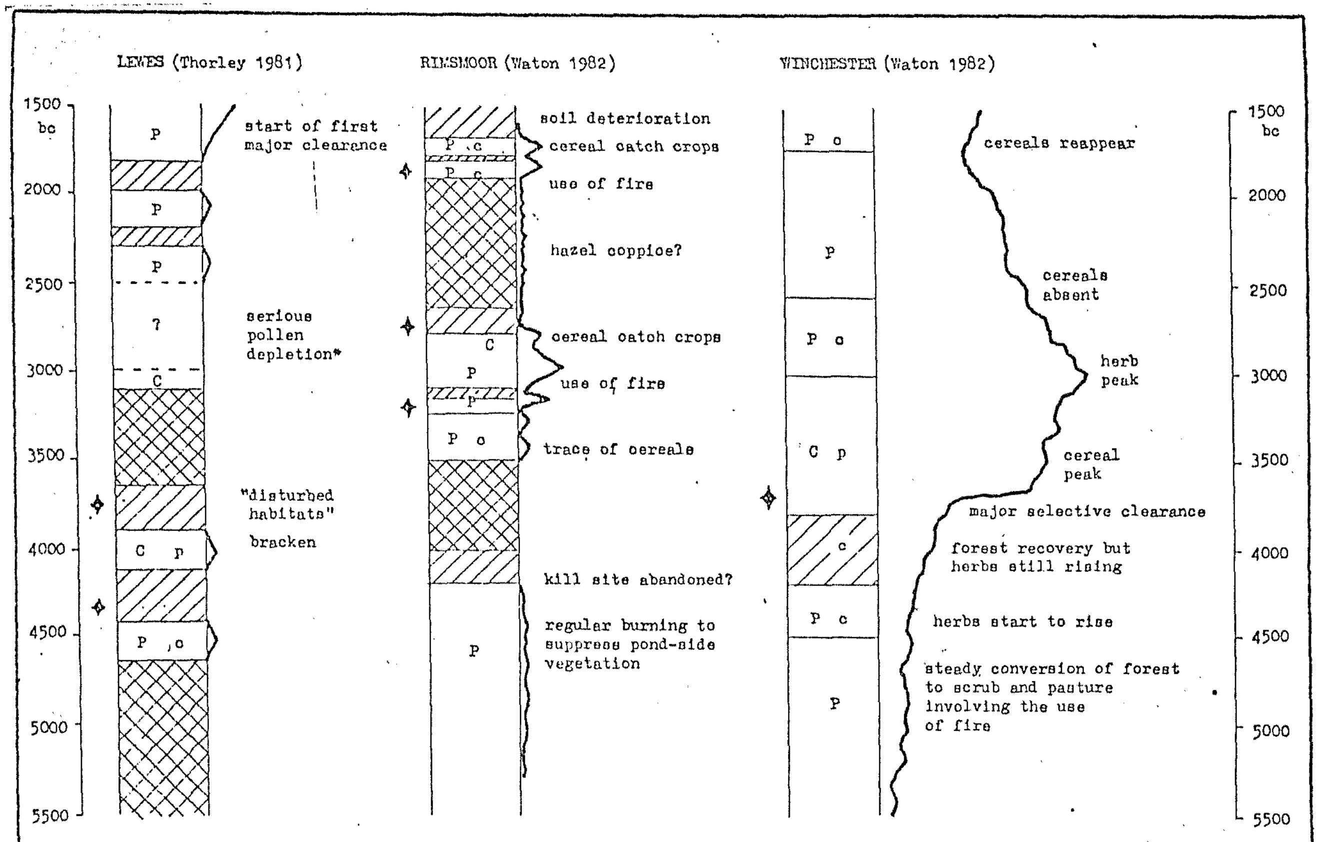
The inferred organisation of late Mesolithic settlement and subsistence activity is portrayed as a spatial model at Figure 71 . The basic premise is that each group overwintering in the middle Kennet exploited a relatively small but economically rich territory, the tenure of which was closely regulated, as indeed it would need to be since it was critical to winter survival. But each group also had access to a much larger and less well defined summer territory at some distance upriver. Because the winter territory was crucial to survival a 'caretaker' element of the group remained somewhere within it throughout the year. But at springtime some members, organised into task units, moved upriver into the summer territory to exploit plant harvests and to regulate herd movements. No doubt others, at some time during the year, ranged even further afield to procure locally unavailable materials and to service social links and obligations - i.e. to the aggregation centres envisaged by Mellars (1976) and Price (1978). Exactly where these aggregation points lay we cannot be sure but one would expect them to occupy a nodal point in line of communication and to be at the interface of mutually dependent regions. In this respect it is probably to major river confluences and the various points where valley systems leave the chalklands that one should look for them.

8. 3. A Regional View

In recapping the points made above it may first be noted that prior to 6000 bc the chalklands, including the river valleys, seem to have been only sparsely populated especially when compared with the density of settlement in areas such as the Weald. There was therefore considerable spare economic capacity in these landscapes. From 6000 bc the sudden loss of a chain of coastal territories coupled with the start of a movement out of ecologically degraded greensand areas conspired to accelerate chalkland colonisation. Whilst there was sufficient 'stretch' in the resource base to avoid an immediate crisis it was inevitable that some degree of socio - economic adaptation should take place. If population levels doubled, as is quite possible, one may envisage a widespread burst of social activity as new territories were claimed and established ones reorganised. Similarly, since many of the new groups originated from the greensand and coastal plain there would also be widespread adaptation of subsistence technology to meet first the different character of chalkland ecology and secondly the background development of Atlantic woodland.

Mellars and Reinhardt (1978) have argued that because chalkland forests were damper than those on the Wealden Sands and supported a more diverse flora the emphasis in chalkland economies may have been firmly on plant foods with hunting playing a subsidiary role - the reverse of the Wealden strategy. This contrast is indeed observable in lithic evidence. Acknowledging that differential access to flint resources had some influence on the matter core tools, such as the adze or pick which could have been used in plant procurement, are rare in the Weald but common in the chalklands Mellars and Reinhardt 1978, Table 6). Similarly microliths, which primarily served as projectile points, are markedly more frequent in Wealden assemblages than they are in chalkland ones. This evidence, together with the faunal data from the Kennet valley (Carter 1976), indicates that between 6000 and 4000 bc Mesolithic communities in the chalklands adapted to increased population density and environmental changes by moving towards an economic strategy in which plants and cattle were the mainstays.

There was of course a good deal of flexibility in the way this



72: EARLIER PREHISTORIC LAND USE IN THE SOUTH WESSEX CHALKLANDS

(a comparison of purpose and scale based on palynological data from Lewes, Sussex; Rimsmoor, Dorset; Winchester, Hants.)

✧	radiocarbon dated horizon
P	clearance mainly to enhance pasture and browse
C	selective cropping of natural or introduced plants
////	forest recovery phase
XXXX	woodland regime (managed or otherwise)

nb. Lewes:

1. pollen depletion occurs at a time when archaeological evidence suggests chalk slopes around the estuary were being cleared and cultivated eg. Bishopstone (Bell 1977); this may have made local groundwater more calcareous and hence less conducive to pollen survival.
2. the flood prone nature of the sampling contexts suggests they are peripheral to the vegetational disturbances on record which could therefore be of a greater magnitude than is apparent.

strategy was applied to the landscape as is evident in the pollen sequences from Rimsmoor, Winnall Moors (Waton 1982) and Lewes (Thorley 1981) which collectively represent a wide range of habitats.

Rimsmoor is reconstructable as a pond formed on a ridgetop exposure of Reading Beds between the Frome and Piddle valleys and at the junction of the chalklands and the Dorset heathlands. The presence of the pond transformed what was otherwise a rather marginal area into a natural focus for game movement. As such it was open to systematic exploitation by Mesolithic hunters. Between circa 5600 bc and circa 4200 bc the vegetation around the pond was indeed being regularly burned off, ostensibly to increase its attractiveness to game and also to facilitate culling of the visiting herds. At circa 4200 bc this strategy was abandoned and woodland was allowed to close in on the pond.

The Lewes sequence refers to activity around the periphery of a marshy estuarine inlet on the downland coast of Sussex. One would assume that here, in contrast to Rimsmoor, hunting of large ungulates was never as important as fishing and shoreline gathering. But it would be logical to expect a significant level of plant exploitation if only to relieve the monotony of diet based largely on salt water protein. The palynological data are not inconsistent with this view. Such disturbances as occur to the valley woodland during the fifth millennium bc are directed selectively against stands of Lime and Elm occupying base rich soils - areas with a markedly better potential for cropping than pertained generally. The scale of these disturbances does increase with time, possibly in response to marine transgression and the associated loss of territory, but at no time was the environment as disturbed as it was at Winnall Moors - a valley bog on the Itchen, near Winchester.

Bearing in mind the transgression problem it superficially appears incongruous that this inland area was more intensively exploited than its coastal counterpart. However, it is explicable if one allows that the lower reaches of the southern chalkland valleys were the take up areas for dispossessed coastal groups and that they were exploited in a different way - one that put much more emphasis on forest management. Waton's report refers to a prevelance of macroscopic charcoal throughout Late Mesolithic levels but his published analysis does not permit us to see whether, as at Lewes, it was stands of Lime/Elm woodland that were being suppressed by fire. However, since Lime was much more frequent in Atlantic woodland than pollen data outwardly indicate (Greig 1982) and since selective attrition of limewoods is evidenced in analogous contexts in the Severn Valley (Brown 1982) it is probable that such was also the case at Winchester.

The evidence collectively presented above may be summarised as showing that the period 6000 - 4000 bc was one in which natural and anthropogenic factors induced accelerated colonisation of the previously rather sparsely populated chalklands. This process involved a significant amount of socio - economic adaptation including a move towards an economy based predominantly on plants and cattle in which selective management of limewood played an increasingly important role. Though the greatest pressure on chalkland resources probably came in the middle of the sixth millennium bc there was sufficient spare capacity to prevent an immediate economic crisis. However, as will shortly be discussed, by the end of the fifth millennium bc there are a number of signs that the economy had run into serious trouble.

Chapter 9

4000 - 2000 bc

9.1. Approaches

Without doubt major socio - economic changes occurred in Wessex during the fourth millennium. Unfortunately there is a paucity of evidence from which to reconstruct how and why these developments took place. Even more frustrating is the fact that when one attempts to discuss what little information there is the only terms available are 'Mesolithic' or 'Neolithic' - terms which carry such clear cut connotations of socio - economic behaviour that they are not really appropriate to the type of evidence under consideration. As Orme (1977, 46) has stressed - "most differences between hunters and farmers are a matter of degree and there is no sharp dividing line between the two means of subsistence". If the economic evidence is ambiguous so too is the material evidence. It may be noted that Whittle's (1977) characterisation of earlier Neolithic material culture rested very heavily on assemblages retrieved in excavation of downland monuments. Acknowledging that he had little else to work with it could be argued that the received picture is not a very reliable guide. With a few exceptions these contexts are simply too late to have any bearing on the material character of the earliest Wessex farmers, and in any case substantial portions of the Neolithic population of the region lived well beyond the monument zones (6.4.).

This problem is well illustrated by the importance attached to Windmill Hill as the type site for early Neolithic Wessex. Almost all finds made elsewhere in the region are eventually referred back to it yet the material in question is largely derived from contexts which could be as much as a millennium later than the earliest farming settlements (Smith 1965a). It is not surprising therefore that Whittle (1977, 99 - 106) was unable to find a substantial 'Mesolithic' element in the earlier Neolithic of southern England - he looked in the wrong areas and in the wrong contexts.

We may recognise that fourth millennium socio - economic development was marked by the appearance of many new items of material equipment (pottery, polished axes etc), or new economic aids (cereals, sheep etc) or even new forms of behaviour (barrow building etc). But it is rarely possible to prove they all appeared together and there are doubts about how much significance one should attach to them when they are individually registered. The essential point is that evidence from fourth millennium contexts should be assessed on its own merits and not from the traditional perspective which seeks to explain it as a backward extension of early third millennium norms.

9.2. Crisis and Response in Southern Wessex

At each of the three recently reported pollen reference sites in southern Wessex (Rimsmoor, Winchester - Waton 1982; Lewes - Thorley 1981) a change in local land use strategies occurs between circa 4200 bc and circa 3500 bc against a background of forest recovery. Superficially this could be taken to indicate partial or total abandonment of the areas involved and in the case of Rimsmoor and Lewes it would be difficult to prove otherwise. However, at Winchester forest recovery is associated with an increase in herb pollen culminating at 3680$\pm$90 bc (HAR - 4342) in large scale clearance and the appearance of cereals. This suggests that forest recovery merely signifies the advent of a new subsistence strategy which made less demand on woodland resources by intensifying in areas already cleared. It is difficult to see why this should be dissociated from the observed Late Mesolithic trend towards plant and cattle dominated economies discussed earlier. If, for whatever reason, there was a need to intensify it would be logical to expect free ranging cattle to be brought into closer management and for selective cutivation of favoured plant foods in favoured areas to replace more random harvesting.

Thus if the Rimsmoor pond is seen as a ridgetop killing ground the cessation of regular, small scale suppression of vegetation around the pond at circa 4200 bc may indicate that the policy of culling free - ranging urgulate populations was abandoned in favour of more direct management. When, at circa 3500 bc, woodland on the site is next disturbed it involves intermittent episodes of larger scale clearance activity connected with the creation of pasture. This secondary sequence of use culminates at 3210$\pm$90 bc (HAR - 3919) in an Elm Decline and eventually a phase of cereal catch cropping. At Lewes one may infer that experimental cropping, whether it involved cereals or not, started rather earlier than at Rimsmoor, as befits its closer proximity to the established farming communities of continental Europe. Regular, if small scale, clearance of limewoods on the periphery of the estuary reached peak proportions, in the early fourth millennium bc, in association with the appearance of a wide range of cultivar herbs. But, as bracken begins to register, it ends and regeneration ensues (3724$\pm$167 bc).

These three pollen sequences represent virtually the only sources for reconstructing how man was ineracting with his environment in southern Wessex during the crucial earlier part of the fourth millennium bc. Lewes may be seen as an early cropping experiment that failed, Winchester as one that succeeded and Rimsmoor as a token of closer management of ungulates. It is somewhat surprising that these economic changes occur at more or less the same time in such geographically and ecologically diverse settings and it is also surprising that they take place at such an early date i.e. a century or so either side of 4000 bc. However this is the evidence and some attempt must be made to understand why change was necessary and how it was organised.

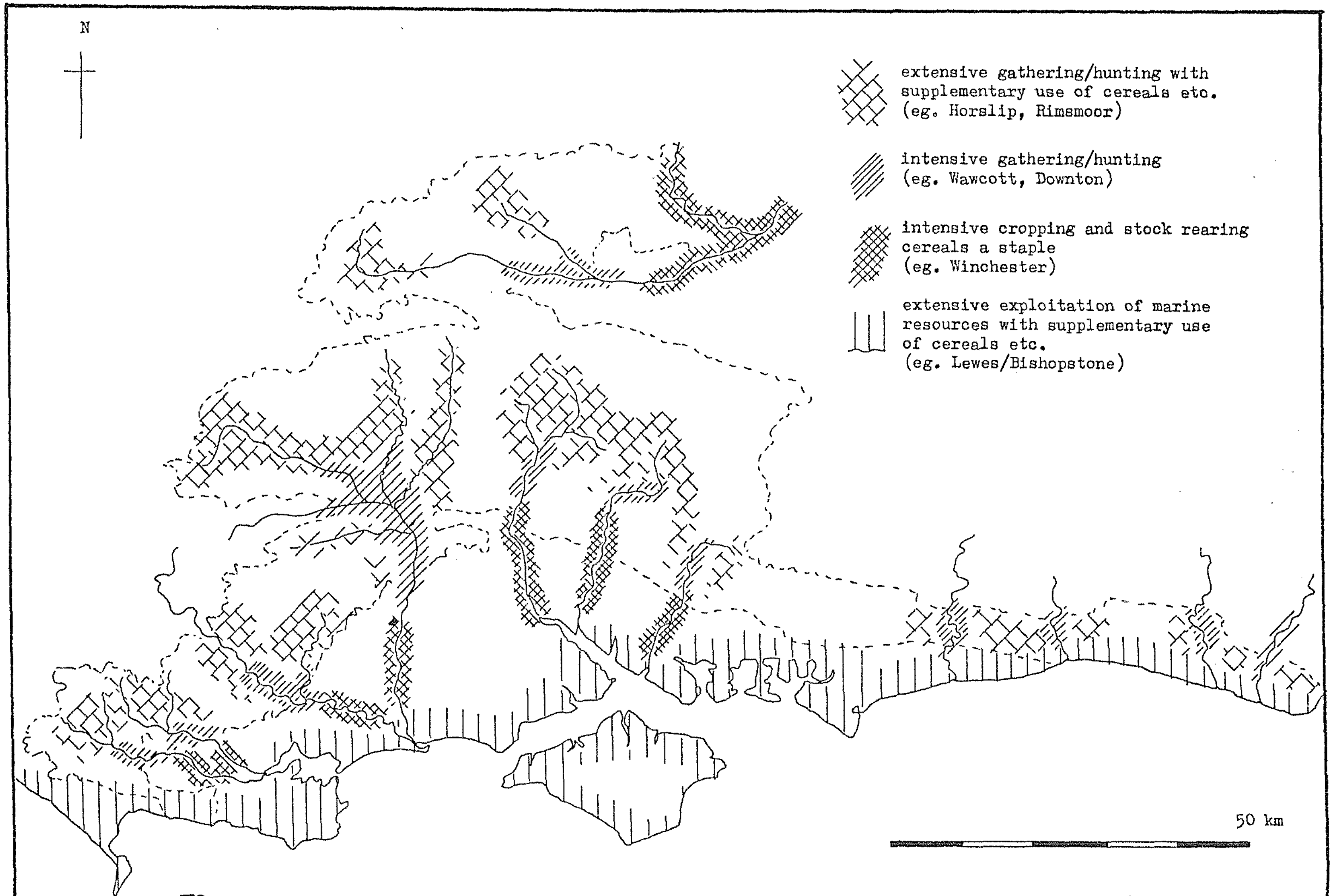
The obvious question is whether the development takes place amongst indigenous groups as a response to imbalance between population and resources or whether it reflects the arrival of a new population from some part of the Continent where farming was already established. Frankly, there is insufficient evidence to resolve such a question but one can at least make some educated guesses. If the new economy was introduced it would have to be from farming groups who were expanding into new territory during the early fourth millennium bc. This at a stroke excludes an origin amongst north Chasseen, Michelsberg,, TRB and probably Roessen groups because their chronology is simply too late (see Whittle 1977, especially pages 253 - 263). The Linear Pottery groups of the Rhenish area are chronologically acceptable and their strategy of selectively exploiting base rich loessic soils by means of garden plot cultivation and cattle rearing is not so very different from the strategy inferred for southern Wessex. But theirs was an inland adaptation that was perhaps too specialised to endure the rigours of long distance relocation across ecologically unsuitable land. In this respect it is more appropriate to look to the coastal zone for an adaptation that could be directly carried across the channel without modification. The situation would appear to call for the type of strategy practised by the Ertebølle - Ellerbek - groups distributed from northern Holland coastwise to southern Sweden (Whittle 1977, 193 - 195).

Whittle did consider whether these essentially Mesolithic groups could have contributed to the English Neolithic but dismissed the idea as a minor possibility only. Though he warns against the dangers "of relying solely upon the evidence of material culture in seeking to define a colonisation" (p. 238) one suspects he was still unconsciously influenced by the obvious difficulty of trying to connect the Windmill Hill 'culture' with the very different material inventory of Rhine/Meuse Mesolithic groups. To fit the evidence from southern Wessex it is not necessary to look for such social and material sophistication - at present there is no necessity to seek anything more complex than an economic adaptation combining established methods of food procurement with supplementary use of cereals and perhaps domestic stock. These are indeed the attributes of the Ertebølle - Ellerbek economy which seems to be based on contact with, and selective borrowing from, inland Linear Pottery groups (Whittle 1977, 193 - 5). It is clear in Whittle's brief review of the evidence from sites such as Swifterbant that these seasonally mobile coastal communities had begun to cultivate cereals, domesticate cattle and pigs and indeed make use of pottery at much the same time as economic change occurs in Wessex.

It seems likely that food production was only adopted by Dutch Mesolithic groups, as a supplementary measure, when their natural resource base was depleted by marine transgression and perhaps burning out of the fragile sand-based ecosystems inland. Whether Mesolithic groups in southern Wessex reacted the same way to the same problem or whether dispossessed Ertebølle groups brought the solution with them is to some extent irrelevant. The important point is that the advent of farming did not of necessity involve large scale demographic movement nor extensive modification of an economy that was still essentially Mesolithic in character. It is here argued that the introduction of farming into Wessex was in most areas a decidedly low key affair though in some circumstances it subsequently led to quite dramatic socio - economic development. This is very close to the situation envisaged by Bradley (1978) who perceptively suggested (long before the evidence reviewed above became available) that the pioneering Neolithic began in the earlier fourth millennium bc and that our inability (then) to document it was essentially an archaeological sampling problem (p. 7 - 8).

If farming is seen not as imposed new lifestyle but as a solution to economic and perhaps social problems, the chronology and nature of its appearance and development may be expected to be highly variable. In the coastal zone where marine resources had always been an economic mainstay there was no requirement for extensive farming and this may help to explain why the Neolithic of Sussex is so weakly defined and why adjoining downland forest remained little disturbed throughout the period. The real problem areas, so far as our limited knowledge of late Mesolithic conditions allows us to see, were probably the densely occupied lower reaches of the southern river valleys.

For the present the Winchester sequence with its sudden mushrooming of clearance activity and cereal cultivation at circa 3700 bc is the sole guide to what was happening elsewhere in these badly neglected landscapes. It is a pity therefore that there is no archaeological provenance for the palynological data - no hint of whether this economic upsurge was, for example, associated with the appearance of villages of the type observed in Linear Pottery and Roessen contexts across the Channel. Certainly, the maintenance of open conditions and the persistence of cereals within the Winchester sequence are consistent



73: THE SUGGESTED PATTERN OF ECONOMIC DEVELOPMENT IN THE LATER FOURTH MILLENNIUM bc.

with the establishment of sizeable and permanent settlements in the area. And in noting the abundance of brickearths and loess rich alluvium in the lower Itchen valley one may conclude that the rather strict ecological requirements of the Linear Pottery/village adaptation could be satisfied locally. When it is also considered that substantial tracts of the Neolithic landscape in these areas now lay buried beneath many metres of silt (see discussion in Jacobi 1981; 21), the failure of past research to locate such settlements is not altogether surprising. One suspects that monitoring of development over brickearths in the vicinity of (for example) Romsey and Eastleigh could however be productive in this respect.

9.3. A Pattern - Mixed Economies

Whatever the circumstances surrounding its emergence in Wessex it would be naive to assume that farming, in the accepted sense, everywhere represented an efficient or attractive subsistence option or that its adoption necessarily involved the complete abondonment of established subsistence techniques. The scale and intensity of farming activity evidenced at Winchester during the middle fourth millennium bc may be representative of what was happening in the lower reaches of other chalkland valleys. But seen as a solution to localised economic problems rather than as a colonising movement the adoption of this type of farming could well have been greatly delayed in areas that could still offer sufficient natural resources to support the local population. The coastal zone is one example where small scale cereal cropping could be added to existing subsistence routines as required without really hindering shoreline gathering, fishing etc. Indeed in the evidence from Bishopstone (Bell 1977) one can see not only that the true forms of subsistence blended together well but also that cereal production was a highly organised affair apparently involving permanent field systems.

A rather different situation may be envisaged inland. Areas such as the river confluence around Salisbury look as if they should have been perfectly viable within a 'Mesolithic' subsistence strategy and of course in the comparable middle Kennet there is clear evidence of such a strategy remaining in use during the later fourth millennium bc. However, unlike the coastal zone, their viability could be ruined by the introduction of cereal production etc. If cereals were to be introduced to these economies at all it could only be within the extended territories upstream where plant harvesting was already an established routine and where consequent environmental changes could be accepted. In these circumstances cereals may have been used more as a catch crop than a staple as is suggested at Rimsmoor and Horslip where they occur usually at the end of a pastoral phase but before forest recovery sets in.

Quite how one should regard the stock element of a farming strategy is difficult to decide chiefly because of the difficulties of reconstructing herd management from morphlogical analysis of faunal remains. Attributes such as size are of interest in charting the development of cattle and pigs within a changing environment but they do not help to establish when they were first managed as domesticates. For this reason it seems safer to assume that, so far as the earlier Neolithic is concerned, morphologically 'wild' cattle and pigs could have been an integral element of what was essentially a farming economy. Sheep, however, as an introduced species are a more reliable guide and ought logically to be found only within areas where cereal cropping was taking place though, as suggested above, this could include the extended territories of communities to whom farming was a supplementary form of subsistence.

9.4. Consequences - Settlement, society and material culture.

Within the economic model outlined for the later fourth millennium bc it is implicit that transhumance was a feature of the annaul round for at least part of the Wessex population, particularly those communities in the upper river valleys. Within their extended upland territories site occupation was too brief and intermittent to leave substantial settlement evidence and though residency of base territories was virtually permanent there was little compunction to remain in same location all the time. After all agriculture was not being practised and base camps were not hemmed in by fields, stock pens, and storehouses such as farmsteads would be. Relatively insubstantial but weatherproof shelters of the type recorded at Downton (Higgs 1959) and Wawcott I (Froom 1979b) would have been perfectly adequate especially if the occupants were free to relocate whenever the site became ecologically degraded. Above all the circumstances precluded the appearance of large settlement foci - certainly no more than groups of two or three dwellings in use at any one time, such as might accommodate an extended family unit.

However, bearing in mind the scale of farming operations in the Itchen valley at Winchester it seems clear that the local population here was not only markedly more numerous, it was also sedentary and it is not fanciful to suggest that settlements were of hamlet or village size. Thus within the same valley system occupational activity could be manifested in three different ways - permanent hamlets, semi-permanent base camps and briefly used upland camps. If this pattern evolved amongst indigenous 'Mesolithic' populations the degree of social cohesion and uniformity of material culture was probably quite high initially. But, it seems inevitable that as settlement and economic norms diverged so dichotomies would arise in other spheres of life.

Unfortunately the 'Winchester adaptation' has yet to be characterised; our knowledge of it is restricted to its environmental impact, although with reference to the northern valley systems of Wessex a potentially significant find was recently made at Maidenhead, Berkshire (Bradley et al 1975/6). Here, within what has been tentatively identified as a well, a sizeable assemblage of Mesolithic flintwork was found stratified with a collection of early Neolithic bowls and cups in a refuse layer dated to 3320 ± 110 bc (HAR 1198). Though Bradley was reluctant to accept the contemporaneity of the various elements the admixture of Mesolithic and Neolithic traits in a context of this date is precisely what would be expected within the terms of the model under discussion. In Figure 74 Maidenhead lies within a zone where an early transition to full time farming has been predicted.

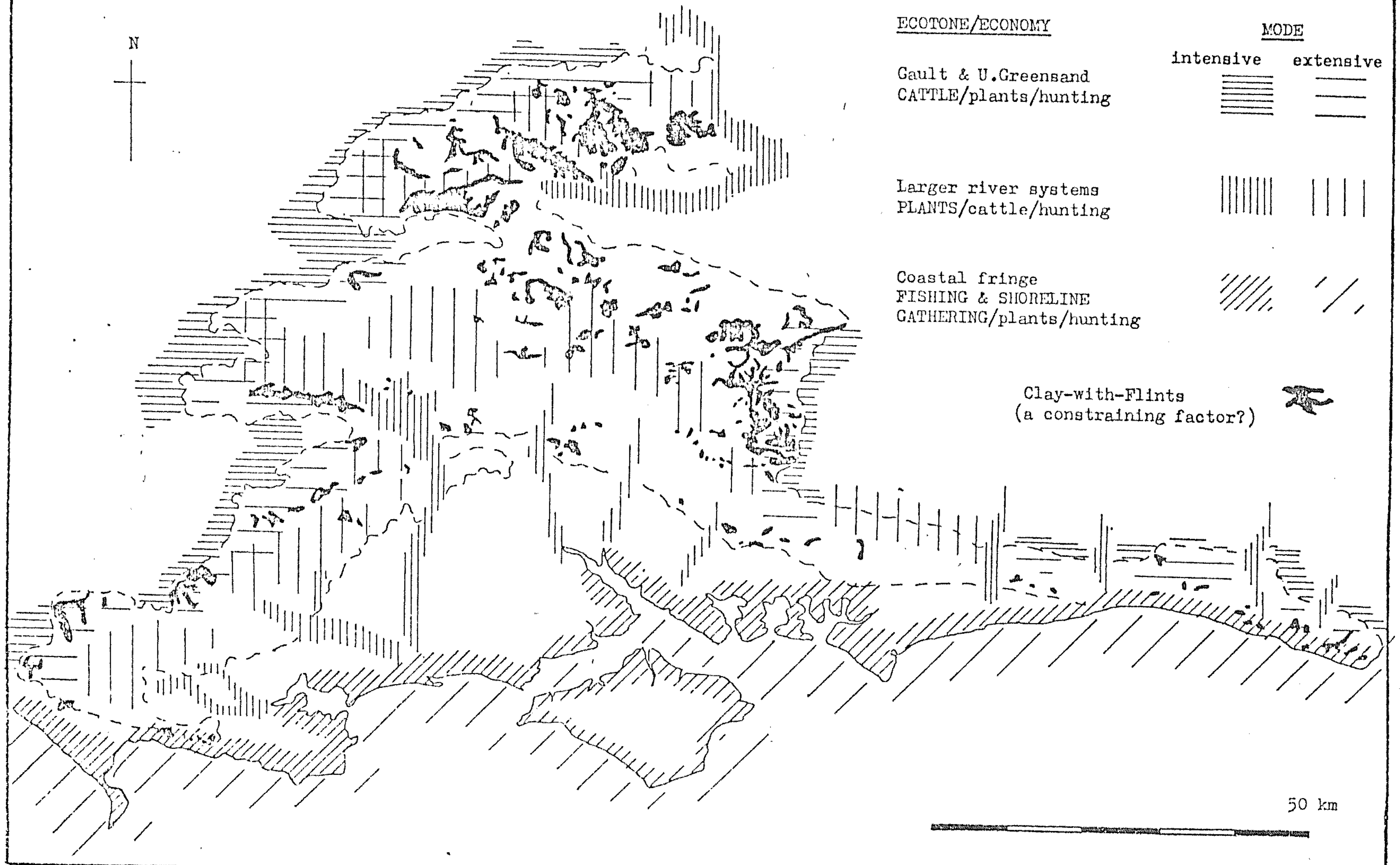
However, this is scant evidence on which to document the social and material attributes of the 'Winchester adaptation'. To do this it is necessary to turn to the Linear Pottery Groups of the river valleys of northern France which, in terms of their economy, and ecological setting, seem to be analogous to the Winchester Adaption. If so one would expect Winchester type material assemblages to include some pottery (mainly plain globular bowls) and a flint industry based on blade production with transverse arrowheads, tranchet axes and maceheads of imported stone (Whittle 1977, 151-158). With regard to the 'lithic' element it is of course somewhat disconcerting to discover that the predicted equipment of these earliest farming groups contain so many types that would normally be classed as Mesolithic when foundin an unassociated context. A significant case in point is the chance discovery of a 'macehead' and knapping debris, including flakes and bladelets, several metres below ground level during construction of the Ocean (Empress) Dock at Southampton (Jacobi 1981, 21). The macehead may well be Mesolithic as Jacobi claims but the debitage was initially described as Neolithic. The important point is that we can no longer be confident about excluding such lithic material from a consideration of farming origins in Wessex. These finds also emphasise just how inaccessible some of the potentially most informative parts of the fourth millenium archaeological record are to normal prospecting techniques.

In discussing funerary customs of the northern French valley farmers (Whittle 1977, 154) suggests small cemeteries of up to a dozen pit inhumations located close to their contributing settlements may have been the norm. Were this to be the case in Winchester type contexts it would help to explain why there are no earlier Neolithic above ground tombs in lowland Wessex other than the Holdenhurst long barrow on a terrace of the lower Stour (Piggott 1937a) which had in fact been superimposed on a 'ritual' pit. Unfortunately bone did not survive in any of the excavated contexts so it is impossible to establish whether this represented a pit inhumation but the idea has attractions, especially since the barrow's primary contexts yielded pottery of an early and "unusual" type.

Turning to the upper valley systems one is on surer ground for there is much more evidence available although, as will be explained, it is necessary to view it from a rather unconventional perspective. It will be recalled that within the model proposed for these areas each subsistence group exploited two spatially distinct territories - their permanently occupied base territory and a seasonally occupied upland territory. In the context of the Kennet valley this implies that a group resident at, for example, Wawcott I annually despatched some of their members upstream to escort local cattle herds into their summer pastures and to exploit plant harvests there. Notionally this distant territory may have been based on a large sector of the Avebury area encompassing a river frontage and land sloping up towards Windmill Hill. Whereas tenure of the base territory was established beyond dispute by custom and residency, as were common rights of access up and down the river corridor, the boundaries of the upland territory were only vaguely defined. Within such a heavily forested and sparsely populated landscape it was not only impossible to define limits, it was unnecessary. But, because there was no permanently resident custodians there would be a need to mark rights over the favoured locations within these territories for, in a way, they were as critical to group survival as the base territories. How this was achieved is unclear but it could have involved devices such as the postulated ox skull totem recorded in later fourth millenium bc contexts on a site that would later become the Beckhampton Road long barrow (see 6.2).

If it is envisaged that communities within these somewhat remote upper valley systems belonged to the same kinship group, as is quite plausible, there should in theory be no need to proscribe such locations - each sub group would be aware of the others' rights. However, it may be the case that unrelated groups from valley systems beyond the chalk, e.g. Bristol Avon and tributaries, were also exploiting these marginal areas. In which case there would certainly be potential for dispute and a requirement for overt displays which identified the tribal affiliation of the sites' users when they themselves were absent. Thus although upland areas like that surrounding Avebury were by definition marginal to the main distribution of population they probably had special social significance long before earthwork monuments began to appear in the landscape.

74: LATE MESOLITHIC SUBSISTENCE PATTERNS IN RELATION TO MAJOR PREFERRED ECOTONES WITHIN AND ADJOINING THE WESSEX CHALKLANDS

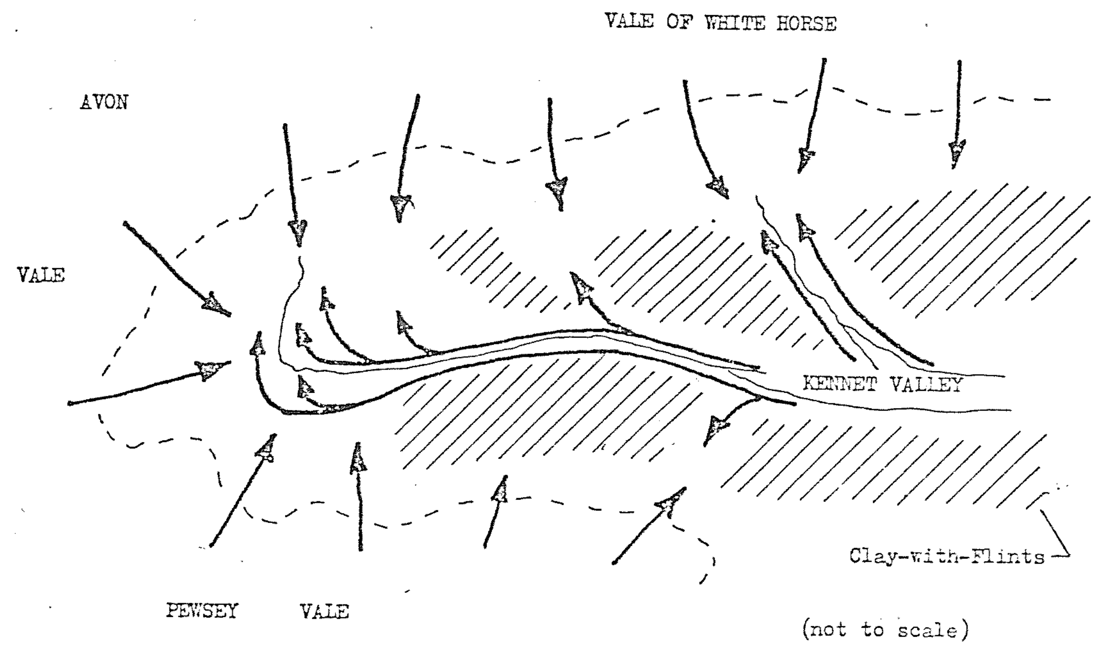


Viewed as a continuum exploitation of these areas during the fourth millennium bc would have entailed gradual changes or 'Neolithicisation' of essentially Mesolithic patterns of behaviour. A primary point of interest is why chalk upland areas should be of interest to communities beyond the chalk. One answer may be established patterns of ungulate hard movement. Whether initiated by natural or by anthropogenic processes clearings in chalk woodland probably had a more favourable regeneration response than those within the clay vales bordering the western edge of the Wessex chalklands. As woodland spread during the Boreal and Atlantic this difference would have become more important leading to a situation where cattle and other ungulate herds naturally ranged into the chalk uplands from far afield. Late Mesolithic communities, though they began to escort and supervise cattle herds more closely, would have gained little by preventing the migration even if they had been able to. Thus human transhumance patterns became superimposed on those of cattle, bringing increasing levels of contact between social groups especially in those areas where a valley system terminates close to the clay vale fringe (as at Avebury), or perhaps the coastal plain - both ecosystems being potentially deficient in grazing resources (Figure 74).

9.5 Monuments, Moveables and Settlement in northern Wessex - a model.

Applying the concept of seasonal transhumance to overall patterns of late Mesolithic exploitation of the chalklands one can predict where interaction between different groups may have occurred (Figure 74). Taking the Avebury area as an obvious example of where such activity was taking place one can begin to reconstruct the details of the arrangement and how it correlates with existing archaeological data. The starting point, nominally set at 4000 bc is largely hypothetical because of the general paucity of evidence from contexts of this date. But as the review moves towards the close of the third millennium so more

a) 4000 bc - SUGGESTED TRANSHUMANCE PATTERNS



b) 3400 bc - SUGGESTED ARRANGEMENT OF EXTENDED TERRITORIES

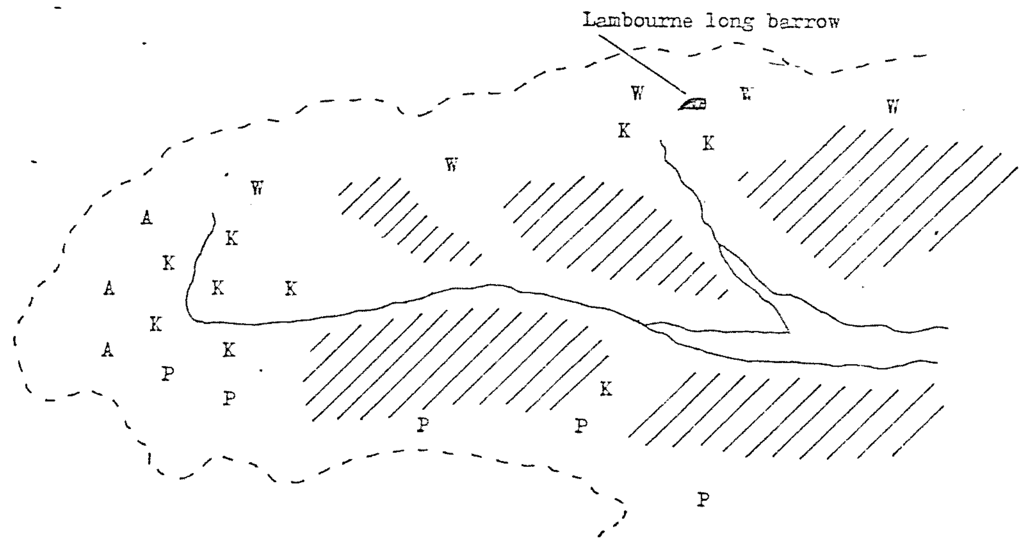


Figure 75: TRANSHUMANCE AND TERRITORIALITY IN THE NORTH WESSEX CHALKLANDS - DEVELOPMENTS DURING THE FOURTH MILLENNIUM bc

information becomes available and it is easier to validate the model.

9.5.1. 4000 bc (Figure 75a)

The Avebury area is a shared land resource lightly exploited by groups from the Kennet valley itself and by others from peripheral vales i.e. The White Horse, Avon and Pewsey. Those from beyond the chalklands put more emphasis on hunting and stock management than on plant harvesting during their seasonal visits. The clearings they use are located mainly on the fringes of the valley corridor rather than within it. The Kennet group make more use of plant harvests but also regard the area as an important grazing resource. Because theirs is essentially a riverine adaptation their preferred locations are distributed mainly along the valley corridor. There are no permanent base camps and contact between groups is limited to accidental encounters along major lines of movement and the occasional orchestrated meeting for the purposes of exchanging information, some material goods and perhaps marriage partners. Only where routine activities of one group are likely to impinge on those of another is there any need to proscribe access by means of permanent structural markers. For the most part tenure is established by custom and reinforced by symbolic differences in those items of material equipment such as projectiles which tend to be discarded in the field.

9.5.2. 3400 bc (Figure 75b)

Under a variety of stimuli (population growth, environmental changes in base territories, economic expansion etc), many of which are associated with the advent of farming elsewhere in the region, the Avebury area is now more heavily exploited. Quite extensive, if temporary, clearances are appearing on the periphery of the valley corridor as groups from the clay vales bring ever larger herds of cattle into the chalklands. Within the valley corridor the Kennet group are experimenting with cereals in their cropping routines.

Because they combine grazing with long fallowing/regeneration of their cultivation plots clearings are usually smaller, longer lived and more intensively used than those of clay vale groups. In some cases the intensity of land use has created a mosaic environment within which semi-permanent occupation sites have been firmly established. Elsewhere residency is still very transitory with no real attempt to invest occupation sites with permanent facilities.

The higher level of social contact and the greater importance attached to their upland territories by these visiting groups is manifested in more overt attempts to show that tenure and access are beyond dispute because they are of ancient standing. Greater emphasis is laid not only on being able to trace the transfer of rights from one generation to the next but also on finding a means of demonstrating such successions. Individuals who played a noteable role in claiming and establishing patterns of exploitation in the upland territories remain there after death as the nucleii of clan cemetery areas which, suitably embellished with totemic symbols, serve to identify and validate tenure whenever the living retreat to their distant base territories. In another part of the Kennet system contact between groups from the Vale of the White Horse and the lower Lambourne valley have stimulated the construction of a massive earthwork mound within one of the headwater ancestral grounds - the Lambourne long barrow.

Pottery, ground stone axes and many items of material equipment associated with the new farming life style are beginning to permeate up the valley systems. But because of their comparative rarity and novel character they are chiefly used in the upland territories to enhance the apparent status of the group in its dealings with others. Normal domestic equipment is more mundane.

9.5.3. 2800 bc (Figure 76)

A few of the old middle Kennet base territories adhered to traditional subsistence methods down to 3000 bc whilst their neighbours went over to small scale food production. But with their local viability threatened by expansion of farming activity and with their upstream extended territories now assuming almost total social and economic independence reorganisation takes place. The entire valley system is now essentially Neolithic in terms of material culture and staple production although 'Mesolithic' traits linger on in the mid Kennet where settlement, in keeping with the greater emphasis on agriculture, has retreated from the rivers' edge to drier sites at the back of the terrace.

Upstream, in the Avebury area, the Kennet valley 'clan' (this term seems the most appropriate - cf Bradley 1978, 102), are establishing a network of permanent settlements spaced at intervals of a kilometer or so along the river bank, each exploiting a strip territory running up into the higher downland. There is a regular traffic of people and goods up and down the river but the settlements are for most purposes self sufficient and long distance transhumation no longer takes place. A mixed farming strategy is practiced with infield arable plots being distributed mainly along the river frontage; the more distant outfields provide most of the required pasture although cereals are sometimes grown here as a catch crop. Land to the north and east of the river is unquestionably Kennet clanland. Other than a single long barrow at the northern edge of their territories, where there is occasional contact with another clan ranging in from the Vale of the White Horse, they have no need of monuments to proscribe their land this side of the river.

To the south and east, however, tenure and access arrangements are more complicated. The land is utilised not only by local valley settlements but also by local settlements distributed around the periphery of the chalk outcrop and by dairy farming groups originating from the clay vale which extends north eastwards from Frome to pass between the chalk and limestone, eventually joining the Vale of the White Horse. These latter groups take up the higher, more marginal land resources not already claimed by the local populations. Long barrows

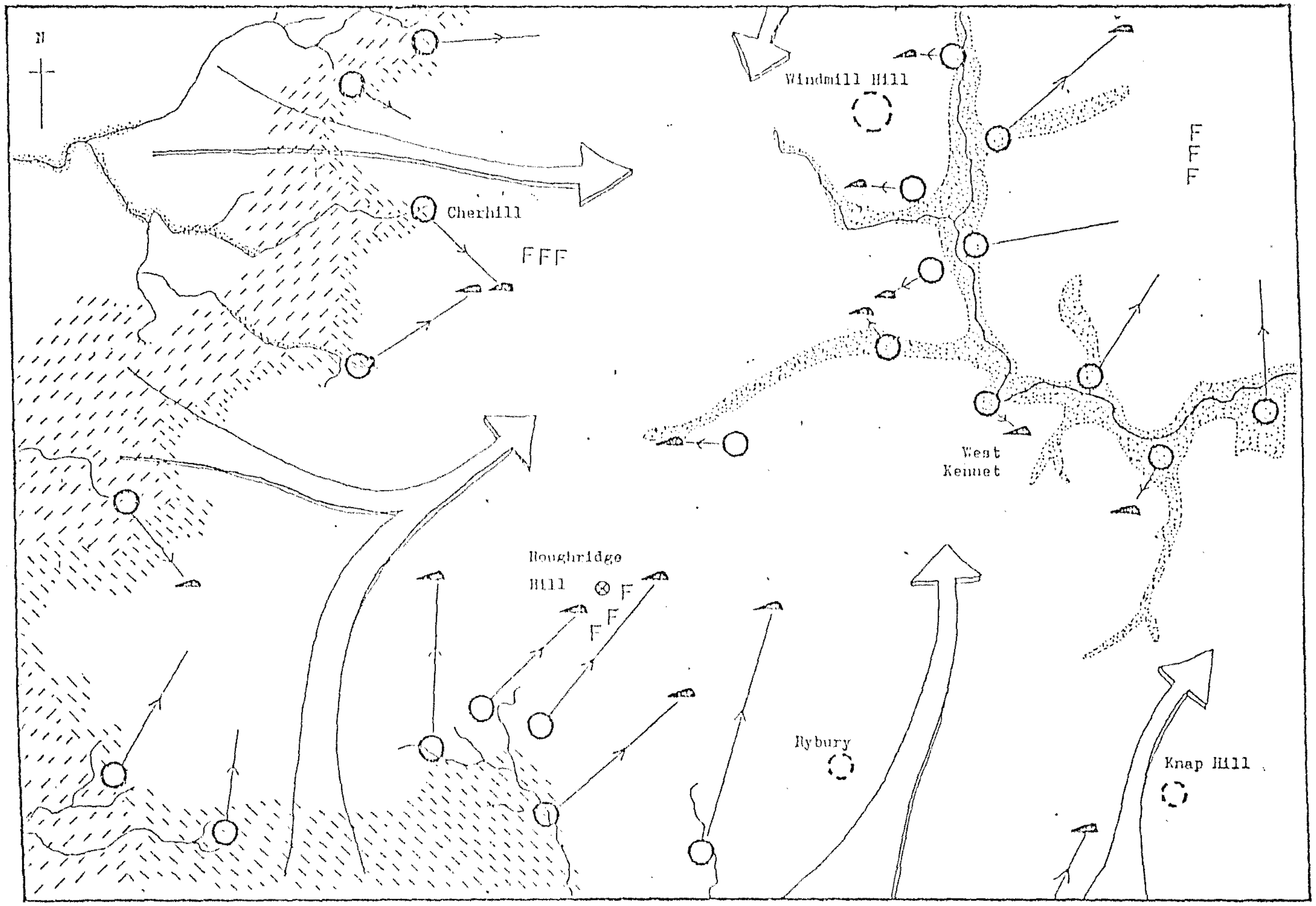


Figure 76 : A MODEL FOR SETTLEMENT AND LAND USE IN THE AVEBURY REGION 2800 - 2300bc

2 km

settlement area (proven or potential - see text)

semi-permanent upland camp

long barrow

causewayed enclosure

non-local take up of land

local take up of land

F Flint source

Gault

Upper Greensand

Gravel and alluvium

are constructed wherever local and non local rights of access are likely to come into dispute. Each is to some extent a territorial marker but some also serve as shrines and charnel houses - especially those constructed on sites proscribed to the ancestors in earlier times. In a hark back to customs established when the uplands were only seasonally visited formal disposal of the dead is restricted to set points in the annual calendar. This entails staged funerary in which bodies are temporarily stored (above or below ground) around the settlement until the appointed time, when the decomposing cadavers are taken down or exhumed and transported to the ancestral cemetery sewn in oxhides to be finally accorded the full funerary rites.

Between the valley corridor and the springline belt fringing the higher downland to the south and west the predominant type of land use is forest grazing. Occupation normally takes the form of temporary encampments of an inconsequential nature although a few quite substantial camps are beginning to be established alongside more accessible outcrops of Upper Chalk and Clay - with - Flints in connection with regular, seasonal extraction and working of flint.

Superficially much of the region appears to be subject to fairly strict tenure but there are still some areas over which no single clan exerts a claim. This arrangement is necessary for it is only at these locations that the various communities who live in or visit the region can safely come together for the purpose of organised social and economic interaction without prejudice to their status - all are regarded as visitors with equal rights of access. Windmill Hill has become one such centre partly because of its topographic character but also because it is strategically located at the interface of at least two distinctly different farming regions - the stock and dairy based adaptation of the clay vales and the stock and corn adaptation of the chalklands. On the southern edge of the area Rybury and Knap Hill, both commanding important access routes over the escarpment into the downland, serve a similar role for this is where visitors from the southern part of the clay vale enter the chalklands.

9.5.4. 2600 bc (Figure 76)

The Avebury region has become a major arena of social activity but only after a troubled phase of re-organisation. A century or so earlier the steady increase in the scale of farming activity had created a situation where old arrangements for controlling access and utilisation of the land became too inflexible and too prone to dispute. In a bid to restore the situation those elements which found themselves in competition eventually subsumed their individual rights as manifested by the long barrow form of proscription, within a policy of commoning the downland. To regulate this new system corporate bodies of representatives drawn from leading families met regularly at the old hilltop exchange centres - Windmill Hill, Rybury and Knap Hill. In keeping with their new role they themselves became proscribed spaces to all but those they served - the participating populations being required to unite in constructing a symbolic enclosure to which the functions formerly performed by their barrow monuments are automically transferred.

For two or three generations this new arrangement worked well. It permitted the area to be utilised more effectively and hence permitted further economic expansion. But inevitably expansion also recreated the same old problem of competition, this time at a higher level. There being no alternative, the peripheral centres of Rybury and Knap Hill relinquished their administrative role to allow better placed Windmill Hill to assume exclusive responsibility for regulating exploitation of the region. This decision was marked by enlargement of the Windmill Hill enclosure and by enlargement and restructuring of selected barrows, such as West Kennet. In keeping with their elevation above local standing it was important that the leading families which now composed the region's governing council should find a way of displaying both their inherited right to govern and their unity in that purpose. The collective tomb at West Kennet with its five readily accessible interment chambers and imposing forecourt was in many ways a perfect solution. Symbolising the intended spirit of unification the barrow was skillfully built so as to incorporate the architectural traditions of each of the five clans even though to do so the builders had to bring in over a ton of limestone from a source up to 30 km distant - no small achievement.

At 2500 bc Windmill Hill is now not only the administrative centre of its region it has also become something of clearing house for the procurement and movement of status goods between regions.

However, the marginality of its hilltop setting, the very attribute which allowed it to become a social focus in the first place, has become a limiting factor. The site is simply too exposed and too far from permanent water supplies to support year round occupation by more than a handful of people. Similarly it is too far from the Kennet and the Ridgeway to develop further its economic functions; it is already evident that other sites closer to these important long distance lines of communication are better placed to handle the everyday collection and traffic of materials and stock. But for as long as there is a need to regulate commoning of the downland pastures and woodland the Windmill Hill enclosure will retain its importance.

9.5.5. 2300 bc (Figure 76)

In their early cereal cropping experiments local farmers soon discovered that these introduced plants were much less tolerant of competition from weeds than the natural woodland plants they had formerly cultivated. But because cereals offered a major increase in productivity the task of checking weed growth was not considered too onerous. Bracken however, although it did not colonise open ground as quickly as other weeds, was a much more serious problem for it could only be erradicated by highly labour intensive husbandry. Once bracken had taken hold it was simpler to clear a new plot than to purge the old one. After nearly a milennium this approach to land use had resulted in a substantial proportion of the best arable land being fouled and attempts to compensate by cropping distant outfield areas were becoming hopelessly inefficient. There was no alternative but to face the problem and intensify within the infields by mobilising labour to the task of reclaiming fouled land.

As this process got underway farming limits contracted and commoning rights in the uplands were no longer so assiduously exercised or as prone to dispute. There was now no necessity to maintain the old enclosure on Windmill Hill, as a mediation centre it has become redundant.

9.6. Monuments, Moveables and Settlement - the evidence

Though the model outlined above embraces many ideas which have been advanced before (Bradley's elegant summary of the evidence for prehistoric transhumance is a noteable example - Bradley 1978, Chapter 4) there remains a need to qualify and substantiate their employment within this study. Perhaps the major new departure from convention is to treat the Mesolithic/Neolithic interface as a continuum and not as a socio - economic hiatus. The reasons for doing so were detailed earlier in this Chapter and will not therefore be restated here where the emphasis is placed on substantiating how the Avebury region was used and where its users lived.

Monuments provide much of the available evidence but it is clear that in some important respects they give only a partial picture of what was going on in the landscape. In observing that nearly every type of imported sedimentary rock recorded at Windmill Hill was already being brought to the site before it was enclosed (Smith 1965a, 116) one is left to ponder on how many other unenclosed sites served a similar function. Similarly we now recognise that construction of a barrow mound often occurs as a late development in a lengthy period of specialised site use which sometimes involved the erection of recordable structures such as mortuary houses and? totems (as at Beckhampton Road - Ashbee et al 1979, 245) and sometimes perhaps left no coherent traces at all. Furthermore it is clear that an unknown proportion of these earlier structures did not ultimately evolve into the readily recognisable barrow form (cf. Normanton Down, Vatcher 1961).

The essential point is that the basic principle of proscribing land by symbolic means evolved before the fashion of constructing earthwork monuments. It could well be a form of behaviour that originated amongst Mesolithic communities, as is implied in Cases' suggestion that the megalithic monuments of Brittany represent aggrandizement of Mesolithic burial and ritual traditions (Case 1976). Similarly, one cannot safely regard the number and distribution of long barrows and public enclosures as giving a true picture of earlier Neolithic social organisation (contra Renfrew 1973), without knowing how many 'non - monumental' equivalents existed in the same landscape.

For the purposes of this study monuments are regarded simply as one form of social focus, as will be evident in Figure 76 which illustrates a situation in which some settlements proscribe their upland territories by other means. The model assumes that each barrow is in effect linked to a single local settlement area, in some cases being close to the settlement, in others at a greater remove. It may be significant that in the Kennet valley where a close spatial relationship is inferred the barrows generally prove on excavation to be cenotaphs as if to indicate that it was unnecessary to reinforce their status by using them as ancestral tombs. West Kennet is an obvious exception but one cannot rule out the possibility that it started life as a cenotaph, like its neighbours - Horslip, South Street and Beckhampton Road, and was later converted into a megalithic chambered tomb as happened with Wayland's Smithy (Atkinson 1965).

Whether tombs or cenotaphs it is clear that barrows, and for that matter causewayed enclosures, were generally built and utilised by a society that was organised into quite small basic units, each of which assiduously preserved their own identity whilst so engaged. West Kennet expresses this segregation within a communal monument by its five discrete interment chambers. From Fussells Lodge there is parallel evidence of five discrete clusters of human remains each apparently having a subtly different history of formation and after care (Shanks and Tilley 1982). Beckhampton Road and South Street, though lacking mortuary evidence, do however show that construction was a piecemeal affair, each participating family having its designated task allotted by the fence and bay system of the primary layout (Ashbee et al 1979). Similar arrangements have been inferred from the structural details of causewayed enclosures (e.g. Mercer 1980, 27).

With regard to the chronology and content of these tombs and enclosures Thorpe (1983) has recently discussed a number of trends and features within the evidence which are consistent with the model here under discussion. He notes not only that human remains from long barrows appear generally to have been decomposed elsewhere before interment but also that they are almost universally associated with an overwhelming predominance of ox bones within the accompanying faunal remains. Indeed the latter phenomenon was noted before. Thurnam

(1868, 182) observed that the parts of oxen most frequently met with in his experience of barrows were the skull and feet, and Ashbee (1970, 77) has also commented on the association of ox heads and hooves with fallen mortuary houses and the burials beneath them. When one considers the practical difficulties of moving decomposed corpses around the landscape without losing bits and pieces on the way it seems inevitable that some form of container would be required and an ox skin with hooves and horns retained as carrying handles would have been eminently suitable. It would also have had a potential utility within the funerary rites.

Thorpe also argues that the function of barrows changes through time, as was suggested in the model where they initially served as social foci in a largely unsettled landscape, later changing their role as some functions were transferred to newly built public enclosures and as more settlements became established within the monument zone. The transfer of role from barrow tomb to public enclosure was perhaps more than symbolic; there is a strong case for believing that the unassociated, fragmentary skulls and long bones found within enclosures were removed from barrow tombs which typically exhibit a deficiency of such elements that cannot be explained in terms of differential preservation (Smith 1965 a, 137). It must also be said that the earliest monuments predate the earliest known settlements in the same area by a considerable margin, as would be expected if monument zones are peripheral to core areas of settlement.

Subject to the caveats mentioned earlier the evidence from monuments is certainly consistent with the idea that the areas they are found in were, initially at least, exploited by non - resident communities through a carefully organised system of transhumance and land sharing. But it, is to the moveables, the various items of equipment that these communities brought with them to the monuments, that one must turn for the clearest insights into where the settlement bases were located. The diversity of the Avebury region's external contacts, as manifested in moveables, has been commented on many times before (e.g. Bradley 1978, 104) though usually within the context of exchange rather than transhumance. Some items, particularly the hardstone axes the professionally made flint tools and weapons and some of the finer pottery can be seen as status objects likely to pass through exchange networks. Other items however can only be seen as mundane bits of everyday household equipment. The artefact assemblages from Windmill Hill (Smith 1965a) illustrates the point.

Though it is impossible to be sure how much of the pottery assemblages was made beyond the chalklands it is clear that 30% or more originates from the clay vale triangle demarcated by Bath, Frome and Atworth. Furthermore the smaller average size of these vessels suggests they were used for consumption rather than storage, implying that only selected vessels were taken to the enclosure. The geologically 'foreign' rocks found on the site add to this picture. Their origins have been placed in the Old Red Sandstone of eastern Mendip; the Trias Sandstone of the vale north of Mendip; the Stonesfield Slates of Bath or the north/mid Cotswold; the Portland beds of Swindon area or beyond and the Lower Greensand of the Warminster area. Most appear to have arrived on the site as rubbers - useful but scrappy little bits of rock which surely had no real exchange value. Indeed, in view of the profusion of sarsen stone in the local area it is difficult to see how these mundane foreign stone artefacts came to be deposited at Windmill Hill if not as household portables brought to the site by people who normally lived elsewhere. In more general terms it is also difficult to see how so much domestic equipment came to be deposited in a region so devoid of permanent settlement evidence without invoking the concept of seasonal transhumance from external settlement core areas.

Although the moveables hint at where we should be looking for the homesteads of the people who visited the Avebury region each year they do not allow us to identify the actual locations more positively. It will be appreciated that any model which allows some elements of the Neolithic population to be temporarily resident away from their normal bases must also come to terms with the problem that domestic equipment will have been used and discarded out of its normal context. Care is needed in assessing whether one is dealing with base settlements or contexts that were only occupied on a temporary basis. There can be no rigid ruling on this problem but it is perhaps reasonable to assume that base settlements will have more continuous occupation sequences, a greater profusion of structural features and heavier accumulations of refuse, particularly burnt stone which seems to have a strong association with domestic activity. One may also predict that artefact assemblages will be more homogenous and plainer than at temporary sites where social interaction with other groups was taking place because refuse in the former situation should reflect just one basic tradition whilst in the latter one is dealing with an amalgam of traditions. Finally, some attempt must be made to assess whether the context has the physical attributes that might have made it an attractive settlement proposition.

On this basis there are very few, if any, known sites within the Avebury chalklands which qualify as base settlements. Of those that might be considered Hemp Knoll has only a brief and rather inconsequential occupation sequence (Robertsen - Mackay 1980). Roughridge Hill has yet to be adequately reported but seems to be a large and somewhat specialised occupation site (Annable 1965) and whilst pre-enclosure Windmill Hill boasts domestic type pits and hearths the associated artefact assemblage contains too many exotics to allow that it was a normal settlement (Smith 1965a). The common problem is that almost all the available evidence for Neolithic settlement of the area is fortuitously derived from investigation of barrows and public enclosures - sites which, within the terms of the proposed model, could contain domestic refuse out of its proper context. What can be said is that monument contexts in the valley generally yield signs of more continuous activity in their vicinity than do those in upland settings, and that environmental trends are also in accord with the idea of valley based settlement (see discussion in Chapter 6.2). This being so the likely location of these Neolithic settlements, as portrayed in Figure 76 can be inferred from the distribution of earlier medieval settlement in the same area (Gover et al 1970). It is not an entirely satisfactory solution to the problem but it does at least acknowledge the locational constraints operating on early chalkland farming communities and there is nothing within the available Neolithic evidence which conflicts with such a pattern.

Reconstructing Neolithic settlement patterns beyond the Avebury chalklands has been approached in much the same way, for much the same reasons. To the south and west, medieval and indeed present day settlement of the Gault/Upper Greensand peripheral zone clusters around springheads in a strikingly uniform manner. The reasons are obvious - a sheltered position below the chalk escarpment, a permanent supply of clean water, easy access to a good range of soils etc. Since these locations would have offered the same advantages in earlier prehistory it seems reasonable to assume they would have attracted Mesolithic and Neolithic occupation. Confirmation that this probably was the case is given by the recent publication of excavations within the springline village of Cherhill where sampling of what appears to have been the edge of the prehistoric settlement traced an occupation sequence spanning the late 6th to mid 2nd millennium bc (Evans and Smith 1983). Quite apart from being more continuous than is generally the case in the chalklands this sequence of site use exhibits a number of attributes which suggests one is dealing with a base settlement area.

Mesolithic occupation probably starts in the late sixth millennium bc, in association with only minimal disturbance of the local forest. Later, against a background of rising water table, which may be due to clearance in the vicinity, occupation appears to retreat onto higher, drier ground although debris continued to find its way into tufa forming over the waterlogged primary site. Thus when the first phase of early Neolithic activity is registered the site is already open. As the excavators themselves suggest - this activity refers to events taking place in near proximity to a settlement of some consequence. Structional evidence points to the establishment and replacement of a series of boundary features; first, perhaps a light stake built fence, then an irregular quarry ditch (traced for 50 m without finding its ends) probably dug to supply clay for an, as yet untraced, wattle and daub wall and eventually, in Beaker times, a new layout of segmented field ditches. Within the early Neolithic, Mortlake and Beaker associated refuse dumped within or around these boundary features it is noticeable that pottery and lithic groups are consistently of a rather 'homespun' character lacking the heterogenity of contemporary assemblages found in nearby chalkland monument contexts.

Petrological analysis of the pottery indicates that it is predominantly, if not wholly, of local manufacture and indeed there is evidence for potting on or near the site. A single clay source (fabric 5) accounts for 65% of the earlier Neolithic assemblages (30% at Windmill Hill), which is uniformly plain, and 58% of the Peterborough assemblage. Similarly, although the lithic assemblage contains some items, such as ground flint axes and arrowheads, which are possibly not of local manufacture, it does not appear to contain the more exotic, distantly made hardstone axes found so commonly around the monuments of the Avebury chalklands.

Yet another aspect of the evidence which sets Cherhill apart are the faunal remains, which also exhibit a number of apparent anomalies. The pre-tufa (i.e. 6th millennium bc) assemblage shows an unusual degree of reliance on wild pig, rather than wild cattle or deer. Bearing in mind that wild pig populations can withstand very heavy culling rates, are not normally migratory and do minimal damage to the forest canopy (Grigson 1982) the evidence indicates the site could be seen as a spring served, forest base camp occupied on a virtually continuous basis (cf. Blashenwell, Dorset - mid fourth millennium bc Mesolithic pig based economy recorded at another springhead - cited by Grigson in Evans and Smith 1983, 69). It was only with the onset of tufa formation, which it was suggested above may be linked to forest clearance nearby, that economic emphasis passed from pig to cattle - a trend which, since wild cattle are migratory, could well have marked the start of regular transhumance into the neighbouring chalk uplands. Less easy to explain is why Neolithic assemblages from the site contain so many wild cattle and wild pig bones. Grigson is clearly uneasy about this aspect of the situation and about the frequency of remains which are of uncertain or transitional status. Her solution - to assume that because some residual Mesolithic flintwork was found in Neolithic contexts the majority of the wild animal bones are also derived, is not a very satisfactory explanation. For example, earlier Neolithic ditch 1, which does penetrate Mesolithic levels, contained in its primary fill 27 fragments of Wild Cattle but only 10 of the domestic variety. The associated flint industry is described by Pitts as of broadly early Neolithic type, uniformly fresh and occurring in discrete concentrations - it does not support the notion of contamination on the scale suggested by the proportion of wild to domestic cattle.

There can be no doubt that the Cherhill sequence does appear to be anomalous when set alongside those of sites such as Windmill Hill,

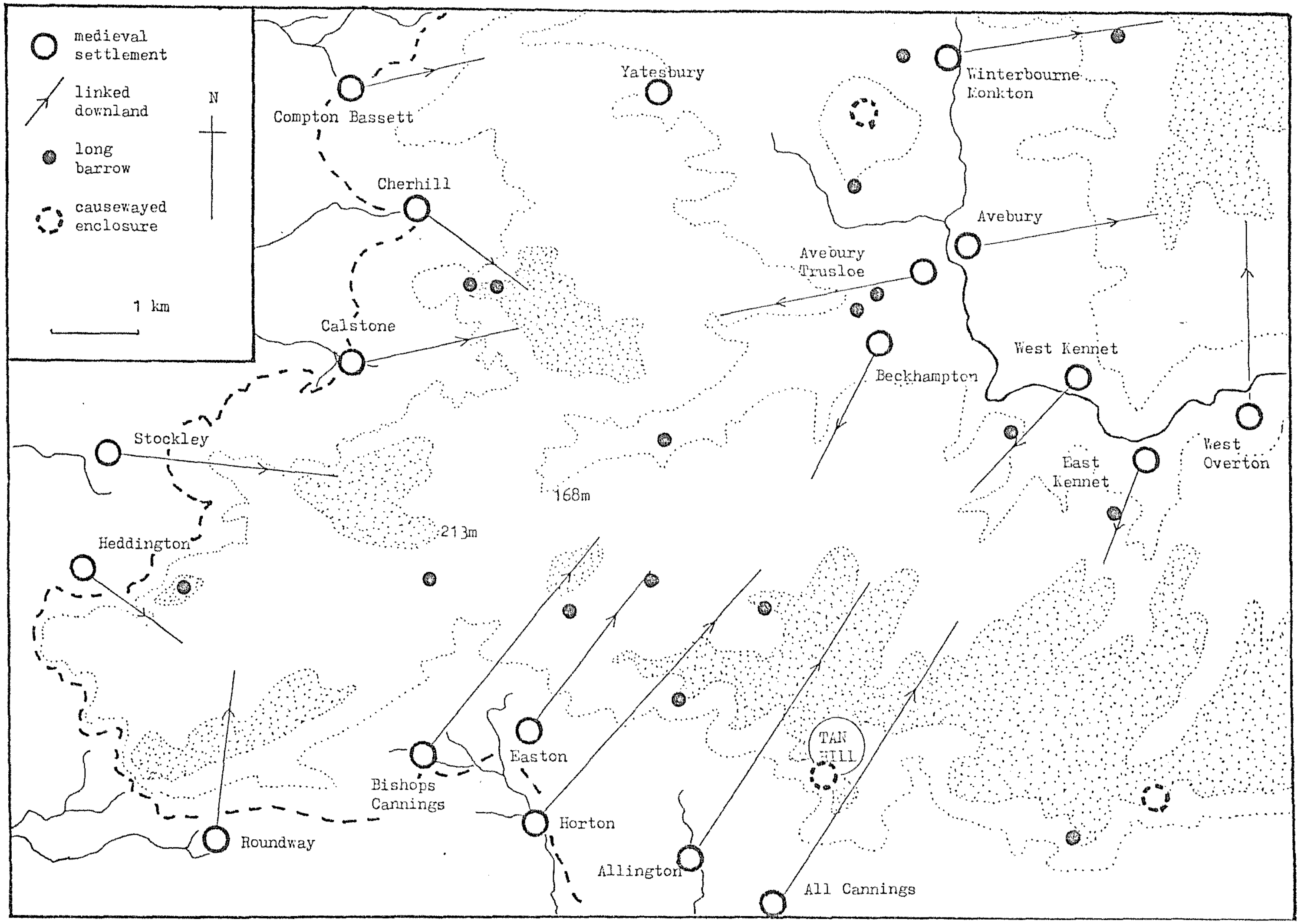


Figure 77 : MEDIEVAL SETTLEMENT AND DOWNLAND EXPLOITATION IN THE AVEBURY AREA - in relation to earlier Neolithic monuments

Beckhampton Road etc. But surely this is to be expected if Cherhill is seen as a base settlement - in truth we have little idea what settlements beyond the monument zone should look like or contain. Cherhill is in this respect regarded not as an anomaly but as a representative of the type of settlements that may yet be discovered at the edge of the chalklands, particularly along springlines. The neighbouring village of Calstone, for example, has exactly the same credentials as Cherhill in terms of setting and stray finds of Mesolithic and Neolithic material - the only difference is that, thanks to an observant German schoolboy who initiated the enquiry, Cherhill has been investigated by modern excavation. The case for believing that other modern villages in the area would also yield evidence for earlier prehistoric settlement were they to be investigated as well is a strong one. This is the thinking which underlies the settlement pattern postulated within the model and illustrated at Figure 76.

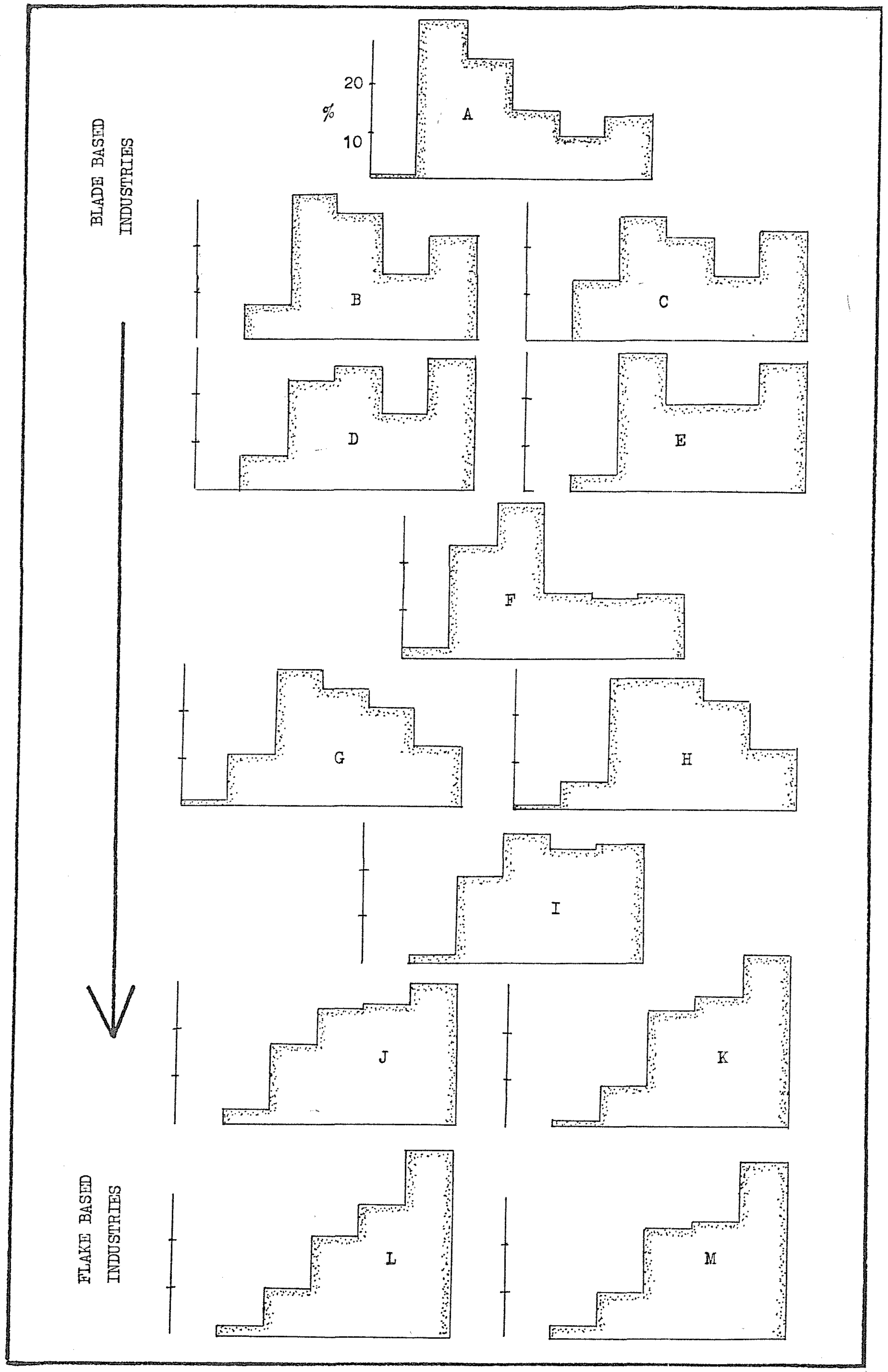
To have placed so much faith in the idea that medieval and later patterns of settlement and land use approximate to those of the Neolithic period may seem misguided. But, as is shown in Figure 77 wherever the two can be compared, which means essentially in the way the uplands were exploited, the correlation is strikingly good. Note, for example, how each hamlet or village on the southern edge of the region claimed a stretch of downland that was up to 5 km distant (in the case of All Cannings), and how the downland territories of the cluster of hamlets around Bishops Cannings each have a long barrow within them. Similarly, on the western edge, where Neolithic settlement has been proven or inferred within the neighbouring villages Cherhill and Calstone, two neighbouring long barrows lie astride the parish boundary which divides the same hill into Cherhill Down and Calstone Down. The analogy is completed by Tan Hill Fair - an annual fair for sheep, oxen and fineries held within or around Rybury (Aubrey 1847). Generally regarded as having its origins in a Celtic fire festival there are certainly many aspects of its customs and observances which are of more than passing interest (Story - Maskelyne 1906, Wiltshire 1984). Foremost, it was not just a local festival, it attracted farmers, shepherds, tinkers and tradesmen from all over Wiltshire who were guided to the site by beacons. Traditionally, cattle were driven through or between these fires to preserve them from disease in the coming year and the ash was afterwards prized for its healing powers.

It is tempting to think there is some form of continuity between Neolithic and medieval exploitation of the Avebury region but frankly it is unlikely and for the purposes of this thesis it is unnecessary to prove it. All that is being suggested is that given they were operating in the same landscape, with similar objectives it would be surprising if Neolithic farmers did not organise themselves spatially along much the same lines as their Saxon and medieval counterparts.

9.7. Beyond the Avebury Region

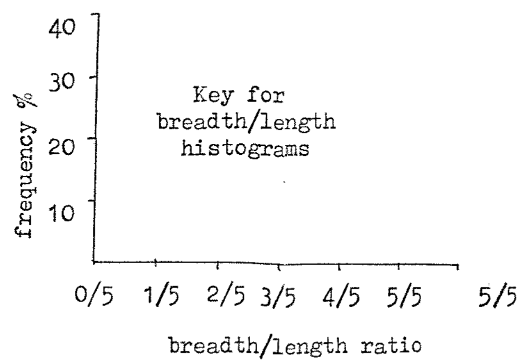
The essence of the model discussed above is that under the influence of late Mesolithic expansion many parts of the chalk uplands began to be claimed as extended territories by partially transhumant groups based on the periphery of the chalklands and within its river systems. Wherever topography, geology and drainage patterns conspired to bring different groups into contact away from their base settlement areas there evolved a symbolic system for proscribing rights which pre-dates the construction of earthwork monuments. In this respect the long barrows generally fossilise an earlier and rather rigid system of tenure and access which was in some cases replaced by a system of downland commoning organised from within causewayed enclosures. Initially there were few, if any, permanent settlements within the monument zone but as levels of social and economic activity increased so new settlements capable of operating independently from their parent communities began to be established. As farming spread across the landscape it left in its wake a secondary environment dominated by bracken, weeds and scrub. For almost a millennium farmers reacted to this problem, wherever it arose, by clearing yet more forest. But around the middle of the third millennium bc farming limits reached their high water mark. Stretched to the point of being unwieldly the extensive subsistence strategy began to give way to a policy of intensifying within neglected old infield areas. Farming limits contracted and communities living within or on the edge of the chalklands disengaged from the upland commons and social arenas.

This picture appears appropriate to the Avebury region but whether it is appropriate to the evidence from other parts of the Wessex chalklands remains to be seen. Frankly the research which might prove or



78: THE EVOLUTION OF LITHIC TRADITIONS IN WESSEX AS INDICATED BY METRICAL ANALYSIS OF MESOLITHIC AND NEOLITHIC WASTE FLAKE ASSEMBLAGES

	CONTEXT/DATE	REFERENCE	SIZE OF ASSEMBLAGE
A	Summary diagram based on ten earlier Mesolithic assemblages	Pitts and Jacobi 1979, 166	-
B	Summary diagram based on eleven later Mesolithic assemblages	Pitts and Jacobi 1979, 166	-
C	Offham Hill, Sussex. Secondary contexts - c. 2800bc.	Drewett 1977, 240	981 flakes
D	Offham Hill, Sussex. Primary contexts - c. 3000bc	Drewett 1977, 240	2356
E	South Street, Wilts. Pre-barrow soil - before c. 2800bc	Ashbee et al 1979, 271	297
F	Pamphill, Dorset. Early Neolithic pit - riverside settlement?	Field et al 1964	70
G	Windmill Hill. Primary contexts - c. 2600bc	Smith 1965, 90	1443
H	Durrington Walls, Wilts. Mid Neolithic - c. 2450bc	Wainwright and Longworth 1971, 160	290
I	Mount Pleasant, Dorset. Pre-henge - mid/late Neolithic	Wainwright 1979, 139	592
J	West Kennet Avenue, Wilts. Late Neolithic.	Smith 1965, 90	1383
K	Mount Pleasant, Dorset. Late Neolithic.	Wainwright 1979, 142	1400
L	Durrington Walls, Wilts. Late Neolithic.	Wainwright and Longworth 1971, 163	1650
M	South Street, Wilts. Late Neolithic/Beaker pit.	Ashbee et al 1979, 272	246



disprove it has yet to be undertaken. Research in the Avebury region combines a wealth of environmental data with a wealth of archaeological data and most importantly complements a considerable body of research elsewhere in the Kennet valley. Until other valley/upland systems have been investigated in the same detail all one can safely do is comment on various strands of evidence which suggest the Avebury model has a wider application.

Taking first the idea that farming originated amongst indigenous Mesolithic populations - it must be said that wherever environtal sequences spanning the fourth millennium bc permit Mesolithic and Neolithic land use strategies in the same area to be compared the basic strategy is the same. At Winchester, for example, the arrival of cereals marked an increase in the scale of subsistence activity but the trend towards more intensive exploitation of plants started well before cereals became available (see Chapter 6). This highlights the central problem that if the basic elements of a farming lifestyle could be acquired it cannot be assumed that when one encounters any of the material equipment generally regarded as belonging to the earlier Neolithic tradition that one is dealing with an intrusive group. One way of escaping this paradox is to distinguish between these artefacts which could have been acquired, whether for functional or status related reasons, and those which more truly reflect basic technological traditions. Since flint working debitage is generally held to be just such a technological indicator (Pitts and Jacobi 1979) and is ubiquitous in both Mesolithic and Neolithic contexts this seems to be the most useful medium to work with.

Figure 78 represents an attempt to chart the development of lithic traditions in Wessex from early Mesolithic times to the end of the Neolithic by visually ordering breadth/length ratio histograms drawn from a variety of previously published analyses of waste flake assemblages. To avoid selective bias the sequence was arrived at by annotating only two histograms (A and M - respectively representing early Mesolithic and late Neolithic traditions) and then grouping and sequencing the others in relation to these through comparison of shape. The results clearly suggest one is dealing with a single continuously evolving lithic tradition rather than two different ones. Indeed so uniform and well defined is this progression from blade to flake based industries

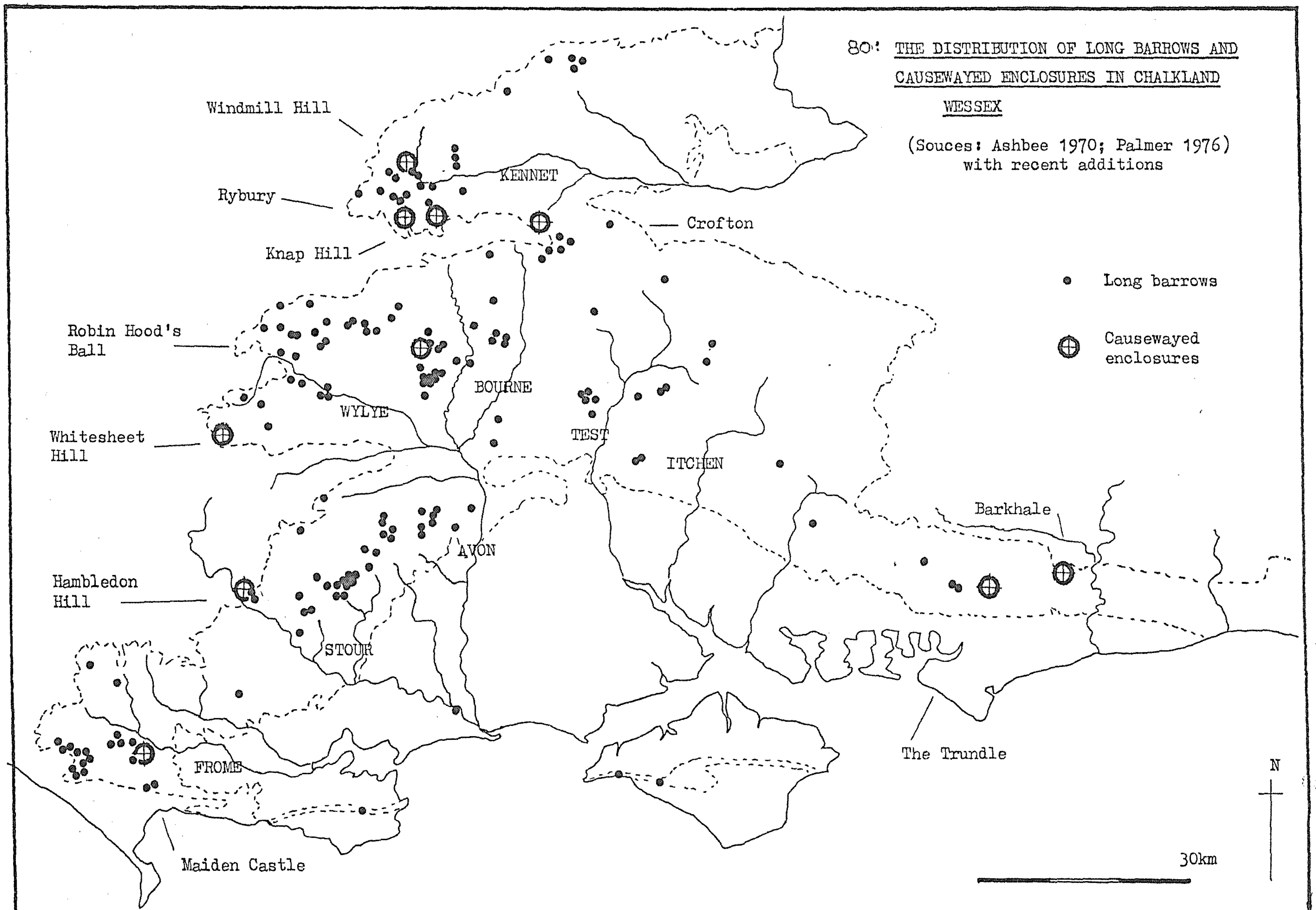
Figure 79 : CONTRASTING DISTRIBUTIONS OF NEOLITHIC MONUMENTS AND MOVEABLES IN THE RIVER SYSTEMS OF SOUTH WILTSHIRE

(source Grinsell 1957)

that no matter where in Wessex they are derived from or how small the assemblages are they can still be quite accurately placed within the sequence. This observation has an obvious relevance to future field research but for immediate purposes it is enough that three of the four earlier Neolithic histograms are virtually indistinguishable from the histograms representing the late Mesolithic tradition. The one apparent anomaly is the assemblage from Pamphill, Dorset which was recovered from a 'Winchester type' setting i.e. one in which a very early adoption of farming seems likely. Note, by comparison the Offham Hill assemblages, although contemporary with Pamphill, have a much more 'Mesolithic' appearance as would be consistent with the idea that the coastal Neolithic of Sussex came to farming very much later. The lithic data, when viewed this way, are therefore in general accord with the predicted situation.

The second point to be considered is whether, as within the Avebury region, the earlier Neolithic monuments of Wessex can be regarded as manifestations of socio - economic interaction between transhumant elements of communities who for the most part lived elsewhere. This would certainly seem to be the case in southern Wiltshire where finds of Neolithic pottery and implements are mainly distributed across valley systems beyond the areas in which monuments are found (Figure 79). Similarly, the distribution of long barrows in Wessex generally can also be accounted for by the same mechanisms of transhumance and interaction (Figure 80). Although the major concentrations of barrows occur along the western edge of the chalklands where interaction between valley based groups and those from the coastal zone or the broad belt of Gault/Upper Greensand may be envisaged, it is perhaps significant that other concentrations occur around the upper reaches of river systems which appear to have no such external interface. The clusters on the upper Test, Bourne, Avon and the Stour tributaries (i.e. Cranborne Chase) perhaps indicate that competition for space or preferred locations in the uplands could be generated from within the chalkland river systems. When one considers just how extensive and complex the drainage patterns of river systems like the Avon are the degree of social complexity implied by the need to erect long barrows in headwater areas is to be expected.

Because past research has tended to concentrate on the monuments



80: THE DISTRIBUTION OF LONG BARROWS AND CAUSEWAYED ENCLOSURES IN CHALKLAND WESSEX

(Souces: Ashbee 1970; Palmer 1976) with recent additions and their surroundings rather than on searching for the settlements of their builders and users our ideas of how Neolithic society was organised can only be derived (at the moment) from the monuments themselves. This of course lies at the heart of earlier attempts to reconstruct Neolithic social organisation (e.g. Renfrew 1973) in which monument clusters were rather arbitrarily divided into social territories without proper regard to the distribution of contemporary settlement. It may now be suggested that if drainage patterns were the major influence on the organisation of settlement within the chalklands they were also the major influence on social organisation.

Thus one can begin to perceive a situation where, for example, the Test river system of Hampshire integrated a number of clans (perhaps four) into some type of tribal formation - each clan having claim to a different part of the headwater area. Similarly, one may envisage a 'Frome' tribe, a 'Stour' tribe etc and when considering the Avon with its much larger and more complex tributary system it may be more appropriate to think in terms of a confederacy. Whether these social units should be regarded as tribes, petty chiefdoms etc is difficult to say but the actual stage of social evolution reached does not really matter - the terms are used merely to illustrate a different way of looking at Neolithic social organisation.

If long barrows marked the individual rights of extended families or groups of families within their tribal upland territory the causewayed enclosures clearly served a different purpose for they are nearly always peripheral to barrow clusters and sometimes occur in areas devoid of barrows. At the risk of over simplifying what is obviously a highly variable and complex class of monuments it may be suggested that these public enclosures primarily served as venues for regulating social and economic interaction between tribal groups. Thus the Kennet system has three such venues (four if Crofton is included) as befits the uniquely diverse origins of the people who exploited its headwater area. The Avon confederacy and the Stour valley tribe both use public enclosures at their western boundaries (respectively White Sheet and Hambledon) but because of its greater social complexity the former needs a further site (Robin Hoods Ball) to regulate internal matters. The Test valley tribe being internally less complex and lacking an active interface with other groups has no need of a public enclosure. In Sussex a chain of enclosures distributed along the South Downs serve to articulate Wealden communities with those living in the coastal zone.

An obvious concomitant of this arrangement is that relationships between the users of boundary enclosures such as Hambledon, White Sheet and perhaps Rybury were probably more fragile than relationships between the users of chalkland enclosures such as Robin Hoods Ball, Windmill Hill and perhaps Maiden Castle. In the former instance there potentially were considerable differences in social customs and economic aims. That these differences could cause conflict and a breakdown of relationships is plainly evident in the construction of defensive outworks around the Hambledon enclosure and by the attack on and burning of the Stepleton enclosure with which the outworks integrate (Mercer 1980). As Mercer notes there is also evidence for Neolithic warfare at other public enclosures eg Crickley Hill and Carn Brea. One suspects White Sheet Hill may eventually prove to have suffered a similar fate and in the vestigial outworks at Rybury and the signs of violent death amongst the west Kennet burials (Piggott 1962, 25) the same may be true of the Avebury region.

Sadly we do not yet know whether boundary enclosures were built by chalkland communities or those from beyond. Who, for example, were the Hambledon outworks designed to exclude? Who attacked and burnt the Stepleton enclosure? Did such attacks represent rivalry between non - local and local populations over the right to common their cattle in the chalklands?

Whether such questions are valid or can be answered lies in the hands of future researchers. But, if it is envisaged that chalkland societies were organised in the dendritic manner of the river systems they lived on they would obviously tend to be more cohesive than those bound together by mere proximity. Add to this the overall similarity of their resource base (i.e. less scope for competition over critical resources) and the ease with which day-to-day communication between groups could be maintained along the river highways and it is not surprising that the most imposing monuments to social cohesion in the Neolithic are found in the headwater areas of chalkland river valleys.

The long barrows and causewayed enclosures are of course representative of only one phase of social activity in these areas. We know that henges and round barrow cemeteries perpetuated this pattern but it is probable that some sites, because of their unique location in relation to transhumant patterns based on the river systems had a special social significance before the Neolithic. The uniquely dense concentration of early Neolithic long barrows around the site later used to accommodate Stonehenge is a case in point. Why did they cluster here rather than around Robin Hood's Ball? Was it already an established social focus for people living in the Avon river system? A hint that it may have been is provided by the recent discovery of traces of large timber uprights, initially thought to be a part of the late Neolithic/early Bronze Age Stonehenge complex, but since dated by radiocarbon assay to the early Mesolithic (Chippendale 1983, 233).

It also seems of more than passing significance that when the leading causewayed enclosures of the earlier to mid Neolithic social landscape were finally superceded by the big henges of the late Neolithic landscape those on the outer periphery of the chalklands (White Sheet, Rybury, Hambledon, the Sussex enclosures) do not appear to have successors, whereas those located internally do. Windmill Hill is replaced by Avebury ; Knap and perhaps Croften by Marden; Robin Hood's Ball by Durrington Walls and Maiden Castle by Mount Pleasant. If the Dorset Cusus is seen as a public monument symbolically equivalent to the causewayed enclosures (as its date suggests it could be - Bowden et al 1983) it too, as a heathland focus, is replaced - in the instance by the Knowlton henge complex. Hampshire and Sussex on the other hand have no obvious equivalent of the big henges in Wiltshire and Dorset. This suggests that society in those areas evolved in a rather different way or from a rather different origins - a theme which would repay further study. However, at this point, it is enough to note that in the location and hierarchy of the late Neolithic enclosures it is much more obvious that one is dealing with a river oriented society. In contrast to the causewayed enclosures, which are generally located on exposed hilltops at some remove from core settlement areas, the big henges were clearly built in settings which were not only more accessible but better suited to year round occupation and use.

Chapter 10

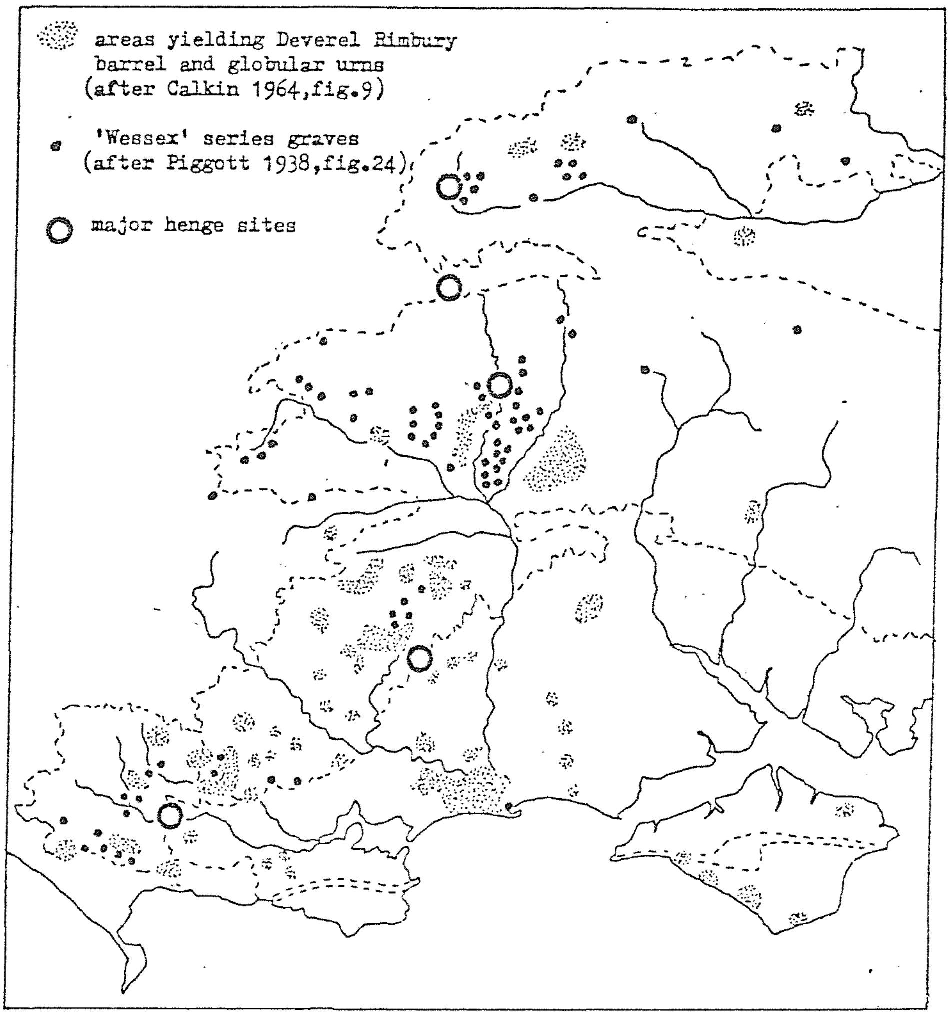
2000 - 500 bc

10.1. Big henges, Beakers and the beginning of a second boom.

In concluding Chapter 9 it was observed that the big henges were sited and structured so as to be easily accessible and capable of supporting year round occupation. This theme can now be elaborated on. It was suggested that causewayed enclosures were built during a phase of Neolithic expansion across the landscape, that they served primarily to regulate socio - economic interaction between transhumant groups intercommoning some parts of the chalklands and that their demise, during the mid third millennium bc, was attributable to abandonment, in the face of ecological degradation, of an extensive land use strategy in favour of an intensive one. As defined in detail within the Avebury area study (Chapter 6.2.) the economic and environmental associations of the late Neolithic big henge phase show that by 2000 bc subsistence methods had evolved to the point where problems posed by secondary environments had been mastered and a second phase of expansion was underway. Assuming this led again to intercommoning, and a general increase in the level of socio - economic contact between chalkland communities and those on the periphery, construction of the big henges can be seen as an obvious response to the need for a regulatory facility like the earlier causewayed enclosures. Although, since each was built alongside the river access routes linking the chalklands with the exterior it was plainly intended that they would be more closely concerned with regional trade and redistribution than the causewayed enclosures were.

Whilst the big henges seem to reflect a common desire to provide some form of grandiose emporium at natural gateways on the interface of two or more economic regions they did not subsequently develop according to a common pattern. Marden (Wainwright 1971) despite being the largest of the group could be regarded as a failure. Compared with the others it does not appear to have been very heavily used and it lacks their close spatial association with extensive round barrow cemeteries indicative of an importance continuing well into the Bronze Age. Its location could have something to do with it, for in being positioned between two major centres of more ancient standing (Avebury and the Stonehenge area) and being served by little more than a stream (the headwater Avon), it was perhaps doomed to be a second order centre from the outset. Though it has yet to be adequately investigated the ideosyncratic layout of the Knowlton complex (RCHM 1975, 113), at the south eastern edge of Cranborne Chase, parallels an earlier situation where a large cursus monument seems to have served some of the functions elsewhere undertaken by causewayed enclosures. However, it was certainly well placed to exploit interaction between the chalklands of the Chase and the Tertiary basin beyond and it is associated with a localised concentration of rich early Bronze Age graves. It could therefore, despite its differences from other members of the group, be judged to have been successful.

The success and importance of the remaining three big henges (Avebury, Durrington Walls and Mount Pleasant) has been established by excavational research (Smith 1965a; Wainwright and Longworth 1971; Wainwright 1979a). Arguably they were the three premier centres of late Neolithic Wessex - Avebury serving communities from the Kennet valley system and the three clay vales fringing the North Wessex Downs; Durrington Walls - the Avon system commanding Salisbury Plain, and the Vales of Warminster and Wardour; Mount Pleasant - the coastal zone, chalklands and Tertiary basin of South Dorset. In view of the diversity of their territorial and social connections there ought to be definable differences in the material culture associated with each monument. This is indeed the case; they all share the same basic repertoire of ceramics and stone implements but precise proportions vary significantly; a phenomenon touched on by Green (1980, 108) and Pitts (in Evans and Smith 1983, 76) and evident now in the original excavation reports. Thus Peterborough series pottery and chisel ended



Comparative chronology of a) Wessex II graves and associations and b) Deverel Rimbury associations. Vertical scale - number of uncalibrated Carbon 14 determinations (plotted at one standard deviation). Source Barrett 1980a, figure 2.

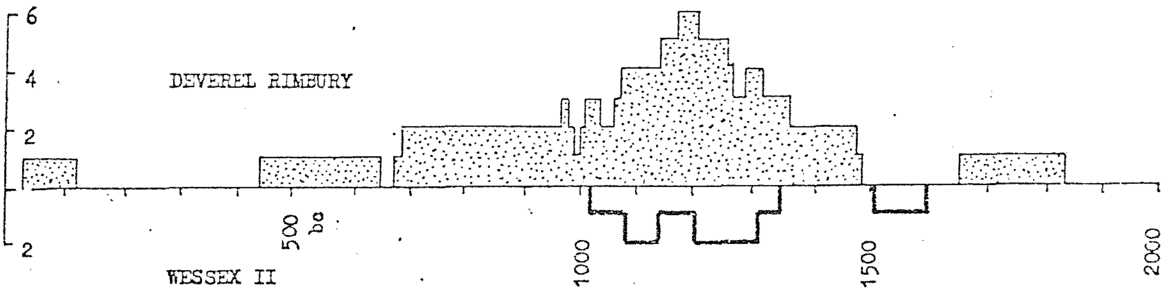


Figure 81 : THE WESSEX AND DEVEREL RIMBURY TRADITIONS IN TIME AND SPACE

arrowheads are unusually common in the vicinity of Avebury; Grooved Ware and oblique arrowheads predominate at Durrington Walls, and whilst there is a more eclectic range of arrowheads at Mount Pleasant the ceramic assemblage does contain a much larger Beaker element than either of the two other sites.

These differences provide an interesting insight into the complexities of late Neolithic social organisation and trade networks and as such are deserving of further research. But, it should not be overlooked that the big henges are confined to the chalklands of Wiltshire and Dorset. If they are indeed symptomatic of a re emergence, within the Wessex chalklands, of a new outward-looking, expansive social order, it is clear that they were not essential to the process, for the populations of Hampshire, Sussex and Berkshire seem to have eventually achieved much the same end without them.

The restricted distribution of big henges can be seen as further evidence for a continuing dichotomy between those parts of the chalklands where transhumance led to intercommoning and those where it did not. It is perpetuated in the restricted distribution of flamboyant Wessex series graves of the earlier Bronze Age (see Figure 81). Thus when, in a recent discussion of the Bronze Age evidence for Wessex, Barrett (1980a) spoke of "Core Areas" and "Buffer Zones" in relation to this dichotomy he was discussing a situation which had been in existence since at least the fourth millennium bc (see Chapter 10). Whether these terms are entirely appropriate is largely a question of which aspect of the evidence one is talking about. Certainly, so far as settlement and subsistence behaviour is concerned, the Buffer Zones are as widely variable as the environments to be found within them. At present almost all the areas beyond those where Wessex series graves are found are classified as Buffer Zones which is not really satisfactory. For the purposes of this thesis it will suffice to identify just three adaptations with the Wessex chalklands - the Salisbury adaptation (equivalent in spatial tones to Barrett and Bradley's Core Areas); the Winchester adaptation and the Lewes adaptation, the last two representing two of the more distinctive land use strategies recorded within the Buffer Zones. One suspects other terms will eventually have to be coined as our understanding of the situation improves. More will be said about the character of the Salisbury, Winchester and Lewes adaptations later; for now attention must return to the common theme of economic expansion during the earlier second millennium bc.

If the mid third millennium bc is seen as a time of retraction in the landscape the closing centuries of that millennium were probably a time of experimentation and adaptation with a view to finding a subsistence strategy capable of operating efficiently in the secondary environments created by the extensive and wasteful land use strategies in use in earlier times. One must assume that after 500 years or so of experimentation the technological capability to expand again and reclaim derelict land existed throughout the region by circa 2000 bc. But, having the capability and using it are two quite separate issues. Ostensibly it was first used in the upper reaches of chalkland river systems in Wiltshire and Dorset where construction of the big henge complexes could perhaps be regarded as signalling the intention to do so. In this respect they were something of a gamble for they were built before expansion had properly got underway and as discussed earlier the negative evidence from Marden suggests the gamble did not always pay off.

Beyond the henge territories of Wiltshire and Dorset the process of expansion takes many different forms and is generally later in getting underway. In the areas now known as the Dorset Heathlands and the Hampshire Basin one is dealing with broad tracts of economically marginal soils (based on Eocene sands and clays) traversed by bands and islands of fertile, well drained gravels and brickearth type deposits within the lower reaches of rivers such as the Stour, Avon and Test. The contrasting potentials of these soils would perhaps always tend to restrict most settlement and subsistence activity to the valley systems - any attempt to clear and work the Eocene soils carrying with it the risk of permanent ecological degradation. The expansion of subsistence operations out into Eocene areas during the late Neolithic and early Bronze Age is in evidence. But, such activity was either small scale and transitory, as at the interfluve site of Rimsmoor (circa 1870 bc - Waton 1982) or abortive, as in the heath/bracken invasions recorded under earlier Bronze Age barrows on the edges of the valley systems elsewhere (see Chapter 7.8.).

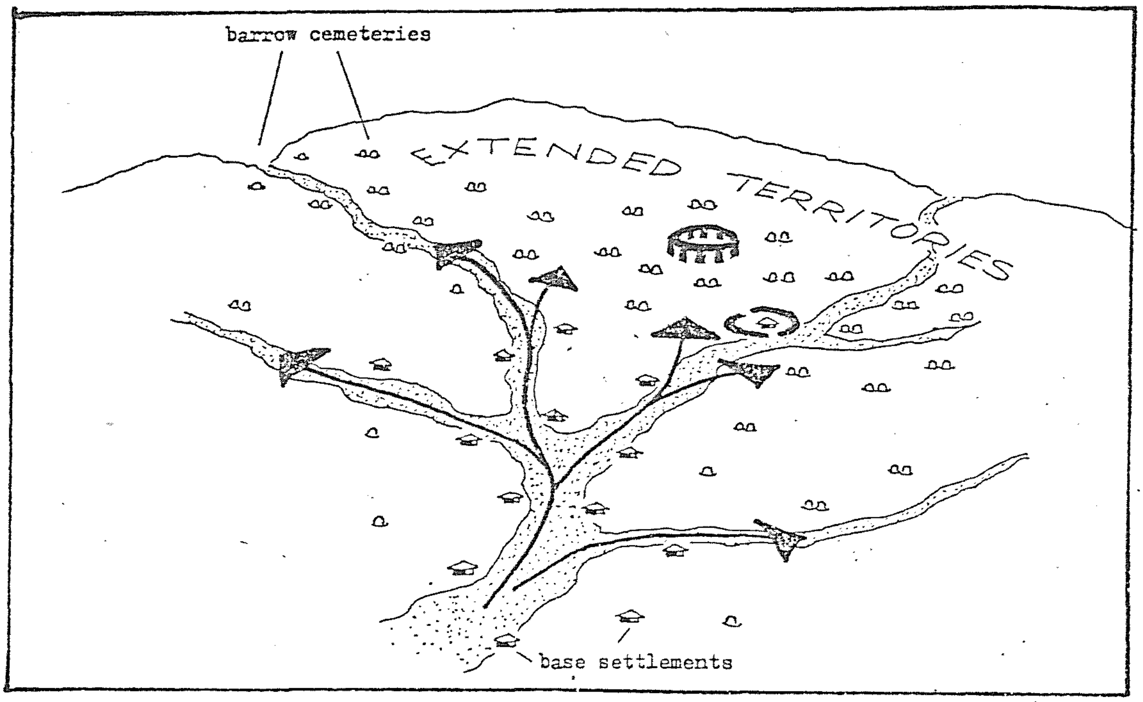
Quite how the chalkland river systems of Hampshire fared at this time is difficult to document. It will be recalled though that most land around Winchester, on the middle Itchen, had been in use since the earliest Neolithic (Waton 1982 and Chapter 7.5.). There was little scope for further expansion locally. What the pollen sequence does show however is that from circa 1700 onwards old pastureland was being progressively broken up for arable. In effect whilst others were increasing their levels of economic production by taking in more land communities such as those at Winchester achieved the same end simply by using existing farmland more intensively.

In east Sussex intensification initially takes the form of reclaimation of scrub infested dry valleys leading off the main valley corridor, as at Itford Bottom (circa 1770 bc - Bell 1983) where an agricultural regime was established early on, and the beginnings of a phase of disturbance to Heath and Alder communities standing around the edges of the estuarine swamps. At Lewes (Thorley 1981) the start date is probably circa 1600 bc and it is not until circa 1240 bc that clearance achieves major proportions which, as the sequence shows, was abortive for thereafter weeds, bracken/heath and eventually birch woodland re invaded. It was perhaps the failure of attempts to bring floodplain and estuarine marshland into permanent production which led to increasing emphasis on further colonisation of the higher downland interfluves as evidenced by the establishment of satellite settlements at, for example, Itford Hill and Black Patch.

Crop mark and excavational evidence from the contiguous gravels of the Newbury - Reading - Oxford region shows that although they had been exploited earlier the level of activity increased quite dramatically during the late Neolithic and early Bronze Age, even if much of that activity was connected with funerary and ceremonial monuments rather than settlement (Case and Whittle 1982). As Barrett and Bradley (1980, 249) have observed, the development of the henge complexes at Stanton Harcourt and Dorchester parallels the situation in the Wessex core areas, although in this case if the henges were intended to facilitate economic expansion the principle target was land on the lower terraces not the more distant chalk uplands. The frequency with which thornscrub charcoals are recorded either in cremation material or the silts of ring ditch cemeteries suggests that here, as in most parts of

Figure 82 : A MODEL FOR THE SALISBURY ADAPTATION IN ITS TRANSHUMANT PHASE

(c. 2000bc to c. 1300bc)



	EXTENDED TERRITORY	BASE TERRITORY
SETTLEMENT	Mainly seasonal occupation of preferred sites taking various forms	Permanent occupation of established sites. Form unknown but likely to be located at back of terrace and at entrances to major dry valleys.
SUBSISTENCE	Collective exploitation with emphasis on herding cattle and sheep augmented by hunting/ gathering and by catch cropping cereals after clearance phases.	Segregated exploitation. Permanent small scale agriculture on higher terrace and in dry valley floors augmented by stock rearing and dairying.
LAND TENURE	Loosely defined. Barrows proscribe preferred locations. Prone to dispute.	Defined by topographic features. Tenure established by custom and residency.
FUNERARY	Scene of most funerary activity. Progressive development of barrow cemeteries. Ostentatious rites. Delayed burial often results in cremation.	Barrows rarer. Occasional plain burials in unmarked flat graves and around old ring ditch cemeteries at edge of gravel terraces.
EQUIPMENT	Rich, portable assemblages. Domestic/industrial items rare. Weaponry common. Heavy/expedient use of flint.	More mundane assemblages. Domestic/ industrial items common. Weaponry rarer. Light/curative use of flint.

the chalklands, it was a secondary (i.e. previously disturbed) environment that was being tackled in driving territorial limits out from upper terrace settlement areas. Whilst some parts of the lower terraces, such as Knights Farm, appear to have remained in use throughout the Bronze Age, others, such as the area around Aldermaston Wharf, did not (Bradley et al 1980). Whether this reflects abandonment in the face of heath development or some other form of disadvantageous environmental response is unclear. But, it is noticeable that there is also a slackening of burial activity in these areas during the mid Bronze Age which Case has linked with the development of field systems on the Berkshire Downs and the establishment of downland centres such as Rams Hill (Case and Whittl 1982, 6). Perhaps, as in east Sussex, downland colonization was to a large extent secondary to and prompted by unsuccessful attempts to reclaim marginal valley land.

10.2. Regional Adaptations in the Bronze Age - models

Having discussed the various ways late Neolithic communities attempted to expand their economic base it remains now to define, as explicitly as the evidence permits how they evolved during the course of the Bronze Age.

10.2.1. The Salisbury Adaptation (Figure 82)

May be defined in spatial terms as extending across the middle to upper reaches of those chalkland valley systems which interface with the Clay and Greensand vales distributed around the northern and western edges of the Wessex chalklands. These are Barrett and Bradley's (1980) "Core Areas" within which the big henges and rich Wessex series graves are concentrated.

In the earlier Bronze Age the economic strategy of the adaptation is based on transhumant expoitation of upper parts of the systems from base settlement areas in the broader middle reaches. Outlying territories occasionally contain permanent occupation sites but for the most part are only seasonally visited. Access and tenurial arrangements are necessarily complex but since most, if not all, the participating families are inter-related within a huge derdritic social structure (mirroring the structure of the valley system they occupy) exploitation is well ordered. Following earlier traditions barrow monuments and cemeteries are sited within the extended territories nominally to proscribe rights of access and tenure. Strictly this is only necessary where circumstances of intercommoning brings two unrelated, or only distantly related, groups into the same area at the same time but such behaviour has become more of a social tradition than an operational necessity.

Burial in one form or another also takes place in base areas downstream but key individuals, those of more than local standing, are almost always buried in the extended territories, partly to signify their social separation from the rest of the community and partly because their successors wish to emphasise and legitimate their inherited rights in these areas. As the economy expands so wealth and influence accrue to those who control the critical resources or largest territories and prestige goods begin to enter the system to satisfy self esteem and as a form of tribute. Expansion across the landscape has also brought rights (in previously ill-defined territories) into dispute, creating a need to invest ever more heavily in legitimizing them. The combined effects of increased wealth, the availability of prestige goods and increased pressure on resources generate some of the most lavish individual burials ever seen in the region. These become the centre pieces of dynastic cemeteries often of considerable size.

Initially subsistence strategies were largely geared to the problems of scrub clearance. Systematic fire setting played perhaps the most important role in creating open spaces but one may assume that pigs were frequently used to root out fire-resistant bracken rhizomes and other persistent weeds, and that ards, mattocks and spades were employed to break up residual root mats especially if the cleared plot was destined for arable use. As reclaimation proceeded sheep began to replace pigs so as to make best use of the new pastures and to provide fold manure over new arable plots too distant from settlements to be fertilised with domestic wastes. Cattle had always been important, especially within transhumance schedules - now they were joined by sheep. Pigs for the most part remained in base areas. Crops included spring sown wheat and barley - the latter being chiefly grown in outlying upland plots, the former mainly on deeper more easily fertilised soils around valley occupation sites. The overall trend was for gradual replacement of a somewhat specialised (colonising) subsistence strategy by a more balanced one based on mixed farming.

Indeed this internal development, together with a number of external factors about which more will be said later (Chapter 11.3), were mainly responsible for creating the conditions where other aspects of the adaptation became due for change. Quite simply as exploitation of extended territories developed to the stage where permanent settlements became necessary, transhumance diminished and it became more important to invest in further development of the land around them than in securing access rights to it. It was no longer so essential to support and service the weighty social superstructure which had regulated the transhumance system or to erect lavishly equipped burial monuments in the extended territory, tenure of which was now demonstrated by residency. The emphasis in social activity and organisation, began to move away from personal position in the old and complex sub regional linear descent structures towards a new concern for standing in local communities - now reckoned in terms of land and stock rather than ancestry. The old transhumance system with all its social complexities was no longer adaptively advantageous.

The timing of this change probably varies from one area to another according to such factors as the cohesive strength of local society, the economic potential of the extended territory and susceptibility (or proximity) to interference and influence by different social groups beyond the system. One would assume however that the massive undertaking of Stonehenge III a (1720 $\pm$ 150 bc, BM 46) represents the apogee of the old society's attainment and that the trend towards less lavish burials in the Wessex II grave series represents an early phase of its demise. This would suggest that the transhumant form of the Salisbury adaptation certainly persisted into the mid Bronze Age but was perhaps being progressively replaced by settled farming thereafter. A further

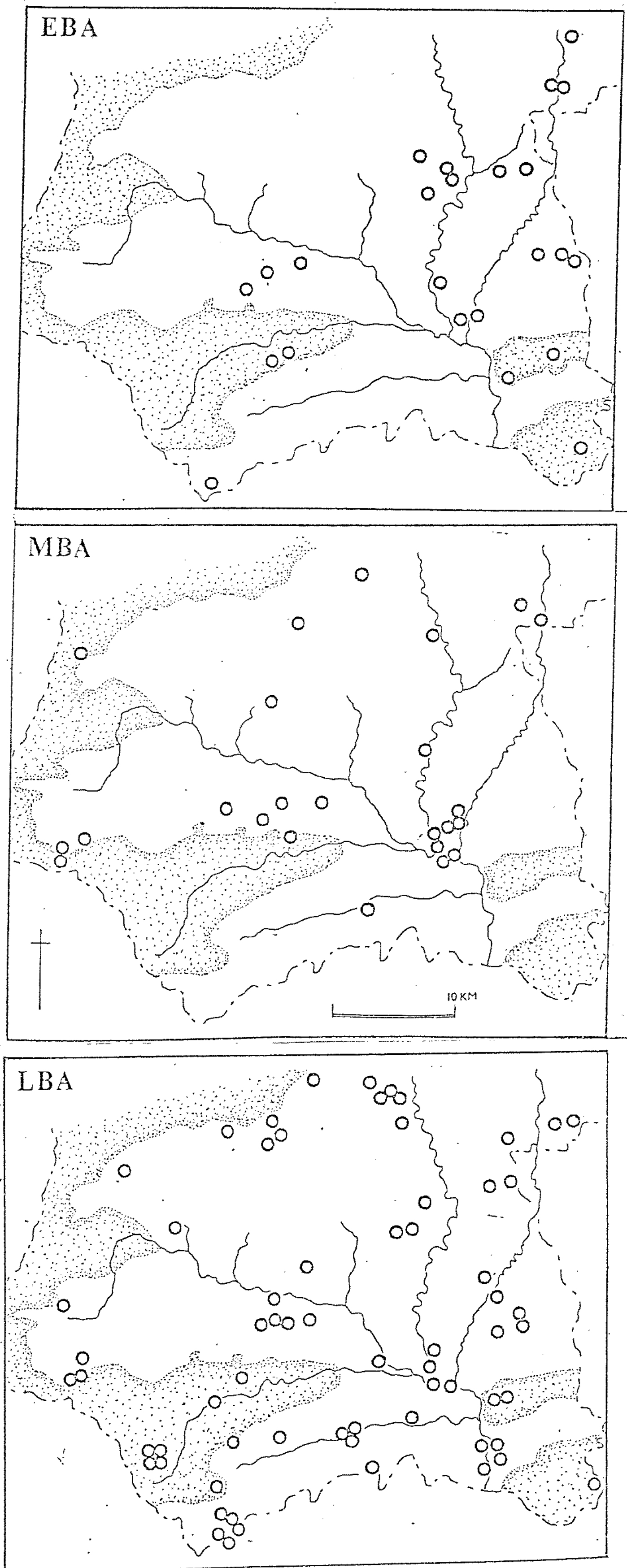


Figure 83: THE EXTENSION OF BRONZE AGE SETTLEMENT ACTIVITY ACROSS SOUTHERN WILTSHIRE - as suggested by changing patterns of metalwork deposition

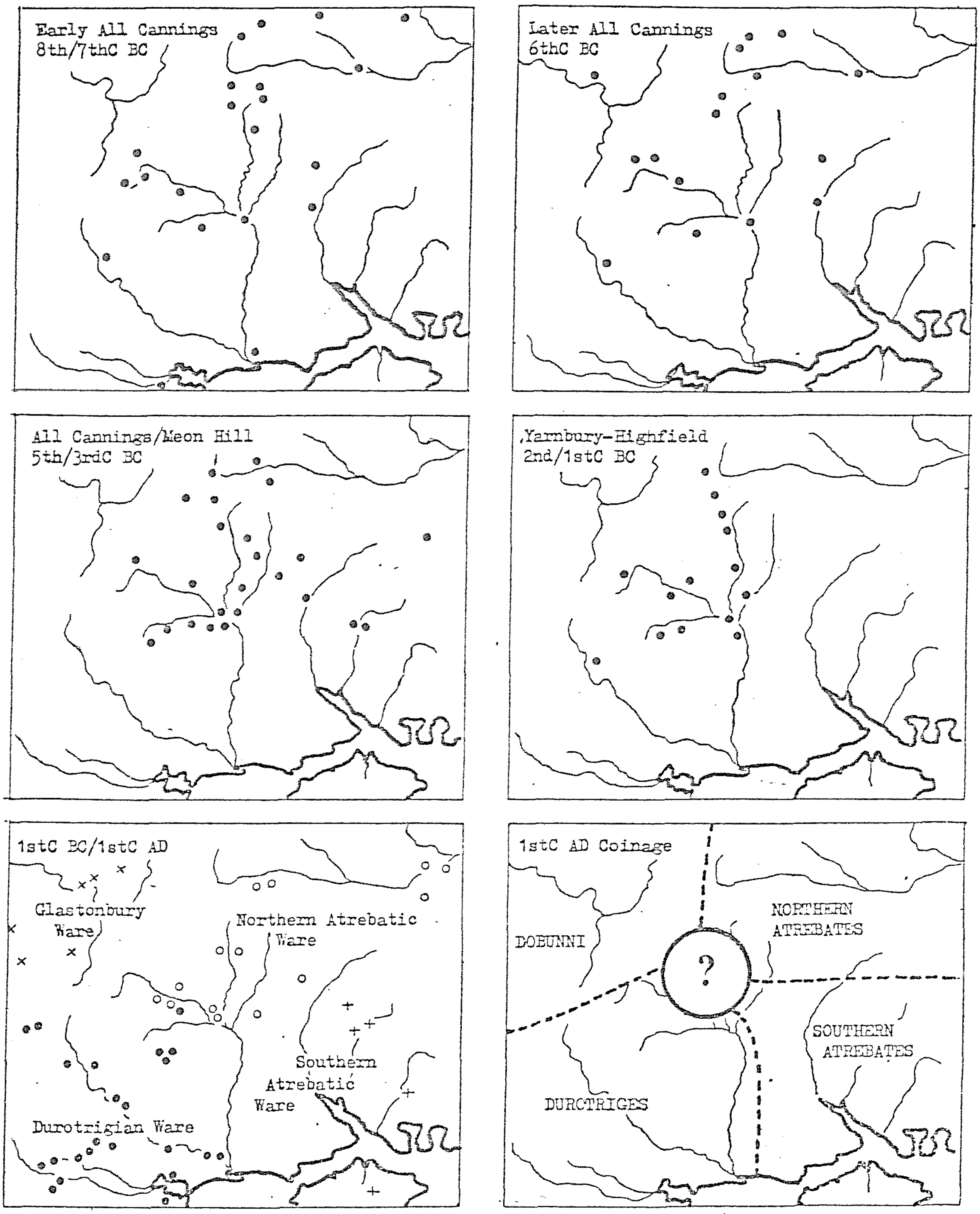


Figure 84 : THE SHRINKING SPHERE OF INFLUENCE OF THE SALISBURY ADAPTATION AS SEEN IN DISTRIBUTION OF IRON AGE CERAMICS AND COINAGE (source: Cunliffe 1978)

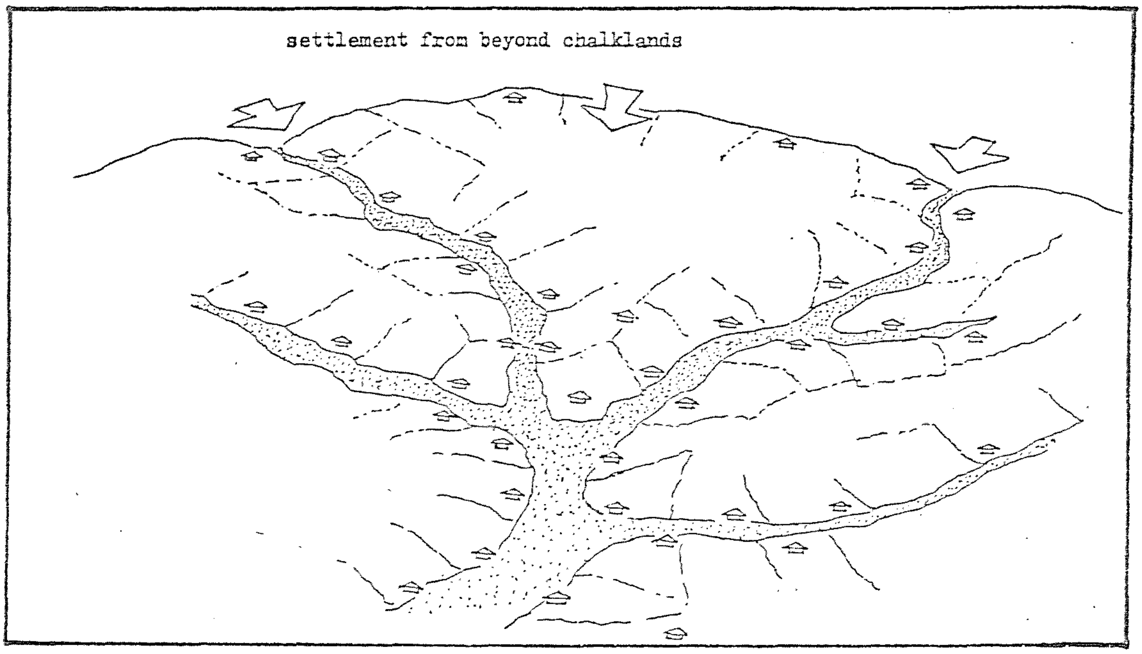
check on the nature and timing of this development is given by the expanding patterns of deposition of Bronze Age metalwork within Southern Wiltshire (Figure 83). As discussed earlier (Chapter 7.2.6), the distribution of metalwork across the landscape (provided it is not obviously associated with barrows or cemeteries) provides one of the best available guides to the likely distribution of contemporary settlement activity. In the evidence from South Wiltshire there are unmistakeable signs of upward and outward extension of settlement activity, along the tributary system, from an EBA core area centred on the major confluence at Salisbury. One suspects that the proliferation of LBA finds around the northern and western edges of the chalklands represents the combined effects of settlement expansion from within the Avon system and from the Gault/Greensand fringe beyond.

In this respect it is interesting to note how Iron Age artefact deposition patterns appear to confirm that in going over to settled farming the Salisbury adaptation progressively lost the rich cultural tradition which had been such a distinctive facet of the old transhumant lifestyle. As settlement of the extended territories proceeded so new traditions were borrowed from other settled adaptations beyond the chalklands. Figure 84 charts the shrinking sphere of cultural influence of the Salisbury adaptation as seen in changing boundaries of ceramic style zones centred on Salisbury. At the end of the Bronze Age this extended into virtually every major river system in the region, even those where the rival Deverel - Rimbury tradition had been particularly strong. But, by the end of the Iron Age the Avon system had completely lost its own cultural identity. Those who lived within it drew instead from more vibrant traditions evolving in adjacent river systems. - the Durotrigian (Frome/Piddle/Stour); the Dobunnic (Severn/Bristol Avon); the Northern Atrebatic (Kennet/Thames) and the Southern Atrebatic (Test/Itchen/Meon). The Stonehenge area which for most of prehistory had been the social focus of Wessex had become a centre without a region - its imposing monuments and cemeteries standing as mute memorials to a vanished way of life.

It remains now to consider how the Salisbury adaptation evolved towards its fully settled form during the later Bronze Age and early Iron Age. One suspects that the transition was not a comfortable or easy one and that the period circa 1400 bc to circa 1200 bc was one in which faltering confidence in the old economic strategy and social order led to deprivation and perhaps conflict. Some of the more

Figure 85 : A MODEL FOR THE SALISBURY ADAPTATION IN ITS SETTLED PHASE

(c. 1300bc to c. 500bc)



	EXTENDED TERRITORY	BASE TERRITORY
SETTLEMENT	Progressive establishment of permanent settlements on prime sites at back of terraces. Some settlement from Gault/Greensand fringes.	Closer packing and consolidation of existing sites. New ones being planted at the upper ends of dry valleys.
SUBSISTENCE	Short range transhumance only. Infield /outfield mixed farming. By end of period - active colonisation of higher downland and floodplain waste with signs of localised economic specialism.	Intensive mixed farming with emphasis on cereal production. Now using winter and spring sown varieties. Manuring and crop rotation.
LAND TENURE	Massive reorganisation as 'ranch' boundary systems replace barrow defined territory and are themselves modified by sub-division. Low lying cemeteries and old arable plots overrun by new field systems. Intercommoning of higher downland pastures in some topographic areas	Evolving strip territories sometimes defined by ditchworks running from river edge up into higher downland. Upward extension of field systems.
FUNERARY	Urnfield development around selected barrows with dwindling secondary use of their mounds. By end of period new rites including pit inhumation within occupation sites.	Similar?
EQUIPMENT	No real differences. Use of flint generally light or altogether abandoned. By end of period more frequent signs of craft specialisation (wool processing/weaving; quern manufacture; metalworking; potting; bone working etc.)	

important themes in the evolutionary process are outlined in Figure 85 which also illustrates a late stage of landscape development. Whilst recent research has begun to shed some light on settlement and land use in chalkland valleys most of the evidence for what was happening in the landscape derives from survey and excavation of the adjoining downland where one can still study, for example, the layout of field systems or ditchworks and their relationship with more closely dateable features such as barrows.

The situation is very similar to that faced by Fleming in tackling the evidence from Dartmoor (Fleming 1983). It is therefore interesting to note that he too infers seasonal exploitation of upland "community territories" from settlement bases in the valley zones (p.224). Most importantly he also identifies a "main boundary making event" (MBME) at circa 1300 bc when these previously rather loose arrangements were formalised by the construction of a vast network of reaves/dykes. It was this system which permitted and perhaps promoted the orderly extension of settlement and farming into marginal areas.

Though they cannot be dated with quite the same precision as on Dartmoor there are certainly very similar boundary works in the upper reaches of the Avon and its tributaries. The best preserved patterns are those on the Avon/Bourne interfluve - an area little touched by historic cultivation until after archaeological recording of the downland had begun. Figure 86 illustrates the distribution of major linear earthworks, their spatial relationship with major barrow cemeteries and discernible patterns of land use associated with them i.e. 'fields' means traces of short rectangular 'Celtic' fields and 'pasture' means no evidence for such fields in circumstances where they should have been visible had they been present. The first point to note is that the ditchworks almost everywhere respect the layout of barrow cemeteries, sometimes carefully skirting or enclosing entire cemeteries, as with the Snail Down (SD) and Haxton Down (HD) groups where the intention seems to have been to segregate them from land destined for arable, and sometimes more closely integrated such that the ditch actually connects rows of barrows, as to the east of Milston Down (MD). In one instance (the most southerly group on Earls Farm Down - EFD)

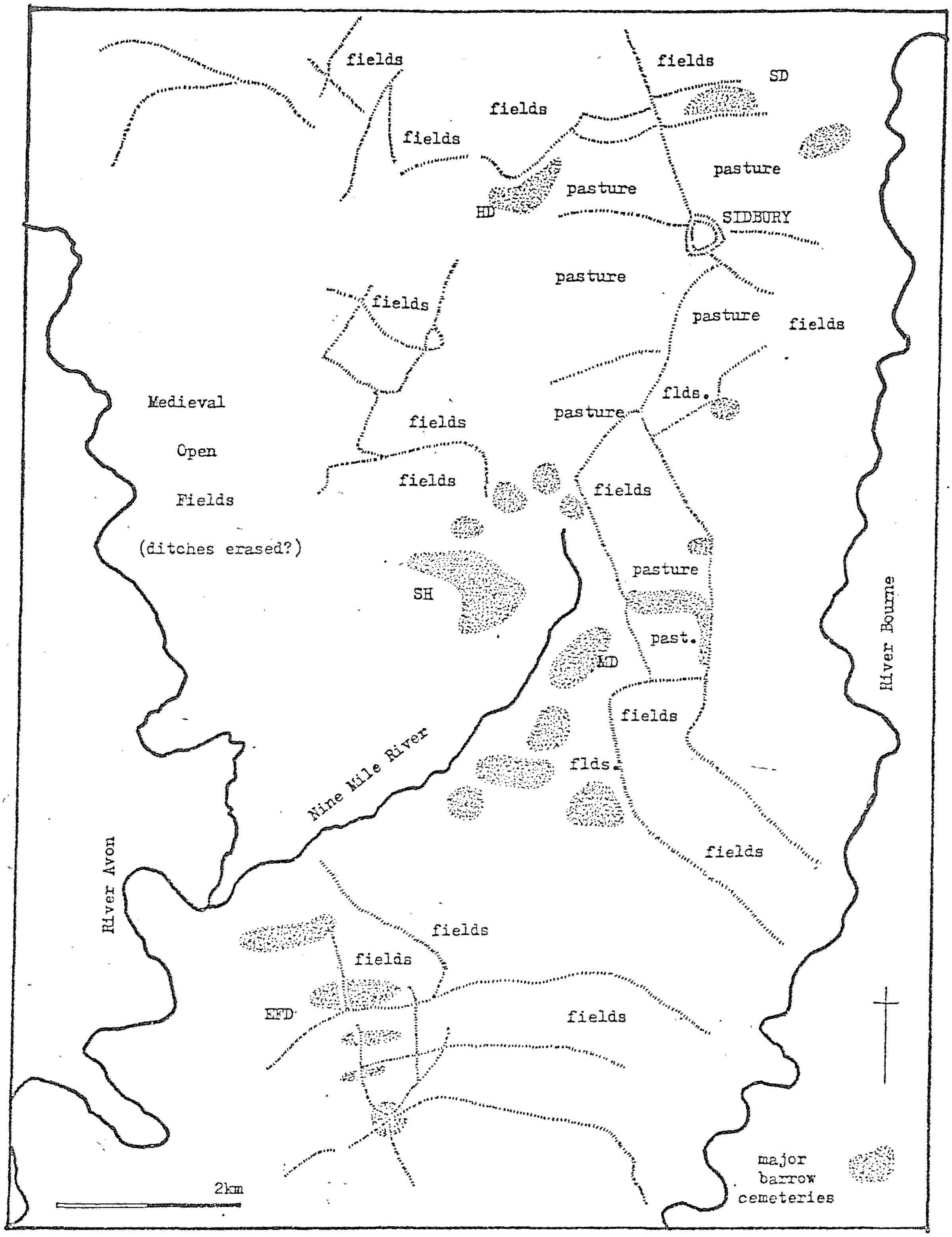


Figure 86 : BARROWS AND BOUNDARIES - the reorganisation of land allotment on the Avon/Bourne interfluve (source Wiltshire SMR)

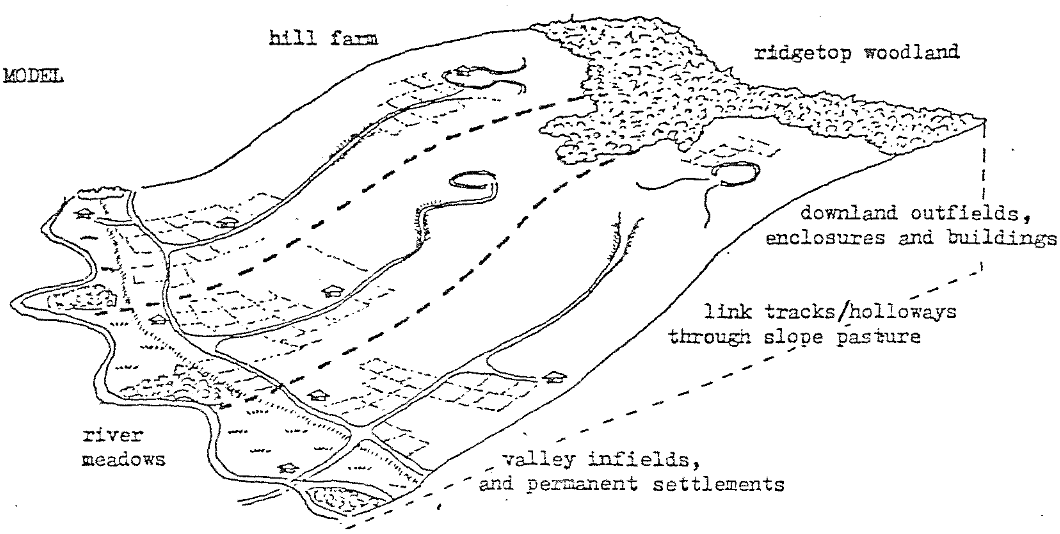
a nucleated cemetery serves as a focal point for numerous ditches which radiate out from it in all directions. It is therefore likely that the ditch system as a whole is later than the barrow cemeteries, specimen dates for which are - Snail Down: 1540$\pm$90 bc (NPL 141); Earls Farm Down: 1640$\pm$90 bc (NPL 75).

Its relationship with early field systems varies. Some field blocks (mainly those on lower ground towards the river Bourne) are indiscriminantly cut through, indicating that the earliest fields (i.e. those pre-dating the ditch system) are the lowest. Others on higher ground at some distance from the river valley integrate perfectly with the ditches and are therefore subsequent to them. One may also note the rather special configuration around Sidbury Hill - the highest and bleakest spot within the area under review, as is emphasised by the total absence of barrow cemeteries or fields in the vicinity. However, it was evidently valued as a pastoral resource for ditches converge on the hilltop from all points of the compass, formalising no doubt an earlier system of intercommoning. As at Querley Hill and a number of other comparable situations in Wessex (Bowen 1978, 122) the territorial node created by these converging ditches was later crowned by an Iron Age hillfort, an act which surely marks the presence (and the need) of an organising influence capable of suppressing established notions of territoriality in the interests of greater efficiency. If there had to be a hillfort in the area to serve as a communal centre for redistribution, storage and decision making it had to be located on Sidbury Hill where each participating group had unchallengeable rights of access established a millennium or more before.

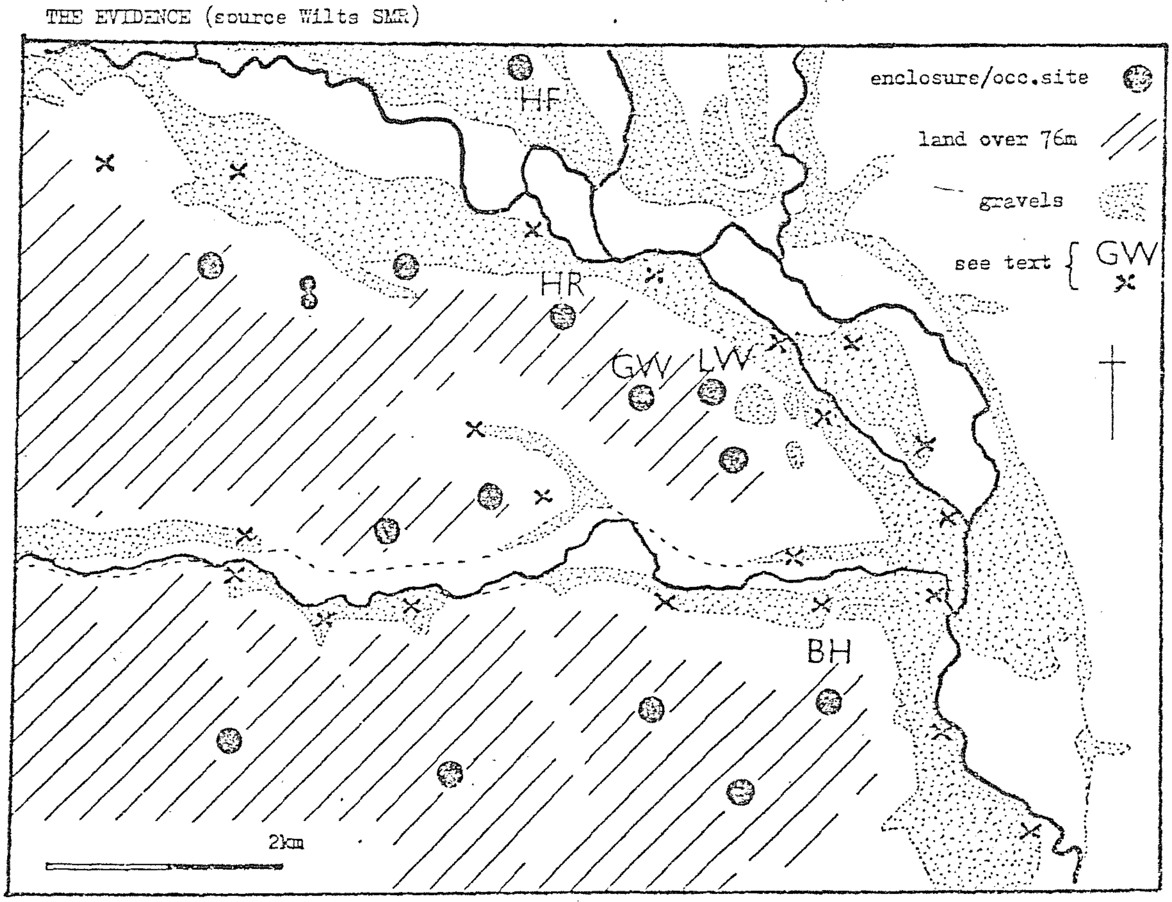
In keeping with the model proposed earlier the character of the ditch system changes from South to North. In the lower reaches of the Bourne the enclosed parcels of land are closely approximate in form to medieval and later strip parishes. They presumably represent a more settled and mature approach to the spatial organisation of land use than do the smaller and less regular territories marked out across high ground between the upper Avon and Bourne. The former offer a balanced selection of soils and other essential resources, including access to the crucial river meadows - they are well suited to settled and virtually self-sufficient farming. The latter are not - they have limited land use potentials which is perhaps a throwback to their former use on a seasonally transhumant basis.

Figure 87 : LATER PREHISTORIC SETTLEMENT SOUTH OF SALISBURY

THE MODEL



THE EVIDENCE (source Wilts SMR)



Viewed overall there is no reason to doubt the assertions made by Bowen (1978) and others that these ditch systems have their origins in the middle Bronze Age (as on Dartmoor) and that they represent an undertaking of massive proportions. The pattern portrayed in Figure 86 is clearly only part of what formerly existed yet it alone contains some 72 km of ditchwork which, assuming a modest section of 1 m^2 for the profile, would absorb 500,000 man hours - as many as the giant henges at Avebury and Durrington Walls (see Startin 1982 for relevant data). In view of its likely date, organisational complexity and manpower demand the Avon/Bourne ditch system and others like it also recorded on Salisbury Plain (RCHM 1979) could well be regarded as the equivalent of building a fourth phase structure at Stonehenge (Phase III b/c is dated 1240$\pm$105 bc; I - 2445). This more than any other aspect of the evidence emphasises just how much social attitudes in the Salisbury adaptation were changing. From circa 1300 onwards it was <u>land</u> rather than <u>lineage</u> that was being invested in.

The way this land concious society developed their newly demarcated territories is seen to best advantage by comparing landscape evidence for downland colonisation from the Salisbury area itself (a former base territory zone) and from the upper Wylye valley (a former extended territory zone). Figure 87 illustrates the known distribution of later prehistoric enclosures and settlements south of Salisbury. The pattern includes some sites, such as Highfield (Stevens 1934), located on or at the back of gravel terraces in much the same way as historic farms and villages are (marked by crosses). But most are distributed above the valley, at the edge of the higher downland, in locations where historic farmers, during times of economic expansion, typically established their outlying field barns and hill farms. These include Harnham (HR - Piggott 1939), Great and Little Woodbury (GW/LW - Bersu 1940; Cunliffe 1978) and Bodenham Hill (BH - Catherall et al 1984, 153 - 169). None of these downland sites appear to have been occupied before the 6th century bc - most are probably a good deal later to judge by their ceramic sequences. Highfield, however, (now buried like most of its potential valley counterparts beneath the sprawling suburbs of Salisbury) has yielded a ceramic sequence which extends without any significant breaks from Roman times back well into the Bronze Age (sherds of Deverel - Rimbury pottery have been retrospectively identified). It also was an open site until late in the Iron Age and evidently had specialised industrial and subsistence functions.

In terms of their siting and chronology the downland sites certainly conform to the concept that they are satellite off shoots of an expanding settlement pattern based on the river gravels. But whether they constitute field barns or permanent farmsteads depends very much on how the evidence is approached. Little Woodbury, for example, with its large roundhouse and mass of grain storage pits is usually thought of as the residence of some Celtic Lord with a responsibility for storing and redistributing corn (e.g. Cunliffe 1978; Bowen in Wainwright 1979b). Such a concept can no longer be accepted for the following reasons:

1. The big house and the storage pit complex are not contemporary; the former belongs to the first phase when almost all structures were built of timber (i.e. palisade, four post granaries, two post racks etc) - the timber no doubt being generated in clearing the area. The storage pits mostly belong to a later phase when timber was evidently no longer freely available, for the palisade is replaced by a bank and ditch; the large hut by a smaller and flimsier version and above ground post built granaries are rare.

2. To judge by the size and spacing of the porch posts of the big hut they supported a sizeable loft into which grain and other produce could be directly off loaded from a cart drawn into the porch. Bearing in mind classical account of Celtic farming practices - "they thresh their corn in spacious buildings, as they have no clear sunshine, often bringing thither the sheaves .....", Strabo IV 5; it is difficult to escape the conclusion that the big hut at Little Woodbury is just such a barn. Analysis of the storage pit complex which replaced the big hut suggests that the site in its later phases was principally a seed repository serving a population of 40 to 50 individuals (Smith 1978) although the antennae ditch system indicates that it also performed some role in the marshalling and processing of stock.

3. For sites such as Little Woodbury to be elite settlements they

would logically have to be a rather rare settlement form and the refuse from them should be 'richer' than average. This is not the case. Little Woodbury is surrounded by enclosures of equivalent or larger size, often less than a kilometer apart, and there is nothing within the refuse assemblages indicative of special status. Indeed the ceramic range compared with that from the valley site of Highfield is positively mundane. In discussing the results of excavating Gussage All Saints, an enclosure with which little Woodbury is often compared, Wainwright (1979b, 193) also noted a marked shortage of prestige items, and as in the area south of Salisbury, Gussage was found to have an identical twin (Gussage II) only 1 km distant on the opposite side of the valley.

Stripped of the mystique which has developed around the site since it was first excavated Little Woodbury and its downland counterparts can now be seen as perfectly ordinary occupation sites. Whether they represent permanently occupied hill farms or temporarily manned field barn complexes is largely irrelevant to this discussion, though the tendency for downland sites to be enclosed (often with works of defensive proportions) and for valley sites to be open, or only lightly enclosed, could be significant. The essential point is that the chronology of their establishment and their spacing across the landscape are consistent with the proposed concept that strip Parish type settlement territories based on the river gravels were evolving and expanding from the late Bronze Age onwards. Whether each downland enclosure served a single valley settlement of hamlet proportions or perhaps two or three farmsteads is uncertain. However, in view of the number of enclosures established and their remarkably close spacing it seems likely that the strip territories were individually narrow (resembling medieval tithings in the area) and that most had their own downland facility. It would seem that in the former base territory zone collaborative approaches to downland exploitation were characteristically parochial and that serious attempts to colonise outlying land did not start before circa 500 bc.

In the Upper Wylye valley (a former extended territory) the indications are that the downland began to be occupied rather earlier and that larger collaborative units were involved - as would perhaps be expected in view of their earlier approaches to land use. Much of the supporting evidence is discussed in relation to the excavation of the valley sited Bishopstrow Farm (see Appendix 2). It will here suffice to recall that downland sites such as Battlesbury, Cold Kitchen Hill, Longbridge Deverill Cow Down etc. have yielded ceramics or radiocarbon dates attributable to the period before circa 500 bc. Each, in a different way, exemplifies how these larger communities organised themselves in the landscape. At Battlesbury, for example, an extensive pattern of pits and postholes (yielding furrowed haematite bowls and later types) was traced along a neck of land connecting the hill to the main escarpment for a distance of nearly 500 m. The hill itself was eventually developed as a major multivallate hillfort. Clearly the scale of the hillfort and the extra-mural occupation site associated with it are indicative of large aggregations of people whether on a permanent basis or not.

Cold Kitchen Hill is a prominent chalk massif, the plateau top of which is divided by a pattern of cross ridge dykes (see Cunliffe 1978, Figure 2.5). The pattern is a common one in higher downland areas and is usually taken to signify the formal demarcation of grazing rights on hill pasture that had previously been intercommoned in a less rigidly defined arrangement. In the context of Nettlecomb Tout, Dorset each section of divided hilltop pasture was linked with later prehistoric strip territories distributed along the valley of the Piddle (Bradley 1978c). The Cold Kitchen Hill pattern could therefore have served the same purpose to emerging strip territories in the Upper Wylye valley. Cunliffe (1974, 304) has suggested that it could be regarded as a potential hillfort location meaning that it could have evolved into one in view of the evidence for communal exploitation. In fact Cold Kitchen Hill like its Sussex counterpart - Bow Hill - went on to become an important Iron Age and Roman religious centre - another type of community focal point.

Longbridge Deverill Cow Down faces Cold Kitchen Hill across the Wylye Valley. The manner in which it was developed during the later Bronze Age and Iron Age illustrates yet another manifestation of a communal approach to downland exploitation (reconstructed at Figure 88). The colonising sequence appears to be:

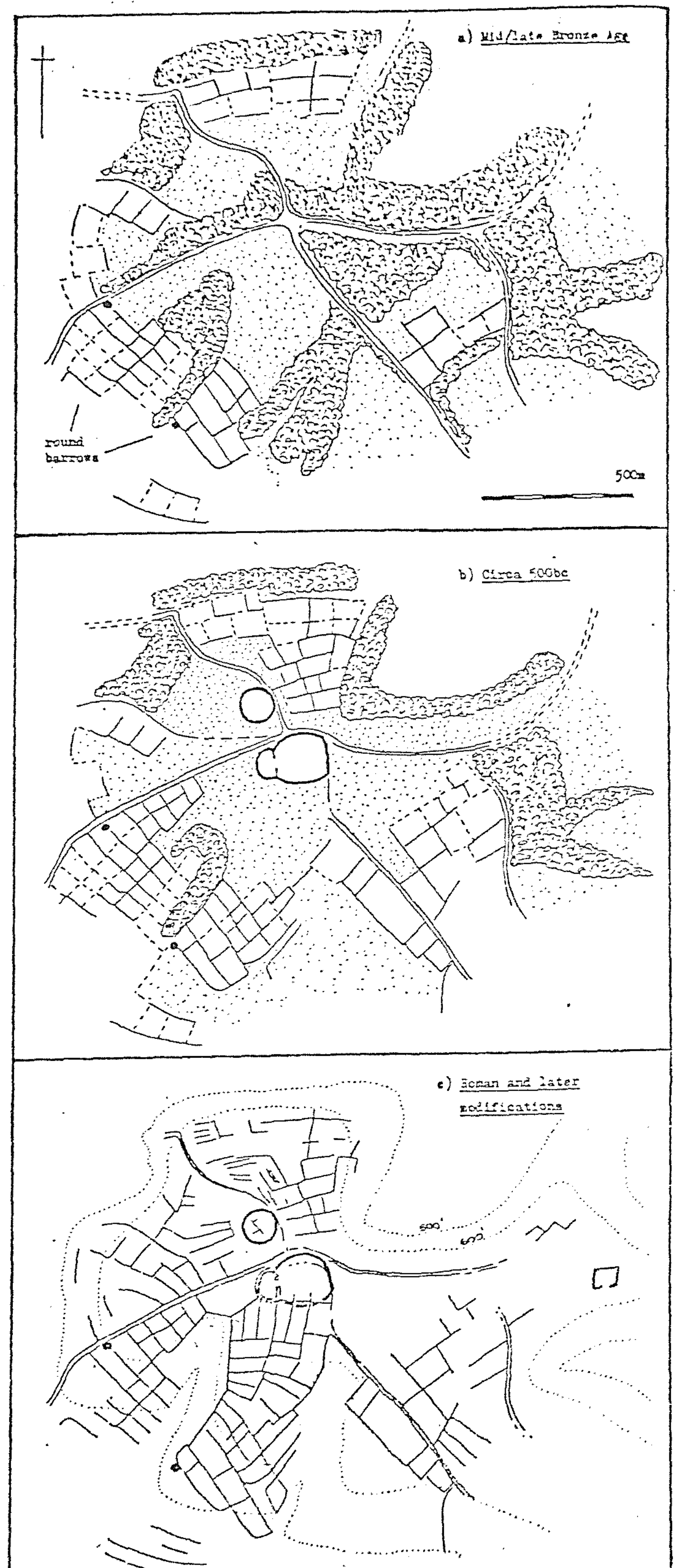


Figure 88: Reconstructing the colonisation of Longbridge Cow Down
(source - Smith 1978)

1. Earlier Bronze Age barrow cemetery established in pasture at the foot of the hill.

2. Barrows used as markers for layout of access tracks onto the hill and the extension of valley arable onto footslopes and deeper into the small combes which dissect them. Hilltop still quite heavily wooded but large areas of pasture now available above the field systems (Figure 88a).

3. Clearance of the hilltop to make way for two enclosures. Excavation has shown both are contemporary and an early phase roundhouse/barn (one of a sequence of four substantial post built Little Woodbury phase I type buildings) within the larger enclosure has been dated to 630 ± 155 bc (NPL 105). These twin facilities enable further economic expansion with field systems being extended still higher and yet more hilltop woodland being cleared for pasture. Woodland now survives chiefly on the 'hangers' - slopes too steep to be of much use other than as coppices and windbreaks. In building the enclosures one of the earlier trackways was blocked and another diverted - this suggests that inter-commoning arrangements were revised and re-oriented around shared use of the enclosures (Figure 88b).

4. After successive rebuilding of the barn type structures, spanning a period of perhaps 2 - 300 years, the level of activity within and around the enclosures dwindles and their ditches are allowed to silt. There is a resumption of hilltop activity during the currency of 'saucepan' pottery (mid to late Iron Age) but then again a break in the occupational sequence until the Roman period when the small D - shaped annex/outwork on the larger enclosure is refurbished and almost all of the old pasture, including the two main enclosures, is put down to arable (Figure 88C).

The salient points within this sequence are firstly the discontinuous nature of hilltop activity, secondly the construction of duplicate enclosures and thirdly the multiplicity of trackways ascending the hill - all of which indicate co-ordinated encroachment on the hill by two to four separate communities resident in the valleys around it. The 'sector' arrangement of land division recalls the sector patterns created by ranch boundaries on Sidbury Hill discussed earlier, although at Cow Down the hilltop being of more modest proportions did not evolve into a hillfort site.

Viewed overall the evidence for later Bronze Age/earlier Iron Age settlement and land use in the Upper Wylye Valley can be seen to indicate a less parochial economic and social outlook than pertained in the Salisbury area and outwardly a broader range of topographical locations were being occupied from the outset. However, as discussed in Appendix 2 (Bishopstrow Farm), the emphasis, measured in terms of the relative richness of ceramic assemblages and the distribution of industrial activity, was perhaps always on settlement of valley land. Bishopstrow Farm is the only valley settlement to have been studied in any detail and it is therefore difficult to see if it is typical. But, if it is, the normal configuration would appear to be a settlement of hamlet proportions, (originally unenclosed save by the associated fields and paddocks) composed of six or so individual structural complexes each defined by pit clusters and each potentially containing one or more dwelling unit. One would assume that the enclosures on Cow Down each served perhaps two such hamlets and that hillforts as large as Battlesbury serviced clan - like consortiums of ten or more, i.e. 300 - 400 people.

Another interesting result of excavations at Bishopstrow is the evidence for organised reclaimation of floodplain waste starting around circa 500 bc (see "Watery Lane" in Appendix 2). One would like to know if this was a general trend in the Upper Wylye Valley for in starting <u>after</u> colonisation of the surrounding downland it could explain why so many of the downland sites appear to have been less intensively used or altogether abandoned during the middle Iron Age. Seen as another phase in the adaptive process an ability to extend valley arable, whilst at the same time converting backswamp areas into fresh river meadow, offered significant productivity gains without incurring the logistic penalties associated with operating and maintaining distant downland facilities.

10.2.2. The Winchester Adaptation

Must for now serve as an umbrella term for socio - economic norms in those areas where the Deverel - Rimbury tradition developed earliest, areas which Barrett and Bradley (1980) have styled Bronze Age "Buffer Zones". Since these for the most part lay outside the spatial parameters of the present study no attempt will be made to define the character of the Winchester Adaptation in the same level of detail as the Salisbury Adaptation.

For the period prior to circa 1300 bc our knowledge of the Winchester Adaptation is meagre in the extreme being based almost exclusively on cemetery research which generally reveals few significant differences between "Core" and "Buffer" other than a relative impoverishment in the latter. However as Barrett (1980a) has pointed out there are two developments which could be taken as significant - the gradual emergence of new, independent metalworking and ceramic traditions (Arreton and Deverel - Rimbury). It was these twin developments which led him to postulate that "Buffer Zone" communities may have been practicing a rather different form of subsistence based on intensive exploitation of the fertile gravels and brickearths found in the lower valley systems of Wessex and the coastal plain. Thanks to the remarkable pollen sequence from Winchester this can now be seen to be the case although it should be emphasised that the strategy of intensive and largely sedentary farming it illustrates was not a Bronze Age development - this arrangement had evidently obtained since the early Neolithic. As discussed in Chapter 10 the rigours of full time farming do not appear to have permitted the type of extrovert social behaviour manifested in the monuments of higher downland areas and complex social structures were perhaps unnecessary. The emphasis had perhaps always been on steady maintenance of existing levels of productivity by careful control of local environments - the marginal potential of the Eocene sands and clays which typically flank the river corridors normally tending to deter lateral expansion.

However, for reasons which are as yet unclear and which are in any case beyond the remit of this study, there were some attempts to increase productivity during the earlier second millennium bc. On the river gravels the Winchester evidence indicates this was achieved by going over to a more intensive cereal based form of farming. But there is also evidence for clearance of woodland on Eocene deposits as at Moor Green, Hants and Turner's Puddle Heath, Dorset (see Chapter 7). These forays into what appears to have been primary woodland are very similar in character to those which brought farming into chalkland areas. But whereas most chalkland clearings remained either permanently open or were at least utilised for many centuries these clearings on Eocene deposits are characterised by rapid ecological deterioration and abandonment. If they were intended to provide a long term boost to the local economy they must be judged a failure.

The abortive outcome of attempts to bring Eocene areas into production must have had serious consequences amongst communities which had committed themselves to economic expansion. In view of the frequent occurrence of the status related Beaker 'package' and second rate 'Wessex' style graves amongst the outlying cemeteries established during this early phase of expansion many of these communities probably were committed to fuelling a new extravagant social order. The logical alternative to lateral colonisation out of old gravel/brickearth settlement areas would be longitudinal extension of settlement patterns up the river systems and out onto the higher downland. The continuing trend away from stock rearing and dairying towards cereal based agriculture seen at Winchester could be yet another response. Since agriculture produces relatively higher yields for a given area and requires a greater labour input one may envisage the favoured valley land being progressively settled at higher densities as was indeed happening elsewhere in comparable situations e.g. the lower Kennet valley (Chapter 7.2).

The extension of settlement into upper chalkland valleys must inevitably have brought increasing levels of social contact between the communities of the Salisbury and Winchester adaptations. It was perhaps in these circumstances that the Deverel - Rimbury tradition was carried into the chalklands, as a means of signifying social identity whenever that became necessary. However in practical terms there were probably few real differences between downland adapted communities no matter where their origins lay. One may note that the establishment of settlements in the downland of Dorset, Hampshire and Berkshire appears to start somewhat earlier than in Wiltshire where, as we have seen, the Salisbury Adaptation persisted longest with its transhumance strategy. But the way land was colonised and the actual form these downland occupation sites take is essentially the same in both areas.

The spread of the Deverel - Rimbury tradition and those that succeeded it across the chalklands serves chiefly to document the spread of settled farming into areas previously exploited on a more seasonal transhumant basis. By circa 500 bc marked contrasts in subsistence behaviour no longer existed within Wessex except perhaps in coastal zones.

10.2.3. The Lewes Adaptation

Is conceived to combine settled farming with a significant level of exploitation of the natural food resources to be found within estuaries, along shorelines and by fishing coastal waters. In the evidence from the lower Ouse valley (e.g. Lewes and Itford Bottom Chapter 7.4.) one may envisage the same spate of land reclaimation and outward/upward extension of arable limits seen elsewhere in earlier second millennium bc contexts. This process is also associated with increasing use of Beaker type equipment and eventually the emergence of social elites - the rich graves found in the Hove and Lewes areas being particularly notable (Ellison 1978, 30). There are signs however, that attempts to intensify production in valley areas ran into trouble - as at Lewes where the culminating mid Bronze Age clearance horizon led not to permanently open conditions but rather to ecological degradation and eventually abandonment. Such disastrous environmental responses no doubt provided an incentive to redouble attempts to colonise or reclaim downland, which responded to clearance in a more favourable way. The establishment of downland satellite settlements such as Itford Hill, Black Patch etc in land that had previously only been used as outfields or cemetery areas could therefore be seen as part of this process. Hence the farming mode would appear to have a good deal in common with the way the economy evolved in areas covered by the Winchester Adaptation.

What perhaps sets the Lewes Adaptation apart is its continued reliance on natural food resources and its potential role in cross - Channel and coastal trade - both aspects could have been of considerable economic importance but sadly they are not at all well documented. One would, for example, like to know more about Drewett's "marsh camps" (Selkirk 1983); whether they were independent subsistence bases or were linked in some way with conventional farms. The evidence from Bishopstone (Bell 1977) shows that such a relationship could have existed (i.e. use of seaweed as field manure, consumption of marine molluscs and fish etc). One must also consider the opportunities these Sussex fishermen had to engage in trade voyages along the coast or even across the Channel. There was certainly a thriving trade in metalwork (and, one must assume, other relatively compact yet valuable cargoes) between the south coast and the Continent from at least the middle Bronze Age onwards (O'Connor 1980). Exploitation of the shortcomings in existing networks for supplying prestige goods may well have compensated for the difficulties these coastal communities were experiencing in expanding the agrarian basis of their economy.

As is clear in Ellison's map of Bronze Age Sussex the plethora of middle and late Bronze Age metalwork found along the coastal fringe stands in stark contrast to the paucity of such finds from inland (Ellison 1978, Figure 14). One may envisage a situation where, because of the juxtaposition of a safe natural harbour and good lines of communication with the hinterland (e.g. river routes), areas such as those around Newhaven, Shoreham, Littlehampton and Chichester, eventually came to rely for their livelihood more on the distribution of trade goods (augmented perhaps by local production of such goods) than on farming. If so, quite pronounced differences in wealth, social organisation and subsistence behaviour are likely to be a characteristic of later prehistoric life within the Lewes Adaptation.

10.3. Interactions

Prior to circa 2000 bc the Salisbury Adaptation was characterised by its extensive land use strategy (in which transhumance played an important part) and by the communal approach to subsistence and other forms of activity as manifested in major earthwork monuments. During the same period the Winchester and Lewes Adaptations were characterised by their lack of such extravagant expressions of communal identity; they were evidently less mobile and placed greater premium on local self-sufficiency whether farming or exploitation of natural food resources was involved.

Towards the end of the third millennium bc, and after 500 years or so of widespread socio - economic stagnation, the Salisbury Adaptation alone underwent a quite dramatic rejuvenation - as marked by the new burst of monument building on a much larger scale than before, by the appearance of a new, more flamboyant material culture and by the environmental evidence for widespread reclaimation of derelict farmland and occupation sites. These trends of course serve only to document the process of rejuvenation. They do not explain why it started. One feels that if we had more information about what was happening in and around valley settlements during the middle Neolithic recession it would be easier to understand the background to late Neolithic revival. It is clear that subsistence techniques underwent revision and in view of the changes taking place in funerary customs there could have been some important changes in social organisation. However, on currently available evidence, the building of Silbury and the giant henges still look like 'events' precipitated by the sudden emergence of a few charismatic individuals with exceptional organisational abilities rather than the outcome of piecemeal or progressive social evolution. Perhaps the most realistic view is to see the stagnation prior to Silbury as creating the conditions within society which allowed these key individuals to rise to prominence.

Whatever its origins this revival within the Salisbury Adaptation led to economic and territorial expansion including a return to significant levels of transhumance. Peak levels were perhaps reached c.

during the span of the Wessex series of rich graves at which time boundary contact with communities following the Winchester/Lewes Adaptation must have been quite intense. Barrett and Bradley's (1980) concept of an expanding 'core' and absorbant 'buffer' is here very useful. But it does tend to convey a picture of rather one sided interactions.

Buffer Zone communities may have lagged somewhat in their attempts to increase productivity but as we have seen there is widespread evidence for Beaker/EBA expansion into environments that had previously been ignored or only lightly exploited. And although it lacks the exaggerated expression of wealth seen in Wessex graves the cemetery evidence from these areas also shows signs of emerging social elites.

The century or so either side of circa 1300 bc could now be regarded as a threshold period in the interactive relationship between 'Core' and 'Buffer'. Within the Salisbury Adaptation transhumance was beginning to be abandoned in favour of permanent settlement of extended territories, a trend which ultimately offered still more gains in economic productivity but which also heralded the demise and devolution of the complex social structures which had been an integral part of the transhumant life style. As these communities in the upper reaches of chalkland valleys in Wiltshire and Dorset began to consolidate their hold on local land resources they became more parochial in outlook and their material culture became more mundane.

Ironically the reverse was happening in the other adaptations. Earlier Bronze Age attempts to expand laterally off the gravels and brickearths of the lower valley systems of Wessex onto the Eocene deposits which typically adjoin them had been abortive or only partially successful. The immediate problem had been the secondary environments created by clearance especially the proliferation of persistent, fire - resistant bracken and heath. But, as in the chalklands, these unhelpful successions could be reversed by labour intensive husbandry. Perhaps the real problem was the speed with which these soils lost their initial fertility in open conditions - it simply wasn't worth trying to reclaim infested land. Though chalkland soils certainly underwent quite dramatic changes in status after clearanceand particularly after prolonged cultivation and cropping there is no reason to believe that their basic fertility was as fragile as that of soils on Eocene deposits.

Whatever the exact chronology of economic expansion in Buffer Zones it is clear that lateral expansion out of the lower valley systems of Wessex soon reached an impasse. Those communities who were committed to increasing productivity would inevitably have begun to take renewed interest in subsistence opportunities in more distant downland areas at the upper ends of their valley systems. To realise these opportunities they would presumably have had to adopt a more extensive land use strategy involving transhumance - the strategy which was beginning to be abandoned in other systems. One must assume that the flowering of the Deverel - Rimbury tradition and its extension into downland areas is an effect of this development - a strong, distinctive cultural tradition being an essential part of extended subsistence operations.

It is perhaps significant that the new tradition appears to have made its biggest impact in those river systems where the ratio of Eocene deposits to chalk is highest - i.e. the Kennet, Stour, Piddle and Frome. Indeed as figure 84 reveals, the shrinking sphere of cultural influence of the Salisbury Adaptation is apparently due to the expanding cultural influence of chalkland adaptations based on the headwater areas of these river systems. This need not imply a situation where one community was being replaced by another - it may be nothing more than the gradual spread of new fashions and social customs - a new vibrant cultural tradition filling the vacuum created by the stagnation of an old one.

There were clearly quite sweeping changes taking place in social organisation and use of the landscape within Wessex during the second millennium bc but as Bradley (1980) has persuasively argued there is no necessity to seek external stimuli such as invasion by groups from the Continent or climatic disasters. Interactions taking place within and between each of the Wessex Adaptations discussed earlier carry sufficient influence to explain what was happening. In this respect differences in the way chalk and non - chalk environments responded when stressed is probably an important factor. We have seen how the "collapse of the Wessex Culture" (as it is usually conceived of) is in fact the progressive evolution of a transhumant adaptation into one based on settled agriculture and how the increasing social complexity of Deverel - Rimbury "Cultures" is apparently associated with the espousal of archaic subsistence methods.

No doubt Barrett (1980a) is correct in suggesting that communities living in the lower reaches of Wessex river valleys and on the coastal plain were well placed to take control of the production and distribution of prestige objects and hence prevent their use by social elites inland. But they had always been in this position. The declining circulation of precious metalwork within the Salisbury Adaptation is as likely to be attributable to declining demand as to attempts to disrupt supply. The relative impoverishment of its material culture in the later Bronze Age does not necessarily indicate that these areas had become an economic backwater if one allows that control of land resources substituted for portable wealth. Indeed the signs are that these somewhat anonymous, but otherwise successful, locally organised farming groups were contributing more to the overall productivity of the region than at any time previously.

One has only to look at the remarkable density of late Bronze Age/early Iron Age settlements, enclosures and field systems along the Avon and its tributaries to see just how busy these local economies were. It was perhaps their success that created the conditions which promoted the establishment of 'ports of trade' (like Hengistbury Head) at strategic points along the coast and the early hillforts at strategic points inland - the former handling exportable surpluses marshalled by the latter. By circa 500 bc communities in the chalklands were again poised to dominate the regional economy.

11.

CONCLUSIONS

In retrospect past research attitudes towards the concept of prehistoric valley occupation in the Wessex chalklands seem unbelievably negative. One has only to make a cursory study of the literature upon which our knowledge of the period is based (the excavation and survey reports, the works of synthesis) to see that the concept has rarely been considered, even on an intuitive rather than empirical basis. It is difficult to understand how, when the gravels of river systems beyond the chalklands have been so successfully studied for such a long time, the potential of similar formations within the chalklands should have been so widely ignored. One must acknowledge that it has always been easier for prehistoric researchers to operate in the more visible landscapes of the higher downland and that it is only recently that knowledge of sedimentary processes has reached a stage where wholesale burial of prehistoric valley horizons has become both demonstrable and comprehensible. But, there is no escaping the conclusion that the lack of progress made in valley research is fundamentally attributable to an intuitive failure of massive proportions.

To compensate for the general deficiency of the valley data base and to demonstrate that prehistoric valley occupation is not just a locally variable phenomenon this thesis has deliberately embraced a wide area and a long time span. It is acknowledged that the review of valley prehistory is at times superficial - this is due to the nature of the available evidence and an inevitable consequence of the way it has been approached. However, by taking a broad regional view rather than concentrating on the detail of any particular locality it has proved possible to identify a number of regularities about prehistoric exploitation of chalkland valleys and, perhaps more importantly, about how research procedures will need to be modified to recover this evidence.

In overall terms the everyday business of survey, analysis and interpretation needs to be conducted along more objective lines. Air survey and fieldwalking are, for example, at a disadvantage when applied to the more heavily built, wooded and grassed landscapes of valleys. They are still capable of yielding important results as is shown by the discovery from the air (albeit in a drought) of the early Iron Age settlement at Bishopstrow Farm and by the outcome of fieldwalking the middle Avon valley. However, there are large parts of the valley landscape where it would be pointless or worse still misleading, to apply these techniques. Woodland, pasture, areas of alluvial or colluvial deposition and particularly village environs demand a different approach. It simply is no longer acceptable, in view of their proven potential, to ignore the fact that they inherently appear as blanks in field or air surveys and to black them out on distribution maps as unsurveyable areas does not help either.

Villages and farms are by definition almost always located on those sites within the landscape which experience has shown to be best suited to permanent settlement and the maintenance of an economy based on farming. A way must be found to explore their ancient origins. Inevitably it will entail the use of labour intensive and time consuming techniques and that is why they should be as efficient as possible which in turn means they must be problem oriented. If, for example, one set out to explore the distribution of Neolithic settlements in valley zones a preliminary question is - how would they be recognised? Can pottery be expected to survive? Does its presence necessarily imply settlement? What type of flint assemblage should we expect to find? Would the presence of (say) the bones of aurochs be significant? How will the living horizons have been altered by post - depositional processes? With regard to local topography, likely land use history and the associated patterns of sedimentary redeposition, will those horizons be deeply buried or close to the surface? If the site has ditches or pits will they show on air photographs? If so under what conditions? Is it likely that struck flint or other artefact material will be available at the surface?

All this may seem unnecessarily complicated but computor modelling of the variables involved offers one solution to the problem and could indeed be a research theme in its own right. Unless we can define what we are looking for how will we know when we have found it? With so much survey work being conducted on a "lets see what we can find" or "look, there is another one!" basis it is not surprising that Neolithic settlement remains are notoriously elusive.

In advocating new archaeological approaches to the prehistory of chalkland valleys it must also be said that these should be more closely integrated with ecological research, especially pollen analysis which is now becoming established in the chalklands as an accredited research tool. The importance of the palynological research carried out recently by Paul Waton (1982) and the sedimentary research carried out by Martin Bell (e.g. 1983) cannot be overstated. In their capacity to reveal by proxy the impact and character of human activity over relatively large areas these techniques offer an attractive and cost-effective way of putting disparate evidence derived from chance finds and conventional archaeological prospecting into a meaningful landscape perspective. They cannot however be regarded as a substitute survey technique for, as in the case of the remarkable pollen sequence from Winchester (see Chapter 6.4.10.), without the archaeological data we can arrive at a situation where for two thousand years or more the existence of a thrusting, well organised agrarian community can only be seen in the pollen record. We have no real idea where these people lived, how they lived or what sort of everyday equipment they surrounded themselves with. This one pollen sequence has revealed the existence of a new Neolithic adaptation which, although not altogether unexpected, cannot as yet be defined in archaeological terms.

It is hoped that by drawing attention to the previously available evidence from chalkland valleys (e.g. Winchester, Downton, Wawcott, Pamphill etc - Chapter 5 - 7) and by reporting previously unpublished evidence, including the results of the author's own field research

(Appendices 1 - 3) the case for believing in the concept of prehistoric settlement of chalkland valleys has been made. It remains now to consider the significance of valley occupation to Wessex prehistory in general.

Perhaps the first point to stress is that there is every indication that the prehistoric sites and horizons that have been or will be located in valleys are not just equivalents of those on the higher downland which are now so familiar. It is not a case of having simply to add more dots to our distribution maps of Wessex.

Eighteen years ago Bowen and Fowler (1966, 62) intuitively guessed that valleys were the primary settlement areas during prehistory and that we should regard the surviving landscape evidence from higher downland areas as reflecting marginal activity. Today, this is no longer a supposition, it can be demonstrated. Valley activity is different. For the Neolithic and Bronze Age it has only really become clear during the past five years or so. We have seen how publication of three long barrow excavations in the Avebury area (Ashbee et al 1979) provided the missing link needed to put a wealth of disparate data together to reveal the valley oriented pattern of Neolithic settlement and land use in that region (Chapter 6.2.). Similarly, it was only after publication of Waton's (1982) and Thorley's (1981) palynological results and Bell's (1983) research within chalk dry valleys that the trends see within the Avebury area could be seen to be regional ones rather than a localised anomaly. Mention should also be made of the work of Barrett and Bradley who have demonstrated on one hand, the richness of the Bronze Age settlement record of the Kennet valley (Bradley et al 1980) and on the other the impoverished settlement record in downland monument zones like Cranborne Chase (Barrett et al 1981).

The true character of prehistoric valley occupation will only be revealed by refocussing research strategies on these much neglected zones. But it is already clear that, for example, land was farmed in a different, more intensive, way (as demonstrated in the Avebury area and at Winchester); that ceramic, lithic and faunal assemblages may be different to those we are accustomed to from the downland (as at Cherhill, Downton and Pamphill) and that in a number of cases innovations made their first appearance within valley contexts, (e.g. the precociously early evidence for iron working and the rite of pit inhumation recorded at Bishopstrow Farm).

It is however within attempts to integrate valley and downland evidence that this thesis has generated more questions than answers. The immature state of valley research does not allow empiric observations on the relationship and rather than leave the situation completely open to question it was deemed better to devise testable models which may eventually assist its further exploration. Some aspects of these models are already testable - i.e. the concept that material assemblages in valley settlement zones will be less exotic than those typically found in contemporary Neolithic and Bronze Age monument zones. Indeed some attempts have been made within this work to validate other concepts as they were proposed - particularly Neolithic transhumance (see Chapter 9.6). But, it must be acknowledged that many of the models are no more than attempts to bridge gaps in our knowledge that have appeared in the course of this research. For this reason it would be reckless to offer any generalised conclusions about the way the pattern of prehistoric life evolved within Wessex.

For now it is perhaps sufficient to conclude that future research in chalkland valleys is a most exciting prospect.

Appendix 1

EXCAVATIONS AND FIELD RESEARCH AT EVERLEY WATER MEADOW, NR. BLANDFORD, DORSET

1. INTRODUCTION
   - 1.1 Background
   - 1.2 The Site
   - 1.3 The Excavations

2. THE TERRACE

3. THE PALAEOCHANNEL
   - 3.1 The described profile in section a - b
   - 3.2 The general sequence
   - 3.2 Discussion

4. SURFACE EVIDENCE AND THE PLOUGHSOIL EXPERIMENT
   - 4.1 Surface Patterns
   - 4.2 The Ploughsoil Experiment
   - 4.3 Summary

5. FINDS AND DATING EVIDENCE

6. DISCUSSION AND RECONSTRUCTION
   - 6.1 The Pleistocene and early Post Glacial Background
   - 6.2 Mesolithic
   - 6.3 Neolithic
   - 6.4 Bronze Age
   - 6.5 Iron Age
   - 6.6 Roman and later activity

7. CONCLUSIONS

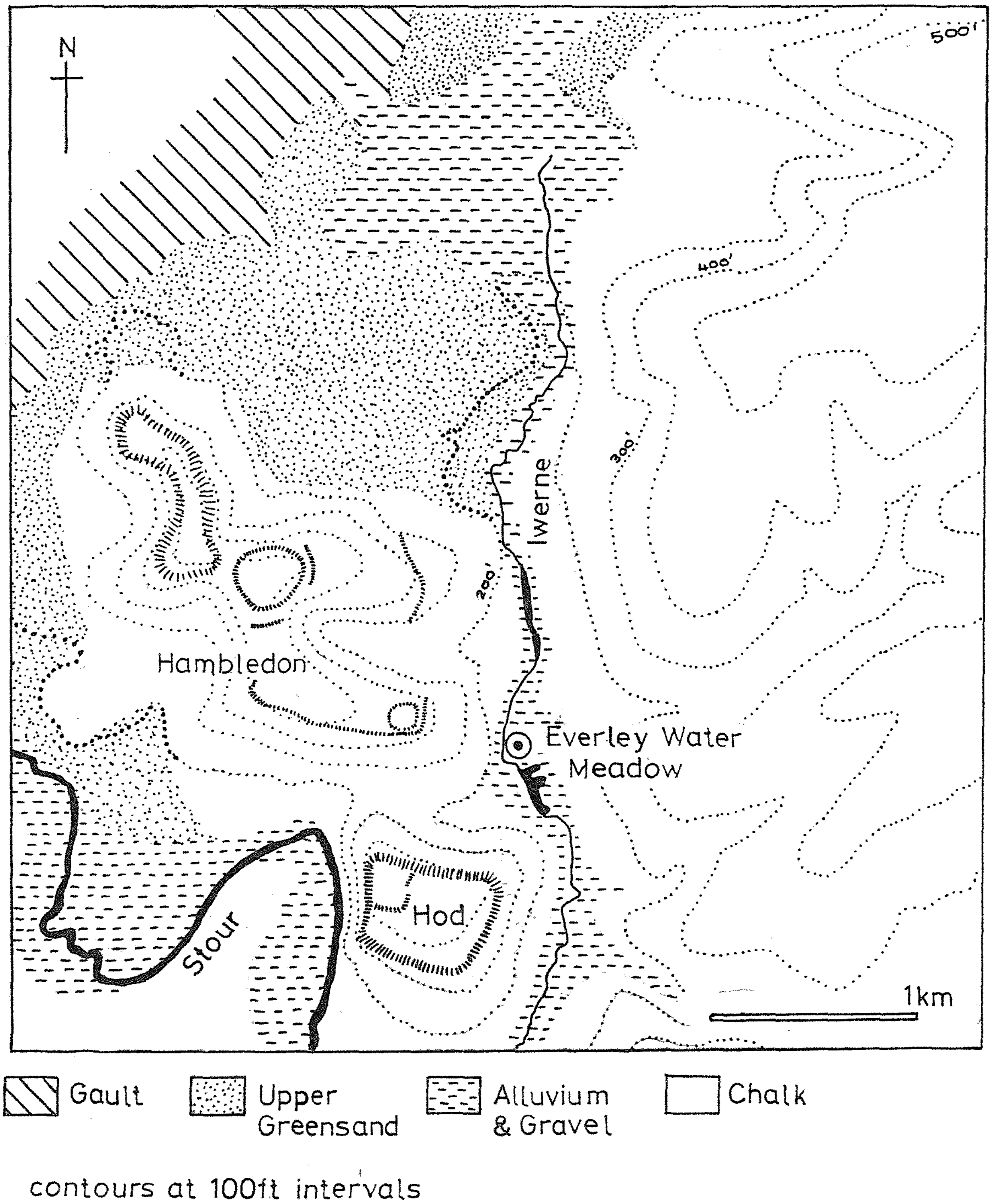


Figure A1·1 EVERLEY WATER MEADOW
Location, Geology and refief.

EVERLEY WATER MEADOW

1. INTRODUCTION

1·1 Background

In 1981 the author was invited by Roger Mercer, Director of the Hambledon Hill Research Project, to design a strategy for investigating prehistoric occupation of the valleys surrounding the hill. From an initial reconnaissance of the area a short list of ten potential excavation sites was drawn up - eight focussed on accumulations of colluvial sediment in foot-slope lynchets, dry valley fills etc, the remaining two on alluvial deposits (one in the Stour valley, one in the Iwerne valley). In collaboration with Dr. Martin Bell, and after a second field visit during which test pits were dug, the short list was narrowed to two sites. Dr. Bell undertook to excavate colluvial deposits in Coombe Bottom - a sizeable dry valley flanked by the Steepleton and Shroton spurs of Hambledon Hill, both of which had previously yielded evidence for Neolithic occupation. The author undertook to excavate within gravels and alluvium of the Iwerne valley at a point where fieldwalking had previously identified a late Neolithic/early Bronze Age flint scatter - Everley Water Meadow. This report deals exclusively with the 1982 and 1983 excavations in Everley Water Meadow. Dr. Bell's investigation of Coombe Bottom will be reported elsewhere.

1·2 The Site (Figure 1)

Everley Water Meadow encompasses a substantial part of the floodplain of the river Iwerne south of the modern village of Shroton and immediately below the Neolithic enclosure on Steepleton spur. In the wake of Post Medieval landscaping of the area the river was diverted to the edge of the meadow leaving the former floodplain dry except at times of winter flooding. Contour surveys revealed that the river formerly occupied a braided system of palaeochannels flanked to the east by a weakly defined gravel terrace and to the west by the sharply rising slopes of the

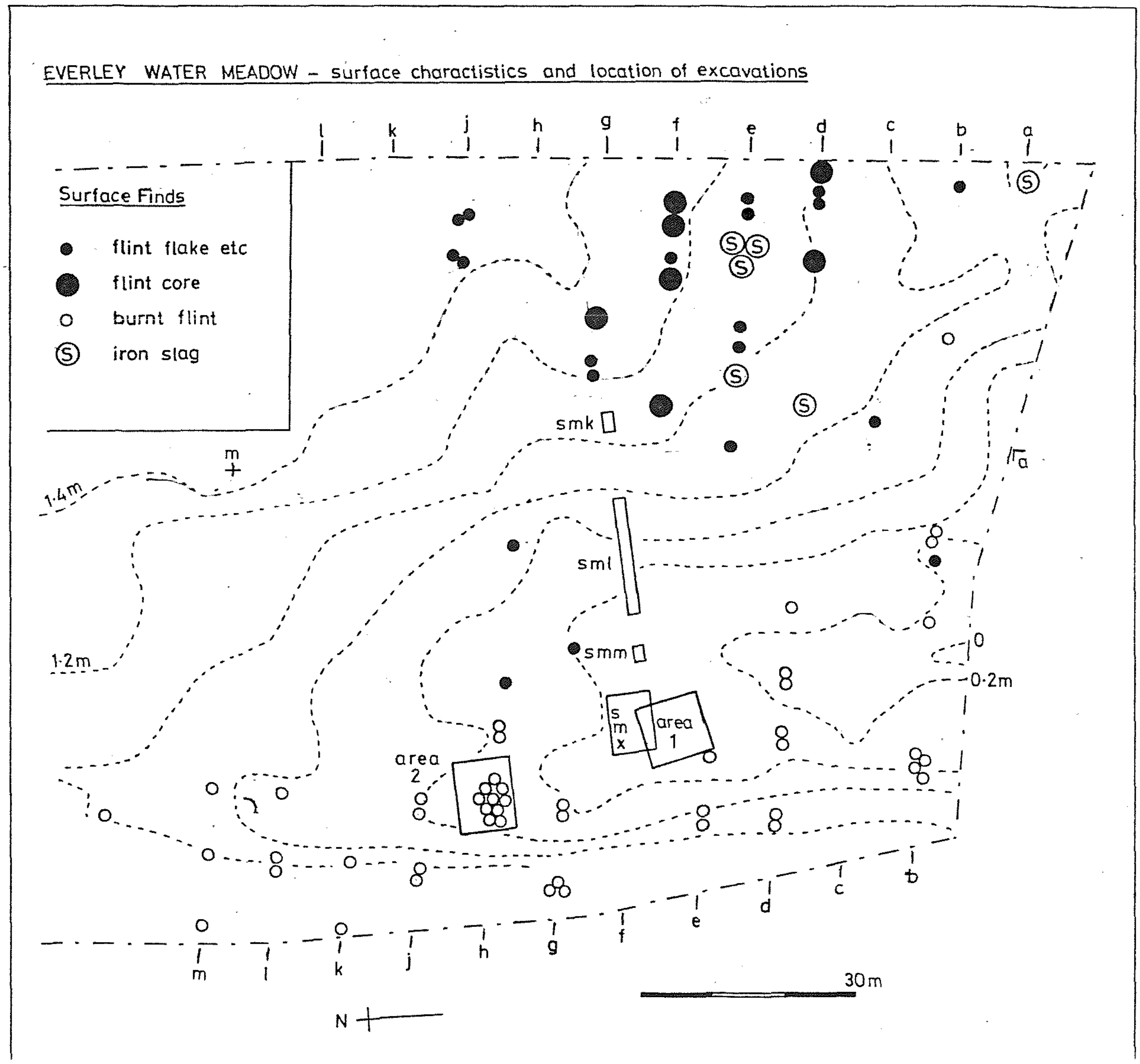

EVERLEY WATER MEADOW - surface charactistics and location of excavations
Surface Finds
flint flake etc
flint core
burnt flint
iron slag
l
k
j
h
g
f
e
d
c
b
a
smk
sml
smm
s m x
area 1
area 2
m
1·4m
1·2m
0
0·2m
30m
N

Figure A1·2

Steepleton spur. Though surrounded at this point by chalk outcrops the river Iwerne springs in an area of Upper Greensand deposits which approach to within 1 km of the site.

The former water meadow system is now annually cultivated and in 1982 it was systematically fieldwalked. Whilst a thin scatter of Roman, medieval and post medieval artefacts extends overall with no clear concentrations the distributions of struck flint, burnt flint and iron slag are sufficiently localised to suggest that they derive from subsoil features rather than manuring activity. Iron slag, chiefly in the form of furnace bottoms, and flint knapping debris, amongst which cores are particularly common, occur in overlapping concentrations high on the gravel terrace. Calcined flints are however densely distributed along the former river channel and not on the terrace.

1·3 The Excavations

The 1982 excavations were principly designed to investigate the subsoil character of the terrace flint scatter and whether a stratified sequence of prehistoric activity could be recorded in alluvial deposits filling the adjoining palaeochannel. To meet this objective a linear pattern of test trenches was excavated, by machine, across the terrace and into the palaeochannel (Figure 2). After cleaning and recording the exposed sections their stratigraphic character was further investigated by excavating lateral control blocks 2m wide by 0·5m deep - all finds being positionally recorded by labelling into the emerging section.

Whilst stratified artefact sequences were encountered in all trenches the westernmost (SMN) had also cut into an occupation feature - a rectangular pit filled with burnt flint, ash and charcoal. This discovery necessitated a change of strategy and to secure a provenance for the feature an area 6m by 8m (SMX) extending north and west from the pit was laid out for excavation in plan - the task being completed ten days later.

The pit was observed to have been dug into the bank of a relict stream course which contained a complex sequence of sand and gravel fillings capped by substantial deposits of organic alluvium. Though the pit did not produce any dating evidence the gravels within the stream course yielded late Bronze Age pottery, a broken stone socketed axe mould and quantities of animal bone. Other notable finds in the vicinity included joining fragments of furnace bottom iron slag and a ceramic casting plug from the the socket of some bronze implement which has yet to be identified. Collectively, the finds pointed to the existence, somewhere in the immediate vicinity, of a late Bronze Age occupation site which had been engaged in metalworking. This was sufficient to prompt a second season of excavation which commenced in September 1983 with the opening of two new trenches disposed on either side of the 1982 trench (see Figure 2). Area 1 deliberately overlapped SMX to ensure a common register when extending investigations of the palaeochannel. Area 2 was located to the nort of SMX over what surface collection had identified as apronounced concentration of calcined flints. The two areas were simultaneously exploited over a period of two weeks.

2. THE TERRACE

Trenches were opened across the terrace so that its stratigraphy could be investigated and a provenance sought for the scatter of struck flint first observed in the 1977 Hambledon fieldwalking survey. Terrace stratigraphy is illustrated at Figure 3. The profile description that follows refers to a point 9m along the horizontal datum of trench SML and is representative of the depositional sequence in general:

m

0 - ·23 10YR 3/2, very dark greyish brown silty clay with 15% small and medium subangular to rounded flint nodules, some fine flint gravel; subangular to blocky structure. Slightly calcareous. Clear wavy boundary.

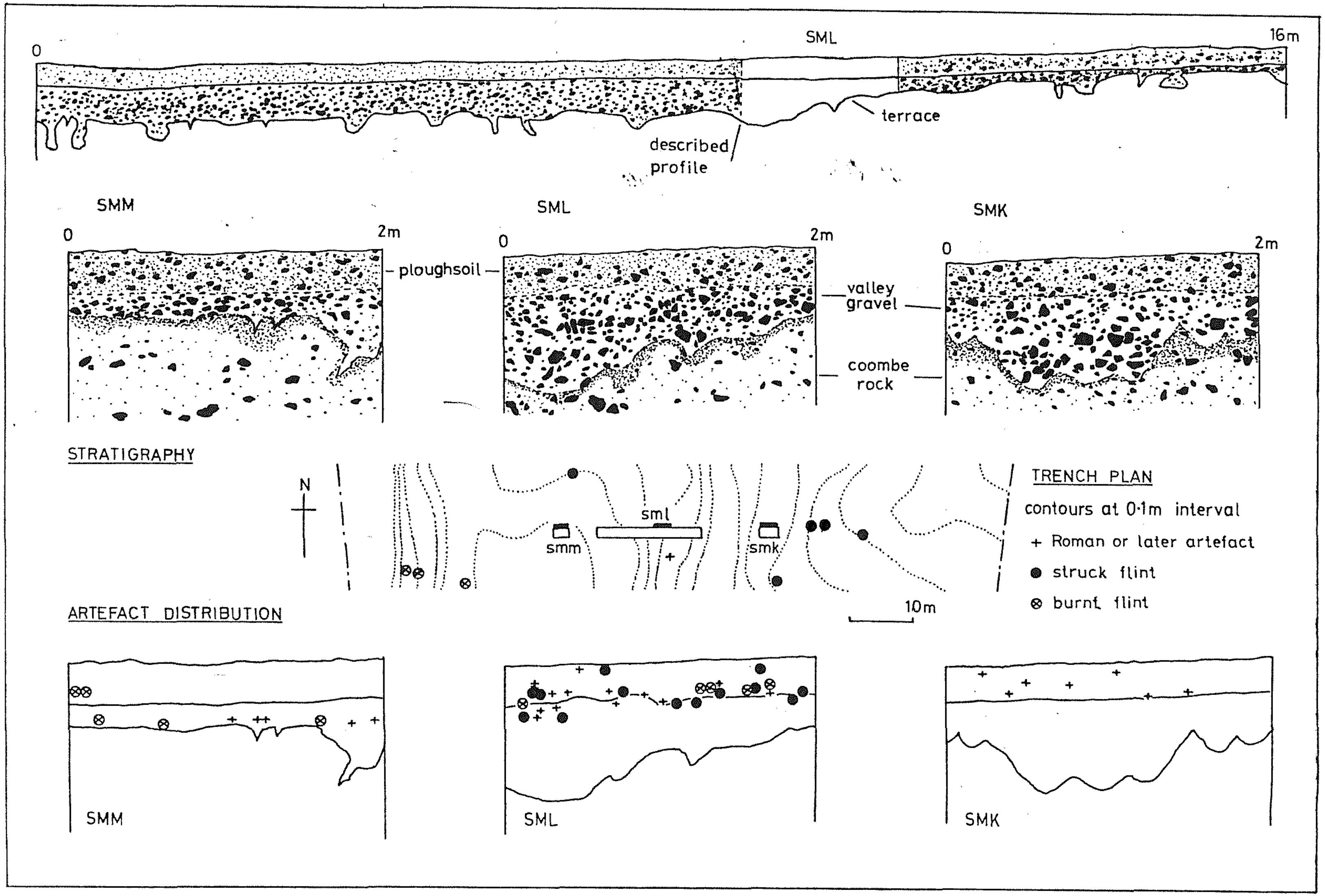


Figure A1.3 TERRACE STRATIGRAPHY

•23 - •38 10YR 4/2, dark greyish brown silty clay with 70% small and medium subangular to rounded flint nodules. Gradual irregular boundary.

•38 - •56 10YR 5/4, yellowish brown silty clay with 70% small and medium subangular to rounded flint nodules and some fine flint gravel. Clear wavy boundary.

•56 - •61 10YR 4/2, dark greyish brown silty clay with 50% small subangular to rounded flints. Fill of involution structure - ? Pleistocene valley gravel.

•61 - •67 2•5YR 8/4, pale yellow chalk deposit, 80% very small and small rounded chalk pieces. Abrupt wavy boundary. Represents a decalcification front for the underlying deposit.

•67 .... 2•5YR 7/6, yellow Coombe Rock with 50% large rounded and rolled flint nodules and some medium flints. Layer varies in the proportion of small rounded chalk granules and greensand which are much more abundant in some places than in others. The bedding of this variation tends to be more or less horizontal.

Coombe Rock is the product of intense physical weathering under periglacial conditions. Such solifluxion debris is ubiquitous in valleys and low lying places of the Wessex chalklands where it results from mass movement of semi-frozen, frost shattered debris over a frozen subsoil during spring and summer melting (Evans 1968). According to Evans's chronological scheme solifluxion and deposition of Coombe Rock may be dated to an early stage of the mid Weichselian commencing at c.48000BC when the climate was both intensely cold and wet. Strictly defined, Coombe Rock is a heterogenous and unstructured mixture of whatever materials outcrop locally. In its upper horizons the Everley Coombe Rock is, however, weakly bedded and it contains a high proportion of greensand which presently outcrops no closer than 1km north of the site. In this respect it is perhaps more accurate to describe the upper elements as a meltwater deposit washed down the valley axis during the late Weichselian by massive release of water from snowfields and frozen ground in spring thaws. Evans (1968) provisionally dates the onset of meltwater deposition to c.12000BC. Whilst the overall trend from this stage onward may have been amelioration there were clearly climatic reverses and one such temporary return to colder conditions probably led to the early Iwerne going into a downcutting phase that created the terrace formation seen in the Coombe Rock surface at 9 to 11m along trench SML. Despite repeated cultivation the terrace is still observable today as a surface feature.

Gravels capping the Coombe Rock are perhaps mainly derived from in-situ sorting and deflation of the Coombe Rock by increased seasonal flood activity though some, no doubt, were also transported down the valley axis. What can be said with certainty is that some gravels were already in position when the Coombe Rock began to be superficially disrupted by frost heaving for gravel is everywhere incorporated in the fill of the involution structures created by this process. The distribution, density and differences in the fill of these structures suggest that cryoturbation occured in at least two distinct phases. Those high on the terrace (see trench SMK) are large, densely distributed and contain a fine reddish silt of loessic origin. Those in trench SML are generally smaller, less frequent and filled with a distinctively different dark greyish brown silty clay. If loessic brick earths were deposited towards the end of the middle Weichselian as Evans (1968) suggests then the involutions in SMK are appreciably earlier than than those in SML where the filling seems to derive from a primitive soil such as would have formed during an interstadial of the late Weichselian. Thus the earliest cryoturbation effects are restricted to the upper terrace, later effects to mid terrace and within 10 - 15m of the palaeo-channel involution structures are altogether absent. The pattern is clearly related to fluvial processes but the precise nature of this relationship is difficult to determine. It is possible that fluvial erosion has differentially removed involuted surfaces but it is perhaps more likely that those areas subject to intermittent fluvial activity were to some extent insulated against the extreme temperature variations responsible for cryoturbation.

One may envisage that the permanent climatic amelioration associated with the end of the Pleistocene resulted locally in the formation of permanent soils and more continuous fluvial activity leading in turn to increased reworking of gravel beds within the river system. At the same time chemical weathering began to supercede physical weathering and decalcification of the Coombe Rock surface must the have started although it is clear that the process is still at work today. Other disruptions to the Coombe Rock surface dating from the post Glacial period are solution features, which occur throughout the meadow, and, less commonly, the root casts left by trees formerly growing on the terrace. Thse features cannot be dated but charcoal, possibly reflecting a clearance phase,was found within the root cast sectioned by trench SMM.

By far the most significant modification of terrace stratigraphy is the impact of cultivation which to judge by the artefact record was quite intensive during the medieval and Roman period if not in prehistory. So severe has been the disruption that undisturbed gravels have, in some places, been almost completely planed away and nowhere was it possible to stratigraphically separate Roman and later artefacts associated with manuring of the terrace arable from flint artefacts discarded several millennia earlier. The terrace stratigraphy is therefore quite severely truncated and hopes that prehistoric land surfaces might survive intact beneath alluvium deposited over the lower terrace were not realised although they were found within the river channel and its fringes.

A1·4

PLAN OF EXCAVATIONS
IN THE PALAEOCHANNEL

2m

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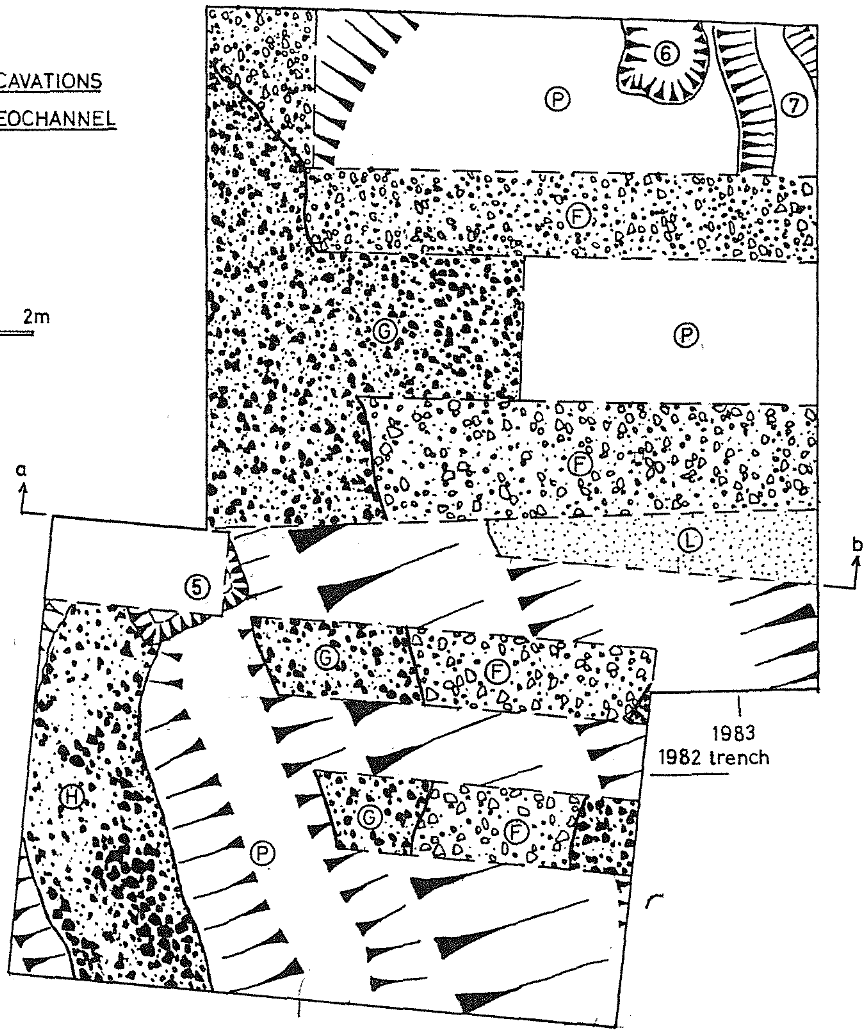
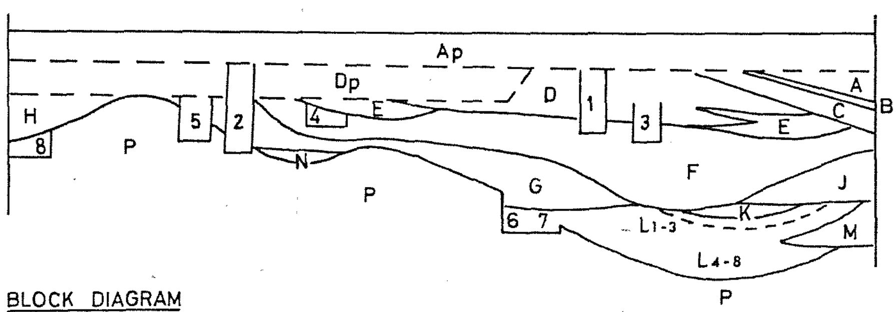




BLOCK DIAGRAM

a summary of vertical relationships
in the palaeochannel

3. THE PALAEOCHANNEL

The last trench to be opened in initial machining of the site was deliberatly sited within the palaeochannel so as to expose part, at least, of its sedimentary sequence. In the event it impinged not on the channel proper but on its eastern bank and on a rectangular pit cut into the bank. This pit contained a mass of heat shattered flint spalls and lumps mixed with charcoal and ash. Other than a solitary struck flake it was devoid other artefacts and hence undateable. Its discovery was, however, sufficient incentive to investigate the surroundimgs and an adjoining area 8m by 6m was opened for further investigation. Finds made in this part of the 1982 excavation (SMX) were sufficiently encouraging to prompt a second season of excavation on the site in 1983. Since the work of both seasons centres on generally similar deposits they are summarily reported in the following account.

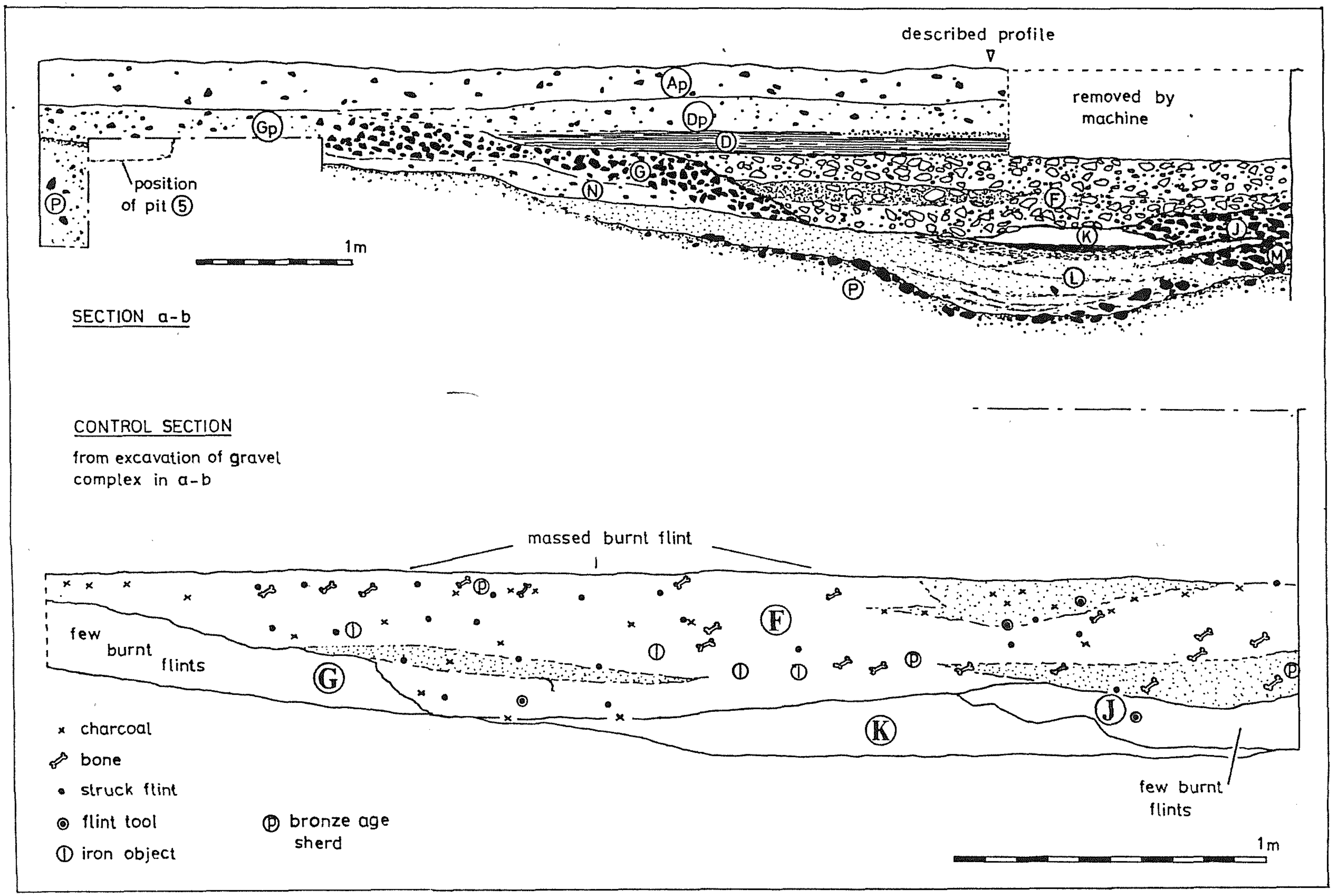
The palaeochannel comprises a matrix of stream braids shifting around within a larger channel formed by downcutting of Coombe Rock by melt-water flows in the later Weichselian. The resulting stratigraphy, as seen over a distance of 14m and encompassing as it does the entire post Glacial period, is necessarily complex. However, careful recording and observation of the many sections generated in excavation has made it possible to summarise all the major and most of the minor stratigraphic relationships in the form of a block diagram - Figure 4. This together with the crucial, centrally located, section a-b and the general plan of palaeochannel excavations illustrate the nature and order of the sequence reported below:

3·1 The described profile in section a-b

m

0 - ·30 Modern ploughsoil. Dark reddish brown (5YR 3/2) clay loam with 15% medium flint nodules and a small amount of hard chalk. Large blocky to prismatic structure. Diffuse wavy boundary.

Figure A1.5 THE PALAEOCHANNEL - Sections



·30-·42 Dark reddish brown (5YR 3/2) clay loam, as the overlying layer excaept there are fewer flints. It appears to be basically the same sediment of alluvial origin but with eroded flints mixed into the pot ·30m. Abrupt smooth boundary.

·42-·46 Dark grey (10YR 4/1) sandy clay with 50% small stones, - largely white rounded chalk pieces and some flints which are more angular. Abrupt smooth boundary.

·46-·52 Very dark grey (10YR 3/1) sany clay loam. Stoneless. It contains a fair proportion of small charcoal pieces. Abrupt smooth boundary. Looks ver much like alluvium laid down in slack water after the stream had changed its course.

·52-·56 Dark greyish brown (10YR 4/2) sandy clay with 50% small rounded chalk pieces and small reddish flint nodules. The layer is distinct only in that the chalk is white and cleaned by percolating water. Essentially it represents the slightly decalcified surface of the underlying layer. Gradual wavy boundary.

·56-·76 Yellowish brown (10YR 5/4) sandy silt with 50% small and medium flint lumps and a proportion of harder chalk. Flints are ochre stained (10YR 6/8) brownish yellow and broken but with angles much rounded. Clear wavy boundary.

·76-·87 Dark greyish brown (10YR 4/2) sandy silt with 40% large rounded flints. Clear wavy boundary.

·87-1·13 Dark greyish brown (10YR 4/2) sandy silt with 70% medium and large rounded flint nodules and some small, hard rounded chalk pieces. Clear wavy boundary.

1·13 Brownish yellow (10YR 6/8) zone of ?iron deposition at a stratigraphic boundary. In deeper parts of the channel this zone takes the form of a hard pan whereas on the flanks it results merely in the sand surface being stained deep orange.

below 1·13 Pale olive (5YR 6/4) fine sand mottled by ?iron staining in places (10YR 6/8). Looks very much like redeposited Greensand. Largely stone free (c.5%).

3·2 The General Sequence

Stratigraphic Units Major	Minor	Description and Interpretation
Ap	A 1 2	Layer Ap is the modern ploughsoil created by mixing of alluvium (of which layer A is the last surviving vestige) with flint gravel and coombe deposits from underlying layers. The origin of the alluvium and features 1 and 2 (representative of a number of stake holes, gulleys and other disturbances) would seem to lie in use of the site as a water meadow.
	B C	Layer B is a stoneline surviving beneath layer A where modern ploughing has not disrupted evidence of the pre water meadow turf line. Layer C is the mottled clayey silt fill of a minor channel upon which turfline B eventually formed.
D	Dp E 3 4	Layer D is a band of dark alluvium containing bands and flecks of charcoal. Over the banks of the channel ancient ploughing has disrupted the alluvium mixing it with gravel and coombe deposits dragged from underlying layers (Dp). Layer D clearly formed in at least two major phases as is indicated by a number of minor features (3) cut through it from mid horizon and by its interstratification with lenses of small flint and chalk gravel (layer E). The latter probably represent seasonal streamlets flowing in depressions across the

		underlying gravels. Feature 4 is a silt filled depression predating layer E but broadly contemporary with it.
F		An extensive spread of flint gravel (much of it calcined) in a matrix of sandy silt containing lenses and bands of dark clayey silt. The gravels fill and level earlier stream beds. They encompass a wide variety of artefact material, the fresh condition of which militates against the idea that the gravels have been rolled to any major extent.
G	J H 5	Layers G,H and J are all dark gravel formations in which calcined flint, though present, is markedly less common than in layer F. Layers G and J are disposed on opposing sides of the major channel and are heavily stained by iron or manganese accretions. This accretion forms a distinctive brittle deposit on the surfaces of individual flint nodules often cementing them to each other and to surrounding sandy silts where it runs in pan like veins. Layer H gravels are distributed beyond the main channel in what appears to have been a storm channel. They are less homogenous than G and J and less heavily stained. Feature 5 is a rectangular pit cut into the coombe deposit bank which separates C and H. It contained ash, charcoal and a mass of heat shattered flint spalls and lumps. Although truncated by cultivation evidenced in layer Dp it appears to have been cut into gravels G and possibly gravels H.
L	K M N	Layer L fills the base of the main channel and is mainly composed of redeposited Upper Greensand within which bands and lenses of more or less clayey silt indicate

6 detail changes in depositional conditions. A braid of
7 dark, heavily stained gravel (layer M) interleaves with L towards the end of its depositional cycle. Despite its outwardly 'natural' and clean appearance isolated charcoal flecks were observed throughout layer L, even at its base. But in its uppermost horizons the frequency flecks and more finely divided charcoal increases dramatically giving rise to a distinctive grey green lens of clayey sandy silt (L1-3). This charcoal stained lens is capped by a further lens of clean chalk mud mixed with a little sandy silt (K). Lenses and braids of similar material occur sporadically throughout the length of the channel but always with dark gravels above and below. Feature 6 is a shallow pit containing ash, charcoal and a bone fragment; Feature 7 is an adjoining gulley devoid of artefact material but presumed to be artificial. Both 6 and 7 cut into Coombe Rock yet contain sandy silts comparable to layer L. Both features also extend beneath the south baulk where dark gravels (cf. G and M) could be seen to dip into them. Layer N is a thin and discontinuous deposit of grey brown flinty clay loam which occurs beneath gravels G where they pass over depressions in the Coombe Rock. It is though that it represents surviving traces of a formerly more extensive palaeosol.

P Coombe Rock with a surface sorted and sculptured by late Glacial and early post Glacial fluvial activity. Within the area investigated the main channel could be seen to bifurcate into two lesser channels and it is likely that this braided system extends both laterally and longitudinally. Whilst the Coombe Rock is itself a natural deposit patches of charcoal occur within its surface, notably where it rises to form river bars. This evidence, together with the observed stratigraphic position of features 6 and 7 suggest that higher parts of the early channel system were seasonally dry enough to permit temporary occupation.

3.3 Discussion

It is clear that the river Iwerne began life in the post Glacial period as a braided system and that this system survived little altered until after prehistoric activity first impinged on the area. The evolutionary history of post Glacial river systems in the chalklands, as indeed elsewhere, is far from perfectly understood but in its earliest stages of development the Iwerne closely parallels the much larger Kennet whichwas also a braided system (Cheetham 1980). That these two widely separated rivers of such different scale should possess the same basic form suggests that most, if not all, chalkland rivers were of braided configuration throughout earlier prehistory.

Braided river systems are maintained in stable condition by frequent but moderate flood discharges. The balance is destroyed when discharges become progressively more severe and less frequent especially when large amounts of sediment are entrained in the flood waters. For this reason river systems that meander through silt choked floodplains are most commonly encountered in agricultural and disforested landscapes. The Kennet eventually evolved into such a system but the Iwerene valley is probably too confined to allow similar developments except at a very small scale. Rather, the river's response to the increasingly more violent flood discharges that might be associated with disafforestation and cultivation of the catchment is more likely to have been more vigourous reworking of its channels accompanied by increased deposition of alluvial silt on their margins.

This process is reflected in that part of the sequence which encompasses layers L,M,K,G and J. The channels cut into Coombe Rock represent the original braided system, scoured clean throughout much of the early post Glacial by regular, moderate flood discharges. The accumulation of layer L marks a breakdown in the pattern and whilst the scattered charcoal flecks within it are not conclusive evidence of human interference in the catchment that would be the most plausible explanation. To judge from the relatively homogenous character of the sandy silts in layer L and the infrequent occurence of charcoal one is probably seeing the result of relatively small scale forest burning, principally over Upper Greensand outcrops. However, the heavily stained upper horizons of L (L1-3), overlain as they are by an influx of chalk mud which is in turn followed by vigourous reworking of gravels in the system, mark a major change in depositional circumstances. The finely divided character of the charcoal in L1-3 is consistent with derivation from a distance - confirming the sedimentary evidence for erosion in Upper Greensand outcrops, nominally 1km upstream. Both point to a major episode of forest clearance involving the use of fire.

L1-3 are associated with a change in the type of sediment entering, or at least being deposited in, the channel. L3 is simply charcoal stained sandy silt. L2 contains a greater admixture of clay and chalk mud and L3 is predominantly chalk mud. Layer K which follows is almost pure chalk and in terms of volume of sediment it is a fairly substantial deposit. If L1-3 reflects clearance and erosion over greensand, layer K is important in showing that these processes were eventually extended over adjoining chalk outcrops.

It was after these erosion episodes in the upstream catchment that re-working of gravels began. The superimposition of gravels J and G over layers K and L almost certainly started at this time, the process continuing until the channel system had found a new stable form. The artefact evidence (see Chapter 5) suggests that the system remained relatively stable throughout later prehistory but the deposition of gravels F marks the start of a second episode of change. The agency responsible for deposition of F is almost certainly an artificial one, as is discussed in Chapter 6, but the significant point is that the river was never thereafter able to adjust to the new conditions as it had previously. Layer E, which is strictly a pattern of small stream beds flowing across the surface of F, represents all that was left of the active channel. By far the most formative process thereafter was overbank flooding resulting in the heavy deposition of rich humic alluvial silt (layer D), right across the system, creating for the first time a true floodplain. In the Iwerne case such a development is attributable to a combination of at least two major factors - artificial modification of drainage patterns and an intensification of agriculture in the catchment. Thus sediment loading increased at the very time the river's capacity to handle it was drastically impaired.

Ater formation of this first floodplain had got underway either remanagement of drainage or natural improvements eventually promoted a period of reduced flooding and comparative stability. Layer C would appear to be a new channel flowing across the floodplain, its mottled fill testifying to discontinuous and probably seasonal flow activity. In time even this channel silted up and a turf line formed over it (layer B) creating a lush meadow environment. With artificial attempts to manage the area as a water meadow (1,2) relatively rapid alluviation resumed giving rise to layer A which forms the basis of the ploughsoil which currently mantles the site.

4. SURFACE EVIDENCE AND THE PLOUGHSOIL EXPERIMENT

From the outset it was realised that Everley Water Meadow was a rather specialised recording environment as far as surface collection was concerned because the presence of extensive deposits of alluvium would potentially mask some early horizons and hence distort surface trends. Concealment effects were investigated by means of the control blocks excavated in trenches SMK, SML, SMM and within SMX. At the same time, since the opportunity presented itself, an attempt was made to quantify the sampling fraction inherent in collecting artefacts from the surface of a ploughsoil as compared with the artefact total in the same plough soil. This was achieved by excavating sample blocks of ploughsoil that had already been fieldwalked. The rationale for conducting the plough soil experiment and the implications drawn from its results are more fully discussed in Chapter 4 of the Thesis. The report that follows is simply a report of results and their relevance in the local context of Everley Water Meadow.

4.1 Surface Patterns (Figure 2)

Surface collection of artefact material was organised on the basis of line walking; lines a - m being spaced at 10m intervals. Within each line find totals were recorded for each 10m walked, giving coverage of trends in two dimensions. In practice, and for the purposes of statistical comparisons each line was assumed to be 2m wide, this being perhaps the maximum width a walker can scan effectively. Ground conditions were good; the field had been harrowed and weathered before walking started, but bright sunlight did hamper recognition of artefacts on the surface. All classes of artefact were retrieved and their distributions studied. However, Figure 2 only portrays the more meaningful patterns - those belonging to struck flint, burnt flint and iron slag. Thin scatters of

Roman, medieval and later pottery occur uniformly all over the meadow in a manner consistent with derivation from the practice of spreading domestic refuse on arable as manure rather than in situ occupation. At the surface patterns of struck flint and burnt flint are virtually mutually exclusive. The former cluster in a relatively discrete scatter c. 50m across, with cores conspicuously concentrated at the centre and other flaking debris at the periphery. At face value the evidence points to the existence of a chipping floor probably associated with extraction of flint nodules from the underlying gravels, both activities being largely restricted to the higher terrace. Conversely, the distribution of burnt flints suggests they derive from activities restricted to the river channel and its margins. One pronounced cluster was investigated by excavation in 1983 (Area 2) and found to mark the position of a stream edge burnt mound. Rather weaker clusters of burnt flint within the corridor pattern presumably mark the sites of other burnt mounds. Interpretation of the distribution of iron slag is less straightforward. Its clustered pattern and the fact that two lumps of furnace bottom were retieved suggests there may be iron working installations at this point but the possibility that the material results from a single episode of dumping metalworking residues from a nearby settlement cannot be ruled out. Only excavation can resolve the issue.

4·2 The Ploughsoil Experiment

Three recovery techniques were used on the ploughsoil - systematic surface collection, rapid hand excavation (mattock and shovel) and intensive (trowel) excavation. Line walking of an area 1·2 hectares in extent by transects 2m wide and spaced 10m apart meant that total coverage of 2500m^2 had been achieved. This technique yielded 100 artefacts. Rapid excavation was confined to trench SMX where a total sample area of 41·75m^2 yielded 62 artefacts. Intensive excavation of the ploughsoil was organised within five dispersed control areas - one each in SMK, SML, SMM and two in SMX giving a total coverage of 8·25m^2 from which a total of 91 artefacts were recovered. Recovery data are summarised in the tables below. Note that, for the purposes of assessing the sampling fraction it was assumed that intensive excavation retrieved 90% of the total artefacts available in the ploughsoil. Similarly, in assessing the relationship between the three different techniques and their ability to retrieve specific artefact types the scores were, for simplicity, expressed in relative terms with that for surface collection always being unity.

a) Technique Analysis:

	Sampling rate m^2/hr	Retrieval rate finds/hr	Finds/m^2	Sampling Fraction %
Surface collection (total coverage)	417	17	0·04	0·3
Rapid Excavation	1·7	2·6	1·5	12·1
Intensive Excavation	0·4	4·5	11·0	?90·0

b) Artefact analysis (recovery ratios)

	Pot Sherds	Struck Flint	Burnt Flint	Iron Objects	Slag
Surface collection (total coverage)	1	1	1	1	1
Rapid Excavation	120	24	13	192	9
Intensive Excavation	607	290	194	608	-

In comparing one retrieval technique with another it is meaningless to speak in terms of relative efficiency. If the critical variable is man power then surface collection permits large areas to be studied rapidly but only at a very low intensity. A most surprising result of the experiment was the discovery that surface collection has such a small sampling fraction inherent in it. The data suggest that for every 330 or so artefacts within the ploughsoil scanned by a fieldwalker only one will be collected. Richards (pers comm) reports similar findings from an extensive surface collection project recently mounted in the Stonehenge area, so the Everley Water Meadow results, despite being based on a much smaller scale, do not seem to be spurious. However, the very low retrieval rate need not cause too much concern if one merely wishes to study broad spatial trends in commonly occuring artefact types. In this respect surface collection correctly identified the existence of the two main points of interest in the field ie. the struck flint scatter and the burnt flint scatter, even if their true extent was not accurately defined. It would also seem that some artefact types are much more likely to be observed and collected than others, as wouldbe expected given the marked variations in size, shape and colour. Predictably, these factors favour burnt flint most. It seems to have been significantly more obtrusive than struck flint and three times more obtrusive than potsherds though one suspects the bright sunlight prevailing at the time had some influence on sherd recognition. Where surface collection begins to become inefficient is when one is searching for rarely occuring artefact types such as might be the case when looking for diagnostic flint implements to indicate the date and functional character of a flint scatter. At Everley all the diagnostic flints came from excavation and most of these from the palaeochannel where surface collection was singularly uninformative with regard to both the density of struck flint and its date or cultural affinity.

4.3 Summary

Everley Water Meadow represents a specialised recording environment but it is one which is replicated throughout the valleys of chalkland Wessex. By operating according to a strategy that permitted surface and subsurface artefact populations to be compared field research was able to elucidate some of the problems which beset valley survey, particularly those relating to investigation of alluviated horizons. Excavations in the vicinity of the palaeochannel showed that there were repeated occupations of the streamside environment during prehistory but surface evidence (burnt flint apart) indicates only what seems to be temporary occupation of the terrace for the purpose of extracting and working flint. Burnt flint is a relatively common find in field walking but normally little importance is attached to its presence on a site. Yet, in the author's experience, dense clusters such as those at Everley are almost always associated with prehistoric occupation sites. At Everley Wter Meadow, Harbridge, Bishopstrow Farm and indeed all the prehistoric occupation sites discovered or investigated in the course of surveying chalkland valleys in Wessex the author has noted that not only is burnt stone the most numerous surface find it is also normally the only indication that the site concerned is both prehistoric and an occupation site.

5. FINDS AND DATING EVIDENCE

At the time of writing a third season of excavation at Everley Meadow is planned - this report is therefore an interim statement made without recourse to specialist analysis of finds which is continuing. Information currently to hand is, however, sufficiently detailed to permit a sound basic understanding of the chronology of the sequence and the character of the occupations encompassed within it.

Ap,A,1 and 2 : Layer generally contains a thin scatter of post Medieval, Medieval and Roman pottery; burnt flints are common, struck flints less so. Since ploughing represented by Ap is known to have a very recent origin (within the last decade), before which the site was a deilict water meadow, all material of medieval or earlier date may be regarded as residual. The struck flint in layers Band C must be similarly regarded.

D,Dp,E,3 and 4 : An artefact assemblage which differs from that in the layer A complex only in the frequency of Roman finds (bronze and iron brooch fragments, Samian and coarseware pottery, iron nails and various other iron objects) which are more numerous than medieval ones (mainly 13th/14th century pottery including glaze trailed jugs and scratch marked coarsewares). Whereas the Roman material is generally in rather abraded condition the medieval pottery is fresh - some sherds being rejoinable. Burnt flint is common; struck flint (only flaking waste) less so. The fresh condition of the 13th/14th century pottery suggests the layer was little disturbed after this date and the frequency of Roman material as contrasted to its scarcity in the layer below suggests it is not residual. The layer D complex therefore started to accumulate during the Roman period and formation was probably almost complete when parts of the layer were cultivated in the 13th/14th centuries.

F: Layer F is chiefly characterised by the mass of burnt flint it contains but it also yielded an important assemblage of late Bronze Age artefacts. Chief amongst these was part of a Trachyte stone mould for casting socketed axes which, together with bronze slag, much animal bone (some burnt) and sherds of late Bronze Age pottery seemed to date the deposit quite closely whilst at the same time pointing to the existence of an industrial settlement at the stream edge. Struck flint, including various scrapers, hinted at a certain amount of residual contamination from an earlier occupation of the site but, as first seen, layer F appeared well stratified. The first doubts were raised by the recovery of iron slag from it and this led to more detailed investigation of the stratigraphy by means of the control section illustrated in Figure 4. Though recent research suggests early iron working could theoretically have taken place in LBA contexts confirmation that the LBA assemblage was indeed derived came from the recovery, within layer F, of a sherd of Samian pottery and a small range of iron, square section nails. Thus despite its overwhelming content of pre-historic material the layer could be seen to have been reworked during the Roman period - acircumstance which is discussed in Chapter 6.

G,J,H,5: Gravels G and J contained small quantities of burnt and struck flint and nothing else. The absence of Roman material points to a pre-historic date for them and the recovery of a small struck flint assem-blage from their interface with underlying horizons shows they were probably forming during the Bronze Age and, less certainly, the late Neolithic. The crucial find from this interface was aparticularly finely worked transverse arrowhead in such pristine condition as to rule out any possibility that it was not in its original discard context. Though these arrowheads have a long chronology (Green 1980) products of specialist workshops, of which this was clearly an example, are normally late Neolithic in date. A scraper and other struck flints found within or beneath the G/J gravel complex are stylistically consistent with this view.

Gravels H are isolated from G by plough truncation of deposits over-lying the stream edge bank and their date can only be deduced from what they contain. Small clusters of burnt flint and burnt animal bone were noted but the most significant finds all relate to metalworking-

- conjoining fragments of furnace bottom iron slag, ironstone, burnt clay daub and a fired clay casting core. The latter object had been badly damaged in extrication from the casting but its size corresponds with what might be expected for the socket of an axe. The absence of Roman and medieval pottery in the context appears to confirm that it is prehistoric and since all the elements of this metalworking were found, apparently undisturbed, within or beneath the same small patch of gravel they are considered to be broadly contemporary. A date early in the Iron Age would be most appropriate. In view of its fill and its stratigraphic position pit 5 may also belong with this group.

L,K,M,N,6 and 7: Precise dating of these layers ultimately rests on radiocarbon analysis of a number of charcoal samples taken at the time of excavation. However, all these deposits are stratigraphically earlier than gravels G which, it was suggested began to form in the late Neolithic or possibly even earlier.

6. DISCUSSION AND RECONSTRUCTION

6.1 The Pleistocene and early Post Glacial Background.

Prevailing conditions prior to the last Glacial are unknown but it is likely that the Iwerne valley already existed in some form. By mid Weichselian times hugh quantities of soliflucted debris, originating from Upper Greensand and chalk outcrops north of Everley Water Meadow, were being seasonally sludged down the valley axis. From c. 12000BC onwards this flow of material began to take on a more riverine character giving rise to the capping of weakly bedded and sorted deposits overlying Coombe Rock laid previously. The main mass of valley gravel and the terrace formation it sits on are probably dateable to this time. With further climatic amelioration the ground surface became subject to disruption by frost heaving - the process being interrupted at least by interstadial conditions during which a primitive soil formed. This was possibly the Bolling interstadial (Zone Ib). In a return to peri-glacial conditions frost heaving resumed and the palaeosol, except where trapped in subsoil hollows was largely removed by meltwater activity which must also have reworked the terrace gravels. In the early post Glacial period soil once again formed on the terrace, the Iwerne began to permanently flow within a braided network of channels and eventually a Boreal flora and fauna became established in the area.

6.2 Mesolithic

The case for Mesolithic occupation of some form within the excavated area rests principally on an axe roughout found deep in the gravels of the river channel. But, there are other indications which suggest relatively intensive exploitation of the area. Foremost is the alleged settlement at ST 890132, generally but misleadingly named from the nearby village of Iwerne Minster (Summers 1941). Situated on the summit of the chalk escarpment at the head of a major dry valley extending east from Everley Water Meadow this prolific site has yielded a flint assemblage numbering many thousands from an area of a hectare or more. The relatively high ratio of cores to implements and the fact that the site overlies an outcrop of Clay-with-Flints suggests it is more of a manufactory than a settlement in the accepted sense. Whilst the assemblage cannot be closely dated it is linked by Palmer (1977, 152) with material from Stourpaine (1km south of Everley Meadow and also in the Iwerne valley) as inland equivalents of her littoral Portland Culture and hence dateable to the later Mesolithic. If one is indeed dealing with a single, seasonally mobile group then the Stour and its tributaries such as the Iwerne would have been important for access to and from the coastal zone. Furthermore, as Mellars and Reinhardt (1978) have observed, major ecotonal situations, such as occur around Everley Meadow, attracted a particularly intensive level of Mesolithic exploitation. There is therefore much within the environmental character of the area and within the field evidence to support the thesis of substantial Mesolithic activity in the Iwerne valley. In the charcoal flecked sandy silts that accumulated in the excavated palaeochannel (layers L4 - 8) one is perhaps seeing some of the physical consequences of such activity.

Upper Greensand is notoriously susceptible to erosion and layer L is essentially the product of erosion in the upstream catchment which, in view of its charcoal content, is almost certainly attributable to forest burning. Scaife (1982) reports the same phenomenon, in Boreal contexts, within the valleys of the Ouse and Cuckmere (Sussex) and Medina (I.O.W.). He also argues for Mesolithic forest burning as a causative factor.

The Iwerne springs 2km north of Everley Water Meadow in an area that during Mesolithic times was, in all probability, a marsh fringed lake - an obvious focal point for hunting and gathering. It seems most likely, from the sedimentary composition of layer L that forest burning took place in the immediate vicinity of the lake and the river that ran southwards from it for otherwise charcoal could not have become incorporated in the eroded sediments.

6.3 Neolithic

Any discussion of Neolithic evidence from Everley Water Meadow is inevitably overshadowed by the results of Mercer's extensive research on Hambledon Hill with its plethora of early and middle Neolithic earthworks and a sequence of activity extending from the fourth to the second millennium BC (Mercer 1980). However, despite its relatively inconsequential physical character, the Everley evidence is important because in the flint assemblage and features sealed beneath the main gravel expanse in the river channel one is looking at evidence for Neolithic exploitation of the valleys around Hambledon Hill. This allows the hilltop evidence to be seen from a new perspective - one that Mercer has himself hinted at when suggesting that the dairy farmers who brought their herds to the hilltop came not from neighbouring chalk uplands but from vales and valleys beyond (Mercer pers.comm.). Whether the Everley Meadow evidence amounts to a settlement is difficult to judge until more extensive investigations can be mounted. If encouragement is needed then it is surely present in the large scale forest clearance horizon inferred from deposits in layer L1 - 3 of the palaeochannel.

The somewhat infrequently charcoal flecked sandy silts of layer L4-8 are held to represent intermittent and comparatively localised Mesolithic forest burning. Consider then the circumstances needed to deposit the same type of silt containing so much charcoal that it is stained grey black. This alone indicates a majoe event in the catchment but in the subsequent deposition of dark clays and chalk mud one can perceive the full magnitude of the disturbance as extending beyond the river edge or those areas effected by Mesolithic man to encompass a much wider area including chalk slopes. Until radiocarbon date determinations become available it is impossible to be sure whether this primary clearance horizon pre-dates or post-dates the start of Neolithic monument building on Hambledon Hill but there seems to be no significant gap between it and the pattern of Mesolithic disturbance evidenced in layers L4-8. Layer L is essentially a continuous sequence arising from erosion in the upstream catchment. Layer L1-3 marks the end of one environment and the beginning of another. Since radiocarbon dates for primary contexts of the hilltop causewayed enclosure cannot be pushed back beyond the early third millennium bc the case for upward expansion and clearance from a valley core area is not altogether improbable.

6.4 Bronze Age

There is a hiatus in the channel depositional sequence between the postulated Neolithic clearance horizon and a phase of late Bronze Age riverside occupation. This may be partly attributable to the fact that the river adjusted to its post clearance regime by reworking its channel network into a scour clean configuration. But, as on nearby Hambledon Hill, evidence for early and mid Bronze Age activity in the area is generally rather scant. Attention should however be drawn to the collection of struck and burnt flint incorporated in gravel banks G and J which were probably open contexts during the period in question. As surface evidence (Figure 2) has shown there are apparently many burnt mounds in the meadow and the burnt flint in gravels G and J could indicate that they were in use over a considerable timespan.

The functions of burnt mounds are as yet very imperfectly understood but, as discussed by Bradley (1978, 83), they are particularly common in the Bronze Age and where good contextual information is available they are frequently associated with settlement. Burnt mounds have now been recorded, or may be inferred, within almost all the classic Deverel - Rimbury settlements of Wessex from Shearplace Hill to South Lodge. The one mound so far investigated at Everley Meadow had been artificially levelled in the Roman period but sufficient of its base remained intact to show that it belongs to the late Bronze Age - it contained a virtually complete Plainware jar. The mound was also observed to interstratify with a sequence of ditches, gulleys and stakehole structures indicative of lengthy riverside occupation.

It is against this evidence that the derived assemblage of domestic and industrial refuse recovered from gravels F must be assessed and it is difficult to escape the conclusion that one is dealing with an extensive and potentially very important riverside settlement which has barely been touched by excavation. This conclusion rests primarily on the fragmentary mould from layer F which has been provisionally identified by Stuart Needham (British Museum) as being manufactured from Trachyte rock which appears to outcrop only in South Wales. As such it is quite distinctive of a group of moulds known from south and west England for the production of "South Welsh" or Stogursey type socketed axes. These moulds are listed by Hodges (1954) and by O'Connor (1980): Bulford Water, Wiltshire; Burderop Down, Wiltshire; Ham Hill, Somerset and in south-east England, Johnson and Needham (1974) report a further example. Products from these moulds are by no means common in Wessex and the greatest concentration outside south Wales is the Stogursey hoard in Somerset (McNeil 1973). They are relatively distinct when complete - a socketed axe with a plain, rather crudely cut collar whence is derived a large side loop. The blade is generally of hexagonal section, only slightly splaying from top to bottom, with three ribs often converging upon the blade face.

The Stogursey find demonstrates the chronological and industrial parallelism between southWelsh axes and spearhead hoards of the Broadward tradition while finds from southern England, notably the Kentish hoards of Minnis Bay and Bexley Heath, demonstrate currency with the Carps Tongue Sword elements. The type is thus a widespread and important linkage in the establishment of metal using currency in the later part of Burgess's Isleham Period (Burgess 1980).

Though the Everley mould is, in strict terms, from a derived context it is directly associated with late Bronze Age domestic refuse and the contexts from which this refuse may have emanated have been found nearby. The mould therefore has a provenance - it is not a casual loss by an itinerant craftsman, it must be viewed as reflecting metalworking on the site. Such sites are of course very rare indeed as is shown by

Pearce's (1976) attempts to catalogue evidence of association between bronzes, bronze working and settlement in south west Britain. Within the precise period in question they are virtually non-existent. In this respect Everley Water Meadow may eventually prove to be as informative as the important riverside settlement at Runnymede Bridge, Surrey, which also has metalworking evidence in contexts dated to 670±70bc (Har-1833) and 800±70bc (Har-1834) (Needham and Longley 1980). Coincidentally, a mould fragment of precisely the same type as that found at Everley Meadow was recovered from Petter's Field which neighbours the Runnymede Bridge site (Johnson and Needham 1974).

6.5 Iron Age

One of the most enigmatic aspects of the evidence from Everley Meadow is the association of iron smelting slags with bronze casting equipment demonstrably of late Bronze Age date. Purists may find this unacceptable - indeed some already have! However, although the association is not as conclusively proven by stratigraphy as could be wished for it must be said that those who have witnessed the the site stratigraphy at first hand have no reason to doubt it. In theoretical terms there can be no objection to iron and bronze working taking place together in the same workshop for, as Cunliffe (1978, 290) notes, the earliest iron implements are usually copies of bronze equivalents. A particularly notable find, which perhaps provides the most conclusive indication that iron and bronze working were in the hands of the same specialists, is the iron copy of a bronze sickle found in the Llyn Fawr hoard (Grimes 1951). All that is lacking so far is the discovery of the work shops where these transitional developments took place. Clearly, further work is necessary before Everley Meadow can be claimed as such a site but it does belong to the transitional period, metalsmiths did work there and it has yielded ironstone and iron slag.

If, as suggested above, the sequence of occupational activity does extend into the earliest Iron Age there is little to document how the area developed subsequently during the main span of the Iron Age. The river system still appears to have been a braided network in stable adjustment with its regime - a circumstance which itself indica tes a lack of intensive activity in the catchment. The massive multivallate hillforts on Hod Hill and Hambledon Hill serve to show that there was a substantial Iron Age presence in the general area and excavations (by the author and Dr. Martin Bell) of lynchets on the eastern side of Hambledon Hill have demonstrated that the hillslopes and at least one dry valley were under cultivation at this time. However, the only evidence for Iron Age occupation of the Iwerne Valley itself is that from a site located 2km north of Everley Meadow at ST 857137. Excavations here, originally undertaken by Pitt Rivers in 1897 and retrospectively reported by Hawkes (1947) centred upon a Roman villa founded on a late Durotrigian settlement within which residual and generally rare finds of La Tene I material hint at an earlier phase of occupation.

6.6 Roman and later activity

If the La Tene I occupation site beyond Iwerne Minster seems to have made little impact on the Iwerne's regime the late Durotrigian and Romano-British settlements certainly did. One suspects that the Iwerne Minster villa is merely one of a number of Roman farmsteads in the area because it is perhaps unlikely that the manuring refuse recorded at Everley Meadow is attributable to a yard 2km distant. Wherever these undiscovered farmsteads are located it is clear that they brought about far reaching changes to local conditions in the valley. The pressure on arable land must have been considerable for why else would local farmers have chosen to till Everley Meadow which even today, with recourse to modern technology, is still a marginal arable field because of the readiness with which it floods. It was also prone to inundation in the Roman period - the thick band of dark alluvium deposited across lower parts of the meadow testifies to prolonged outbreaks of flooding during which humic silts were stripped from valley arable. Comparable evidence for substantial episodes of alluviation in Roman contexts is mainly, if not exclusively, confined to the later and final part of the period (Potter 1976). The Everley evidence probably conforms to this pattern.

The settlement beyond Iwerne Minster was in occupation during the 1st and 2nd centuries AD but it remained a comparatively minor one until the 3rd century when large stone buildings began to be erected. This range was added to and elaborated in the 4th century AD (Hawkes 1947). In essence the villa estate is largely a 4th century development. At Everley Meadow the earliest recorded Roman activity surrounds levelling of the pattern of burnt mounds distributed along the banks of the Iwerne (giving rise to the composite gravel layer F) - an event which is dated by the few Roman sherds found in layer F to the earlier part of the period. Cleared of obstructions the meadow was then broken and brought into cultivation. Common sense dictates that flooding was not a significant problem when this phase of cultivation was initiated - it only became one after intensive agriculture had begun to damage the structure of local soils making them susceptible to erosion, a trend apparently associated with increased rainstorm activity. Alluviation of Everley Meadow is therefore believed to be a later Roman development and one that must surely have put an end to regular cultivation of land bordering the river. In theory the Iwerne might have been able to once again adjust to the new regime but the old braided network seems to have become irrevocably choked by alluvial sediment and detritus from the burnt mounds. Instead it remained little more than a stream subject

to overbank flooding at times of high discharge.
This pattern has persisted since. The terrace was, it is true, cultivated again in the 13th and 14th centuries - during what has been recognised as a period of exceptionally dry conditions but in being later managed as a water meadow further large scale alluviation ensued. Had it not been for this protective mantle of alluvium plough damage to the crucially important prehistoric horizons at the river edge would have been severe.

7. CONCLUSIONS

As became clear when excavating the palaeochannel and when searching the archaeological literature for comparable sequences there is no precedent for the type of field research currently being undertaken at Everley Water Meadow. One of the most disconcerting aspects of excavating such a site is the way in which gravels and silts that would normally be classed as 'natural' were consistently found to contain cultural evidence. In the author's mind this has enforced a complete rethink of the formation processes at work in riverine contexts. The Everley sequence also illustrates that other palaeochannels elsewhere in the river systems of chalkland Wessex could contain a potential goldmine of prehistoric evidence all of which could be so easily overlooked by the casual observer.
It must be said that trenching of the palaeochannel at the outset of the project was a speculative venture; the burnt flint clustering along it had been noted but no great importance was attached to it. As the subsequent investigations here (and indeed at all the other sites reported within these Appendices) proved - concentrations of burnt flint are highly significant in a surface context because they are so often diagnostic of prehistoric settlement. As anyone familiar with the analysis of fieldwalking results will understand the fact that burnt flint is durable, obtrusive <u>and</u> diagnostic gives it an importance within field

research that cannot be over-emphasised.
But, perhaps the most significant conclusion to be drawn from research at Everley is that, despite being forced by depositional circumstances to operate virtually in the 'blind', these outwardly uninteresting valley floors can be made to yield highly productive results. Machine trenching augmented by open area excavation of modest scale has successfully identified not only what appears to be a Neolithic valley clearance episode to set alongside the evidence from Hambledon Hill but also a late Bronze Age industrial settlement - a site with no recorded parallel in Wessex. It would further seem that these riverside contexts are also rich in palaeoenvironmental data. Dr. Martin Bell's preliminary analysis of sediment samples taken from the palaeochannel sequence have demonstrated that they contain a rich suite of mollusca, microfauna and plant remains from which to reconstruct the ecology not only of these valley settlements themselves but also their catchment areas.

As radiocarbon determinations and specialist reports become available we will be in a better position to assess the Everley sequence but it is already clear that the site has a vast potential which we have scarcely begun to realise. Indeed, if the quality and diversity of the evidence it has yielded is typical of what may yet be encountered in similar topographic circumstances elsewhere in the Wessex chalklands future research in valleys promises to be a most exciting prospect. It must also be said that, on the basis of experience gained at Everley, even a solitary fieldworker could replicate these results given the availability of a JCB and appropriate support from specialist laboratories!

Appendix 2

EXCAVATIONS AT BISHOPSTROW FARM AND WATERY LANE, NR. WARMINSTER, WILTSHIRE

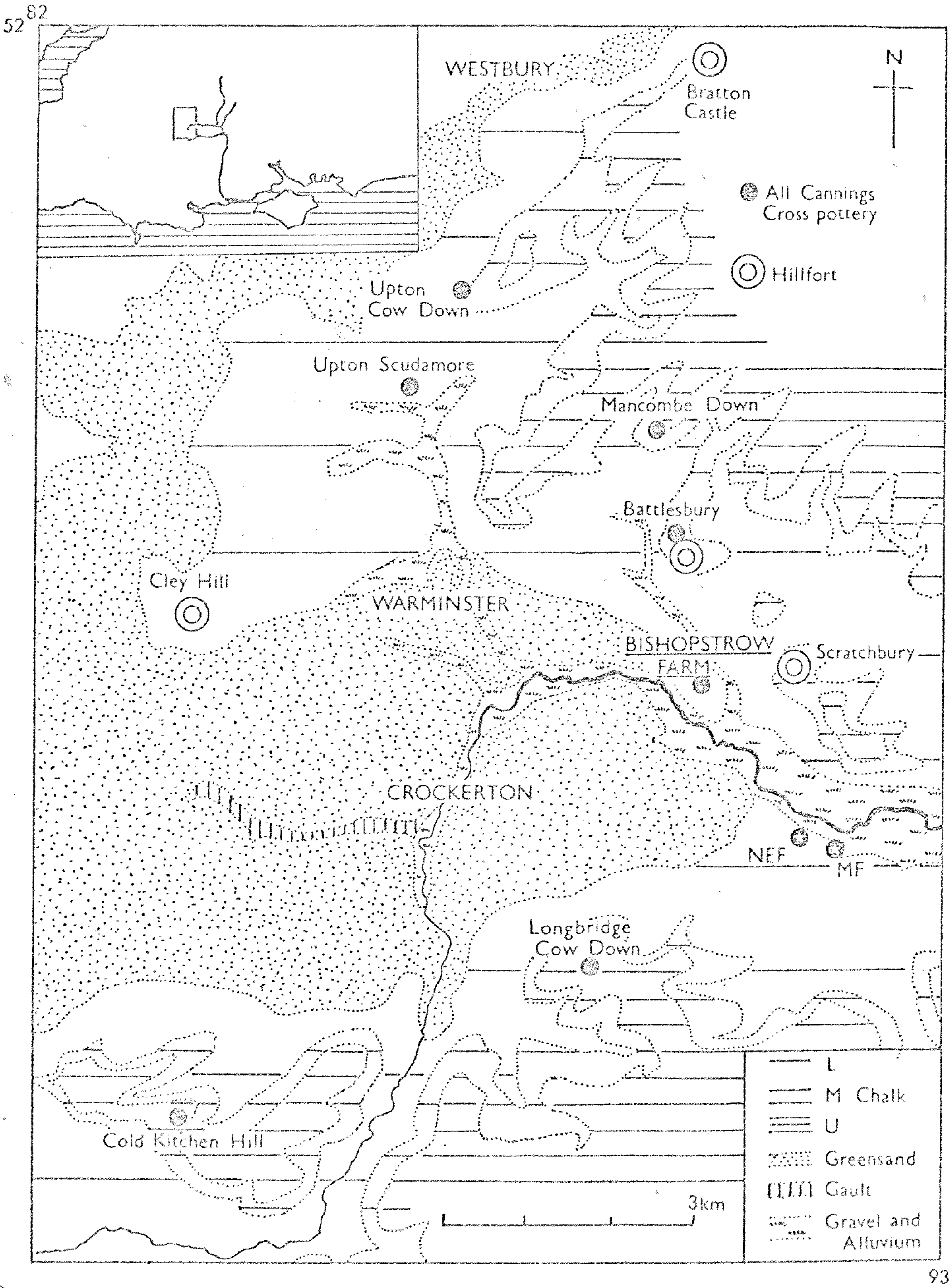


Figure A2·1 BISHOPSTROW FARM/WATERY LANE - location, geology and the known distribution of contemporary settlements

EXCAVATIONS AT BISHOPSTROW FARM AND WATERY LANE, nr. WARMINSTER, WILTSHIRE.

1. INTRODUCTION

The early Iron Age settlement at Bishopstrow Farm (ST 901440) was discovered during air survey in the drought of 1976. Located on the eastern outskirts of Warminster, Wilts, the site straddles the end of a narrow spur of Lower Chalk projecting from the foot of the southwestern scarp edge of Salisbury Plain into the flood plain of the river Wylye (Figure 1). Being annually cultivated for winter wheat the settlement's enclosing works have long since disappeared as recognisable eartworks and in regular fieldwalking surface finds are chiefly restricted to medieval and post medieval pottery and building materials. Prehistoric pottery seems not to survive in the ploughsoil but a certain amount of struck flint is present and burnt flint or fragments of greensand attain high densities over the site. Although the field has been photographed from the air on numerous occasions since its initial discovery in 1976 the cropmark display has never re-appeared. The sequence of photographs taken at the time of discovery therefore provide the only clue to the layout of the settlement and the character of its environs.

2. THE PHOTOGRAPHIC EVIDENCE

Details observed on the air photographs are mapped at Figures 2 and 3. So far as this report is concerned the focus of interest is a pattern of eighty or more pits extending over an area of about 1 hectare which is delimited on its eastern side by a curving ditch of narrow width. The pits appear to be grouped into relatively discrete clusters, three of which have minor curvilinear ditch sections within them. The most extensive group is a row of pits following, and in places encroaching on, the main enclosure ditch.

The full extent of the settlement is obscured by a number of modern and ancient features. The visible pit clusters are traversed by a road constructed in the turnpike era to replace the holloway which passes to the north of the site. Colluvium built up against

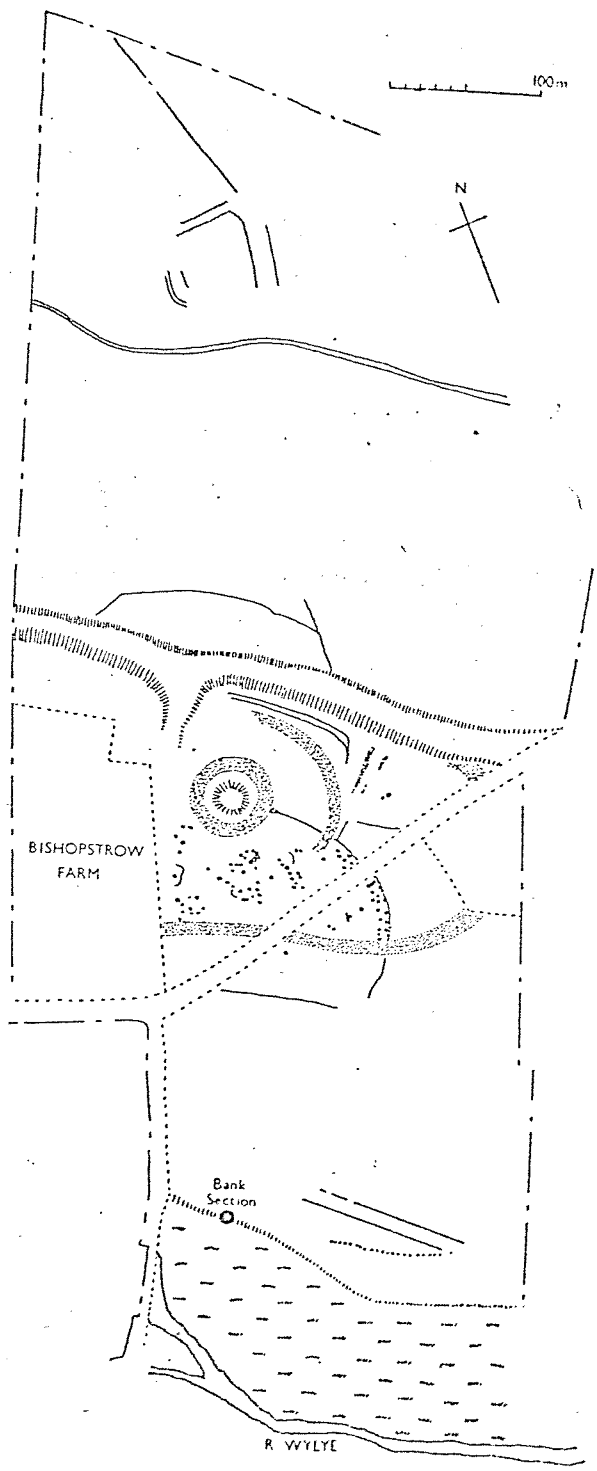


Figure A2.2 BISHOPSTROW FARM/WATERY LANE

Cropmarks and earthworks

the northern edge of this raised roadway obscures all details within a 20m swathe across the site. To the west detail is obscured by the modern Bishopstrow Farm. Less easy to explain is the relationship between the Iron Age settlement and the substantial earthworks with which it interlinks. The central circular feature was for a time mapped by the Ordnance Survey as a Tumulus but it is clear from the proportion of its ditch that it is not a round barrow although it does have a rounded centre. When first seen in 1976 these features were interpreted as a medieval motte with inner and outer bailey and whilst confirmation ultimately depends on excavation this would seem to be the most acceptable interpretation at the moment.

Assuming these works to be medieval the gently curving ditch south of the road which closely resembles and almost intersects with the Iron Age enclosure ditch is almost certainly a medieval furlong boundary. There are perhaps four weakly defined strip lynchets on the southern slope between road and floodplain and at least two of them coincide with ditch cropmarks. Significantly, they parallel the line of what has been proposed as the outer bailey of Bishopstrow Castle.

Further to the south, towards the edge of the floodplain, cropmarks indicate the presence of a pit alignment obliquely traversed by a straight ditched trackway. Pit alignments are generally considered to be a later prehistoric phenomenon though their function has never been satisfactorily explained. The ditched trackway is however aligned on the nearby Pitmeads Roman villa and hence is probably of Roman date.

North of the Iron Age enclosure the holloway may be seen to curve around the line of the outer bailey and to have a ramped spur approaching the west side of the motte which occupies the highest point of the site. From here the land slopes away to a sinuous stream course beyond which cropmarks hint at a junction of drove ways within perhaps a pattern of enditched paddocks.

3. EXCAVATIONS OF 1981 AND 1983

Bishopstrow Farm was merely one of three generally similar 'pit cluster' cropmark sites discovered in the floor of the Wylye

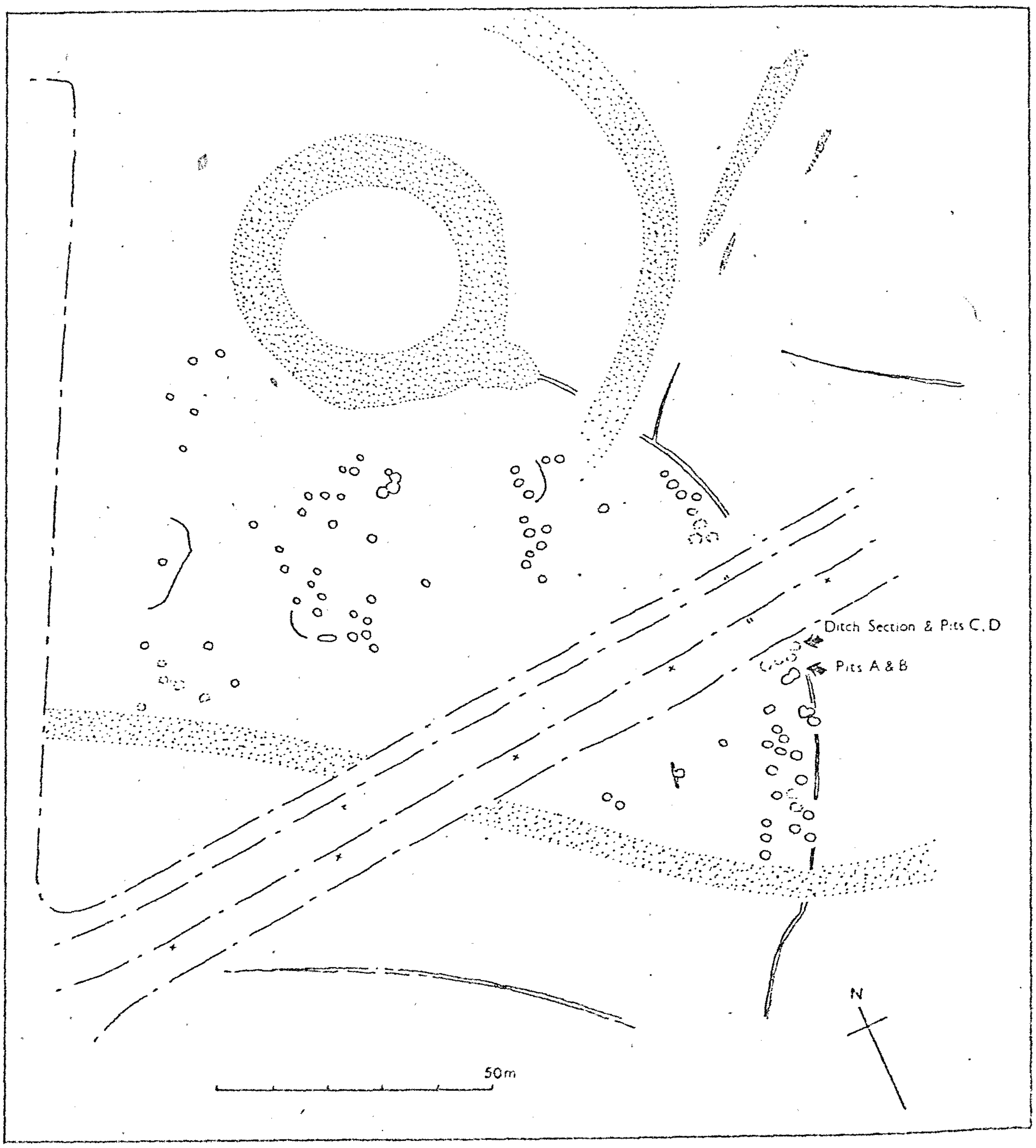


Figure A2·3 BISHOPSTROW FARM - detail of the Iron Age settlement valley during the one flight. The others are marked on Figure 1 as NEF (North End Farm) and MF (Manor Farm). The shared characteristic of clustered pits suggested they were all of Iron Age date but when field walked for dating evidence none was forthcoming although all three were marked by the same relatively dense scatters of burnt stone. In an area noted for its abundance of Iron Age hillforts and enclosures these three newly discovered sites in the valley floor seemed to represent a new dimension of the prehistoric settlement pattern and as such it was resolved to investigate them further. The principle aim was to secure dating evidence by small scale excavation of selected features showing as cropmarks on air photographs.

The Bishopstrow Farm site was selected as the primary target because the quality of the air photograph and the abundance of reference points for triangulation (roadside lights etc) offered the best prospect for locating features at the first attempt. This proved to bee the case. In January 1981 a small trench was opened over what appeared on the air photograph to be a particularly dense cluster of pits at the eastern edge of the settlement immediately south of the modern road (see location in Figure 3). Removal of the ploughsoil revealed the outline of two intersecting pits. They were excavated to a depth of 0·4m only simply to recover a representative artefact sample which, as suspected, proved to be of Iron Age date. In the course of this initial excavation a human burial was partly exposed but in view of the restricted aim of the 1981 excavations it was not excavated further. In 1983 a more ambitious programme of excavations was planned. Its aims were to investigate the stratigraphic character of a bank formed at the edge of the nearby floodplain (see Figure 2) and to further investigate the date and character of the settlement.

Banks formed at the edge of floodplains are a common topographic feature in the chalklands and, as Bell (1981a) has suggested, they potentially contain a wealth of information about early occupation of valleys. They have rarely, if ever, been excavated as archaeological features probably because they are normally regarded as natural formations.

In May 1983 a trench was opened across the floodplain edge bank at Watery Lane with a view to determining the processes by which

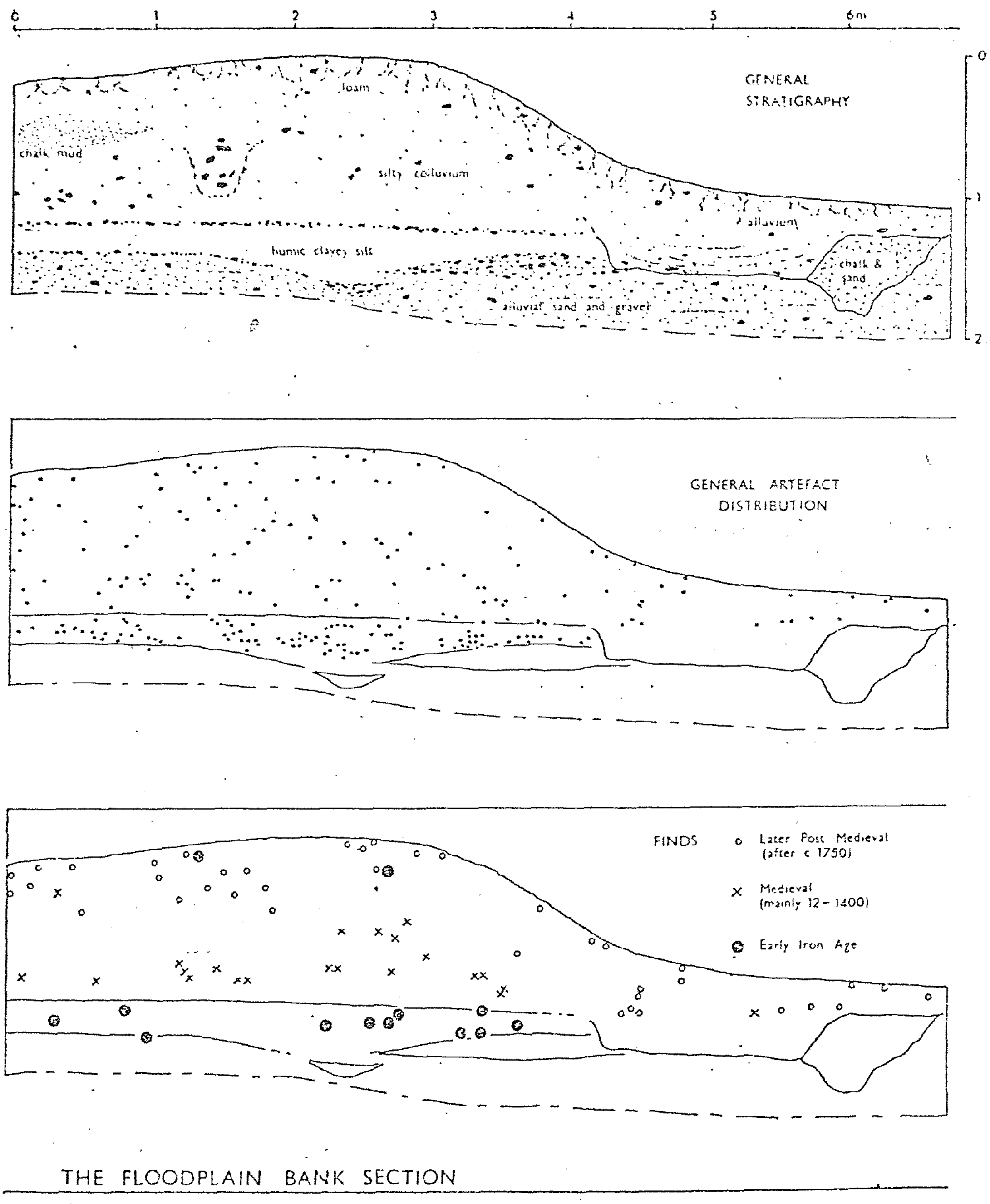


Figure A2·4 Watery Lane - stratigraphy of the fllodplain edge bank it was created and whether the close proximity of an Iron Age settlement could be detected. When work on the site resumed in September investigation of the floodplain bank was extended by sinking a small test pit 5m north of the earlier trench but the main objective of the season was more extensive investigation of Iron Age settlement.

4. WATERY LANE - excavations at the floodplain edge

Never was a site more aptly named. The combination of unseasonally high water table and torrential rain led to a situation where the excavation had to be baled out every thirty minutes or so. But despite this surfeit of water and the unwelcome attentions of a herd of cows which regularly broke through (and partially consumed) the protective fence to inspect the workings sterile floodplain deposits were eventually reached at an average depth of 1·60m.

The main trench, measuring 6·75m in length by 0·75m wide, was laid perpendicularly across the floodplain bank so as to encompass part of the modern floodplain. It was rapidly excavated to natural and then, to recover the sediment/artefact sequence, a lateral control strip 0·25m wide was carefully exploited by 0·10m spits with all finds being positionally recorded on the emerging section. A total of 251 artefacts were retrieved and recorded within this narrow control strip. Their distribution and relationship to the observed sediment sequence is summarised and illustrated in Figures 4 and 5.

4·1 The Sediment Sequence
(profile description at 2·5m along horizontal datum)

m	
0 - 30	blackish brown humic loam containing much decayed wood, roots and plant material. (The modern turf line formed around surviving vestiges of the former hedgeline).
30- 40	transition zone.
40- 55	grey black sandy silty colluvium with scattered small flints. Diffuse lower boundary.
55- 100	grey black to buff brown silty colluvium with scattered small flints and chalk flecks.

100-120 blackish, virtually stoneless silt containing common chalk flecks.

120-130 (Upper stoneline). Level horizon of rolled flint gravel and rounded chalk pellets in a matrix of blackish alluvial silt.

130-145 (Boundary Midden). Band of virtually stoneless black silt containing a profusion of charcoal, burnt plant material and animal bone fragments.

145-152 (Lower stoneline). Undulating horizon of rolled flint gravel and chalk pellets in a matrix of greenish black clayey silt.

152 - Sandy silts and gravels. In the uppermost horizons the silts are mottled grey black/brown grey and interspersed with lenses and braids of rolled flint gravel and rounded chalk pellets. Below this the chalk fraction diminishes and the sandy silts take on a more homogenous texture and hue (greenish grey).

4·2 The Artefacts and their distribution

The characterisation and dating of medieval and post-medieval finds was based on research carried out by the author in investigating and reporting the excavations of a stratified occupation sequence within the nearby town of Warminster (Canham and Smith forthcoming). Post medieval - the Emwell Street excavations in Warminster demonstrated that the town and its hinterland received most of its pottery from an anciently established industry at nearby Crockerton. This is certainly true of the period 16th to 18th centuries when Crockerton products are usually the only ones found but in the later 18th century the situation changes. Crockerton coarsewares begin to be replaced by those from the highly successful industry centred on Verwood in Dorset and the fineware market is captured by a wide range of entirely new types including tin glazed earthen wares, stonewares and porcelain emanating from Staffordshire, Bristol and various other distant sources. In stratified sequences Verwood and Crockerton coarsewares are virtually mutually exclusive with the former always overlying the latter. This is indeed the pattern in the Watery Lane lynchet - a context which would not necessarily be thought of as stratified. The only anomaly in the distribution is a pocket of 17th/18th century Crockerton sherds

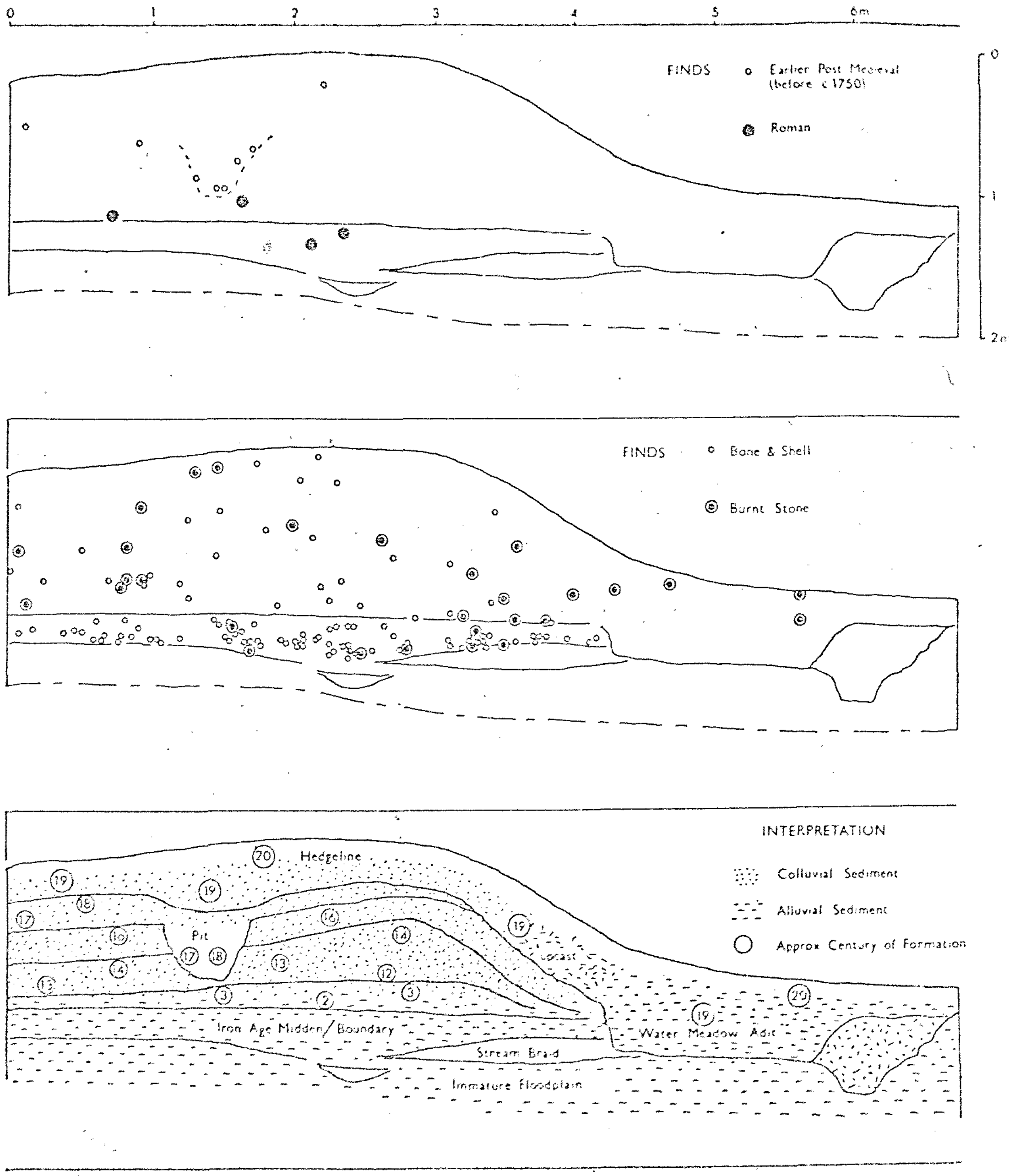


Figure A2•5 Watery Lane - stratigraphy and interpretation found within a small stone packed pit cut into medieval layers at 1·5m along the datum.

Medieval - almost exclusively derived from the Crockerton industry medieval pottery in the lynchet spans the period 12th to 15th centuries though most would best be paralleled in 13th and 14th century assemblages from Warminster. The distribution shows no real anomalies but, apart from one sherd which is clearly residual, the pattern stops short of the floodplain, appearing to rise in the form of a bank under what is today the crown of the lynchet. At the tail of the bank is a band of colluvium approximately 0·30m thick which contains animal bone and burnt stone but which falls between the medieval and post-medieval pottery distributions. It may be suggested that it was deposited at a time, perhaps in the 16th century, when domestic pottery was not being incorporated in refuse mucked out onto the fields as manure.
Saxon pottery or indeed any other recognisable artefact of that date was not encountered and to judge from the manner in which medieval distributions directly overlay Roman ones lynchet formation stood still at this time.

Roman - four small and rather badly eroded fragments of Samian and colour coated wares cannot be closely dated but are thought to have been deposited within the 2nd or earlier 3rd centuries perhaps during a brief episode of cultivation on the adjoining slope. Two sherds occupy a mixed alluvial/colluvial horizon sandwiched between medieval and Iron Age distributions but two were also recovered within the latter. This anomaly is best explained by their context - a soft, yielding lens of alluvium covering a relict stream bed. It is assumed that they were displaced from their original context by an agency such as trampling.

Iron Age - as previously noted, silts between the two stonelines contain an abundance of sheep, cattle and pig bone. In contrast to material from overlying parts of the lynchet which was customarily highly fragmented and well weathered that from the Iron Age horizon was well preserved and frequently clustered in groups of complete or even semi-articulated bones (eg. mandible/skull, metapodial/phalanges). The Iron Age material clearly includes much butchery waste although since meat yielding bones and pot sherds are also present some of the debris must derive from domestic contexts, The pottery assemblage is not large and it lacks diagnostic forms but on the basis of fabric it can be matched to assemblages retrieved from the nearby early Iron Age settlement reported below. Sandstone quern fragments and rubbers, so common in the settlement, also occur at this level though nowhere else in the lynchet.

Apart from the abundance of waste animal bone, the other notable characteristic of the Iron Age 'midden' horizon is the quantity of charcoal and burnt plant material present within it. Much of the charcoal could simply derive from refuse dumping but the plant material could be seen during excavation to have burnt in situ. No attempt was made to remove samples for further investi - gation but the plants involved include reed and tall stemmed grasses which appear to have been cut and thrown onto the midden possibly to fuel fires designed to sterilise it.

4·3 Interpretation

Since silts and gravels at the base of the sequemce were archae-ologically sterile and lacking organic matter they probably rep-resent material transported in free flowing water from the upstream area. Greensand outcrops alongside the site which explains the predominance of sandy silt but the chalk and flint gravel has been transported at least 5km from chalk outcrops around the Deverill valley. It is possible that some of this material was introduced into the river system as a result of erosion triggered by human disturbance of the local environment but the inorganic nature of the sediments perhaps argues against such an explanation. It is safer to assume that they simply reflect channel reworking in what appears to have been an unmanaged river system. The presence of two gravel braids and particularly the mottling of the uppermost sediments testify to a phase of seasonal or at least intermittent drying out of what had formerly been a permanent water course.

Though presumably still waterlogged for much of the year the context eventually dried sufficiently for vegetation to establish and it was upon this undulating marshy surface that the early Iron Age midden began to accumulate. If, as seems likely, the lower stoneline results from faunal sorting then there was an appreciable delay between the establishment of a vegetation cover and the commencement of refuse dumping.

With reference to subsequent development of the feature and the distribution of midden deposits at its base it may be suggested that prior to the start of refuse dumping a boundary had been newly established at this point - in effect reclaiming marshy waste from the floodplain edge. Physical evidence for a boundary work was not seen but cropmarks on the air photographs do show a pit alignment traversing the lower edge of the field towards the excavation (which was too narrow to be sure of cutting one of the pits in section). As to the midden itself it is clearly contemporary with the nearby early Iron Age settlement and may be taken to represent controlled disposal of butchery debris and other noisome waste away from the residential area. That it also served to consolidate and ultimately improve a newly claimed strip of marshy waste was probably of secondary importance.

The pre-Iron Age floodplain edge would therefore lay further to the north and inspection of the topography does reveal that behind the lynchet the land remains relatively level for 15-20m at which point it begins to rise more sharply.

If the upper stoneline represents formation of a new turf line over the midden after dumping ceased then a break in the artefact sequence suggests the site was little disturbed between the early Iron Age and the mid Roman period. The thin scatter of 2nd and 3rd century AD pottery occurs at a point in the sequence where the nature of sediment being deposited changes from water laid alluvium to slope eroded colluvium. Whilst still subject to seasonal waterlogging the context had evidently become sufficiently dry for most of the year to be considered viable for arable use. Thereafter the feature developed piecemeal in the manner of most chalkland field lynchets. Little growth took place during the later Roman and Saxon periods but from the 12th century onwards the bankgrew at an average rate of 0·20m each century. Thus the boundary initially established in the early first millennium BC was perpetuated as colluvium built up over it and progressively spilled forward into the floodplain. At various times in its history the line of the bank was re-affirmed; there are hints of a hedgeline on its crown in the late medieval period, followed by a 17th century fence, in turn followed by another hedge in the 19th century. When this last hedge was becoming established a broad shallow ditch was cut across the face of the bank replacing an earlier but undated vee-cut ditch, both probably associated with operation of a water meadow system.

4·4 Conclusions

If the Watery Lane example is typical of what may be found else where floodplain edge banks are potentially invaluable sources of evidence from which to reconstruct prehistoric settlement records, land use strategies and palaeoenvironment within valleys. The investigation failed to locate pre-Iron Age horizons but did at least point to where they will be found. To compensate further it also demonstrated an important development in earlier first millennium bc land use strategy - the reclaimation of river edge waste. Such a development has been hinted at in the context of the Severn valley by Brown's (1982) work on polleniferous floodplain peat and by Shotton's (1978) study of alluvial sediments but the Watery Lane evidence goes one step further by showing how the process was organised and how it relates to contemporary settlement patterns.

Somewhat incongruously this reclaimation of wetland resources takes place against a background of deteriorating climate. Indeed, Turner (1981) and others have suggested that the early Iron Age marks a culmination of the trend towards wetter conditions. How then is the evidence to be interpreted? At Watery Lane the signs are that the floodplain, if it can really be called that, was already drying out before it began to be colonised though whether this was a natural development or one prompted by drainage works is not clear. If one accepts Turner's picture of contemporary climate then improvements in the drainage of the Watery Lane site must, like the establishment of the boundary midden, be regarded as part of an organised and effective attempt to 'improve' marshy waste. That such enterprises were being undertaken in the face of the wettest climatic episode in prehistory suggests there was unprecedented pressure on land resources. In the context of Watery Lane the close proximity of a settlement no doubt had some bearing on local land pressure but in the evidence beginning to accumulate from the Severn valley and elsewhere one may envisage that pressures were felt more generally than the immediate confines of the western Wylye valley.

A further facet of the investigation which warrants attention is the observation that the Iron Age boundary midden horizon lies more than 0·30m below the level of the modern floodplain. In the Thames valley Robinson (1981, 270) has reported closely comparable situations with Iron Age occupation horizons being covered by up to 0·50m of alluvium. Whilst it would be wrong to assert that alluviation in the sense of widespread deposition of organic sediment is exclusively a phenomenon of later prehistory and the historic period there is no reason to doubt Limbrey's (1978) suggestion that floodplains as they are usually conceived of are a comparatively recent landscape development. It is surely more than coincidence that at Watery Lane deposition of organic alluvium starts at the same time as the first tangible attempts to intensively exploit the river edge are recorded. One may also ponder on the potential for discovering other intact prehistoric occupation evidence elsewhere in the Wylye floodplain.

4·5 The Extension Pit

When excavation of the Watery Lane floodplain bank was first considered there seemed some likelihood that it might contain a sediment sequence spanning the entire history of agricultural land use in the area. There is certainly abundant field evidence, in the form of flint scatters and barrow monuments, for Neolithic and Bronze Age occupation in the vicinity but in the event of excavation earlier prehistoric sediments were not encountered. The distribution of Iron Age and later artefacts showed that the bank had formed by sediment creeping forward beyond some primary boundary.

To determine whether earlier prehistoric sediments lay further up slope a test pit 1·5 by 1m was sunk 5m north of the main trench. This in fact showed the same type of sequence as previously, thinning to the north. The absence of pre-Iron Age deposits in the test pit can be taken to indicate that reclaimation of the floodplain was not a process of progressive encroachment but was more in the nature of a Late Bronze Age /early Iron Age 'event' - the result of a concious and calculated decision to do so.

5. EXCAVATIONS WITHIN THE IRON AGE SETTLEMENT

It should perhaps be emphasised at this point in the report that excavations within the Iron Age settlement have sampled only a timy fraction of the evidence it potentially contains. From the outset the intention was simply to secure stratified occupation material partly to provide clues to the date of the settlement itself and partly for comparison with material recovered from the base of the nearby flood-plain edge bank. In the event the excavation did more than merely satisfy these limited aims it also furnished valuable evidence on the character of the settlement. The evidence, derived from partial excavation of four storage pits and a section of the enclosing ditch is reviewed below.

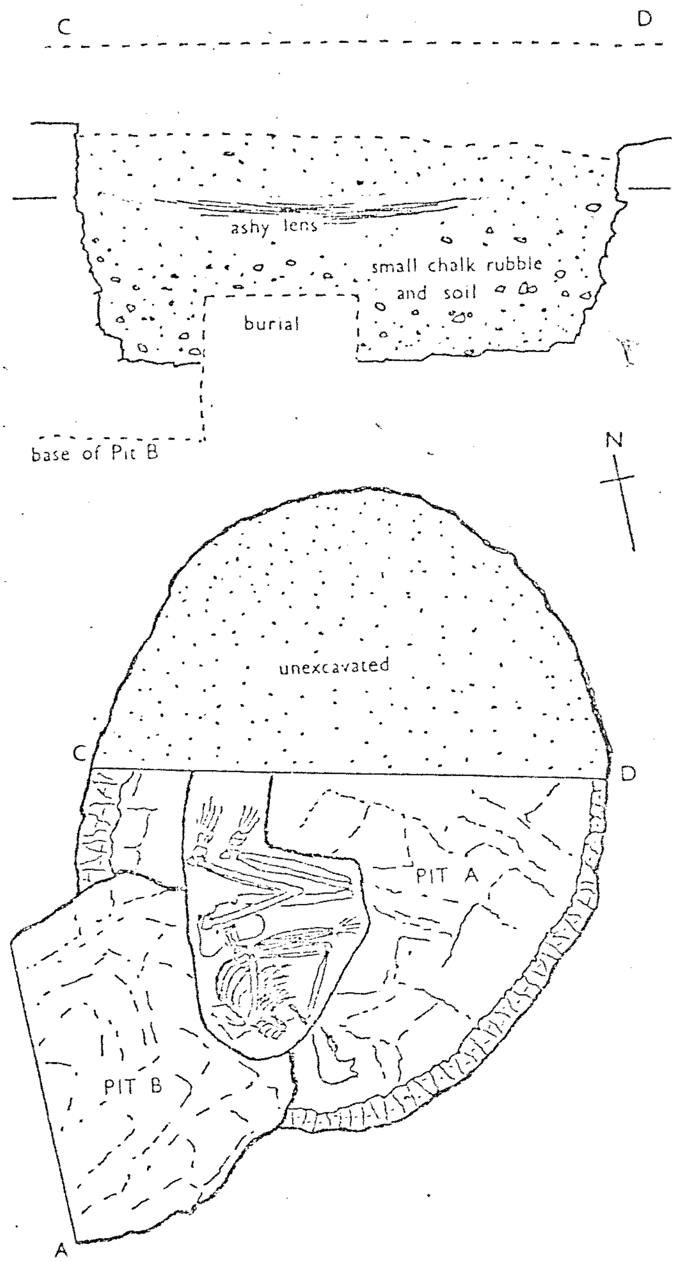
5.1. Pits A and B (Figure 6)

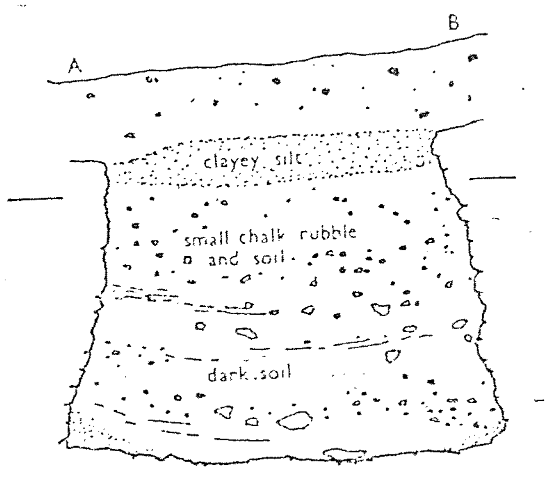
As noted in paragraph 3, these intersecting pits were first encountered in 1981 though investigation was, of necessity, cursory. In the 1983 season both pits were half sectioned so as to fully expose not only their filling sequence but also the burial observed in 1981. Pit B, the earlier and smaller of the pair, appears to be oval in plan (1.2 m by ? 1.50 m) with an inward sloping (bell shaped) profile cut 1.2 m deep into chalk rock. Almost certainly it originally served as grain storage silo, probably being reused several times before being infilled with soil, settlement refuse and a little chalk rubble. Skeletal remains of field voles in fans of chalk wash in the bottom corners of the pit testify to it being open to the elements for a short time before infilling commenced and banding in the fill suggests that this was not accomplished in one operation although since the walls are not weathered infilling was not a prolonged affair.

Pit A differs in several respects. It also is oval in plan but is significantly larger (2.4 m by 1.9 m), shallower (.85 m) and of a different (cylindrical) profile. The density of domestic refuse within the fill is markedly lighter than in pit B and filling was achieved in one or possibly two operations. The first operation involved the burial of a young adult male. Though the burial is separated from the

Figure A2·6

PITS A and B





base of the pit by 5 cm of soil there are no stratigraphic indications that this primary fill is anything other than part of the inhumation process. Once inserted in the pit the body was covered with 60 cm of soil containing a little residual refuse and a lens of hearth debris (charcoal, ash, and a mass of calcined flint spalls) associated with unburnt red deer antler. Whether the hearth and antler were part of the funerary ritual is as problematic as deciding whether the apparently deliberate decision not to tip domestic refuse in the pit was out of deference to the deceased. A further question which should be considered is whether the pit was dug to accommodate the burial or whether it was merely re-used after becoming redundant in an earlier role. It is certainly far larger than was necessary for burial purposes and yet its size and particularly its shallowness would seem not to favour earlier use as a grain storage silo but further speculation would be pointless.

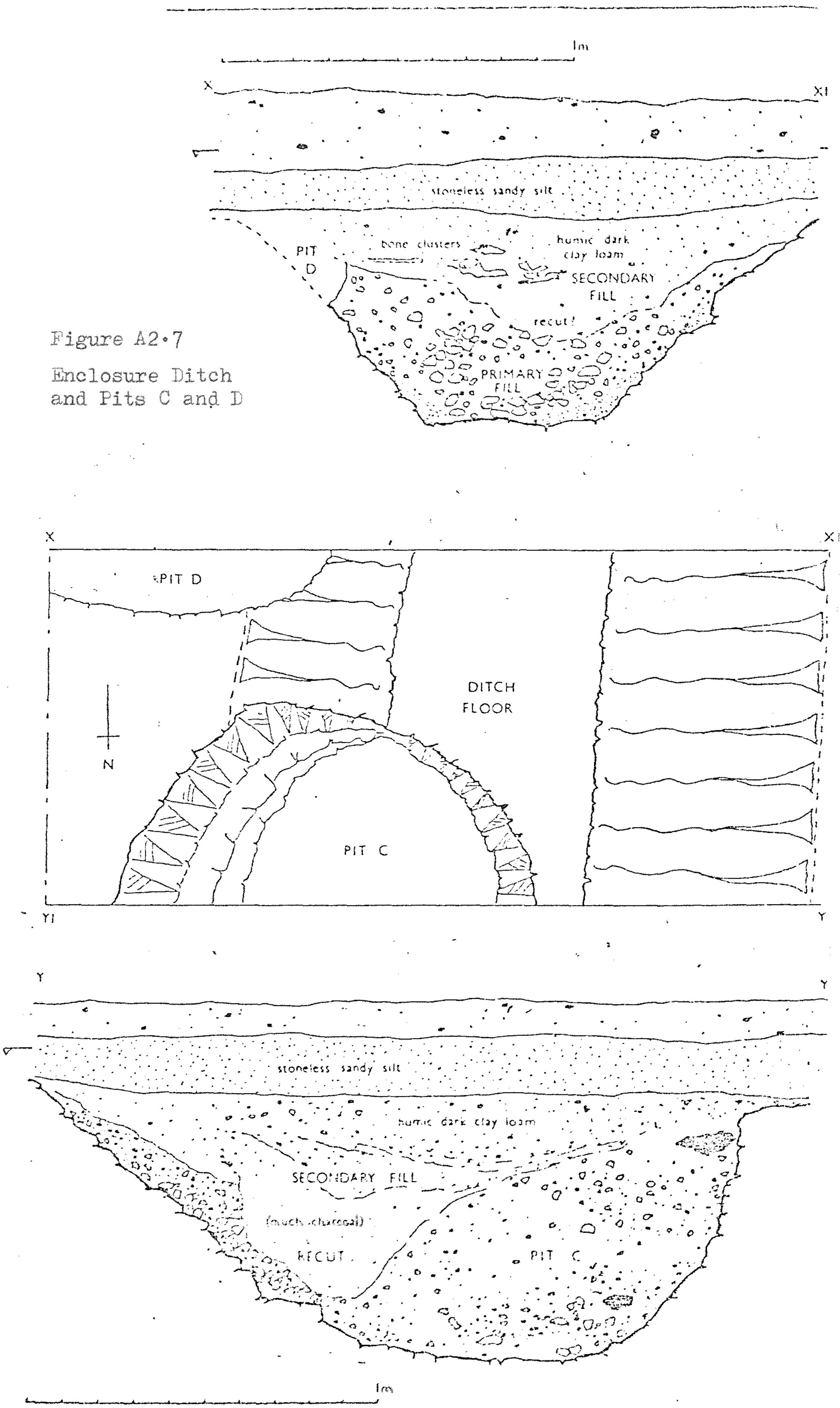
5.2. The enclosure ditch and pits C and D (Figure 7)

Using the photographs as a guide a trench 1 m wide was laid out across an area which contained a profusion of pit-like disturbances straddling the line of the enclosure ditch. This palimpsest area was selected so as to maximise the chances of observing stratigraphic relationships between the various features so obtaining a better idea of the chronology and character of the settlement. Within the 1 m wide sample cutting two pits were observed to intersect with the enclosure ditch which itself showed signs of a complex history.

As suspected the ditch is the earliest feature. It had been dug .60 m deep into chalk rock with a flat bottomed vee-cut profile. At its base it was .55 - .60 m wide and across the shoulders it was 1.60 m wide. Although the evidence is not conclusive patterning of the primary fill suggests the associated bank was located internally. The bank and ditch would clearly not have been of defensive proportions, indeed, to judge by the loose nature of chalk rubble in the primary fill, the bank may well have been deliberately pushed back into the

Figure A2·7

Enclosure Ditch and Pits C and D



THE DITCH CUTTING

ditch not too long after its creation. Corroboration of the assumption that the enclosure work had become redundant at this stage is provided by the digging of pits C and D into the eastern flank of the levelled off ditch. Pit D was not investigated beyond exploring its relationship with the ditch fill but pit C was half sectioned and would seem to represent a small disused grain storage pit. Both contained a heterogenous fill of occupation soil and small chalk rubble.

Rather incongruously, after the old enclosure ditch had been infilled and disturbed by pit digging, its line was re-established by a narrow and somewhat irregular recut. The recut, in turn, became infilled first by humic, virtually stoneless silt containing much charcoal and then by a secondary deposit of humic clay loam mixed with clusters of noticeably unweathered animal bone.

Extending overall, as in the case of pits A and B, was a .15 m thick layer of stoneless sandy silt toally different in both colour and texture to the modern ploughsoil which overlies it. The origin of this, apparently greensand derived, silt on a site located on Lower Chalk defies simple explanation for it is not merely an element of fill in features it was observed wherever the ploughsoil was stripped, even over undisturbed chalk.

5.3. The Human Burial in Pit A (Figure 8)

Within the southern half of pit A and lying within the fill rather than directly on the pit floor was a human burial. The body had been laid, with head to the south, on its right side with legs flexed and arms neatly folded across the chest. The head was slightly crouched forward and arranged to face east. It was identified as a young adult male (18 - 22 years) with a stature of 1.62 - 1.64 m. With the exception of ribs, vertebrae and the fringes of the pelvis the skeleton was generally in sound condition. Multiple fractures and a certain amount of crush damage were noted on the lower leg boes and the ulnas of both arms were also fractured. In the case of fractures to the lower leg bones it could be seen that this damage

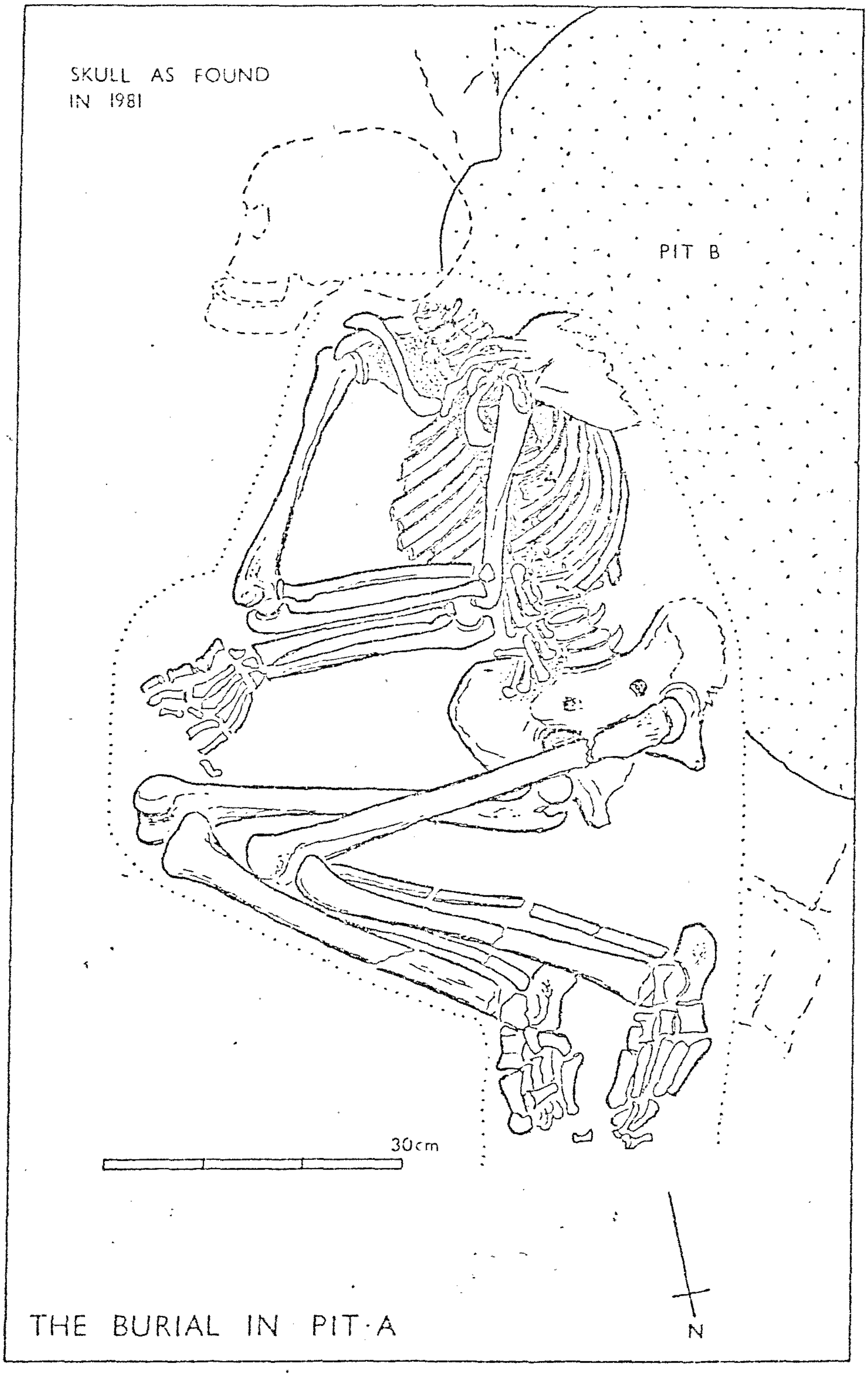


Figure A2·8

arose as the body settled over stones in the underlying fill and there is no reason to suspect that any of the damage is not post-depositional. There is therefore no clue as to cause of death. No significant manifestations of arthritis were seen, though in-life tooth loss, damage and decay seems to have been chronic.

With regard to funerary rite it has already been noted that inhumation took place with some fill already in the pit and that, with the exception of hearth debris and an incomplete red deer antler, deliberate inclusion of domestic refuse in the remaining fill seems to have been avoided. There is no conclusive evidence for the provision of grave goods though the antler overlying the body and a horse mandible found on the pit floor partly beneath the skull are somewhat exceptional in a pit that otherwise only produced small, generally weathered bone fragments. Similarly, although numerous greensand rubbers were scattered throughout the pit fill, one was retrieved from between the thighs and heels and another in such a position as to suggest it had originally been clasped by the left hand. The neat arrangement of the arms and, less probably, the legs suggests that the corpse may have been bound prior to interment.

In terms of its context and arrangement the Bishopstrow Farm burial belongs to a class of pit inhumations recognised by Whimster (1981) as typical of the chalklands of central Wessex. It is rather more common for the body to be laid on its left side with head to the north but the Bishopstrow Farm orientation is by no means rare. What does mark it as an unusual find is the date of the context. Burial and infilling of the pit were performed at much the same time - there is no evidence for the grave being cut into an earlier pit. Whilst most of the artefacts within the fill are probably residual in the sense that they were inadvertantly incorporated when scraping up soil around the pit none of the pottery can be dated later than the 6th century bc and to judge by its condition, particularly the friable haemetite coating on furrowed bowl sherds, it could not have lain exposed to the elements for long. The inhumation is therefore to be dated within the early Iron Age at least two centuries before similar methods for disposal of the dead began to be practiced in the Wessex chalklands (Whimster 1981, 191). As Whimster notes "the evidence for the methods of disposal used between circa 1000 bc and 400 bc is almost non-existent and prohibits the definition of any distinctive recurrent burial types. This scarcity is so striking that it would now seem possible to argue the existence of a burial technique that by definition leaves no visible archaeological trace of itself. (Whimster 1981, 190).

To obtain a better understanding of the chronology of Iron Age pit inhumation dated examples from the Wessex chalklands, as listed in Whimster's gazetteer, were studied. It was found that 71% belong to the period 1 st century AD - 1st century BC, 25% to what has generally been termed the middle Iron Age and only 4% to the period before 300 BC. Of these early burials none are known to be associated with furrowed bowl pottery assemblages which characterise the late Bronze Age/early Iron Age transition in central Wessex. The Bishopstrow Farm pit inhumation would therefore seem to be either an anomaly or the progenitor of a rite that would eventually become ubiquitous. Its apparent chronological isolation and the apparent lack of funerary evidence for the earliest Iron Age are probably related phenomenon and in seeking to understand them it has been noted that, so far as the author is aware, Bishopstrow Farm is the only valley sited settlement yet investigated by modern excavation. The data upon which Whimster and others have based their interpretation of Iron Age funerary rites are drawn principally from occupation sites and enclosures located on hilltops, hillsides and the higher downland. One is tempted to suggest that further research within valley sited settlements will eventually fill the apparent gap in the later prehistoric burial record but of course, until such work is undertaken, this is merely speculation. It also seems likely that recent revision and back dating of pottery assemblages formerly known as Iron Age 'A' (Barrett 1980) would correspondingly backdate pit inhumations associated with them - effectively filling at least the later part of the gap defined by Whimster who seems not to have taken this factor into consideration.

5.4 Pottery and Ceramics

The assemblage reported here consists of 424 pottery sherds and 15 daub fragments recovered from the partial excavation of the flood-plain bank, four pits and a section through the primary and secondary hill of the enclosure ditch - all stratified contexts. Since no other comparable groups from this part of Wessex have been adequately reported this admittedly small assemblage is discussed in some detail.

5.4.1. Fabrics and Forms

Initial sorting produced 15 fabric variants although there are essentially only three quantifiable and significantly different groups within the assemblage. Each embraces a good deal of variability resulting from different standards of clay preparation, firing and surface treatment but to attempt a rigourous subdivision on the basis of these differences would be somewhat artificial and, in an assemblage of this size, of doubtful significance.

Group 1 Sand and Quartz Gravel - by far the most common fabric on the site in all contexts and, as would be expected, of local origin (see discussion below). Essentially a rather fine textured clay naturally containing a high proportion of fine sand and variable quantities of mica, altered glauconite and waterworn quartz gravel. Somewhat rarer, but still potentially natural inclusions, are irregular pieces of chalk, greensand rock and minute shell fragments. Flint, usually well calcined, is a common inclusion though not a ubiquitous one. In some cases the large size and angular form of the flint inclusions make it clear that they are a deliberately added tempering agent but it is possible that some of the small sub-angular fragments are natural inclusions. Another regularly occuring tempering agent is vegetable matter being sometimes present in conspicuous quantities. It is noticeable that the grade of sand naturally included in this fabric is generally fine in earliest groups but quite coarse in the latest groups reflecting perhaps, the gradual working out of the best potting clays. With regard to inclusion type, standard of preparation, firing and finish two sub groups are recognised:

1a - Fineware-- a generally hard, fine, sandy, micaceous fabric, with a distinctive powdery feel when handled. When adequately fired it is uniformly grey in section with brown to black brown margins though this is frequently modified by the addition of a slip coat, particularly one containing haematite. Whilst conspicuous inclusions are uncommon some sherds do contain angular flint slivers up to 10 mm in length though they are normally worked into the body of the pot to avoid spoiling the surface. The most common form is a carinated bowl with furrowed shoulders haematite rich slip coat and burnished surfaces though some examples have only one of these attributes. Two bowls have omphalos bases and there is at least one large carinated bowl with geometric arrangements of furrowed lines around its shoulders.

1b - Coarseware - a medium hard sandy fabric with variable quantities of mica, waterworn quartz, flint, vegetable matter and less commonly chalk, greensand rock and minute shell fragments. It fires to a wide range of colours though mottled black/brown surfaces with dark grey cores are perhaps the norm. Vessels generally have markedly thicker bodies than those in fabric 1a (averaging 9 mm as opposed to 5 mm for 1a), and are much less frequently given any special surface treatment. Burnishing is present on necks and shoulders of some of the finer jars and at least one bears a maroon brown slip coat on its exterior. Jars are the predominant form, sometimes with clearly angled shoulders, sometimes of globular form and sometimes with everted rims. At least one vessel originally bore a pierced lug on its shoulder. Decoration, where present, consists chiefly of rows of finger tip or nail impressions on shoulders and rim exteriors though wide spaced incised girth grooves and less formal arrangements of finger dimples and grooves were also noted. Whilst no examples are worthy of illustration a significant proportion of the sherds belong to small plain bowls rather than jars but nothing as small as a cup was observed.

Group 2 - Oolitic Limestone - a soft to medium hard fabric whose main distinguishing feature is the presence of abundant rounded oolites which are conspicuous even on the surfaces of more carefully finished vessels. In some instances the oolites on the interior of jars have burnt out or been dissolved in use leaving a surface pockmarked by hemi-spherical voids. Vessel forms comprise a range of generally small and undecorated jars and bowls. There is a single example of a small bowl with haematatite slip coating on the rim exterior.

Group 3 - Shelly Limestone - a soft to medium hard fabric with variable quantities of fossil shell, sub angular limestone fragments and vegetable matter. In some sherds shell predominates to the almost total exclusion of limestone fragments whilst in others the reverse is true. Vegetable tempering is common but not conspicuous. There is perhaps one sub group which could be defined as fineware element of this fabric. It is characteristically medium hard with a profusion of small ($\leqslant$ 1 mm) shell fragments and no readily visible limestone inclusions. Sherds in this fineware sub group (3a) are rare. In the main group (3b) forms range from very large parallel sided storage jars to smaller globular jars to rather crudely made small bowls generally with simple rims. Surface treatment is not at all common but isolated sherds exhibit slip (including haematitic) coating and burnishing. Decoration in the form of finger tipping, grooving etc is conspicuously absent.

Group 4 - Miscellaneous - collectively an assortment of rarely occurring fabrics that do not belong to any of the groups listed above. They are presented as a group purely for statistical purposes. The range includes a very friable fabric tempered with sand and iron oxides; there is also a single sherd from a well made haematite coated furrowed bowl rendered in a hard granular sandy fabric reminiscent of medieval pottery from Salisbury and its environs.

Group 5 - Daub and fired clay - a generally fine, soft and rather sandy fabric with jumbled structure and occasional ? natural inclusions of chalk lumps, flint fragments and vegetable

Figure A2·9 <u>POTTERY FABRIC ANALYSIS</u>

CONTEXT

FABRIC	ditch primary fill	pit B	pit A	pit C	pit D	ditch secondary fill	floodplain edge bank	overall fabric frequency
1a	33 (12)	15 (15)	10 (7)	7 (2)	0	6 (6)	8 (13)	12 (10)
1b	67 (88)	68 (57)	66 (68)	66 (83)	100 (100)	86 (83)	84 (81)	70 (67)
2	0	7 (9)	3 (2)	20 (11)	0	0	0	4 (5)
3a	0	0	2 (1)	0	0	0	8 (6)	1 (1)
3b	0	10 (19)	17 (19)	7 (4)	0	8 (11)	0	12 (16)
4	0	0	2 (3)	0	0	0	0	1 (1)
No. sherds	18	127	193	15	2	56	13	424
Weight (gm)	122	1612	1390	102	10	695	68	3999
Mean sherd weight (gm)	6·8	12·7	7·2	6·8	5·0	12·4	5·2	

nb. figures in parenthesis refer to percentage frequency <u>by weight</u>, others to percentage frequency <u>by sherd count</u>.

binder. Most pieces have one smooth, flat or slightly convex surface and lacking any signs of firing they probably originate from pit covers or weather walls of buildings. A few pieces have pinkish margins suggesting some degree of firing and these possibly originate from oven structures as do those fired to a uniform grey black.

5.4.2 Analysis (Figure 9)

The analysis is arranged according to the likely chronological sequence of the contexts, noting that pottery from the floodplain edge bank beyond the settlement cannot be accurately placed within this sequence. Figures in parenthesis refer to percentage frequency by weight analysis, other by sherd count.

Values for average sherd weight indicate that refuse in pit B and in the secondary ditch fill derives from direct dumping of domestic waste whereas refuse in the other contexts would appear to have lain in an occupation soil or midden for some time before being finally discarded, though the delay need not have been a lengthy one to judge by the condition of the pottery. This is in keeping with the depositional character of each of the contexts as noted during excavation and as recorded in sectional stratigraphy. Whilst all but three of the contexts yielded too few sherds for reliable statistical analysis it is noticeable that the frequency of the main fabric groups remains relatively constant throughout, particularly in the analyses based on sherd count. There are, however, signs of a chronological pattern in the usage of different fabrics. Use of finewares appears to decline with elapsed time whilst assemblage variability after initially increasing also shows a decline. One would perhaps expect these two trends to be related.

5.4.3. The Illustrated Series (Figures 10 and 11)

Pit A:

1. Tall necked furrowed bowl, red haematite slip coated and lightly burnished. Fabric 1a.
2. Furrowed bowl, black brown burnished slip coating. Fabric 1a.
3. Carinated bowl, contrasting black brown burnished exterior, haematite coated interior. Fabric 1a.
4. Small urn shaped vessel lacking surface treatment but with finger tip/nail impressions on exterior of rim and shoulder. Fabric 1b. (cf Gunnington 1923 Plate 29.7)
5. Base of medium sized jar. Fabric 1b.

Other vessels (not illustrated) in Fabric 1 include - a short necked, haematite coated, furrowed bowl, a shouldered jar with incised geometric hatching across the shoulder and various other jar forms up to 40 cm diameter.

6. Small, well made, bowl of? globular form, with haematite slip coated exterior. Fabric 2.
7. Plain hemispherical bowl with roughly indented neck. Fabric 3b
8. Plain bowl of ? globular form, with crude beaded rim. Fabric 3b.
9. Globular jar. Fabric 3b.

Pit B:

10. Large carinated bowl with panels of alternately horizontal and vertical furrowing encompassed between horizontal furrows on shoulder and neck. Surface is treated with a patchy haematite slip coat and lightly burnished. Fabric 1a. (cf. Cunnington 1923. Plate 43. 1.)
11. Furrowed bowl with omphalos base and externally burnished dark bronze coloured slip coat. Fabric is close to 1a but not an exact match.

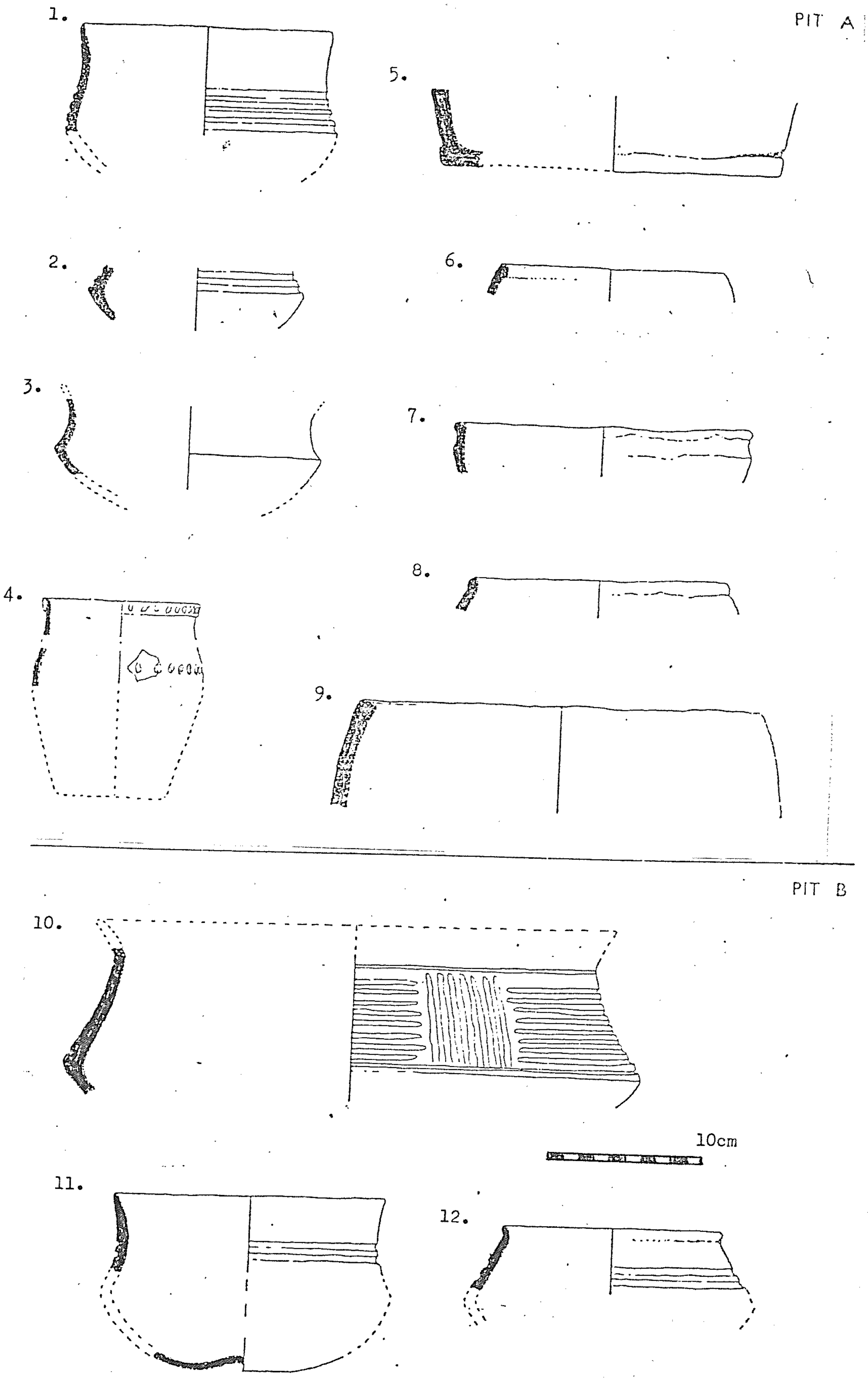
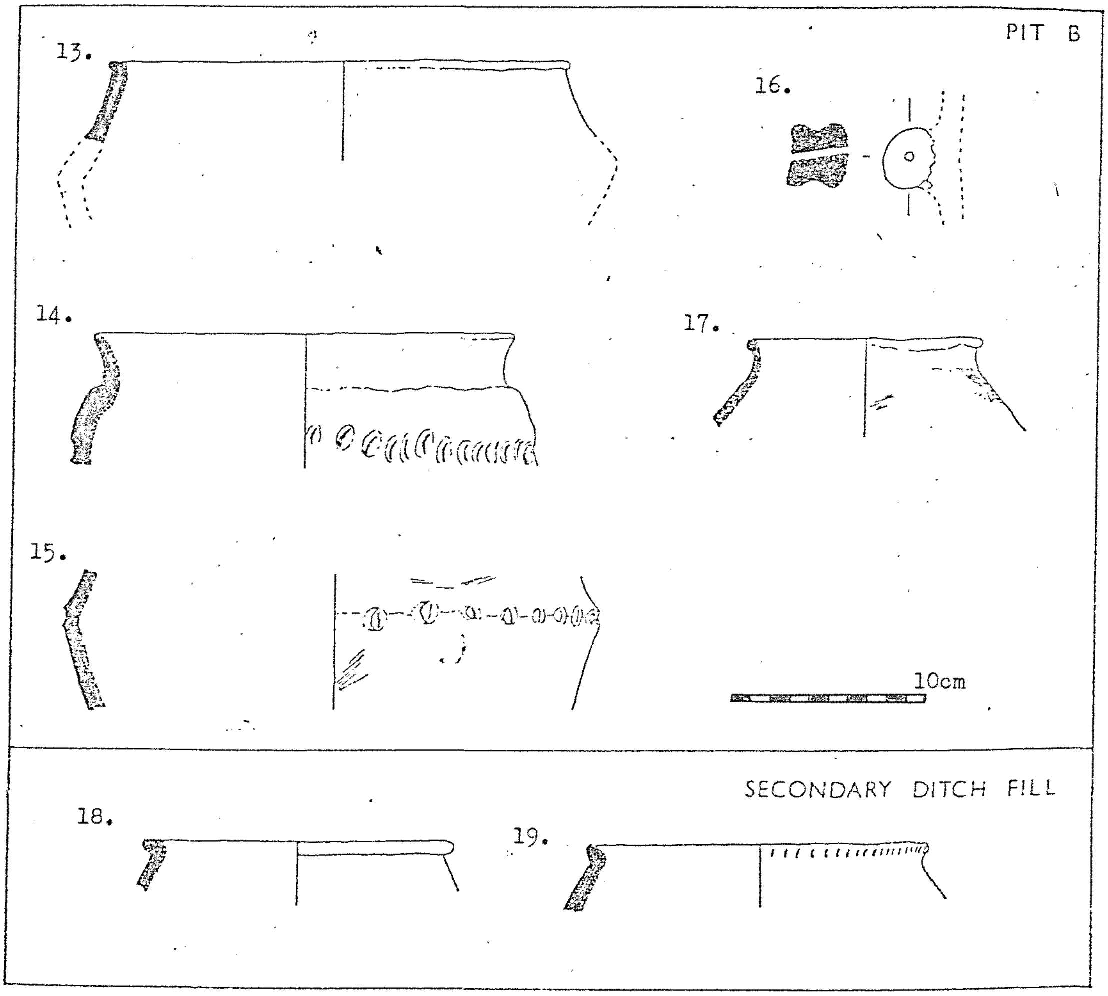


Figure A2.10 :

Figure A2·11



12. Small, short necked, furrowed bowl with haematite slip coating. Surface too eroded to determine whether it was originally burnished. Fabric 1a.
13. Lipped rim of shouldered jar. Highly burnished black brown slip coated exterior. Fabric 1b.
14. Shouldered jar with simple everted rim and rather roughly executed fingertip decoration around shoulder. Fabric 1b.
15. Shouldered jar with row of fingertip indentations on shoulder. Fabric 4b.
16. Pierced 'cotton reel' shaped lug. Fabric 1b.

Other vessels in Fabric 1, but not illustrated, include - a variety of carinated bowls, some furrowed, others merely slip coated; two further fingertip decorated jars and some burnished but otherwise undiagnostic sherds.

17. Globular jar with lipped and slightly everted rim. Fired uniformly black. Fabric 2.

Unillustrated vessels in Fabrics 2 and 3 include a variety of jar forms the largest of which would appear to be of barrel type.

Secondary Ditch Fill:

18. Club section rim of bowl with external haematite slip coat. Later (cruder) version of Fabric 1a.
19. Club section rim of jar with finger nail impressions around rim exterior. Late version of Fabric 1b.

Unillustrated vessels in Fabric 1 include - omphaloid base of bowl and a large barrel jar with fingertip decoration around girth.

5.4.4. Sources

Group 1 - it is clear from its overwhelming predominance in all contexts that Fabric group 1 ought to be of local origin and this is confirmed by its petrological character. Sherds in Fabric 1 are often indistinguishable from local medieval pottery as characterised in the recent excavation of stratified urban deposits at Emwell Street, in the nearby town of Warminster. (Canham and Smith, forthcoming). The industry responsible for these medieval wares is known to have exploited deposits of Gault and alluvial clay at Crockerton (located 3 km southwest of Bishopstrow Farm). In 1982, whilst monitoring trial pitting along the proposed route of the Warminster By-Pass the author was able to study these alluvial clays which were observed to contain a wide variety of natural inclusions - notably those recorded in fabric 1. Quite independently petrological and X-ray florescence analysis of pottery from the neighbouring and contemporary hilltop settlement on Longbridge Deverill Cow Down (Hawkes 1961) has indicated that it too drew its pottery or at least its potting clay from the same source (D.F. Williams, pers. comm.). Amongst the Bishopstrow Farm assemblages there are some sherds which could be interpreted as wasters but in default of more conclusive evidence the question of whether clay was transported to the site or worked at nearby Crockerton must remain unresolved.

Group 2 - Oolitic limestone and alluvial clays that may potentially have been of potting quality occur together in the vicinity of Frome (14 km west of the site) though there is no recorded evidence that they have ever been exploited for that purpose. A source even further to the west or north west is therefore likely.

Group 3 - Clays containing shelly limestone outcrop within a wide band of Jurassic deposits extending west and north west of Bishopstrow at a distance of 12 to 15 km. One such deposit known to have been exploited by potters in the past occurs near Westbury. Cunnington (1923, 29 - 30) also looked to Westbury as a source area for pottery recovered at All Cannings Cross.

Group 4 - as noted previously, this amalgam of fabrics contains only one sherd for which an origin can be suggested and this almost certainly derives from the Salisbury area.

5.4.5. Affinities and Dating

The key characteristic of the Bishopstrow Farm assemblage is the presence of haematitic wares, of which the furrowed bowls are perhaps of most interest. Following recent research by Barrett (1980), which has chronologically backdated them, it may be said that comparable assemblages are current in Wessex from the end of the late Bronze Age through to the end of the early Iron Age. Their precise date range is still subject to contention. Barrett favours a start date in the late 9th/early 8th centuries with an end in the 6th or 5th centuries BC. But others have preferred to see an even earlier start with an origin in the 10th century (e.g. Champion 1975). It is, however, generally recognised that the furrowed bowl tradition may be subdivided into earlier and later styles chiefly on the basis of neck height, rim type and the manner in which the furrows are formed (Harding 1974, 148 - 153). On this basis the Bishopstrow Farm assemblage is overall an intermediate one for it contains a balance of both early and late bowl styles and the associated jars present a similar picture. Of those contexts that yielded significant quantities of pottery Pit B is clearly the earliest and could perhaps be dated to 8th Century BC. Pit A is demonstrably later than B on stratigraphic grounds and although its pottery assemblage does display some significant differences it is probably not very much later than B - a date in the 7th Century would be appropriate. By inference all the other contexts, with the exception of the secondary fill of the enclosure ditch, could fall within this date range. However, the assemblage from the latter context contains only one haematite coated sherd and this was from a bowl outside the classic furrowed/angular bowl tradition. The fabrics were, as noted below, also dissimilar (cruder) to those from other contexts. With these factors in mind the secondary ditch fill pottery, is dated to the late 6th/early 5th Centuries BC, i.e. when the haematite tradition had all but disappeared.

Bishopstrow Farm lies at the junction of three pottery style zones as defined by Cunliffe (1978) and this is reflected in the rather heterogenous character of the potting traditions observed there. Local products exhibit a blend of the All Cannings Cross style, of central

Wessex (Figure 10: 1, 2, 3, 4, 10, 11, 12) and its Dorset variants including the Kimmerdige - Caburn style, the latter being mainly manifested in jar forms (Figure 11: 13, 14, 15). Vessels in Jurassic fabrics 2 and 3 originating from east Somerset or west Wiltshire clearly belong to a markedly different tradition - one seen to best advantage in pottery from Budbury, Bradford on Avon (Wainwright 1970) where Jurassic fabrics predominate. Stylistically the Budbury assemblage mirrors that from Bishopstrow in showing a fusion of the central Wessex All Cannings style and those of areas peripheral to the chalklands.

Within the local area haematite were assemblages broadly contemporary with Bishopstrow Farm have been cursorily or selectively reported from six other locations (see Figure 1). These are - Cold Kitchen Hill (illustrated in Barrett 1980, Figure 6 and Cunliffe 1978, Figure A.2); Longbridge Deverill Cow Down (Hawkes 1961, interim); Battlesbury (Chadwick and Thompson 1956); Upton Scudamore (Annable 1963, 469); Upton Cow Down (Annable 1967, 134) and Mancombe Down (Fowler et al 1965). The lack of detailed reporting precludes discussion of how well they compare or contrast with the Bishopstrow Farm assemblage but some general observations are relevant. Longbridge Deverill Cow Down provided the radiocarbon dates upon which Barrett's (1980) backdating of furrowed bowls is based. When calibrated these dates centre on the late 9th/ early 8th centuries BC serving to illustrate that such pottery has an early currency in the local area. The Longbridge Deverill assemblage also has the same fabric suite at Bishopstrow Farm (D.F. Williams, per comm). Quantitive analyses of pottery recovered from the Mancombe Down enclosure (Fowler et al 1965) shows that it not only has the same suite of fabrics as Bishopstrow Farm but that they occur at virtually identical frequencies. The equivalent of Bishopstrow fabric 1 occurs at 75% frequency, oolitic limestone (fabric 2) at 7% and shell tempered (fabric 3) at 17%. At Bishopstrow Farm the corresponding frequencies were 77%, 5% and 17%. Whilst both sites, and probably Longbridge Deverill Cow Down too, appear to draw their pottery from identical sources it is noticeable that finewares are almost totally absent at Mancombe Down suggesting that it was a low status or peripheral point in local settlement patterns - a suggestion which is discussed further in concluding this report.

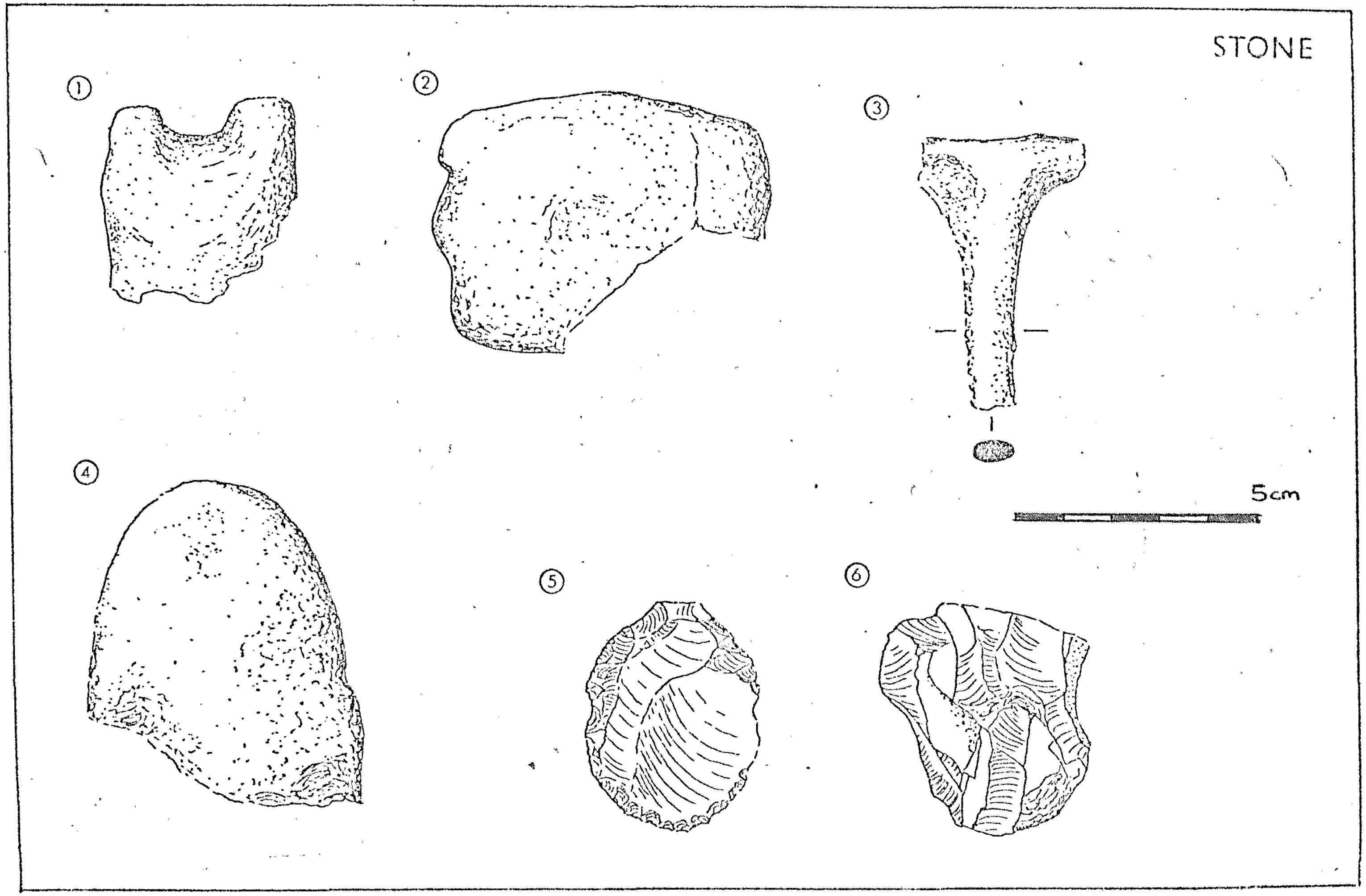
5.5. Faunal Remains

Whilst excavation within the settlement was primarily designed to secure only dating evidence faunal remains were retrieved and although the resulting assemblage is too small to justify detailed research limited analysis has been undertaken with the following results.

Discounting the remains of field voles found in abundance in the bottom of pits A and B a total of 67 fragments were identified to species. Pits C and D did not yield identifiable material but pits A, B and primary fill of the enclosure ditch which are all broadly contemporary contexts showed a clear predominance of sheep or goat (29 fragments over pig (14) and cattle (9). Pit A also produced two bird bones of duck size and the remains of red deer in the form of a tooth and two antler fragments. Sheep are represented chiefly by head and foot parts from young animals whilst cattle and pig remains encompass a wider range of the carcass and show no such conspicuous preference for culling juvenile or yearling animals. The secondary filling of the enclosure ditch, a substantially later context, yielded 8 fragments from mature cattle, 7 from mature sheep and the semi-articulated radius and ulna of a very large dog. Apart from one of the red deer antlers which had had the brow tine sawn off there was no evidence for bone working.

Given the nature of the local environment some specialisation in sheep husbandry would be expected and this is confirmed by the faunal evidence, limited though it is. But it is somewhat unusual to encounter such a predominance of juvenile animals when they are customarily kept well into maturity for their wool yield and their manuring activity over arable. It seems more likely that they failed to overwinter than that they were deliberately culled but further speculation simply isn't justified.

Figure A2·12



5.6 Stone and Stoneworking

Struck flint was found in virtually every context though diagnostic artefacts were confined to Pit A which yielded a rather fine scraper with steeply retouched edges and a blade core (Figure 12: 5, 6) together with a further core, snapped micro blade and an ancient flake with later retouching. Most of the struck flint is sufficiently rolled to indicate that it is residual in these contexts but the scraper is in fresh condition which lends support to the idea that in some circumstances flint working lingered on well into the Iron Age.

Flint in the form of calcined lumps is particularly common both in the ploughsoil over the settlement and in its subsoil contexts; so too are heat altered lumps of local greensand rock which have often been so modified as to resemble grey speckled white lumps of glass. Whether of flint, greensand or any other stone these 'potboilers' are ubiquitous in later Bronze Age and Iron Age settlements though they are not, as their name suggests, necessarily always derived from domestic hearths. Amongst other possible origins their use in grain parching operations is most relevant in view of the need to dry grain before storing it underground.

Many of the greensand 'potboilers' are re-used fragments of querns and rubbers (see selection illustrated at Figure 12). Indeed almost all greensand rocks on the site, whether burnt or not, possess at least one smoothed surface. There are generally too many worked fragments of stone over and within the settlement to be dismissed as normal domestic refuse, rather, the evidence suggests working on industrial scale. Though the site is located on Lower Chalk it lies only 400 m from Upper Greensand outcrops that have been commercially quarried for building stone. The particular virtue of this Warminster Burr Stone is that when freshly quarried it is relatively soft and easy to shape, only hardening after prolonged exposure- a quality which would have made no less attractive as a material from which to manufacture querns and rubbers. Greensand quernstones are found on most Iron Age settlements in and around the chalklands of Wessex and in the Bishopstrow evidence one may identify one of the centres responsible for their production. Viewed in this light the rubbing stone found clapsed by the left hand of the inhumation in Pit A takes on new meaning.

5.7. Metal and Metalworking

Only one worked metal object was retrieved. This, a folded strip of bronze sheet 1.5 cm wide and originally 7.5 cm long, was found high in the filling of Pit A, possibly within the backfill of the 1981 excavation. It is not therefore securely stratified and is not illustrated.

Of more interest is the evidence for iron working amounting to a piece of smithing slag from Pit B and hemispherical, (furnace bottom) lumps of smelting slag from Pit A and secondary filling of the enclosure ditch. As Cunliffe (1978, 290) has observed, iron smelting and forging seems to be normal industrial activities in most Iron Age homesteads but only from the 4th century onwards as iron came into general usage. In the 7th or 8th centuries BC, which is the date of the Bishopstrow Farm contexts, iron was still an experimental medium for tools and weapons. This is most graphically illustrated by a single loop socketed iron axe found in association with 7th century pottery on Cold Kitchen Hill (Cunliffe 1978, 290). That the smith responsible for its manufacture should devote so much time to laboriously forging such a complex shape from a solid iron blank purely to imitate similar products cast in bronze shows on the one hand an unfamiliarity with the working characteristics of iron but on the other commensurate skill and patience. There can be no doubt that iron working evolved at an early date in the local area and that the Bishopstrow Farm settlement participated in these developments. It is perhaps notable that all of the contexts which yielded significant quantities of occupation debris also produced iron working residues.

Less clear is where the iron ores were obtained from. Ores exploited commercially in the historic period and probably during the Roman period exist at Westbury (10 km north west of the site), an area which potentially also contributed pottery to the Bishopstrow Farm settlement. But whilst the Westbury ironstone is superficially the most likely source mention must be made of nodules of pyritic iron which occur naturally on and around the site in exploitable quantity and quality. Systematic collection of these nodules would certainly have obviated the need to rely on specialist extraction of ores which bearing in mind the early date may not have then been fully organised.

6. THE SETTLEMENT AND ITS ENVIRONS

Prior to 1976, when the Bishopstrow Farm site was first detected the known pattern of Iron Age settlement in the Western Wylye Valley was much the same as in other parts of chalkland Wessex. It consisted of a network of generally enclosed occupation sites distributed across higher ground and hilltops with one anomalous outlier at the village of Upton Scudamore (Annable 1963, 469). Since 1976 fieldwork has shown that the Upton Scudamore settlement is far from anomalous it is representative of a new class of occupation sites located on lower ground chiefly in and around modern villages. Five have so far been recorded. These include, apart from those named above, Iron Age pits fleetingly seen in builders trenches within the village of Boreham and the crop mark sites recorded on the same air survey flight as Bishopstrow Farm - namely North End Farm and Manor Farm (see Figure 1).

These recently recorded additions not only extendthe local settlement pattern they point to the existence of a different locational strategy and by inference a different approach to the exploitation of resources. One would therefore expect to encounter corresponding differences in the way life in these valley settlements was organised. Though they are small scale the excavations at Bishopstrow Farm are important because at present they are the only source of information about how valley settlement organisation differs from that of the upland occupation sites.

Until the extent of the settlement and its internal layout have been fully recorded it is difficult to reach any firm conclusions about how it compares morphologically with other Iron Age settlement forms. But, it is at least as large as the lightly enclosed occupation sites in the Little Woodbury, Gussage All Saints tradition (Cunliffe 1978, 162) and has a similar density of internal occupation features, though at Bishopstrow their spatial distribution hints at more rigid organisation than is normally the case. There is then nothing particularly remarkable about the physical character of the settlement.

From the number of grain storage pits and quernstone fragments within the site it is clear that corn production was an important mainstay of the economy and the predominance of sheep within faunal remains underlines this, for within the chalklands sheep and corn are inseperable elements of the common husbandry system. However, this system has traditionally been organised so that the bulk of the arable, upon which corn production depended, was located on the deep stable and fertile valley soils whilst sheep flocks were mainly grazed on outlying upland pastures. It therefore seems likely that to maintain a sizeable flock the Bishopstrow Farm settlement must have had access to downland resources within the exploitive territories of the neighbouring hilltop settlements. Conversely the hilltop settlements would probably have needed access to valley arable land and would certainly have required the use of the river and its lush meadow grass. Whilst the overall subsistence strategy practiced by each of these partners differed only in degree one can envisage a network of links between, for example, Scratchbury, Battlesbury, Longbridge Cow Down on the one hand and Boreham, Bishopstrow, North End Farm and Manor Farm on the other (see Figure 1), each link being founded on limited economic interdependence.

The popular concept of Iron Age self-sufficiency is in this respect misleading. The patterning of critical resources within the chalklands determines that there must always be a link between valley and downland as far as subsistence operations are concerned and in organising and regulating such a system Iron Age farmers may have fostered some degree of material interdependence. A logical development would be limited specialisation both in subsistence and industrial activity as was observed by Wainwright (1979) at Gussage All Saints, which apart from routine subsistence was also engaged in procuring and equipping chariot horses. The abundance of worked bone implements and production waste at All Cannings Cross (Cunnington 1923) may be another form of specialisation. Before considering the Bishopstrow evidence for clues as to how it fits into such a pattern mention must be made of Wainwright's (1979, 189 - 190) observation that unpublished analysis of faunal remains from Longbridge Cow Down indicates that it, like Gussage, was engaged in specialised management of horse herds.

Pottery is a useful, though not infallible, indicator of settlement status and on this basis some marked contrasts occur within the local area. Assemblages from the low lying settlements at Upton Scudamore and Bishopstrow contain a high proportion of decorated pieces and other finewares whereas those from the downland contexts of Upton Cow Down and Mancombe Down do not. Where fabric analysis has been undertaken it is clear that each of the sites drew their pottery from much the same sources so these differences cannot be explained in terms of access to finewares. They suggest that the low lying settlements are generally of a higher status than those in peripheral upland locations though this is unlikely to be an invariable rule as is indicated by the rich but poorly provenanced pottery assemblage from Cold Kitchen Hill.

One would expect specialist craftsmen to operate mainly in the more important settlements and in the evidence for quern manufacture and iron smelting at Bishopstrow Farm this argument receives some support. Although iron working eventually became commonplace in most Iron Age occupation sites it was not so in the 7th century when such activity was taking place at Bishopstrow. Indeed, so far as the author is aware, this is the only evidence for iron smelting at such an early date yet recorded in this part of the Wessex chalklands. It is however in keeping with the early appearance of the rite of inhuming within pits which also becomes commonplace later at much the same time as iron working became more widespread. There are then a number of special features within the Bishopstrow evidence that mark it as being different to the norm for upland settlements. What remains unknown at present is how it compares with other valley sited settlements in the immediate vicinity.

Casting further afield the settlement at Highfield, Salisbury (25 km east of Bishopstrow) is a very good match in terms of its siting, size and layout (Stevens 1934) and it too exhibits a number of unusual features. Pottery production and industrial working of bone and antler have been recognised and it seems to have had a specialised, mainly pastoral, subsistence economy linked with dog breeding. But perhaps the most important result of the excavations was the demonstration that it was occupied throughout the Iron Age. By contrast the occupation sequences of upland settlements in the same area are generally much more discontinuous.

Appendix 3

THE MIDDLE AVON VALLEY FIELD SURVEY

3.1. INTRODUCTION

Since 1979 the Avon Valley Archaeological Society, organised by Mr. Tony Light and supervised by Dr. Steven Shennan, has been engaged in an ambitious surface collection project designed to survey systematically the settlement history of the middle Avon valley. The study area extends from the South Wiltshire border, through the Fordingbridge district, to Ringwood. In geological terms it comprises a broad belt of valley gravel flanked in the north by Upp er Chalk and in the South by Eocene sands and clays (Figure A 3.1). To the west lies the major chalk formation of Cranborne Chase. Numerous streams and small rivers springing on the lower slopes of the Chase flow south eastwards to join the Avon after dissecting its main gravel terraces - the confluence toward the centre of figure A 3.1 (Fordingbridge) represents this situation.

Documentary sources and limited field data show that the area had been quite densely settled since Saxon times but prior to the start of the project evidence for prehistoric occupation of the valley was meagre in the extreme, especially when contrasted with the wealth of prehistoric evidence from nearby Cranborne Chase (e.g. Barrett et al 1981). This apparent dichotomy was an important influence on the decision to undertake the project and AVRG are to be congratulated on their willingness to tackle such a challenging problem. Indeed theirs is the only extensive and systematic survey of a major chalkland valley that has so far been mounted.

Because the aims of the project overlap with those of the author's own reseasrch he was invited to collaborate, particularly with the task of analysing and interpreting the evidence it generated and in undertaking limited excavation where this was thought necessary. The report that follows is very much an interim statement because excavation and

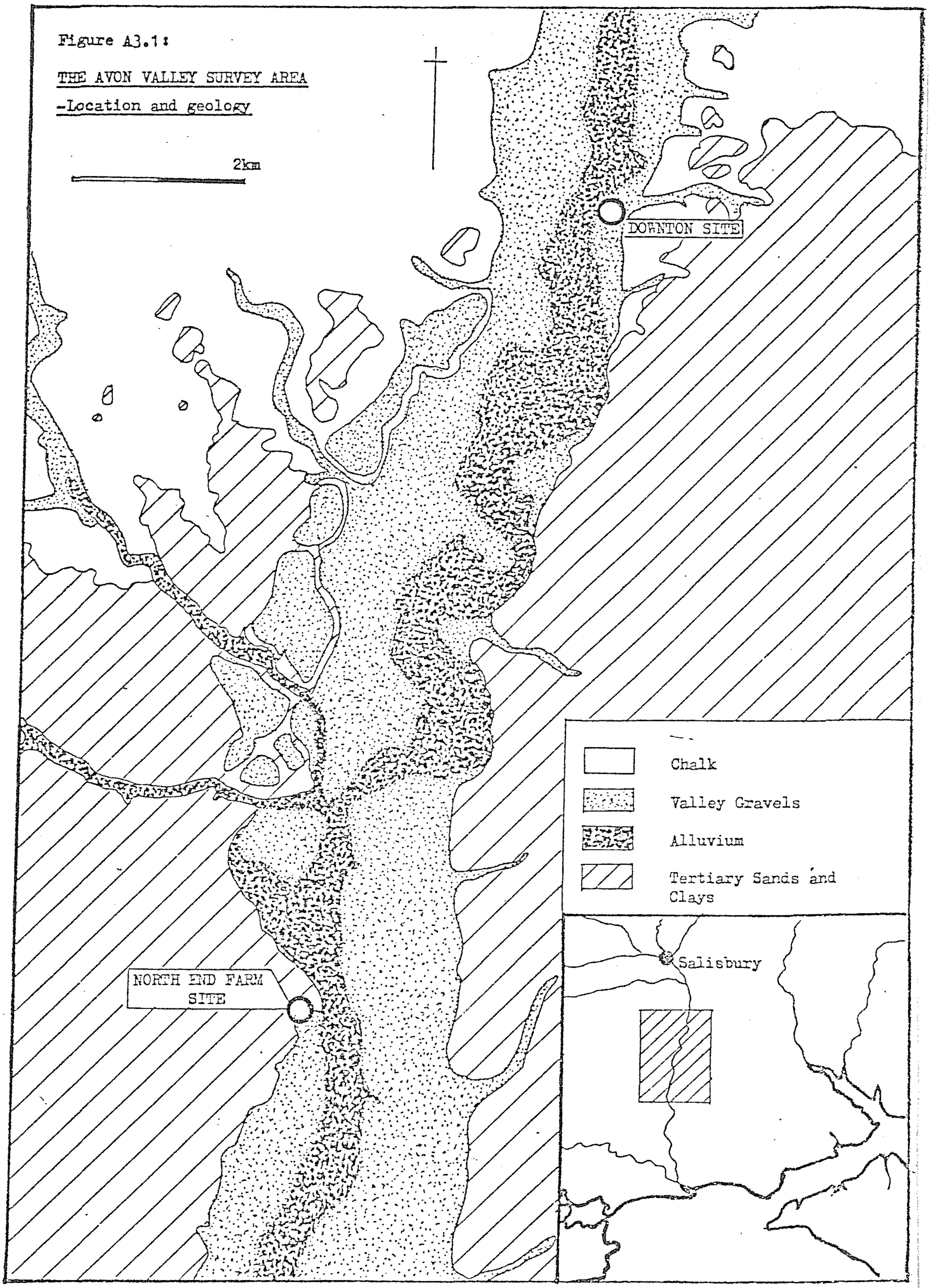


Figure A3.1:
THE AVON VALLEY SURVEY AREA
-Location and geology
2km
DOWNTON SITE
NORTH END FARM SITE
Chalk
Valley Gravels
Alluvium
Tertiary Sands and Clays
Salisbury

fieldwalking continues. However, sufficient data have already been recovered to permit several important conclusions to be drawn about prehistoric activity in the Avon valley and about the methodology of retrieving, analysing and interpreting field survey results. To add an extra dimension to what is essentially a fieldwalking project the report will also consider results of excavations at Downton (Higgs 1954) and North End Farm, Harbridge.

3.2 RETRIEVAL PROCEDURES AND BASIC QUANTIFICATION

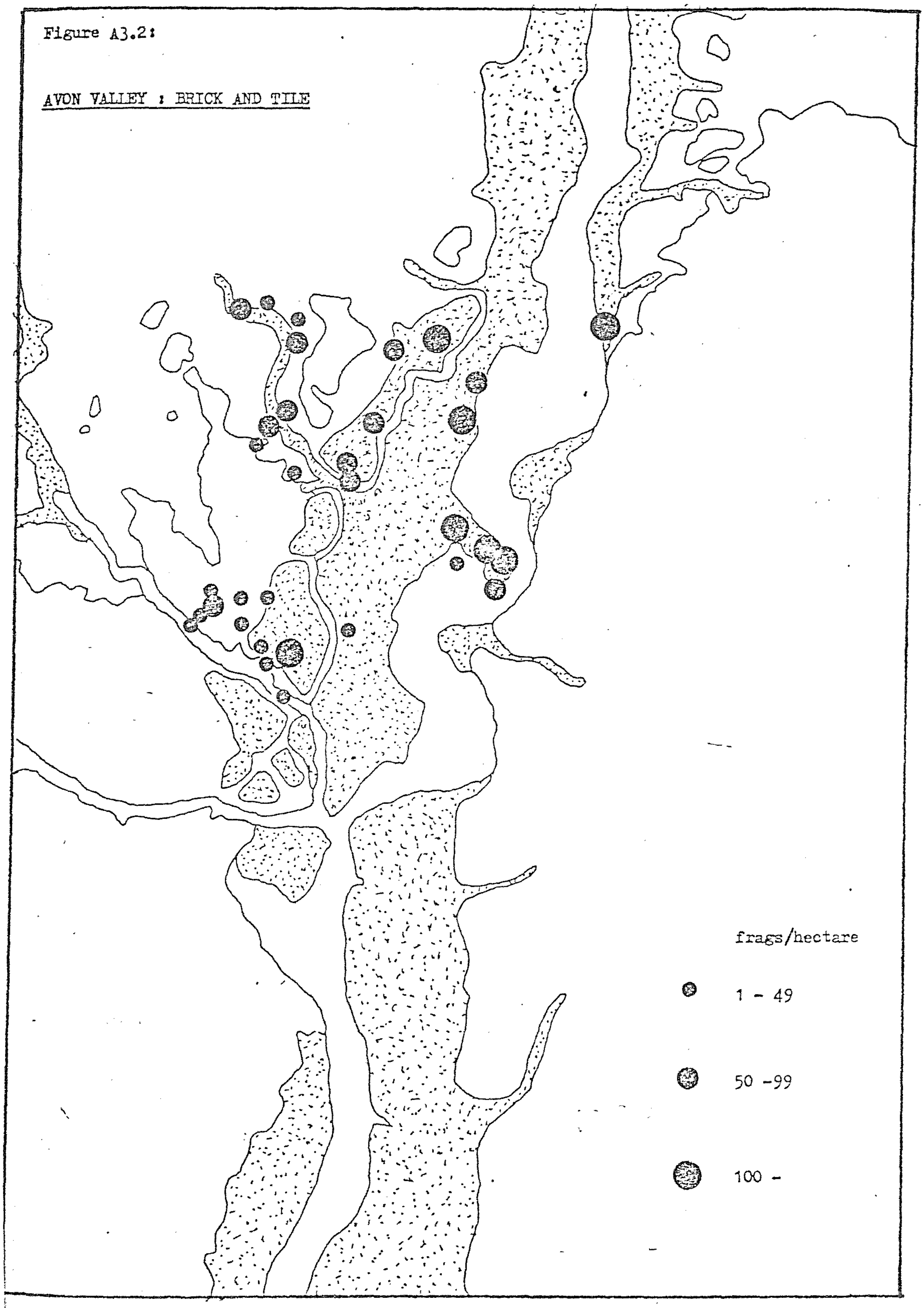
The eventual aim of the project is to walk every arable field in the study area as it becomes available. This will give very extensive coverage with few significant gaps. Whilst the total number of fields walked now exceeds 100, processing of finds and basic quantification inevitably lags behind and for the purpose of this report data from only 36 fields are used. These are chiefly fields in the northern part of the area where chalk and gravel are the dominant geological formations.

The normal fieldwork routine has been to collect surface material within a pattern of traverses across the field spaced at 15 m intervals. All the fields have been sampled this way and in two instances surface trends have been studied in more detail by means of 10 m grid pattern collection. All categories of artefact material were retrieved, even modern trash, so as to achieve a better understanding of the history of deposition and disturbance of each field. Totals for each traverse were summed to give a field total which for comparative purposes was then converted to a density statistic by introducing the variable of field size.

Density scores for each of the major artefact categories are mapped at Figures A3.2 - A.3.7 where each score is represented by a filled circle of proportionate size. Negative scores are held to be just as significant as positive ones and where one can be sure that non-survival or faulty retrieval are not responsible for such absences negatives are indicated by a cross.

Figure A3.2:

AVON VALLEY : BRICK AND TILE



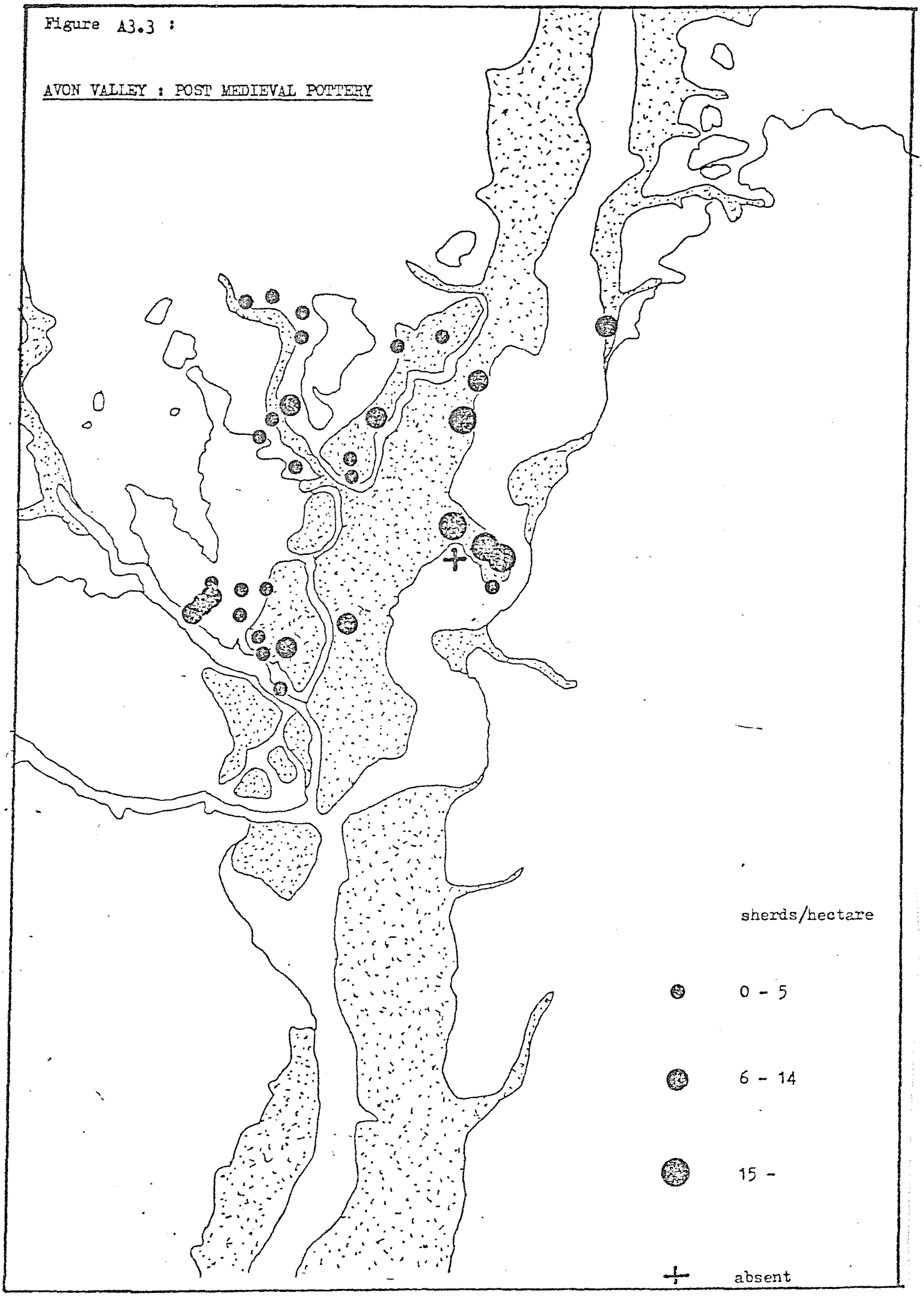


Figure A3.3 :
AVON VALLEY : POST MEDIEVAL POTTERY
sherds/hectare
0 - 5
6 - 14
15 -
absent

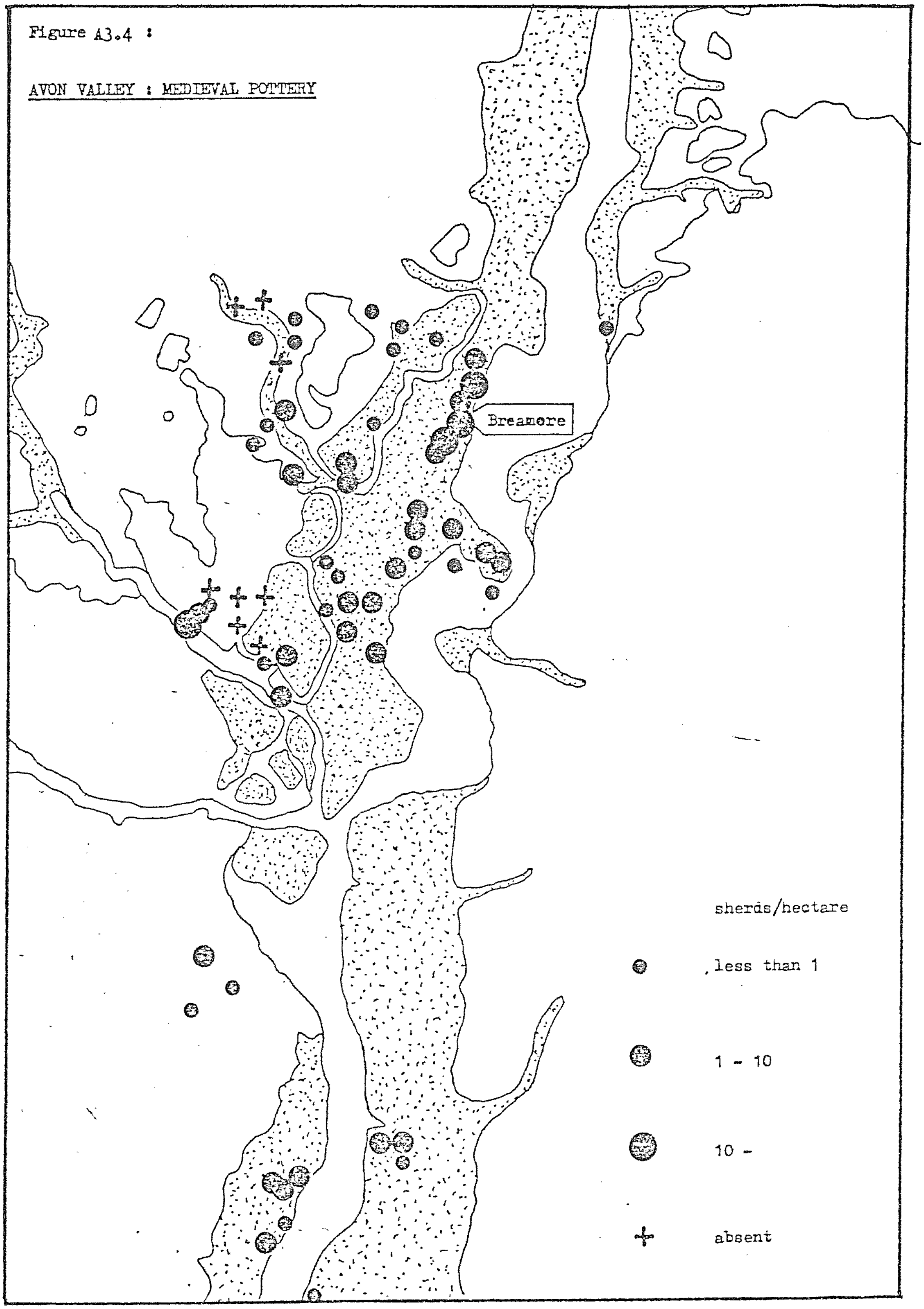


Figure A3.4 :
AVON VALLEY : MEDIEVAL POTTERY
Breamore
sherds/hectare
less than 1
1 - 10
10 -
absent

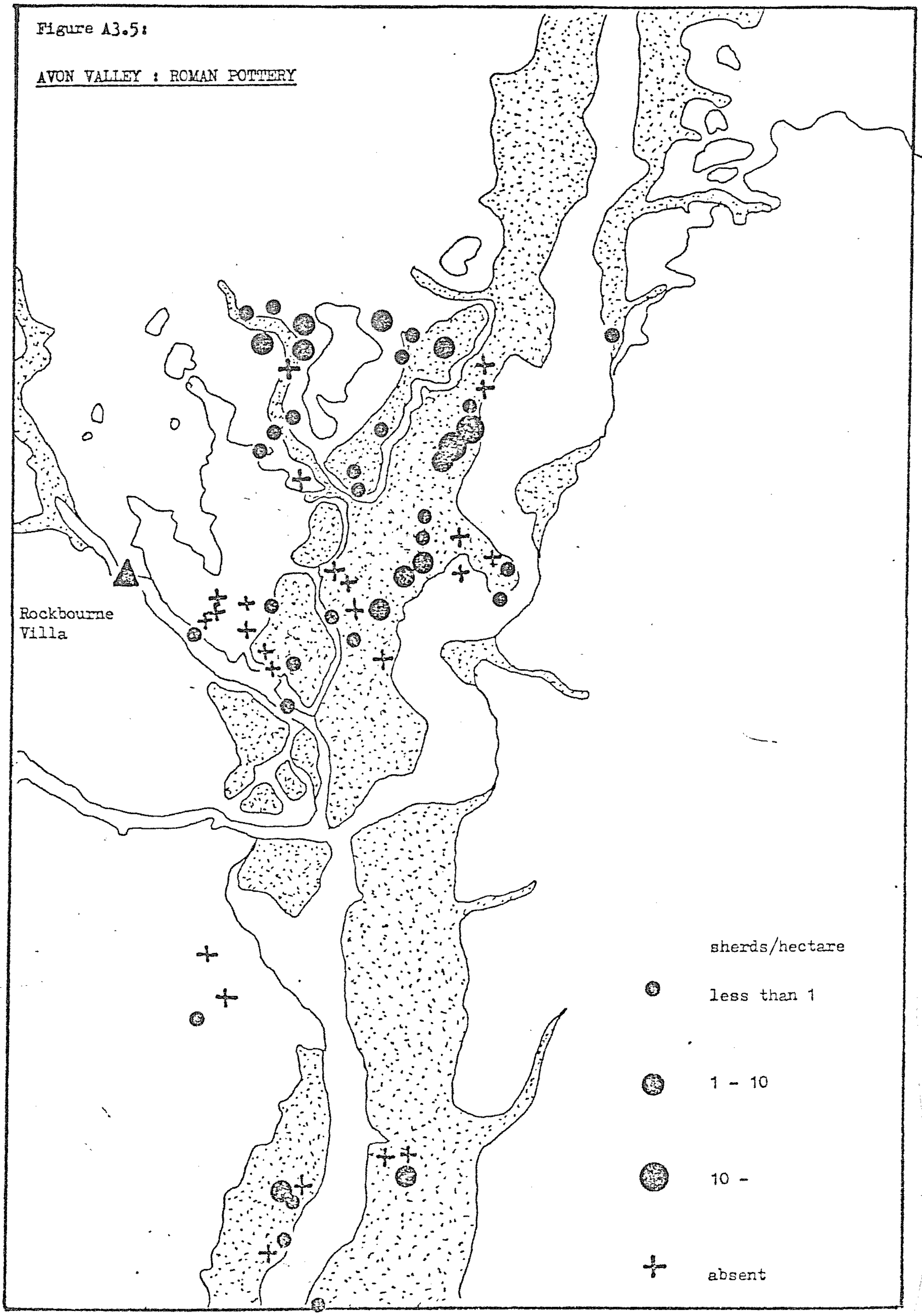


Figure A3.5:
AVON VALLEY : ROMAN POTTERY
Rockbourne Villa
sherds/hectare
less than 1
1 - 10
10 -
absent

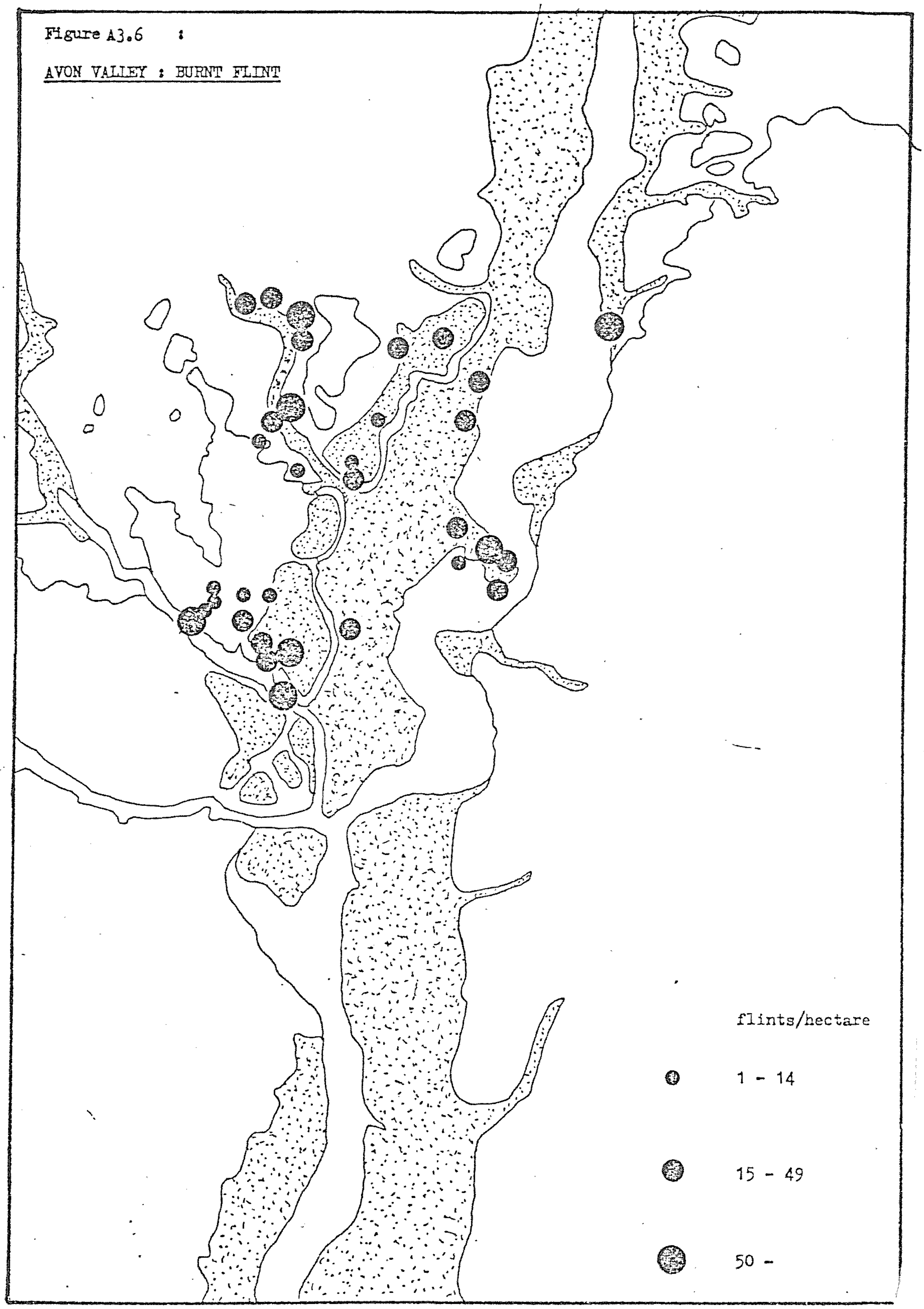


Figure A3.6 :
AVON VALLEY : BURNT FLINT
flints/hectare
1 - 14
15 - 49
50 -

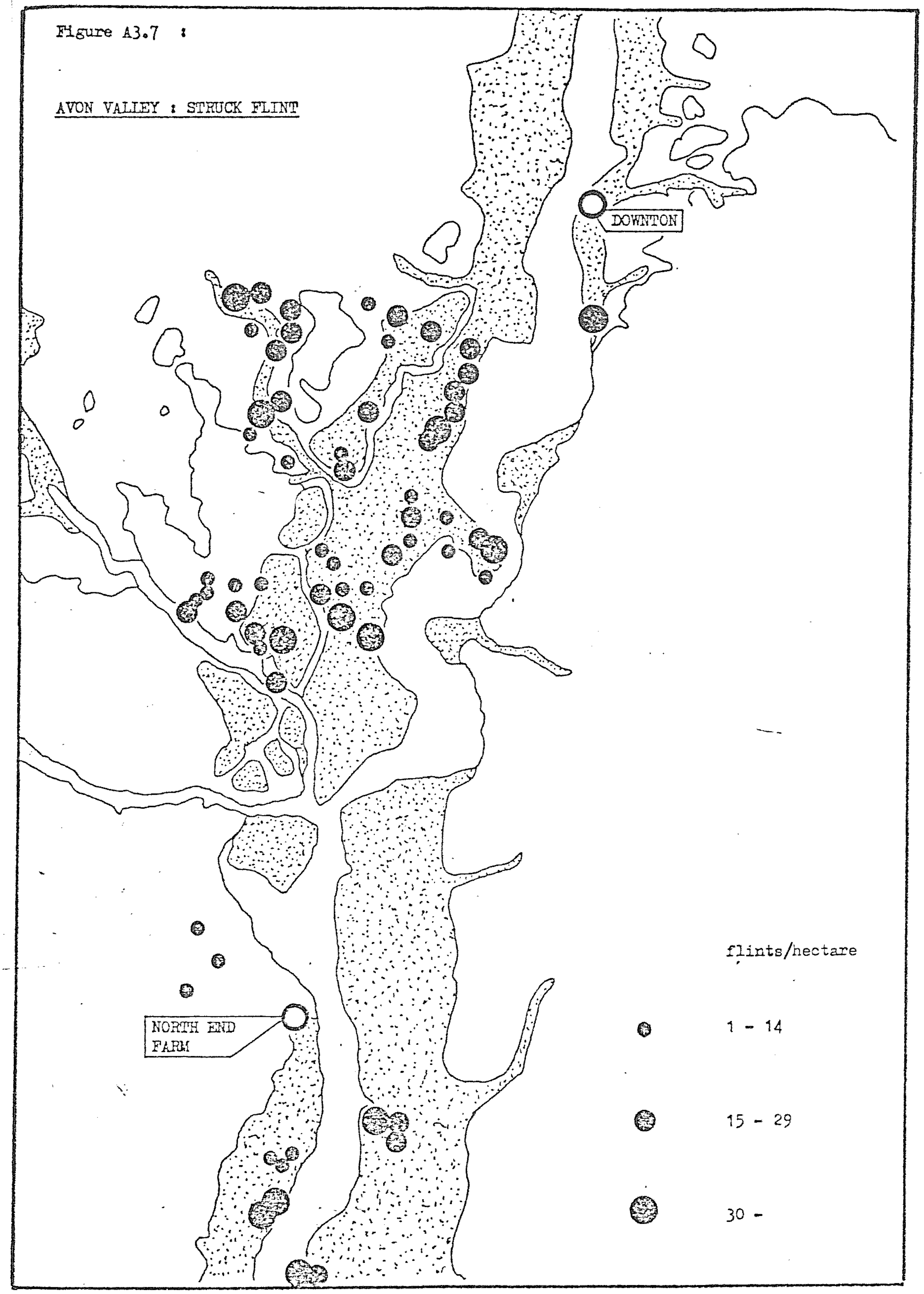


Figure A3.7 :
AVON VALLEY : STRUCK FLINT
DOWNTON
NORTH END FARM
flints/hectare
1 - 14
15 - 29
30 -

3.3 APPROACHES TO THE EVIDENCE

It is important to start by stressing that in an area survey of this nature where the basic statistic arising out of analysis is a density value for a given field one is not dealing with 'sites', much less 'settlements'. The data simply allow spatial trends in the distribution of key artefact types to be studied. In this sense the results are more of a guide to the way land was used in the past.

When dealing with Roman and later materials one might reasonably expect pottery densities, for example, to be generally higher in the vicinity of settlements, even allowing for the way the practice of manuring arable with domestic refuse will distort distributional patterns. Roman and later finds are also a good deal easier to date such that although one is dealing with a palimpsest it is comparatively easy to unravel the chronology of its formation. Thus with regard to relative differences in the density of pottery distributions one can suggest that (as would be expected) since prehistory the gravels have generally been preferred for settlement and agriculture rather than the chalk or Eocene deposits. One may note how fields on Eocene deposits close by the Rockbourne villa do not appear to have been manured and hence probably were not cultivated. Conversely, a cluster of high density scores for Roman pottery on the northern gravels indicate that the medieval village of Breamore (itself picked out by consistently high values for medieval pottery) has a Roman antecedent. These trends will be more clearly defined as more data becomes available and as follow up work within selected fields is undertaken. But they are not really central to this Thesis which is concerned with prehistoric occupation of the valley. They do however demonstrate that surface materials collected in this way are capable of revealing the general pattern of human activity in the valley.

In seeking to reconstruct prehistoric activity in the valley the materials available include struck flint, pottery and perhaps burnt flint. Burnt flint is known to be a common element in prehistoric refuse deposits but that does not of necessity prove that its ubiquity in Avon Valley contexts is attributable to a prehistoric presence. It could theoretically be of later origin. The most obvious way of resolving the issue seemed to be to investigate and quantify the frequency with which the different materials are associated in the same

Figure A3.8 :

SERIATION OF FIELDWALKING FINDS - FREQUENCY OF ASSOCIATION IN THE SAME SCATTER

(study based on sample of ten fields)

	STRUCK FLINT	BURNT FLINT	BRICK AND TILE	POST-MED POTTERY	MEDIEVAL POTTERY	ROMAN POTTERY
STRUCK FLINT		30	29	26	22	15
BURNT FLINT			29	26	22	15
BRICK AND TILE				31	18	17
POST-MED POTTERY					18	19
MEDIEVAL POTTERY						11
ROMAN POTTERY						

scatter; in particular the frequency with which burnt flint is associated with other materials of known date. Thus, for example, if burnt flint has a Roman origin it would logically occur in high densities in these fields which also have above average densities of Roman pottery.

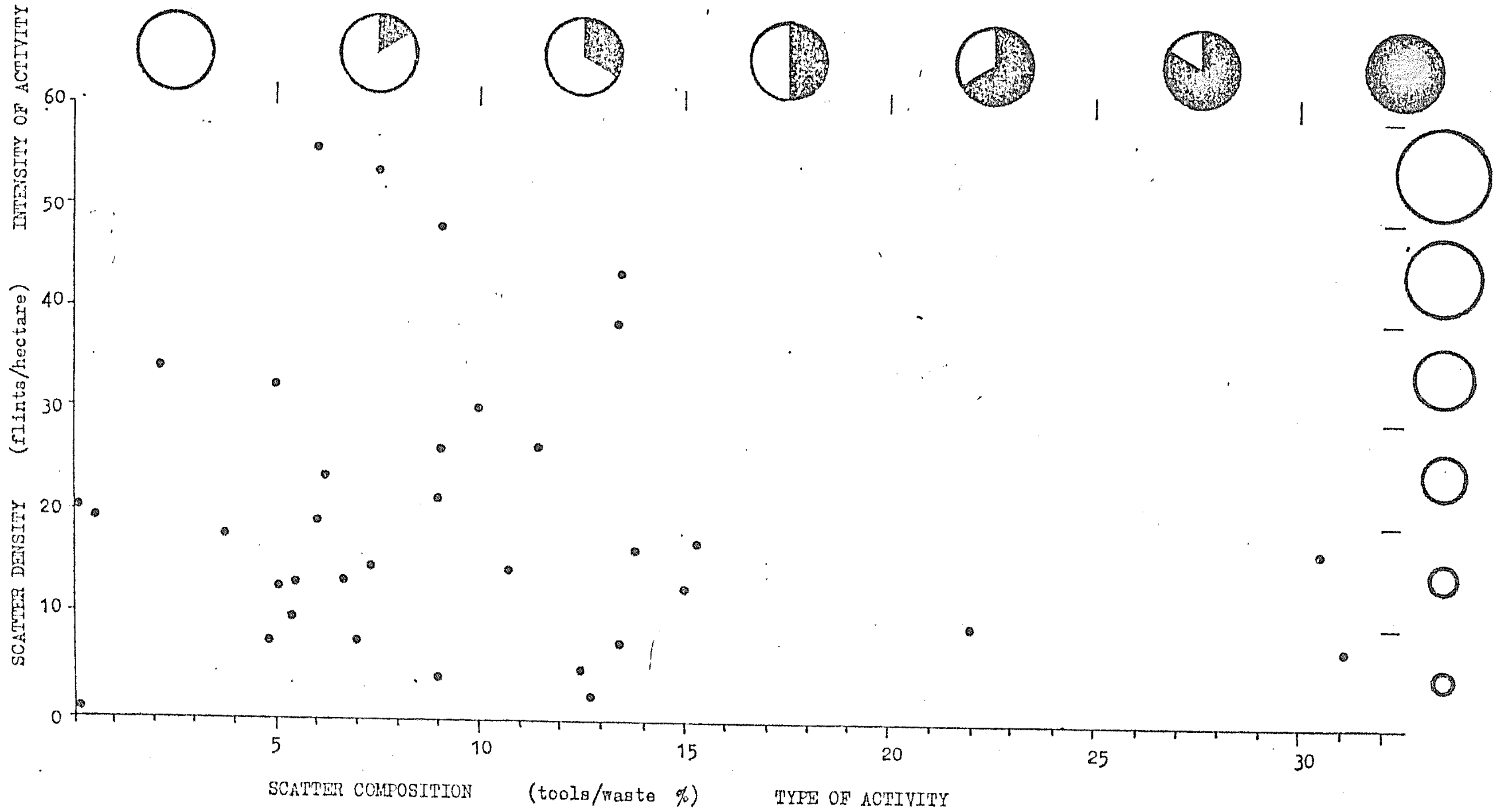
As figure A3.8 reveals, burnt flint is most commonly associated with struck flint (score 30), just as brick and tile is with post medieval pottery (score 31) rather than, say, Roman pottery (score 17). This does indicate a prehistoric origin for the burnt flint. But, in view of its apparent link with brick and tile (score 29) a further check was run. Prehistoric pottery occurs too infrequently to be seriated in the same manner as other materials but the fields within which it was found characteristically contain dense scatters of burnt and struck flint. Burnt flint is therefore regarded as a prehistoric input to the surface palimpsest; its apparent link with brick and tile is coincidental.

The survival of prehistoric pottery in ploughsoils is notoriously poor. It cannot therefore be employed as an indicator of contemporary activity because although its presence is probably significant its absence certainly is not. The same cannot be said of struck flint. One of the most startling results of the project is the recovery of struck flint from <u>every</u> field so far investigated. However, there are some severe (and often understated) limitations on what one can do with this wealth of lithic data. Flint scatters from ploughed surfaces are typically composed of a mass of largely undiagnostic <u>debitage</u>. Implements are rare and it is often difficult to assign them to a particular period with any confidence. Furthermore, since they are not derived from a closed context there is no guarantee that they were deposited at the same time as the main mass of material in the scatters.

3.4. RESULTS

These limitations coupled with the fact that struck flint was not collected in a site oriented manner determined that it would be totally unrealistic to expect the lithic data to reveal more than the basic

Figure A3.9 : FLINT SCATTER ATTRIBUTE ANALYSIS (information is mapped at figure 10)



outline and chronology of prehistoric activity in the valley. It is initially assumed that, as in other parts of the chalklands, flint knapping had virtually died out before the Iron Age and the excavations at Downton (Higgs 1959) indicate that Mesolithic surfaces in valley floors are often too deeply buried beneath alluvium or colluvium to be capable of making a significant contribution to flint scatters in modern ploughsoils. It therefore seems likely that most of the material in question is of Neolithic and Bronze Age date. Since basic land use strategies probably changed little during this time span it was considered justifiable to treat the struck flint as a single group and to employ basic attributes of scatter density and scatter composition as a guide to the intensity and character of Neolithic/ Bronze Age land use across the study area.

Figure A.39 represents an attempt to sort fields according to the values for tool/waste ratios ('tools' here includes retouched and utilised pieces) and overall density of the flint scatters found within them. Dense scatters with relatively low tool/waste ratios could be regarded as areas where extraction or primary working of flint was taking place. Scatters with high tool/waste ratios ought to reflect where the production, use and breakage of tools was taking place, i.e. residential areas. Fields containing light scatters with very few tools perhaps represent peripheral activity connected with subsistence operations away from settlements. However, whatever the logic of this line of reasoning it is evident that the field scores do not naturally separate out into clearly defined groups.

Until more comparative data from other field surveys become available it must be assumed that this situation is a genuine reflection of blurring within prehistoric activity patterns rather than due to any fault in the way the data were collected or analysed. For now it is instructive to observe that the recorded tool/waste ratios are almost all equivalent to or higher than those recorded in settlement excavations elsewhere in the Avon valley. In Mesolithic levels at Downton the ratio was 2.4% (Higgs 1959)and in late Neolithic/early Bronze Age contexts at Durrington Walls it was 3% (Wainwright and Longworth 1971). Undoubtedly waste flakes will be more assiduously retrieved in excavation than in surface collection, especially the smaller knapping debris, and this makes direct comparison difficult. But, if one allows for retrieval bias by taking values of (say) 10%

The revelation of a Neolithic and Bronze Age settlement pattern along the Avon also makes it necessary to consider what sort of relationship existed between these sites and their better known downland couterparts on nearby Cranborne Chase. The latter area has also recently been surveyed and discussed in some detail (Barrett et al 1981) a circumstance which makes direct comparison of valley and downland evidence somewhat easier. The Chase contains an impressive number of Neolithic and Bronze Age burial monuments; large dense flint scatters abound and the inventory of surface collected axes and arrowheads is reasonably long. But, as Barrett et al (1981) note, convincing traces of domestic settlements are most elusive and there are some ominous gaps in the overall sequence of activity on the Chase. These observations together with their conclusion that Neolithic monuments were built on upper limits of settlement patterns can be rationalised within the concept of the Chase serving as a marginal land resource over which valley based activity ebbed and flowed throughout earlier prehistory. It is perhaps significant that their recommendations for future research included extending the survey towards the nearby river valleys.

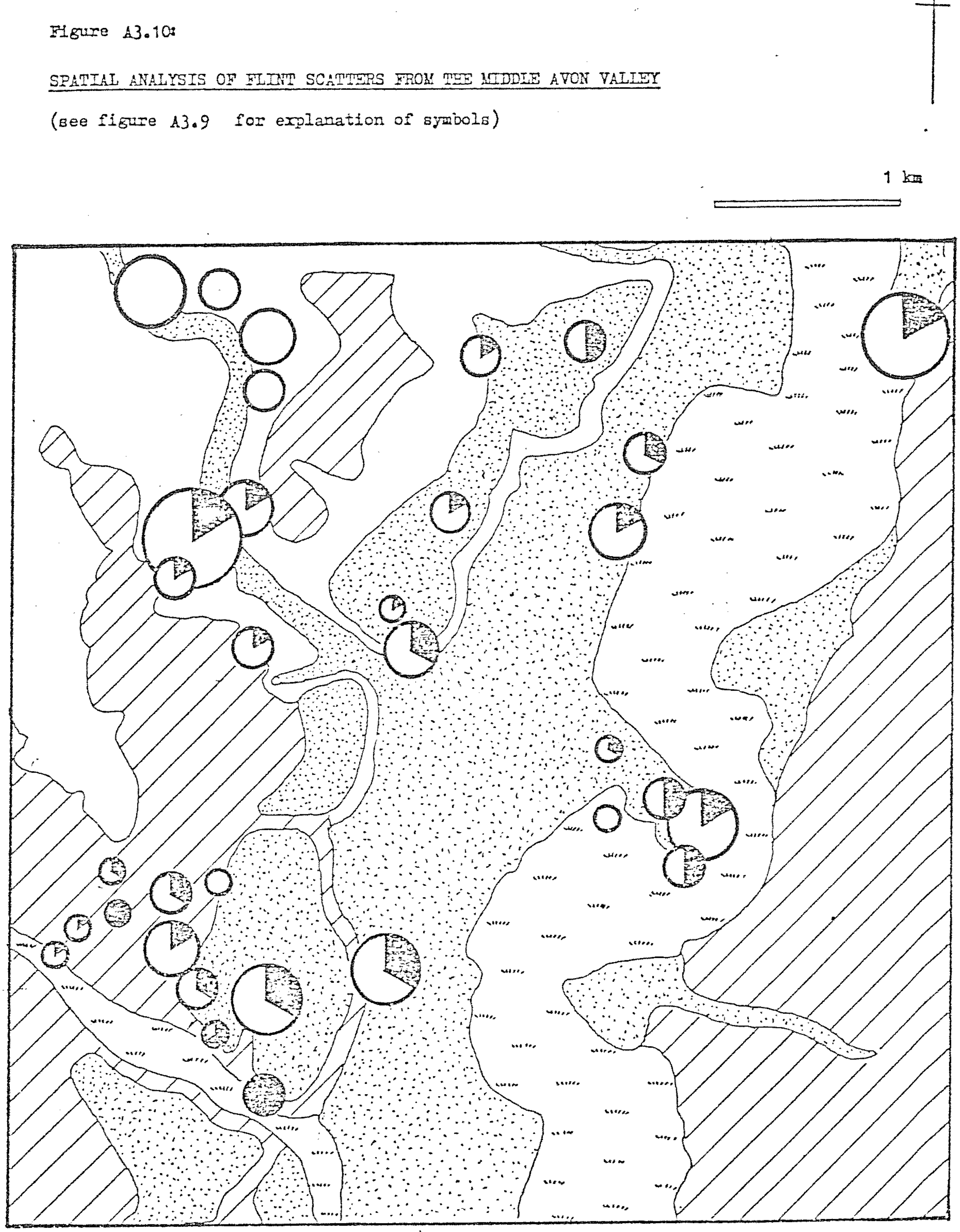
Later prehistoric occupation of the Avon valley is not at first sight easy to document within the available surface evidence. Pottery survives only rarely and struck flint patterns are probably irrelevant to Iron Age research. One is left with the prolific but superficially uninformative scatters of burnt flint. However, research by the author indicates that concentrations of burnt flint in a plough soil are almost invariably a secure guide to the existence of some form of late Bronze Age/Iron Age occupation site (see Figure A3.11 for an example of this phenomenon). It should also be recalled that the late Bronze Age settlement at Everley Water Meadow (Appendix 1) was also initially detected as a ploughsoil concentration of burnt flint. Indeed the pattern of streamside burnt mounds recorded at Everley Water Meadow appears to have at least one counterpart in the study area.

Fieldwalking in the vicinity of North End Farm, Harbridge has recorded a pattern of perhaps six mounds distributed at intervals of a hundred metres or so along a minor tributary stream of the Avon. Excavation of one of these mounds and its immediate surrounds started in 1983 and continues. To date it has recovered late Bronze Age

Figure A3.10:

SPATIAL ANALYSIS OF FLINT SCATTERS FROM THE MIDDLE AVON VALLEY

(see figure A3.9 for explanation of symbols)



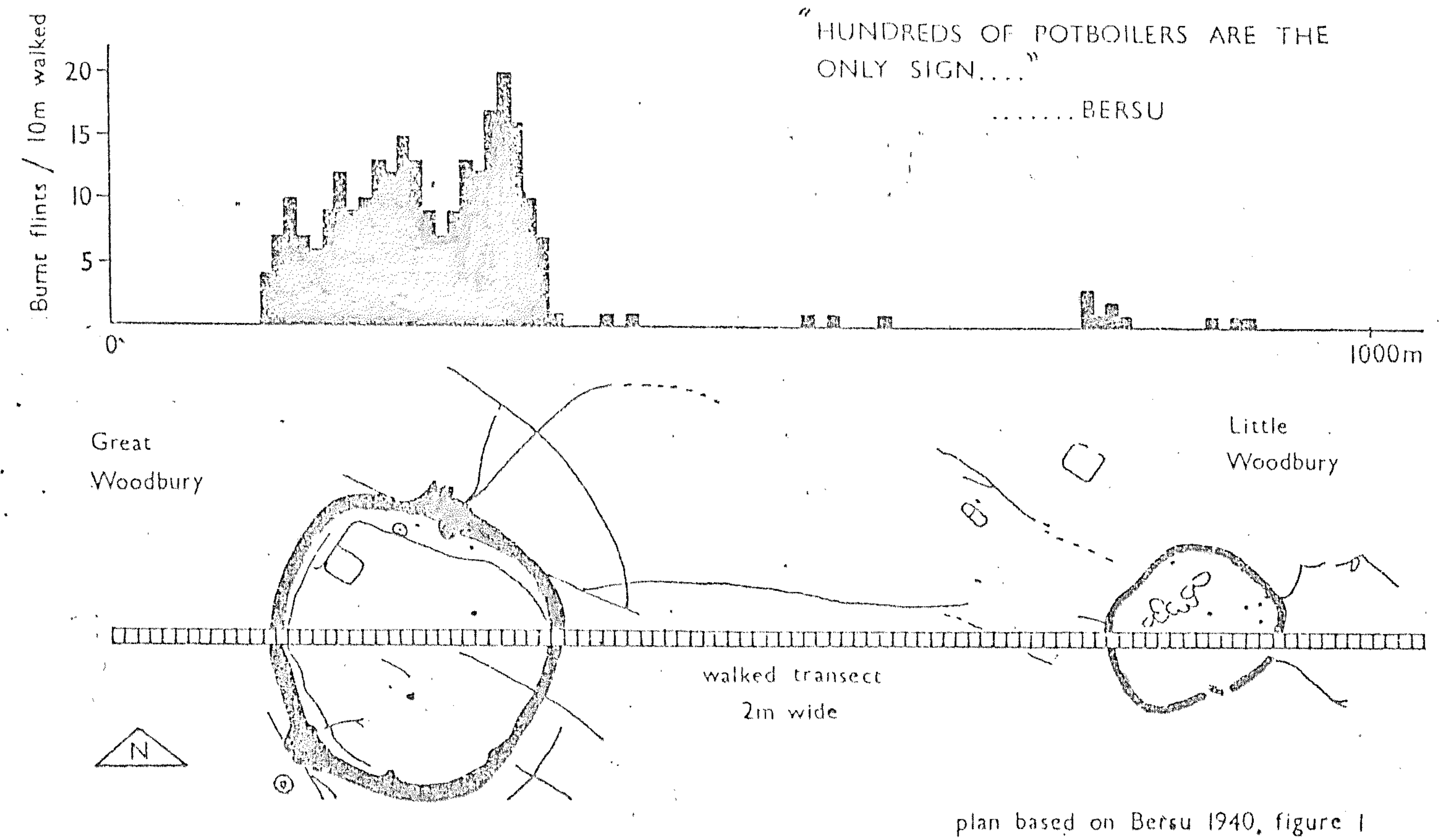
as typical of settlement contexts the survey has clearly identified that much of the earlier prehistoric activity recorded in the middle Avon valley is related to settlement.

To establish whether the lithic data permit any coherent trends in the spatial distribution of settlement related activity to be discerned the density/composition scores for each field were re-mapped using new symbols and on a geological base of larger scale (figure A3.10). If fields with tool/waste ratios of 10% or more (circles with ⅓ or more filled) are taken as scenes of settlement type activity it may be seen that the most favoured areas were the main gravel terraces and locations along the tributary streams that cross them from the north west. By contrast assemblages from the chalk dry valley in the north west corner of the area, although dense, appear to uniformly reflect extractive/industrial activity. Whether coombe deposits in the valley floor were being quarried for the nodules they contain or whether a flint seam exposed in the side of the valley was being exploited is not clear. The most important point is that mapping of assemblage variability does reveal coherent patterns of earlier prehistoric activity.

3.5 DISCUSSION

The results of the Avon valley fieldwalking project must now be considered within a wider perspective. Excavations at Downton (Higgs 1959, Rahtz 1962) provide a 'window' on what might lay beneath these outwardly mundane flint scatters. Here at least four earlier prehistoric settlement phases were recognised - two of Mesolithic date, one middle Neolithic and one Beaker (the sequence is discussed in more detail within Chapter 5 and 6). Whereas Downton formerly appeared to be a relatively unique example of prehistoric valley occupation the Avon Valley fieldwalking results indicate that its sequence could well be typical of the settlement history of the Avon terraces. Clearly the idea that future excavation of these terraces could reveal not only stratified occupation sites but could also lead to the reconstruction of actual settlement patterns is a very exciting prospect indeed.

Figure A3·11: Concentrations of burnt flint as an indicator of later prehistoric settlement - a fieldwalking experiment based on Great/Little Woodbury



pottery and identified a number of features including at least one storage pit. It is still unclear what function these enigmatic mounds performed but they can now be recognised as a recurring element in later prehistoric settlement and subsistence activity patterns.

This being so the distribution of burnt flint across the Avon Valley (Figure A3.6) should be looked at with care. It is immediately evident that the material occurs almost everywhere which is in itself significant. But obviously there cannot be an occupation site in every field! It seems preferable to envisage that the occupation sites are the particularly dense concentrations which interestingly occur at the same locations which struck flint analysis has indicated were earlier prehistoric occupation sites. The lighter scatters of burnt flint would then presumably represent material taken out of settlements as field manure - their presence indicating perhaps which were the infield areas.

3.6 CONCLUSIONS

The Avon Valley fieldwalking project is of considerable potential importance to prehistoric research in Wessex, representing as it does the first serious attempt to reconstruct the full settlement history of a valley landscape. Since the project is unlikely to be completed in the near future the conclusions drawn here must be taken as an interim statement or perhaps prediction on what will eventually be achieved.

a. Methods and Procedures - When analysing the results of routine fieldwalking for insights into the character of earlier activity patterns it would appear that tool/waste ratios and scatter density attributes are a more reliable guide than rarely occurring 'diagnostic' flint implements. Similarly, for later prehistory burnt flint provides a prolific, durable and easily recognised alternative to pottery as a settlement indicator.

b. Prehistoric occupation of the Avon Valley - the surface evidence indicates a comparatively dense and constant pattern of prehistoric settlement distributed mainly along the broad gravel terraces but extending out into Chalk and Eocene areas along tributary and stream systems. During at least earlier prehistory these valley settlements were probably linked, through the medium of transhumance, with exploitation of distant downland resources on Cranborne Chase where most of the contemporary Neolithic and Bronze Age cemeteries are located. Use of soils over Eocene sands and clays is unclear. They may have supported managed woodland for there are few signs of activity on them prior to the late Bronze Age.

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