English Heritage

MAIDEN CASTLE

Excavations and field survey 1985–6

N M Sharples

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with major contributions by
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1 Introduction

Previous research

It is important for the understanding of any archaeological project to discuss its objectives. All archaeological work must have specific aims, and a detailed research design should be formulated for any excavation that receives an English Heritage grant or involves the examination of a Scheduled Ancient Monument. While it is accepted that important unexpected discoveries may alter the direction of the project, one can only assess the success of the project and the relevance of the original research design by comparing the results achieved with the goals set out. Discussion of the research design also allows a fuller understanding of why certain aspects of the historical record are examined at the expense of others. It must be accepted that by designing an excavation or survey to answer certain specific questions, other potentially equally important questions will not be given the attention which they might deserve.

This is nothing new, as the publication of the excavations at Maiden Castle by Sir Mortimer Wheeler began with a discussion of the objectives and reasons for the work. At a specific level, he intended:

> '(1) to investigate the structural history of the great fortifications which are now the distinctive feature of the site;
> (2) to identify and correlate the associated cultures;
> (3) to explore the possibility of recovering some part of the town plan' (Wheeler 1943, 3–4).

Wheeler then assessed his success in answering these objectives and judged that though the first two 'objectives were achieved', the third lay 'beyond our reach' (1943, 4). He argued that the complexity produced by a long and intense occupation made it impossible to unravel the structural patterns. This statement was not universally accepted (Grimes 1945).

The excavations also made the totally unexpected discovery of an important Neolithic occupation. The effort expended on these discoveries was, however, limited and, although Wheeler did enough to resolve the basic sequence and importance of the monuments, he was not diverted from his original research design.

In the introduction to his report, Wheeler also outlined his reasons for excavating at Maiden Castle (1943, 1); further reasons were given in his autobiography (1955, 102). This is a sensible precedent to follow and, before setting out the objectives of the recent excavations, a short digression on the significance of the site since Wheeler's excavations and on the reasons for the present project seems appropriate.

Wheeler's excavations are central to the present project, because they established the academic importance of the site and, perhaps more importantly, the public interest which provides the impetus for subsequent work. The academic importance of Maiden Castle derives from a number of different criteria: the scale of the excavations, the quality of the work, and the historical significance of the interpretation of the site.

The area excavated by Wheeler was one of the most extensive excavated for any prehistoric site at that time. It was only surpassed in the 1960s, when the recent phase of large-scale rescue excavations was begun, and even today there are still very few hillfort excavations of this size. Only four hillforts in Wessex have seen comparable area excavations: Danebury (Cunliffe 1984a), South Cadbury (Alcock 1972), Balksbury (Wainwright 1970), and Winklebury (K Smith 1977). As a result, Maiden Castle is one of the few extensive prehistoric settlements where we can understand the variety of occupation present and how it was organised. The importance of the economic understanding of such settlements has grown, as the chronological problems of the period decrease.

The techniques used by Wheeler to excavate and record the site were well in advance of any other excavation of the period. For the first time, complex stratigraphy was examined in sufficient detail to assess the chronological history of a site continuously occupied for over 400 years and intermittently occupied for 5000 years. Furthermore, various classic features were recognised and published, which would act as type fossils for the prehistory of southern England. Wheeler's illustrations of Iron Age storage pits are even today models of clarity, which would justify reproduction in any general textbook. It is also significant that the first experimental construction of an Iron Age house was based on evidence recovered in the Maiden Castle excavations – even though this reconstruction was only attempted in 1973 (Reynolds 1979).

Perhaps, however, the greatest significance of the excavations at Maiden Castle is the least tangible. It derives from the reasons for the excavation and the central position which the site has in the intellectual structure used to order and explain the mass of information derived from the Iron Age. The excavation of Maiden Castle took place in a formative period in the study of the Iron Age of the British Isles. Christopher Hawkes had recently proposed a scheme for explaining the Iron Age: this did away with the terms Halstatt and La Tène, which had proved inappropriate in the analysis of the British material, and replaced them with a threefold division known as the ABC system (first proposed on a national basis in *Antiquity* (C Hawkes 1931) and discussed in detail in Kendrick and Hawkes (1932)). Each of the chronologically successive groups was distinguished by a different type of pottery, and it was argued that the differences were the result of successive invasions from the continent.

This framework was essential to Wheeler's interpretation of the site and probably provided the impetus behind the excavations (J Hawkes 1984, 163). Wheeler had previously restricted his archaeological investigations to the Roman period. He clearly saw the potential of the framework and realised that he could use the excavations to enter the discussion of a period that must have appeared chaotically disorganised to a mind trained on the classics. He may also have appreciated that he could decisively contribute to the acceptance of the model. The available data from Iron Age sites in Britain were obviously not sufficiently detailed to corroborate the hypothesis; it required testing against a site with a much larger and coherent database than was then available. He was not alone in the quest. In the decade after the appearance of Hawkes's paper, the number of excavated hillforts more than doubled (Cunliffe 1974, 5).

Maiden Castle was by far the most spectacular of these excavations (Fig 1) and was used to prove conclusively the validity of the ABC system. Wheeler also imposed his character on the model. He tied the threefold division closely to the construction of the defences and emphasised the dramatic and military nature of the cultural changes. He then linked these changes to the historical changes, which took place in Gaul as the Roman empire expanded, to provide hard chronological boundaries to the divisions and reasons for the incursions.

After the Maiden Castle excavations were published, the ABC system was accepted as the framework for understanding the Iron Age throughout Britain. It dominated thought throughout the '40s, '50s, and well into the '60s, even though it was subjected to repeated challenges (Wheeler 1952; Hodson 1960; 1964). It was only when the results of the extensive new excavations of the 1960s became available and when a new generation of scholars appeared in the '70s that the rigid assumptions of this framework could be removed. The publication of Cunliffe's *Iron Age communities in Britain* (1974) marked the end of the ABC system by setting out a spatial and chronological division of the period into cultural groups and by emphasising the study of the subsistence and economy of the period. This approach was, however, challenged by the publication of *The Iron Age in lowland Britain* by D W Harding (1974), which was very clearly an attempt to defend the accepted system against the new orthodoxy.

The position of the Maiden Castle excavations at the genesis of the ABC system gave them a crucial position in Iron Age archaeology. It is noticeable that the significance of Maiden Castle in the study of the period has declined since the attitudes to this period have changed. This is partly because the original excavations were aimed at answering specific questions concerning the cultural sequence, and other aspects of the site were less intensely examined. The interpretation of the site is also, however, inherently biased for contemporary analysis, precisely because it is based on the assumptions of the original ABC system.

In contrast, Maiden Castle has had a much less important role in the development of Neolithic studies. At the time of the excavations, the Neolithic had only just been established as the period of the primary agricultural colonisation. Nevertheless, the diagnostic

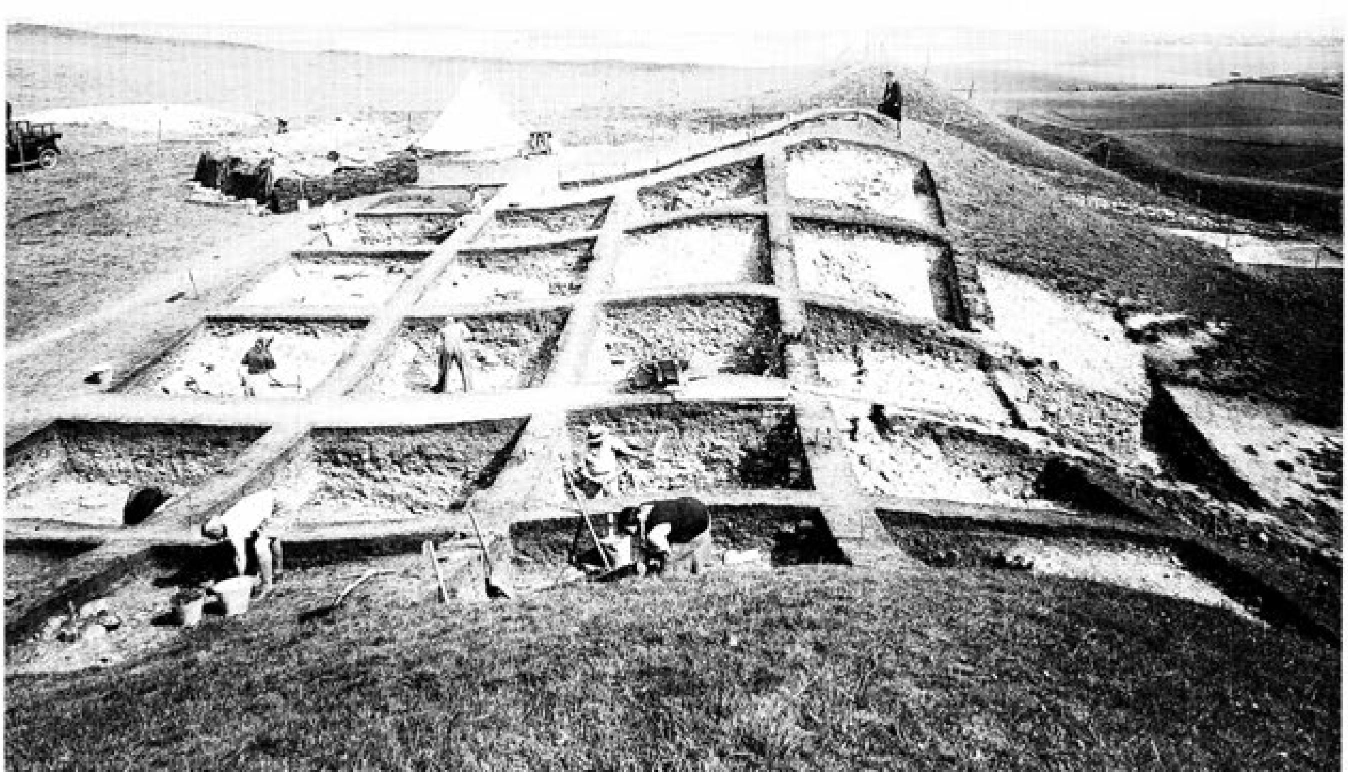

Fig 1 The excavation of the eastern entrance of the hillfort by Sir Mortimer Wheeler

features of the period – 'camps', barrows, mines, round-based pots, leaf arrowheads, etc – were firmly established in the archaeological literature (Kendrick and Hawkes 1932). The evidence from Maiden Castle was comparable in quality and quantity with other sites, such as Hembury (Liddel 1936), and was poor compared to the evidence from Windmill Hill (I Smith 1965). The latter site was extensively excavated over a long period of time, and the clarity of the principal features and quantity of material recovered made it the type site for the Neolithic. It was indeed this site which dominated discussion of the Neolithic in the next 30 years, as Maiden Castle dominated discussion of the Iron Age. Nevertheless, the Neolithic features at Maiden Castle have been an important aspect of evidence for this period, and in certain respects the evidence is unique. It is the only site where there was a physical relationship between a barrow and an enclosure, and the barrow itself is uniquely long; Maiden Castle is also one of the few sites where a protected area of the interior was extensively excavated.

Research design

Whilst this background is crucial to understanding the organisation of the research design for the recent excavations, it does not explain the motivation for the work reported in this volume. This is really a response to the public importance of the site. Again, much of the public awareness of Maiden Castle derives from Wheeler's excavations. Considerable effort was attached by him to attracting members of the public to the site, using regular features in the local and national press and in cinema newsreels. This was very successful and many thousands of visitors were guided around the site during the excavations. While it could not be claimed that any significant proportion of the modern visitors remember these excavations, it can be claimed that the excavations put Maiden Castle on the tourist agenda in Dorset: a position which it has never lost. The spectacular nature of the results and the manner in which they were interpreted also meant that Maiden Castle became one of the few archaeological sites to feature in primary school textbooks; it was thus recognised (if not understood) by a broad range of the population.

Since the excavations, however, very little had been done at the site to encourage this public involvement with the archaeological remains. There was no information on the site which could explain the features that were visible, and there was no attempt to outline the history of the site or to illustrate the development of the earthworks which define it. In recent years, the only available guidebook became increasingly unrelated to our contemporary archaeological understanding of the past. It was therefore necessary to design a selective programme of excavations and survey which would apply analytical techniques that were not available 50 years ago to this important monument.

There were other reasons for the renewed interest in the site. It had become clear in recent years that the site was being badly damaged. Erosion on the steep slopes of the defences had increased steadily and was becoming more than an eyesore – in fact, a serious threat to the stability of the ramparts. In the interior, large areas of bare ground were appearing around fences and at the entrance to the monument. These problems were the result of a number of factors: the basic instability of the ramparts, the increased numbers of visitors to the site, inappropriate stocking levels, and burrowing animals. It was obvious that a large monument, such as Maiden Castle, in the increasingly densely populated landscape of south Dorset could not be left to survive on its own. An active management programme was required. A major programme of repair and reinstatement of the monument has run concurrently with the researches reported here.

The archaeological research objectives were set out by Wainwright and Cunliffe in an article in *Antiquity* (1985), and a committee was established to monitor the progress of the project. The archaeological objectives were organised around three fields of enquiry: a landscape survey, a survey of the monument, and excavation.

The landscape survey was designed to '... obtain a clearer understanding of the local archaeological landscape in terms of settlement and landuse' (Wainwright and Cunliffe 1985, 98–9). It was hoped to examine the relationship between Maiden Castle and settlements contemporary with its main periods of occupation and to identify the settlements that belonged to the period when the hilltop was unoccupied. Only by this approach would it be possible to understand the continuities and discontinuities in the settlement of the region.

The survey of the earthworks and the interior of the monument was designed as an essential management tool and as a means of gaining a greater understanding of the site occupation and construction history.

The proposals for the excavation were set out in the greatest detail. The strategy was designed to examine three general areas of enquiry:

'(a) The changing environment from the Neolithic to the Roman period.
(b) The Iron Age cultural sequence.
(c) The development of the eastern gates' (Wainwright and Cunliffe 1985, 99).

At a more specific level, the excavation was designed to recover samples for the radiocarbon dating of the early prehistoric occupation of the hilltop, to establish the nature of the Bank Barrow, and to study the economy of the inhabitants of the hillfort.

On a more general level, the excavations were designed to complement the research design of the Institute of Archaeology, University of Oxford, into Iron Age Wessex. Most of the specialists who analysed the artefacts and the environmental remains were also actively engaged in work on the material from the Danebury excavations. It was hoped that, by employing the analytical methods used at Danebury, it would be possible to make direct quantitative comparisons between the two sites and other sites excavated in the Oxford research programme, such as Hengistbury Head (Cunliffe 1987).

Layout of this report

It would be premature to discuss the success or failure of these research objectives at this point. It is first necessary to examine the results. This report is split into five chapters which present the data: the setting of the hillfort, the surveys of the monument, the stratigraphy and structures exposed in the excavations, the site environment and economy, and the objects that were recovered. These chapters present a synthesis of the evidence available from the site and explore themes which are deemed important to advancing the discipline; discussion of the methodology and the primary data are placed in fiche unless particularly novel techniques or startling discoveries were present. Detailed discussions of data are presented within the text in smaller type. These chapters are succeeded by a discussion which attempts a synthesis of the material recovered from the excavations, reviews the research design, and discusses the contribution which the project has made to our understanding of the social history of the prehistoric period.

Fiche

The fiche element supporting the text is not supplied with the volume. It can be obtained free and on demand from Wessex Archaeology, Portway House, South Portway Estate, Salisbury SP4 6EB. For the purposes of the volume, the reports within fiche are arranged following the text chapters by subject and author; the tables and figures are numbered in sequence, following the numbering of the text figures and tables, with the reports to which they relate. The fiche reports are distributed on ten fiche as indicated.

Fiche contents

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Archive

The archive and finds are stored at the Dorset County Museum in Dorchester, Dorset alongside the finds and archive from the Wheeler excavations. The paper archive has been copied onto microfiche and a copy held at the National Archaeological Record of the Royal Commission on the Historical Monuments of England.

2 The landscape survey

Introduction

by P J Woodward

The survey was designed to collect and synthesise data to enable an historical analysis of the landscape surrounding Maiden Castle and to clarify the significance of the hilltop occupation. The area of the survey (Figs 3 and 4) was arranged to recover evidence from the three major resource zones immediately adjacent to Maiden Castle: the valley of the South Winterborne, the plain lying between Maiden Castle and Dorchester, and the high ground to the north and west. This study complemented existing fieldwork (Fig 3, survey areas 1–4) in the region (Woodward 1991), which was focused on the South Dorset Ridgeway (immediately south of the South Winterborne), but included an area immediately north of the River Frome (Fig 3.1). The survey area was extended to the west along the line of the Dorchester bypass (Woodward and Smith 1988), as an immediate response to the threat created by this development.

The survey included the mapping and analysis of the following elements: the soils, the present management regime, documentary sources, surviving earthworks and monuments, and soil and crop marks. The sequence of change was further analysed by the collection of artefactual material and the more intensive survey techniques of geochemical mapping, geophysical survey, detailed artefact distribution mapping, and excavation.

Current landuse in the area involves the rotation ploughing of over 90% of the land for a mixed farming regime (Fig 5); in 1985, this included the cultivation of barley, wheat, and kale (Fig 203, Chap 2 fiche). The only substantial areas which were not cultivated were areas of permanent pasture on the steep slopes of the dry valleys, on some areas of river meadow, and Maiden Castle itself. The present field system is a creation of the Enclosure of Fordington Common (Fig 2) in 1874. It is, however, based upon the traditional medieval pattern of landuse, and many of the present divisions are visible in the Simpson Survey of 1779 (Fig 11). This document is the only record which allows us to distinguish the features of the present landscape from medieval and potentially earlier divisions.

Within the landscape a number of earthworks survive. A detailed inventory of these earthworks is present in the County Sites and Monuments Record and many have been published in the RCHME survey (1970). Many of these relate to historic landuse patterns: namely parish boundaries, settlement earthworks, and watermeadow systems. However, others clearly predate this system, such as the Lanceborough barrow cemetery and Maiden Castle. These are all recorded on Ordnance Survey 1:10,000 maps in the archive, together with features only visible as soil and crop marks.

The crop and soil marks were largely plotted from aerial photographs available in three collections: the 1947 Royal Air Force survey in the Salisbury branch of the RCHME, the National Monuments Record, and Dorset County Council. The latter collection includes a set of photographs taken along the route of the Dorchester bypass. The survey also made use of plots previously made from aerial photographs in the National Monuments Record (Wells 1981; C Green 1987a), and some information was checked with aerial photographs undertaken for the survey in 1985 and 1986 by the staff of HMS Osprey. This set of photographs can be found in the survey archive.

The systematic collection of artefacts to produce detailed distribution maps was a central component of the survey. The distribution of worked flint and chert provides the bulk of the evidence for the early prehistoric periods. The techniques were designed to be comparable with other surveys carried out by the Trust for Wessex Archaeology (Woodward 1978; J Richards

Fig 2 A watercolour of the landscape to the north of Maiden Castle by Henry Joseph Moule (1825–1904), August 1869, before Enclosure (Dorset County Museum; Moule 1869)

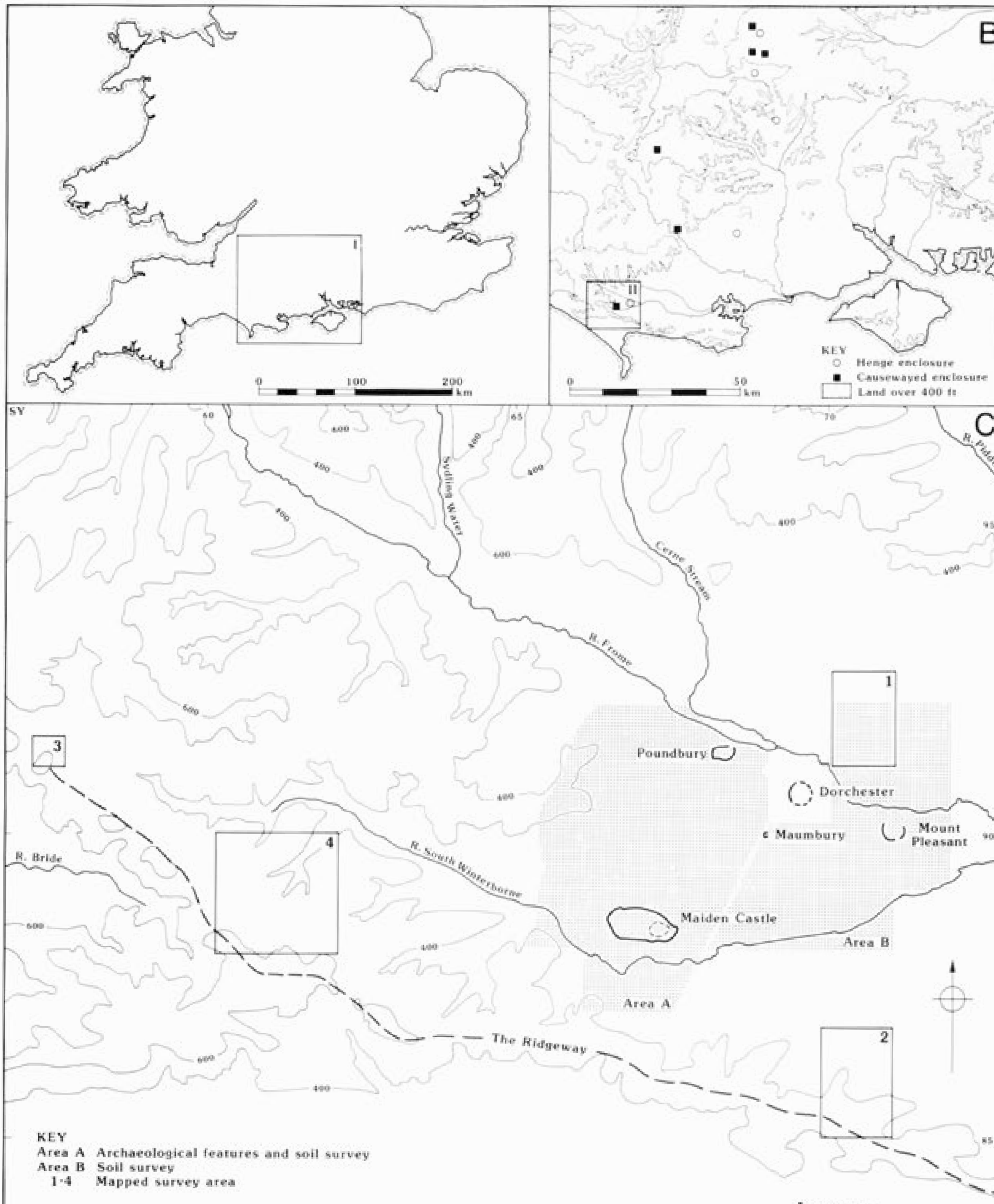


Fig 3 The location of Maiden Castle in relation to the causewayed camps of southern England (B), the areas examined by the South Dorset Ridgeway Survey (C, areas 1–4), and the extent of the recent soil survey (C, areas A and B)

1983). Material from other less systematic collections (Wells 1981) and chance finds in the delimited area were, however, re-examined (Dorset County Museum collections). These collections included an important lithic assemblage which has been widely referred to in discussions of the area (Care 1979; Care 1982; Gardiner 1984).

Geophysical survey of extensive areas of the land-

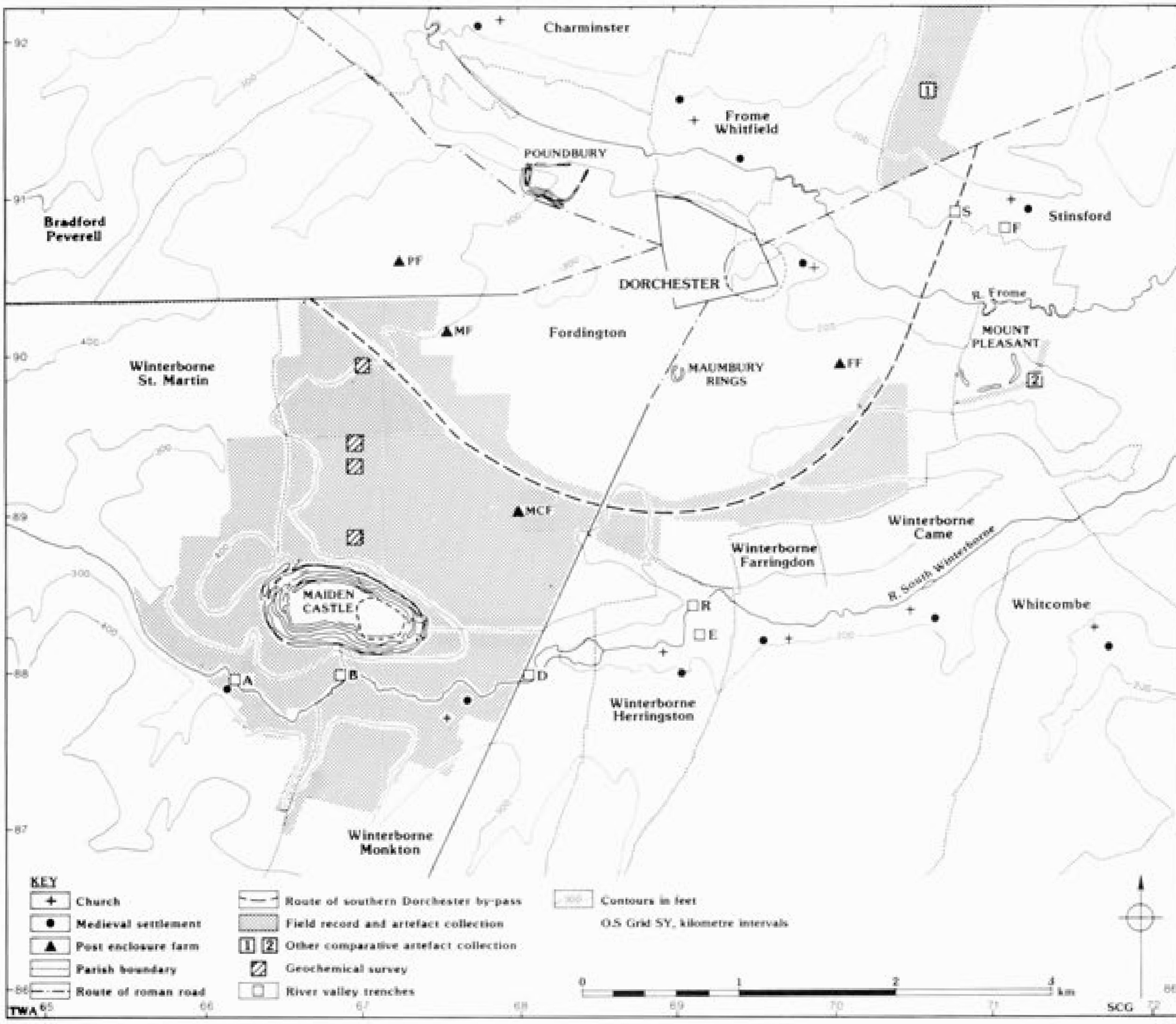


Fig 4 The area of the landscape survey, showing the extent of the area fieldwalked and key archaeological and topographic features referred to in the text

scape outside Maiden Castle was unfortunately not possible in this survey programme. Sample geophysical surveys were, however, undertaken along the route of the Dorchester bypass in 1987 (Woodward and Smith 1988).

Phosphate and magnetic susceptibility samples were taken from five areas on a north–south transect across the survey area to assess the relative importance of settlement activities (Balaam and Porter, Chap 3 fiche).

The next stage in a fuller understanding of the settlement sequence would be systematic sample excavation of the areas identified by artefactual distributions or structural features. Earlier sample excavation of structural features had been limited to the cropmark complex north of Maiden Castle (Bowen and Farrar 1970). With the exception of the small-scale environmental sampling in the river valleys, however, excavation has not formed a part of the present survey. To some extent, this gap in the research design has been filled by the extensive programme of rescue excavation along the line of the Dorchester bypass (Woodward and Smith 1988). This was limited to the extreme northern edge of the survey area, and important zones such as the South Winterborne valley remain to be explored.

The results are presented with an analysis of the current soil regime and the results of the river valley survey. The former provides an essential background to understand the landuse history for the area, and the latter, together with work on the hilltop, gives an insight into the environmental history. This is followed by a discussion of the human influence on this landscape as seen in the documentary maps and historical settlement patterns. Only with an understanding of the landscape divisions of this later medieval period is it possible to distinguish between medieval and prehistoric divisions in the complex pattern of earthworks and cropmarks mapped in the survey area (Fig 12). The detailed discussion of the earlier prehistoric occupation comes from an analysis of the artefact distributions, which forms the subsequent sections of the chapter.

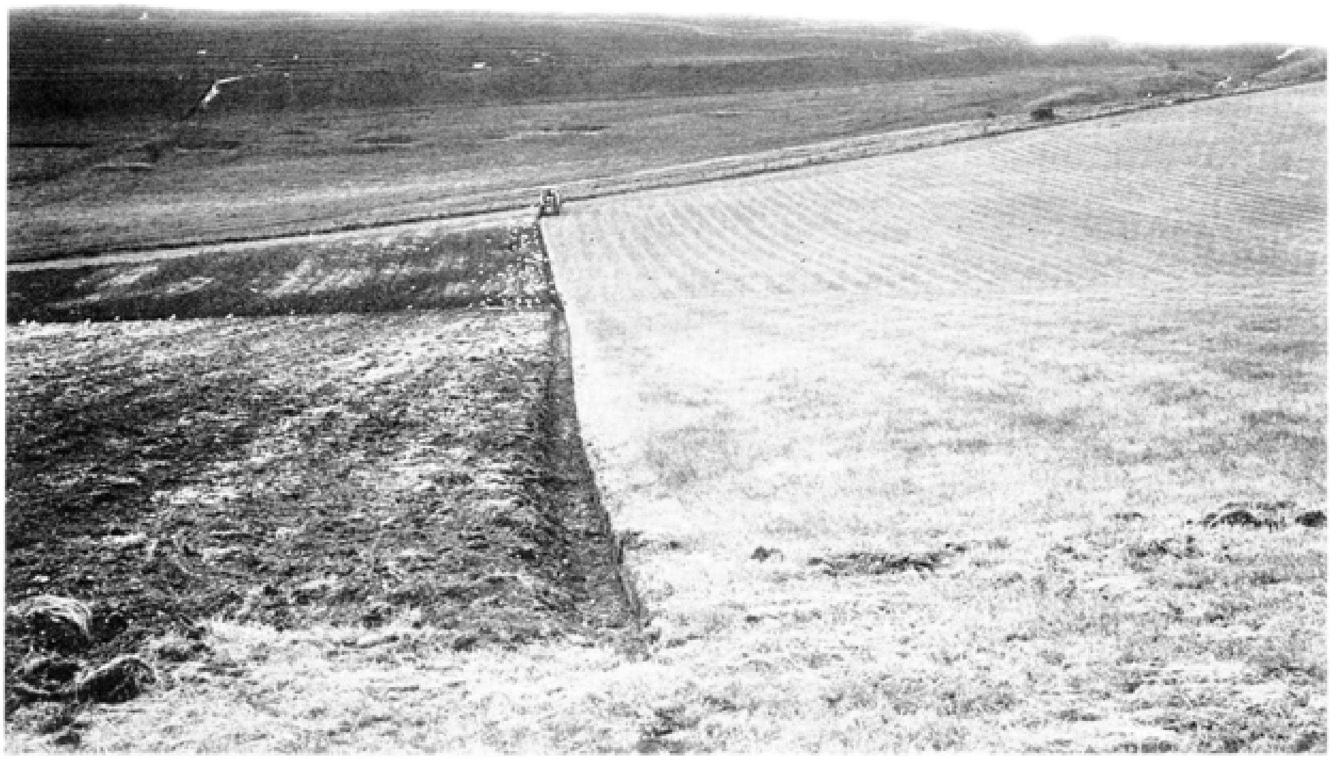


Fig 5 Ploughing north of Maiden Castle, September 1985

The soils

by S Staines

The whole area is underlain by white Upper Chalk. The chalk is a very pure (>99% calcium carbonate) soft limestone which contains bands of flint. The weathering residues from this chalk thus consist of a minute amount of clay and the insoluble flints. The soils present on the chalkland cannot be derived from the weathering residues of chalk and thus must derive from other materials. The drift deposits have been mapped in Figure 202 (Chap 2 fiche).

The Dorset chalkland is thought to have been originally covered with a deposit of later Tertiary rocks and in this area there are remnant deposits of the Reading Beds. These are reddish and yellowish sands, loams, and clays which often contain characteristic black, rounded flint pebbles. There are outcrops of loamy, stony Reading Beds on Hog Hill and along Conygar Hill. There are very small remnants of loams and clays within Maiden Castle and within Mount Pleasant.

Elsewhere on ridge crests and plateaux, the chalk is overlain with reddish and yellowish flinty clays which contain lenses of loamy material and quartzite pebbles. This somewhat heterogeneous deposit, termed Plateau Drift, is thought to be a residual deposit derived from the mixing of thin Tertiary deposits with clay-enriched material directly overlying the chalk. These deposits, basically the result of weathering in warm climates, contain in their upper layers additions of aeolian silt. This loess was windborn from glaciofluvial deposits which formed extensive spreads in north-west Europe at various stages in the Pleistocene, particularly at the end of the Devensian glaciation. As silty soil materials which overlie both drift deposits and the chalk itself are not stoneless, they must have been reworked and mixed with the underlying deposits by periglacial activity at the end of the Devensian glaciation.

Gravelly deposits are common in the area, although their age varies with their position in the landscape. The gravels are predominantly flinty, but quartzites do occur. The oldest gravels are those north of the river Frome, where they form a series of broad terraces. These are thought to have been laid down by a large river following roughly the course of the Frome and exiting to the sea via the Solent. This proto-Solent river probably originated in Devon and perhaps Cornwall, as the gravels contain metamorphic and igneous rocks from these counties. Other gravel deposits occur below alluvium in current river floodplains, but many valleys which do not at present have active watercourses contain gravel spreads. These valley gravels may be alluvial in origin relating to ancient stream courses, or they may be periglacial deposits. Head deposits are crudely stratified or unstratified materials transported by solifluction during cold periods in the Pleistocene. In this area, they principally comprise stony loamy deposits derived from Tertiary and later deposits, but in many places the chalk is overlain by fractured chalk fragments set in a finer white matrix. This Coombe Rock passes downwards to bedded chalk proper and is considered as being similar to *in situ* chalk in terms of soil parent materials.

Stoneless, fine textured alluvium occurs in the valleys of the river Frome and along the South Winterborne. It is seldom more than 0.5m in depth and varies from a very calcareous silty deposit to heavy clay. There are also peat layers and deposits in low-lying parts of the floodplains (see p16; Fig 10).

The distribution of soils is shown on Figure 6. The soils are classed according to the system used by the Soil Survey of England and Wales (Table 1; Avery 1980), and brief descriptions are provided in the fiche for Chapter 2.

Soil acidity

A map of potential soil acidity (Fig 7) has been compiled from the information contained in the soil map. Potential for acidity is based upon known characteristics of soils under semi-natural conditions. It is assumed that liming has not taken place and that the distribution of acidity would be representative of that occurring under a system of agriculture where liming was unknown or not practised.

The map is potentially useful since a large degree of acidity implies, in the absence of liming, an inability to produce cereal crops very successfully, although oats and, to a lesser extent, wheat will

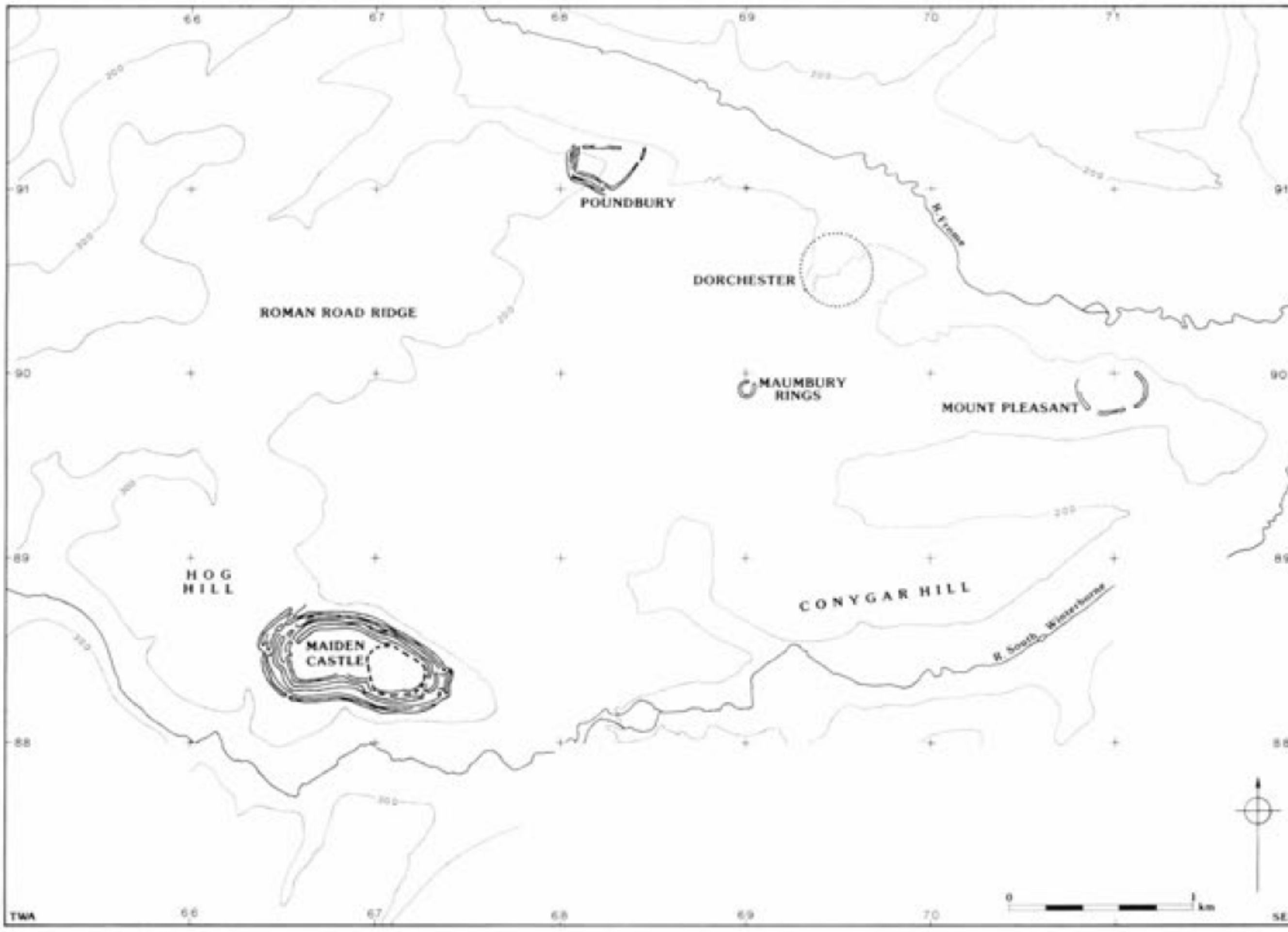


Fig 6 The area of the landscape survey showing the principal soil types

tolerate a degree of soil acidity.

It is worth noting that this map shows acidity as it would be today under these circumstances. Work on the Dorchester bypass excavations (Staines *in* Woodward *et al* in prep) suggests that acidity could well have been much more widespread and that originally there were relatively few calcareous soils in the district before the tree cover was removed.

Soil erosion

On the basis of the presence of colluvium (Fig 8) and of recent work on the modern patterns and characteristics of soil erosion under arable cropping, a broad assumption can be made that all soils that have been cultivated have suffered some soil erosion. The work of Evans and Rouse (p16) suggests that there are large differences in

Table 1 Soil classification

Soil subgroup	*Soil series*	*Definition*
Humic rendzinas	Icknield	Loamy, lithoskeletal chalk
Grey rendzinas	Upton	Loamy, lithoskeletal chalk
Brown rendzinas	Andover	Silty, lithoskeletal chalk
Typical brown calcareous earths	Panholes	Fine silty material over lithoskeletal chalk
Colluvial brown calcareous earths	Millington	Fine silty calcareous colluvium
	Dullingham	Fine loamy calcareous coluvium
Typical argillic brown earths	Dundale	Fine loamy material passing to loam or soft sandstone
	Efford	Fine loamy material over non-calcareous gravel
	Garston	Fine silty material over lithoskeletal chalk
	Rowton	Silty material over non-calcareous gravel
	Charity	Fine silty drift with siliceous stones
	Ludford	Fine loamy drift with siliceous stones
Typical paleoargillic brown earths	Carstens	Fine silty over clayey drift with siliceous stones
	Porton	Fine silty over clayey material over lithoskeletal chalk
Stanogleyic paleoargillic brown earths	Batcombe	Fine silty over clayey drift with siliceous stones
Calcareous alluvial gley soils	Frome	Silty alluvium over calcareous gravel

Note: For full details of soil classification and explanation of terminology, see Avery (1973) and Clayden and Hollis (1984)

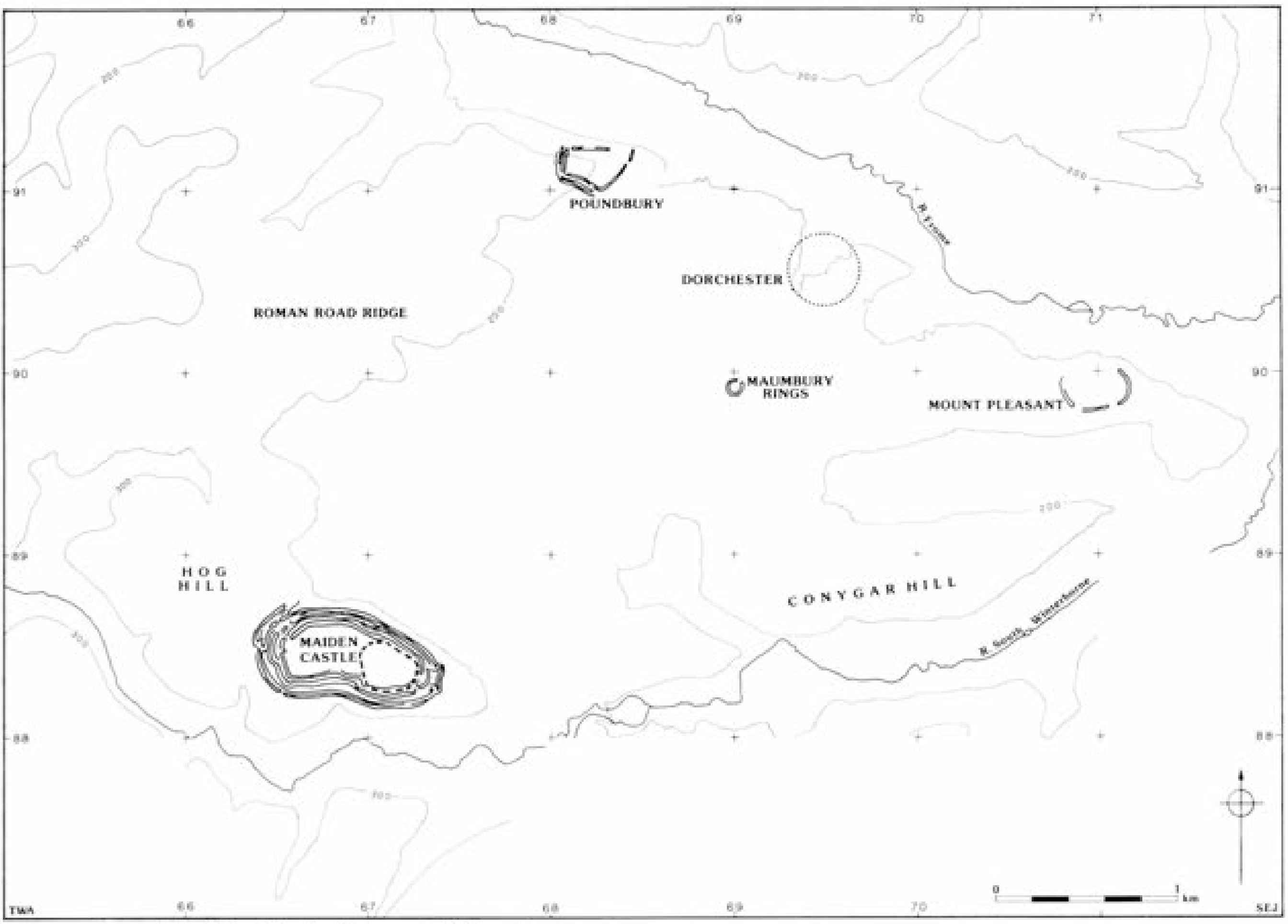


Fig 7 Potential soil acidity in the area of the landscape survey

erosion rates according to soil type and landform. Following local experience in erosion and of erosion in other areas, a map has been devised showing erosion risk (Fig 9).

The evidence for contemporary historic and prehistoric soil erosion comes from a number of sources.

1 The presence of colluvium in many valleys confirms ancient soil erosion. The work of M Bell (1981) and M Allen (1988) suggests that chalkland erosion was certainly occurring during the Bronze Age, Romano-British times, and the medieval period.

2 Active modern soil erosion was observed near Winterborne Monkton during the winter of 1986–7.

3 South of Ashton Farm (SY663773), the boundary between Charity soils nearly 1m deep and Andover soils about 0.3m deep over chalk coincides with a hedgebank. This points to massive soil erosion on the downslope side of the hedge. It is noteworthy that augering of the colluvium in the small valley below this slope revealed chalky colluvium overlying only very slightly chalky brown silty colluvium. This sequence surely represents successive phases of erosion beginning with more or less non-chalky soils and culminating with erosion of rendzinas which were formed as the silty cover was stripped and chalk incorporated within the ploughsoils.

4 At Clandon Hill the barrow is composed, at least in part, of loamy, pebbly, Tertiary-derived material, yet there is no sign of loamy soils derived from tertiary beds in the surrounding area. Most soils around the barrow are very chalky Andover and Upton soils (Fig 6). It seems unlikely that the material from which the barrow was constructed would have been transported from the adjacent hills. Hence, it is plausible to postulate severe erosion of loamy soils in the area around the barrow.

5 The character of present-day soils themselves is indicative of erosion in the past. The presence of very thin chalky Upton soils on knolls suggests much erosion and incorporation of chalk within the plough layer as the soils thin. There is extensive water erosion on the chalklands of Britain today (Boardman and Robinson 1984) which could account for the erosion, although mass movement due to the action of ploughing itself contributes to soil movement. It is noteworthy that the recent excavations along the Bridport–Yeovil Road link (Chowne 1988) provide evidence of water erosion in the form of sand-filled channels within ancient colluvium.

The pattern of colluvium distribution (Fig 8) contains some evidence for the distribution of erosion in the past. For example, the major dry valley running north-east to the Frome contains thick, silty calcareous and chalky colluvium derived in part from adjacent slopes which carry shallow Upton and Andover soils. Smaller tributary valleys surrounded by thicker, less chalky soils contain thinner, less calcareous silty colluvium.

Within a context in which all soils probably suffered some erosion, most erosion seems to have occurred on slopes that now carry Upton, Andover, and Garston soils (Fig 6). The flatter interfluvial areas comprising Charity, Carstens, and Batcombe soils (Fig 6) are thought to have been less prone to erosion, partly because of slope and partly since they are less likely to have been cultivated due to acidity. Those most at risk from erosion are silty soils on steep slopes and also those occurring on or near convexities in the landscape. Least at risk must be those on gentle or flat slopes which have few convexities. Within a prehistoric context, erosion risk is obviously related to landuse. It is known that in tropical countries, where current deforestation can be observed, initial deforestation is often followed, almost axiomatically, by massive soil erosion. It is likely that a similar scenario can be proposed for ancient deforestation in temperate areas. In contrast to, for example, grassland, most of the organic matter within an undisturbed forest ecosystem is within the living trees itself and to a lesser extent in relatively thin topsoils and litter layers. As resistance to soil erosion for a given soil type and site is largely controlled by structural stability and resilience, which is in turn related to organic matter content, then rapid loss of structural stability following forest clearance may engender a significant risk of erosion following loss of organic matter.

Hence, the location of deforestation and soil and land type will control erosion rates. In view of the acidity of soils on Clay-with-Flints and Plateau Drift and their presence on gentle slopes, then these areas may have suffered less erosion overall than the shallower soils currently found on the rolling chalkland. This contention is backed by current observation of erosion on the chalkland, which seems mostly confined to rendzinas on rolling chalkland.

Calculations of potential soil loss have been made for the area mapped to the west of the Dorchester–Weymouth road. These figures are based upon volumes of colluvium discovered during the soil survey. By applying volumes of colluvium to the whole of the area, this gives a figure of 60mm soil loss, whilst, by allocating different rates to different landforms (following the accompanying erosion risk map), the sloping land currently occupied by rendzinas has lost at least 150mm of soil. This must be considered as a significant underestimate of soil loss.

There is evidence from colluvial soil sections near Middle Farm and from the auger survey around Maiden Castle Farm that much of the early colluvial sequences and indeed underlying original soils are missing. Typical sequences consist of very chalky, very calcareous colluvium directly overlying a chalk substratum. However, on other sites, for example in the dry valleys draining northwards into the South Winterborne near Ashton Farm, the colluvium tends to consist of a very chalky grey upper layer overlying a browner, less chalky lower layer. There thus appears to be a variable distribution of preservation of eroded material. This suggests that the earliest eroded material and original valley soils have been carried out of the dry valley systems and deposited either as alluvium in the stream valleys or indeed carried out to sea and deposited in Poole Harbour as marine alluvium.

The river valleys of the South Winterborne and Frome

by J G Evans and A J Rouse

The aim of this work was to extend the environmental investigation of the hilltop to other topographical zones. The primary objective was to detail the environment of the present floodplains in terms of their potential for exploitation by man: ploughing, grazing, harvesting various narrow-leaved plants (such as sedges, grasses, and reeds), and for timber and peat. It would be naive to imagine the floodplain of the Frome as having been the same at all times in prehistory. We only have to view the extensive dendritic systems of the watermeadow channels to realise that this has not been so. The same relic landscape also reminds us of both the potential of the floodplain and the lengths to which man may go to exploit it.

Specifically, the sediments and archaeology of the river valley bottoms and their biota, especially the Mollusca, were investigated. This was done through transects, made up of augerholes, pits, and open sections along levelled profiles. Two areas of the South Winterborne (Ashton Farm, Fig 4: A/B, and Winterborne Herringston, Fig 4: R/E) and two of the Frome (Kingston Maurward, Fig 4: F, and Stinsford, Fig 4: S) were studied. A full report is in the Chapter 5 fiche.

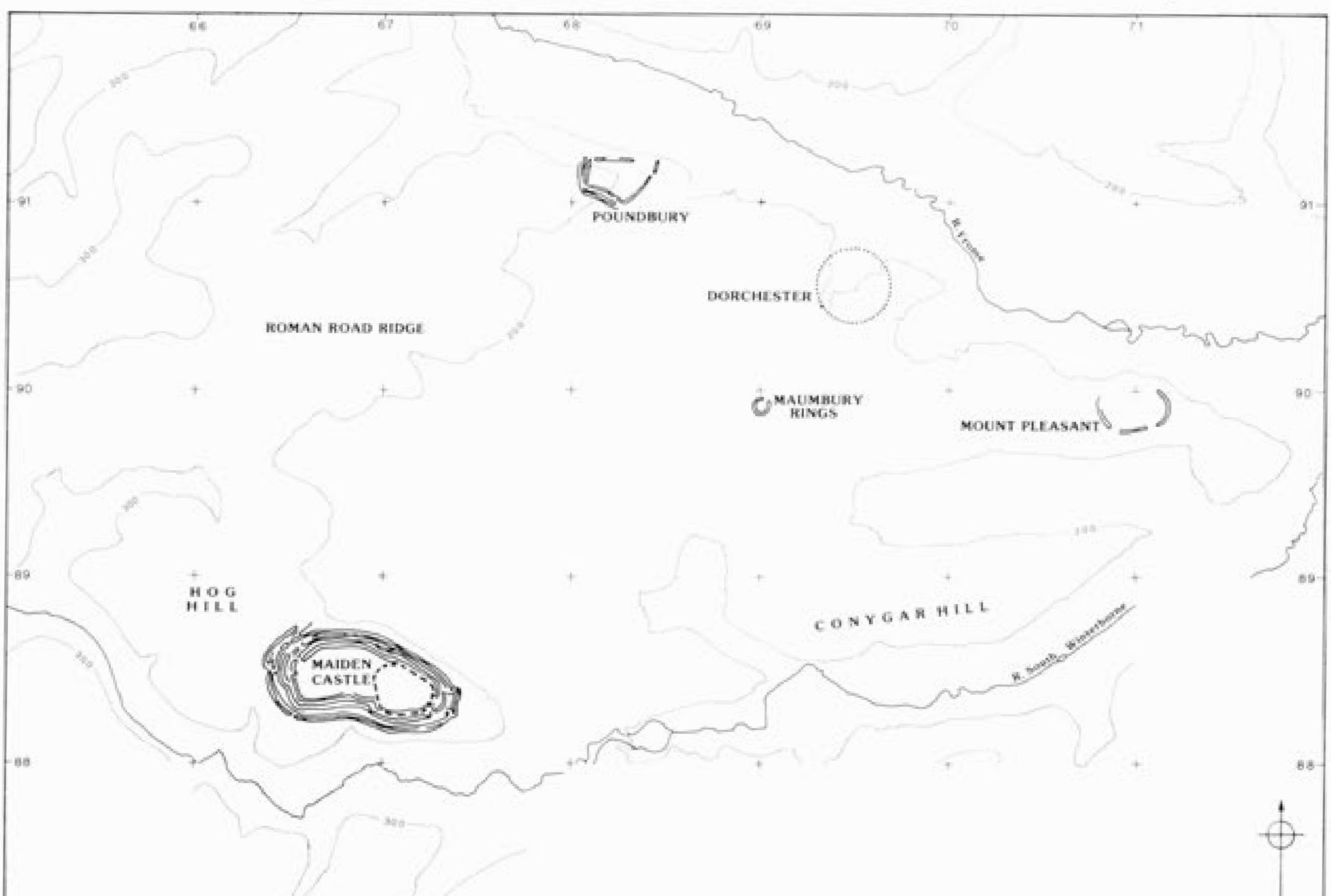


Fig 8 Accumulations of colluvium in the area of the soil survey

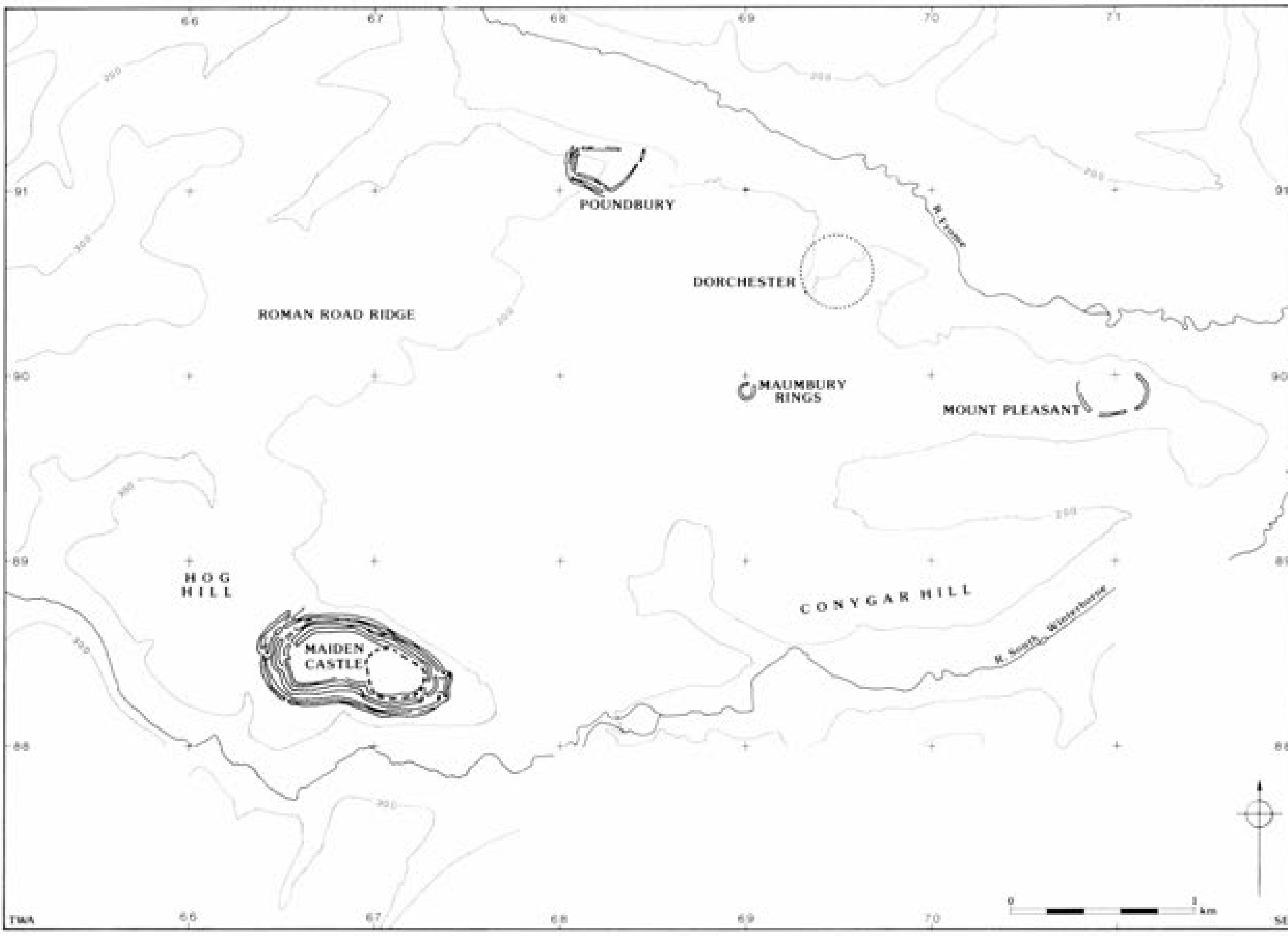


Fig 9 The probable extent of erosion in the area of the soil survey

The results

At Ashton Farm, the deposits in the valley bottom of the South Winterborne consisted of a narrow zone of calcareous alluvium on either side of the river, not more than 0.75m thick, overlying flint gravel. Medieval pottery and other medieval/post-medieval debris lay beneath the alluvium.

At one place beneath the alluvium, there was a concentration of burnt flints and charcoal with, in an immediately overlying layer, flint flakes and a fabricator of Late Neolithic/Early Bronze Age type. Charcoal from a layer immediately below the burnt flints was dated to 3850±70 BP (OxA-1870) and 3770±70 BP (OxA-1891).

A lynchet on the north side of the valley was sectioned. At the base of 1.15m of chalky colluvium and cut into the underlying foxy-brown palaeosol, there was a pit full of charcoal of *Fraxinus* sp. and a mass of carbonised cereal grain, mostly hulled six-row barley. A radiocarbon date of the *Fraxinus* charcoal gave a result of 1530±70 BP (OxA-1869), so the pit is either late Roman or Dark Age and the lynchet of the historic period. In an upslope direction, the lynchet deposits are continuous with the deposits of the dry valley which runs up to the area of the western entrance of the hillfort. In a downslope direction, the lynchet deposits rapidly wedge out and cannot be seen to relate to the valley bottom alluvium. Nevertheless, we can say that the alluvium and the colluvium in this part of the valley are both of the historic period.

At Winterborne Herringston, an open section across the valley in the side of the main channel of the river revealed two layers of alluvium, separated by a palaeosol which had probably once been ploughed. The molluscs from the upper layer of alluvium indicate a permanently-flowing river, not a winterborne. The sequence was overlain by the carriers and drains of watermeadows. No other dating evidence was obtained.

In this part of the valley, a staircase of three lynchets rises to 3m above the valley bottom at its edge. A section revealed a ditch, under 0.65m of colluvium, extending 0.9m down into the periglacial substratum and aligned along the lynchets, that is, parallel to the valley side. There was no dating evidence in the form of small finds, but shells of the common snail, *Helix aspersa*, if not entirely due to burrowing, suggest a Roman date at the earliest: there are no records of this species in the British fauna earlier than that period. So again, as at Ashton Farm, it looks as if the colluvium at the valley edge is of the historic period. Most unfortunately, the downslope edge of the colluvium terminated abruptly and did not relate to the valley bottom alluvium.

The best evidence for the deposits in the Frome valley comes from the side of the drainage ditch of the Dorchester bypass. This cut the northern arm of the river known as the Stinsford Channel. The diagram (Fig 10) shows the main sequence of deposits. Alder wood from the basal gravel (layer 10) dated to 2660±70 BP (OxA-1871). Mollusca from layers 8 and 9 indicate flowing water with the surrounding land being meadow or lightly-grazed pasture. Then there is a palaeosol which becomes peat in channels and supports sedge fen. This is dated by radiocarbon to the late Roman period or early Dark Ages, so the overlying alluvium, sealed by two phases of watermeadow construction, belongs broadly to the Middle Ages. The auger transect at Kingston Maurward (Fig 10) confirms this sequence.

Conclusions

1 The bottom of the valley of the South Winterborne was stable during all of prehistory, with little or no alluviation or lateral movement of the river. This is based on the absence of alluvium and the presence of the prehistoric layers at Ashton Farm.

2 The South Winterborne at Winterborne Herringston was permanent during at least one phase of its

history. We do not know if this dated to the Iron Age, but the state and possibility of permanency has implications for water supply and in particular cattle farming.

3 Colluviation did not take place in the South Winterborne valley until historic times, at least at Ashton Farm and Winterborne Herringston.

4 In the Frome valley during the Iron Age, there was a shifting river course with lightly grazed pasture or meadow and, probably, well-drained soils.

5 Peat formation took place in the late Roman period, when there was an environment of sedge fen, followed by alluviation probably in the Dark Ages.

The documented and monumental sequence

by P J Woodward

The present landscape, with mixed farming, enclosure, and tenanted farms, is essentially that set out in the nineteenth-century Enclosure (completed in 1873–4) described by Moule (1892): 'Fordington Field ... was divided into four large farmsteads ..., each with an extensive house and cottages, were built. Wire fences were erected bounding all roads and dividing farms from each other ...'

This was a fundamental change in farm management from the essentially medieval open-field system of rotation and multiple holdings shown in Figure 11, a summary of Simpson's survey of 1779 (DCO). Again, Moule provides a graphic description (1892): '... I see pleasant sights of the old Manor in long past years .... What a picture I see – half a mile or more of waving gold with not a fence to break it ... processions of loaded waggons bear down on the village homesteads from all parts of the Great Field.'

Most of the survey area lies within the parish of Fordington, but it includes small areas of the parishes of Winterborne Monkton and Winterborne St Martin. The shape and size of Fordington parish contrasts with these other two parishes and most of the surrounding parishes. The latter are essentially long, linear shapes oriented to cut across the contours, whilst the former has a more complex shape, which is less influenced by the topography and encloses a much larger area. The smaller parishes are likely to have been designed to provide roughly equal access to the contrasting resources of: meadow – along the river valley, arable – on the valley sides and at the end of the spurs, and pasture – on the Ridgeway. The accompanying settlements were

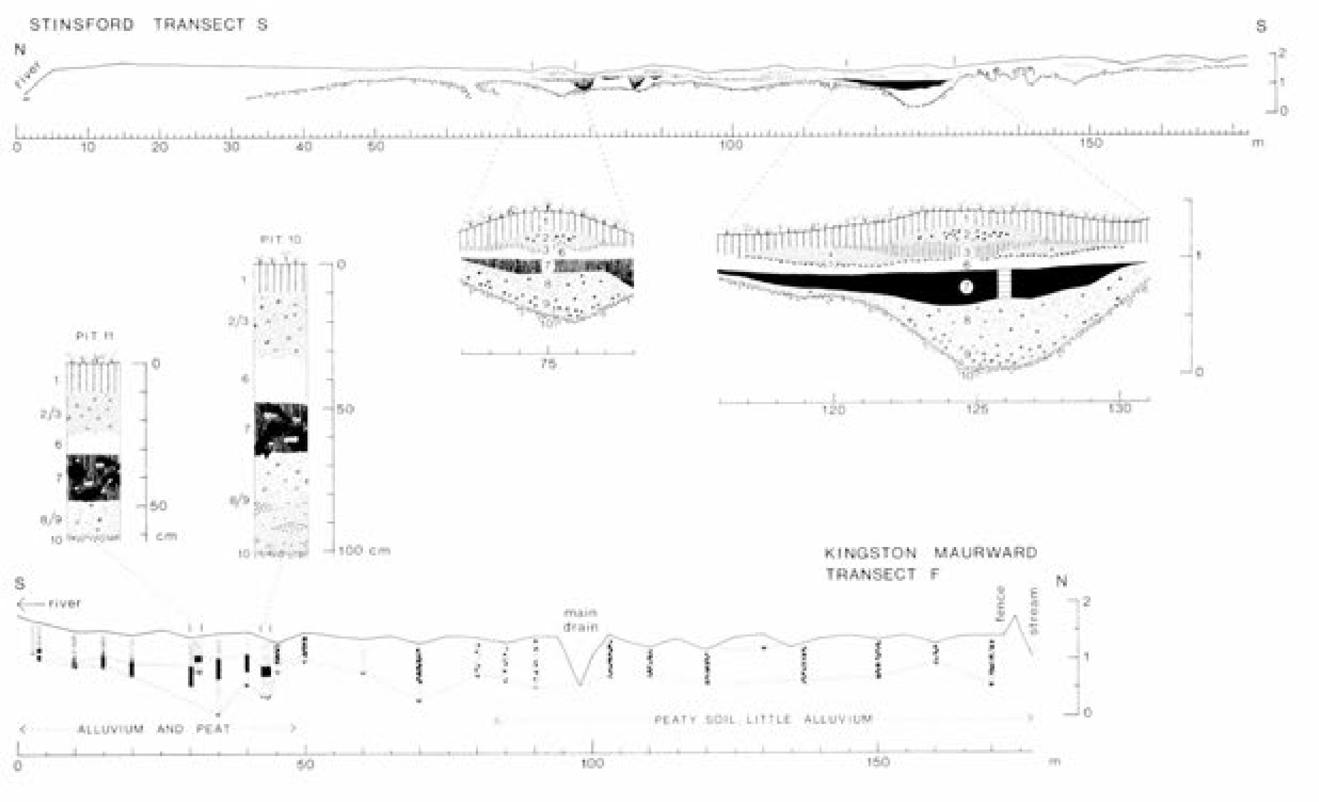


Fig 10 Transects across the floodplain of the Frome at Stinsford and Kingston Maurward, showing the stratigraphy observed in road cuttings and soil test pits; layers: 1, topsoil; 2–5, watermeadow deposits and banks; 6, upper alluvium; 7, peat; 8–9, lower alluvium; 10, flint gravel

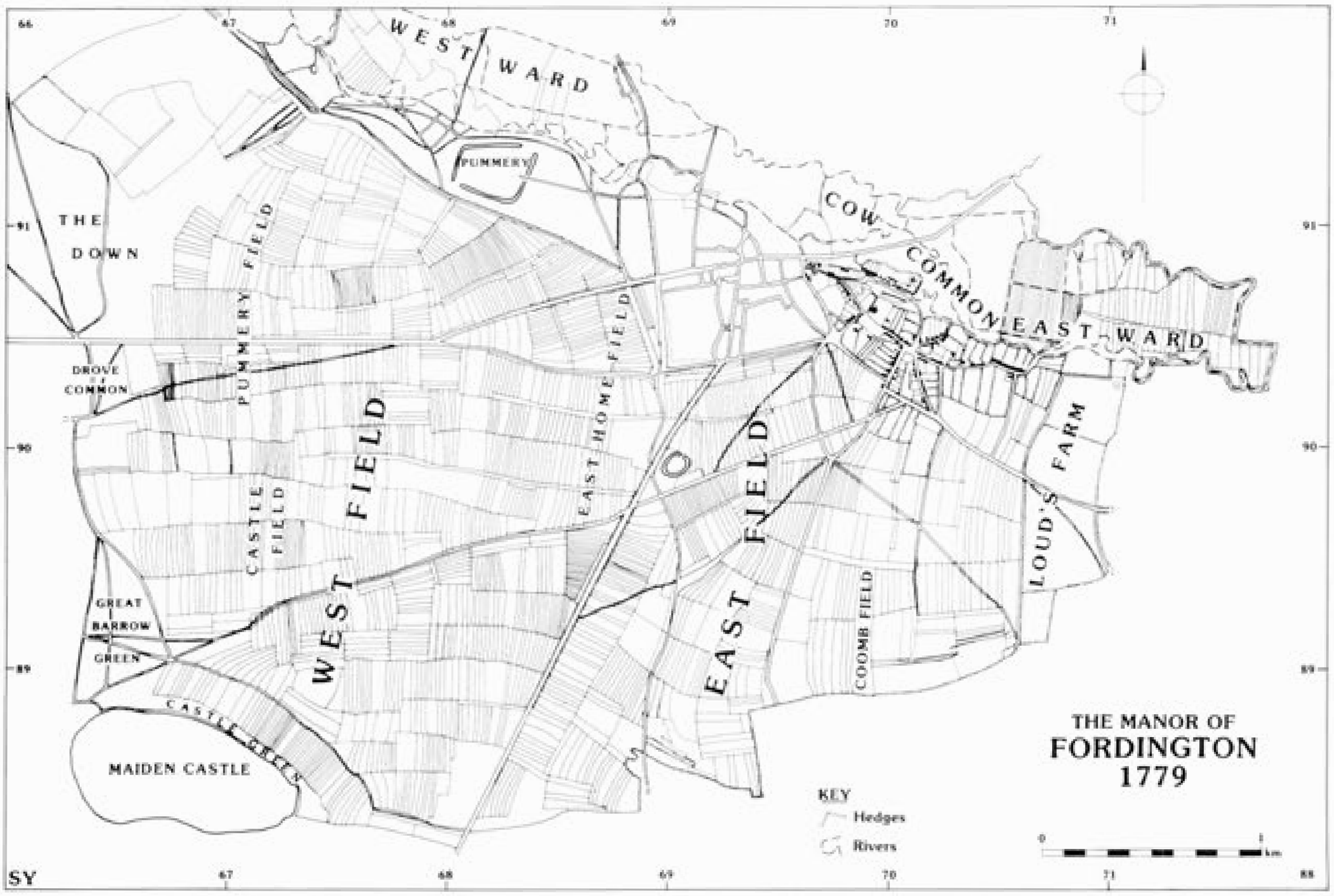


Fig 11 The medieval open fields of Fordington Parish based on the Simpson Survey of 1779

situated at the end of the parish adjacent to the river valley. These parishes may have a more ancient origin, where land division was more closely related to resources necessary for the independent survival of the community. Similar parish divisions can also be seen on the River Stour, to the east of Hambledon Hill (Drew 1947).

In the medieval period, the parish of Fordington would have been primarily composed of arable fields, together with an area of meadow along the River Frome and some areas of upland pasture at the edge of the parish around Maiden Castle and Poundbury. Fordington parish is set out around the town of Dorchester. Medieval settlement centres, as defined by the church foundations, are divided into a group of three ecclesiastical parishes within the ancient defences of the Roman town and the church (of Fordington) set on a ridge outside the eastern boundaries of the town (Fig 4). This parish allotment can be seen to be similar to those of the South Winterborne, with an equivalent range of resources and the churches and settlement close to the River. The shape and size of the parish, however, is rather different, and it can be suggested that Fordington parish is the remnant of an estate administered from the Roman town of *Durnovaria* and set out in the first century AD.

The layout of the fields within the parish of Fordington (Fig 11) has been described by Keen (1983): '... an extensive system of long slightly curving parallel lines made up by the headland and furlong divisions cross the field systems from west to east. Equally remarkable is that a series of north to south headland and furlong parallel divisions crossing the west to east boundaries is present.' He argues (1983, 237–8, fig 72) that these land allotments were the result of a deliberate act of planning and suggests that they originate in the eighth century.

This pattern of medieval land allotment can be seen to overlie earlier field systems of some considerable complexity and clearly derives from more than one period of activity. It is now possible to make some tentative suggestions about the major phases of this earlier sequence.

The most obvious feature of the cropmarks visible in Figure 12 is the appearance of three centres defined by clusters of small fields (Fig 14). The most obvious of these runs along a low ridge east from the Lanceborough Barrow group. The others are at the head of the dry valley known as Fordington Bottom and on the south side of Poundbury hillfort. A further centre has been located by extensive rescue excavations to the east of Dorchester on the Maumbury/Mount Pleasant ridge. Rescue excavations have now occurred on all four of these sites (Woodward and Smith 1988; Chowne 1988; C Green 1987b; S Davies *et al* 1986), and a consistent pattern is appearing. The settlements appear to commence before the Roman conquest in the first century BC or AD (Poundbury is probably the earliest) and show a sequence of development through to the fourth and fifth centuries AD and into the period after the collapse of Roman Britain. None of these developed any buildings of status, and the general absence of such buildings around Dorchester, with the

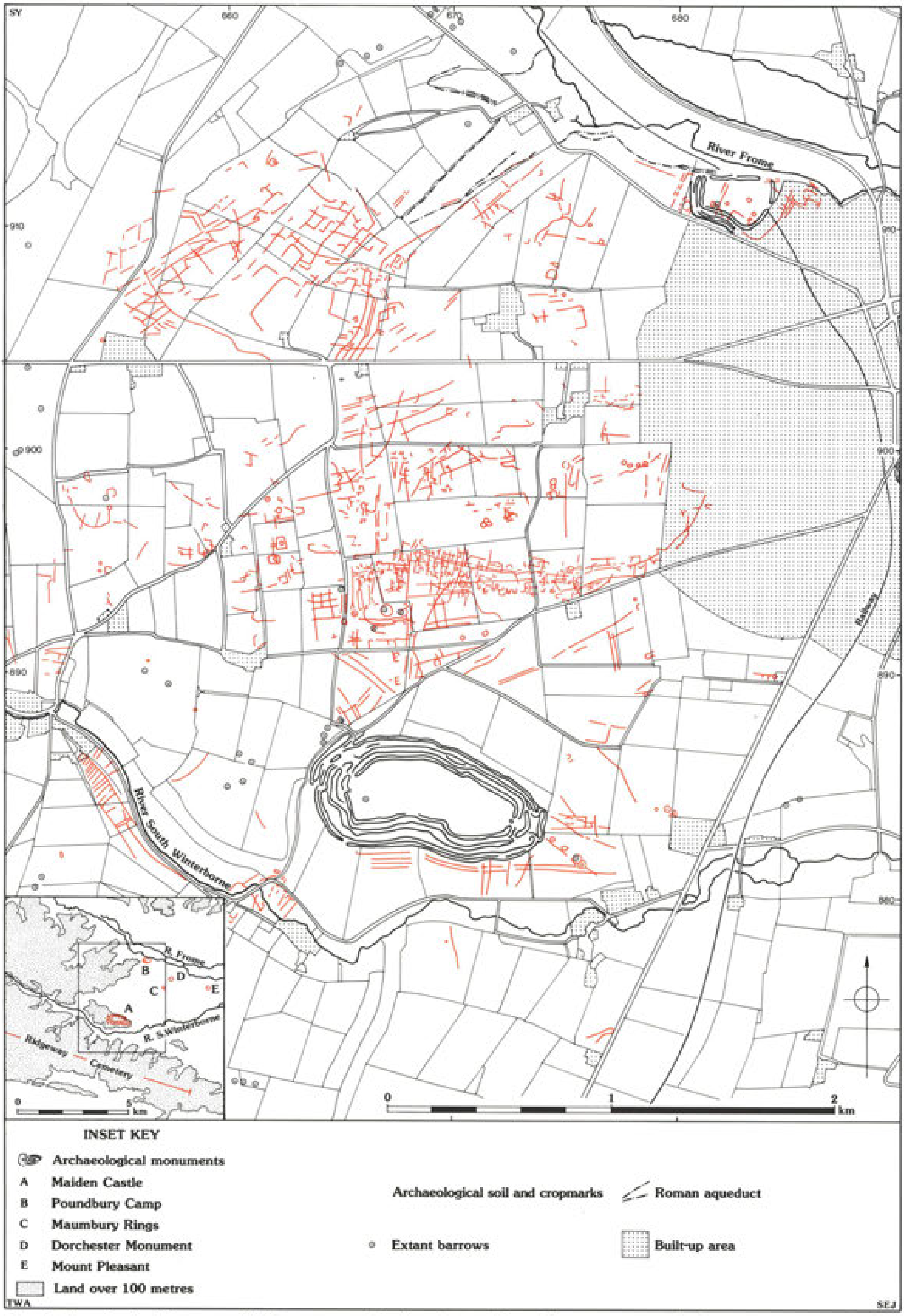


Fig 12 Archaeological features, visible as crop and soil marks, and standing monuments in the survey area north of Maiden Castle

Fig 13 The Lanceborough barrow cemetery from the west immediately after ploughing

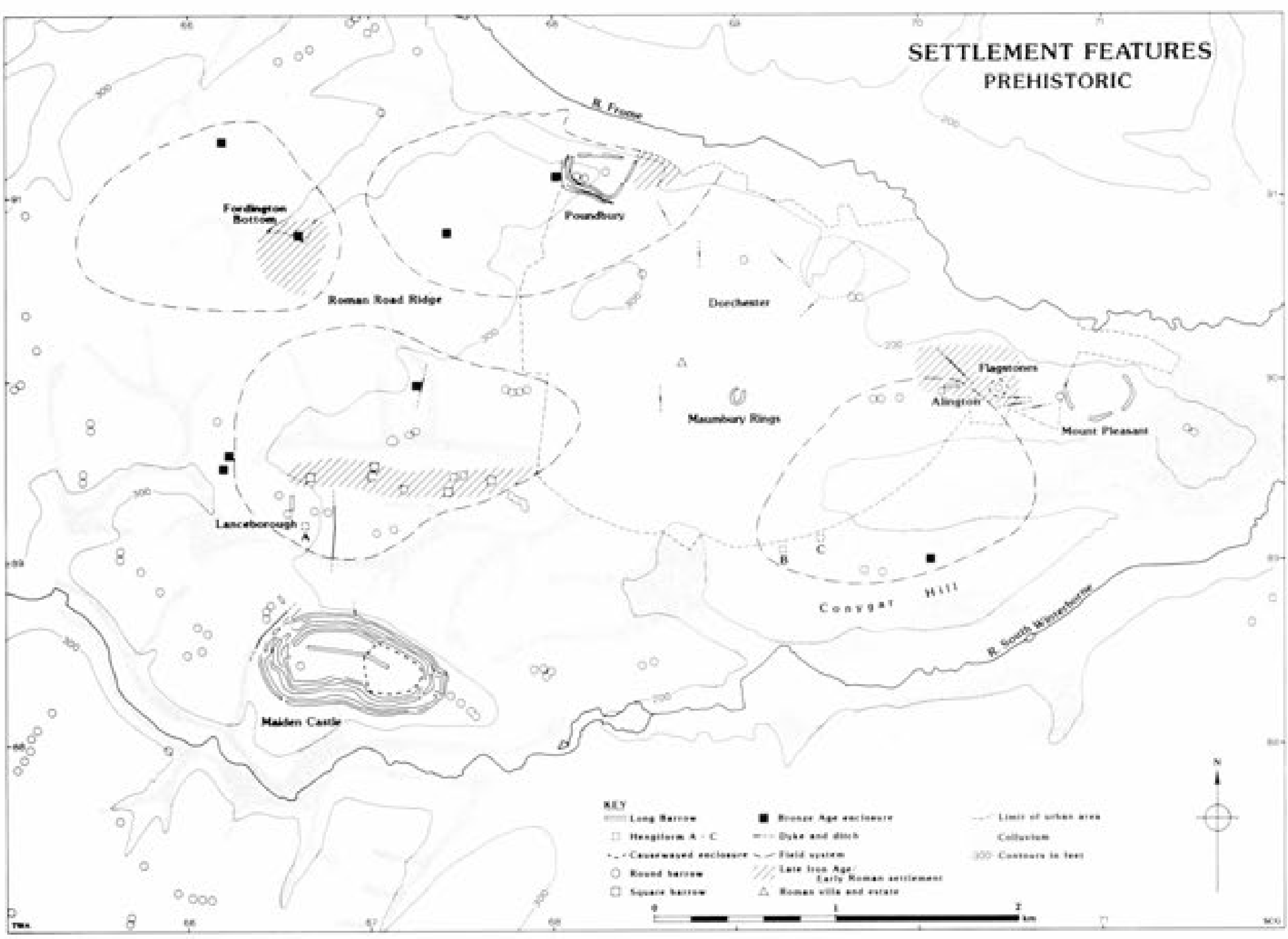


Fig 14 Habitation sites, settlement units, and resource zones

possible exception of Dagmar Road (RCHME 1970, 570), may indicate that the farming wealth of the area was directed into the town of *Durnovaria*.

These four settlement units are of roughly equal area, *c* 1sq km, and can be taken to be the arable units within a mixed farming regime. The area of land to the east of Maiden Castle contains little evidence for field systems, which may suggest a zone reserved for pasture running across to Conygar Hill and with access down to the South Winterborne. The Roman town of Dorchester and its subsequent development obscure a complete picture. Although to date there has only been limited evidence for pre-urban settlement within the confines of *Durnovaria* (Woodward *et al* 1985; Bellamy unpubl; C Green 1987a), a focus may exist somewhere within the Roman town. The buildings at Dagmar Road (RCHME 1970, 570) may have been developed at the edge of a pre-existing settlement and within an associated field unit.

These settlement units can be seen to command roughly equivalent resources: land area, soils, valleys, and ridges. All have easy access to watermeadow and river valley, although the access distance for the unit north of Maiden Castle would be of a greater length, perhaps via the west end of Conygar Hill where a spring line is known to feed the South Winterborne. The units can be seen to have a degree of separation and the blank areas, where there is no evidence for field boundaries, can be interpreted as areas reserved for grazing and perhaps woodland.

These Late Iron Age settlements and their landscape divisions overlie an early system of boundaries which appears to represent an earlier comprehensive land allotment. This system has been dated to the Middle Bronze Age by excavation at Poundbury (C Green 1987b, 31), where some ditches actually underlie the hillfort defences. The sequence is, however, also present at Fordington Bottom (Chowne 1988) and has been partially exposed in the Coburg Road excavations (R Smith 1988).

There is no evidence that the field systems were interrelated on a common coaxial alignment (Fleming 1987), nor that they were arranged in direct relationship to barrow positions, as at Winterbourne Steepleton (RCHME 1970; Woodward 1986). However, it is clear that barrow cemeteries are located on specific ridges on the edge of these settlements (Fig 14). The number of barrows within the area has been considerably increased by the survey and recent excavations (Woodward and Smith 1988, 87), but it is notable that the Roman Road Ridge appears to have none. The variation in topography dictates the degree of proximity of barrow cemetery to field system. On the shallower slopes and flatter ground to the north of Maiden Castle, the cemeteries and settlements are closely integrated. On the steeper slopes with more defined ridges, such as the Ridgeway, there appears to be a greater degree of separation. These cemeteries are also located on areas of severely eroded soils (ie the Maumbury/Mount Pleasant ridge and the Lanceborough ridge), which are areas of earlier clearance and settlement (see below, p31–2).

An important component of this field system is a series of major boundary banks and ditches. The most obvious today is clearly visible as a north to south soil and crop mark to the east of the Lanceborough barrow group (Fig 13). This can possibly be linked with the outer earthwork of the western entrance to Maiden Castle and a boundary cutting a Bronze Age enclosure at Middle Farm (Woodward and Smith 1988, fig 6). C Green (1987a) has argued that these large boundaries are of Iron Age date and were developed to enclose and defend an area of land between the two hillforts and the Mount Pleasant ridge. The excavations at Middle Farm (Woodward and Smith 1988), however, suggest a Late Bronze Age date, as was expected from fieldwork in other areas of Wessex (Barrett 1980, 91). The use of these boundaries during the Late Iron Age is possible, but the inception of a divided landscape can be taken to have occurred during the Bronze Age with the hillforts being subsequently superimposed upon the system.

Only one enclosure has been dated to the Bronze Age by excavation, Middle Farm (Woodward and Smith 1988), but others (Fig 14) can be suggested from the complex of archaeological features (Fig 12) by typological comparison. The clearest examples are at the head of Fordington Bottom, immediately to the southwest of Poundbury (C Green 1987b, fig 4), and within Maiden Castle (Figs 30 and 33).

The function of the two hillforts and their development within this system can be seen to complement each other. Maiden Castle is sited on a ridge that physically dominates and controls the resources of the surrounding area. It lies between the two major resource zones (river valley and upland). Poundbury, in contrast, lies within the low-lying land around the River Frome. The latter may have had a more restricted function to act as an enclosure for stock and control movement along and across the river (C Green 1987b).

The Neolithic and Early Bronze Age landscapes can only be defined by reference to the surviving ritual monuments: barrows, causewayed camp, and hengiform enclosures. No field systems or habitation sites have been recognised in this complex, other than by excavation: Poundbury (C Green 1987b), Mount Pleasant (Wainwright 1979b), and Flagstones (Woodward and Smith 1988). These patterns of settlement and landuse can only otherwise be identified by artefact distribution.

Artefact distribution

by P J Woodward and P Bellamy

Methodology

The fieldwalking collection pattern was based on the national grid and in a manner comparable to that used on the South Dorset Ridgeway Project (Woodward 1991) and elsewhere in the region by the Trust for Wessex Archaeology. These techniques are described in Woodward (1978b) and J Richards (1983), and a full description is provided in the fiche for Chapter 2. The method provides a reliable qualitative and quantitative database for comparative settlement studies.

The field collection in this project was carried out on a 25m grid, which provided a 10% surface scan of the ploughed fields (a 20% surface scan was collected for the South Dorset Ridgeway project,

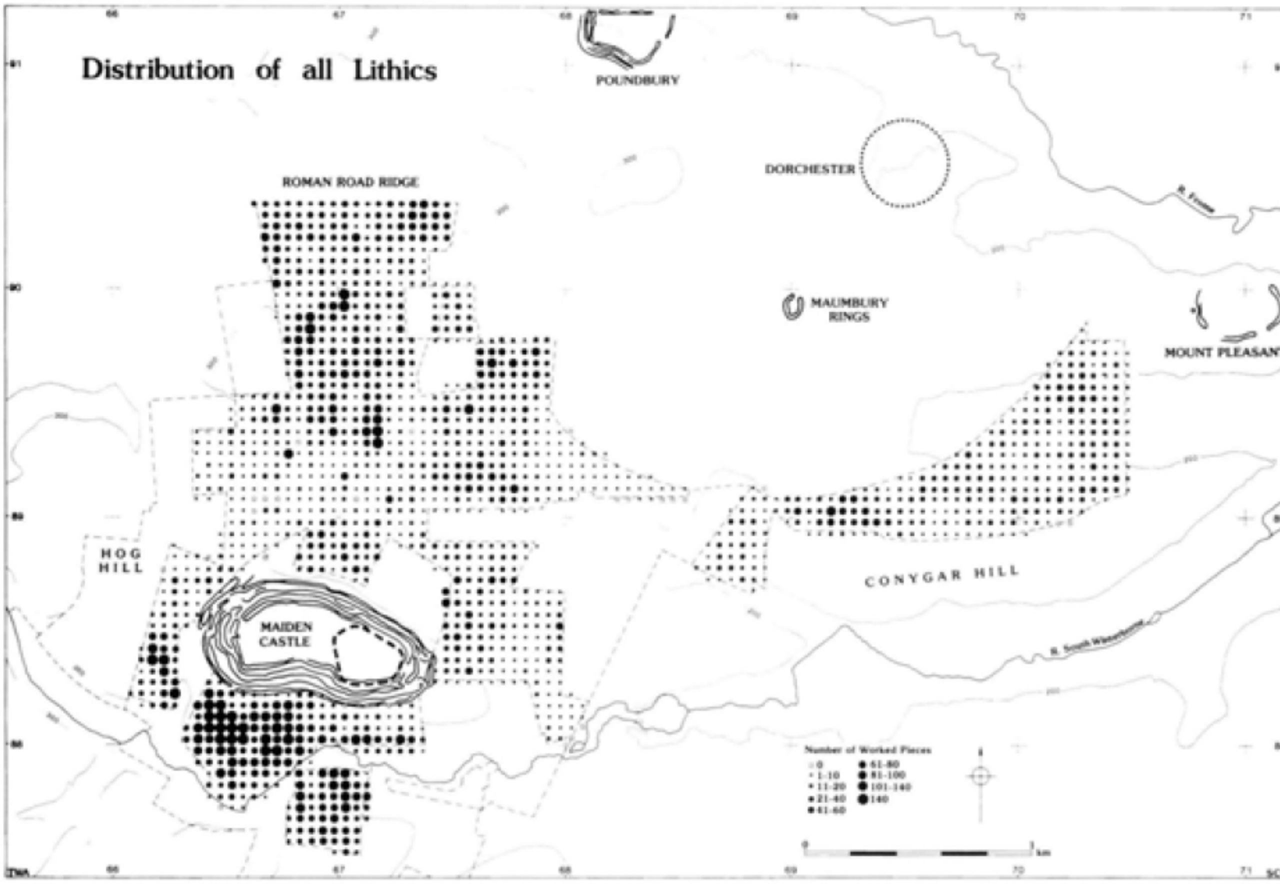


Fig 15 *The total lithic distribution*

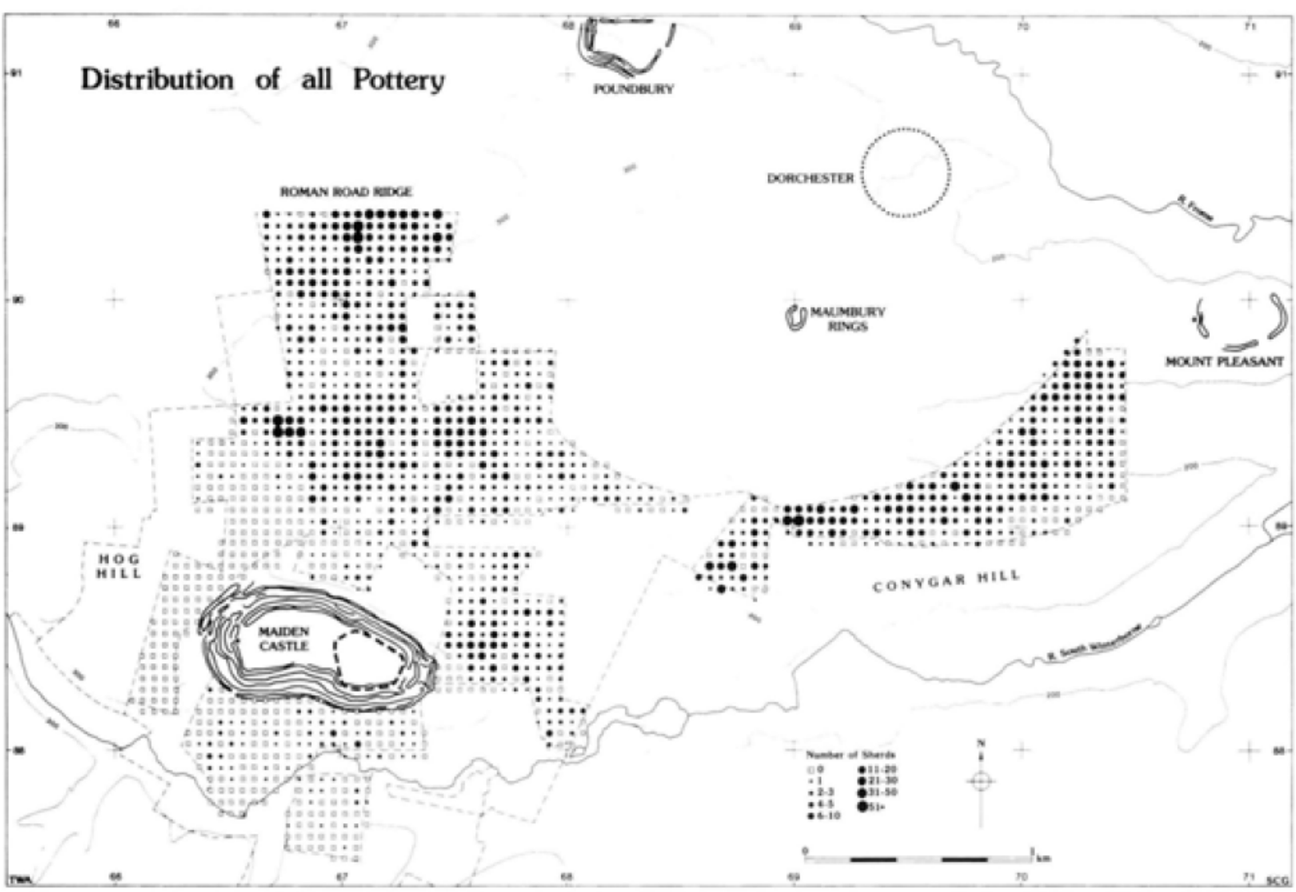


Fig 16 *The distribution of all pottery types*

Woodward 1991). All artefacts were collected and recorded and from these a series of distributions have been generated for the more informative material. These distributions are plotted on a 50m grid.

The artefacts were collected from field surfaces in conditions ranging from just ploughed, to ploughed and weathered, and to seeded with initial growth. The details of this together with those of weather conditions and visibility were collated into 'comparative field conditions' and ranked for each collection unit (Woodward 1978b) to help clarify any differential collection which may have affected overall patterns (see next section). The comparison of these field conditions (Fig 204, Chap 2 fiche) with the overall lithic collection (Fig 15) and all pottery (Fig 16) shows that, although there may be some local variation in distribution between areas as a result of field conditions, this was not sufficient to mask the acute contrasts in the overall lithic patterning apparent in Figure 15.

Overall patterns

The overall patterning for the lithics (Fig 15) shows marked clusters in which considerable quantities of material occur: notably to the south of Maiden Castle above the South Winterborne, to the north of the Lanceborough Barrows, and along the Bridport Road ridge. Small concentrations occur: to the north-east of Maiden Castle, below Conygar Hill, and below the Maumbury/Mount Pleasant ridge. This overall pattern of lithics may reflect settlement and landuse patterns in earlier prehistory.

This lithic distribution is in complete contrast to the overall pottery distribution (Fig 16). The patterning to the north and east of Maiden Castle shows a relative evenness that corresponds to the open fields of Fordington parish. To the south of Maiden Castle, a lesser pottery density occurs in the open fields of Winterborne Monkton. This overall distribution contains a large quantity of later medieval and post-medieval pottery and can be taken to result from manuring of the fields, for example night soil and bedding straw from town and village centres (Fig 4). The absence of pottery at the west end of the Maiden Castle ridge is a clear indication that this area was treated somewhat differently (ie not manured) and this might suggest that it was held in permanent pasture. In a similar way, 'Great Barrow Green' at Fordington parish (Fig 11) shows clearly as a blank on this distribution.

There was no prehistoric pottery in this assemblage. The Romano-British component (Fig 17; full catalogue in Chap 2 fiche) occurred in close association with the known settlement on the Lanceborough Ridge and is focused at the western end of the area defined by crop and soil marks. This assemblage primarily comprised sherds of BB1 fabrics and forms of Poole Harbour origin (Textural Group A2: p185). There are no pre-conquest forms present (Lisa Brown pers comm). The occurrence of Samian and New Forest sherds also confirms a date range of first to fourth centuries AD. A scatter of sherds to the east and south-west of Maiden Castle may possibly indicate small habitation sites. The scatter to the north of Conygar Hill probably derives from the settlement site at Alington Avenue (S Davies *et al* 1986). It is of interest that these Romano-British distributions show very little spillage of material away from settlement centres and contrast with the distribution of medieval and post-medieval ceramics.

Two other overall distributions are of interest: those of slingstones and gunflints (Chap 2 fiche, Fig 205). Both show distinct patterning. The slingstones are concentrated close to the eastern entrance of Maiden Castle and the gun flints are scattered below Conygar Hill. The slingstone distribution may be the result of warfare or accidental spillage from delivery to the hillfort. The gunflint occurrence may reflect manufacture or usage. The lack of lithics in this area suggests the latter and documentary evidence may ultimately discern a cause, such as game shooting or the activities of the Dorset Regiment. These two distributions reflect very specific events.

The interpretation of these distributions relies upon known structural association and documented settlement and landuse patterns. For earlier periods in prehistory, there is less settlement structure and fewer habitation sites, making the interpretation of the overall lithic distribution difficult. This is further complicated by the absence of other contemporary material types in the field collection (cf pottery and bone), the identification of the activities from which the lithic debris might result (material curation, tool manufacture, function, usage, discard, and reworking), and the potential chronological span of the activity. The discussion of overall lithic patterns is therefore limited until well-dated, stratified assemblages are available

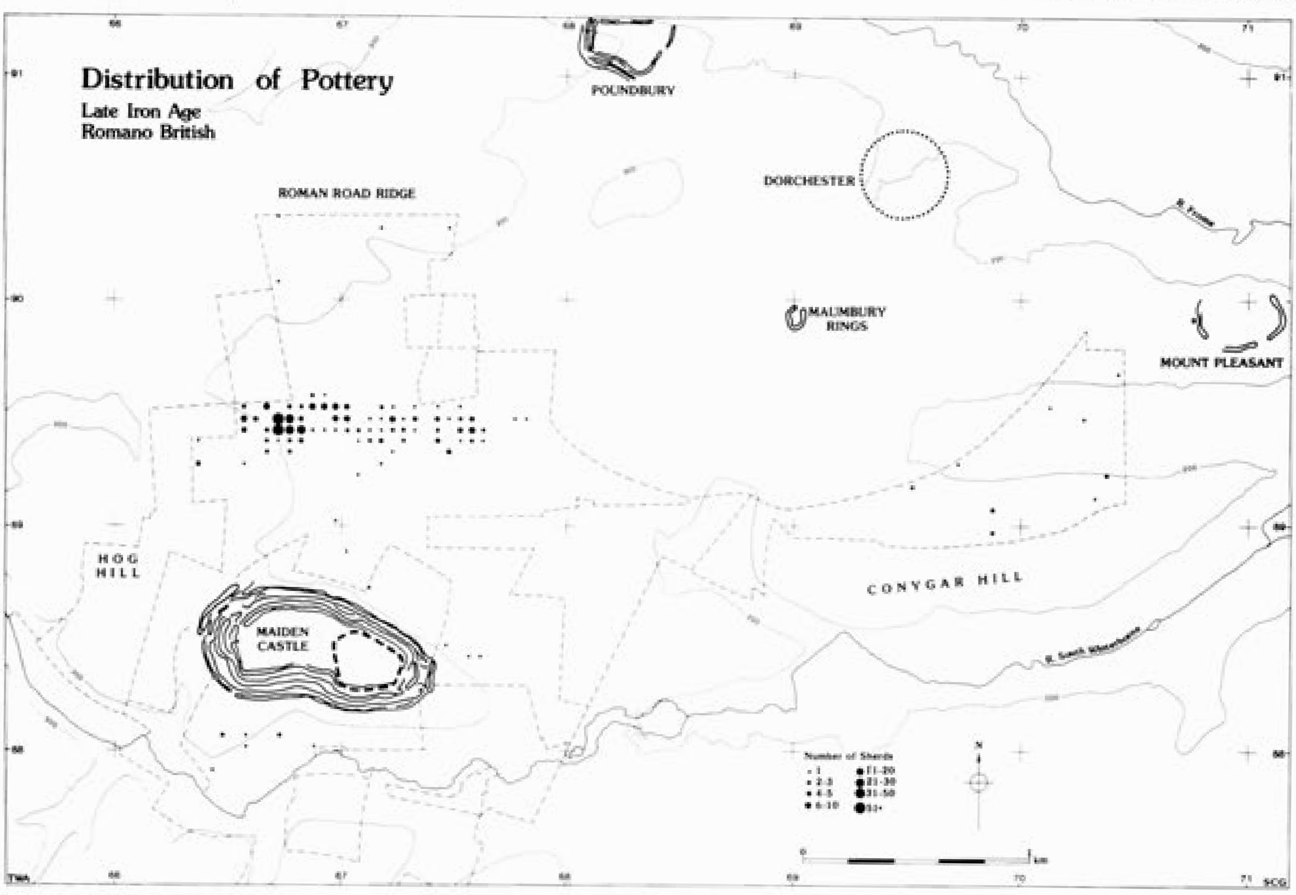


Fig 17 The distribution of Romano-British pottery

Table 2 The degree of association between overall lithic categories and soil types as represented by chi-squared test applied to the lithic distributions of the original survey area

		Worked chert		*Flakes*		*Cores*		*Tools**		*Scrapers*		
Soil subgroup	*Soil series*	*Chi*	*Sig*	*Chi*	*Sig*	*Chi*	*Sig*	*Chi*	*Sig*	*Chi*	*Sig*	
Humic rendzinas	Icknield			2.56	0.75	11.87	0.995			3.52	0.90	Soil erosion
Grey rendzinas	Upton	0.88	0.50	5.34	0.975	1.74	0.75	0.757	0.5			Soil erosion
Brown rendzinas	Andover	2.30	0.75	1.56	0.75	2.57	0.75	2.46	0.75	0.23	0.25	
	Andover chalky	17.75	0.995	3.59	0.90	11.69	0.995	3.67	0.90	2.05	0.75	Soil erosion
Typical brown calcareous earths	Panholes	0.11	0.25	3.26	0.90	2.52	0.75	1.46	0.75			
Colluvial brown calcareous earths	Millington deep	0.32	0.25	2.66	0.75	1.65	0.75					Colluvium
	Millington shallow	0.38	0.25	0.003		0.04	0.05	0.18	0.25			Colluvium
Typical argillic brown earths	Dundale	0.05	0.10	0.78	0.5	3.44	0.90	0.05	0.01	0.39	0.25	Patchily acid
	Garston	0.09	0.01	8.80	0.995	3.13	0.90	12.64	0.995	13.52	0.995	Patchily acid
	Rowton	0.08	0.10	1.19	0.50	0.66	0.50	0.439	0.25	0.28	0.25	Colluvium
	Charity											Patchily acid
Typical paleoargillic brown earths	Carstens	39.54	0.995	7.84	0.99	0.274	0.25	33.22	0.995	1.51	0.75	Acid
Calcareous alluvial gley soils	Frome											

Note: * All lithic tools excluding scrapers

from the excavation of the lithic scatters themselves and their associated structures.

At this stage, the overall lithic pattern can be partly interpreted by examining the relationship of the overall scatter to topography (compare Figs 6–9 and 15). The major spread of lithics is associated with the slopes above the South Winterborne, on soils (Andover and Upton) developed in areas of severe erosion. This contrasts with the area of low density immediately adjacent and to the north of Maiden Castle, where similar soils occur and the erosion can be discerned in the colluvial accumulations. Although the latter may to some extent mask any distributions accumulated in the dry valleys, the area masked is small. This would suggest that a preferred settlement location in the Neolithic and Bronze Age was the valley of the South Winterborne, ie close to the most varied and rich natural resources, and with access to rich sources of nodular flint.

It is interesting to note here that the later documented settlement, the village centres of the medieval parishes, also occurs at regular intervals along this river valley. It is also worth noting here that the valley bottom is covered by an alluvial soil across which no lithics were recorded in the fields surveyed. Sections through the valley sediments confirm that these valley sediments were deposited in the medieval period and mask earlier levels (see p16). However, there is a remarkable absence of Iron Age and Romano- British settlement recorded for the river valley, and virtually no material of this date was recorded from the river valley. This does not, however, contradict the suggestion that the parish land allotment has its origin in the pre-medieval period, as evidence from excavation is not available for the village sites. Some of the ancient fields within these parishes were in a number of cases modified and developed in the Romano-British period (RCHME 1970; Woodward *et al* 1985).

The next most intense lithic concentration occurs in the centre of the area to the north of Maiden Castle on either side of a long west–east dry valley (Rowton series soils, Fig 6). This distribution is essentially associated with brown earth soils of the Garston and Charity series (which occur either because they are less eroded or because the original soil profile was deeper). This zone, along a shallow coombe between developed chalky soils of the Andover series and the potentially acid soils of the brown earths, may also have been a preferred settlement location.

The only chalk colluvium (Millington series, Fig 6) to be identified in the dry valley system occurs in a steep north–south coombe adjacent to Middle Farm which can be shown to have formed during the Bronze Age (Woodward and Smith 1988). The lower non-chalky colluvium may be the remnant part of an earlier accumulation which has, in part, been eroded out of the system (see p16). This might suggest that, in an earlier period, streams could develop at certain times of the year to wash any soil accumulation further down and out of the system of valleys towards the South Winterborne and Frome. The lowering of the watertable by Neolithic clearance may have allowed subsequent accumulation in the coombes to remain. The flint in this zone is nodular flint, freely available in the drift deposits, which would have been brought to the surface by erosion and cultivation.

The other, lesser lithic concentrations again occur where erosion is greatest and adjacent to dry valleys (compare Figs 15 and 9).

It is clear from this discussion that the overall flint distribution may reflect both the surface availability of the raw material (a product of erosion) and/or the foci of the most intense settlement (as exemplified by the use of flint). It is only by examining the distribution of other individual categories of worked flint in relationship to this overall material distribution that this problem of interpretation can be resolved.

Lithic variation and typology

The lithic artefacts have been divided into broad categories which are considered in terms of distribution, relationship to topography, and soils. Technology was not exhaustively analysed, nor were the finer details of typology. These finer divisions were thought to be secondary and should be carried out on stratified assemblages from a variety of sites. However, some secondary analysis was undertaken to compare with the excavated assemblage from Maiden Castle and this enabled a broad assessment of the assemblage composition to be made.

The typological categories and technological variation noted in the analysis could derive from two different, though not mutually exclusive, processes: chronological change and functional variability. The most obvious technological change is from a system of prepared cores for blade production in the Neolithic to a more varied and crude core technique which resulted in the production of thicker flakes in the Bronze Age. Locally, these changes in technology are clear in assemblages on the South Dorset Ridgeway (P Harding 1991) and the assemblage on Maiden Castle (see p214). The distinctive characteristics are summarised in Table 3 (after P Harding 1991, 86, table 16). Various tool types also have generally accepted chronologies and these are summarised in Table 4 (arrowheads are described in detail by S Green 1984; axes and picks by Care 1979).

The distribution of tool types may be related to the different functions which these tools had and, to some extent, could identify different landuse patterns. The interpretation of overall patterns has

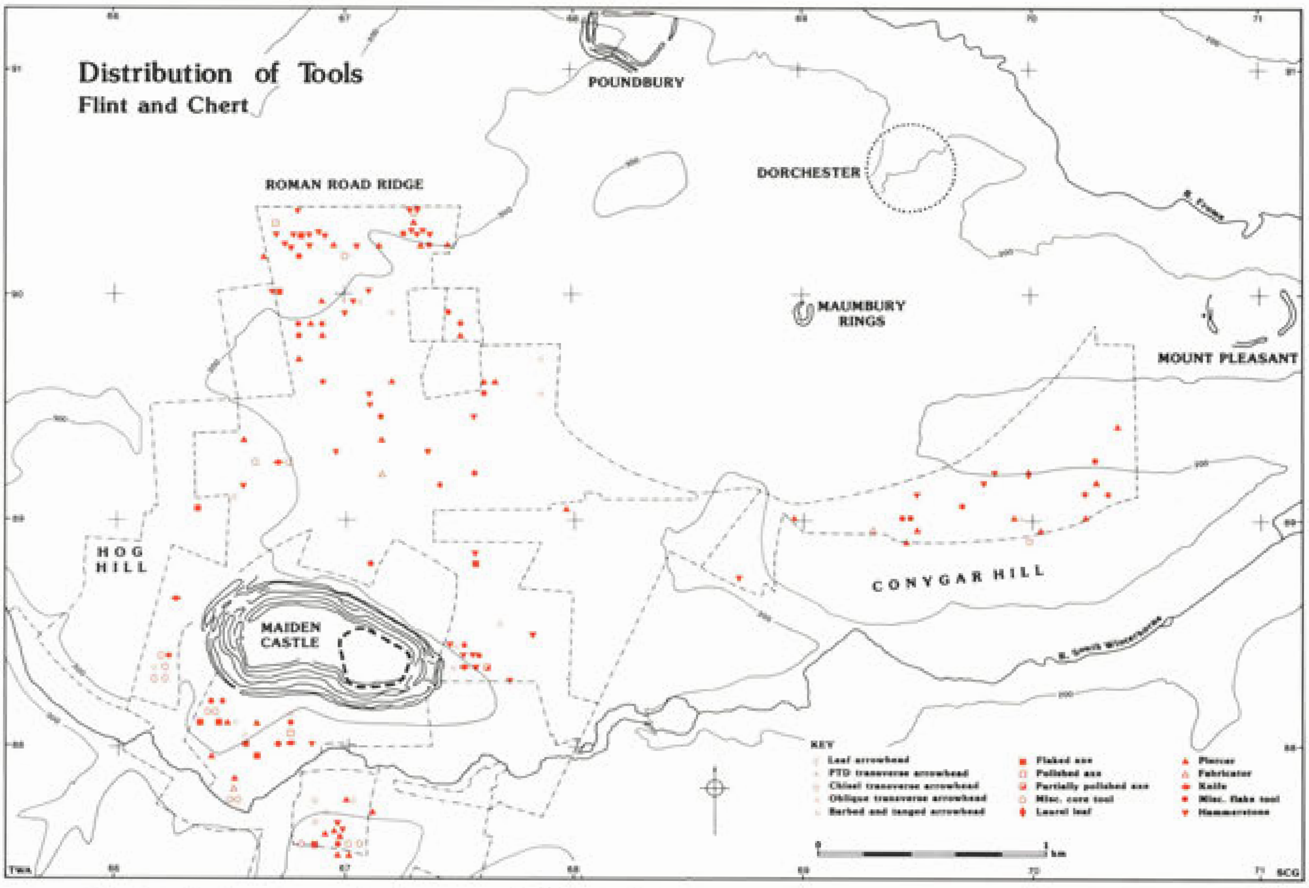


Fig 18 *The distribution of arrowheads, axes, and other tool types*

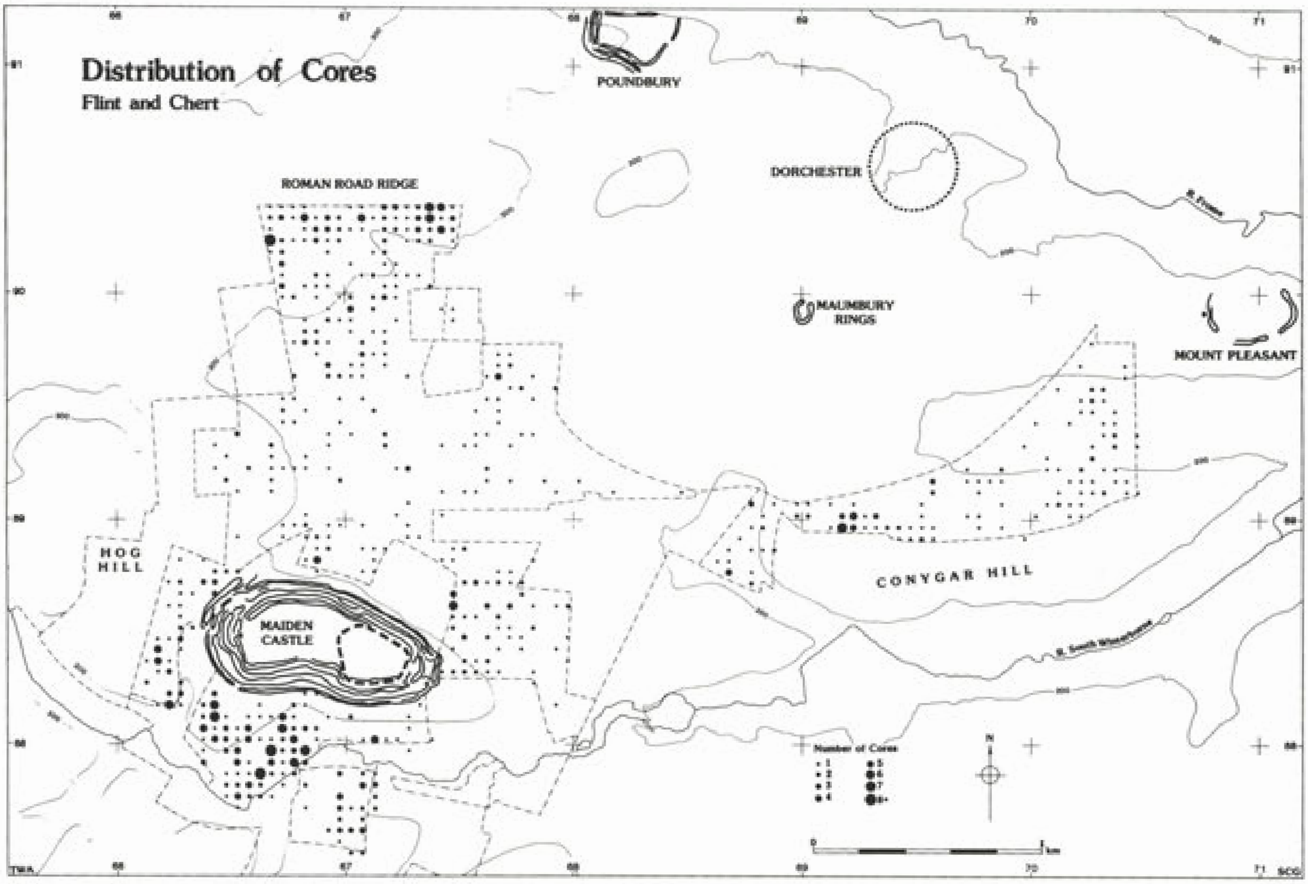


Fig 19 *The distribution of cores*

Table 3 A summary of differences between Early Neolithic and Middle/Late Bronze Age flint assemblages from the South Dorset Ridgeway

Attributes	*Early Neolithic*	*Middle/Late Bronze Age*	*Contrasts*
Hammer mode	Soft	Hard	Changes in hammer material
Percussion angle	75 av	65 av	Decrease through time
Platform abrasion	Present	Absent	
Flake measurements			
Length	39% > 50mm	20% > 50mm	Significant difference assuming common raw material
Breadth	53% < 30mm	36% < 30mm	
Thickness	44% < 6mm	20% < 6mm	
	16% > 13mm	30% > 13mm	
Hinge fractures			
Preparation	29%	26%	
Side trimming	16%	21%	
Distal trimming	22%	5%	
Misc trimming	15%	34%	
Combined	18%	24%	
Bulb removal	Not recorded	Recorded	
Retouch forms and tools	Leaf arrowheads, core tools etc	Piercers, denticulates, etc	See also other published sources
Rejuvenation tablets	Present	Absent	

previously been discussed in relation to soil types: some aspects of assemblage variation and tool types may indicate different activities in the landscape.

The distribution of arrowheads in the present survey (Fig 18) can be seen to cluster around Maiden Castle, but, when the material from other surveys (Care 1979; Woodward 1986; 1991, 28–33) is plotted (Fig 28), the additional data draw out some distinct contrasts:

1 The arrowheads are clustered. A noticeable paucity of material north of Conygar Hill contrasts with concentrations close to Maiden Castle and adjacent to the river valleys.

2 There are only three barbed-and-tanged examples and all occur in widely separate locations.

3 Most leaf arrowheads occur close to Maiden Castle.

4 The transverse arrowheads cluster in groups.

The clustering of arrowheads does not suggest occasional loss from hunting – one explanation for the distribution of arrowheads in the South Dorset Ridgeway survey (Woodward 1991, 28–33). This general distribution suggested the following associations:

Barbed-and-tanged → upland zone → large game hunting

Leaf → Maiden Castle ridge → warfare

Transverse → river valleys → small game and birds

Although the topographical zoning is still visible, the loss through hunting seems less likely because of the clustered distribution identified above.

The total number of arrowheads recovered from the field collection is small, if the use was everyday and for hunting. Less durable arrowheads of hardened wood may have been the norm for hunting, with stone examples being for special hunting trips, display, warfare, and burial.

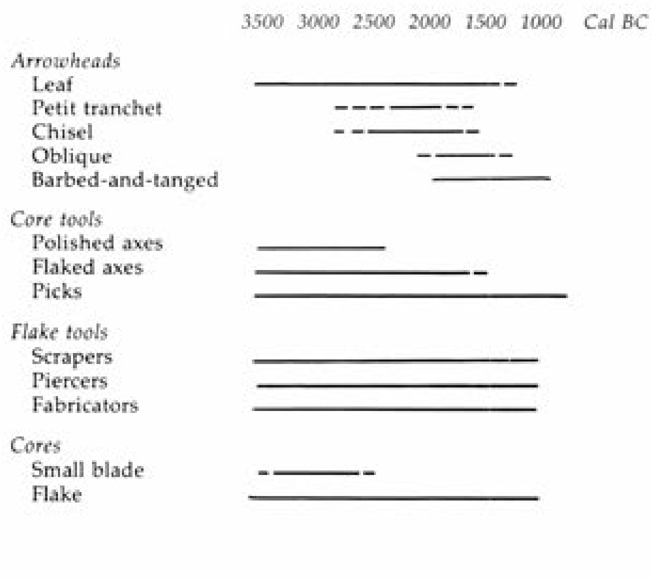
The three barbed-and-tanged arrowheads were not the particularly well-formed examples that one might expect from burial contexts (D V Clarke *et al* 1985, 174), and they were not in locations closely associated with known barrow or ring ditch sites. Neither can these examples be seen to be in close association with settlement enclosures or Bronze Age lithic assemblage groups. Their loss can therefore be considered as random and hunting loss could be considered.

The very specific distributions of leaf and transverse arrowheads can be best interpreted as loss within a structured settlement complex and may identify habitation sites. The cluster of leaf arrowheads around Maiden Castle also agrees with their suggested Early Neolithic date and association with causewayed camps. Leaf arrowheads have also frequently been associated with warfare and death at similar sites, for example at Crickley Hill (Dixon 1981) and Carn Brea (Mercer 1981). Tightly confined battles and ritual display, rather than full-scale periods of extended warfare over wide areas, should be envisaged.

The leaf arrowheads also occur in the transverse arrowhead clusters: north-east of Maiden Castle, south of the South Winterborne, and north of the River Frome. Two more dispersed clusters of transverse arrowheads are possibly present to the south-east of Mount Pleasant and to the north of Maiden Castle. A similar clustered pattern occurs in the distribution of the much larger assemblage collected in the vicinity of Stonehenge (J Richards 1990). The clusters may represent habitation sites, which commence in the Early Neolithic and continue into the Late Neolithic.

The clustering of transverse arrowheads also shows that random loss through hunting does not occur, and it is possible to suggest that these tools had an alternative function within the settlements. A notable gap within the Neolithic and Bronze Age assemblages is of tools suitable for woodworking, and it is possible that these transverse arrowheads are chisels (Harding pers comm). The dis-

Table 4 A chronology for tool types



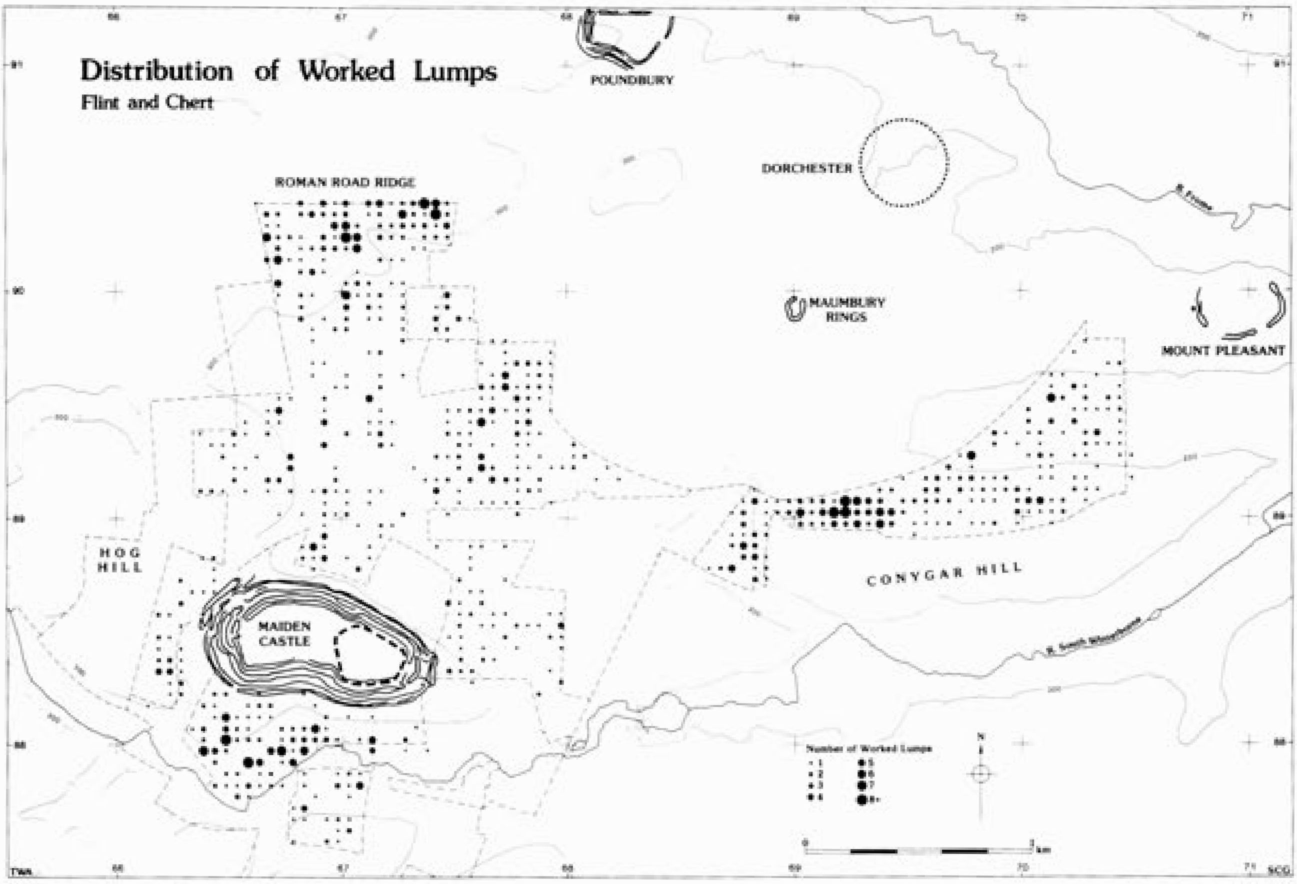


Fig 20 The distribution of worked lumps

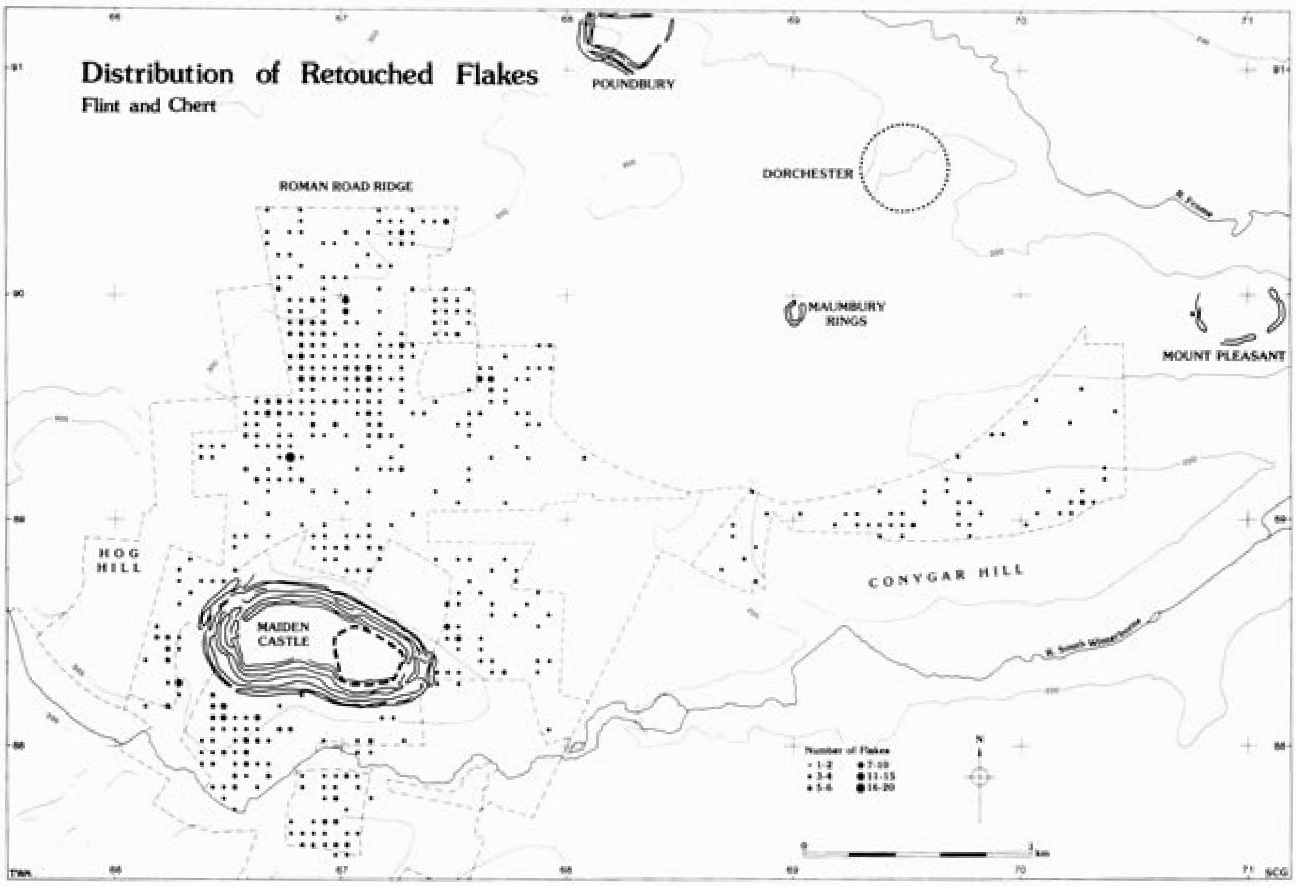


Fig 21 The distribution of retouched flakes

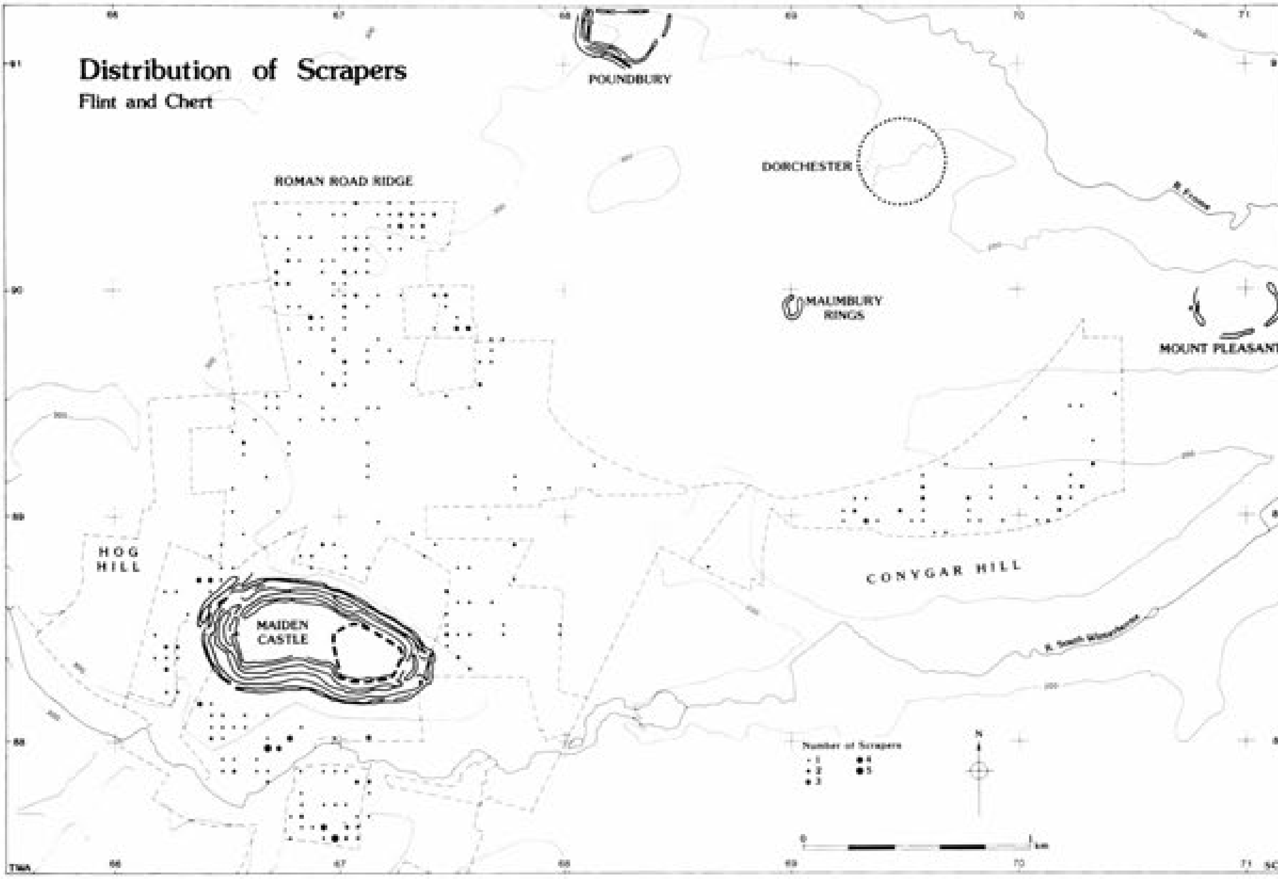


Fig 22 The distribution of scrapers

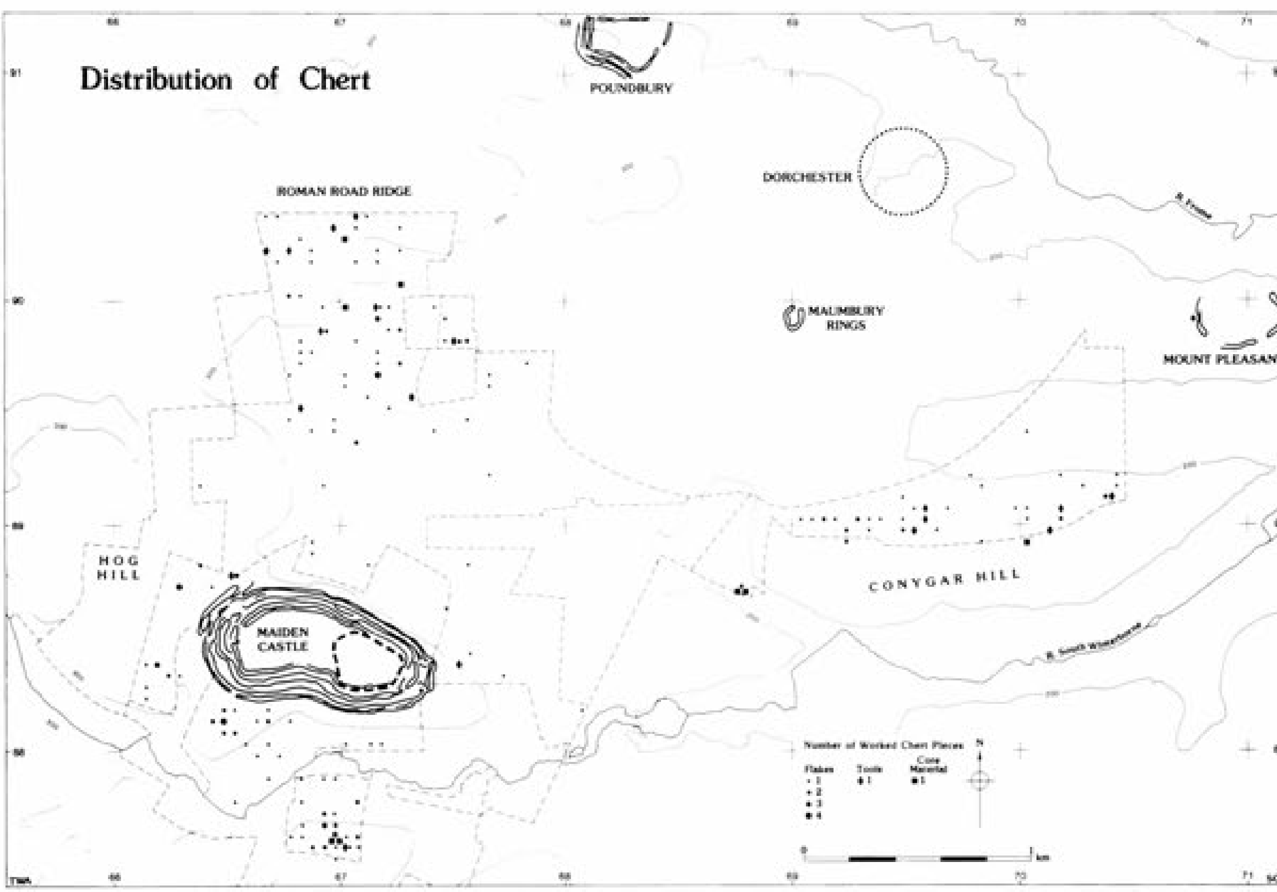


Fig 23 The distribution of chert

Fig 24 The valley of the South Winterborne, looking west towards the barrow at Clandon

tribution of transverse arrowheads in the wider study area of the South Dorset Ridgeway also indicates a close association with river valleys, in particular the South Winterborne and Frome. This again might reflect the preferred settlement location during the Late Neolithic and Early Bronze Age.

The distribution of axes in the South Dorset Ridgeway study area suggests that there is a higher proportion of polished axes in the central zone from Maiden Castle to Mount Pleasant than along the upland Ridgeway, where rough-outs and flaked axes predominate (Woodward 1991, fig 15).

Lithic variation and distribution

The distributions of the individual classes of material conform broadly to the overall distribution pattern described above (Figs 18–23). No attempt has been made to differentiate between the variety of raw materials. However, on Figure 23 it can be seen that the overall distribution of chert is similar to that of flint. The main concentrations are in the South Winterborne valley, where chert is associated with the Carstens soils (Table 2), and on Conygar Hill ridge. The only divergence from the general pattern is in the assemblage collected by Martin Green (sample area 15: Fig 25) which has a large proportion of chert, including a number of cores. However, this concentration has not been depicted on Figure 23 because of its different collection method. It occurred as a very discrete, tightly clustered assemblage and perhaps derived from a pit or a series of pits. The cores, flakes, and implements are of a form and quality similar to their flint counterparts, so it seems unlikely that chert was treated as anything other than an alternative raw material which was used when available.

The distribution of cores (Fig 19) closely reflects the overall lithic patterning with the majority concentrated along the South Winterborne valley (Fig 24) and on the Roman Road ridge. Specific areas of flint extraction or preparation can perhaps be seen in the discrete concentrations on the southern side of the South Winterborne valley and below the Conygar Hill ridge. These may represent specific settlement locations. The distribution of worked lumps (crude unclassified cores, Fig 20) is much more diffuse, perhaps reflecting the more casual collection and exploitation of this material.

If it is assumed that many of the hammerstones (Fig 18) were used for flint knapping, then one would expect to see a broadly similar distribution to the cores (Fig 19), but this is not the case. While both have concentrations along the Roman Road ridge, there is a notably low density of hammerstones in the South Winterborne valley. A single discrete concentration of hammerstones on the southern side of the river is possibly related to a concentration of cores in that area. This may suggest the use of a less durable material for hammers in this area or perhaps indicates that hammerstones had a different function (as suggested by the use of flint hammers during the Iron Age on Maiden Castle).

The implements (Chap 2 fiche, overall assemblage composition and catalogue) have been divided into the main types with no attempt to further subdivide individual classes, except for arrowheads (Fig 18). Scrapers are the most numerous implement type with a fairly widespread distribution, although they are notably absent from the central area to the north of Maiden Castle. The piercers (Fig 18) appear to be associated with the upland areas with a larger number along the Roman Road ridge and along the top of the Conygar Hill ridge. A small concentration is also apparent on the southern slopes of the South Winterborne valley, where the arrowhead clusters may also reflect settlement locations. Further subdivision of these classes of material (cf scrapers) may give additional information for chronology and function.

The axes (Fig 18) are concentrated in the South Winterborne valley with a small number found immediately east of Maiden Castle and on the Roman Road ridge. The other core tools, mainly choppers and rough picks, have a more constrained distribution in the South Winterborne valley and on Hog Hill. No significant patterning is visible in the distribution of the other tool types, as the numbers involved are very small.

The retouched flakes (Fig 21) have a notable concentration along the west–east dry valley just to the south of the Roman Road ridge. This may be partly due to the greater likelihood of accidental retouch caused by soil movement in forming the colluvium, but this phenomenon was not noted elsewhere in the survey area. It may reflect

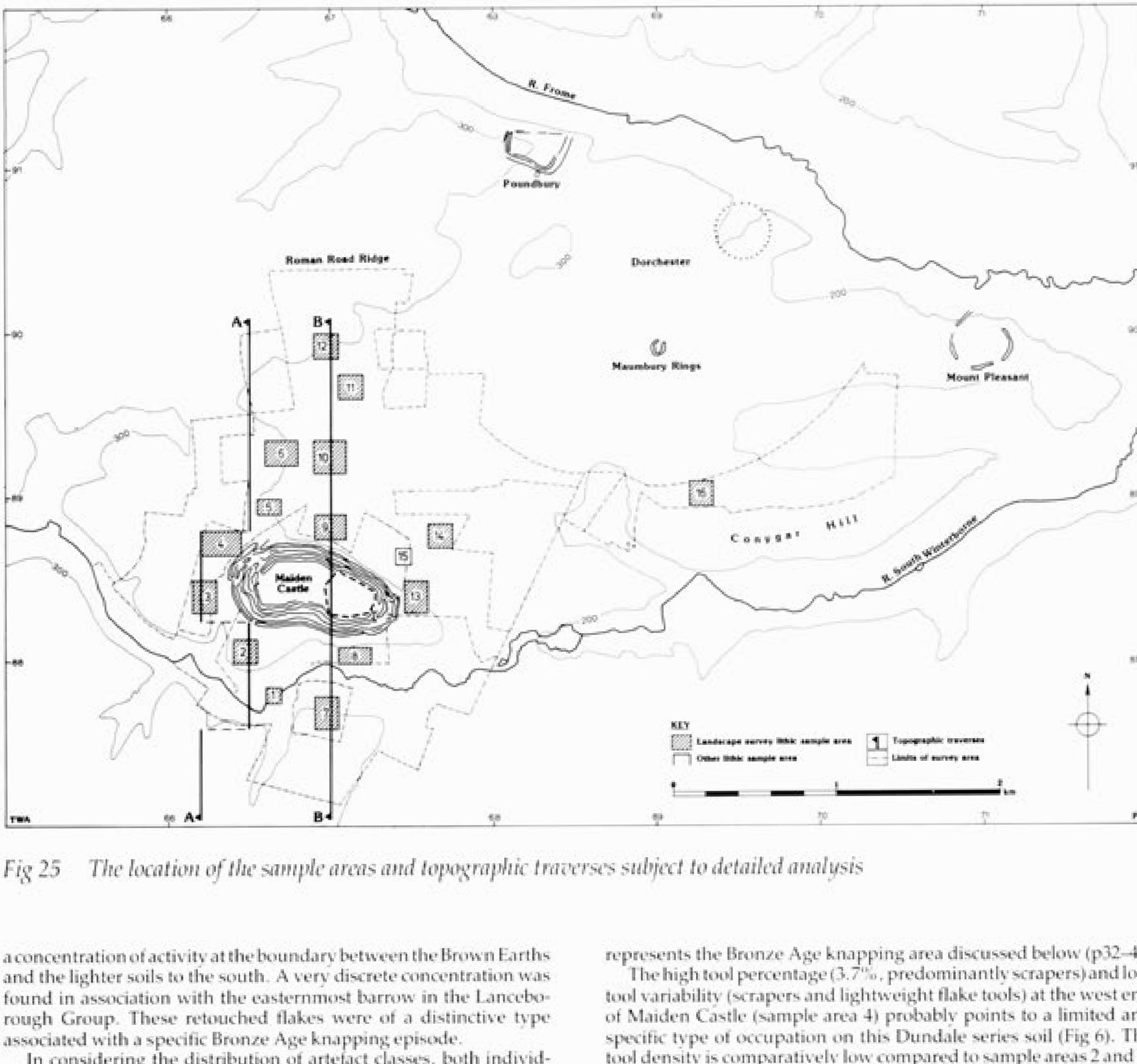


Fig 25 The location of the sample areas and topographic traverses subject to detailed analysis

a concentration of activity at the boundary between the Brown Earths and the lighter soils to the south. A very discrete concentration was found in association with the easternmost barrow in the Lanceborough Group. These retouched flakes were of a distinctive type associated with a specific Bronze Age knapping episode.

In considering the distribution of artefact classes, both individually and together, it is possible to begin to build up a picture of areas of differing activity in terms of intensity and function. One can perhaps see areas of raw material extraction and exploitation along the Roman Road ridge and in specific locations on the South Winterborne valley. The area of the greatest intensity and range of activity would appear to be along the South Winterborne. The area to the north of Maiden Castle conversely shows a lessening of activity involving the use of flint. There is a suggestion of functional variation within the landscape, with concentrations of piercers and arrowheads on the higher ground and a concentration of retouched material along the dry valleys below the Roman Road ridge.

Lithic variation and topography

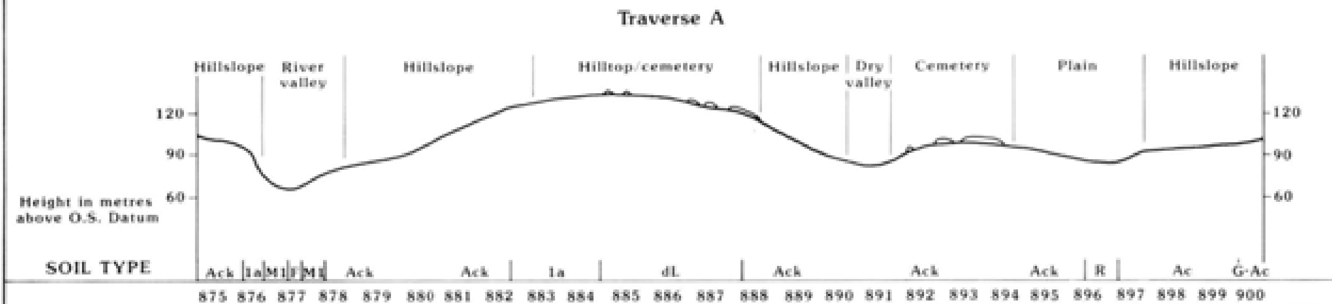
Sample areas (Fig 25) within the overall distribution are here compared against two transects across the topography. The sample areas were selected to compare and contrast perceived concentrations of lithics on the different topographic features of the landscape. The lithics in these areas are presented in Figures 26 and 27 (further details are presented in Chap 2 fiche).

Settlement foci on the hilltop above the South Winterborne (sample areas 2, 3, and 7) are to be identified by an increase in tool variability, retouched material, cores, and waste. A very high percentage of cores in sample area 1 may indicate that settlement extended into what is now the floodplain of the South Winterborne. The increase in variability and retouched material in sample area 6 represents the Bronze Age knapping area discussed below (p32–4).

The high tool percentage (3.7%, predominantly scrapers) and low tool variability (scrapers and lightweight flake tools) at the west end of Maiden Castle (sample area 4) probably points to a limited and specific type of occupation on this Dundale series soil (Fig 6). The tool density is comparatively low compared to sample areas 2 and 3. The classification of scrapers has not been attempted, but an assessment of this assemblage in comparison with the excavated assemblages from Maiden Castle suggests an Early Neolithic presence. This acidic and poor arable soil may have remained as upland pasture in the medieval period.

A comparison of Traverse A with a comparable traverse from Blackhill to Sheepdown and Loscombe at Winterbourne Steepleton (Woodward 1991, 36, fig 19; survey area 4, Fig 3) also shows similar characteristics: low tool variability (predominantly scrapers) near an upland long barrow, close to the Eocene sands and gravels, and high tool variability on the side of a dry valley. These relatively low-density concentrations of scrapers, which form a high proportion of the sample area assemblages (3–4%), may be associated with animal stocking. Analysis of scraper angle rather than form may distinguish scrapers designed to work with wood, for wattle fencing (steep angle), or for work with animal butchery and skin preparation (shallow angle).

The highest tool percentage, density, and variability were found in sample area 13, at the eastern end of Maiden Castle ridge, close to the causewayed camp and above the concentration of chert described by Care (Fig 25: 15; Care 1979). Interestingly, this does not overlook the South Winterborne valley, but the low ridges and dry valleys to the north of the Maiden Castle ridge. It also lies at the head of two shallow coombes with colluviation running northwards (Fig 8). This assemblage may relate to settlement and land management of the zone north and east of Maiden Castle during the Middle and Late Neolithic.



Sample area	1	2	3	4	5	6
Area (hectares)	0.75	2.25	2.75	3.5	1.5	3
Total lithic	94	1,999	923	269	48	227
Scrapers	1	8	10	9	0	2
Other tools	0	4	6	1	0	3
Retouched flakes	2	18	16	6	2	28
Cores	7	47	41	23	0	15
Tool percentage	1.1	0.6	1.7	3.7	0	2.2
Retouched flake percentage	2.1	0.9	1.7	2.2	4.2	12.3
Core percentage	7.4	2.4	4.4	8.6	0	6.6
Waste percentage	89.4	96.1	91.1	85.5	95.8	78.9
Total lithics/ hectare	125.3	888.4	335.7	76.9	32.0	75.7
Tools/hectare	1.3	5.3	5.8	2.9	0	1.7
Retouched flakes/ hectare	2.7	8.0	5.8	1.7	1.3	9.3
Cores/hectare	9.3	20.9	14.9	6.6	0	5.0
Waste/hectare	112.0	854.2	305.8	65.7	30.7	59.7
Tool variability	1	5	4	2	0	3

TWA SCG

Fig 26 Lithic variation in topographic traverse A

Lithic variation and soils

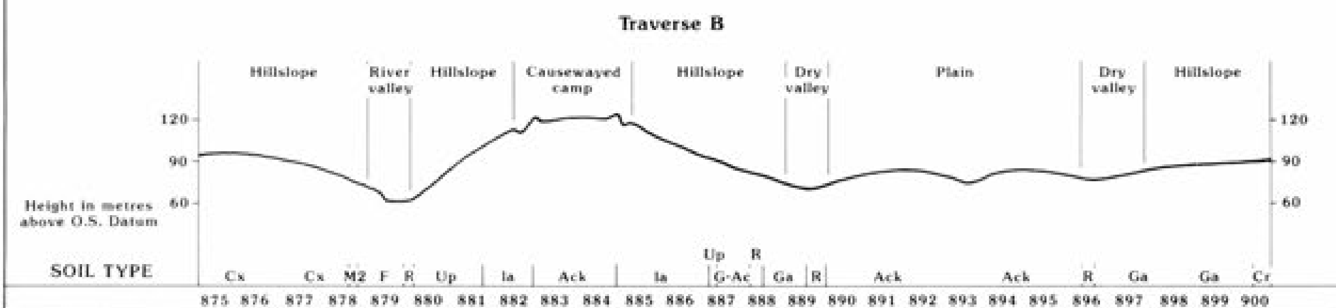
The patterns of association between lithics and soil types were tested by Staines with a chi-squared test applied to the original survey area to the west of the Weymouth Road (Table 2). Although it can be argued that these associations are invalid, since topographic position and structural associations are ignored, they can be seen to demonstrate a number of features.

The high degree of association of chert with Carstens soils contrasts with a virtual absence from Garston soils, which in turn is in marked contrast to the soil association with flint flakes. The flakes can be taken to represent the overall association of worked flint to soil type, since the pattern of flakes is virtually the same as the distribution of all lithics (Fig 15). This suggests that the chert material has a particular origin in the Carsten series soil which is currently confined to uneroded locations at the end of spurs to the south of the South Winterborne (Fig 6). The fact that the chert appears to have been struck from small pebbles is perhaps a confirmation of this. The use of the chert would also appear to be associated with Andover chalky soils. These two associations together can be taken to suggest some form of curation to settlement locations. This is also confirmed by the occurrence of a chert concentration to the north-east of Maiden Castle, sample area 15, which has been shown to be of Neolithic date (Care 1982; see p34).

This curation of lithic materials from source (the drift soils above the chalk bedrock, the brown earth soils, and Garston and Carstens series) to areas of settlement on the eroded chalk spurs (Rendzina soils and Icknield, Upton, and Andover series) can also be seen in the core association. The cores show a higher association with the eroded chalk soils than with the source deposits, which suggests core preparation at source (primarily the Garston series soils) and flake production from prepared cores on the settlement areas (Andover Chalky series soils). The high level of association of flakes with the Upton series soils reflects a specific knapping event in the Lanceborough barrow cemetery which will be discussed later.

The association of tools with the source of the material is intriguing. There is some curation of prepared cores for flake tool production to where settlement and landuse is most intense, but many of these flake tools do appear on the Garston soils, particularly scrapers. This may reflect a functional zoning in the landscape, where these multi-purpose tools (scrapers) are associated with animal stocking and their products: skins and leather products.

The procurement of suitable nodular flint and chert for working and tool production is a product of surface exposure. One of the initial agencies of exposure will be woodland clearance and subsequent surface erosion on steeper slopes by run-off and wash. The initial source of material can therefore be suggested: the slopes on valley sides above the South Winterborne and the east–west 'dry' valley to the north of Lanceborough. This would include the exposure of the chert in the Carstens soils to the south of Maiden Castle. The subsequent introduction of agriculture would have progressively exposed useful nodular material. The selected material would have been cleared, prepared, and curated to settlement centres which may well be dispersed in the landscape as a whole. These may be identified where cores concentrate on rendzina soils. The associ-



Sample area	7	8	13	9	10	11	12
Area (hectares)	3	2	3	2.75	4	2.25	2.25
Total lithics	967	530	466	441	242	546	709
Scrapers	9	3	9	5	0	2	6
Other tools	8	0	8	0	1	0	3
Retouched flakes	16	4	10	9	2	24	19
Cores	27	14	25	13	10	12	25
Tool percentage	1.8	0.6	3.6	1.1	0.4	0.4	1.3
Retouched flake percentage	1.7	0.8	2.1	2.0	0.8	4.4	2.7
Core percentage	2.8	2.6	5.4	2.9	4.1	2.2	3.5
Waste percentage	93.8	96.0	88.8	93.9	94.6	93.0	92.5
Total lithics/hectare	322.3	265.0	155.3	160.4	60.5	242.7	315.1
Tools /hectare	5.7	1.5	5.7	1.8	0.25	0.9	4.0
Retouched flakes/hectare	5.3	2.0	3.0	3.3	0.5	10.7	8.4
Cores/hectare	9.0	7.0	8.3	4.7	2.5	5.3	11.1
Waste/hectare	302.3	254.5	138.3	150.5	57.25	225.7	291.6
Tool variability	4	1	5	1	1	1	4

TWA SMC

Fig 27 Lithic variation in topographic traverse B

ation of scrapers with the acid brown earth soil might well reflect areas of pasture and the preparation of animal products during the Neolithic.

In the Bronze Age, the areas of grazing and arable were expanded with the clearance of remnant woodland and scrub over a wide area. The increased range and deeper soils now available shifted the arable field units and settlements away from the zones of earlier intensive exploitation on the Lanceborough, Maumbury/Mount Pleasant, and Maiden Castle ridges. The newly developed settlement units (Fig 14) incorporated large areas of more acid soils. The old areas of settlement and fields were now given over to pasture and monument construction.

The farming and settlement of the new areas led to the progressive exposure of new and rich sources of nodular flint. It would have been necessary to clear this material from the field surfaces, both for use and convenience, from the Late Neolithic onwards. This would appear to be supported by the subsequent location of Middle Bronze Age enclosures (Fig 14) and by the inception of field units, which include areas of both brown earth and rendzina soils for rotation mixed farming. The Middle Bronze Age enclosures are located at the edge of these zones. The identification of a specific Bronze Age knapping site on the eastern side of the Lanceborough barrow cemetery suggests clearance to a reserved zone, where the debris from tool preparation would not interfere with grazing stock (ie damage to hooves from sharp edges). The high level of retouched flakes in this assemblage suggests *in situ* occupation. This in turn suggests that a considerable area of arable in the zone of highly eroded soils around Maiden Castle reverted to a controlled mixed farming regime, with considerable areas reverting to pasture and the stock conveniently grazing closer to water sources.

Lithic technology and spatial patterning

by P Bellamy and M Edmonds

The lithic assemblages from the sample areas (Fig 25) were re-examined in greater detail in order to attempt to determine the technological, chronological, and functional attributes of the individual samples. This was done by comparison with the Maiden Castle assemblage (see p214–29) and the Early Neolithic and Bronze Age industries on the South Dorset Ridgeway (P Harding 1991) which are summarised in Table 3. The detail from this re-analysis is presented in fiche (Chap 2 fiche, Tables 96–8) and otherwise summarised in Tables 5 and 6.

The bulk of the worked stone is chalk flint with a small percentage of Tertiary gravel flint and Portland chert. The Tertiary gravel flint was present in small quantities around Maiden Castle and on the Roman Road ridge (sample areas 3, 7, 12, 13, and 15). The distribution of this flint type outside Maiden Castle appears to be associated with Charity soils (Fig 6). A similar association occurs within the material collected by fieldwalking in the Stinsford area as part of the South Dorset Ridgeway survey (Woodward 1991). It is possible,

Table 5 The composition of the lithic assemblage from sample areas 1–16 (see Fig 25 for the location of these sample areas)

	Flint													*Chert*												
		Cores		*Flakes*								*Tools*			*Cores*		*Flakes*								*Tools*	
				Complete		*Broken*		*Burnt*		*Retouched*							*Complete*		*Broken*		*Burnt*		*Retouched*			
	Total	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*Total*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*
1	89	7	7.9	57	64.0	20	22.5			4	4.5	1	1.1													
2	1989	49	2.5	1324	66.5	564	28.3	3	0.1	39	1.9	14	0.7	6					5	83.3	1	16.7				
3	932	48	5.2	648	69.5	202	21.7	5	0.5	7	0.7	22	2.4	4	1	25	2	50	1	25						
4	260	24	9.2	148	56.9	67	25.8			9	3.5	12	4.6	5			4	80	1	20						
5	48			36	75.0	9	18.7	2	4.2	1	2.1															
6	222	22	9.9	137	61.7	39	17.6			20	9.0	4	1.8													
7	958	25	2.5	635	66.3	264	27.6	5	0.5	12	1.3	17	1.8	11	2	18.2	1	9.1	6	54.5			2	18.2		
8	524	18	3.4	341	65.0	155	29.6	2	0.4	5	1.0	3	0.6	2					2	100						
9	442	15	3.4	261	59.0	143	32.4	9	2.0	8	1.8	6	1.4													
10	240	11	4.6	171	71.3	56	23.3	1	0.4			1	0.4	1					1	100						
11	540	14	2.6	340	62.9	161	29.8	1	0.2	22	4.1	2	0.4	5					2	40	3	60				
12	705	26	3.6	407	57.9	238	33.7	4	0.6	21	2.9	9	1.3	3					2	66.6					1	33.3
13	467	27	5.8	300	64.2	111	23.8	3	0.6	8	1.7	18	3.9	2			1	50							1	50
14	274	9	3.3	193	70.5	70	25.5	2	0.7																	
15	156	4	2.6	52	32.9	25	16.1			8	5.2	67	43.2	102	10	9.8	40	39.2	44	43.1			7	6.9	1	1.0
16	538	55	10.2	302	56.1	158	29.4	6	1.1	7	1.3	10	1.9	6			3	50.0	3	50.0						

Table 6 Tool type: Sample areas 1–16

	Flint	*Tool types*														*Chert*	*Tool types*	
Sample areas	*Total*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*Total*	*8*	*11*
1	1								1							0		
2	14		1			1			9	2		1				0		
3	22			1		1			15	1	1	1	2			0		
4	12								9	2		1				0		
5	0															0		
6	4								2				2			0		
7	17				1		1		9	4				1	1	0		
8	3								3							0		
9	6								6							0		
10	1														1	0		
11	2								2							0		
12	9								6	2					1	1		1
13	18					1	1		9			3	1	1	2	1	1	
14	0															0		
15	67	7	3	2	6	2	2	1	41		1		1	1		1	1	
16	10								9			1				0		

Notes: Tool types
1 – Polished axes
2 – Flaked axes
3 – Picks
4 – Leaf arrowheads
5 – Chisel transverse arrowheads
6 – Oblique transverse arrowheads
7 – Knives
8 – Scrapers
9 – Piercers
10 – Fabricators
11 – Misc. flake tools
12 – Misc. core tools
13 – Core/hammers
14 – Hammerstones

therefore, that these Charity soils are the source of this flint type. The material from sample area 12 included a single broken core of this flint.

The majority of the sample areas contain less than 1% Portland chert with only sample area 15 containing a substantial proportion (40%). There appear to be no major differences in composition and form between the chert and the flint assemblages.

The assemblage from the South Winterborne valley (sample areas 1, 2, 7, and 8) is dominated by cores and debitage from an unspecialised flake industry, with only a very small proportion which may have come from a small blade industry. This blade industry is similar to material from the Maiden Castle causewayed enclosure ditches and is therefore assumed to be an indication of Early Neolithic activity; it is most marked in sample area 7 where a leaf arrowhead was also found. The assemblage in the valley bottom is dominated by large, thick, squat flakes and a high proportion of cores. The composition of this assemblage was probably a result of the downslope movement of the larger pieces, rather than an indication of *in situ* flintworking.

The two sample areas on Hog Hill have a very different character to those in the river valley. Sample area 3 mainly has long narrow flakes and blades with associated trimming debitage. The cores are fairly rough and shattered with only a few blade cores present. This might indicate the removal of the better raw material to another location, but is, at least in part, a result of the brittle frost-fractured nature of the flint in this area. Sample area 4, on the top of the hill, has a similar assemblage composition with a large proportion of tertiary flakes, although smaller numbers of blades are present. These two assemblages did have some significant differences. The blades in sample area 3 are much larger than either those found in sample area 4 or associated with the causewayed enclosure, which might be an indication of some chronological variability. The blade industry in sample area 4 was very similar to that found on Maiden Castle. The core material from this sample area includes a high proportion of small blade cores and includes three cores made on thick broken flakes. Similar cores were found at Alington Avenue, where they were possibly associated with the long barrow (Bellamy forthcoming a). The high proportion of retouched material and tertiary flakes points to some activity other than flint extraction and working. While an Early Neolithic date is suggested for some of this material, whether this was contemporary with the causewayed enclosure cannot be determined.

In the area to the north of Maiden Castle (sample areas 5, 6, 9, 10, and 14), the assemblages are small with a relatively small number of cores. The majority of pieces are small thick flakes. The general character suggests a low intensity of non-specialised flint working. The assemblage from sample area 6 also contains a distinctive industry, composed of large thick flakes removed from large rough cores, which was specifically associated with a barrow in the Lanceborough Group. This assemblage contains a high proportion of retouched flakes mainly formed by the removal of a single large retouch flake from the ventral surface, normally near the proximal end in an attempt to thin down the flake. Three *janus* flakes were also recovered, emphasising the use of this butt-thinning technique. These flakes are very similar to those from the Middle/Late Bronze Age industry on the barrow at Cowleaze (P Harding 1991, 73–87).

The two sample areas on the Roman Road ridge (11, 12) have similar lithic assemblages. Both have a certain number of small blades and small blade cores and both contain a large proportion of tertiary flakes and a comparatively high number of broken flakes. The large quantity of retouched flakes in sample area 11 were manufactured on both large thick flakes and on the smaller debitage from the blade industry. The assemblage from sample area 16 on the Conygar Hill ridge was in many ways very similar to the material from the Roman Road ridge. All these sample areas contain material with some characteristics which can be considered Early Neolithic. The much reduced proportion of tertiary flakes on the Roman Road ridge is perhaps an indication of the removal of the products to settlement or functional zones elsewhere. There is a suggestion that, in the case of the tertiary gravel flint at least, the material was being transported, perhaps in the form of prepared cores, to Maiden Castle itself (see p218).

Sample area 13 at the east end of Maiden Castle has a very mixed assemblage with a large proportion of implements including broken and reworked axe fragments. Evidence for broken and reworked axes was also present in sample area 15. This sample area had a very distinctive character which cannot be explained purely by the different collection method used (this assemblage was collected on a casual basis by Martin Green in 1969). The large proportion of chert has already been mentioned above, but the large number and type of implements are also distinctive (Table 6). The flint raw material is similar to that collected in the surrounding fields with a similar range of patination. The industry has a very strong emphasis on blade production, but this might be a result of the biased collection technique which did not recover most of the debitage and waste. On the whole, the implements appear to be much finer than the majority of those collected during the landscape survey, with the scrapers having much more regular retouch and shallower scraping angles and the core tools tending to be much larger. The majority of the axes were either broken, burnt, or had evidence of reworking; two flakes from polished axes are perhaps significant in this respect. This assemblage is obviously mixed (most easily seen in the range of arrowheads: Table 6 and Fig 28), but it has a very discrete distribution and is likely to be derived from a pit truncated by modern landuse.

In conclusion, it can be seen that in many ways this re-analysis confirms the trends apparent from the more general distribution analysis. The Early Neolithic activity is centred on Maiden Castle with evidence for the procurement of raw materials from the Roman Road ridge. The Late Neolithic/Early Bronze Age industries are more difficult to isolate with any degree of confidence, but they appear to have a more widespread distribution with a definite concentration in the South Winterborne valley. The Middle/Late Bronze Age activity is confined to a single barrow in the Lanceborough Group.

Discussion

by P J Woodward

The landscape survey has drawn together the documentary sources, the soils and topography, and the

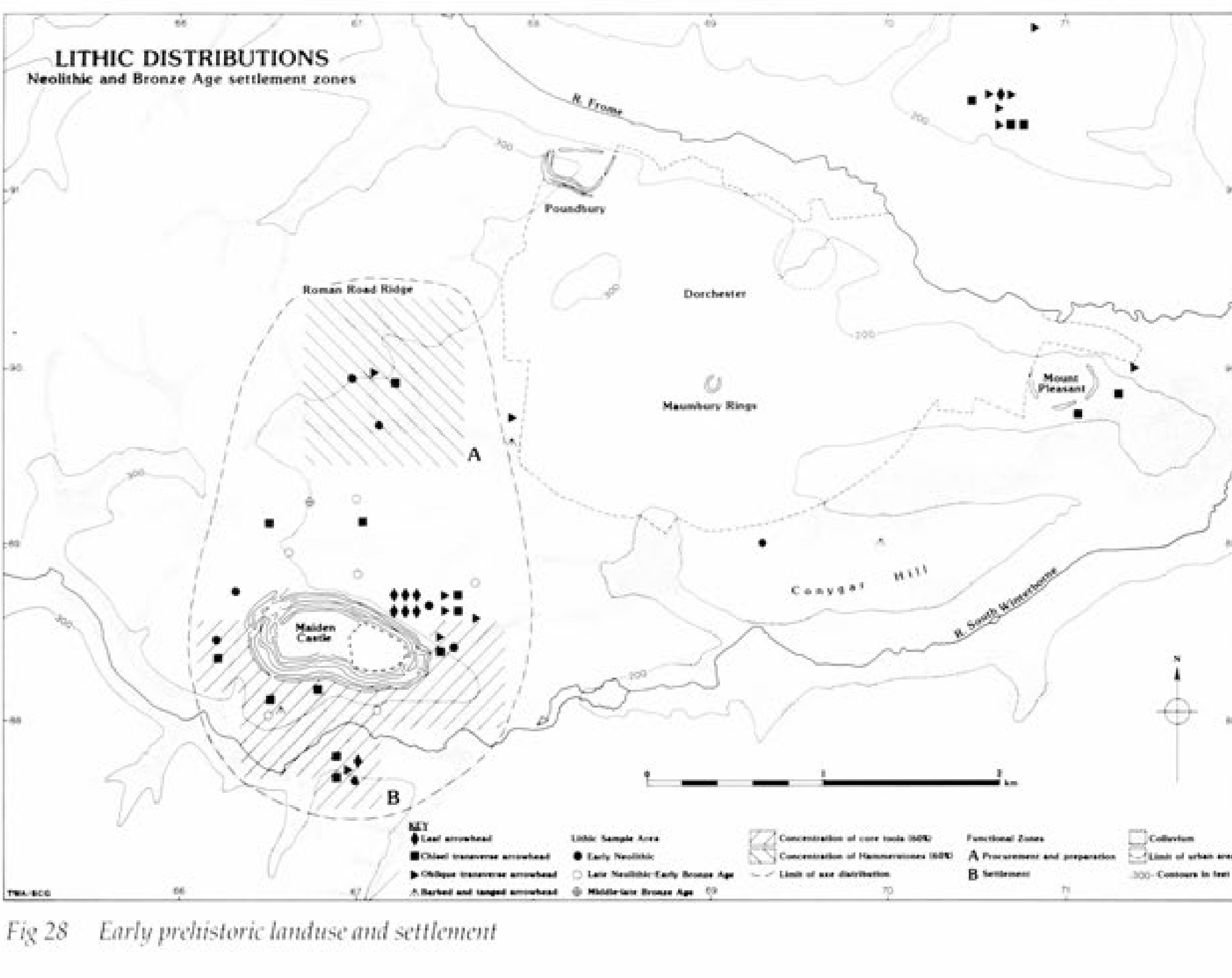


Fig 28 Early prehistoric landuse and settlement

archaeological remains together with reference to some of the available excavation evidence from archaeological sites and valley bottom deposits, so that period reconstructions of landscape and settlement patterns can be attempted. The survey has provided a range of data that have been used principally to extend and review the evidence for landuse and settlement in the prehistoric period. A fuller exposition of general conclusions, which takes into account the results of many recent excavations, and over a broader area, is to be found in the report of the South Dorset Ridgeway Project (Woodward 1991, 122–54).

There is little evidence for Mesolithic occupation of the area. The only occurrence of microliths in the field assemblage is to the north of the Frome on the river gravel terrace (Fig 3, survey area 1; Woodward 1991). The soil and environmental evidence from excavations in the area (Staines forthcoming; M Allen in prep) together with that from Maiden Castle (see p123) can be used to suggest that woodland dominated the pre-Neolithic landscape. Some modification of the woodland by Mesolithic groups can, however, be expected (Care 1979), possibly along the sides of the river valleys.

The Neolithic monuments in the area suggest two foci of activity: the Maumbury/Mount Pleasant ridge, with the valley of the river Frome, and the Maiden Castle ridge, with the valley of the South Winterborne. Early Neolithic settlement can be identified in the causewayed camp at Maiden Castle, in settlement material at Mount Pleasant (Wainwright 1979b, 75, 139–42), and pits excavated at Flagstones (Woodward and Smith 1988). The South Winterborne continued to be a focus of activity in the later Neolithic, and there was an expansion into the area north of Maiden Castle. The construction of a long barrow (S Davies *et al* 1986) and associated funerary monuments of the later Neolithic (Woodward and Smith 1988) on the Maumbury/Mount Pleasant ridge, and subsequently the construction of the henges at Mount Pleasant (Wainwright 1979b) and Maumbury Rings (Bradley 1976) and the post-ring at Dorchester (Woodward *et al* 1985), indicate an extension to this later Neolithic monumental centre. Settlement extended as far as the coombe on the east side of Poundbury (C Green 1987a). Further north-west along the south side of the valley of the river Frome, a group of long barrows in the parish of Bradford Peverell marks another Neolithic clearance (RCHM 1952, vol I).

Two smaller pit monuments of the later Neolithic have now also been identified on the north slope of Conygar Hill ridge (Woodward and Smith 1988). These are sited on the northern slopes of Conygar Hill and are placed at a position from which Mount Pleasant, Maiden Castle, and the Lanceborough barrows are clearly visible. This location points to the probability that the areas to the west, north, and east of this site were now cleared of woodland and extensively exploited for settlement.

The siting of all these monuments together with the environmental and soil evidence from excavation point to initial clearance zones at the edges of the two river valleys with exploitation along the adjacent spurs. By the end of the later Neolithic and at the beginning of the Early Bronze Age, the clearance of the woodland was probably extensive and large tracts of land had been opened up for grazing and mixed farming. The massive timbers of the post-ring monument in Dorchester and the palisade enclosure at Mount Pleasant emphasise this final phase of woodland clearance. Soil erosion would have occurred rapidly with the onset of woodland clearance and also would have been accelerated by cultivation. The fine loess and brown earth cover of the rolling country would have begun to be washed out of the system with a consequent increase in rendzina soil profiles. This process of clearance is firmly supported by the evidence from the lithic distributions.

The Neolithic settlement complex in the survey area can be further divided into two zones of activity characterised by the limited distribution of certain types of finds:

Zone A Hammerstones and cores on the more acid soils of the Roman Road ridge suggest procurement and primary preparation of raw materials (flint)

Zone B Core tools, fabricators, and high tool variability along the South Winterborne suggest a greater range of settlement activity and more frequent and more complex habitation sites.

Late Neolithic habitation sites can be inferred from the distribution of arrowhead types, and four such sites can now be identified to the south of the South Winterborne, to the north-east of Maiden Castle, adjacent to Mount Pleasant, and to the north of the Frome (Fig 28). The first site is above an area of serious soil erosion, the next two sites are on chalk ridges which have been subject to high soil erosion, and the fourth is on a river gravel terrace with a long history of soil erosion.

Fixed land allotment and maintained mixed farming patterns were established during the Bronze Age. In the early second millennium BC, the old monumental centres were in some cases abandoned and destroyed: the Dorchester post-ring (Woodward *et al* 1985) and the Mount Pleasant palisade (Wainwright 1979b). These and other centres were progressively incorporated into extensive round barrow cemeteries, which became established on the old centres of clearance and settlement.

The later Bronze Age settlement can be recognised in the field systems and boundaries laid out across the dry coombes, in the progressive colluviation of the coombe bottoms, and in the extensive round barrow cemeteries. The processes of soil erosion and loss of fertility on continually worked soils were recognised, and land management techniques to maintain soils and increase food production were developed. The maintenance of soils within small fields was achieved, with soils being retained by field boundaries in positive lynchets. The soil accumulations in valley bottoms were ploughed, and the thin soils of the eroded ridges were used for pasture and the construction of round barrows. Settlements would have been dispersed within the field systems along the edge of the dry valleys between pasture and arable: for example at Poundbury (Green 1987b), Fordington Bottom (Chowne 1988), and, further afield, Winterbourne

Steepleton (Woodward 1986; 1991). The creation of field units in the Bronze Age coincides with an expansion of settlement onto the deeper brown earth and acid soils.

The Bronze Age settlement and landuse can also be linked to a structured flint distribution. A very specific assemblage limited to knapping and tool preparation can be recognised on the east side of the Lanceborough cemetery (Figs 13 and 28). Assemblages of this type have now been recognised in the excavation of round barrow ditches at Flagstones and south of Maiden Castle Road and in the field boundaries close to the Roman road (Woodward and Smith 1988; Bellamy in prep). Tool preparation of the later Bronze Age would appear to be located along the edge of fields and settlement and at locations where the raw material was readily available. A structured distribution of this type can also be seen in the dry valley at Winterbourne Steepleton below the South Dorset Ridgeway (Woodward 1986; 1991).

The cleared, open landscape of the later Bronze Age and Iron Age continues and develops the pattern of mixed farming on a variety of soil types. Within this farming regime, a number of small upland enclosures were built (Fig 13). A system of boundary divisions is also developed at this stage. In some cases, these cut across the earlier field arrangements and in one known case along the ditch of an enclosure (Woodward and Smith 1988).

In the Early Iron Age, the hillforts at Maiden Castle and Poundbury were constructed. The location of the hillforts emphasises the importance of the river valleys and the control of the upland and lowland resources for a developed mixed farming regime. This sequence shows an increasing control and division of the landscape, which begin to centre on certain hillforts. The primary importance of Maiden Castle within this landscape, together with its status as a principal seat of power for the Iron Age tribal community, is discussed below.

In the later Iron Age, a number of settlement units began to develop with clusters of small fields. These have been defined by crop/soil marks, excavation, and material distribution and can be identified as growing village centres within a controlled and ordered landscape. There is little evidence for the landuse and farming outside these village centres, but it can be assumed that patterns of mixed farming were maintained.

The foundation of the Roman town of *Durnovaria* was carefully planned, and it can be identified as a *civitas* capital for the Durotriges within the Roman province of Britain (Wacher 1975). The foundation of *Durnovaria* marks a decisive shift of political power away from Maiden Castle. The hillfort was not, however, entirely deserted: the earthworks enclosed a late Roman temple.

In the Romano-British period, there is no evidence for the development of villa-type buildings within the established village settlements. This suggests that the management and direction of the land immediately around *Durnovaria* may have come from the town itself, with the investment of the profits of a new market economy into the buildings of the town.

Excavation has demonstrated that the Iron Age village centres continued into the late Roman period, and buildings of post-Roman and medieval type occur at Poundbury, Alington Avenue, and Maiden Castle Road. In contrast, the buildings within Dorchester were not maintained after the end of Roman Britain and progressively decayed. Some areas in the centre of the town were converted into field strips (Woodward *et al* 1985). The development of Fordington village outside *Durnovaria* can be seen as a shift of power and wealth away from the town to parish manorial tenure and control.

The management and development of the landscape in the medieval period gradually shifts to a number of village and manorial centres within a system of parish land divisions that may have their origin in the Romano-British period. Some of these settlements and boundaries continue in use within the landscape as we know it today, although others have been abandoned or absorbed; for example, the parish of Winterborne Farringdon is now within Winterborne Came, and there is a deserted settlement at Lower Ashton Farm within Winterborne St Martin (Fig 4). At some stage during the earlier medieval period, the Romano-British and post-Roman settlements within Fordington parish were abandoned, perhaps when field divisions were set within the parish in the eighth century (Keen 1983), and it is perhaps at this point that the medieval town of 'Dorchester' becomes established again within the walled boundary of *Durnovaria*.

This discussion has attempted to review the results of the landscape survey and to compose a single broad settlement and landuse history for the area. This is, of course, an interim statement, but it does provide a settlement history that can be tested by excavation, and it provides a framework against which the Maiden Castle excavations can be set and the patterns of settlement further explored.

3 The surveys

by N D Balaam, M Corney, C Dunn, and H Porter

The programme of research involved a full resurvey of the monument. The goal was not only to record the surface features and topography of the hillfort, but also to explore the evidence for the nature and intensity of occupation across the interior of the hilltop by non-destructive techniques. These surveys were carried out immediately before, and during, the excavation and played no part in assessing the objectives of the excavations. They were designed to stand on their own as part of a database which would be used for the interpretation of the monument, to help in the management of the monument as an archaeological resource, and as an aid to any future research programmes.

The surveys were:

1 A photogrammetric survey of the hillfort and its immediate environs (producing a contoured plan, [illegible])

2 A ground survey of the earthworks (producing a hachured plan, Fig 29)

3 A magnetometer survey (Fig 30)

4 A phosphate survey (Fig 31)

5 A magnetic susceptibility survey (Fig 32).

Methods

A full discussion of the methodologies is presented in fiche (Chap 3 fiche). The salient points are summarised here.

The photogrammetric survey was undertaken by the Department of Photogrammetry and Surveying, University College, London, using vertical photographs taken for the project at the request of the Air Photograph Unit of the National Monuments Record. Contours were plotted at 0.5m intervals except on the steep slopes of the ramparts where only a 1m interval was possible.

The ground survey (Fig 29) was undertaken by the Royal Commission on the Historical Monuments of England, using electronic surveying equipment. The data deriving from this survey were used to draw an interpretative plan using hachures to indicate degree and direction of slope.

The magnetometer survey was carried out by, and followed the usual field procedures of, the Ancient Monuments Laboratory. The plot produced (Fig 30) is based on readings taken at a sampling interval of 650mm along traverses 1m apart using a fluxgate gradiometer (Philpot Electronics DMO2).

The magnetic susceptibility (Fig 32) and phosphate (Fig 31) surveys were taken on a 10m grid based on the National Grid and were carried out by the Central Excavation Unit and the Ancient Monuments Laboratory. Samples were taken from the topmost layer of mineral soil, immediately beneath the turf root mat using a 'Dutch' soil auger. A single series of samples was taken, and individual samples were then split to provide subsamples for phosphate and magnetic susceptibility measurements.

Interpretation

There are problems in dating features which have been revealed by any form of non-destructive survey. These problems are probably greatest in the interpretation of phosphate and magnetic susceptibility data, as these surveys deal with slight changes in the make-up of the topsoil, rather than the presence or absence of substantial features. In both phosphate and magnetic susceptibility survey, the limited resolution prevents the identification of particular classes of feature. There is also uncertainty about the cause of enhancement and always the possibility of modification of the patterns of enhancement by mass movement of the topsoil, for example due to the effects of colluviation. It may be possible to estimate ages for patterns of enhancement by comparing the information with that from other forms of survey, by evidence from excavation, or when patterns respect or are overlain by substantial features of known date; such estimates must, however, be considered with caution.

The features observed in the various surveys can be divided into those visible as topographic features and those that are now invisible. The former consist of:

1 The defences that surround and define the hillfort

2 The abandoned defences of the Early Iron Age fort

3 The Bank Barrow and other barrows inside the hillfort

4 Roads, dividing the interior

5 Quarry hollows, immediately inside the inner bank of the defences.

The physical evidence of these features is reinforced and enhanced by the evidence of the geophysical and geochemical surveys, which have also identified further major features:

6 An enclosure at the top of the dry valley, which divides the fort

7 Evidence of the distribution and intensity of the occupation.

The defences

The defences of the developed hillfort basically consist of three banks and two ditches which enclose an area of 17.22ha (42.55 acres). The area of the site including the defences is 45.28ha (111.28 acres). The entrances to the fort are paired gateways with additional and elaborate outworks at the eastern and western ends. No attempt will be made to give a full description of the earthworks that comprise the defences of the developed hillfort. The plan produced by the Royal Commission (Fig 29) is a more than eloquent statement of the results of the survey and could not be adequately described in the space available. It is, however, worth emphasising certain points which might not be noticed by a superficial examination of the plan.

On the gentler slopes of the southern side of the ridge, an additional fourth bank and third ditch were built and the outer edge of each ditch was separated from the adjacent bank by a wide berm. These berms were covered in a profusion of low mounds and shallow hollows, which may be dumps and scoops left from the construction of the defences. On the south-east, especially, the rear of the outer rampart presents the appearance of a line of large dumps never fully integrated into the defences and the sinuous and irregular form of the third rampart may suggest that it was unfinished. A few of the hollows have a rounded sub-rectangular shape and are regular enough to suggest that buildings may have been erected on the berms.

Throughout the circuit of the defences, the bases of the ditches are irregular, consisting of shallow hollows separated by slight causeways. At many points, these hollows correspond to 'peaks' or steps on the tops of the adjacent ramparts. Such features suggest the work of different gangs during the construction or refurbishment of the defences.

At the western entrance, the form of the inturned banks flanking the two carriageways has been given added precision by the survey. Previous plans depict them as simple flanking banks, with the northern pair being the more substantial. Resurvey shows that the northern ones are much broader than the southern, although the northernmost inturn is of very low elevation and is angled to point towards the end of its companion. A small, well-defined mound was located between the portals, apparently sited on the edge of a large, internal quarry scoop.

Flanking the south carriageway are hollows, probably indicating the position of side chambers (Fig 29, P). West of the carriageway, remains of the earlier road, now truncated by the massive inner hornwork, are still visible (Fig 29, R).

The most westerly outworks of the hillfort were ascribed by Wheeler (1943, fig 24) to the final Iron Age phase, but the survey suggests a more complex development. Unlike their eastern counterpart, these earthworks do not follow the gentle curve of the inner elements of the outworks; instead, their alignment at the north end takes them across the saddle between Maiden Castle and Hog Hill, immediately to the west. Furthermore, the ditch and banks are breached by a causeway some 70m from the north-east end. It is suggested that this feature may originally have been an isolated cross-ridge dyke separating the spur from Hog Hill.

Cross-ridge dykes associated with Neolithic enclosures are attested at Hambledon Hill, Dorset, and possible examples occur at White Sheet Hill, Mere, Wiltshire. An alternative view is that the ditch and banks belong to a period just prior to, or contemporary with, the construction of the first Iron Age enclosure upon the eastern knoll.

Other, potentially early features are visible in the area outside the earthworks of the fort. Immediately to the north of the outermost northern rampart, and overlain by it, is a short length of ditch up to 7m wide and

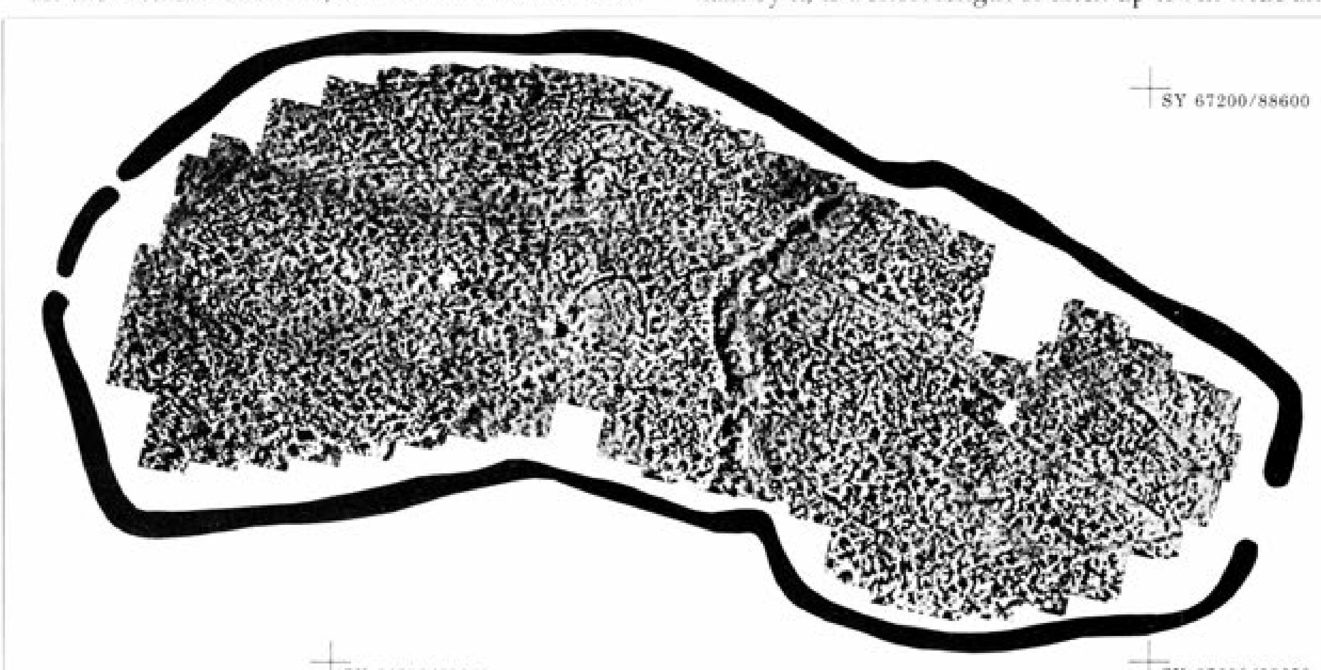


Fig 30 The magnetometer survey of the interior of the fort

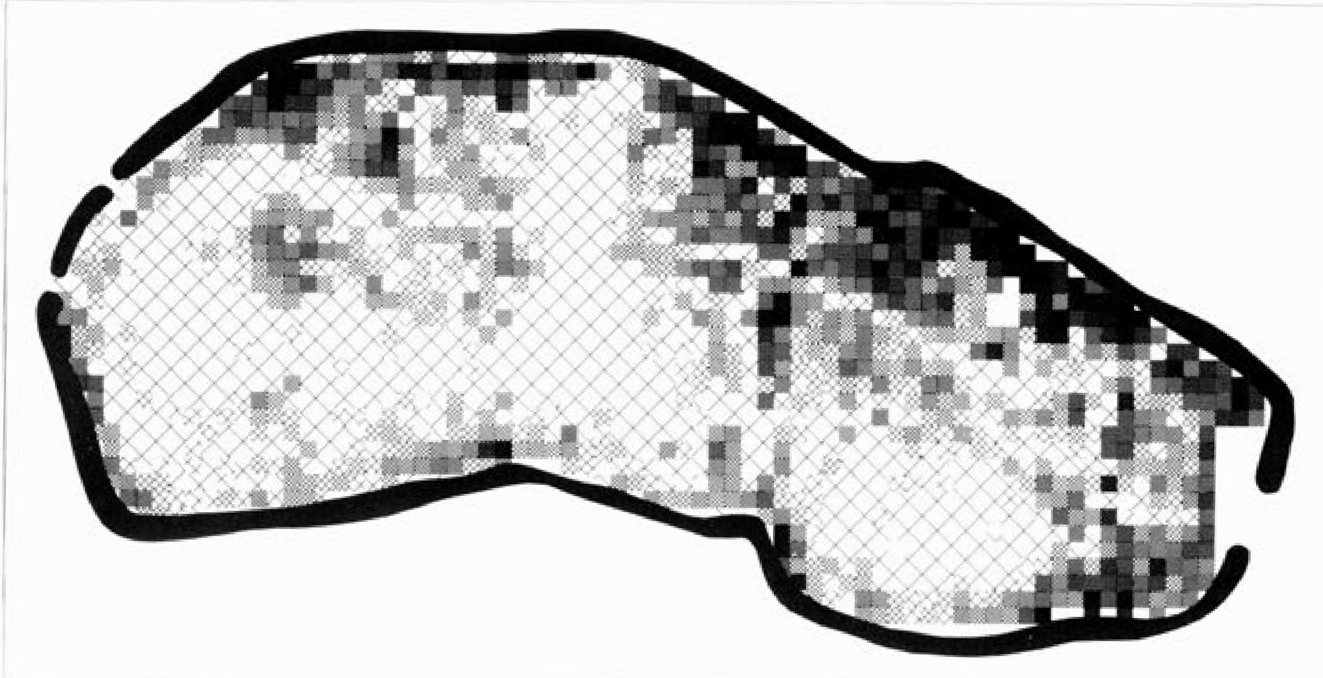


Fig 31 The phosphate survey of the interior of the fort

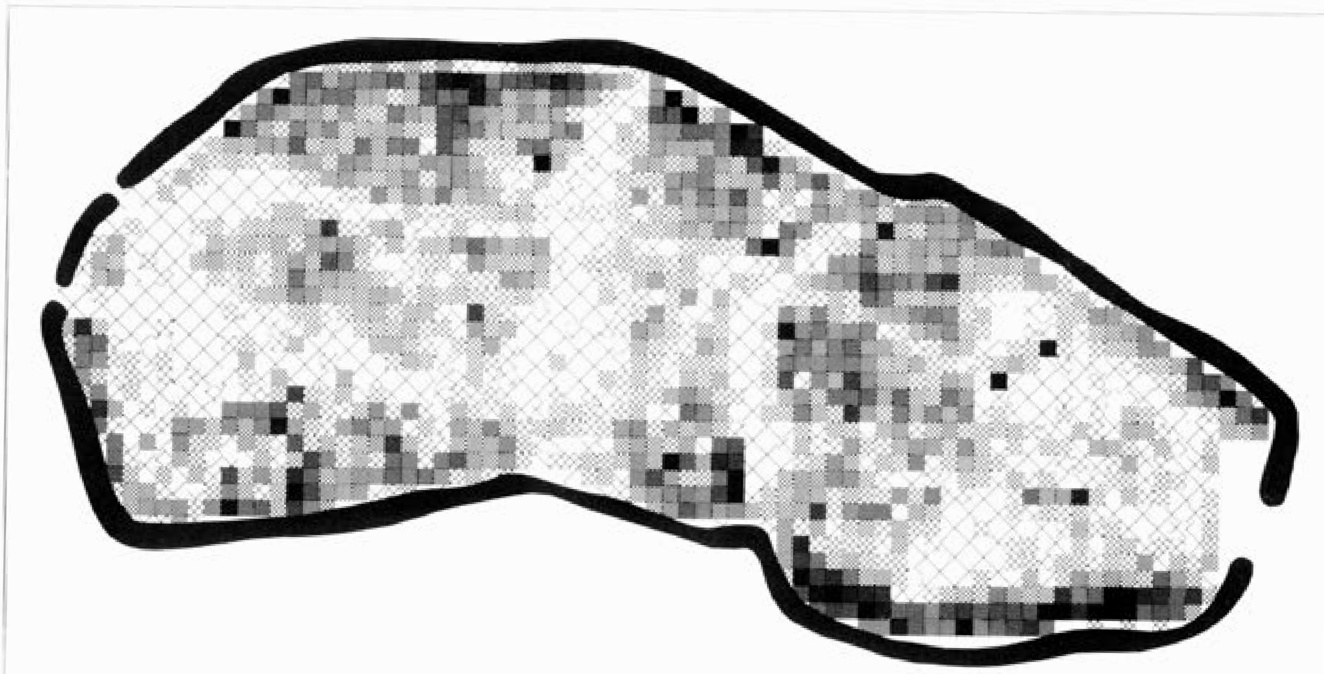


Fig 32 The magnetic susceptibility survey of the interior of the fort

0.3m deep, with a bank 3m wide on its west side (Fig 29, D). It is apparently truncated on the north by a lynchet of medieval or later date and, beyond this point, could not be traced. Its alignment, if projected upslope, would bring it close to the westernmost defences of the first Iron Age enclosure and to the more westerly of the alignment changes of the Bank Barrow.

Examination of aerial photographs (NMR SY 3688/3 and 4) of the eastern entrance and the area beyond has revealed a heavily ploughed feature, visible for some 300m east of the hillfort, possibly an extension of Wheeler's 'Y' ditch (Wheeler 1943, fig 8, 43). Traces of the 'Y' ditch were visible on the ground immediately west of the outermost element of the entrance (Fig 29, E); its continuation eastward could modify Wheeler's phasing in this area and raises the possibility that the earliest hillfort is placed at a junction of linear ditches which converge on the hilltop from the east and north. Similar relationships are established at Quarley Hill (C Hawkes 1939) and Sidbury (Palmer 1984).

A number of features identified during the survey clearly represent modifications to the hillfort after the defences had been completed. The earliest visible destruction of the defences occurs amongst the banks and ditches in the south-east. The third rampart stops at a broad low bank, extending north–south across the berm (Fig 29, N). Wheeler's excavations established that this rampart originally extended to the east entrance (1943, plate XIII) and was levelled prior to the Roman invasion, presumably in connection with the extra-mural activity in this area.

Other modifications to the defences can be associated with Roman and medieval activity on the hilltop. A prominent feature of the survey is the contrast between the inner rampart of the eastern hillfort and the western rampart of the developed hillfort. In the east, the rampart displays clear signs of modification and possible refurbishment; it is also much smaller in both height and width than its western counterpart, especially in the north-east quadrant. Only in the vicinity of the eastern entrance and at the southern junction with the defences of the first hillfort do its dimensions equal those on the west.

It is possible to associate this modification with the presence of the temple and ancillary structure in the eastern half of the fort. In the fourth century AD, the eastern entrance was refurbished, the southern portal was blocked, and the northern portal was replaced by a masonry gate. Possibly contemporary with these modifications was a low stone bank (S), which appears to block the approach to the entrance complex from the north (it may, however, be associated with later medieval activity in the area: Wheeler 1943, 122). It is conceivable that the whole eastern part of the hillfort was reused as a temenos, with the rampart of the Early Iron Age hillfort used as the western limit. Wheeler himself commented upon the similarity between Maiden Castle and Lydney (Wheeler 1943, 122), where the southern half of a hillfort was refurbished to act as a temenos boundary (Wheeler 1932).

Possibly contemporary with this phase of activity is the secondary access route which crosses the inner rampart on the northern side at the junction between the first phase rampart and the western extension (Fig 29, J). A well-developed narrow track is terraced down the rampart face, traversing the innermost ditch on a prominent causeway, whence it can be seen crossing the remaining banks and ditches in a north-westerly direction. Clearly defined breaches in the ramparts have developed on the line of the track. Such a route could well have provided access to the temple from the large Romano-British settlement north of Maiden Castle (see p18).

On the south side of the hillfort, west of the 'well', at the top of a narrow coombe, is a gap in the inner rampart. At the eastern end of this break, a terrace-way or path, similar to that on the north, descends obliquely to the ditch bottom, whence, in a series of zig-zags, it crosses the remaining earthworks. The path is undated, but the earthworks associated with the path suggest a long development. A sub-rectangular depression in the outer face of the third rampart, west of the path, appears to mark the position of a small structure (Fig 29, K). Earthworks on the berms between the defences clearly indicate a phase of planned subdivision subsequent to the construction of the ramparts. A low bank with a ditch to the west cuts the third rampart 60m west of the path (Fig 29, L); a similar bank, on the same alignment, continues this subdivision on the innermost berm (Fig 29, M).

The abandoned defences

The most prominent feature inside the hillfort is the remains of the bank which originally defined the western edge of the Early Iron Age fort. This is visible as a terrace split by four clear breaks. Two of the breaks are adjacent to the ramparts and may represent deliberate demolition of the original rampart during the construction of the extended fort. The break in the southern half of the ramparts is the entrance to the original fort (Wheeler 1943). The break in the northern half on the south side of the Bank Barrow may represent the position of a Roman road discovered in Wheeler's excavations around the temple.

The eastern edge of the bank coincides with an area of intense activity on the magnetometer survey (Fig 30), and with significant features on the magnetic susceptibility (Fig 32) and phosphate surveys (Fig 31). In the latter, the summit and western slope of the bank is an area of low enhancement, which is particularly prominent where it bisects areas with high values. In places, the inner slope of the bank has concentrations of high values, but these are not restricted to the bank, or as prominent as those in the magnetometer survey.

The ditch which lay to the west of the bank was almost completely infilled by occupation and soil accumulation in the Iron Age. The only area in which it could be located with any confidence was between the original entrance and the southern rampart, but it may also be visible to the north of the Bank Barrow. This ditch, in contrast to the bank, does not show up significantly on the geochemical or geophysical surveys.

The barrows

The Bank Barrow is visible as a very low earthwork for a total length of 500m. It is now little more than a ridge in the chalk, which has been protected from erosion by the now-vanished body of the mound (Atkinson 1952). From the contour survey it is obvious that for the whole of its length the barrow is set on a false crest, some 10m north of the summit of the ridge at the west end, increasing up to 20m at the east end. Such a setting seems to have been deliberately designed for viewing from the north and north-east. The surviving mound can be divided into three sections: the prominent central section, 65m long, the east section, 157m long, and the west section, 225m long; they are all roughly 15m wide. These sections were separated by an area without a bank and have given rise to the suggestion (Bradley 1984b) that the monument was created as a simple long barrow, which was only later extended to the east and west (see below, p54, for further discussion of this point).

The Bank Barrow is visible as an area of low enhancement on the susceptibility and geochemical surveys and by a relative lack of other, later features in the magnetometer survey. The ditches show up as linear areas of low enhancement, in some places separated from the mound by lines of high values. This is particularly clear for the southern ditch in the centre of the western part of the monument.

Prior to the recent survey, one round barrow (Winterborne St Martin 141) was known within the defences of the hillfort. Situated upon the western knoll (Fig 29, F), it has a central depression, characteristic of early barrow investigation, although no record of this activity survives. What appears to be a second round barrow (Fig 29, G) has been found some 20m north of the Bank Barrow. It is an irregular mound 0.5m in height and 20m in diameter. Confirmation of its presence was obtained by the magnetometer survey. A circular, ditched enclosure, about 25m in diameter, was discovered at this point. Attached to the north-east side of this was a slightly smaller enclosure which can be seen only on the magnetometer survey. These features are on the edge of a large area of low magnetic susceptibility and phosphate values and which extends to the southern rampart, dividing the hilltop in two.

The roads

Leading inwards from all the entrances, including the denuded western entrance to the original fort, were well-defined hollow-ways. The hollow-way leading from the northern portal of the west entrance of the developed fort becomes a terrace and then turns towards the Bank Barrow. The northernmost hollow from the east entrance was trenched by Wheeler and traced to a point just south of the Romano-British temple close to the east end of the Bank Barrow (Wheeler 1943, pl I).

The hollow-ways are clearly visible on the magnetometer survey and faintly visible on the magnetic susceptibility and phosphate surveys. The pattern is clearest at the eastern entrance, where three roads are defined by both an absence of features in the hollow-way and a concentration of features adjacent to it (similar patterns defined the roads in the excavations at Danebury: Cunliffe 1984a, fig 4.84). The hollow-way leading towards the south side of the temple is clearly visible for about 80m, but cannot be traced in the temple area or beyond. This route also appears as an area of low enhancement on the phosphate and magnetic susceptibility surveys which sharply define an area of high values behind the rampart. Radiating from the southern portal of the east entrance were two roads. The northern route aims straight for the summit of the western knoll and cuts across the centre of the fort. It can be traced for 130m, disappearing just south-east of the end of the Bank Barrow. It is visible in places on the phosphate survey as an area of low values. The southern road curves around the back of the rampart for approximately 210m before becoming indistinct. It may turn towards the centre of the fort at this point, but it is perhaps possible to follow it to the western entrance of the Early Iron Age hillfort.

The routes from the western entrance of the extended hillfort are not clearly visible, but it is possible to pick out short stretches of alignment in the interior of the western part of the hillfort on the magnetometer survey, ie to the north of the recently discovered round barrow, which indicate that this area had been divided by access roads.

The quarry hollows

In the western half of the fort, where the rampart is higher than elsewhere on the circuit, there are shallow quarry hollows behind the inner rampart of the developed hillfort. These are picked out by high values, immediately behind the rampart, in the magnetic susceptibility and phosphate surveys. In both of these, however, there is considerable variation, which does not appear to be related to the presence or absence of the quarries visible in ground survey, and this will be discussed as part of the general distribution of occupation across the hilltop.

The enclosure

The magnetometer survey revealed one substantial finding which was completely unexpected. This was an enclosure, 40m by 45m, lying at the centre of the hillfort between the 'well' and the west end of the primary long barrow. This is not a visually prominent topographic position, as it lies at the top of the dry valley separating the east and west knolls. The north-east and north-west sides of the enclosure are clear, but the other sides, and particularly the south corner, are obscured (this might reflect the differential silting of the dry valley). A very distinct break in the ditch of the enclosure, on the east side of the north corner, may indicate an entrance. Diagonally opposite is a group of four magnetic anomalies which may indicate another entrance, although the actual position of the enclosure circuit is unclear at this point. The interior of the enclosure contains fewer anomalies than the surrounding area of the hillfort. The absence of magnetic anomalies immediately within the ditch may indicate the former presence of an internal bank.

This enclosure coincides with the southern part of an extensive area of low phosphate and susceptibility enhancement, which extends across the Bank Barrow to the north.

Unfortunately, it is not possible to date this enclosure. The relatively low density of internal features shown by the magnetometer survey and the low level of magnetic susceptibility and phosphate enhancement in this area might be used to argue that it was contemporary with the hillfort occupation and represents an enclosure set aside for ritual (an undefined area of shrines was discovered in the centre of Danebury: Cunliffe 1984a, 81–6) or as a high status residence (perhaps similar to that at Hod Hill: Richmond 1968, hut 36a). The clear visibility of the Bank Barrow in the magnetometer survey does, however, indicate that early prehistoric structures were incorporated into, and influenced the pattern of, the later occupation. Thus, although the enclosure must have had a significance in the Iron Age, the defining features need not necessarily be of Iron Age date. Enclosures of this form have been dated to the later Bronze Age in the immediate vicinity of the hillfort (see p21).

Intensity and distribution of occupation

Medieval cultivation within the hillfort covered the whole of the interior (Wheeler 1943, pl XXIV, CXVIII), with rig aligned east-west to the north of the Bank Barrow and north-south to the south of it. This suggests that the barrow acted as a headland. This cultivation has removed all the physical traces of hut platforms and other fine detail, such as still survives within the neighbouring hillfort at Chalbury (RCHME 1970, 484). There is thus little or no surface evidence for the internal arrangement of the hillfort. However, the geophysical and geochemical surveys give a clear indication of the intensity of use of the site.

The magnetometer survey shows an almost continuous distribution of magnetic anomalies across the interior of the site, which is only significantly interrupted by the effects of the major features mentioned above. It is likely that many of these anomalies are pits and have masked the presence of less substantial features, such as houses or post-built structures.

Intensive use of the hillfort is also indicated by the magnetic susceptibility and phosphate surveys. In both, the overwhelming majority of samples had values above those normally associated with chalk downland. Over 90% of magnetic susceptibility values were above 120×10^{-8} SI units/kg. Values for the soil phosphate were similarly high, with the lowest recorded being 1588 ppm P. These values are substantially above those recorded from the field survey areas, where magnetic susceptibility values ranged from 30 to 335×10^{-8} SI units/kg (though over 95% had values less than 100×10^{-8} SI units/kg) and phosphate values were between 150 and 880 ppm.

The coarseness of the sampling interval prevents the detection of the pits, which were identified by the magnetometer survey, in the geochemical and susceptibility surveys. These surveys do, however, show significant variation between different areas of the site which is likely to be due to the varying intensity of Iron Age occupation.

One of the aspects of these surveys is the contrast between the phosphate and magnetic susceptibility values. This is most clearly demonstrated in the eastern part of the site, where the southern side of the early hillfort has a restricted band of very high magnetic susceptibility values immediately adjacent to the rampart, while high phosphate values are only detected at the eastern end of this band. The reverse of this pattern is shown in the northern part of the early hillfort, where there is an extensive area of very high phosphate values, but little evidence of particular enhancement of the magnetic susceptibility. Complementary patterns in phosphate and magnetic susceptibility studies have been noted elsewhere (eg A Clark 1977), and it has been suggested that the differences could be attributed to different types of activity. It is also possible that there may be some degree of suppression of one variable by the enhancement of the other, although the fact that these surveys show simultaneous high values in both surveys at a number of points must favour the former hypothesis.

Neither phosphate nor magnetic susceptibility identified the area of trench IV as an area of intense activity, although the excavation has shown that there was a long and complex occupation with much rubbish accumulation and some evidence of metalworking. The significance of the variation in phosphate and magnetic susceptibility values across this particular site will only be known after sample excavation of some of the areas which show substantial enhancement.

A general trend evident in both surveys is the tendency for enhanced values to occur around the edge of the interior of the hillfort. This may correspond to higher densities of rubbish disposal and/or occupation behind the rampart, but it is possible that these higher values are due to the colluvial movement of soils into these areas. Variation of the patterns of phosphate and magnetic susceptibility values at different levels in the soil is demonstrated by studies of magnetic susceptibility and phosphate samples taken at different stages of the excavation of trench IV (see below, p80). These show substantially different patterns at different depths.

Roman occupation of the hillfort was evidenced in Wheeler's excavation. There is also a distinct possibility of other Roman buildings in addition to the features excavated: a number of slight rectangular depressions terraced into the slope east of the temple deserve careful consideration in this context (Fig 29, H). The Roman occupation must also have made a significant contribution to levels of phosphate and magnetic susceptibility within the hillfort, and the high levels of phosphate around the temple may be of Roman origin.

Conclusion

These four surveys provide a range of data from which firm conclusions can only be drawn in the light of further excavation and research. They have, however, provided new evidence for the settlement sequence on the hilltop. The most surprising revelation was the identification of a major enclosure in the centre of the hillfort. This was hitherto completely unsuspected and, though its shape and the presence of associated features are clear, a convincing interpretation cannot be made. Other discoveries both precede the construction of the fort (ie a cross-ridge dyke, incorporated in the earthworks of the western entrance, and a number of banks and ditches which may belong to a Bronze Age boundary system), or were created after the abandonment of the hillfort (ie the banks and ditches of a settlement in the berms of the southern defences and the ridge and furrow which covers the hilltop). Unfortunately, this later activity has destroyed much of the physical evidence for the occupation of the interior of the hillfort. The geophysical and geochemical surveys have to some extent compensated for this destruction by indicating the intensity of the occupation. The details presented in the various surveys can only be accurately interpreted where they correspond to features exposed by excavation.

4 The excavations

Introduction

That there was a long and complex sequence of occupation on the hilltop of Maiden Castle has been well known since the publication, in 1943, of the report on his excavations by Sir Mortimer Wheeler. In part one of that report, Wheeler discussed the sequence in detail and provided an illustration (Wheeler 1943, fig 3) of some of the main phases of the monument. The 'structural sequence' depicted in this illustration consisted of two Neolithic phases and four Iron Age phases and excluded the major late Roman modifications when the temple was constructed. In the accompanying text, however, Wheeler also isolated a number of important phases of activity on the hilltop to which traces of structures could not be assigned: a Late Neolithic occupation, a Bronze Age hiatus, an early Roman occupation, and Saxon burials.

In this account of more recent work, the basic sequence used by Wheeler has been retained and the site stratigraphy excavated in 1985 broken down into 11 numbered phases (Fig 33) which are designed to coincide with major changes in the nature of activity on the hilltop.

The phases (Fig 33) comprise:

1 Pre-enclosure (not illustrated). This is primarily an environmental phase identified from buried soils. There are, however, some features which predate the enclosure ditch. There are no finds that would suggest a Mesolithic occupation of the hilltop.

2 Neolithic enclosure. This is the double-ditched causewayed camp described by Wheeler and some miscellaneous features inside and outside the enclosure.

3 Bank Barrow and Late Neolithic/Early Bronze Age. This phase consists of the construction of the Bank Barrow, followed by a period of very little activity and then a Late Neolithic and Early Bronze Age occupation which probably involved the cultivation of the hilltop.

4 Bronze Age turfline. Sealing the early prehistoric layers, where they were preserved by Iron Age deposits, was a thick, decalcified soil horizon. There was little human activity during this period in the areas excavated, but a number of features, identified in the survey, appear to precede phase 5 and are marked on Figure 33.

5 Early Iron Age fort. The fort is defined by a single bank and ditch which enclosed the eastern summit of the hilltop. It marks a dramatic change in the use of the hilltop in the first millennium BC.

6 Extended fort. The hillfort was extended to the west to enclose more than double the area of the previous fort. Throughout this period, extra ramparts were added and the inner rampart heightened. The entrances to the fort became gradually more complex, as extra ramparts were added and existing gateways redesigned. The interior of the hillfort appears to be densely occupied throughout this period.

7 Late Iron Age occupation. In the later part of the Iron Age, occupation became restricted to the eastern half of the fort. The defences became less and less important, though the inner bank and ditch were refurbished at least once. Settlement and industrial activity extended into the area in front of the eastern gateway.

8 Early Roman. Occupation of the site continued after the Roman invasion of southern Britain. The nature of this occupation is obscure; Wheeler suggested that it was a continuation of the pre-Roman settlement, but a Roman military occupation is also possible.

9 Late Roman and Saxon. After the abandonment of the settlement at the end of the first century AD, there is a hiatus until the construction of a late Romano-Celtic temple in the fourth century. This was used in the post-Roman period and is associated with a number of Saxon burials.

10 Medieval (not illustrated). The interior of the hilltop was covered with rig and furrow indicating intensive cultivation in the medieval period. Chance finds during Wheeler's excavations and features visible in the survey suggest that there may also have been settlement on the hilltop.

11 Modern (not illustrated). This phase largely represents the excavations of Sir Mortimer Wheeler. There is no evidence that the hillfort has been cultivated in the last two centuries.

Information from the recent excavations has been further broken down into subdivisions of these phases. The subdivisions are used in the detailed stratigraphic report in the archive to isolate units for analysis. These subdivisions are also used in this discussion of the archaeological results and are identified in Figure 34. In many instances, these subdivisions are chronologically related and provide a more refined phasing for the stratigraphy in the trenches excavated. However, this is not always the case and the subdivisions are not necessarily chronological.

Excavations 1934–7

It would be impossible to understand the evidence from 1985–6 without using information derived from Wheeler's excavations, including his archive. Conse-

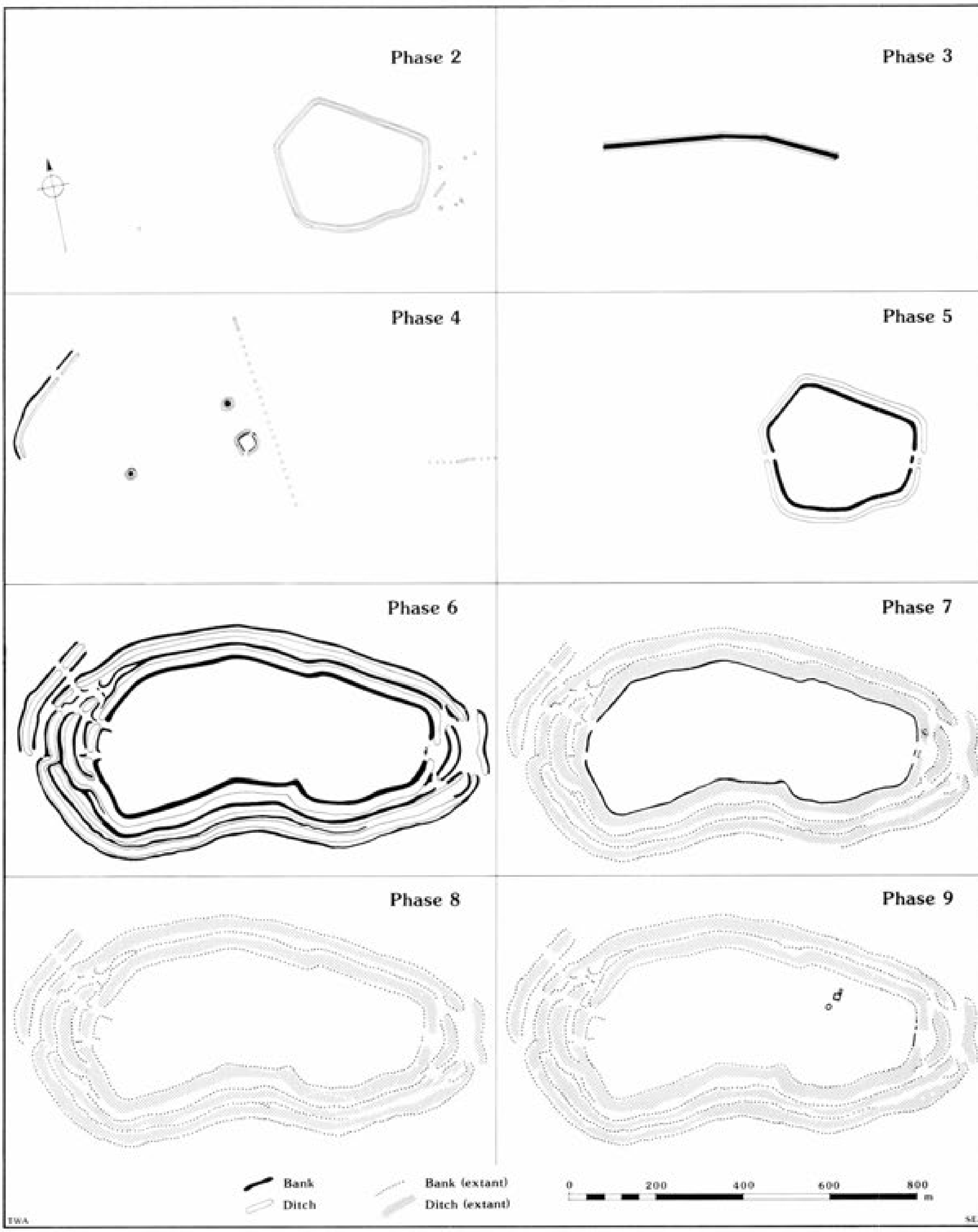


Fig 33 The various phases of occupation identified on the hilltop

quently, a brief summary of the original excavation is necessary to understand references in the following text.

The original excavations consisted of four seasons work from 1934 to 1937. Up to 17 areas were examined, A–W (Fig 35; Table 7; I, J, S, U, and V were not assigned). Most are single trenches, but others, notably Q and T, consist of large numbers of small trenches which extend across considerable areas of the hilltop.

A was a trench through the western defences of the Early Iron Age hillfort immediately north of the entrance.

B was a large area excavation around the late Roman temple.

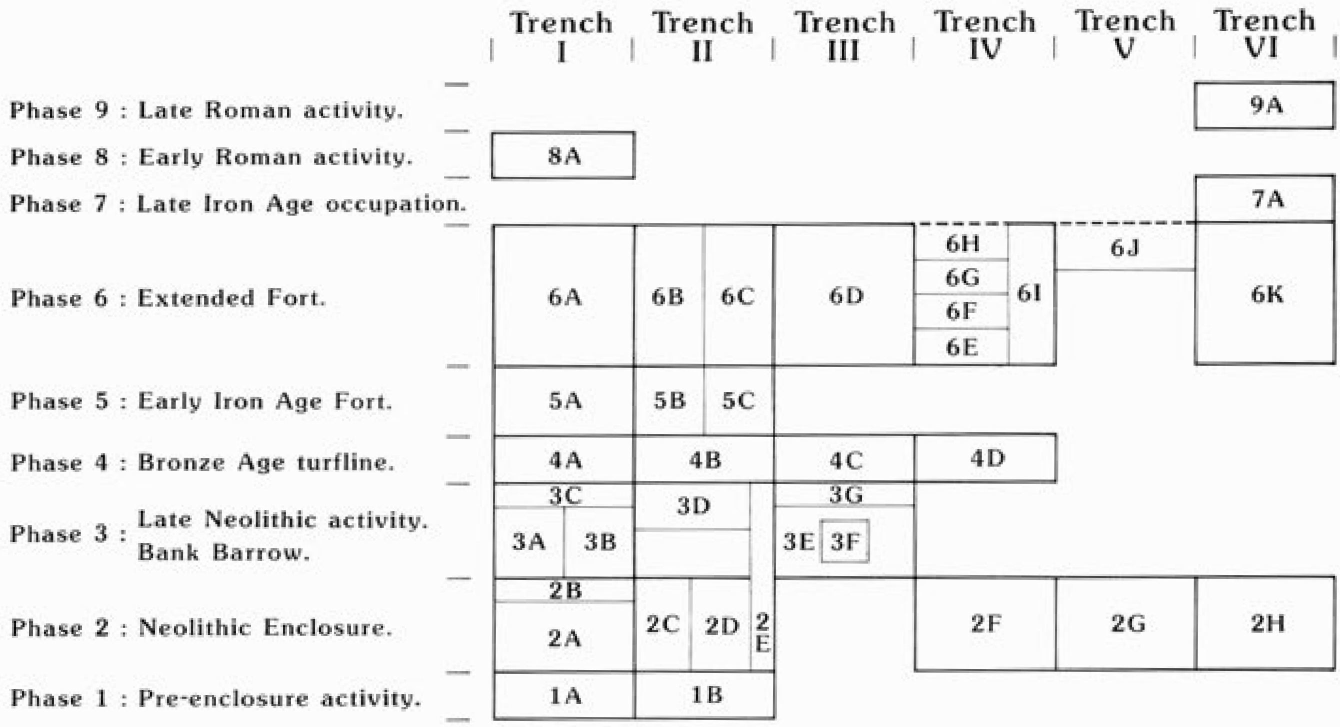


Fig 34 A diagrammatic presentation of the sequence of phases in each trench

C was a series of slit trenches on the edge of the western defences of the Early Iron Age hillfort, where it overlay the Bank Barrow.

D was a large trench behind the defences of the extended hillfort in the south-west corner of the hill.

E was a trench through the inner ditch and bank in the south-west corner of the extended hillfort.

F was an area excavation of the northern portal of the eastern entrance.

G was an area excavation of the southern portal of the eastern entrance.

H was a trench across the western ditch of the Early Iron Age hillfort where it was overlain by the rampart of the extended hillfort.

K was part of the excavation of the war cemetery.

L was an excavation of the area immediately south of trench B in the centre of the Early Iron Age hillfort.

M was somewhere in the eastern entrance and is possibly the slot through the bank and ditch lying between the two portals.

N was a number of trenches in the northern part of the outworks of the eastern entrance.

O was somewhere in the eastern entrance and is possibly the original trial trench through the war cemetery.

P was the large area excavation behind the inner hornwork of the eastern entrance which exposed the 'war cemetery'.

Q comprised over 70 trenches across the ditches of the Bank Barrow and an area excavation of the east end of the Bank Barrow south of trench L.

R was an area excavation of the western entrance of the Early Iron Age fort.

T was a large number of small trenches in the outer earthworks of the eastern entrance.

W comprised five small trenches in the western entrance of the extended hillfort.

For each excavated area, there would have been a site notebook and drawings. Site notebooks, however, are missing for several sites: the most noticeable loss is that for Q, and it seems likely that many of the drawings are also missing, though as there are no original lists

Table 7 The occurrence of the different phases of activity in the trenches excavated by Wheeler

Wheeler trench		*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*K*	*L*	*M*	*N*	*O*	*P*	*Q*	*R*	*T*	*W*
Phase 9			+				+	+			+	+				+			
Phase 8							+	+			+					+			
Phase 7			+				+	+		+	+	+	+	?	+	+		+	
Phase 6		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Phase 5		+	+	+			+	+	+	+	+	+		?	+	+	+		
Phase 4		+			+	+	+	+	+	?	+	+				+	+	+	?
Phase 3	*ii*	+			?	?	+	+			+	+				+	+	+	
	i	+									+					+			
Phase 2		+			?	?	+				+	+			?	+	+	+	
Phase 1																			

+ = present; ? = possibly present

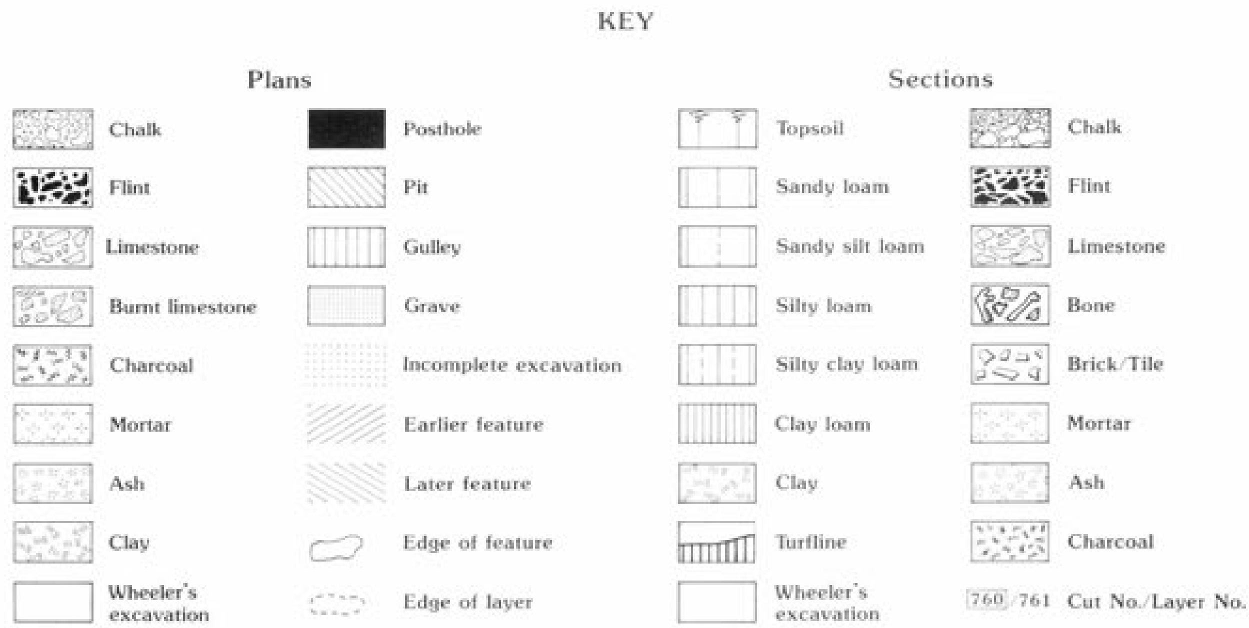


Fig 35 Key to the conventions used in the sections and plans

of the site drawings, this is not quantifiable. Each trench, or series of trenches, was divided into excavation squares. These were identified by a 'p' number, which referred to the page in the accompanying notebook where this square or trench was described.

The quantity and quality of information recorded varies considerably from trench to trench and sometimes from page to page. Normally, it consisted of a list of the layers identified and any notable finds that were recovered. Sometimes sketch sections were drawn and layers were linked to adjacent squares and any clearly identifiable features, such as ramparts or houses. The drawing record was equally variable. In some trenches, eg B, more than 50% of the squares' sections were drawn, in others (eg Q) very little appears to have ever been drawn.

In general, the publication of the data recorded during the excavations is an accurate summary of what was recorded in the notebooks and drawings. It should be emphasised, however, that it is a summary. A large amount of information, which had been prepared for publication, was not used. This is particularly clear when one examines the drawings, because the quality of the publication standard drawings is considerably higher than most of the field drawings. These data were of considerable value to the recent project and were used to examine a number of problems for the present report; for example, it was possible to reconstruct the dimensions and profiles of 108 pits, which, with the data from the recent excavations, provide a database large enough for comparison with other, extensively excavated Iron Age sites in southern England. Annotated sections of many of the trenches through the Bank Barrow ditch have been used to plot the distribution of different early prehistoric ceramics. A number of previously unknown features of Neolithic date are also recorded in the archive drawings of the eastern entrance.

It must also be stressed that the archive is not complete and that a great deal of information was not recorded or has been lost. The information recorded in the archive is also constrained by the methods and principles employed by Wheeler. The division of the trenches into squares makes it very difficult to follow stratigraphy across a trench, particularly when a limited number of section drawings survives. The description and interpretation of stratigraphic units, and soil layers in particular, are almost non-existent. Examples of layer descriptions include 'green earth', 'brown green earth', 'muddy wad', 'mincemeat', and 'rainwash speckly green'. The intention was to isolate units, not to interpret contexts, and the emphasis on stratigraphy was to establish a chronological sequence, not to examine the process of continuous occupation in any area. These problems provide constraints which would make any complete contemporary analysis of questionable legitimacy.

Excavations 1985–6

The recent excavations at Maiden Castle involved the examination of six trenches in the hillfort. All were positioned adjacent to trenches excavated by Wheeler and most involved some re-excavation of his trenches. Each trench had specific archaeological objectives and, using the information from Wheeler's excavation, the trenches were located where these could be best achieved.

Trench I

This trench was 15m long and 3.8m wide (Figs 37 and 46). It was situated in the centre of the hillfort (Fig 36) on the pronounced scarp which marks the abandoned Early Iron Age bank. It involved the re-excavation of the northern half of a trench excavated by Wheeler and the excavation of a strip of undisturbed deposits on the eastern side.

The basic stratigraphy (Fig 46) was identified in Wheeler's excavation. The major archaeological features were the Early Iron Age rampart (phase 5A), which overlay the mound and northern ditch of the Bank Barrow (phase 3A and 3B), which in turn overlay the inner ditch of the causewayed camp (phase 2A and 2B). Also present were indications of the pre-enclosure phase (phase 1A), the Late Neolithic (phase 3C), the Bronze Age turfline (phase 4A), and later Iron Age and Roman features (phase 6A and 8A). The quality of preservation for the Neolithic period was exceptional and provided crucial evidence for the relationship between the Bank Barrow and the causewayed camp.

The recovery of an environmental sequence through the second and third millennia BC was the prime reason for the examination of this trench. The causewayed camp ditch and the Bank Barrow ditch provide successive sequences of environmental material from the same spot, which can be compared with preserved soil horizons under the Bank Barrow mound and Iron Age rampart.

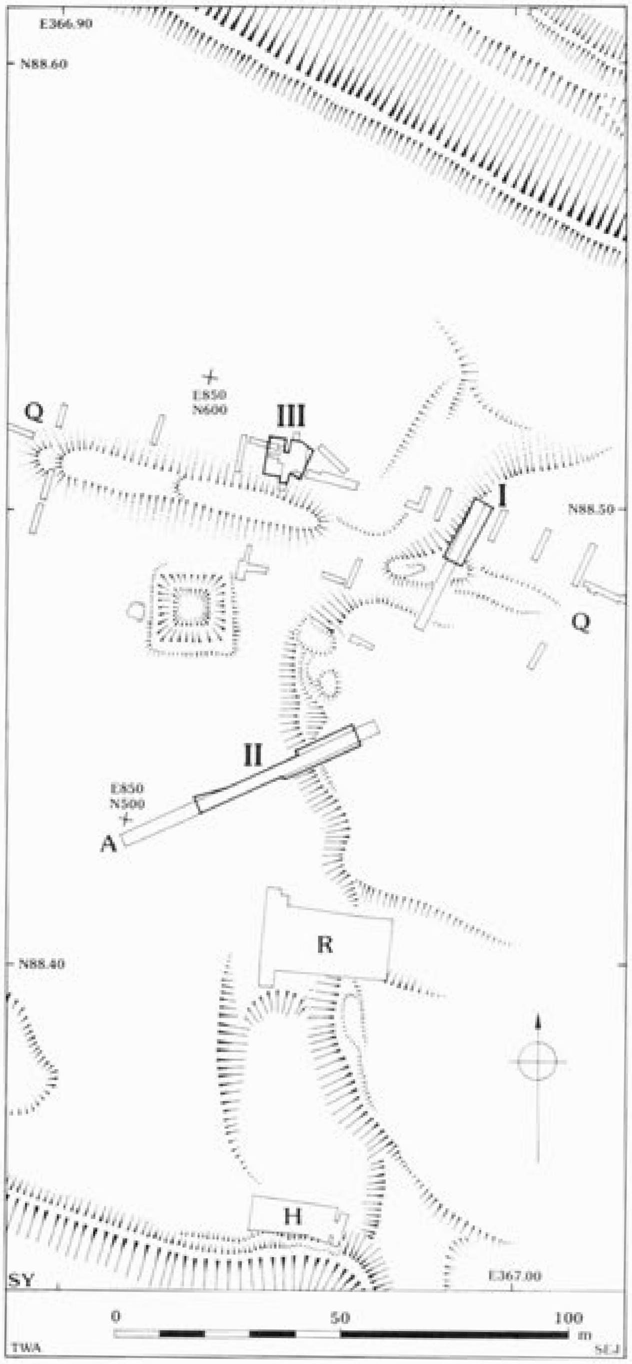


Fig 36 The location of the three trenches excavated in 1985

Trench II

This trench was 30m long and up to 3.90m wide (Figs 38 and 47). It was situated in the centre of the hilltop (Fig 36) to the south of trench I and cut across the abandoned bank and ditch of the Early Iron Age fort. It involved the excavation of Wheeler's trench A and a restricted strip of undisturbed stratigraphy to the north.

The main features in the trench were the bank and ditch of the Early Iron Age fort (phase 5B and 5C). Iron Age occupation was, however, preserved in the fill of the ditch and numerous features cut into the rampart (phase 6B and C). Sealed under the rampart was the Bronze Age turfline (phase 4B), which in turn sealed the inner ditch of the causewayed camp (phase 2C) and other features created by the Neolithic occupation of the hilltop (phase 1B, 2E, and 3D). The base of the outer ditch of the causewayed camp (phase 2D) survived on the edge of the Early Iron Age ditch.

Fig 37 Trench I during the excavation; the original Wheeler excavations are on the right, and the area on the left has been excavated to the top of the Bronze Age turfline

The primary objective here was to recover environmental and economic data for the first millennium BC by sampling the section through the Early Iron Age ditch. The causewayed camp ditch was also excavated to recover environmental samples and cultural material to complement the database recovered from trench I.

Trench III

This trench was irregular in shape, roughly 9m long and 8m wide (Figs 39 and 56). It lay in the centre of the hilltop to the west of trench I (Fig 36). It involved both complete and partial re-excavation of several of the trenches excavated by Wheeler as area Q (these are referred to by the notebook pages p32A, p32B, p36) and the excavation of a large area of undisturbed stratigraphy.

The trench was positioned on the line of the northern ditch of the Bank Barrow (phase 3E), but, because individual trenches across the Bank Barrow were not discussed in the published report, it was unclear exactly what had been discovered by Wheeler's excavations. The evidence available in the archive plans and sections suggested that there was a break in the Bank Barrow ditch at this point and that other, potentially Neolithic ditches were present (phase 3F). It was also clear that an important sequence of Late Neolithic, Early Bronze Age, and Iron Age occupation (phases 3G, 4C, and 6D) existed.

This trench was excavated to investigate the break in the Bank Barrow ditch and to recover radiocarbon samples for dating the different phases of the Bank Barrow. It would also provide an environmental sequence and cultural material to complement the database recovered from trench I.

Trench IV

This trench was based on a rectangle 30m long and 15m wide, which was expanded to the east and west to encompass an area of 620sq m

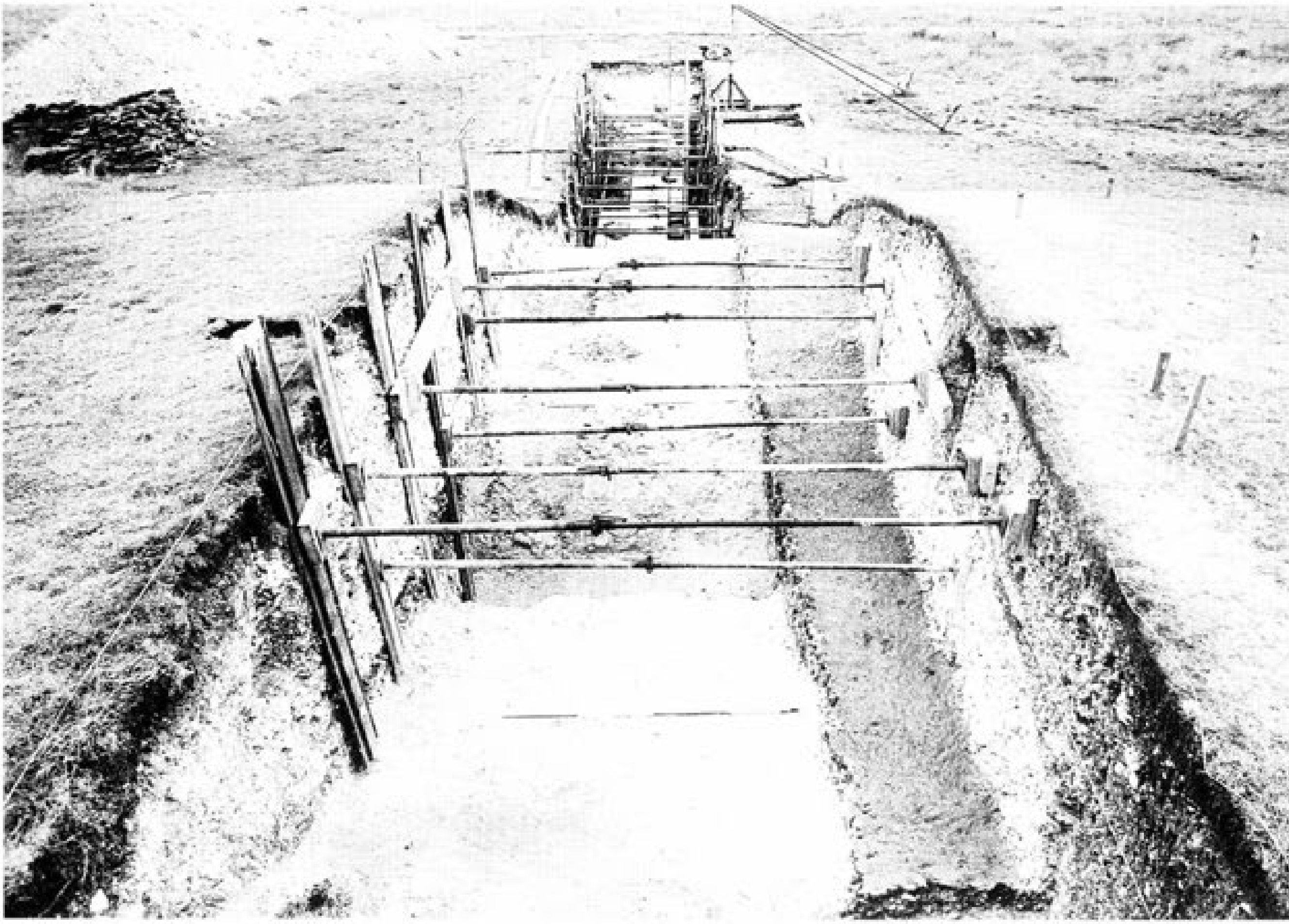


Fig 38 Trench II during excavation; the Bronze Age turfline is exposed on the right-hand side of the trench

(Figs 40 and 41). It was situated in the south-west corner of the extended fort, immediately behind the inner rampart and adjacent to a trench excavated by Wheeler (trench D) in 1935.

The excavations by Wheeler indicated that in this part of the site there was extensive Iron Age stratigraphy (phases 6E, 6F, 6G, 6H, and 6I) preserved in a quarry immediately behind the rampart. Wheeler (1943, 91–100) identified several substantial, well-preserved houses in the quarry and storage pits in the area immediately behind the quarry. The hillfort rampart preserved the Bronze Age ground surface (phase 4D) and some earlier Neolithic features (phase 2F).

The objectives of the excavation were to use the stratigraphy and contextual information to recover economic and cultural material which would provide a picture of social and environmental change immediately preceding the Roman conquest. It was clear that excavation of this part of the fort would uncover features typical of the Iron Age occupation of Maiden Castle. These features were well preserved and, most importantly, chronologically related by the stratigraphy.

Trench V

This trench was a square, 4.5m across (Figs 43 and 53). It was situated in the northern portal of the eastern entrance (Fig 42), adjacent to the terminal of the inner ditch. Most of the trench had been examined by Wheeler in 1935 (trench F; 1943, pl XIV).

The major features present in the trench were the road surfaces and revetment of the entrance to the Iron Age hillfort (phase 6J). The road surfaces, however, sealed the outer ditch of the causewayed camp (phase 2G), which elsewhere was destroyed by the inner ditch of the hillfort.

The principal objective of the trench was to examine the outer causewayed camp ditch, to compare the nature of the ditch with the inner ditch examined in trenches I and II, and to recover samples for radiocarbon dating and environmental analysis.

Trench VI

This trench was 8.5m wide and on average 8.5m long (Figs 44 and 96). It was situated in the east entrance (Fig 42) and overlay the filled inner ditch of the Early Iron Age fort. It lay between trenches F and G and included the partial re-excavation of other small trenches excavated by Wheeler (1943, pl XVI).

Within the trench, a mound of chalk waste dating to the Roman period (phase 9A) overlay Late Iron Age occupation levels (phase 7A), which in turn lay on top of the backfilled inner ditch of the Iron Age fort (phase 6K). The severely truncated base of the outer ditch of the causewayed camp (phase 2H) was also identified.

The Late Iron Age occupation was particularly interesting as it contained evidence for the working of ferrous metals and the examination of these deposits was the main objective. A detailed understanding of this occupation would provide unparalleled evidence for industrial activity in the period immediately preceding the Roman conquest.

The historical sequence

Phase 1: pre-enclosure activity

Prior to the Neolithic, our understanding of the history of the hilltop is severely constrained by the destructive effects of the later activity on the site. The only soil horizon, which may be relatively undisturbed by later activity, underlay a bank between the inner and outer ditch of the causewayed enclosure in trench II (Fig 59: 435). This bank will be discussed elsewhere (see p57),

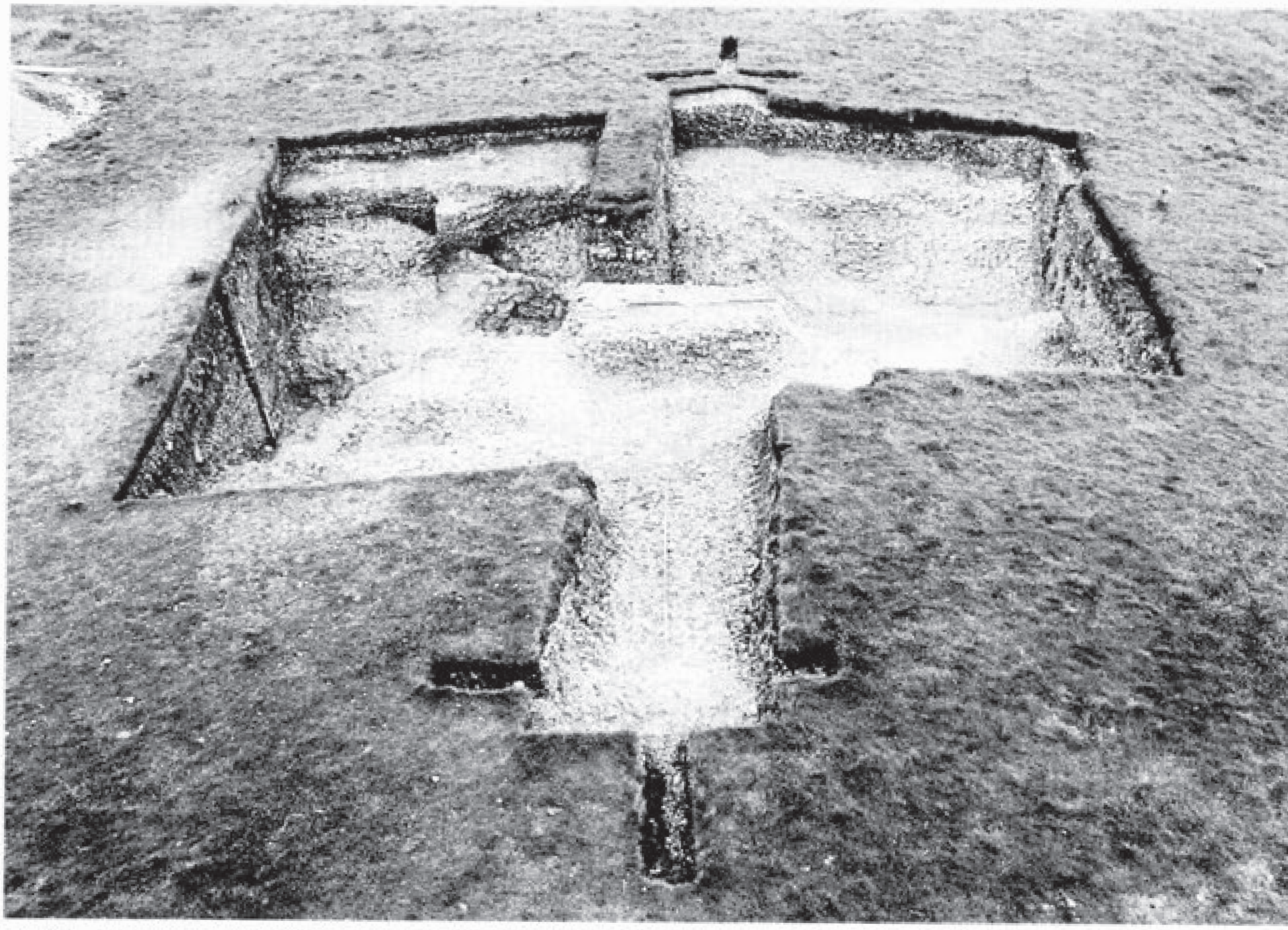


Fig 39 Trench III after excavation

but it is important to note that it was not a primary feature of the enclosure. With this caveat, it is interesting that during the excavation the structure of the underlying soil was clearly very different from that of the other soils. There was a very uneven junction between it and the underlying clay natural, with channels suggesting root disturbance. Throughout the soil, there was a substantial component of chalk and flint with no clear concentrations in levels. These features suggest that a major change in soil formation occurred when the enclosure was constructed, and it now seems clear that this was related to vegetation changes on the hilltop (see pp 109 and 123).

Archaeological evidence on the hilltop for the period prior to the creation of the Neolithic enclosure is almost absent. Numerous isolated Neolithic pits could predate the enclosure, as they have no relationship to this feature. However, it is simpler to assume that they were roughly contemporary with the construction and use of the established Neolithic monuments. Only one feature was discovered during the present excavations which definitely predated the enclosure ditch. This was an enigmatic feature ([illegible] 2233), in trench I, which had been largely removed by the inner ditch of the enclosure. Although it was first thought to be the primary fill of the enclosure ditch, the fill was distinctly different with a noticeable paucity of finds. The feature was either a ditch or a large pit, but the absence of finds makes its date and significance unclear.

Phase 2: Neolithic enclosure

The discovery of the Neolithic enclosure or causewayed camp at Maiden Castle had come as a complete surprise to Wheeler, as the ditches of the enclosure are sealed below the defences of the Early Iron Age hillfort. The masking of the enclosure has meant that the circuit of the ditches has been located with precision only in the few trenches that Wheeler cut through the early fort defences. It is thus not possible to state categorically either the area enclosed or the shape of the enclosure. There are, however, good reasons to believe that the earthworks of the enclosure were visible and were used to mark out the line of the Early Iron Age defences (see below, p58). It is possible, therefore, to assume that these defences roughly indicate the plan of the enclosure.

In Wheeler's excavations, six trenches exposed the ditches that define the enclosure. The recent excavations were extensions to three of these trenches. Most of the interior was disturbed later in the Iron Age, but a large area was sealed by the mound of the Bank Barrow. This is one of the few preserved areas inside a causewayed camp and is an invaluable archaeological resource.

The enclosure was defined by two ditches spaced 14–15m apart. The area enclosed by the inner ditch was roughly 8ha. The inner ditch, for which 12 complete sections are available, varied in breadth from 3m to 4m and in depth from 1.2m to 1.6m. It was straight-sided and round-bottomed in all trenches. No breaks or causeways have been discovered in this ditch. The plan of the base of the ditch revealed in trench II (Fig 47: 571; Fig 48), however, suggests that it was originally dug in segments and that these segments were subsequently joined together. The terminals of the two original segments survived as deeper areas against the north and south sides of the trench. A

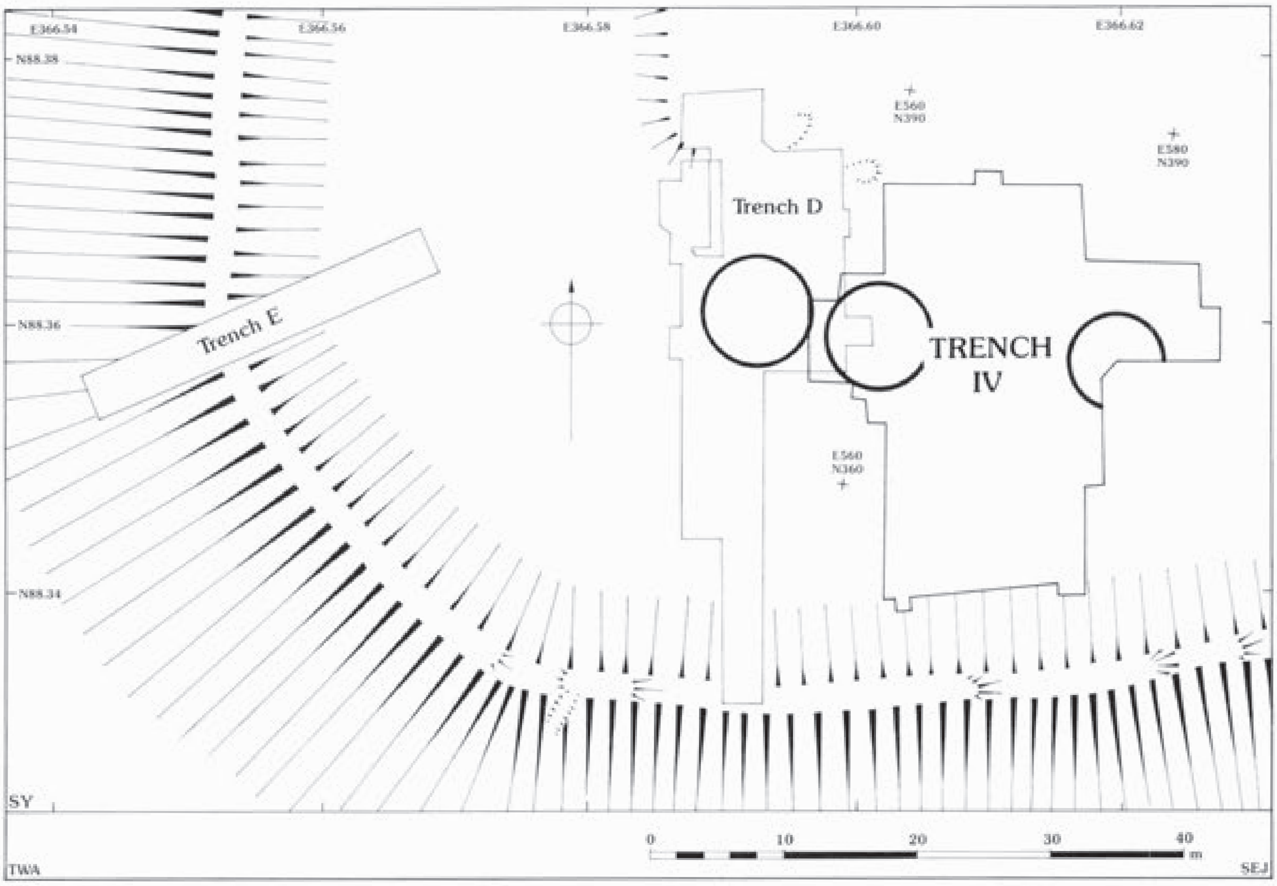


Fig 40 The position of trench IV in relation to Wheeler trenches D and E

similar, if slightly less prominent, pattern was visible in the ditch in trench I (Fig 46: 2235; key to sections given in Fig 45) with an original, deeper segment in the south-west corner of the trench. The sides of the ditch were often very irregular, with the width increased by relatively shallow and restricted terraces at the top of the ditch. In trench II, a terrace had been cut on the inside of the ditch and a similar terrace was visible alongside the ditch in the eastern entrance (1943, pl XI). Both of these terraces could be Late Neolithic or Bronze Age in date (see below, p56).

The outer ditch of the enclosure was noticeably smaller than the inner. Its width varied from 1.7m to 2.4m and its depth varied from 1.35m to 1.8m. It was a flat-bottomed ditch with almost vertical sides. Knowledge of the form of the outer ditch is severely restricted, as most of the ditch was removed by the ditch of the Early Iron Age fort. About 0.20m or 0.30m of the basal fill is normally all that survives (eg trench II, [redacted]: 324, and VI, Fig 98: 7122), except where the Early Iron Age ditch is absent at the entrances to the fort. Nevertheless, it is clear that, unlike the inner ditch of the causewayed camp, the outer ditch was characterised by a number of breaks (causeways) in the circuit. The ditch was not found in the southern portal of the eastern entrance to the fort. A gap 5m wide was identified in the western entrance to the Early Iron Age fort and a gap of at most 6m was identified in the northern portal of the eastern entrance.

The picture of the enclosure outlined above is more or less identical to that which has prevailed in the literature, since Wheeler's excavations were completed. There are, however, some interesting features which were not published in the report, but which show up clearly in any examination of the archive and suggest that this is not a complete picture of the first Neolithic monument. Extensive excavation by Wheeler in the area to the east of the enclosure revealed a number of features which were not explained in the published report and which have subsequently been ignored.

Underneath the inner hornwork, there is a straight-sided, flat-bottomed ditch which does not fit into any of the phases of the Iron Age fort. This is most clearly illustrated in plate XII of the 1943 report. The ditch was 0.8m deep and 2.3m wide. Most noticeably, a feature of the fill was the presence of a child burial in the thick turfline which sealed the ditch. Wheeler dated this ditch to the Iron Age because of a single sherd of Early Iron Age B pottery found with the burial. An apparent continuation of this ditch was found to the north, underlying the 'war cemetery'. This ditch appears on plate CXIX, the main plan of the eastern entrance, where it terminates just to the south of the southern roadway. This part of the ditch was identified as Neolithic in the archive notebook for trench R, along with a large pit or ditch to the south of the northern road and a small pit and gully in the north-west corner of this trench, although neither of the pits appear on the illustration. The dating of the gully is important and it may indicate that some of the other 'early palisades' in the eastern entrance belong to the early prehistoric occupation of the hilltop, though some are definitely Iron Age.

Further east, in the outworks of the entrance, trench LXXXIII cut through a 'neolithic mound' (Wheeler 1943, plate XIII) of unknown extent and significance, and seven Neolithic pits were excavated and recorded on plate CXIX. A number of 'Neolithic' postholes to the north and south of pit T2 were referred to in the site notebook, but they were not planned or published.

These features do not make a coherent pattern which can be discussed or summarised on a phase plan, but they do suggest that the enclosure might lie within a more complex system of outworks than has hitherto been suspected. Indeed, it has been argued (Chapter 3) that the outer earthwork of the western entrance to the hillfort may well precede the hillfort by some time.

The evidence for the use of the enclosure can be approached by examining the deposits left in the enclosing ditches and the features inside and outside the enclosure. The best record of the fill of the inner and outer enclosure ditches comes from the recent excavation. Examination of Wheeler's archive suggests that these recent trenches were representative, and that the general sequence of occupation is the same throughout the circuit of the enclosure. Our understanding of the interior of the enclosure, in contrast, is totally dependent on the information from Wheeler's excavations and is extremely limited.

The inner ditch fill

The Early Neolithic fill of the enclosure ditch was best preserved and most clearly understood in trench I (Figs

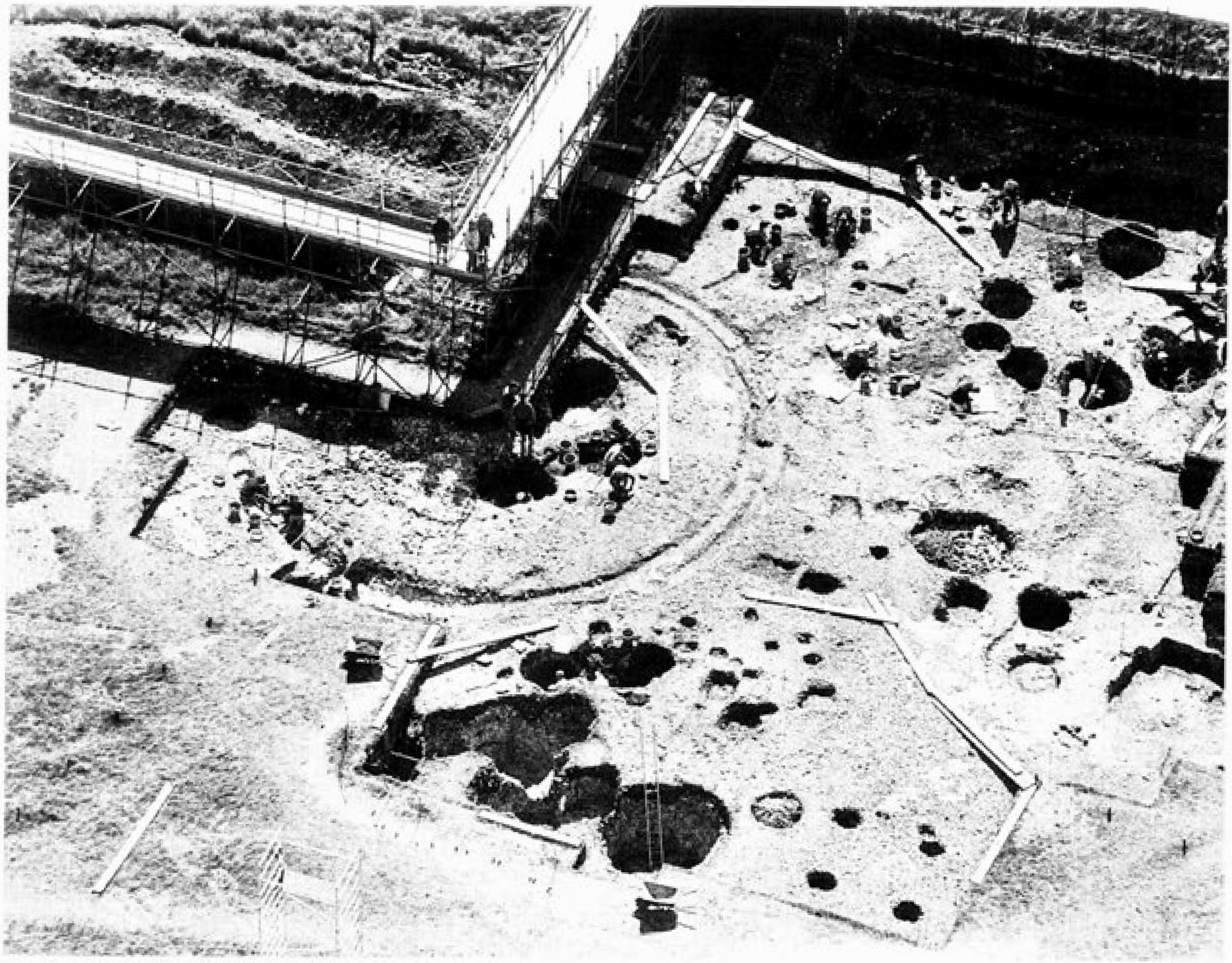


Fig 41 An aerial photograph of trench IV during the excavation

49 and 51). This was the area where the enclosure ditch (2235) was overlain by the mound of the Bank Barrow. Consequently, the ditch was sealed almost immediately after the use of the enclosure and has remained undisturbed ever since (due to the orientation of this trench, the drawn sections of the fill are oblique to the line of the ditch and do not give a clear visual impression of the fill of the ditch).

The nature of the ditch fill at this point can be split into four distinct soil types in rough chronological order: fine chalk silts, chalk rubble, loams with a high rubble content, and loams dominated by artefactual material and charcoal.

At the base of the ditch were the chalk silts (Fig 49: 2176, 2227; Fig 51: 230). These were probably deposited by rainwater almost immediately after the ditch had been created. On top of these silts, and intermingled with silt layers 2237 and 2232, were the much thicker and relatively unconsolidated layers of chalk rubble (Fig 49: 2226, 2169; Fig 51: 140, 130). The rubble contained considerable quantities of charcoal, largely mature oak, which was at least partially created by a fire which had scorched many of the chalk blocks. In the south-west corner of the ditch, an inhumation (Fig 52) had been inserted into this layer (Fig 51: 140).

Above the chalk rubble was a complex series of intermixed loams and charcoal and artefact-rich midden layers. The loams contained large quantities of artefacts, but much less charcoal, and were concentrated on the inside of the ditch (Fig 49: 281, 2151). The midden layers were thicker on the outer side of the ditch (Fig 51: 119, 235) and slope down from the west. In the west section, two layers of midden were clearly separated by a layer of chalk rubble (Fig 51: 236). This might suggest that the layers were deposited from outside the inner enclosure and that they were separated by collapse of the ditch sides or a dump of chalk rubble. Unfortunately, it was not possible to join the layers visible in the east and west sections, as they were separated by Wheeler's excavations.

A similar sequence was observed in the section of the Neolithic enclosure ditch exposed in trench II (Figs 50a, 58, and 59). The primary midden layers (Fig 59: 567, 553) were again sealed by a layer of chalk rubble (550), which was in turn sealed by more midden layers (317, 542). The later midden layers in this trench could, however, be much later, perhaps contemporary with the Late Neolithic (see p56).

This secondary layer of chalk rubble appeared quite high in the fill sequence of the ditch and it is difficult to interpret it as part of the natural infilling of the ditch. It may represent a deliberate infilling of the ditch. It cannot be the collapse of a bank, as there is no evidence for a bank adjacent to the inner ditch, and the preservation was such that this evidence would have survived.

The fill of the inner enclosure ditch, in trench I, was sealed by a soil horizon. It comprised a thin, stone-free layer above a concentration of chalk and flint rubble (Fig 51: 96, 98; Fig 49: 2153, 2157). It merged laterally with the thick soil horizon (Fig 49: 297), which was preserved in the interior of the enclosure by the Bank Barrow mound.

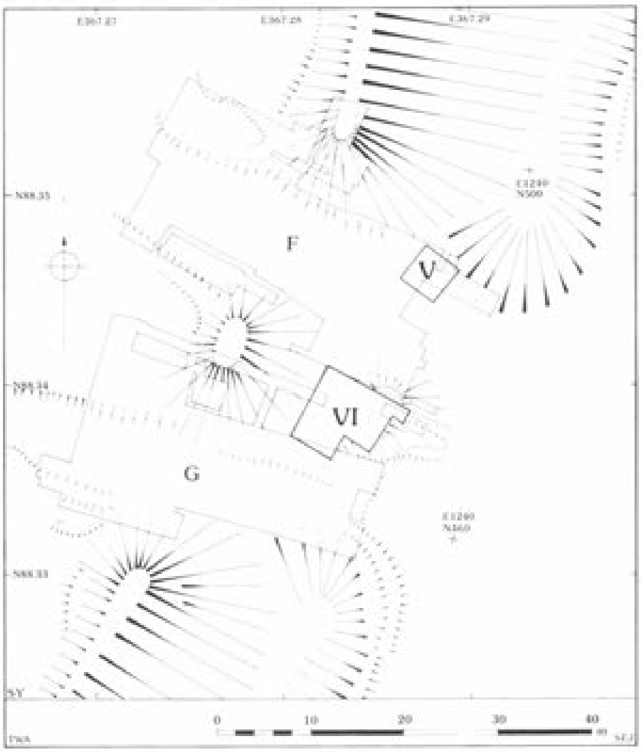


Fig 42 The location of trench V and VI in the eastern entrance to the hillfort

The outer ditch fill

The outer ditch of the enclosure had a very different fill to that described above. The recent excavations in trench V (Fig 53) provide the best information for this. On the base of the ditch was a chalk silt (7014) which had been sealed by deliberately laid chalk blocks (7013). Above this, and completely infilling the ditch, were several practically indistinguishable layers of small chalk rubble (7011, 7012, 7015). Very few finds were recovered.

In trench II, the truncated basal fill (Fig 50b: 324) of the ditch contained an important deposit of animal and human bones associated with a scatter of flint flakes and a stone axe (Fig 54). The bones were completely disarticulated and represent at least three humans: an adult at least 45 years old, a juvenile aged 5–10 years, and a juvenile aged 3–5 years. In trench R, immediately to the south, Wheeler recovered the head of an adult male about '20–25 years of age' (1943, 344). This may have been from an articulated skeleton, as it was on the edge of the trench. It seems, therefore, that the outer ditch was deliberately backfilled over deposits which included human remains.

The pits

The features excavated by Wheeler which might be related to the use of the enclosure can be split into three, spatially distinct groups: a scatter of pits, post-

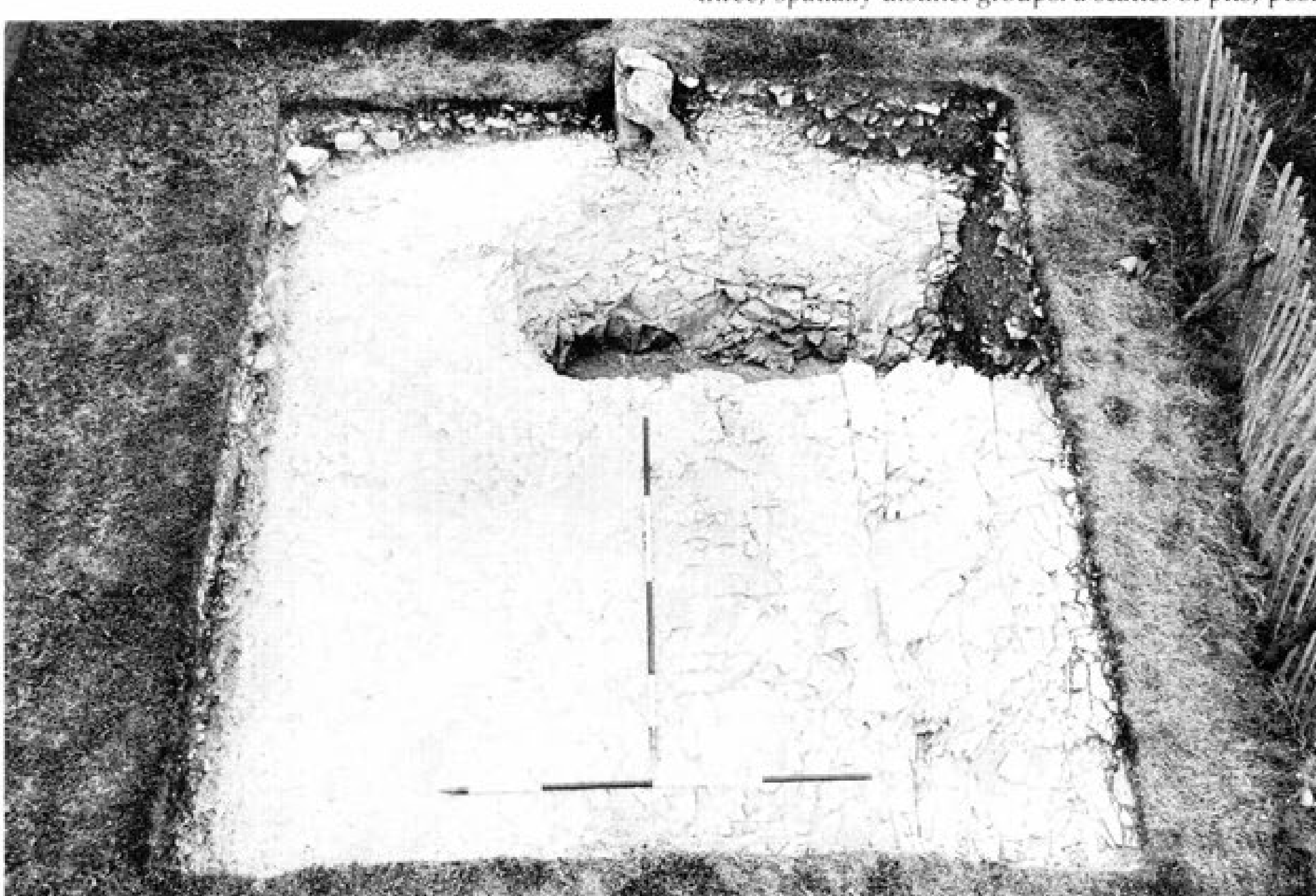


Fig 43 Trench V after excavation

holes, and burials under the eastern end of the Bank Barrow, the cluster of pits in the eastern entrance, and evidence for 'flint knapping' under the Iron Age ramparts in the south-west corner of the fort. There were also isolated pits in several other trenches excavated by Wheeler, but it is difficult to see any pattern in these features.

The main problem with these features is their date. There is no evidence to suggest that they are all of the same date or contemporary with the use of the enclosure. Indeed, there is good evidence to suggest that they are not all of the same date. Amongst the pits in the eastern entrance, several have produced Late Neolithic pottery, Grooved Ware, and Beaker. Wheeler assumed that some of the pits under the Bank Barrow belonged to the construction of this monument. The environmental evidence suggests that a major phase of pre-enclosure activity is unlikely, but the environmental data are largely restricted to the centre of the hilltop and cannot be held to represent the environment at the extreme eastern and western ends of the hilltop.

The 'flint working' noted in the south-west corner of the hillfort (Wheeler 1943, pl IX) can be dismissed as a misinterpretation of the worm-sorted horizon at the base of the Bronze Age turfline (see Bellamy and Edmonds, Chapter 6). The recent excavation did, however, identify a shallow Early Neolithic pit in the south-west corner of trench IV, and there is abundant evidence for Late Neolithic and Early Bronze Age activity from the residual flint in the Iron Age layers.

The known distribution of pits across the hilltop does not indicate that the enclosure was an important focus for settlement during the Neolithic. Only the deposition of large quantities of material in the ditches signify the importance of the enclosure. This would suggest that the material in the ditches was not the result of casual dumping from adjacent activity areas, but the result of carefully structured deposition designed to emphasise the significance of the enclosure.

One deposit under the Bank Barrow deserves detailed discussion. Under the southern half of the mound, about 17.5m from the eastern end, was a burial. This was of 'two children, probably 6 or 7 years old, buried together north and south in crouched positions, head to tail' (Wheeler 1943, 344). Accompanying this burial, at the shoulder of one of the children, was a very small, round-based bowl. The skeleton is described as being clearly stratified between the turfline and the Bank Barrow mound in the description of the human remains, but is more ambiguously positioned in the description of the archaeology (Wheeler 1943, 88). It is suggested here that this burial could be related to the use of the enclosure. The relationship with the turfline is not a reason for dating it to after the use of the enclosure, as this seems to be largely a relic of the pre-enclosure turfline.

Fig 44 Trench VI in the eastern entrance of the hillfort, looking towards Dorchester

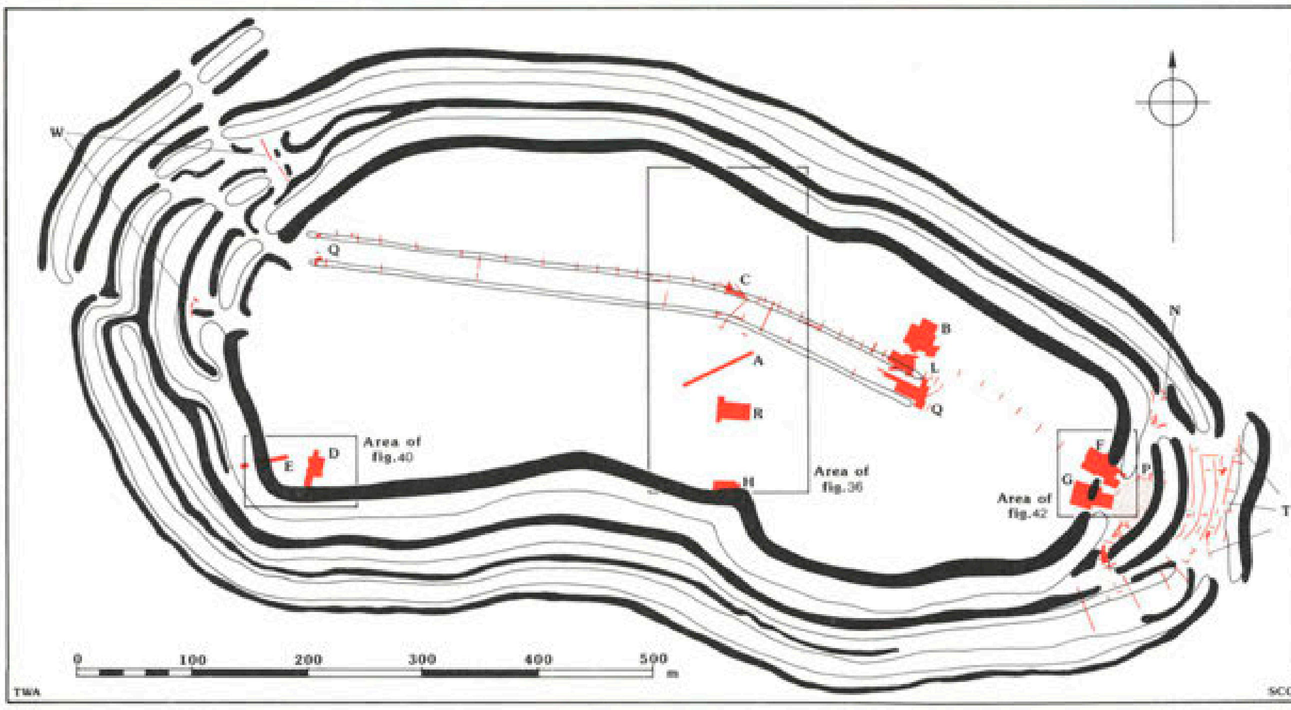


Fig 45 A schematic plan of the earthworks, showing the location of the trenches excavated by Wheeler

Phase 3: Bank Barrow and Late Neolithic activity

This phase represents at least two distinct chronological periods with little continuity between the two. They represent contrasting practices and are marked by different cultural assemblages. They will be discussed as two separate units: phase 3(i), the Bank Barrow, and phase 3(ii), the Late Neolithic and Early Bronze Age settlement.

(i) The Bank Barrow

The Bank Barrow is a monument unique in the British Isles. It comprised a mound originally 546m long and 17.5m wide flanked by two ditches 5.5m wide and 1.5m deep. It consisted of three separate segments: a central segment (Fig 55), 65m long, an east segment, visible as a mound, 155m long, and a west segment, visible as a mound, 225m long. All three segments had slightly different orientations. The central segment was situated at the top of a dry coombe running down to the South Winterborne (Fig 29). Both the eastern and western sections are deliberately sited on the false crest to the north of the high ground in the interior of the hillfort.

It has been suggested by Bradley (1984b) that the Bank Barrow started life as a long barrow situated on the edge of the Neolithic enclosure and that its purpose was intimately connected with the rituals associated with the enclosure. The evidence for this chronological development is circumstantial. The central segment of the monument is an appropriate length for a long barrow. The ditch was known to be broken at the east end of this segment, a point confirmed by the excavation of trench III. The central segment of the barrow mound is much higher than any other stretch of the Bank Barrow and seems to be separated from the other parts of the mound. These three points indicate that the central part of the monument was separate and distinct, but they do not prove that it was the chronological precursor of the entire monument. Nevertheless, as there is no alternative explanation for this distinction, the chronological succession will be assumed in the rest of this discussion.

The eastern extension of the mound sealed a soil at the top of the filled inner ditch of the enclosure (Fig 51: 96), the insignificant nature of which suggests that it was buried relatively soon after the abandonment of the enclosure ditch. This is corroborated by the radiocarbon dates discussed below.

The Bank Barrow was relatively extensively excavated by Wheeler. He excavated a large stretch of the ditch and a considerable area of the mound, in trenches L and Q (Wheeler 1943, plate IV), at the eastern end of the monument. The rest of the mound was explored by 45 slit trenches across the north and south ditches. Only one of these trenches explored the area between the ditches, although another slot was cut across the west end of the Barrow by Atkinson (1952). The recent excavation included two trenches (I and III) which cut the northern ditch of the Bank Barrow. Only a small and atypical section of the Barrow mound was examined (trench I).

The mound of the Bank Barrow was badly denuded by the later activity in the Iron Age, and the only area which survives to any extent is where the mound was sealed by the western rampart of the Early Iron Age fort. At this point, the mound reached a maximum thickness of 2m, but this was where the mound overlay the depression above the enclosure ditch (Fig 46) and it provides a misleading impression of its height: 1m was more representative of the height of the mound at the beginning of the Iron Age occupation.

The mound was not revetted at the sides. Postholes,

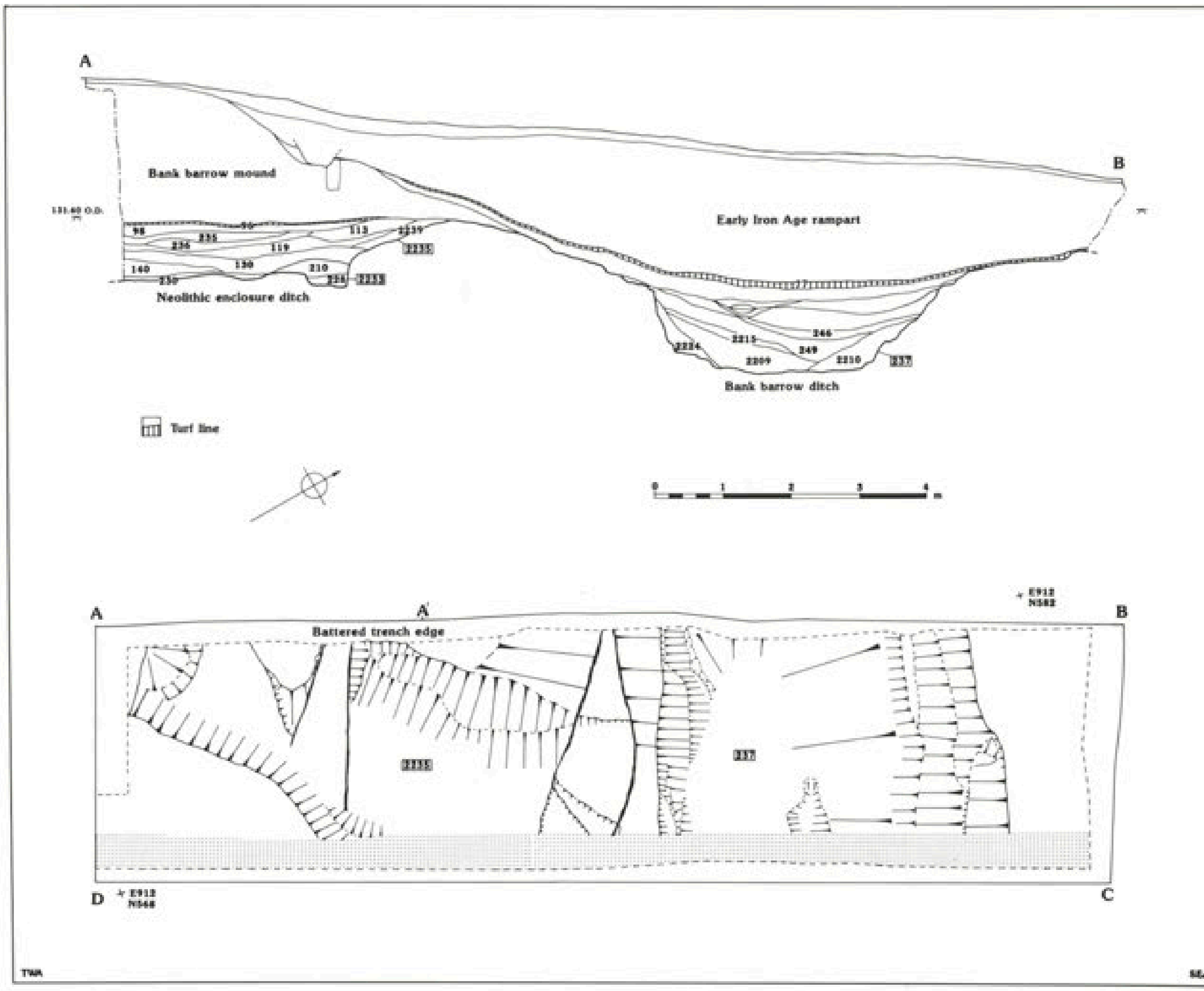


Fig 46 Trench I: a) the west section; b) the plan after excavation

which were discovered by Wheeler at the west end (1943, 88), were suggested to be a facade or revetment, but their arrangement is by no means convincing. The mound was formed by dumping spoil from the adjacent ditches. This was particularly clear where the northern ditch cuts the earlier enclosure ditch (trench I: Fig 46). The redeposited silts from the enclosure ditch (Fig 49: 261) were found to make up the core of the mound adjacent to where the ditch was truncated. This was then sealed by chalk (Fig 49: 23) quarried from below the enclosure ditch.

The fill of the Bank Barrow ditch was remarkably consistent throughout its length and can be illustrated by the sections excavated in trench III in 1985 (Fig 57). The layers are similar on both sides of the trench and largely result from the natural infilling of the ditch. This trench was situated over the break in the ditch which marks the point where the Bank Barrow was extended. The western section is of the earlier barrow ditch and the eastern section is of the eastern extension to the Bank Barrow. The similarity of the fills suggests that the earlier barrow ditch may have been cleaned out for the construction of the Bank Barrow.

The basal fill of the ditch was loose chalk rubble (Fig 57d: 809, 810; Fig 57a: 2267). On the west side, the ditch cut a chalk solution hollow and, at this point, the primary fill was a clay layer (Fig 57a: 2262) and the subsequent fills had a much higher clay component. Above the primary fill was a layer still with large quantities of chalk, though the chalk had been eroded and compacted and a significant silt component was present (Fig 57d: 811; Fig 57a: 2263, 2268). This was sealed by a thick stone-free homogeneous silt (Fig 57d: 812; Fig 57a: 984). The fill of the ditch until this point can be explained in terms of natural processes of erosion of the surrounding chalk sides of the ditch and the turf and topsoil which would have been undermined at the sides of the ditch. Above the stone-free silt, however, the ditch was filled by a thick layer of chalk rubble which must represent extensive human disturbance of the hilltop. This is discussed in the next section.

Within the basal fill of the ditch, finds were rare. There was a scatter of animal bones, including an antler pick, and some flint. In the homogeneous silt layer, there were more intensive indications of human activity. A patch of charcoal and burnt soil, visible in the west section (Fig 57a: 992), indicated a hearth created during the accumulation of this silt. This hearth is in a similar position to the 'occupation material' recorded by Wheeler in the published section of the Bank Barrow ditch (Wheeler 1943, fig 15). This occupation material included large quantities of cattle bones and the concentration of four or five skulls at the eastern terminal of the southern ditch.

The silt layer, in trench III, sealed several features which cut the primary fills of the ditch. Three pits (Fig 56: 807, 2261, 2276) were identified, and there were probably more, both to the north of the trench and in the area excavated by Wheeler. The pits were not uniform in shape and size: their length varied from 1.10m to 2.5m, their width from 0.8m to 1.3m, and their depth from 0.6m to 0.8m.

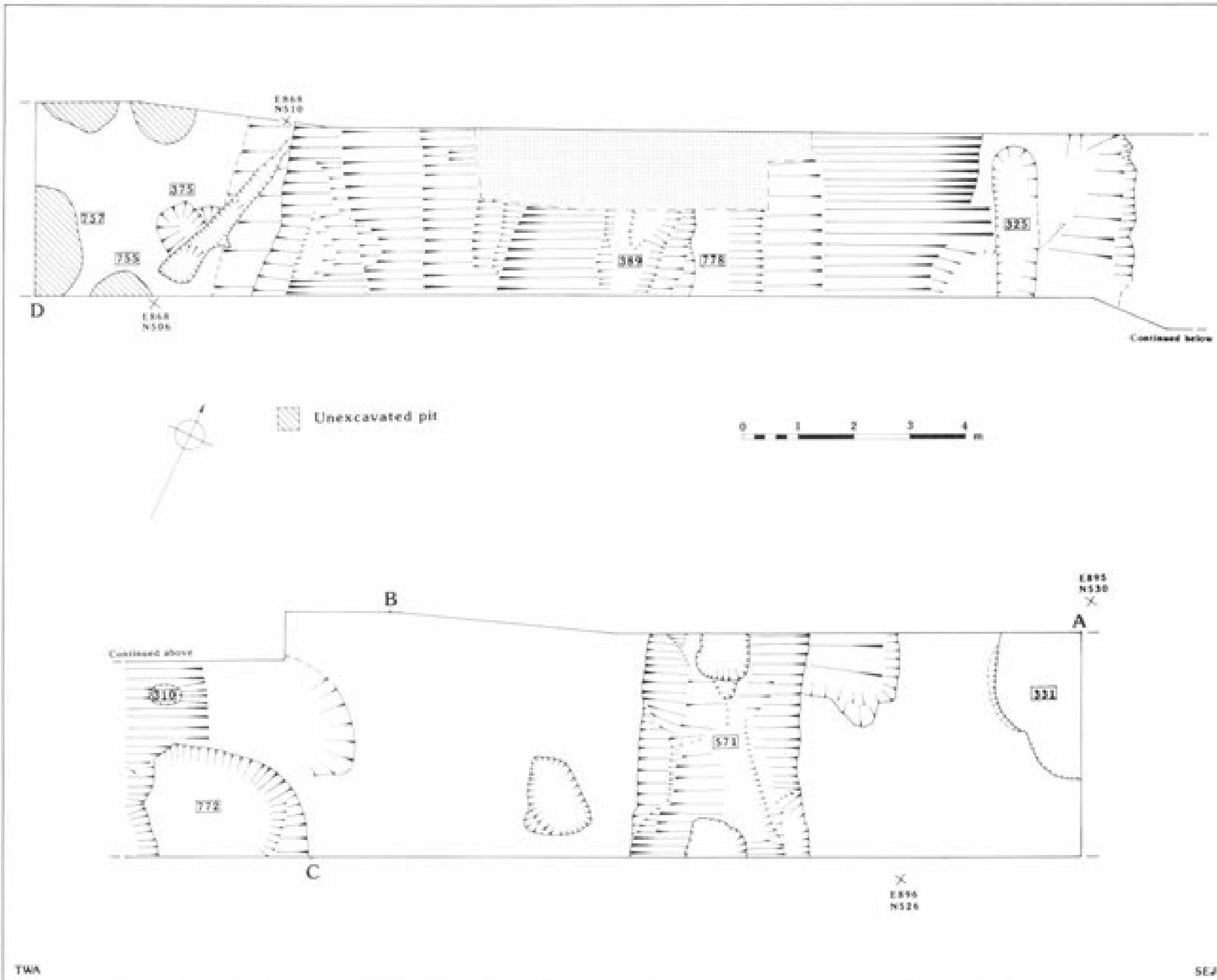


Fig 47 Trench II: the plan at the end of the excavation

Their fills, however, were relatively homogeneous. A section through pit 2261 (Fig 57c) is the clearest. A thick, chalk rubble layer (2260) almost completely filled the pit, but at the top there was a dark brown soil mixed with the chalk (2259) and, at the base, the chalk was mixed with silt (2270). The nature of the fill suggests that the pits were deliberately infilled.

(ii) The Late Neolithic and Early Bronze Age occupation

A Late Neolithic occupation of the hilltop is demonstrated by the occurrence of Beaker and decorated Peterborough Wares in the upper fills of all the Early Neolithic features on the hilltop. This was an obvious feature of the Bank Barrow and enclosure ditches, but it was also a feature of several of the larger pits in the eastern entrance and may indicate that they were only partially infilled by the Late Neolithic. The presence of this material in features across the hilltop suggests that it was deposited in a uniform layer covering the hilltop and that elsewhere the layer was disturbed and the diagnostic cultural material destroyed by later processes. The quantity of pottery in the ditches was by no means uniform and the distribution of different Late Neolithic to Early Bronze Age types may indicate different foci for activity on the hilltop (see p183).

This material indicates renewed activity on the hilltop after a period of apparent abandonment (see p124). It coincided with a marked change in the soil processes infilling the Bank Barrow ditch. The Late Neolithic material in trench I and III was associated with a layer of chalk rubble (eg Fig 57a: 937, 954), and in trench III the quantity of rubble increased towards the top of the ditch fill.

This rubble was markedly different from the large loose rubble in the primary fill of the ditch, and the final layer (Fig 57a: 937) comprised small rounded fragments in a rich, dark brown loam. The most likely interpretation of this layer is that it resulted from the cultivation of the hilltop: it is too evenly distributed to represent the collapse of the Bank Barrow mound. Cultivation of the hilltop would have caused erosion of the topsoil over the mound and then erosion of the underlying chalk rubble. This would explain the concentration of chalk at the top of the layer. The animal bone and pottery found in this ditch were small abraded fragments, which would be consistent with cultivation of the soil.

In contrast, the fill of the top of the enclosure ditch, in trench II, did not contain such an obvious cultivation horizon (Figs 58 and 59) and this area may have evidence for *in situ* occupation. The final fill of the ditch included two layers (Fig 59a: 529, 537) which extended across the terrace on the inside of the ditch. In contrast with the Bank Barrow ditch, the upper layer (529) was stone-free. The terrace may be a primary feature of the ditch, but it is more likely to be Late Neolithic, as it appears to have cut across the top of the ditch and truncated the fill (Fig 59: 542, 550, 557). It was initially filled with chalk-rich layers 541, 537, and 536 which were concentrated on the

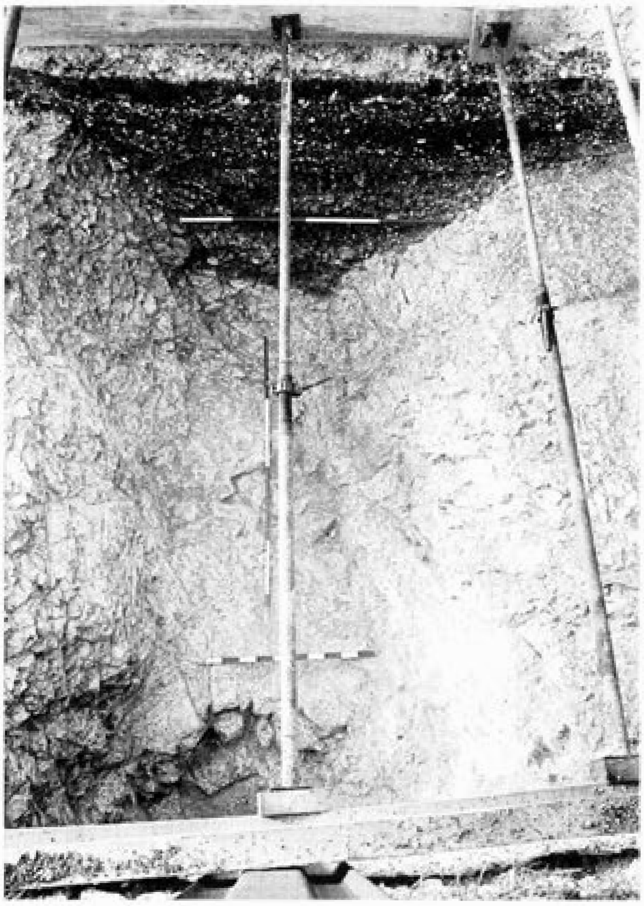


Fig 48 Trench II: the inner ditch of the causewayed camp after excavation; note the deeper terminal adjacent to the south section

west side of the terrace. These were sealed by a stone-free soil layer (529), which represented the slow accumulation of occupation material and silt in the hollow. It was only above this that there was a stony layer (Fig 59: 501, 523) similar to the cultivation layer in the trench II and III.

The hollow was rectangular and 4m east to west and at least 1.2m north to south (Fig 47). It contained a number of sherds of Peterborough Ware which was noticeably absent from the other trenches excavated in 1985. The purpose of the hollow is not clear: it could be a redefinition of the enclosure in the Late Neolithic, or a domestic structure positioned to take advantage of the hollow at the top of the ditch. Only more extensive excavation could answer this question.

A small bank (Fig 60) between the inner and outer ditch of the enclosure may be connected with the later Neolithic activity. The bank was 2m wide and 0.17m high and consisted of two flint and chalk-rich layers (Fig 59a: 509, 434). There was a concentration of artefacts at the base of the bank directly overlying the old ground surface.

This bank was originally thought to be part of the Early Neolithic enclosure, as it was also found in Wheeler's excavation between the enclosure ditches at the eastern entrance to the fort (Wheeler 1943, pl XI). This now seems unlikely for a number of reasons: there was a sherd of Mortlake Ware at the base of the bank (see p181), a radiocarbon date from the base of the bank is later than the dates from the ditch, and a detailed micromorphological examination of the underlying ground surface identified a long sequence of activity which included cultivation (see p113).

The presence of the apparently similar bank in the eastern entrance suggests that it was associated with the enclosure ditch and, together with the presence of Late Neolithic deposits in the ditch, represented a redefinition of the enclosure. The bank was not, however, identified in other trenches excavated by Wheeler across the eastern and western entrances. It may be no coincidence that the presence of the bank between the two portals of the eastern entrance coincides with a concentration of Beakers in the adjacent section of the enclosure ditch. An alternative explanation could be that it was a field boundary associated with the Late Neolithic and Early Bronze Age cultivation of the hilltop and that the fields incorporated the earthworks of the enclosure, where these were visible and conveniently located.

Phase 4: Bronze Age turfline

The end of the Late Neolithic occupation of the hilltop was distinguished by the formation of a thick, decalcified, worm-sorted soil horizon. This survived where it was sealed by the Iron Age rampart (eg trenches I, Fig 37, and II, Fig 38) and also above early prehistoric features, where Iron Age activity involved the deposition of material (eg trench III). It was identified at the extreme eastern end of the hilltop under the outworks of the east entrance and at the western end under the rampart in trench IV.

There are normally two elements to this turfline: a stone-free 'clay' up to 0.2m thick and a thin, underlying layer of concentrated flints. There is, however, some variation: the flint layer was absent in trench III, and in trench II a repeated sequence of flint and stone-free clay underlay the more widespread turfline (Fig 58). The latter may indicate some disturbance of the layer during its formation.

A detailed description of this soil horizon and the formation processes which created it can be found later in this report (see p116–17). Its historical significance is that it represents a period of up to a thousand years when the hilltop was not intensively occupied. It is possible that during this period the round barrows (see Chapter 3) were created, but they could be earlier features contemporary with the phase 3 activity.

Phase 5: Early Iron Age fort

The beginning of Iron Age activity on the site is identified by the construction of the first hillfort. This was an enclosure of 15.98 acres (6.47ha), defined by a single rampart and ditch on the eastern summit of the ridge. Access was by an entrance on the west side and a double entrance on the east side. Excavation by Wheeler of this fort was extensive: four trenches were cut through the enclosing rampart, both entrances were almost completely excavated, and a large area of the interior was stripped. Unfortunately, because of the extensive later Iron Age occupation and the medieval cultivation of the hilltop, an unknown amount of the occupation inside this fort has been destroyed or masked.

The hillfort has a distinctive angular shape defined by five straight stretches of rampart and ditch (Fig 33). The line of the rampart on the south and north sides may have been chosen to take advantage of the natural slope of the hill, but this was not a consideration in the eastern and western ramparts. The north-east corner of the fort is the most unusual. The east and north side meet at an angle of *c* 100°, at a corner which is some way down the slope. Thus, to have made the top of the rampart level, the height of the rampart must have been increased. These peculiarities in the design suggest that construction of the fort may have been constrained by certain pre-existing features.

The excavation of trench II revealed that the front of

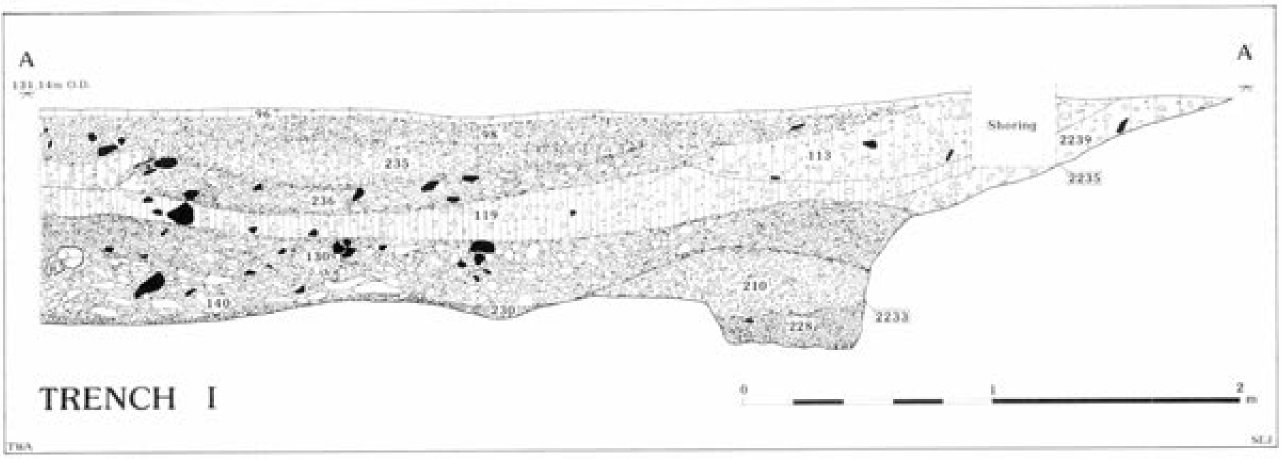


Fig 51 Trench I: the western section through the causewayed camp ditch

the rampart was defined by a turf revetment (Fig 50) and that this was deliberately placed on top of an earlier bank. This bank was observed in a similar position in the trench between the double gateway of the eastern entrance (Wheeler 1943, pl XI) and has been interpreted as a feature of the Late Neolithic occupation of the hilltop (see above, phase 2).

There are other indications that important field boundaries influenced the design of the fort. A fragment of a linear earthwork was noted on the north side of the hillfort by RCHME (Fig 29, D). It was suggested that this earthwork preceded at least the construction of the outer counterscarp bank. If this earthwork was earlier than the fort and ran across the hilltop, its position would coincide almost exactly with the hillfort ditch on the south-west side. Outside the eastern end of the hillfort, on the crest of the ridge, are several linear earthworks visible as cropmarks (see above, p39). One earthwork appears to be a continuation of the main arm of the 'Y-ditch' discussed by Wheeler (1943, 111).

There is no evidence of the stratigraphic relationship between these earthworks and the early fort. If, however, the central arm of the 'Y-ditch' preceded the fort, it may help to explain the purpose of the unique double gateway. The gates would then provide access to fields separated by this linear boundary.

The evidence is circumstantial, but it does suggest that the shape and possibly the location of the hillfort were deliberately chosen to take advantage of certain features in the existing landscape. It is unclear whether the fort was directly superimposed upon the vague remains of the Neolithic enclosure which lay in a deserted landscape, or placed astride a number of boundaries, including the enclosure, which played a significant role in the land management of the preceding phase of human activity.

The bank and ditch

The defences of the early fort comprised a single bank and ditch, 33.5m wide and with a rise in height of 10.5m from the base of the ditch to the top of the rampart. The clearest section of the bank was in the trench between the two gateways of the eastern entrance (Wheeler 1943, pl XI). The clearest section of the ditch was in trench H (Wheeler 1943, pl XIX). Both of these sections should, however, be compared with the section through the bank and ditch exposed in the recent excavations (Fig 50a and b) which shows much more

Fig 52 Trench I: the inhumation in the primary fill of the causewayed camp ditch

detail. The rampart and ditch provided a formidable barrier and were meant to discourage access to the enclosure except through the designated entrances.

The archaeological evidence from the recent excavation suggests that the circuit of the defences was the result of two distinct, and chronologically separate, acts of construction. These were represented by two phases of bank and a recut ditch. The recut ditch was clearly visible on the section of the ditch in trench H (Wheeler 1943, pl XIX). It was not exposed in the original excavation of trench II (trench A), as the ditch had not been bottomed. There is no evidence for a recut of the ditch lying between the two entrances of the eastern gateway (Wheeler 1943, pl XI), and the stone revetted 'inner hornwork' of the eastern gateway may be contemporary with the refurbishment of the primary defences.

The only part of the primary ditch to survive was the bottom 0.3m (Fig 50b: 778). This indicated that the ditch was V-shaped and about

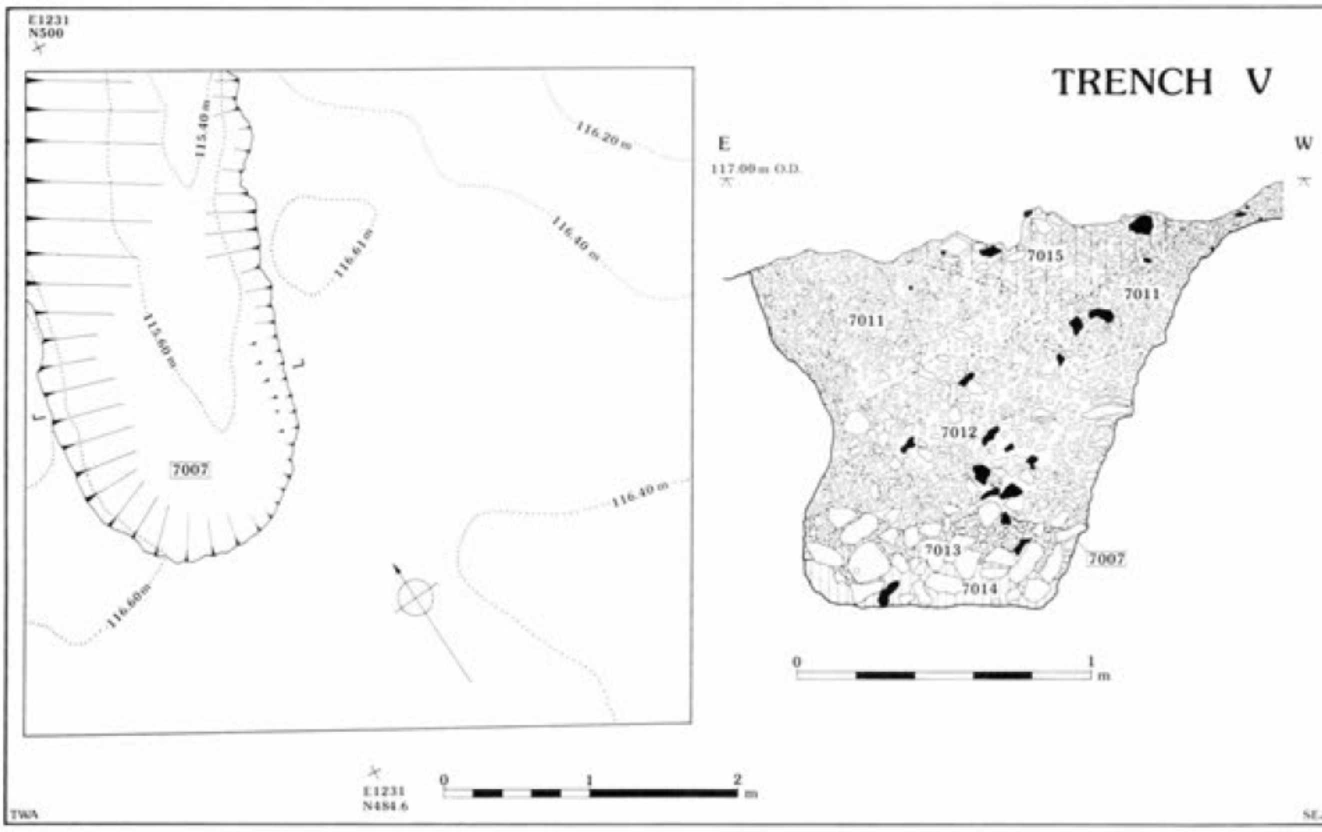


Fig 53 Trench V: the plan and section of the outer ditch of the causewayed camp

5.4m deep. The basal fills of the ditch were present (Fig 50b: 407, 746), but as these probably formed in the first winter of the fort's use, they do not give an indication of the length of time before the ditch was recut.

The bank associated with this ditch was 10.6m wide and survived to a height of 2.2m (Fig 61). It was largely made up of freshly quarried chalk (Fig 50a: 350, 423) from the ditch, but occasional lenses of clay (Fig 50a: 410) were present, indicating that the ditch cut a solution hollow. The tip lines in trench II suggest that the chalk rubble was dumped at the front and spread to the back. In trench I, the tip lines suggested a slightly more complicated deposition from two different sides (though this is not apparent in Fig 49).

Wheeler (1943, pl II) suggested a reconstruction of this bank as a timbered box rampart with a vertical face up to 4m high. The evidence from trench II has, however, raised doubts about this interpretation. This trench exposed a 4m long section through the rampart (Fig 47): there were no large postholes which could represent the front or rear revetment of a box rampart. Instead, the front face appears to be defined by a simple turf revetment (Fig 50a: 433). In trench H, the postholes, which purport to represent the primary rampart revetment, appear to cut through the already denuded rampart and are on a markedly different alignment to the adjacent ditch (Wheeler 1943, pl XI). It is only in the trench between the two gateways of the eastern entrance that postholes, which could possibly indicate a box rampart type structure, were discovered. The rampart should therefore be reconstructed as a bank similar to that used in the first phase of the extended fort (Wheeler 1943, pl III, type II) with an elaborate timber revetment restricted to the eastern entrance.

Evidence for a possible additional defence incorporated into this bank is suggested by a series of amorphous scoops at the crest of the rampart in trench II (ie Fig 62a: 333). These may represent root disturbance from a line of gorse or blackthorn scrub deliberately planted on top of the bank.

The refurbishment of the defences involved the excavation of a ditch 7m deep and 15.5m wide (Fig 50b: 389). This ditch was V-shaped, but had a noticeably asymmetrical profile: the base of the ditch had moved forward to make the outer edge steeper. The primary fills of the ditch show the effects of this. The steeper side eroded rapidly to deposit large blocks of fresh chalk rubble against the outer side of the ditch (Fig 50b: 387); the primary fills on the inside edge were more slowly accumulating silts.

The spoil from the re-excavation of the ditch is clearly visible as a series of layers of dirty chalk and soil dumped at the back of the primary rampart (Fig 50a: 371 to 366). Cutting the first of these soil layers, but apparently sealed by the rest, were two large postholes (Wheeler 1943, pl V; Fig 62a: 394). These postholes were presumed to relate to the construction of the primary rampart, but it seems more reasonable to connect them with the secondary bank. They are not on the same alignment as the rampart, and their function is unclear.

The eastern entrance

The eastern entrance to the fort was extensively excavated by Wheeler, who identified a complex sequence of structural modifications. It is, however, not possible to restrict discussion simply to a description of these features, as this involves interpretation of the social processes which lay behind the construction of the earthworks. It is unclear whether the earthworks were a series of separate and chronologically distinct phases, designed and then constructed to a preconceived plan, or were built up through piecemeal additions to the enclosure. Either process has implications for the manner in which the evidence is interpreted. This dilemma will be discussed here, but it is obviously important in any discussion of the sequence of rampart construction in the following phase as well.

Wheeler emphatically favoured the concept that the hillfort builders worked to a coherent design and always completed that which they set out to construct, at least at Maiden Castle, even though in some cases he regarded their design concept as lacking in essential elegance. He used the concept of a coherent design to argue for the presence of features for which there is no

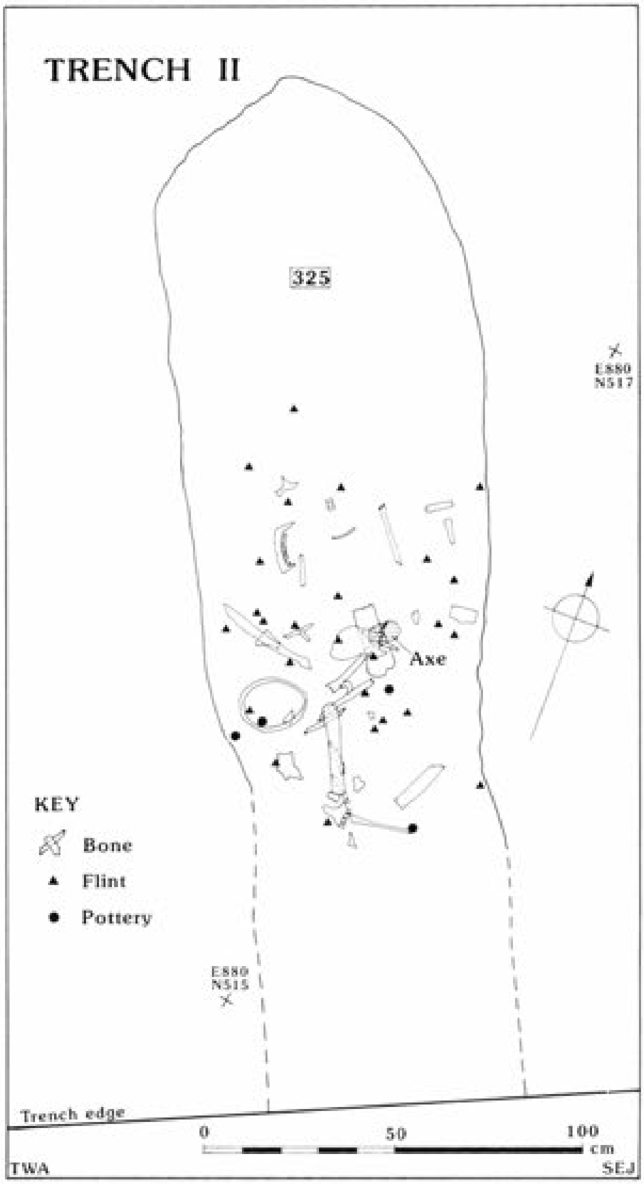


Fig 54 Trench II: the plan of the animal and human bone on the base of the outer ditch of the causewayed camp

evidence. The best example of this is ditch D on the north side of the east entrance. There is absolutely no evidence for the existence of this ditch, but he argues that it must have existed because of a phased scheme for the western entrance deduced from three partially excavated slit trenches (Wheeler 1943, pl XXI). The argument is in fact persistently used, sometimes explicitly and sometimes without justification, to create features for which there is no evidence. To abandon this principle would, however, make it impossible to suggest what the entrance to the fort was like at any particular period. The problem is compounded by the complexity of the entrance. So many of the earlier fort features may have been removed by the later activity and such a small area of the entrance was examined that it is really a testament to Wheeler's imagination that any clear pattern could be claimed.

The main, irrefutable features of the entrance are that the early double gateway was approached by roads which led straight to the gateways, but the later roadways approached the entrance by weaving through a complicated series of earthworks. The precise sequence of banks and ditches and the design concept involved in their construction are not necessarily as portrayed in Wheeler's publication. Indeed, several features appear to be considerably earlier than he suggested.

The eastern gateway, in phase 5, was represented by Wheeler's entrance phases 1 and 2. The basic feature of the defences described by Wheeler can be summarised. The first gateway consisted of timber-revetted terminals to the encircling banks with the gate positioned at the back edge of the rampart. In front of the gate was an extensive area of metalling cut by a series of palisades, suggesting some form of stock enclosure. The second phase of the entrance consisted of the construction of outworks in the form of a V-shaped bank with partially accompanying ditch on either side of the gateways and a double bank separating the two roadways. The banks in this extension were box ramparts with limestone revetments.

There are problems with this interpretation: first, there was no stratigraphic reason for associating the metalling and palisades with the hillfort, and second, the configuration and chronological position of the 'Y-ditch' was not clear.

There was no excavated evidence for the presence of the north/south arms of the 'Y-ditch'. They are hypothetically said to have existed, but then to have been destroyed by the later defences. It has already been suggested above that the east-west element of the Y-ditch may have been part of a series of boundaries which predate the fort (see p58), and there is no convincing reason why this is not the case. The timber-revetted central part of Wheeler's phase 2 entrance would then be an elaboration of an already existing boundary.

The palisades in front of the original entrance were stratigraphically unrelated to the primary hillfort and they may be associated with Bronze Age or Late Neolithic activity (see pp56–7). The metalling could be a natural, worm-sorted horizon which was incorrectly interpreted by Wheeler. It is possible, therefore, that the features of the hornwork were part of the primary construction of the fort and that they were placed in a separate phase only because of their relationship with this layer. However, the identification of two phases in the defences of the early fort, but only one phase of ditch in the entrance (1943, pl XI), suggests that the hornworks were associated with this refurbishment of the defences.

The occupation

The occupation of the Early Iron Age hillfort is not well understood. Although a large area at the centre of the fort was excavated by Wheeler (trenches B, L, and Q), no clear picture of the occupation was obtained. The bulk of the structural evidence was concentrated in trench L, where a cluster of postholes interpreted as a rectangular house lay adjacent to a road which was traced to the eastern entrance (Wheeler 1943, fig 22; this building can be reinterpreted as a group of 'four-post' granaries). Contemporary with these were 'two hearths and a chalk floor' and, scattered across trench

Fig 55 The central section of the Bank Barrow as a topographic feature

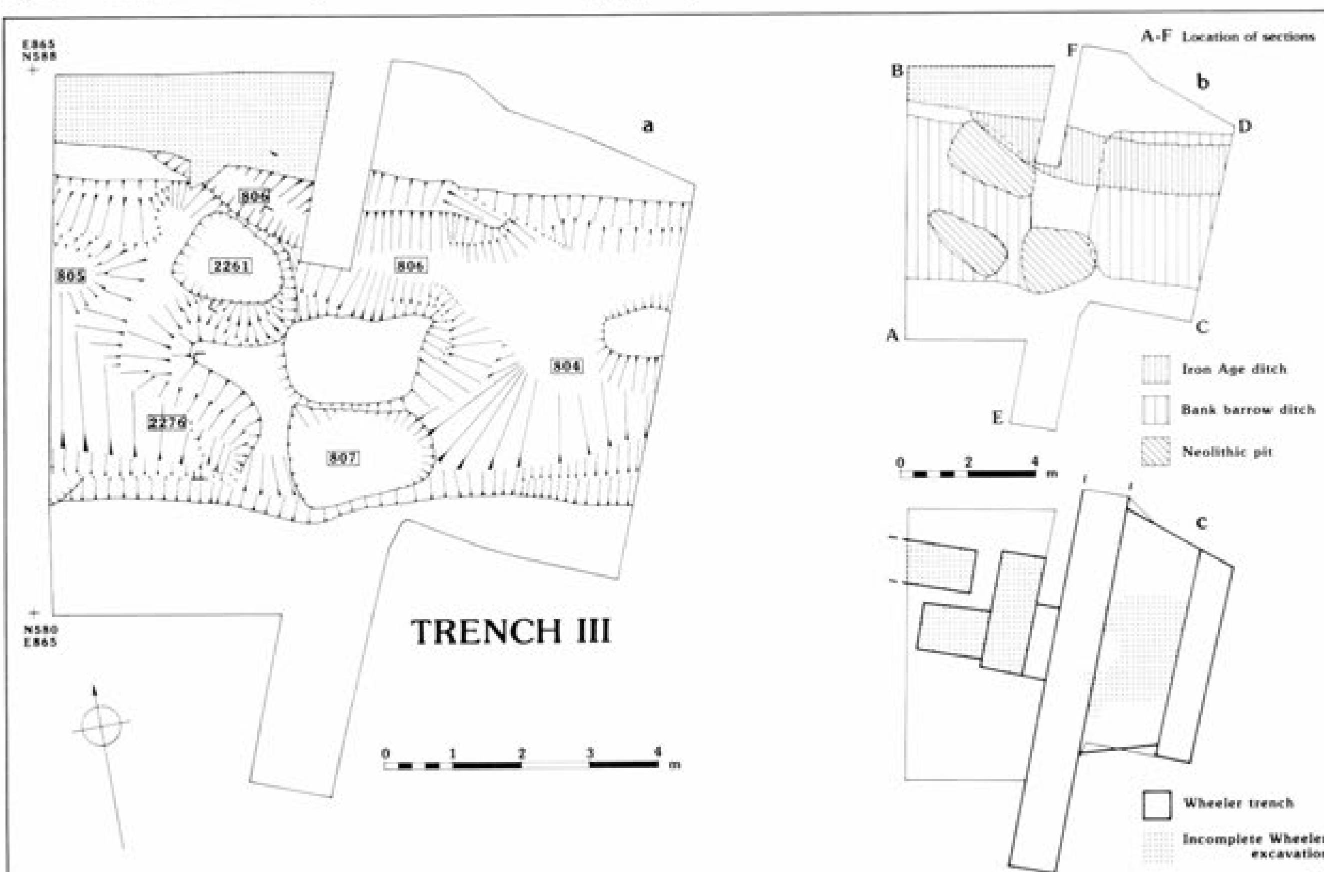


Fig 56 Trench III: a) the plan after excavation; b) an interpretive plan showing the main features; c) the location of the trenches excavated by Wheeler

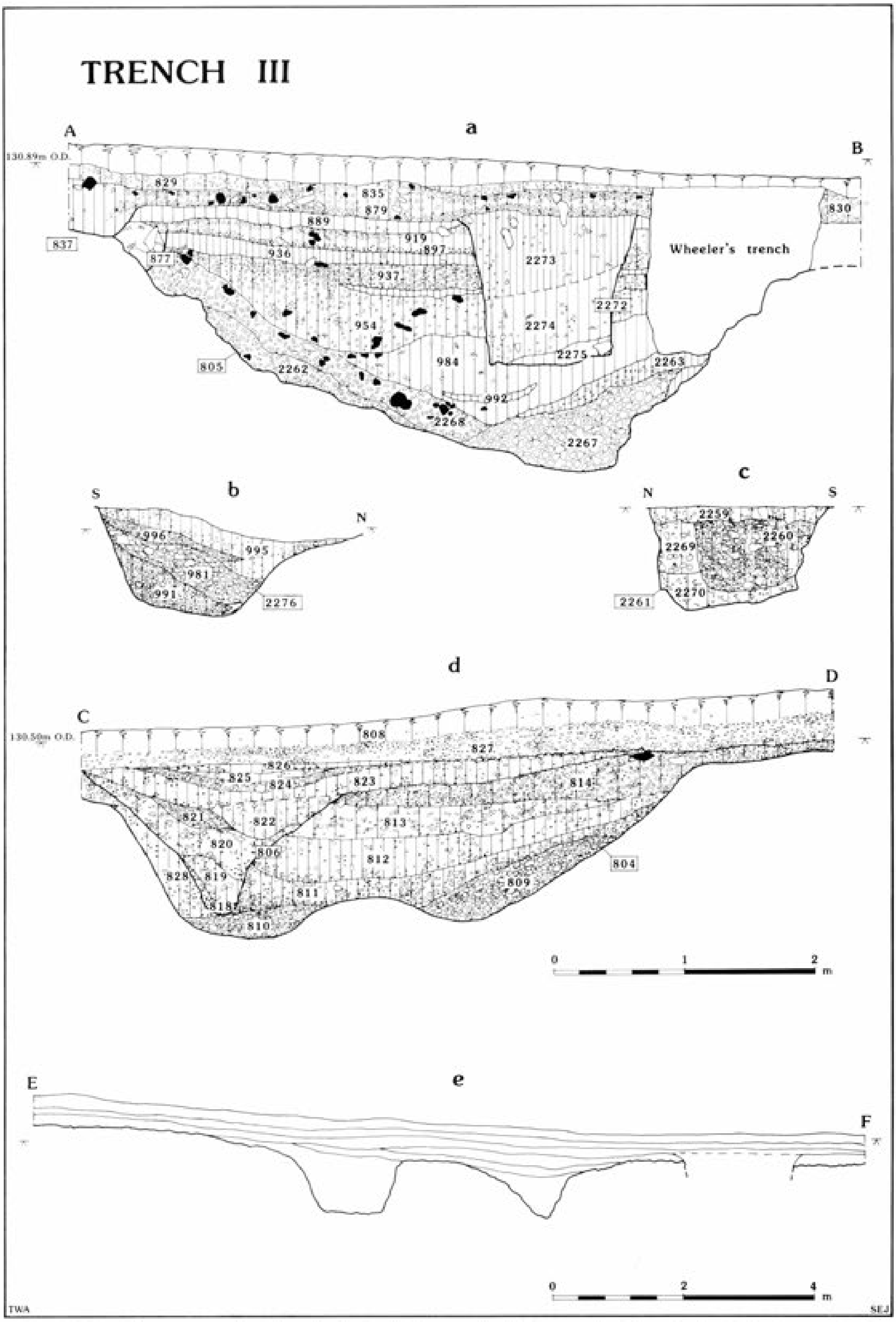


Fig 57 Trench III: a) the west section through the Bank Barrow ditch; b) a section through pit 2276; c) a section through pit 2261; d) the east section through the Bank Barrow; e) a section through the centre of the trench, redrawn from the Wheeler archive

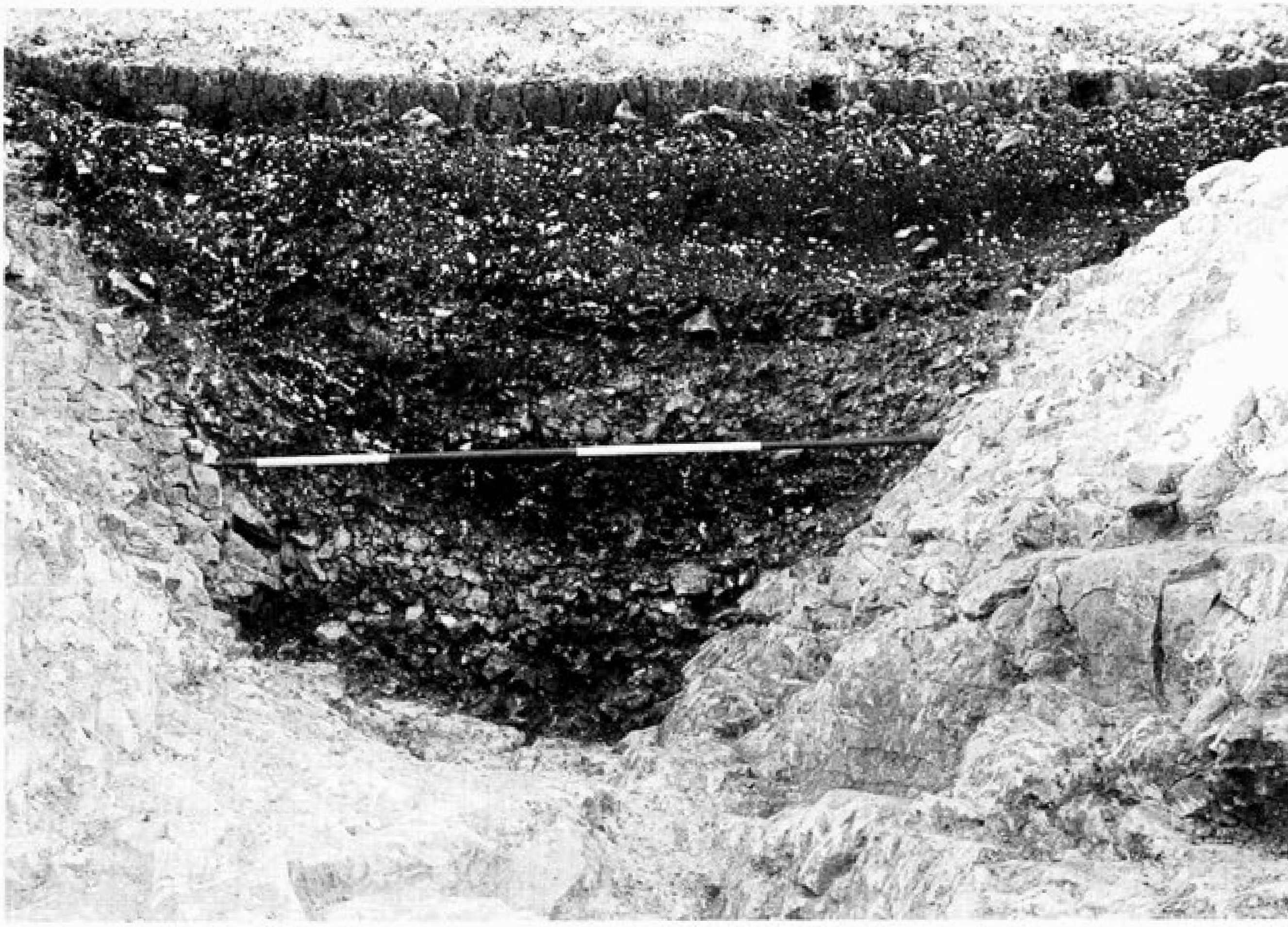


Fig 58 Trench II: the north section through the causewayed camp ditch

D and L, there were 27 pits containing 'Iron Age A' pottery. It is likely, however, that not all of these pits belong to this phase, as the distinction between 'A' and 'B' is not equivalent to the distinction between phases 5 and 6. Many of the postholes and gullies in both of these trenches could belong to this period, and it was only the quality of the stratigraphy above the Bank Barrow ditch which allowed the features in trench L to be definitely ascribed to the Early Iron Age.

Phase 6: extended fort

The extended hillfort is the monument which dominates the present hilltop. Of all the phases, this was the one which left the greatest amount of evidence for the nature of the occupation. As the later activity on the hilltop was limited, it is possible to use the surveys (Chapter 3) to clarify the nature of the occupation and the development of the defences.

This phase was defined by the increase in the enclosed area from 6.47ha (15.98 acres) to 17.22ha (42.55 acres). The earthworks that enclosed the extended hillfort were characterised by repeatedly rebuilt, multiple ramparts and ditches which increased the area of the site to 45.28ha (111.88 acres). Access to the hillfort was by two entrances at the eastern and western ends of the hilltop. Each entrance contained two gates and was screened by an elaborate complexity of interleaved earthworks.

The evidence for the occupation of the hilltop, and the development of the earthworks which surround it, is largely based on the excavation of three areas: the eastern entrance, the centre of the original fort, and the south-west corner of the extended fort. There were many additional small trenches across the interior, but they provide little more than a general picture of the spread of features across the hilltop.

There is obviously potential for error in any generalisation about a site from partial excavation, but it is hoped that the three main areas are representative of the occupation within the hillfort.

The evidence for this phase is discussed in three sections: the earthworks, the occupation – in particular, the stratigraphic sequence in the south-west corner, and structural features, including houses, pits, and hearths. The first section is dependent on a re-examination of the excavations by Wheeler. In contrast, the other sections will involve a detailed discussion of the recent excavations and only a brief re-examination of Wheeler's work.

The earthworks

The most important feature of the defences is the development of multiple ditches and banks, but there is also a significant increase in the scale of these earthworks. The earthworks at the eastern entrance show considerable change during this phase. Direct access

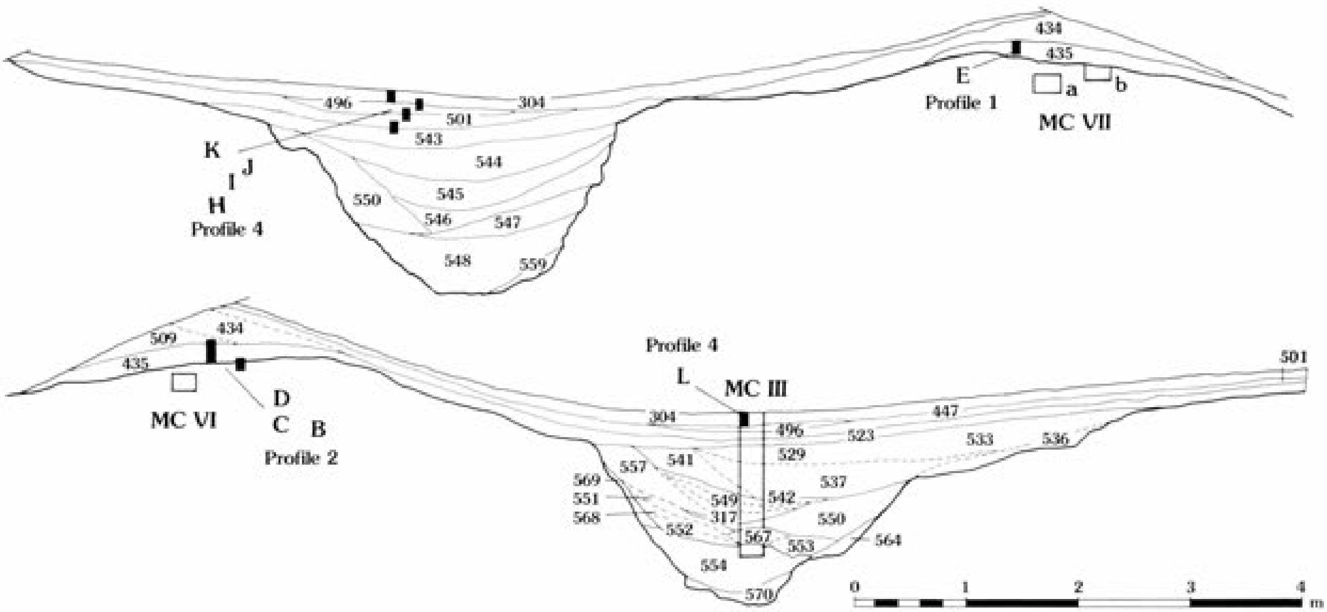


Fig 59 A schematic section through the early prehistoric deposits in trench II, showing the location of the mollusc columns and soil samples discussed in Chapter 5

Fig 60 Trench II: the bank between the inner and outer ditch of the causewayed camp

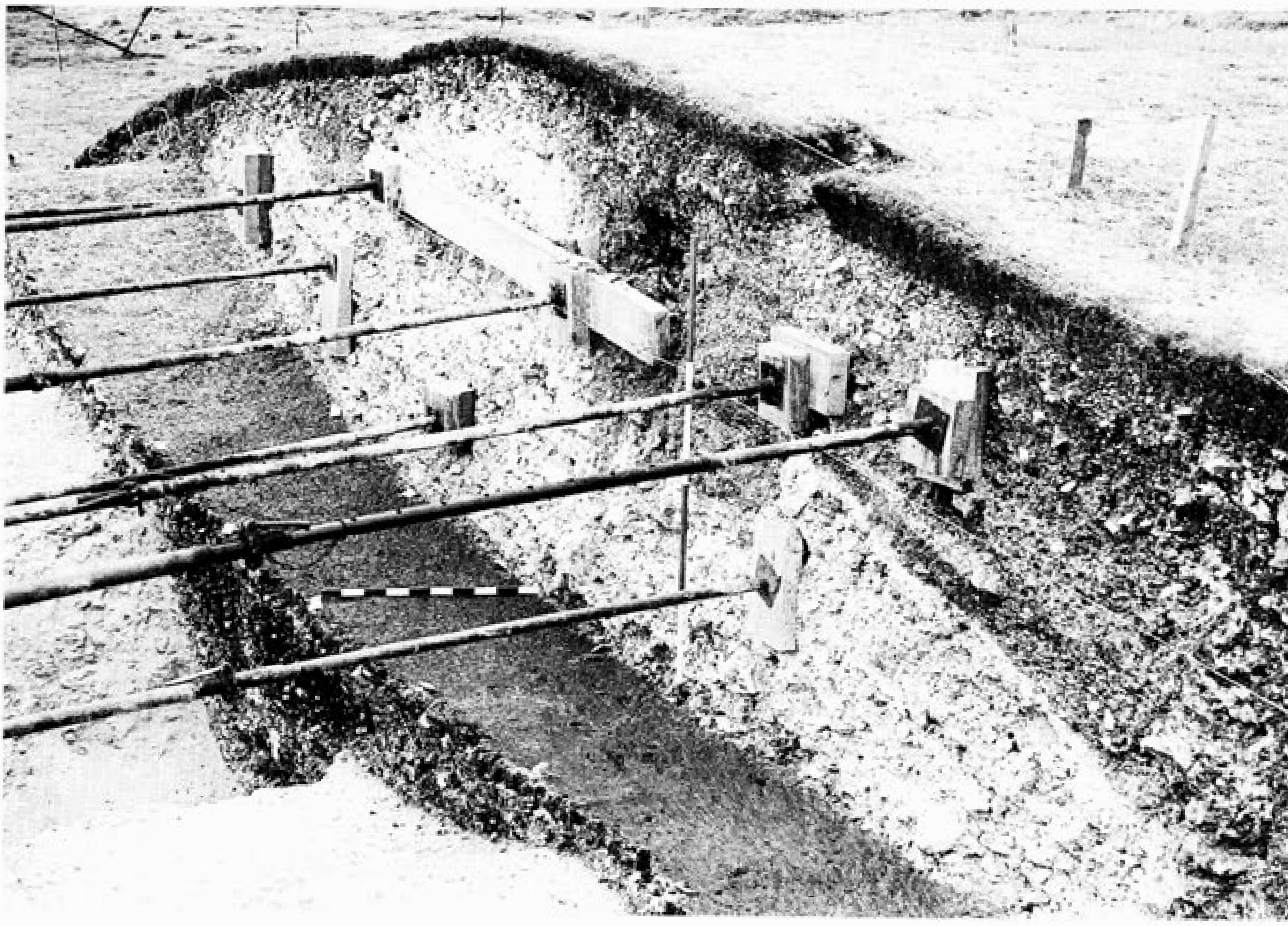


Fig 61 *Trench II: the rampart of the Early Iron Age hillfort*

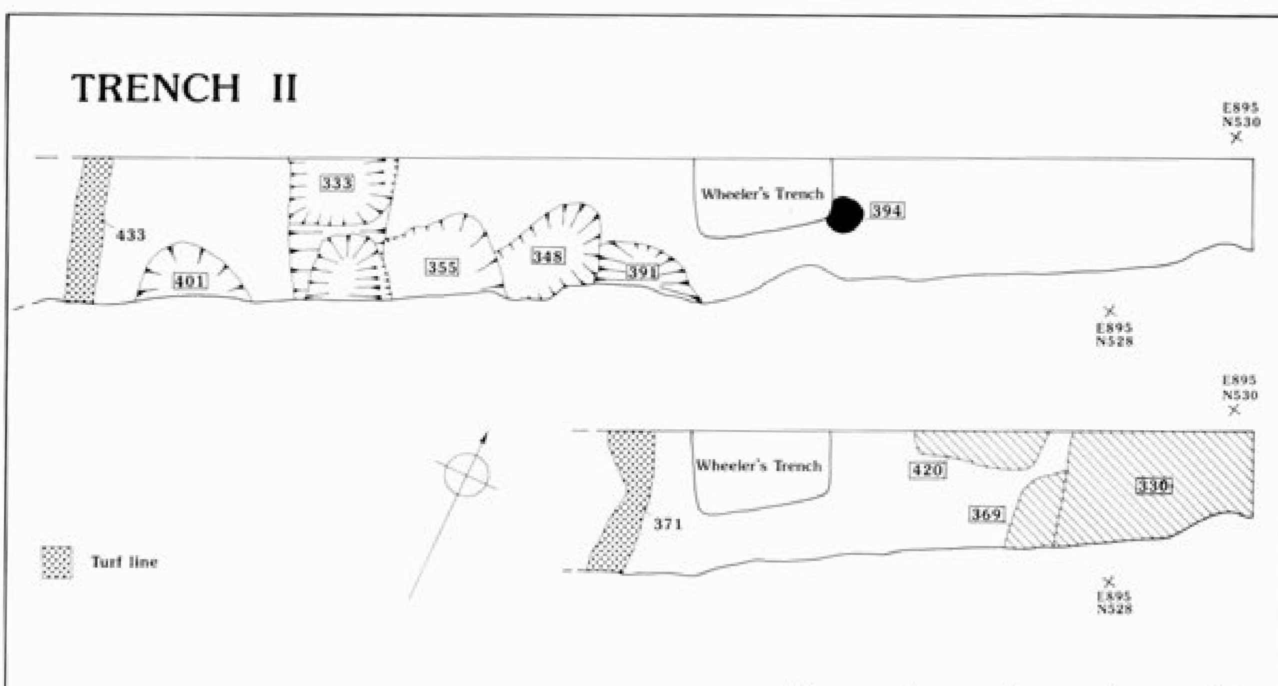


Fig 62 *Trench II: a) the features at the top of the primary rampart; b) the pits cutting the secondary rampart*

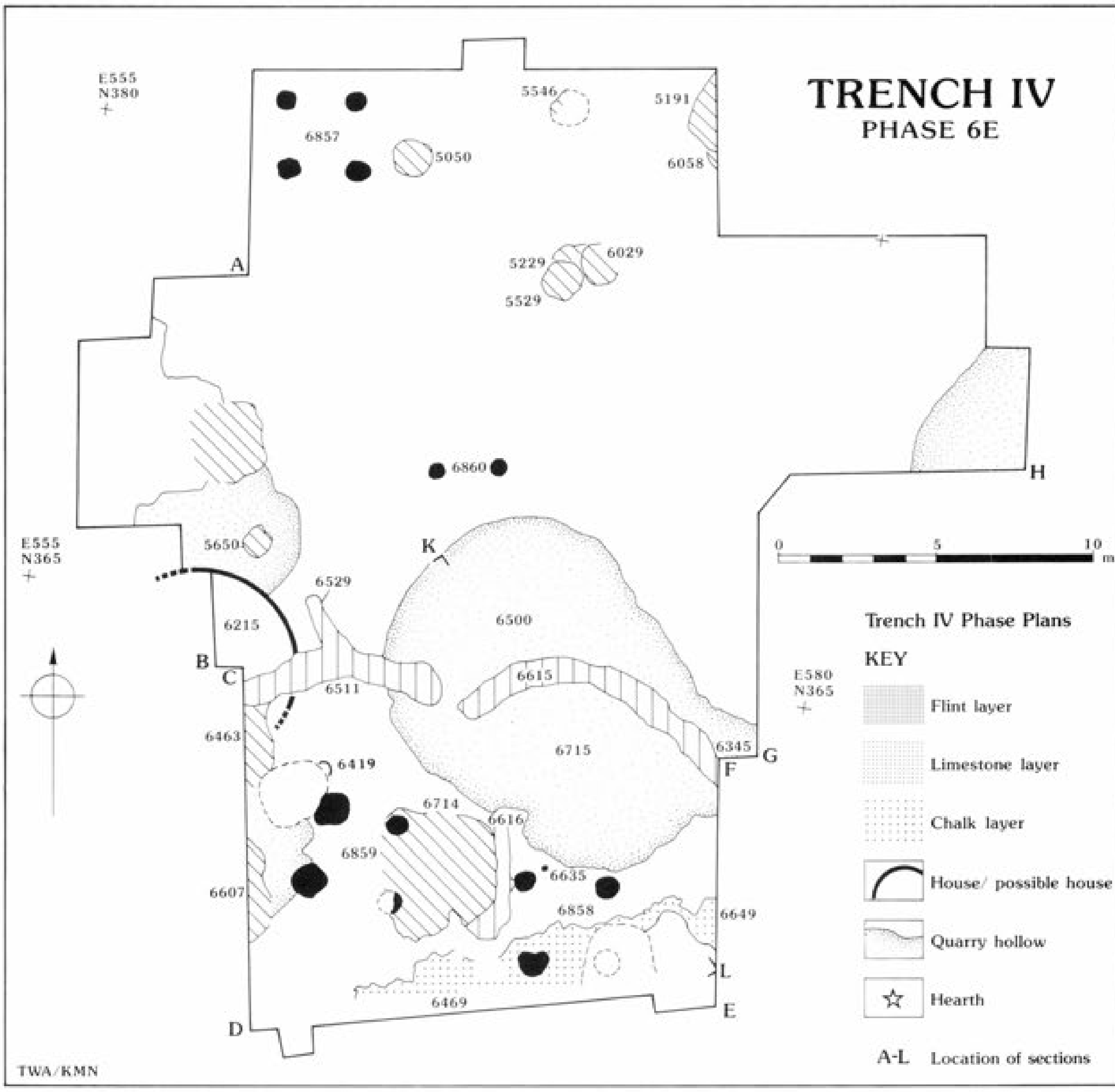


Fig 65 Trench IV: phase 6E

through the hornworks was blocked off and entry involved weaving between the outer hornwork and ramparts to penetrate the inner hornwork at the extreme north and south ends (Wheeler 1943, fig 8 and 9).

This change in the eastern entrance must have occurred after the development of the multiple banks and ditches, but its relationship to the heightening of the defences is not clear. Wheeler suggested (1943, 109) that an increase in the scale of the rampart and ditch preceded the major alteration of the entrance (which defined his phase IV). This seems unlikely, however, because where the hornwork ditch was filled in to provide access for the remodelled entrance there was a small, not a large ditch (1943, pl CXIX), although the large ditch appears on either side of the entrance. It would appear, therefore, that the massive enlargement of the defences should be associated with the reorganisation of the entrance.

This interpretation of the defensive sequence also means that the creation of the outer earthworks cannot be associated with the enlargement of the inner bank as Wheeler suggested. Therefore, the outer banks and ditches could be earlier and were possibly part of the original plan of the extended hillfort, although obviously it would make more sense for the inner rampart to be the first act in the sequence of construction.

The only area where these modifications of the defences can be dated, or associated with the occupation in the interior of the hillfort, is in the south-west corner of the fort. Here, Wheeler excavated two trenches (D and E) which examined the inner rampart. Trench D also involved an area excavation of the interior, which was extended by the recent excavation of trench IV. To relate the occupation and the defences, it is necessary to summarise the sequence exposed in the south-west corner (Wheeler 1943, 100–6).

In trench D and E, the primary rampart of the extended fort was a chalk and clay dump fronted by a turf kerb or revetment. This was 3m high and at least 13m wide. If one accepts the reinterpretation of the early hillfort rampart, this was a direct reconstruction of this rampart. Rampart 2 was a turf mound on the crest of this bank and was followed by rampart 3, a dump of chalk rubble on the inside of the bank.

Two chalk layers separated by a layer of soil were identified in the south-east corner of trench IV (Fig 64: 6649) and are likely to be the tail of rampart 3 and possibly rampart 1.

Rampart 4 was the major reconstruction of the rampart which increased the height to 5.5m and the width to *c* 15m. In contrast to the earlier ramparts, this bank consisted largely of clay (which came from quarrying Tertiary deposits inside the fort) and had internal limestone revetments on the inner face. The construction was contemporary with a discontinuous quarry hollow behind the inner rampart of the extended hillfort. In trench IV, this quarry hollow was a discrete feature (Fig 64: 6500, 6715), but elsewhere larger and more extensive hollows were characteristic.

Rampart 4 can be identified with a thick soil layer (Fig 64: 6314; Fig 63: 6413) which sealed the chalk rampart and extended across much of the old ground surface between the quarry hollow and this rampart. Although it is possible that this soil was *in situ* bank material, it is more likely that it was derived from rapid erosion of the bank.

The ramparts constructed up to this point all belonged to phase 6E, in trench IV (see p68), and preceded most of the occupation in the hillfort. The only features which were definitely earlier than rampart 4 were some 'four-posters' (see below, p68). This would suggest that the major modifications of the surrounding defences, the multivallation, the redesign of the entrance, and the increase in the scale of the defences all preceded the dense occupation of the interior of the western half of the fort. The various phases of rampart construction after this period appear more as maintenance and do not radically alter the defences.

Rampart 5 was separated from rampart 4 by another layer of soil eroded from the early rampart. It consisted of a refurbishment of the inner revetment, at the top of the bank, and an additional dump of soil on the inner slope, revetted at the base by limestone slabs.

Although complicated by the identification of many more layers, the same sequence was visible in the western section of trench IV, in phase 6F. The revetment was identified in the western slot cut into the rampart and overlay a thick soil layer (Fig 63: 6319). In front of the revetment, there was a variety of layers of rubble and soil (Fig 63: 6255, 6294, 6293) which appeared to have collapsed from this revetment.

On the east side of the trench, however, there was no sign of this revetment and it does not appear to have been constructed. Its absence may be connected with the steps onto the rampart in the middle of the trench (these are discussed with the other features of phase 6F, below). Consequently, it is not possible to directly correlate the stratigraphy in the east section with that in the west section. It seems likely, however, that soil layers 6313, 6312, and 6311 in Figure 64 were derived from rampart 5.

A number of soil and rubble layers (Fig 63: 5926, 5006; Fig 64: 5451) were deposited on the back of rampart 5, during phase 6G, and before the creation of rampart 6. It is possible that these represent the erosion of the rampart, but it is also possible that they represent deliberate attempts to heighten the rampart which were not recorded by Wheeler.

The final addition to the rampart, which can be identified with rampart 6, comprised a layer of soil sealed by a layer of limestone slabs (Fig 64: 5005, 5003 respectively). The latter could be the collapse of a limestone revetment at the top of the rampart, but they may have been deliberately laid to seal the soil layer and inhibit erosion. This addition is associated with phase 6H, in trench IV, and preceded much of the activity in the south-west corner (see below). One fragment of Dressel 1-Pascual 1 was found in this rampart (5005), confirming the late date suggested by Wheeler.

The occupation

The most detailed evidence for the occupation of the hillfort derives from the recent excavation of trench IV, in the south-west corner of the fort. This can be divided into two stratigraphic zones: immediately behind the rampart, there was an area of deep stratigraphy, the result of soil accumulation, in quarry hollows and against the tail of the rampart; to the north of the quarry hollows, there was an area without vertical stratigraphy, where the archaeological evidence survived as negative features cut into the underlying subsoil.

It is possible using the stratigraphy to establish a relative chronology for the features in the zone behind the rampart. The discontinuous nature of the quarry hollows and the absence of extensive layers, however, make it difficult to obtain secure relationships between many areas. Nevertheless, by using a degree of interpretation, it is possible to divide the features of phase 6 into four chronological sub-phases: 6E, 6F, 6G, and 6H.

The zone to the north of the quarry hollows (Fig 93; discussed as phase 6I in the archive report) cannot be stratigraphically related to these phases, but, by using the ceramic sequence, it is possible to suggest a phase for most of the pits.

It was not possible to correlate the sub-phases of the recent excavations with features exposed by Wheeler in his trench D in any detail. Consequently, the stratigraphy in his trench will not be systematically described, even though the archive notebooks are available.

The four major, discernible phases were defined by significant changes in the structure of the occupation and were separated by layers of silt apparently derived from the breakdown and erosion of rubbish and midden layers. These layers were not, however, continuous and only the distinction between phases 6F and 6G can be identified as a clear stratigraphic break. Most features were stratified above or below a homogeneous layer of silt (eg Fig 64b: 5789) which separates these two phases. There is a possibility that between phases 6E and 6F, and 6G and 6H, individual features are in the wrong phase. This should not, however, alter the general interpretation of these phases.

Phase 6E: quarry hollows and gullies

Evidence for the earliest activity in trench IV consisted of three principal features: the rampart, the quarry hollows, and a scatter of postholes representing at least two 'four-post' structures (Fig 65). The creation of these features would have required considerable expenditure of effort, but they do not indicate intensive occupation of this area. Evidence for occupation is sparse and, though occasional concentrations of artefacts were discovered, the general quantity of finds was small compared to later phases. There are a number of features in the upper fills of the quarry hollows which indicate that activity in the area was increasing in the later part of the phase, but only one domestic structure can be suggested.

Three separate quarry hollows were identified in trench IV. In the centre, there was a quarry (6500/6715/6345) roughly 11m long and 8m wide and over 1m deep. Adjacent to the western section was the edge of the large quarry which Wheeler identified and excavated in trench D. In the eastern extension to trench IV, the corner of another large quarry was discovered. Due to the constraints of time and labour, it was not possible to excavate these quarries completely and the fill of the eastern quarry was not examined.

The fill of the central quarry is illustrated by Figure 64b. The

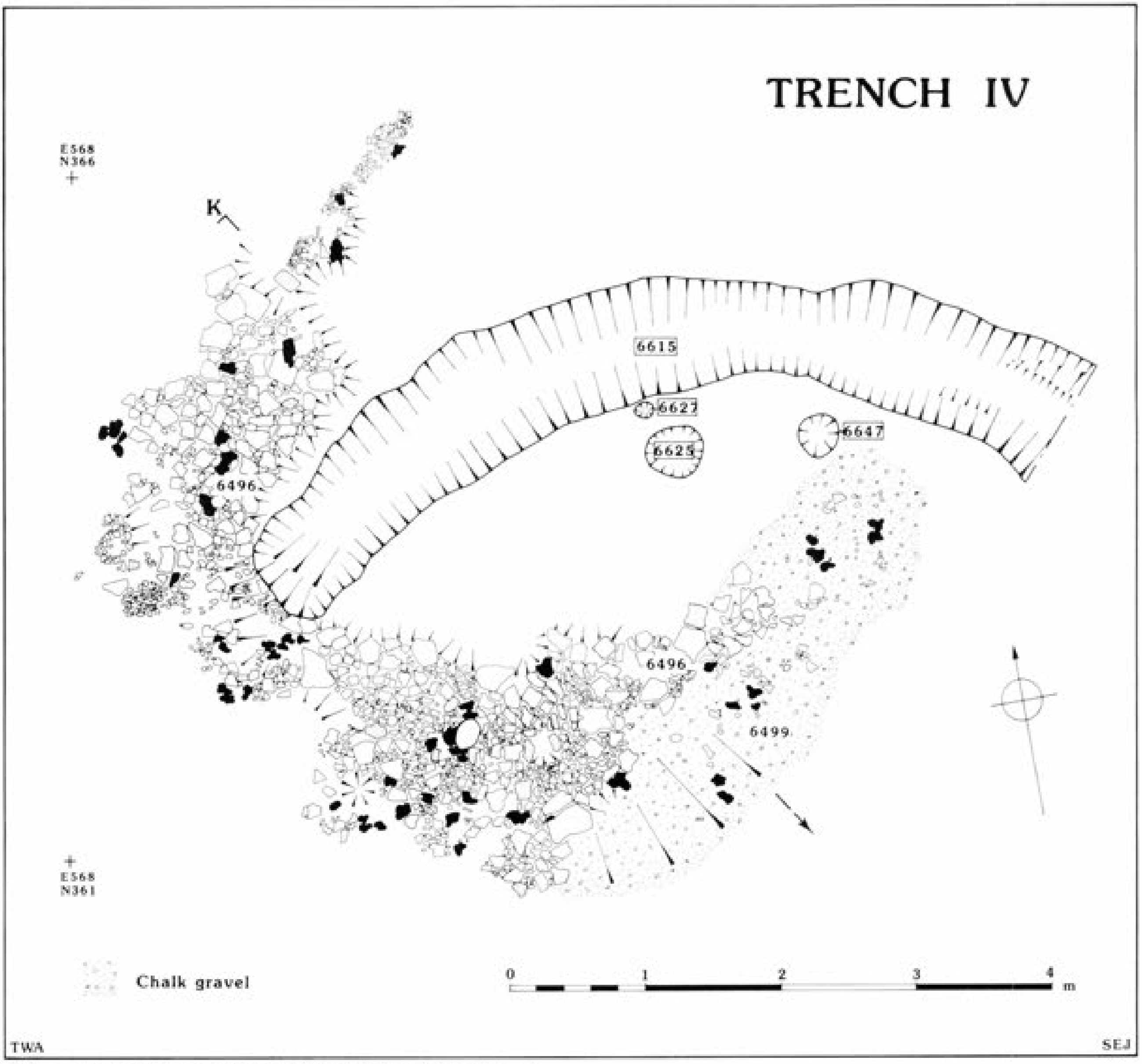


Fig 66 Trench IV: the chalk rubble structure in phase 6E

lowest, exposed layer was a clay layer in the northern half of the quarry. This may be the surface of natural clay, but it was flecked with charcoal. Directly overlying the clay was a charcoal-rich layer (6618). This was sealed by homogeneous silts (including 6608, 6602/6614, 6485/6643) 0.6m thick, which enclosed several restricted layers of rubble (including 6601, 6603) and a posthole (not illustrated). The fill suggests gradual accumulation in the quarry hollow with only sporadic human activity.

The first sign of significant human activity after the creation of the quarry hollow was the digging of two gullies (Fig 65: 6511, 6615) and the deposition of large quantities of chalk rubble. Both gullies were U-shaped in section with homogeneous silt fills (eg gully 6615; Fig 64b: 6610, 6344). The silt fill of 6511 (Fig 63: 6510), however, contained thin layers of charcoal and in the terminal there was a concentration of chalk rubble (not illustrated). The fill of the gullies suggests that they were open and may have been to drain rain water onto the silts of the infilled quarry hollow.

The eastern gully (6615) may have been associated with a structure built in the centre of the quarry hollow. The structure was a rectangle, 5.8m × 4.5m, defined by three banks of chalk (Fig 66). The gully terminated at the south-west side of this rectangle and passed through the absent north-east side. The south-west side was by far the most substantial (0.65m wide) and was made with large chalk blocks. In no area, however, was it possible to identify a wall face. The other two sides were substantial adjacent to the south-west side, but gradually became more nebulous, until they were patches of trampled chalk and gravel (6499). Three postholes (6627, 6625, 6647) lay between the gully and the southern edge of the rubble.

The western quarry was split, by later activity, into two stratigraphically unrelated sections, north and south. In the south, there were two pits (Fig 65: 6607, 6463): one (6463) was sealed by the primary fill of the quarry and the other (6607) cut through this layer (Fig 63).

The earliest features in the northern part of the quarry were a shallow hollow and the adjacent mound of clay created by its excavation (Fig 63: 6522). Both were sealed by a silt layer (6514), which was cut by a circular terrace containing a thin charcoal-rich occupation layer (Fig 63: 6215; Fig 67). This may be the truncated floor of a house. Contemporary with this was a very shallow scoop (Fig 65: 5650). A rubble-filled gully (Fig 65: 6529) lay to the east and disappeared in the upper fills of gully 6511.

The earliest features in trench IV were the chalk layers of the primary rampart (Fig 65: 6469; there was a primary chalk layer overlain by a soil layer which was sealed by another very thin layer of chalk). These layers belong to either the first or second rampart identified by Wheeler (1943, 101) and were sealed by a thick soil layer (5017/6314), which was the tail of rampart 4 (Wheeler 1943, 99–100). This massive enlargement of the defences involved dumps of large quantities of flint, chalk, and clay, which were presumably derived from the quarry hollows.

Adjacent to the rampart were two 'four-posters' (Fig 65: 6859, 6858; Fig 68): the eastern one was 2.7m square and the western one

2.5m square. Lying between them, there was a rectangular, rubble-filled hollow (6714), defined on the east side by a flint-filled gully (6616). A shallow scoop (6419) and a small posthole (6427, 6635) lay between the rampart and the quarry hollow.

The unstratified area in the northern part of the trench contained several features which could belong to this phase. The ceramics found in five pits (Fig 65: 5050, 5529, 5229, 6029, 6058) suggest that they were filled in phase 6E. Another two pits (5546, 5191) and several unexcavated pits found on the east side of the trench could belong to either this phase or the next, 6F. The position of the stratified 'four-posters' suggests that the unstratified example (6587) also belongs to this phase. A pair of postholes (6860) in the centre of the trench can be interpreted as a 'four-poster' that has been disturbed by the excavation of the quarry or the construction of the central house in phase 6F.

The relative chronology of these features is insecure. This phase represents a long period of time and much of the activity could be short-lived. The primary features are the chalk rampart layers. These were cut by a posthole of the eastern 'four-poster', which was then sealed when the rampart was heightened. If all the 'four-posters' are contemporary, it would indicate that they were the earliest structures in the interior of the extended hillfort in trench IV. The heightening of the rampart can be related to the creation of the quarry hollows, as this is the only source of large amounts of clay, chalk, and flint rubble. There was no relationship between the features in the quarry hollows, until they were largely infilled and gully 6511 was excavated. This gully cut across the two quarry hollows and indicates that the possible house, in the western quarry, was earlier than the chalk rubble structure in the central quarry. The latter would therefore represent the final activity in phase 6E.

Phase 6F: ovens and steps

Activity in phase 6F was very different from that of phase 6E. It was dominated by domestic occupation (Fig 69), including at least two, probably three, houses. The silts that filled the quarry were surfaced, and scattered around the houses there were pits, hearths, and other structures. None of the houses was rebuilt and, other than the repeated surfacing of one part of the quarry hollow, there was little to suggest that this was an extended period of occupation.

The only house (5959) to be completely excavated lay in the centre of the trench directly over the infilled quarry hollow. The western house (6851) lay to the north-west and was partially excavated by Wheeler (1943, 93). The third house (6855) lay between the western house and the rampart, most of it lying in the unexcavated area between trench IV and trench D. All three houses are discussed in detail in a section following this discussion of the stratigraphy (see pp74–88).

The area between the central house and the rampart is illustrated in Figure 70 and can be split into an area to the south-east and south-west of the house entrance and the area immediately behind the rampart.

The surface of the area to the south-east comprised the silt accumulated in the previous phase. There were very few features to indicate human activity above these layers. Immediately adjacent to the entrance of the central house, there was a small patch of crushed chalk (6623), and to the east, over the infilled gully surrounding the house, were two hearths (6288, 6842). Further south were five postholes (6718, 6301, 6272, 6276, 6637) and another hearth (6845). Three of these postholes (6272, 6301, 6637) are positioned directly below the entrance to the phase 6H house and may be incorrectly phased. Postholes 6718 and 6276 seem to be definitely stratified in this phase, but the structural purpose of the postholes is unclear.

The area to the south-west of the central house was very different from the area to the south-east. A large part of the underlying silts had been deliberately surfaced with flint, chalk, and limestone rubble. The earliest evidence of activity was in the form of two pits (6291,

Fig 67 Trench IV: the charcoal layer on the west side in phase 6E, indicating a possible house

Fig 68 Trench IV: the southern edge of the trench in phase 6E; in the foreground, a cluster of pits and postholes, mostly from later phases, but including the western 'four-poster'; in the background, the eastern 'four-poster' which cuts the tail of the primary rampart

6316). These lay in a hollow behind the rampart which was subsequently filled by three uneven, but deliberately laid layers of rubble. The first was restricted to the area of pit 6316, the second was more extensive, and the third (5774) extended from the bank around the central house to the edge of the south-western house and to the rubble layers behind the rampart.

This final layer of rubble overlay features (eg 6421) associated with the south-western house and the bank of the central house, and it was probably laid down late in phase 6F. It also overlay a line of three hollows oriented roughly east-west (Fig 70). The eastern and western hollows appear to be hearths (6846, 6847), and the central hollow (6442) may have been an associated stoke-hole.

The chronological relationship between the hearth complex and the south-western house depends on three observations:

1 The hearth complex cut across the proposed line of the wall of the south-western house

2 To the north, a patch of burnt clay overlay the packing of a posthole of the house, but respected the post-pipe

3 The overlying rubble layer respected the position of the house.

It would therefore appear that the complex was constructed immediately after the house was abandoned, but before it had disappeared.

The most significant feature of the rampart in phase 6F was a layer of flint and chalk rubble (Fig 70: 5937/5936). This layer sealed a number of smaller rubble and soil layers, which were deposited to even out irregularities at the rear of the rampart, and was associated with a cluster of postholes. Seven of the postholes were arranged in two lines, *c* 1m apart, aligned at roughly 45° to the axis of the rampart and pointing towards the eastern side of the entrance to house 5959. The eastern line consisted of two postholes, the western of five. This arrangement suggests the presence of wooden steps or a platform leading onto the back of the rampart.

Another cluster of postholes was identified in the south-west corner of the trench, but they do not form a coherent pattern. They cut a layer of limestone slabs (Fig 63: 6293) which had collapsed from the limestone revetment identified in the western slot cut into the rampart. This was examined by Wheeler and belonged to rampart phase 5, the penultimate rampart phase. The limestone revetment did not appear in the eastern slot cut into the rampart and may have stopped on the west side of the steps.

The silt between houses was largely surfaced with flint and chalk rubble (Fig 69: 5646, 6209, 5648), but the underlying natural was exposed in certain areas.

To the north-east of the central house, there were a number of features which preceded the phase 6G activity. These lay outside the area of silts accumulating behind the rampart and were not stratigraphically related to the early phases. It is, therefore, not possible to separate them into either phase 6E or 6F. For the purpose of this report, they will be discussed as phase 6F features.

Along the northern section of the extension to the trench, there were four pits (Fig 69: 6108, 6160, 6162, 6165) and two scoops (6080, 6183) cut by the gullies of the eastern roundhouse. Inside the gullies were twelve pits (6578, 6558, 5875, 6568, 6565, 6172, 6666, 6663, 6071, 6653, 6110, 6570) and three postholes sealed by the house floor. Two gullies (6180, 6078) belonged to this group of partially stratified features. Gully 6078 curves around the edge of the eastern quarry and gully 6180 lies between the pits in the centre of the house and the surrounding gullies. The latter was 0.2m deep and 0.2m wide, forming the arc of a circle *c* 7.0m in diameter. Both gullies could indicate the position of structures destroyed by later activity.

Amongst the unstratified features in the northern part of the trench, four pits (5504, 5385, 5275, 5073) contained ceramics which would date them to this phase, and two pits (5191, 5546) belonged either to this phase or the preceding phase.

Phase 6G: houses and divisions

Activity in phase 6G was dominated by the building of two houses at the back of the earlier quarry hollows (Fig 71). The western house (6852) was built directly on top of the phase 6F western house, and the eastern house (6854) was built on the east side of the trench. At a similar distance from the rampart was a house (DB), which was excavated by Wheeler (1943, 96) in the adjacent trench. Together, these three houses formed a row centred about 18m behind the rampart. All three houses were rebuilt at least once. The other major structural feature of this phase was a chalk bank, which was oriented north-east to south-west in the area between the houses and the rampart. This appeared to be a late division of the area, perhaps contemporary with the rebuilt houses.

The rebuilding of the houses and the construction of the bank would suggest that this was a relatively long-lived occupation. There was, however, little evidence for intense activity in most of the trench.

In the south of the trench, the dominant feature was a linear 'bank' of chalk and clay which extended from the eastern house to the south-west corner of the trench (Fig 71: 5449, 5498; Fig 72). It separated the southern part of the trench into two zones: an area to the south-east linked to the eastern house and an area to the north-west associated with the western house.

The 'bank' was not a positive feature, but a revetment, 1m wide and over 0.5m high, between a hollow to the north-west and higher ground to the south-east (this is clear in section, Fig 63: 5498). A gap of *c* 2m in the western part of the 'bank' may allow access between the two areas. The earliest part of the 'bank' was a layer of clay, but it was largely made up of chalk rubble. It seems likely that the later reconstruction of the eastern house was contemporary with the chalk 'bank'. The stratigraphic relationship is, however, not secure: the original 'bank' stopped short of the outer gully of this house, but

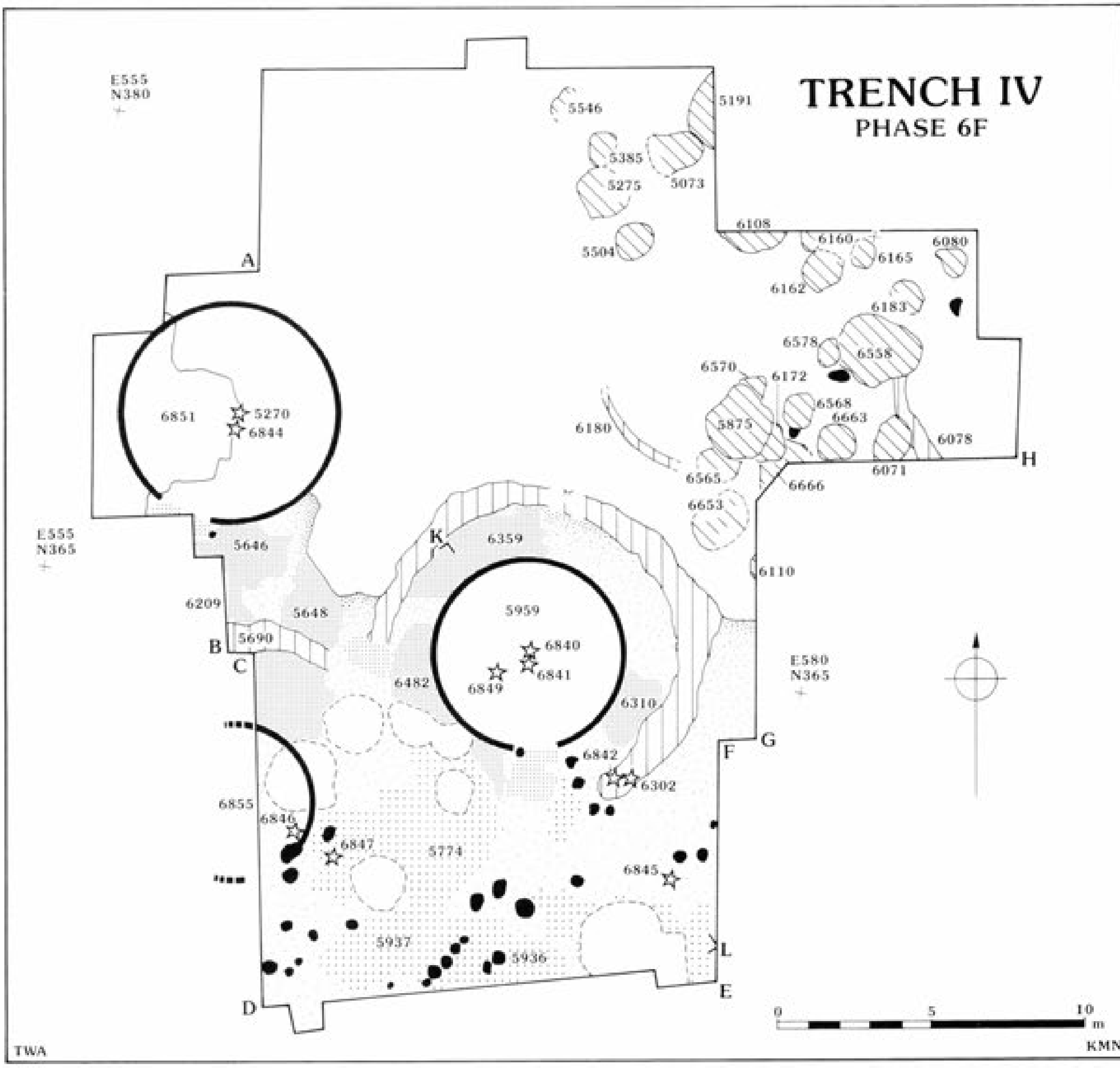


Fig 69 Trench IV: phase 6F

the 'bank' was later extended (Fig 64: 5764) and a layer filling the outer gully overlay the extension.

The hollow (Fig 71: 5499) to the north of the 'bank' merged with a hollow in front of the western house. The lower fills included a layer of burnt clay, charcoal, and a layer of unburnt clay (Fig 64b: 5487, 5771, 5776). These layers preceded the construction of the 'bank' and were sealed, partially by the 'bank' and by layers of silt and rubble eroding from the 'bank' and the higher ground to the north. The only feature in the area after the 'bank' had been constructed was a pit (5915). This contained metalworking debris, which suggests that it was contemporary with two pits (5622, 5114) to the north.

At the western edge of the trench, there was a series of layers (Fig 63: 6203, 6204, 6205) interpreted as a bank around house 6855, in phase 6F. The discovery of a potin coin in the soil layer underlying this 'bank' has led to doubts over the phasing of this sequence, and it is possible that these layers represent the fill of a hollow dug in phase 6G (see below, pp155–6).

At the base of the hollow in front of the western house, there was a layer of flint gravel (Fig 71: 5644). On this surface was a subcircular patch of burnt soil (5642), 0.45m in diameter, and an arc of limestone slabs (5164). The arc appeared to define a yard in front of the house, enclosing a temporary hearth. The hearth was related to the first house (6852), but the limestone slabs may have functioned during the use of both phase 6G houses.

The rebuilt house was separated from the first house by a layer of silt (Fig 63: 5263), up to 0.2m thick, which sealed two pits (Fig 71: 5622, 5695). These pits visibly cut the floor of the earlier house (Fig 75). The southern pit (Fig 89: 5622) had large amounts of bronze metalworking debris, which was also found in the overlying silt layer and in a large unstratified pit (Fig 71: 5114) to the east. The majority of the metalworking debris was associated with very similar rubble layers in the fill of these pits, which suggests that the pits were contemporary. They represent a period of metalworking activity, after the early house had gone out of use and before the house was rebuilt. South of the large pit and east of the limestone slabs was a shallow subcircular scoop (5163).

To the south of the chalk bank, there was a large pit (5457) which cut the tail of the rampart (5005), adjacent to which was a shallow charcoal-filled scoop (5225). Parallel to the bank, about 1.5–2m from it, was a line of postholes. Four (5444, 5187, 5149, 5783) were in a straight line, the other (5780) close to this. Between the line and the bank was a small pit (5786).

In the area of the eastern house, there were a number of features not directly related to the structure of the house (Fig 71). In the south, where the inner gully (5750) of the house ran into the eastern baulk, the fill of the gully sealed a small charcoal spread and a patch of burnt clay (Fig 82: 6330). On the burnt clay was a smashed pot (8613) and a distinct cluster of shattered chalk loomweights (8614).

To the north of the house was a gully (6186) which may be a drain

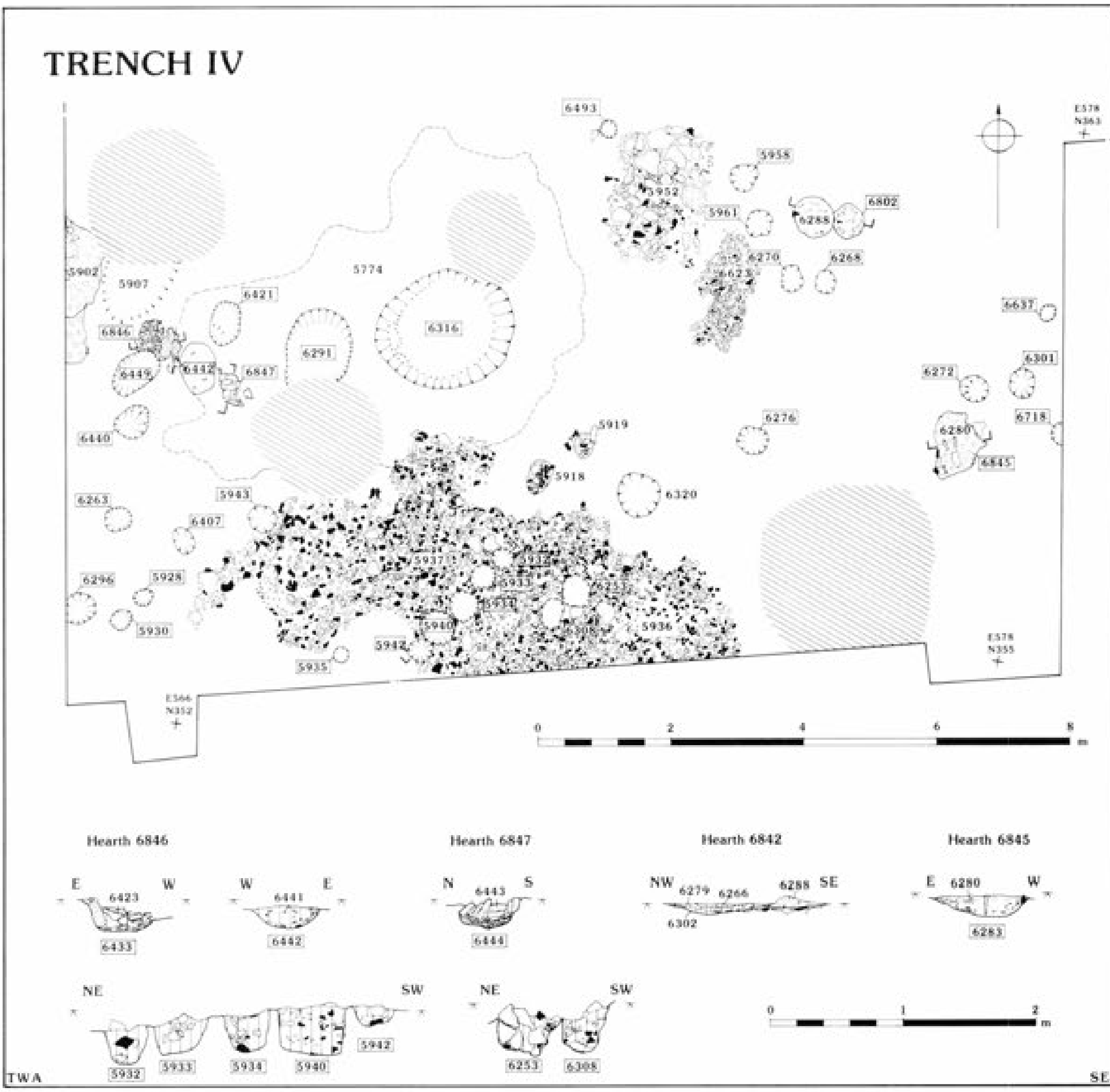


Fig 70 Trench IV: features in the southern half of the trench, in phase 6F

around the house. Its eastern end was cut by a shallow scoop (6100) and the western end by a pit (6119). This pit had an important relationship with the two gullies which define the eastern house (Fig 82). It cut the early gully (5876) and was cut by the later gully (6161). The stratigraphic position of this pit may indicate that there was a period of abandonment of the house, similar to that of the western house, before the house was rebuilt.

Amongst the unstratified features in the northern half of the trench, two pits (5061, 5074) contain ceramics which could belong to this phase. Two pits (5525, 5334) may be of this phase or phase 6H.

Phase 6H: chalk spreads and ephemeral huts

The final phase of activity identified in trench IV represented a change in the use of the area (Fig 73). The houses occupied in phase 6G were abandoned, although their positions were clearly identified by collapsed structural material. A cluster of pits, postholes, and hearths in the south-west corner of the trench indicates fairly intense occupation. Most of the eastern half of the trench was paved with chalk rubble, and lying between the eastern house and the rampart was the only house (6856) which belonged to this phase. Over the rest of the trench were isolated pits, rubble spreads, postholes, and, on the western edge of the trench, the remains of an enigmatic structure.

The lack of any pattern to these features and the presence of areas, where there was a succession of different activities, suggest that occupation was intermittent, with each group of features representing a short-lived activity, which taken together make up a long period of occupation. The presence of imported Armorican wares dating to the middle of the first century BC and amphora dating to the early years AD give some idea of the date of this occupation. It is likely that it overlaps with the phase 7 occupation of trench VI, although Roman artefacts are confined to the soil accumulation layers sealing the occupation.

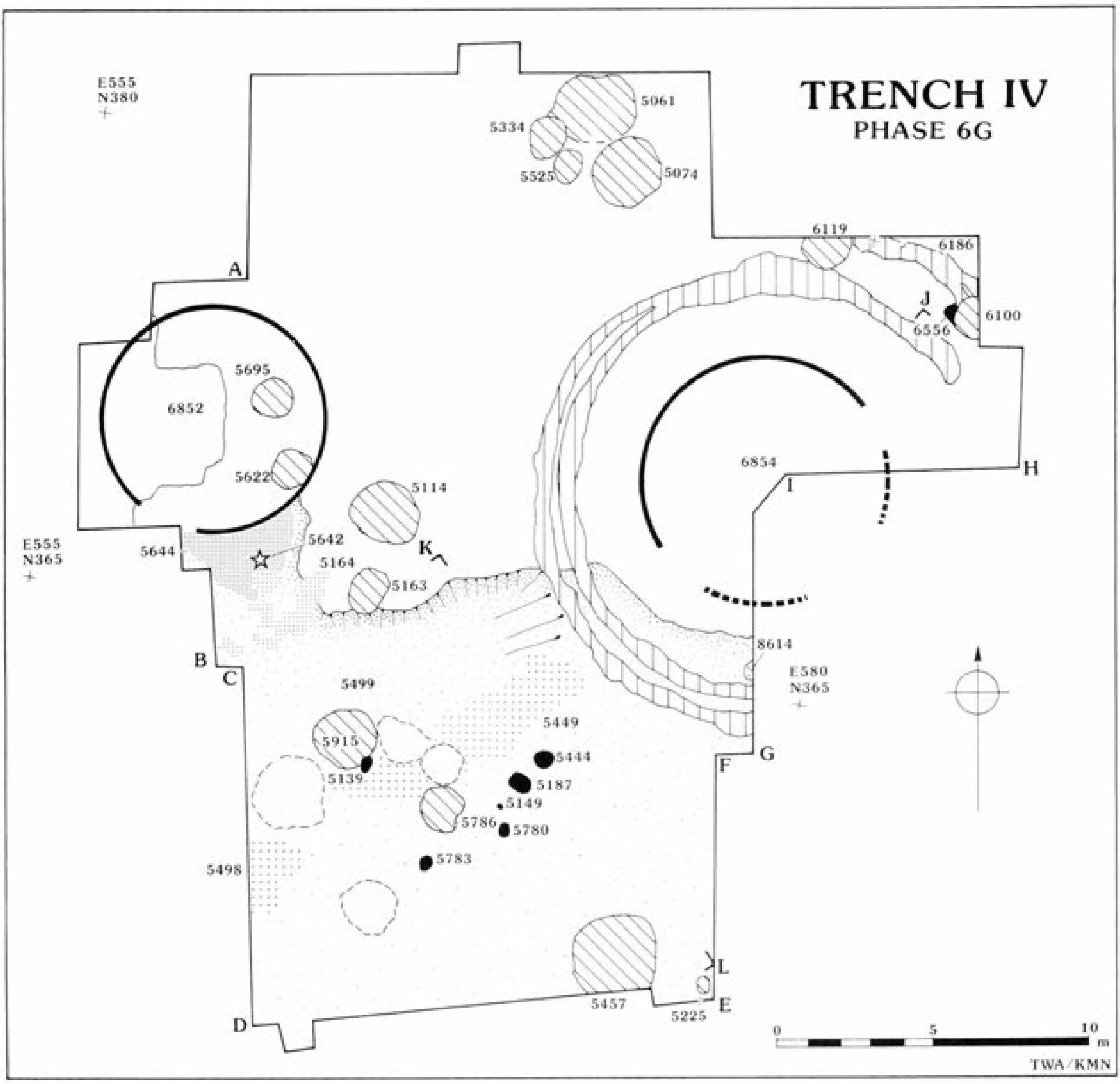


Fig 71 Trench IV: phase 6G

The most obvious feature on the west side of the trench was an enigmatic D-shaped structure (Fig 74). The south and south-east edges were a semi-circular arc of chalk blocks (5116), and the northern edge was a line of flint on top of which was a hearth (5154). In the western half of this structure, there was a layer of limestone and chalk (5110) which extended to the west of the structure. The eastern half contained a layer of dark, occupation-rich soil (5111).

To the north of the structure, there was a shallow subcircular hollow (Fig 73; 5085) cut by a similar, but smaller hollow (5083). Further north, a layer of chalk indicated the collapsed wall of the underlying house. A small posthole (5297) lay to the east of the structure.

The occupation in the south-west corner of the trench can be split into an earlier and later group of features. The main feature of the earlier group was a limestone and rubble layer (5233) immediately adjacent to the tail of the rampart (directly below 5108). Associated with this were a hearth (6848), a pit (5323), and three postholes (5317, 5337, 5406). Probably contemporary with this earlier period of occupation were two pairs of postholes (5467, 5469 and 5427, 5421) and two pits (5708, 5425) further to the east and north.

The features above the silt layer (5095) included 14 postholes, three pits (5098, 5173, 5179), a hearth (6843), and two shallow hollows (5101, 5150). The rubble layer (5233) behind the rampart was rebuilt with limestone slabs (5108), and, as it was faced to the north, can now be referred to as a wall. Along the south edge of the trench, there was a layer of limestone slabs (5003) which was the source of the slabs used to build the wall. The wall may have been constructed to prevent slippage off the rampart and the number of postholes in front of the wall suggests that a building was present. Most of the features were sealed by an extensive spread of limestone slabs (5092).

Contemporary with the features in the south-east was an extensive layer of chalk rubble (5089), deliberately laid to seal the underlying silt. This layer extended from the back of the rampart to a layer of chalk (5120) over the gullies of the eastern house. It was cut by house 6856 which is one of the latest structures in the trench.

To the north, the chalk layer (5120) was largely restricted to a band overlying the double gullies surrounding the house. The inner edge of the original gully was directly reflected by the edge of the chalk rubble. The layer was discontinuous around the house: to the north, it appeared as short stretches of large rubble mounded up to form a bank about 0.1m high, to the south, it had been disturbed by the construction of the later house (6856) with patches of chalk redeposited inside the house. The juxtaposition of the chalk layer and the gullies suggests that this chalk has a relationship with the eastern

Fig 72 Trench IV: a general view of the centre of the trench, in phase 6G, when the chalk bank was only partially exposed

house (6852). It is possible that, on the destruction of the house, the gullies were deliberately infilled.

Much of the floor of the eastern house was removed by the excavation of two large pits, one small pit, and a shallow scoop (Fig 73: 6113, 6192, 6667, 5291), and the position of the earlier pits was defined by a silt layer which filled the hollow caused by the subsidence of the fill. To the north was a small subcircular limestone hearth (6199). Outside the chalk bank to the north-east, there was a pair of postholes (6068, 6069).

On the extreme eastern edge of the trench was a thin spread of chalk (5879), which partially overlay the interior of the roundhouse. It extended out of the trench to the east and south, but to the west it was defined by a discontinuous line of chalk and limestone blocks set back into the floor of the earlier roundhouse. This revetment and chalk floor may represent a structure, about 10.5m in diameter.

Amongst the features in the northern half of the trench, one pit (5338) contained imported French wares and two other pits (5334, 5525) had ceramics belonging to this phase or phase 6G.

Wheeler's excavations

The south-west corner of the hillfort is the only excavated area of the internal quarry hollow and consequently the only area where there is a detailed picture of the sequence of occupation in the hillfort. The excavation of the top of the infilled Early Iron Age ditch in trench A produced a similar sequence with successive occupation surfaces and structures. However, as the principal objective in this trench was to investigate the nature of the ditch, detailed recording and analysis of the uppermost layers was not attempted.

Excavation over the ditch of the Bank Barrow has also revealed a succession of occupation. In trench III, the area excavated was too small for detailed analysis, but in trench L Wheeler excavated a large area (1943, plate XX). Most of the features in this trench were of Iron Age 'A' or Iron Age 'C' date, but Wheeler did note (1943, 129) the presence of a circular house with a limestone floor, overlying the postholes of the Iron Age 'A' structure.

Trench B is the only area extensively excavated by Wheeler that produced a phase 6 occupation. This area did not have any preserved stratigraphy and large areas had been disturbed by the construction of the Roman temple. The most significant feature of the occupation was the large quantity of pits which corroborate the picture, derived from the magnetometer survey (Fig 30), of a dense occupation that covered the hilltop. The most interesting feature of the trench, however, was the presence of a complex sequence of gullies. Most of these indicate the position of houses (see below), but there was also a large sub-rectangular enclosure and possibly a circular enclosure which enclosed the houses.

The overall distribution of features suggests that the hillfort interior was divided into occupation zones. To the north, there was a road, cut by very few features, and further north a dense concentration of pits. To the east of the houses, there were a large number of postholes and smaller features, including a child burial. In trench L, to the south, the absence of phase 6 occupation has already been noted. This spatial patterning would be expected, if the occupation exposed in the excavations at Danebury (Cunliffe 1984a) is typical of these large developed hillforts.

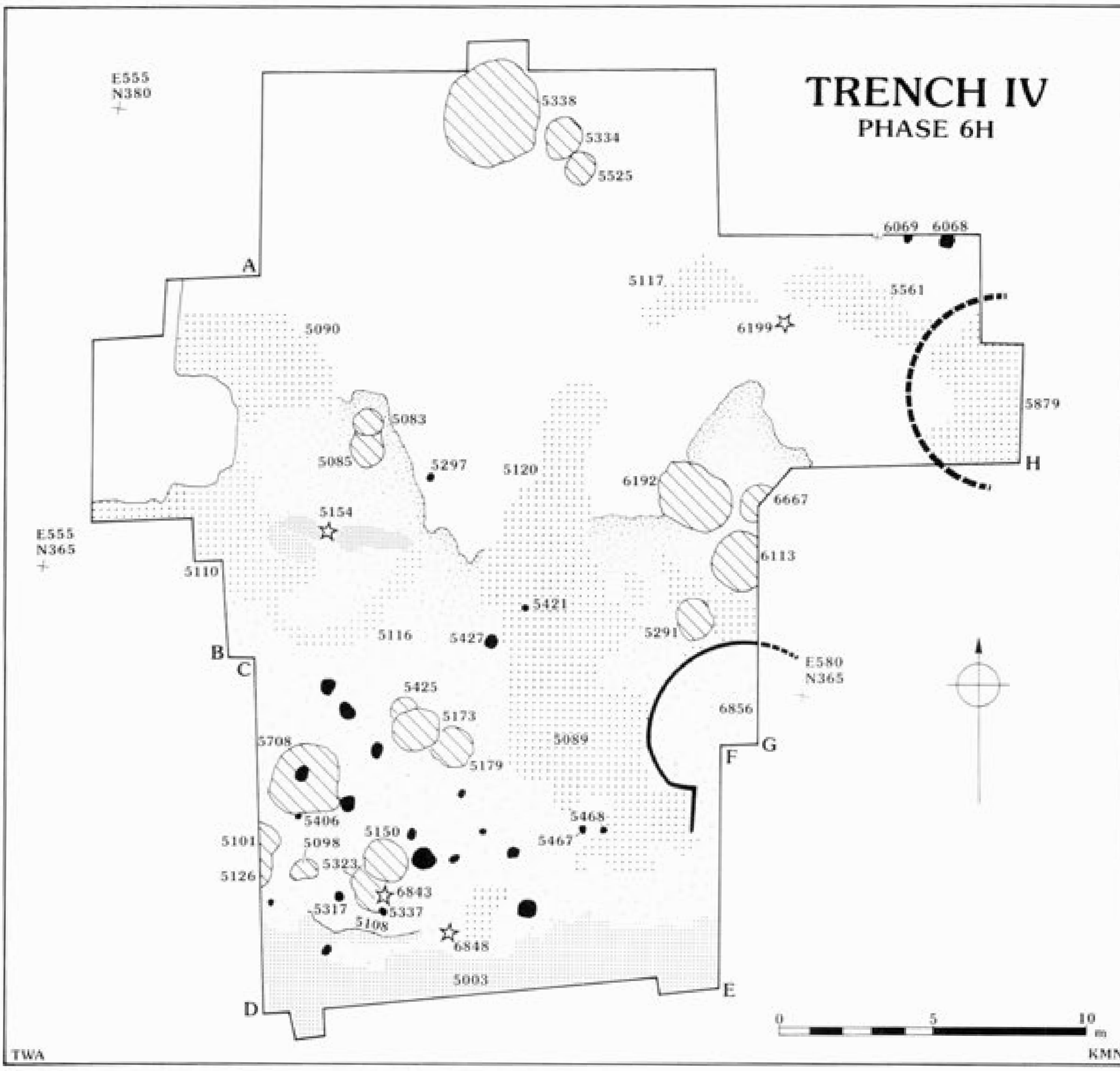


Fig 73 Trench IV: phase 6H

The houses

A minimum of 13 houses belonging to phase 6 were discovered in the recent excavations. Wheeler's excavations revealed evidence for at least ten other houses which can be dated to this phase. The evidence suggests that, apart from the distinctive post-built structures discussed below, all the houses constructed during the use of the hillfort are circular in form.

The evidence for the houses on Maiden Castle is extremely variable. Only in seven houses does an accurate ground plan allow us to reconstruct the major structural features. All of these houses were discovered in the south-west corner of the hillfort in the silt accumulating behind the inner rampart. Here, the houses discovered in the recent excavations are discussed in detail, those exposed by Wheeler are summarised, and new evidence for some of the more ephemeral structures is examined.

Western house

Several of the best-preserved houses occurred on a terrace on the west side of trench IV, which acted as a natural focus for house construction. Three separate and well-preserved house plans could be distinguished. A house (DL) had been identified by Wheeler (1943, pl VIII) in trench D and about a third of its floor area was removed in 1935.

The earliest house (6851; Figs 75a and 76) was built in phase 6F and was 7m in diameter with an entrance facing south-south-west. The north edge was defined by the terrace and, at the base of this, there was a line of 20 stakeholes. These were only identified where the floor of the house cut through natural chalk, and it is expected that more stakeholes were present, but could not be identified. The stakeholes were 0.17m deep and 0.04m in diameter on average.

The south edge was defined by three or four postholes (6502, 6504, 6506, 6516?) adjacent to a line of chalk rubble (6513). These postholes mark the outer wall and suggest that this lay at the top of the terrace. Just inside the line of postholes was a gully (6250), 0.45m wide and 0.15m deep, almost completely filled by a charcoal-rich homogeneous silt (6249).

The gully and chalk rubble terminated at the entrance to the house. An external limestone pavement (6507) defined the entrance and on the east side of this was a posthole (6518), which may indicate a timber porch.

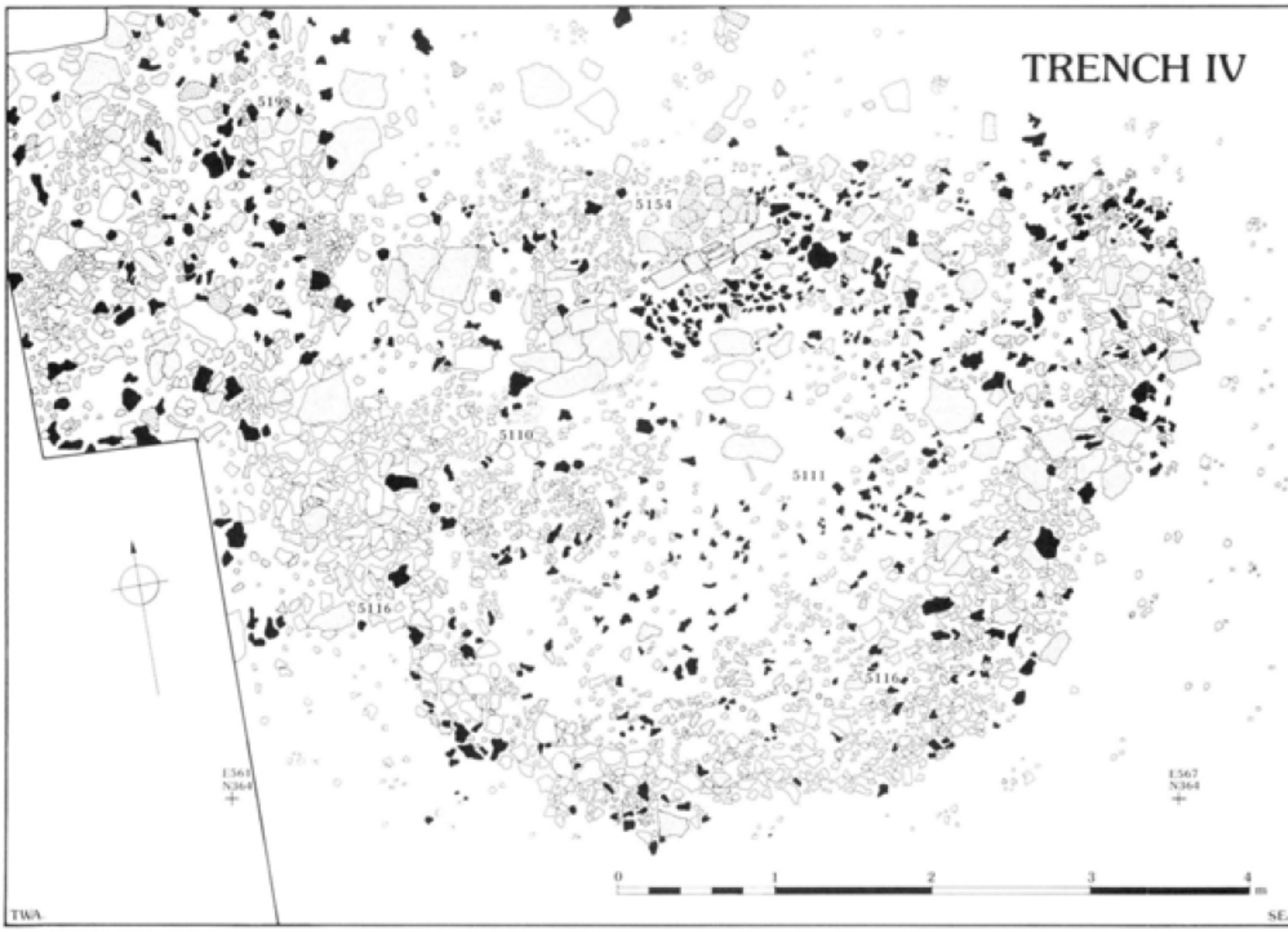


Fig 74 Trench IV: the 'D-shaped' enclosure in phase 6H

Internal supports for the roof of the house included a ring of posts 3m in diameter. This survived as three postholes (5700, 6238, 5698).

The nature of the floor of the house varied in places: it was natural chalk, clay with flints, or the colluvium filling of the underlying quarry hollow. This was remarkably clean of contemporary occupation debris. In the centre of the house, there was a small, chalk-based hearth (6844) and immediately to the north was a patch of burnt clay (5270) which was probably the base of a separate hearth. Overlying both hearths was a spread of ash (5271). The clay hearth appeared to replace the chalk hearth, but the stratigraphy was not conclusive. East of the hearths was a dump of clay and chalk (5692) and a pile of slingstones (8249). In the north-west corner of the house, there was a thin layer of charcoal-rich occupation soil (6248).

It seems likely that the oven excavated by Wheeler from house DL (Wheeler 1943, fig 16) belonged to this primary phase of the house. Wheeler specifically refers to the floor of the house as being 'of yellow clay': this can only be interpreted as the natural clay which was the base of much of the house. An unpublished section also locates the oven on the primary floor level. Thus, the hearths discussed above (see p176) are either subsidiary to, or precursors of, the oven. It is noticeable, however, that the layer of 'soot and charcoal' which Wheeler (1943, 93) identified was not present, and neither were the large sherds of pottery and complete loomweights.

The second house was built in phase 6G (6852; Figs 75b and 77) and, although the terrace was slightly recut, the diameter of the outer wall remains unchanged. The south side was defined by a low clay and chalk bank (5610, 5633), 2m long, 0.3m wide, and 0.05m high, which was continued to the west by a line of limestone blocks. The absence of a bank or limestone slabs on the far west side of the trench is presumed to indicate an entrance, again facing south-south-west. Clusters of flint and limestone at the top of the bank indicated the position of two postholes (5609, 5607). A further posthole (5635) and a possible posthole (5641) lay adjacent to the limestone slabs on the inside.

Inside the house, a structural ring of posts with a diameter of 5.5m was defined by two postholes (5618, 5616) and two post-pads of flint and limestone (5632, 5639).

The internal ring of postholes defined the outer edge of a chalk floor (5262) which partially covered the interior. Between the postholes and the outer wall, there was a band of dark occupation soil (5625). The southern part of the chalk floor was covered by limestone slabs (5612) and more chalk rubble, which may represent repairs to the original floor. These layers extended the floor to the south, outside the ring of postholes, and partially obscured some of the structural posts.

A small cylindrical scoop (5636), 0.25m deep, was discovered in the centre of this house. It contained the base of a large pot and was filled with ash (5637). The condition of the pot and the presence of ash suggest that this was a cooking vessel which was set permanently in a hollow in the floor.

Two pits were visible at the floor level. The southern pit (Fig 89: 5622) was situated between the inner ring of postholes and the terrace edge and partially cut the terrace edge. The northern pit (Fig 89: 5695) removed a large area of the chalk floor and may have cut away one of the postholes of the internal wall line. It is possible that the southern pit was dug when the house was in use, but the northern pit was later.

This house was reconstructed in phase 6G (6853; Fig 75, c), after a thin layer of silt had accumulated. In the meantime, the western edge of the terrace had collapsed. Consequently, to create a solid base for the construction of the house wall, the terrace edge was consolidated by a chalk revetment. This was a bank of soil, 0.6m wide and 0.4m high, which had been faced and capped with chalk blocks (5076).

On the south side, the house was defined by a cluster of postholes. This cluster can be split into three lines: first four postholes (5312, 5207, 5212, 5248), then a pair of postholes (5209, 5261) with an adjacent posthole (5208) to the east, and finally two pairs of postholes (5210, 5211, and 5254; the latter was thought to be only one during excavation). It seems likely that some of these outer postholes were the wall of the house and it is also possible that the paired outer postholes mark the entrance.

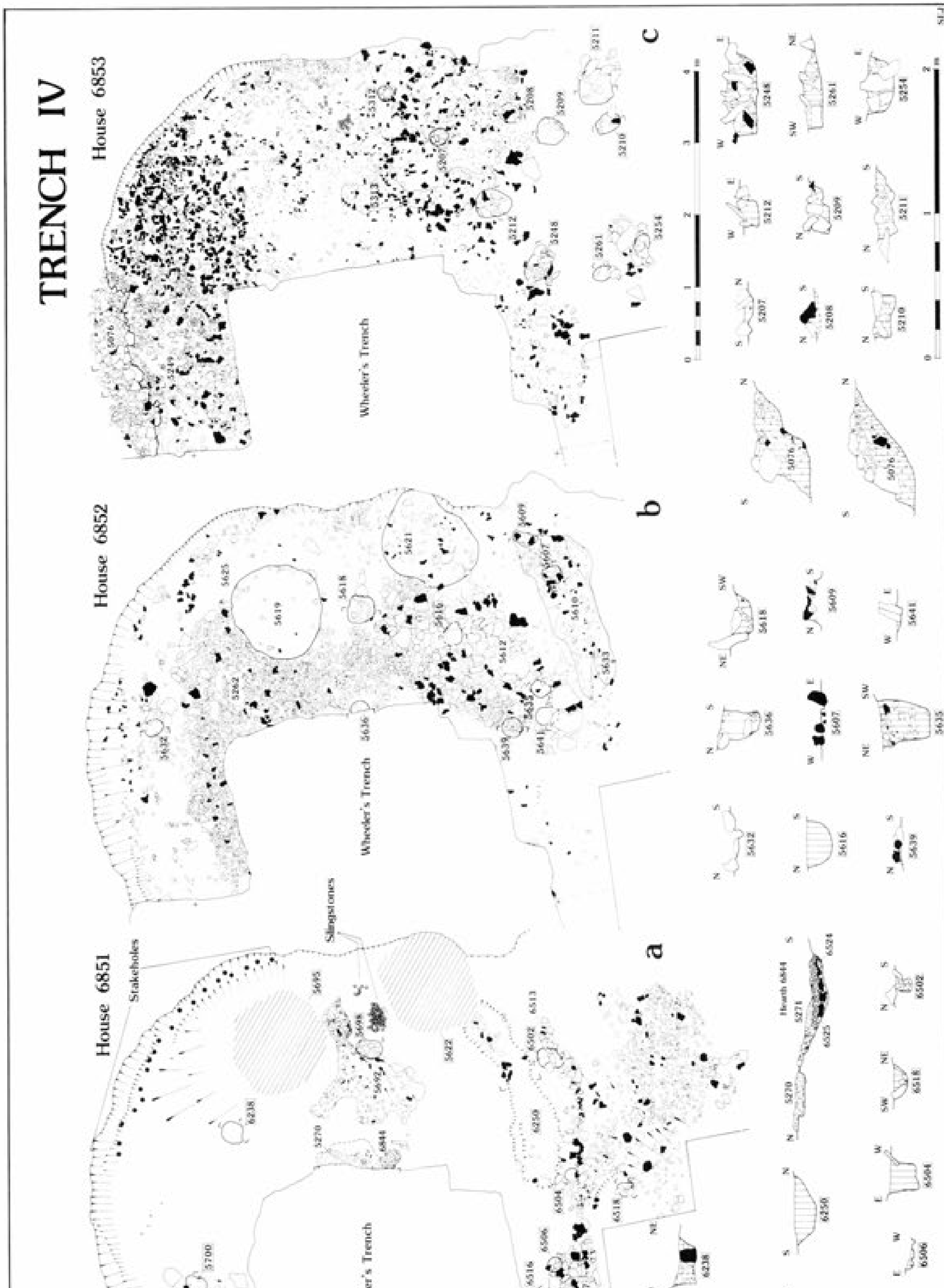


Fig 75 Trench IV: a) western house, 6851, phase 6F; b) western house, 6852, phase 6G; c) western house, 6853, phase 6G

Fig 76 Trench IV: the western house, 6851, in phase 6F

The northern part of the floor consisted of a rubble layer (5249). This was largely made up of small flint pebbles, but on the west side there was much more chalk in the layer. Further south, the floor was largely the compacted surface of the underlying silt. There was, however, an elongated layer of clay (5313) running north/south from the inner line of postholes. To the east of this clay, the silt was covered by slightly more stone, including a patch of slingstones. The clay layer and the distinctions in the presence of stone on the silt suggest that the house was deliberately partitioned into activity areas.

Phosphate and magnetic susceptibility surveys were made of each of the three floor levels of the house (Fig 78). Samples were taken at 0.5m intervals and the method of analysis was identical to that for the general site survey (see Balaam and Porter, Chap 3 fiche).

The lowest floor level (6851) has the least complete coverage (16505), as a large area of the floor was removed by two later pits and very few samples were taken from the area south of the house. Nevertheless, the surveys highlight certain specific areas. The magnetic susceptibility shows a distinct enhancement of the soil filling the gully along the southern edge of the house and the layer of clay deposited east of the centre of the house. It is noticeable that the hearth in the centre of the house is not indicated by particularly high values. The phosphate values, in contrast, are generally high in the interior of the house, decreasing only in the north-east corner. This pattern reflects the nature of the deposits lying on or forming the floor; for example, the natural chalk and clay in the north-east is picked out as an area of low enhancement.

The features visible in the phosphate and magnetic susceptibility surveys of the second floor level (6852) seem to correspond. On the phosphate survey, the features show up as areas of enhancement, whereas on the magnetic susceptibility survey they show up as isolated enhanced readings.

Some of the areas with enhanced values coincide with features recorded during excavation, most noticeably, the position of the entrance and pit 5695 (interestingly, 5622 did not show up, even though this pit contained a dump of metalworking debris). The other two noticeable areas of enhancement were the north-west and an area between the entrance and pit 5695: in neither was there an archaeological feature of note. The clay bank (5610) which defines the southern wall of the house can be distinguished as a group of low values for magnetic susceptibility, but it is not particularly clear in the phosphate survey. There is also no great distinction between the inside and outside of the house.

The phosphate survey of the final floor level (6853) highlights three areas of enhanced values: a small concentration in the north-west corner unrelated to any excavated feature, a small concentration in the south-east lying between two paired postholes which may be the entrance, and a dispersed spread of enhanced values in the centre. The boundaries of this central area of higher values coincide with the edge of the chalk floor to the north and the inner line of postholes to the south-east, but with no obvious feature to the south-west. The area is interrupted by a linear zone of low values, coinciding with the clay layer (5313) which divided the interior of the house.

It is important to note that the areas of enhancement vary between each house floor and between the phosphate and magnetic susceptibility surveys, with one exception: the area in the north-west corner of the house. This area is enhanced in all the surveys, though only slightly in the magnetic susceptibility of the lower floor, and on no occasion does this enhancement coincide with a feature recognised during the excavation. This might suggest that the enhancement is unrelated to archaeological activity: the proximity to Wheeler's excavation may not be a coincidence. Otherwise, the results are informative in that they add an extra dimension which enhances the visibility of some archaeological features and isolates areas that were hitherto not distinguished.

Eastern house

The large eastern house (6854; Figs 79 and 80) was built in phase 6G and was defined by a pair of gullies roughly 13m in diameter. The two gullies were not concentric: in the north, the outer gully overlay the inner gully, but elsewhere the two gullies were separate. Both had a rounded terminal in the north-east.

The dimensions and profile of the early gully (5876/5750) varied considerably (Fig 82). In general, it was deep and clearly defined in the north and shallow in the west and south. It reached a maximum width and depth of 0.6m and 0.5m respectively in the north, but it was as shallow as 0.1m in the west. Its fill likewise varied: some parts were loam and other parts rubble (Fig 82).

The later gully (6161/5485) was shallower and wider, up to 1m wide and 0.45m deep. Like the early gully, however, the dimensions and fill varied (Fig 82), although there was more rubble in the later gully.

Immediately adjacent to these gullies (Fig 79), there were two short stretches of bank (5740, 6166 not illustrated), three postholes (5135, 6062, 6194), and a shallow scoop (6195). All but one section of bank were found in the north. The scoop contained the articulated skeleton of a small sheep. One posthole was sealed by the northern clay bank. The northern bank could have been created by the excavation of the later gully, but the southern bank was a line of flint and limestone rubble.

Inside the gullies, there was an irregular layer of chalk, flint, and limestone rubble (Fig 81: 6142). This concentrated exclusively in the north-east quadrant of the house and was up to 0.2m thick in places. Although the layer was excavated as two separate layers, this division was more of an arbitrary spit than two stratigraphically separate layers. Neither the upper or lower levels were even surfaces, both were disorganised uneven spreads. This disorganisation may have been caused by either haphazard patching of the floor after it had subsided into underlying pits, or subsequent activity in the area, including the later pit digging and more recent cultivation of the hilltop. It was noticeable that the lower chalk spread was closely related to the position of underlying pits, and it may be that the presence of these earlier pits was the original reason for laying the rubble floor. The only definitely early pit in the southern part of the house has a deliberate fill of chalk rubble (Fig 82: pit 6110, layer 6109).

The most prominent feature in the centre of the house was a gully (Fig 79: 5533), 8.2m in diameter, roughly concentric with the earlier gully. The gully was identified in the rubble layer discussed above (Fig 81). However, it proved impossible to discern, whether the gully cut through the floor or was already in existence when the floor was laid down. In the south, the gully ended adjacent to two small postholes (Fig 79: 6659, 6657), in the north and east it faded away. It could be excavated as a negative feature cut into the underlying clay natural up to the edge of pit 6558. From that point, it was visible as a gap in the chalk rubble for another 1.5m (Fig 81). Further south, against the edge of the trench, a number of vertically set stones possibly indicated its presence (Fig 82, above the eastern edge of pit 6071). The gully was a series of irregular slots, never more than 0.1m deep and 0.1m wide (Fig 82). It was filled with a dark clay loam which contained some chalk and flint, but no distinct postholes or plank impressions were visible.

After the removal of the rubble layer, some postholes were identified. These could have been part of the house construction, although there is no way of being certain that they were not part of an earlier phase. Four postholes (Fig 79: 6153, 6094, 6563, 6598) cluster around the point in the north-east where the inner gully fades away. Two of these postholes (6094, 6598) were substantial and may be a pair defining an entrance to the roundhouse. Further west, just inside this gully, there was a line of three postholes (6092, 6088, 6086) and beside these were two isolated postholes (6084). Outside the inner gully was another posthole (6073).

This complex of features is interpreted as the remains of a house substantially rebuilt at least once. The detailed interpretation of the structure of the house is more difficult. The outer gullies are not structural, as there was no evidence of post packing in the fill. The fill was laid down in layers which suggested partially natural and partially deliberate infilling of an open ditch. The only clear evidence for the structural elements of a house was the inner gully, the size and shape of which suggest a trench for a plank-built wall similar to those at Danebury (Cunliffe 1984a, 54–6). The house was probably built immediately after the rubble layer had been laid down to consolidate the fill of several pits. Some time later, this rubble was relaid perhaps as part of the rebuilding of the house indicated by the redigging of the outer gully. There was an entrance to both houses in the north-east and it is possible that there was a secondary entrance in the south-west, defined by the two postholes at the south-west end of the inner gully. The only internal postholes appear to belong to entrance structures or internal divisions.

Fig 77 Trench IV: the western house, 6852, in phase 6G

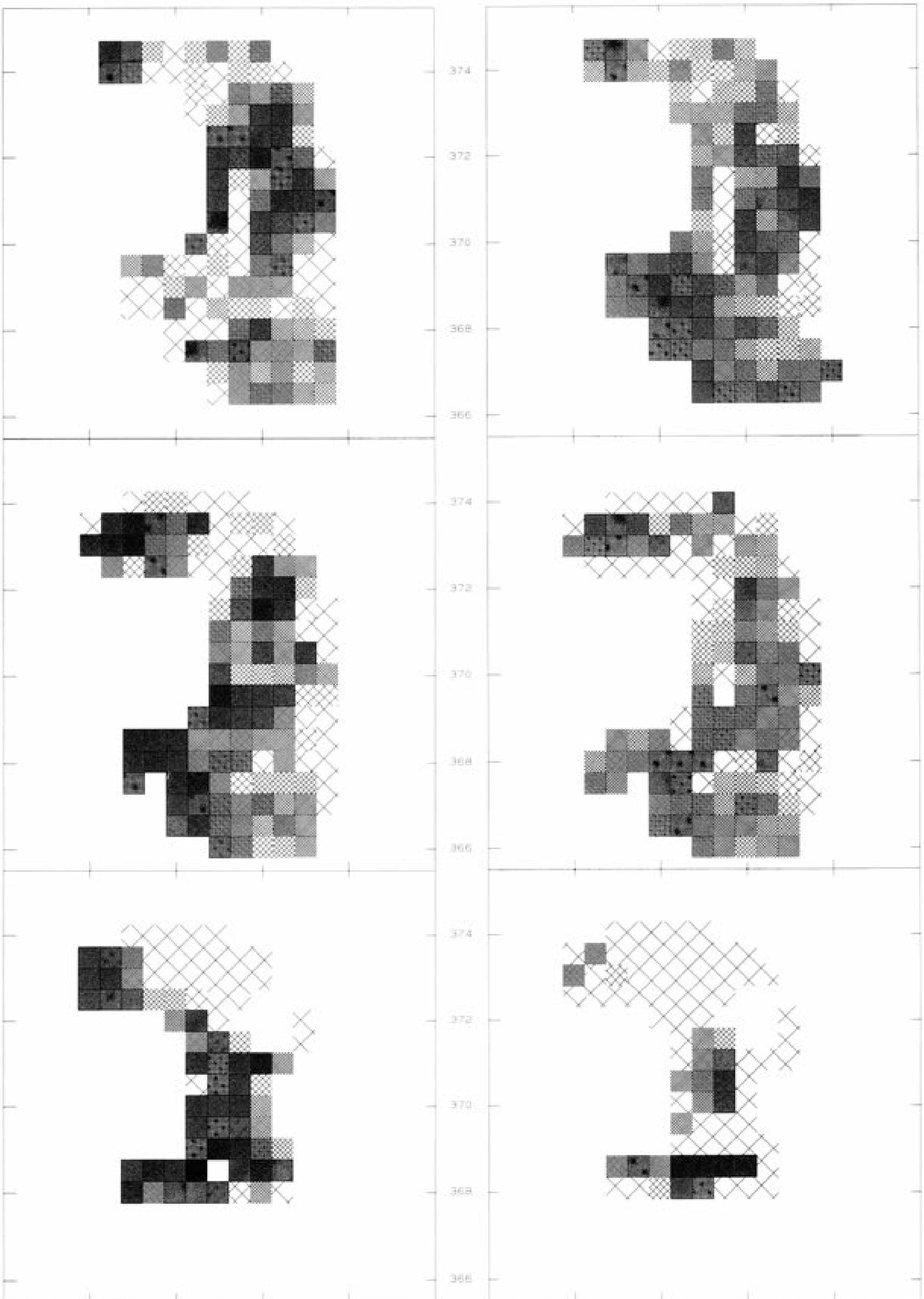


Fig 78 Trench IV: magnetic susceptibility and phosphate plans for the floors of the western house; (from top to bottom) 6853, 6852, 6851

Central house

The central house (5959; Figs 83 and 84) was built in phase 6F and was defined by a gully (6340, 5128), 9.3m in diameter. The eastern end of this gully terminated at the entrance, but no distinct western terminal was identified, and it is not clear if the gully originally extended to the entrance of the house.

The gully varied in shape and size (Fig 85). It reached a maximum of 1.1m wide and 0.6m deep on the east side of the entrance. It was filled with an homogeneous silty loam (6337/5282) that contained occasional patches of rubble and a basal layer of clay (6339).

Immediately inside the gully, there was a low bank (Fig 84: 6482, 6359, 6310). It was not continuous and varied in consistency in the areas where it could be identified. The variation was directly related to changes in the subsoil and indicated that the bank was formed of material produced in the excavation of the gully.

The entrance was defined by a posthole (6493), adjacent to the surrounding bank, and a narrow slot, defined on one side by limestone and flint pebbles (5977) and on the other by a layer of limestone slabs (5952) which extended for 2m in front of the entrance. On these slabs, there was a patch of ash (5956), but, as there was no burning on the underlying slabs, this was probably a dump rather than a hearth. On the east side of the entrance, there was a line of four postholes (5958, 5961, 6270, 6268) which enclosed the terminal of the surrounding bank and ditch.

There was no laid floor in the interior of the house. The only paved area was at the entrance, where there was a line of flint and limestone blocks (5977) and a layer of rammed chalk (6384). To the east of this chalk, there was a small area of limestone blocks (6389). Over the rest of the interior, the floor was simply the compacted surface of the underlying silt.

The southern half of a structural ring of posts can be identified as four clusters of stone (6489, 6490, 6388, 6357), which were set 0.8m to 1.2m inside the bank and spaced 1.3m to 2.2m apart. Around the back of the house, there were no obvious post-pads. There was, however, a cluster of three postholes (6363, 6364, 6365) and an elongated hollow (6366). The postholes may have a relationship to the structure, but they are further into the interior of the house than

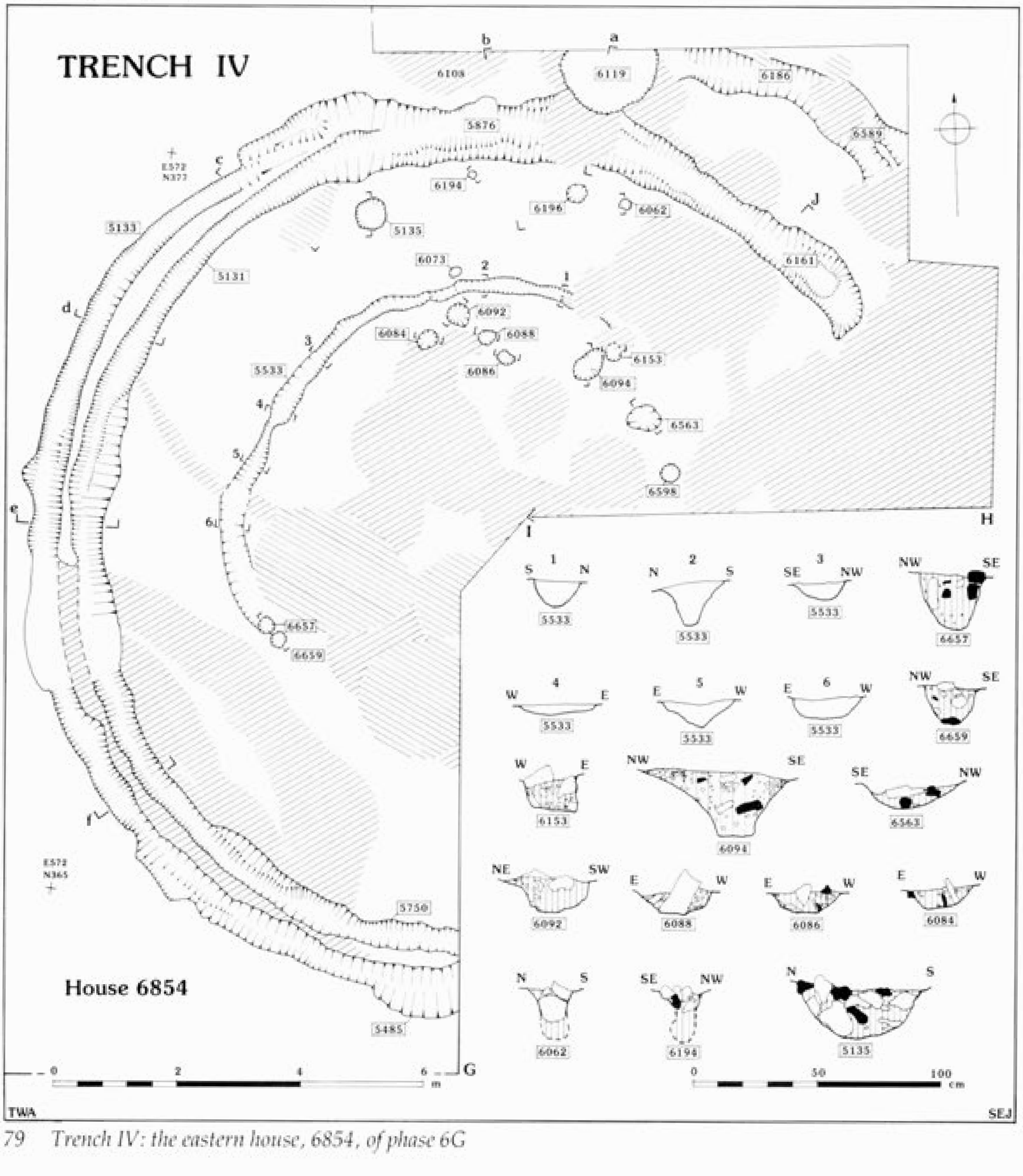


Fig 79 Trench IV: the eastern house, 6854, of phase 6G

Fig 80 Trench IV: the eastern house, 6854, after excavation

the post-pads. The hollow is a more enigmatic feature and may have removed the remains of some post-pads. A further two clusters of chalk (6390, 6391) may indicate internal features of the house. They were similar in size, set 1m apart, and positioned to the west of the hearth. They could represent an internal wall. Immediately adjacent to the western pad was a small posthole (6484).

In the centre of the house, there was a complex of shallow scoops and hearths. Two hearths (6840, 6841), an oven (6849), and two hollows (6361, 6374) were identified. The earliest hearth (6840) lay roughly in the centre of the trench and the adjacent hearth (6841) lay to the south, clipping the edge of the earlier hearth. To the west of this hearth was the oven (6849).

These hearths were surrounded by a series of charcoal layers (Fig 84: 5964). The layers concentrated amongst the hearths, but included several extensive spreads which reached the wall of the house in the south-west and the chalk and limestone paving inside the entrance. The last hearth had weathered before the floor was finally sealed, as the stones were surrounded by a spread of clay and rubble derived from the decay of the superstructure. There was very little accumulation of ash in the northern half of the house.

Magnetic susceptibility and phosphate samples were recovered for most of the floor of this house and for an area of the bank to the west of the house (Fig 86). The samples were taken at 0.5m intervals, before the excavation of any features or the removal of the charcoal layers in the south-west. The area adjacent to the entrance was not sampled due to the presence of rubble layers.

The western edge of the house is distinguished by a marked reduction in the level of enhancement of both phosphate and magnetic susceptibility. In the phosphate survey, the lower values are most noticeable in the north-west. Once again, variation seems due to changes in soil, rather than activity.

The most significant feature of the two surveys in the interior of the house is the contrast between the south-west, with generally high phosphate and only sporadically high magnetic susceptibility, and the north-east, with generally low phosphate and high magnetic susceptibility. This reflects the division between the area of the floor covered by charcoal layers, the south-west, and the area without any general floor layers, the north-east.

A more detailed examination of the features of the house did not reveal any regular correspondence between the minor fluctuations in either survey and the excavation evidence. Notably, the ovens and hearths in the centre do not affect the values in this area. The clearly defined high magnetic susceptibility values to the west of the entrance do not relate to any visible feature. The exception is the hollow (6366), in the north-east, which shows as an area of relatively low values in both surveys.

South-western house

The south-western house (6855; Fig 69) was built in phase 6F and was represented by a hollow and a series of ash layers similar to those described for the central house. The house had been badly damaged by later pit digging, and over half of its interior lies in the unexcavated area to the west. Due to these problems and the absence of any clearly defined structural elements, the interpretation of this structure is open to doubt.

The central features of this complex were a series of bright orange clay layers (presumably compacted ash), a charcoal-rich layer, and a layer of limestone slabs (Fig 63: 5901, 5902, 5903). The cumulative thickness of these layers was only 0.15m. Immediately to the east of these ash layers, there was a shallow hollow (Fig 70: 5907), 0.6m wide and 0.2m deep, filled with a charcoal-rich silt and a layer of limestone slabs. These clay layers and the hollow were truncated by a large pit.

South of these layers were three postholes (6421, 6440, 6449) which may be part of the structure surrounding the ash layers. Two of the postholes lay at the edge of the chalk surface to the east of the house, but the third posthole was sealed by this rubble. North of the ash layers was a crescent-shaped layer of clay with flint. In section (Fig 63: 6201, 6203, 6204, 6205), this appeared as a pronounced bank, up to 0.6m thick. Further north was a gully (5690), 0.2m deep and 1m wide, which cut through the underlying silts, natural clay, and

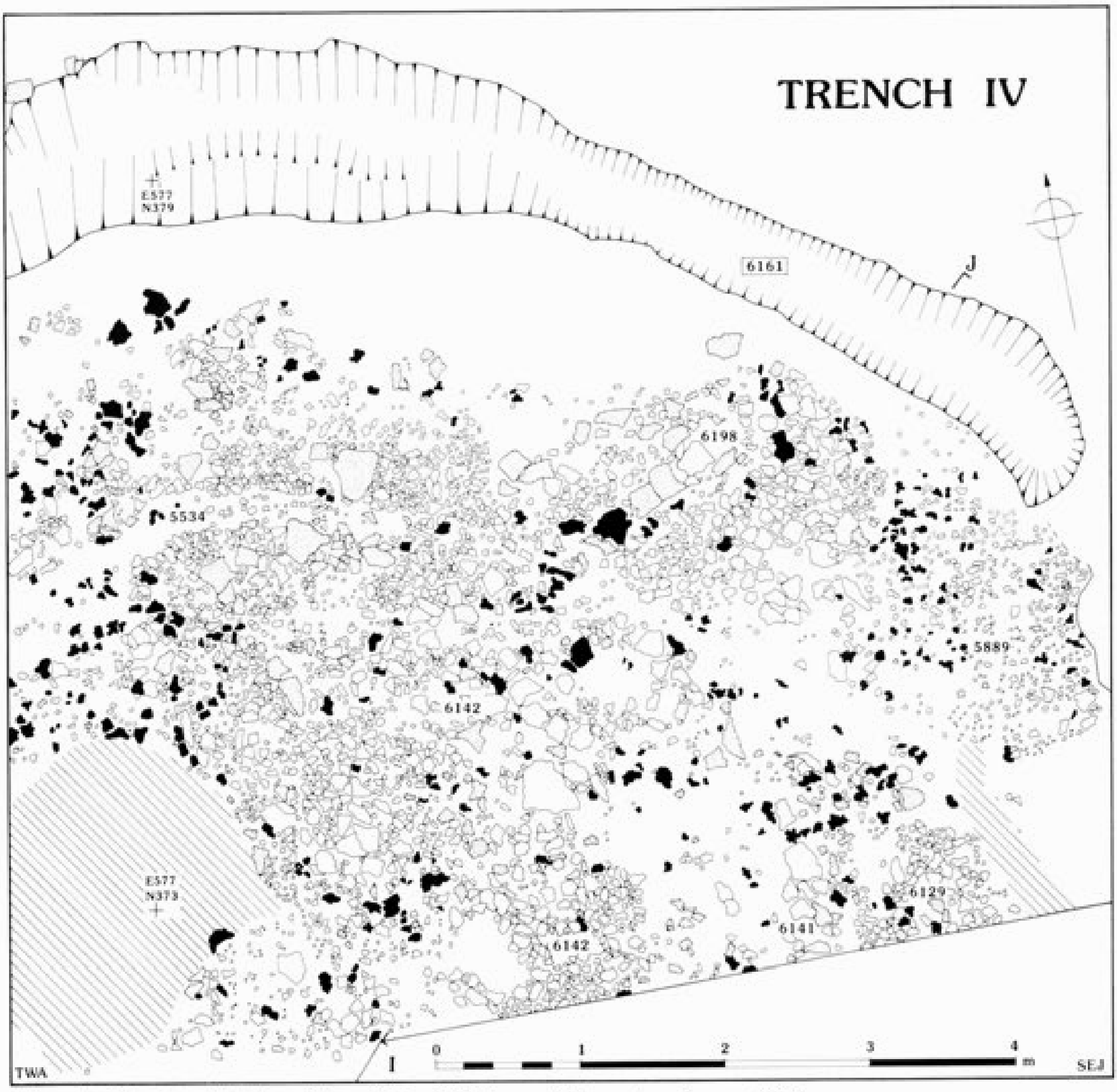


Fig 81 Trench IV: a detailed plan of the chalk rubble floor, of the eastern house, 6854

chalk, and may be the source for the bank. To the east, this bank and ditch petered out against the slope of the natural clay, which marked the edge of the underlying quarry hollow.

It seems probable that this complex of features was a house. There were no walls defined by stake- or postholes, but these features were also absent in the central house. A circular hollow was defined by the inner edge of the clay bank to the north, the edge of the quarry to the east, the rubble spreads to the south-east, and three postholes to the south. Within this area, there was a complex of ash layers similar to that in the central house. The postholes to the south might define the entrance.

South-eastern house

The south-eastern house (6856; Fig 73) was built in phase 6H and was defined by a circular hollow cut into the chalk layer which covered the south-east corner of the trench. Less than half of this house was present inside the trench. The hollow was roughly 5.6m in diameter and the edge was emphasised by chalk blocks (Fig 82: 5706). There was a gap in the chalk blocks, facing the rampart, and the hollow extended south by 0.8 to 1m. Inside the hollow was a gully (Fig 82: 5705) roughly concentric with the chalk blocks. This gully was packed with large flint nodules, but no clear post impressions were visible.

The line of chalk blocks probably marked the position of the wall, with the gully indicating an internal ring of posts, and the cut to the south indicating an entrance. This interpretation remains open to challenge, as the only possible structural posts were recognised below the chalk layer which preceded the construction of the house. Alternative explanations for the clearly defined circle of chalk blocks are, however, difficult to perceive.

Miscellaneous houses

The remaining houses identified in the present excavations are only imperfectly understood. Consequently, they will be mentioned, but not fully described.

In trench II, there were at least two successive houses terraced into the inner edge of the Early Iron Age ditch when it was completely infilled. In trench III, two houses were built over the infilled Bank Barrow ditch (Chap 4 fiche). In trench IV, there were three distinctive features, which may be the remains of houses: a semi-circular terrace filled with charcoal (Fig 65: 6215 and Fig 67) and cut into the upper fills of the quarry in phase 6E, an arc of gully (Fig 69: 6180) lying between, and cut by, the inner and outer gullies of the eastern house of phase 6G, and an arc of chalk boulders, enclosing a layer of chalk metalling (Fig 73: 5879) in the eastern extension to the trench, phase 6H.

Wheeler's houses

The largest concentration of houses in Wheeler's excavation was in trench D, where a total of six circular houses was identified. Of these six, interpretable plans are available for only four houses. House DL, the earliest house, was excavated in 1985 and has already been discussed. The remaining three houses, DA, DB2, and DB, have

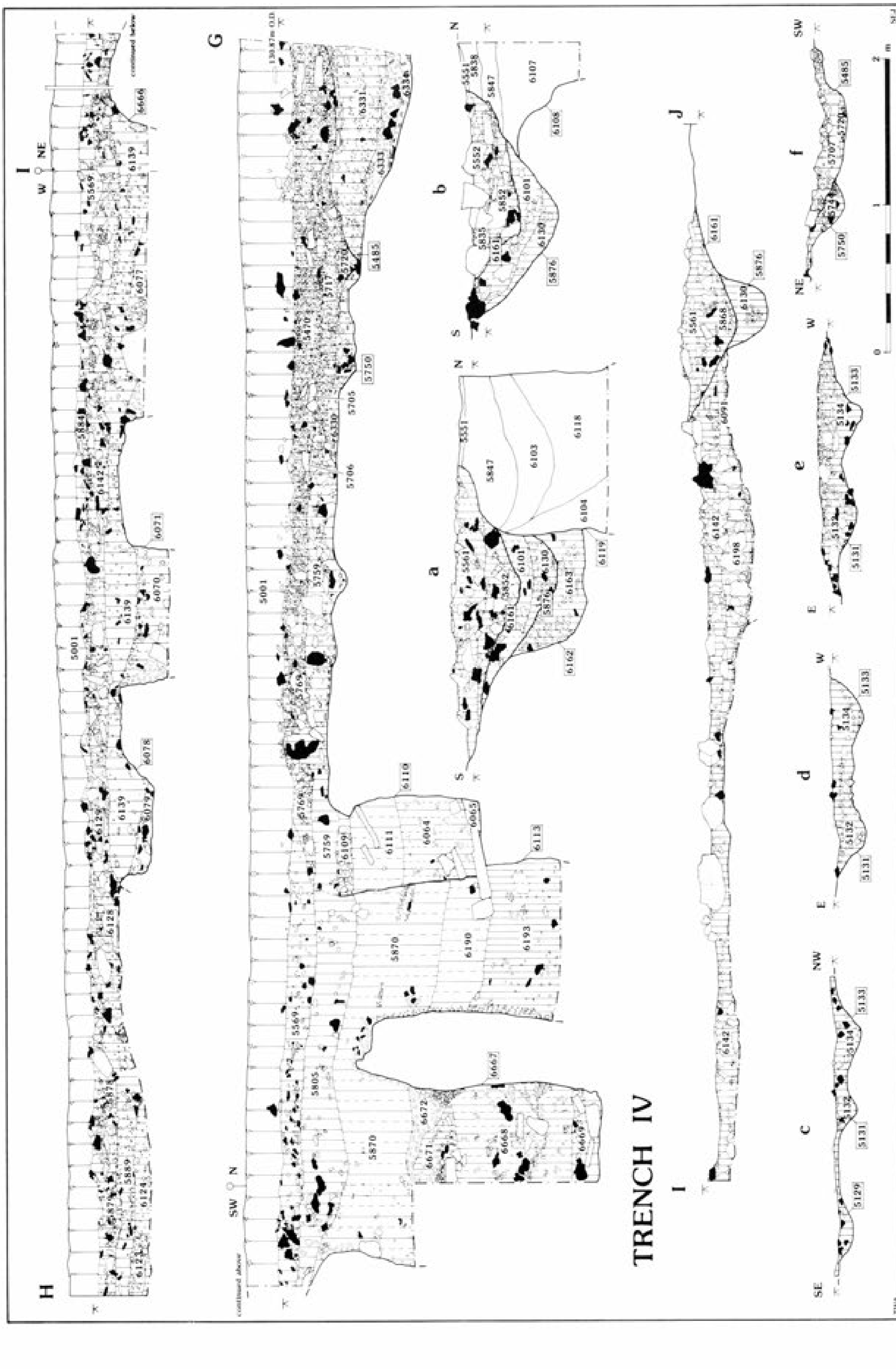


Fig 82 Trench IV: sections through features associated with the eastern house, 6854

characteristics not present in the houses discovered in the recent excavations, so it is worth summarising the evidence for their structure.

House DA (Wheeler 1943, fig 17) was defined by a ring of postholes *c* 7m in diameter. They enclosed a layer of rammed chalk which acted as a floor. No clear entrance was defined and there was no internal hearth. The position of the external wall of the house is not clear. It has been assumed that the edge of the chalk floor and the postholes mark the edge of the house, but the postholes could be an internal ring of posts.

House DB2 (Wheeler 1943, fig 18) is part of a row of houses lying 15m behind the rampart, which included the western and eastern houses exposed in trench IV. It was defined by a wall, up to 1.22m wide, with an internal diameter of *c* 6.7m. The wall was made of chalk rubble with occasional lumps of flint and survived to a height of *c* 0.75m. Inside the wall, there was a ring of 10 or 11 postholes. The entrance faced east and was defined by flat slabs on the floor and a pair of very large postholes on the inner ring. The southern post of this pair had been replaced during the use of the house.

There were two distinct floor levels in the interior of the house. The later floor covered the postholes of the internal ring. This would suggest that the house had been rebuilt and that the original roof, which had been supported by the inner ring of posts, had been replaced by a roof which rested directly on the outer wall. The irregular plan of the wall may indicate that this had been rebuilt as part of the reconstruction. The reconstruction of this house parallels the reconstruction of the eastern and western houses in trench IV.

The lowest floor was covered in 'wood ash', and there were three badly preserved ovens, similar to that found in the centre of house DL, and a pit. The second floor was of clay and at the centre of the house was a circular clay hearth. Among the many finds on this floor were broken loomweights, a slingstone hoard, oven brick and slag fragments, and a crucible.

The final house identified in this trench was house DB (Wheeler 1943, fig 19). This overlay the destruction level of house DB2. It consisted of a series of isolated postholes. As these were unrelated to a clear floor level, it remains uncertain whether they should be linked together to form a single structure. They could represent several unrelated structures. Wheeler (1943, Fig 19) interpreted the plan as an inner ring of 5 postholes and an outer ring of 11 postholes. A clear arrangement of four related postholes was thought to define the entrance to the house. However, the inner and outer circles are not concentric and the spacing between postholes is not regular. So, it seems better to pronounce a verdict of 'not proven' on the existence of the house.

In the adjacent trench E, the presence of a house is noted in the plan and section (Wheeler 1943, pl IX), but not discussed in the text. The house was circular and defined by the presence of an oven and surrounding ash layers, several postholes, and a line of limestone slabs.

The only other circular buildings, which were discussed by Wheeler, are in trench L and in front of the gateway to the eastern entrance. These houses relate to the immediately pre-Roman Iron Age occupation of the hilltop and will be discussed later. There are, however, several other structures, identified by the excavations, but not discussed in the report, which can be interpreted as houses.

In trench B, and to a certain extent trench L, at least three and perhaps as many as eight houses were defined by circular drainage ditches. Wheeler interpreted these gullies as being '.. designed for conducting rainwater to storage-pits' (Wheeler 1943, 91). It is not clear exactly why the occupants of the hill should want to conduct rainwater to storage pits, particularly as this is an area of chalk where the rainwater would have quickly drained away. The presence of only short stretches of gullies has probably discouraged subsequent scholars from reinterpreting this complex of gullies as a sequence of overlapping houses, but evidence from the houses discovered in trench IV shows that drainage ditches need not completely enclose a house and that the structural features need not survive, unless preservation is ideal. Trench B is not only on a slope eroded by medieval and recent cultivation, but the area was severely truncated by terracing for the late Roman temple complex. The effects of these destructive processes must have been severe, but they cannot be assessed from the evidence now available.

The gullies range in diameter from 10.6m to 15.6m and are therefore comparable to the eaves drip gullies of the eastern house (6854) in trench IV.

In the excavation of the eastern entrance, it is clear from the published plans (Wheeler 1943, pls XIV and XV) that the remains of

Fig 83 Trench IV: the central and eastern house during excavation, from the south-west

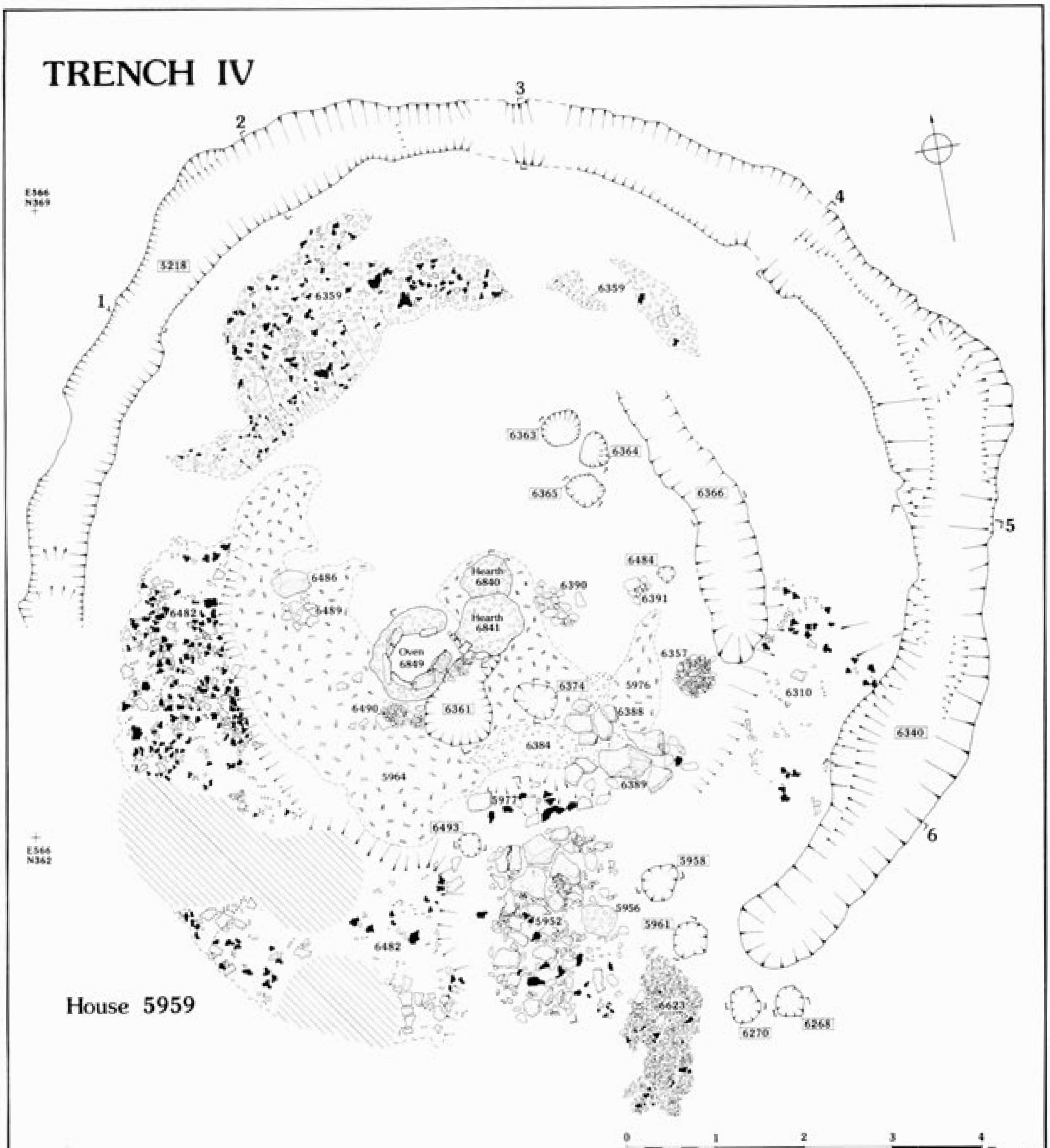


Fig 84 Trench IV: the central house, 5959, of phase 6F

several overlapping houses were found in the small area of ground exposed in the interior of the fort behind the inner rampart.

Discussion

The excavations at Maiden Castle revealed good evidence for the structural remains and floor levels of seven houses and imperfect evidence for the position and size of at least ten others. The area enclosed by the outer wall varies from 24.6sq m to 52.7sq m (house 6856 and house 6854 respectively). The overwhelming feature of the remains is the absence of a standard house plan. For example, a row of houses behind the rampart in the south-west corner of the hillfort consisted of three contemporary houses which were completely different in size and structure: the western house had a stone wall, the central house had been terraced into the hillside, and the eastern house was surrounded by a drainage gully. The distinguishing features of each house were retained when the houses were rebuilt, and each house was rebuilt at least once.

This variability indicates individual choice practised

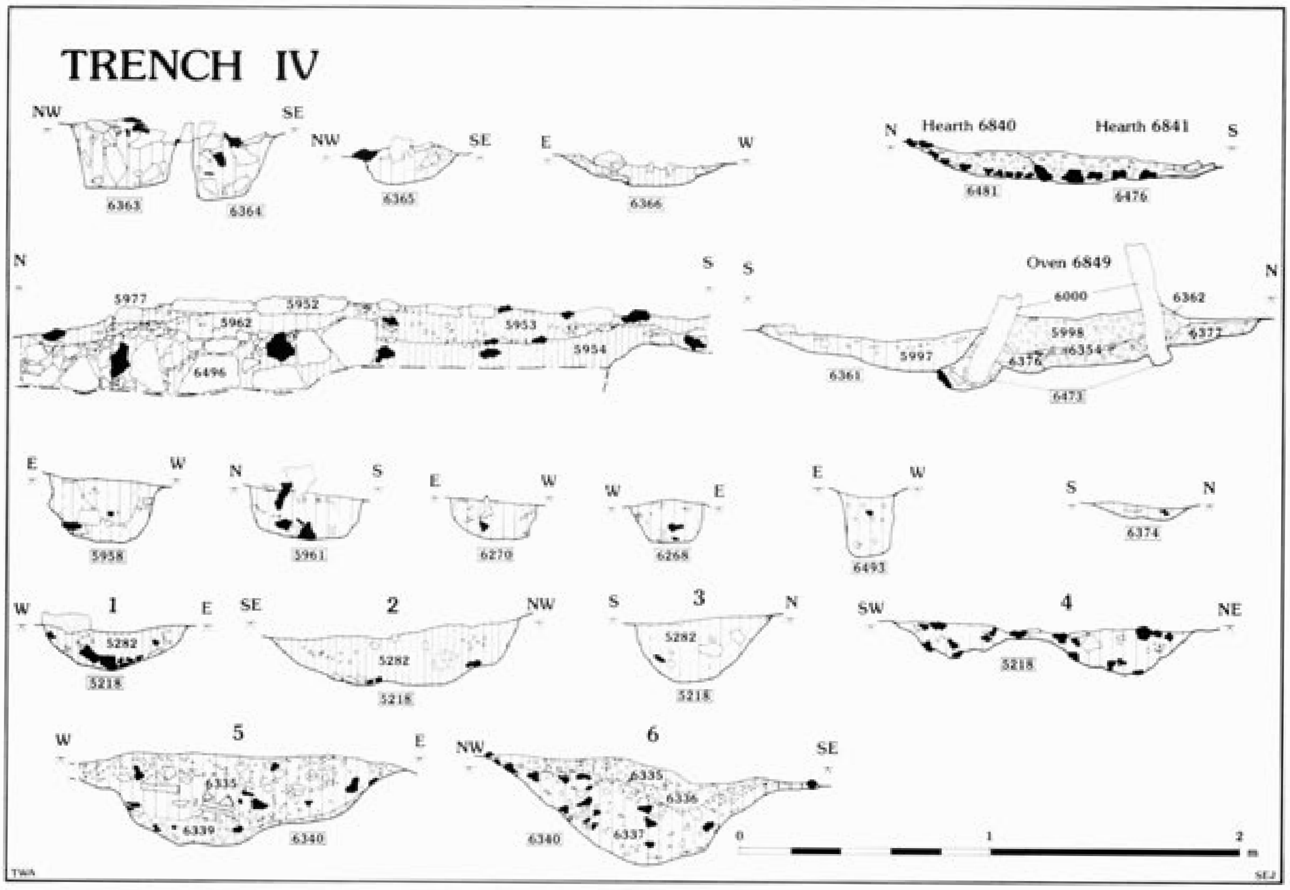


Fig 85 *Trench IV: sections through features associated with the central house, 5959*

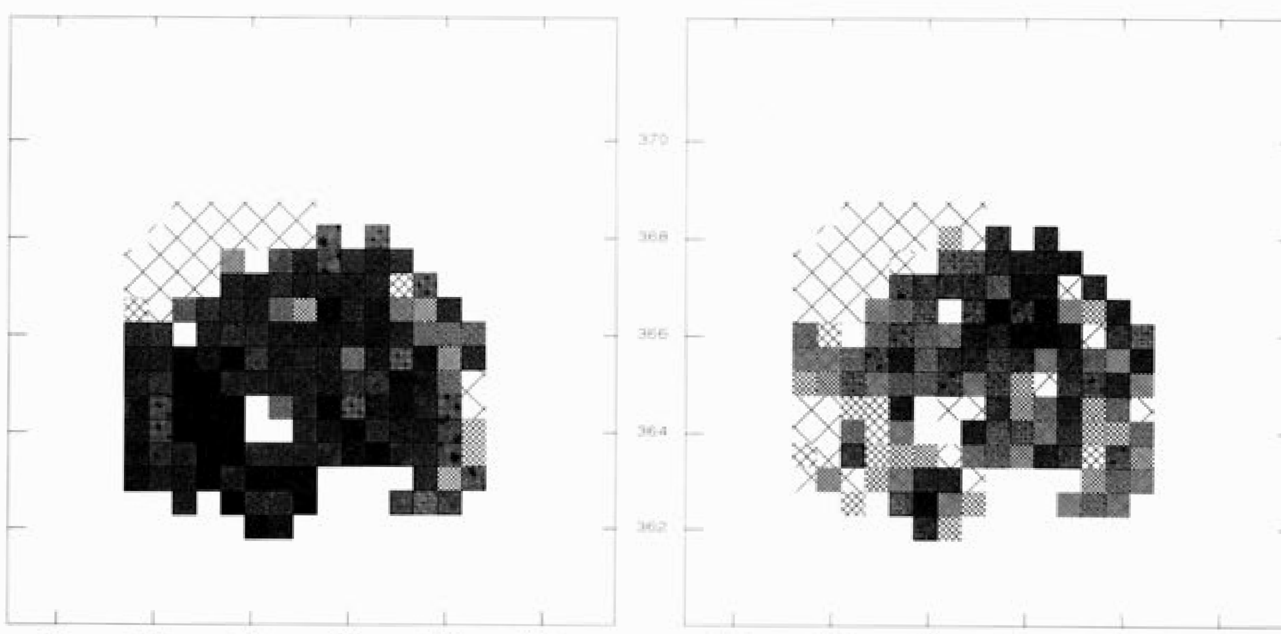


Fig 86 *Trench IV: magnetic susceptibility and phosphate plot for the floor of the central house, 5959*

by the inhabitants which contrasts with the control evident in the positioning of houses in rows or streets. It is in marked contrast to the situation at Danebury, where there was a considerable degree of standardisation in the house structure: 19 out of 24 of the circular structures (Cunliffe 1984a) were stake-built roundhouses, which, though they varied slightly in diameter, were practically identical in structure and entrance architecture. Excavations since the 1984 publication have further emphasised this homogeneity (Cunliffe pers comm).

Individually, the houses at Maiden Castle have good parallels with houses on Iron Age sites in southern England. A detailed examination of parallels is not appropriate, but it will be useful to outline some of the more obvious comparisons for the better preserved houses.

Stone-walled houses are a common feature of the Iron Age in south-western England and a close parallel for the Maiden Castle house was excavated at the nearby hillfort of Chalbury (Whitley 1943), and there are unexcavated examples at Chalbury and Abbotsbury (RCHME 1952). Terraced houses cover the interior of Hambledon Hill and one of these has recently been excavated (Mercer 1987). Drainage gullies were found encircling 14 of the houses excavated at Pilsdon Pen, Dorset (Gelling 1977) and gullies used to hold the foundations of the house wall are known at Danebury (Cunliffe 1984a), Winklebury (K Smith 1977), and Winnal Down (Fasham 1985).

Precise structural parallels for the central house (5959) are less clear. This house was one of the best preserved at Maiden Castle, but ideal preservation would be necessary for the survival of the features which define it and such conditions are rare. The obvious situation for parallels was in the Danebury quarry hollow (Cunliffe 1984a), but the nature of the door structure and the absence of internal post-rings at Danebury emphasise the difference between the two sites.

The pattern at Maiden Castle suggests that the dwellings were similar to houses in general use in southern and south-west England. The diversity of different types of house was unusual and distinguishes the site from others in the region. The few hillforts that have been extensively excavated and show extensive traces of occupation – Danebury (Cunliffe 1984a), Moel y Gaer (Guilbert 1975), and Pilsdon Pen (Gelling 1977) – show a marked homogeneity of house type which contrasts sharply with the situation at Maiden Castle.

The hearths

Fifteen hearths and one oven were discovered in the recent excavations, all in trench IV. The hearths can be classified into four types: clay-based, chalk-based, limestone slabs, and those without any structure.

There were five clay hearths. All but one of these were constructed as a layer of clay on a foundation of flint pebbles in a slight hollow. The exception was a heavily burnt clay layer (Fig 75: 5270), without any foundation, in the western house (6851; phase 6F). Three of the other hearths were associated with the central house (phase 6F) – two inside (Figs 88 and 84: 6840, 6841) and one just outside (Fig 70: 6842) – and the fourth came from the south-west corner of the trench in phase 6H (Fig 73: 6843). No samples were taken from the clay used in these hearths and it is not possible to compare them with the daub, except to suggest that fabric A clay was used for the central hearth of the central house (Poole, Chap 6 fiche). All of these hearths were about 0.6m in diameter.

There were four hearths made with a chalk base, all belonging to phase 6F. The simplest was similar to the clay hearths described above: a flint foundation covered by a layer of chalk. The only example was in the centre of the western house (Fig 75a: 6844). The other three hearths were set in distinct hollows, up to 0.23m deep,

Fig 87 Trench IV: limestone hearth, 5154, phase 6H

and were constructed with limestone slabs, which suggested superstructures and flues. Although none of these was as obviously an oven as that in the central house, this may only be because they were not as well preserved. Two were in the south-west corner of the trench and seem to be contemporary and connected (Fig 70: 6846, 6847), and the other was in the south-east corner of the trench (Fig 70: 6845). The size of the hearths varies from 1m × 0.65m (6845) to 0.6m × 0.4m (6844).

Three hearths, all belonging to phase 6H (Fig 73), consisted of layers of limestone slabs heavily burnt on their upper surface. The largest was 1.3m × 1.1m (6848) and the smallest was 0.8m in diameter (6199). Only one of these hearths (5154, Fig 87) had any structure: a line of edge-set slabs which defined the south side of the hearth. The other two hearths (6843, 6199) were roughly circular.

Patches of charcoal and ash and shallow scoops with charcoal were relatively common. In only two occasions, however, did discolouration of the underlying surface indicate *in situ* combustion. This was adjacent to the western house (Fig 71: 5642, phase 6G) and over the infilled gully to the east of the entrance to the central house (Fig 70: 6302, phase 6F). In the latter case, a clay hearth sealed the original patch of burnt soil.

The limited area and small numbers of hearths examined restrict discussion, but three points are worth noting. First, deliberately constructed hearths are restricted to phase 6F and 6H. Second, there are preferences within each phase. In phase 6H, three out of four hearths are layers of limestone slabs: a type of hearth not found in any other phase. In phase 6F, two types predominate: clay-based hearths and chalk-based hearths with limestone superstructures. The latter are not found in any other phase. Third, in phase 6F, all but one of the hearths are associated with houses, either near the centre of the house or outside, immediately to the east of the entrance. Those outside appear to be constructed soon after the abandonment of the house.

The oven

by C Poole

Only one clay oven base (6849) was found *in situ* during the recent excavations (Fig 88). It consisted of an oval of upright limestone slabs (Fig 85: 6000), 1.0m × 0.8m, set in a shallow trench (6473) with an entrance to the north-east. The stones were packed around with clay (6472, 6471, 6362) and the floor of the oven was formed of clay (6376) and covered by charcoal. Although stone foundations are not common in the Iron Age, the form of the structure is typical of domestic oven bases, and it is likely that the clay walls continued upwards to form a dome or support an oven cover. Stones are often incorporated within oven walls at other sites, for example flint at Danebury (Poole 1984a) and ironstone and amphora at Hengistbury Head (Poole 1987a, 114).

Wheeler found at least six oven bases in several structures, but only two are illustrated (Wheeler 1943, fig 16) and only one described in detail (Wheeler 1943, 93). These are of similar size, 0.8m and 0.9m in diameter, and with walls between 0.15m and 0.24m thick. One survives high enough to show the position of a plate in the form of limestone slabs set in the wall at a height of 0.2m. It is not clear whether these supported a clay oven plate, but the internal diameter is only 0.3m at this point – too small for surviving oven plates. It is possible that individual fire bases were used in a small oven of this type.

The pits

by M Rawlings

For the purpose of this report, a pit is defined as a negative feature which is circular or subcircular in plan, in which there is a distinction between the sides and the base and in which the sides meet the base at an angle of between 60 and 120°. Interpretation of function plays no part in the identification of a pit, other than that small 'pits' are often distinguished from large 'postholes' on the basis of fill characteristics.

Fig 88 Trench IV: oven 6849 and clay hearth 6841 in the central house, 5959, phase 6F

At least 289 pits have been recorded at Maiden Castle (Fig 89). Not all were fully excavated and the total discovered by Wheeler cannot be accurately ascertained. He discovered at least 229 pits, but only 108 were recorded in sufficient detail to allow metrical study. The 1985–6 excavations discovered 60 pits, of which 53 were within trench IV. The metrical study of the pits on Maiden Castle is based on the 108 pits recorded in detail by Wheeler and the 60 pits recorded by the 1985–6 excavations: a total of 168 pits.

Shape and size

The pits on Maiden Castle were originally classified according to the typology of profiles first proposed by Jeffries (1979), which takes no account of horizontal dimensions. In this, it contrasts with the typology proposed by Whittle (1984) and used at Danebury, where the scheme included sub-rectangular pits: a term referring to the plan view.

The problems of classification are a result of overlap between categories and variation within them. An added problem is erosion of the upper part of the pit. The difficulties can be seen clearly in a comparison of the pit profiles from Maiden Castle and Danebury. At Danebury, pits with overhanging sides are classed as 'beehive', because that is the predominant type. Indeed, Whittle comments: 'A small series with concave sides but with the base a little wider than the mouth may be noted .. The resulting barrel form is unusual' (1984, 130). This is in contrast to Maiden Castle, where pits of the barrel form comprise two-thirds of the pits with overhanging sides. The variation between the two sites is due to a subtle difference in classification of the profiles. There are many beehive pits at Danebury (eg Whittle 1984, pits 166 and 562), which would have been recorded as barrel pits had they been excavated on Maiden Castle.

Given this evidence for overlapping and different recording systems, the process of comparing the pits at Maiden Castle with the pits from other sites can only be achieved by a further simplification of the typologies. The overlap between the forms classed as beehive, barrel, and bell is so great as to necessitate a reduction to two forms: pits with overhanging sides and pits with vertical or slightly splayed sides. This classification does not allow for either the Danebury sub-rectangular form (which was rare at Maiden Castle) or for the Danebury conical form (which was also rare at Maiden Castle and has a different function to the pits discussed here).

The comparison of the proportions of different forms of pits from various sites is shown in Figure 91. The overall impression is one of a very similar situation. At Maiden Castle, 60% of pits with classified profiles had overhanging sides. At Danebury, the comparable figure is 71%. Although there is a large difference in sample size (139 pits at Maiden Castle and 1057 at Danebury), these figures are similar. At Gussage, this figure was 59% and at Little Woodbury it was only 30%.

The data from Gussage All Saints show that the earliest phase was characterised by a high percentage of barrel pits (64%), but this decreased in the later phases (Fig 92; a similar trend might be present at Maiden Castle, but the database is not large enough to be certain). At Danebury, however, this is not the case. Here, the number of beehive pits increased throughout the occupation.

Volume

At Gussage All Saints, there was an increase in the size of the pits during the Iron Age: the average volume in phase 2 is 68% greater than for phase 1, and this decreases only slightly in phase 3 (Jeffries 1979, 10, fig 11). At Danebury, a similar increase in volume is visible (Whittle 1984, 132, table 6): there is a gradual increase in average pit volume throughout the early phases (cp 1–6) and then a large increase, with the average volume for cp 7–8 being 56% greater than for cp 6.

The apparent increase in pit volume in the Middle Iron Age cannot be corroborated at Maiden Castle, because there is not a large enough sample. From the 59 pits excavated by Wheeler and to which he assigned a relative date, there is an increase in average depth from 1.36m for Iron Age A to 1.76m for Iron Age B. The average depth for the pits excavated in trench IV is 1.38m. The average volume is 3.56cu m, the smallest being 0.36cu m and the largest 12.51cu m.

The calculation of volume is made more difficult by the erosion of the profile. The pit volumes at Maiden Castle were calculated using the same formula as at Gussage All Saints (Jeffries 1979, 11), but with h = depth/10 or occasionally depth/5 for small pits. The radii of the conic frustra were taken from the section drawings and no attempt was made to account for erosion. This does not allow comparison with Danebury, for here the original profiles were estimated and the volumes calculated using the formula for a truncated cone (Whittle 1984, 131). This formula was tested on several pits at Maiden Castle and was found to give results of up to 25% difference from the results using the Gussage formula. When the percentage error of estimating the original mouth diameter of a pit is also taken into account, the overall deviation between the two methods negates comparisons between the sites. The method used to calculate the pit volumes at Danebury assumes an ideal pit shape, but because this shape is rarely obtained, the value of the analysis is reduced.

Grain storage

The area of excavation in the interior of Maiden Castle is too small to allow calculations of overall grain storage capacity. At several sites, this type of analysis has been used as a means of estimating the number of people supported by the economy and in some cases as a means of estimating the population of a site at any given time. The problems have been outlined elsewhere (Bowen and Wood 1968; D Harding 1974), but the Maiden Castle data help to highlight some of them.

Twelve pits in trench IV had traces of a clay lining or capping (Fig 90). Others had deposits of clay in the fill in such a manner as to indicate the presence of collapsed clay linings/capping. These clay linings were restricted to the upper part of the pits, but in some cases they extended down to 1m below the surface. One of the pits excavated by Wheeler (Q13) is shown on the unpublished section drawing as having an *in situ* clay lining extending down to 2.8m below the pit surface (the pit was 3.10m deep).

The maximum thickness recorded for a clay lining was 0.5m (pit 5504). The clay used for these linings/cappings had not been treated and contained large flints. In at least two pits (Fig 94: 5334, 5504), the side had been cut back to provide a ledge or lip which supported the clay lining.

The presence of a clay lining in pit 5504 reduced the volume by more than 30%. Obviously, the percentage loss of volume decreases as the pit size increases, but it is clear that the presence or absence of clay linings can have an effect on overall storage capacity. It is also true that a thick seal of clay or any other substance at the surface of the pit would reduce the volume. Reynolds' (1974) work on experimental storage pits has shown that a seal of 0.1m thickness is perfectly adequate and, in the case of a cylindrical pit 1.0m deep, the volume would normally be reduced by about 10%.

The pits with clay linings on Maiden Castle have no other common factor: they vary in size, location, and relative chronology. Most are barrel-shaped, but this is representative of the pits as a whole. It is not necessary here to enter into discussion on the use of clay linings and cappings as ways of maximising the efficiency of pits, but their presence can be taken as an indication of function. The recording of definite and relatively substantial remnants of clay linings on pits as shallow as 0.55m means that within certain parameters (as in the definition of pits laid out above), size cannot be taken as a measure of function.

This conclusion can be examined alongside Whittle's views on the pits at Danebury: 'It is hard to believe .. that a small pit less than 0.5m deep played the same role as a pit up to 2m deep, though purely in terms of shape they are rather similar' (1984, 131). The fact that almost half the cylindrical pits at Danebury are 0.5m or less in depth suggests three possibilities. First, the pits may have been abandoned before completion, although Whittle points out that some seem to be well-finished. Second, size is an indication of function, and the shallow pits have a different function from the larger pits. If this were the case, then it might be possible to see two distinct clusters of pits according to depth. Third, function is a constant and the size of the pit is determined by a factor of social necessity at the time that the pit was originally dug. The problem here lies in the recognition of shallow pits as being capable of functioning as grain silos. The evidence of the clay linings at Maiden Castle suggests pits as shallow as 0.55m were used as grain stores. At Danebury, 20 of the beehive pits were 0.5m deep or less, and this is the profile type which is the most efficient for grain storage. If these are regarded as unfinished, then this refutes suggestions (Collis 1970; Reynolds 1979) that beehive/barrel pits arose as a result of successive episodes of cleaning and/or erosion.

Another part of the discussion of overall grain storage capacity concerns the amount of grain stored above ground rather than in pits. Whilst this may be be linked to arguments about seed corn having different storage requirements from those of grain for consumption, the identification of granaries in the archaeological record is also relevant. The discussion concerning the function of the four-post structures typical on sites of this period is a fairly lengthy one (eg Bersu 1940; Ellison and Drewett 1971; Gent 1983; Poole 1984c), and the only addition to it that can be made from Maiden Castle is that the stratified four-post structures within trench IV were all part of the earliest phase. This is in accordance with the overall trend for hillforts in the Iron Age as suggested by Gent (1983), but in conflict with the evidence from Danebury where the 'post-built structures' were concentrated in phase cp 7–8 (Cunliffe 1984a, 189).

It has been suggested (Reynolds 1974; 1979) that the pits are for the storage of seed corn rather than grain for consumption. The basis for this argument lies in the fairly large average size of the pits. Experiments have shown that grain for consumption does not keep very well, if the seal is broken regularly to allow access for the removal of a proportion of the grain. Following on from this, it is suggested that the amount of grain stored in an average pit is too large to be consumed within the necessary time and thus the stored grain must be seed corn to be used in spring.

Any discussion of this suggestion, however, ought to include some ideas on social organisation. The time taken to consume any specific amount of stored grain depends on the size of the social

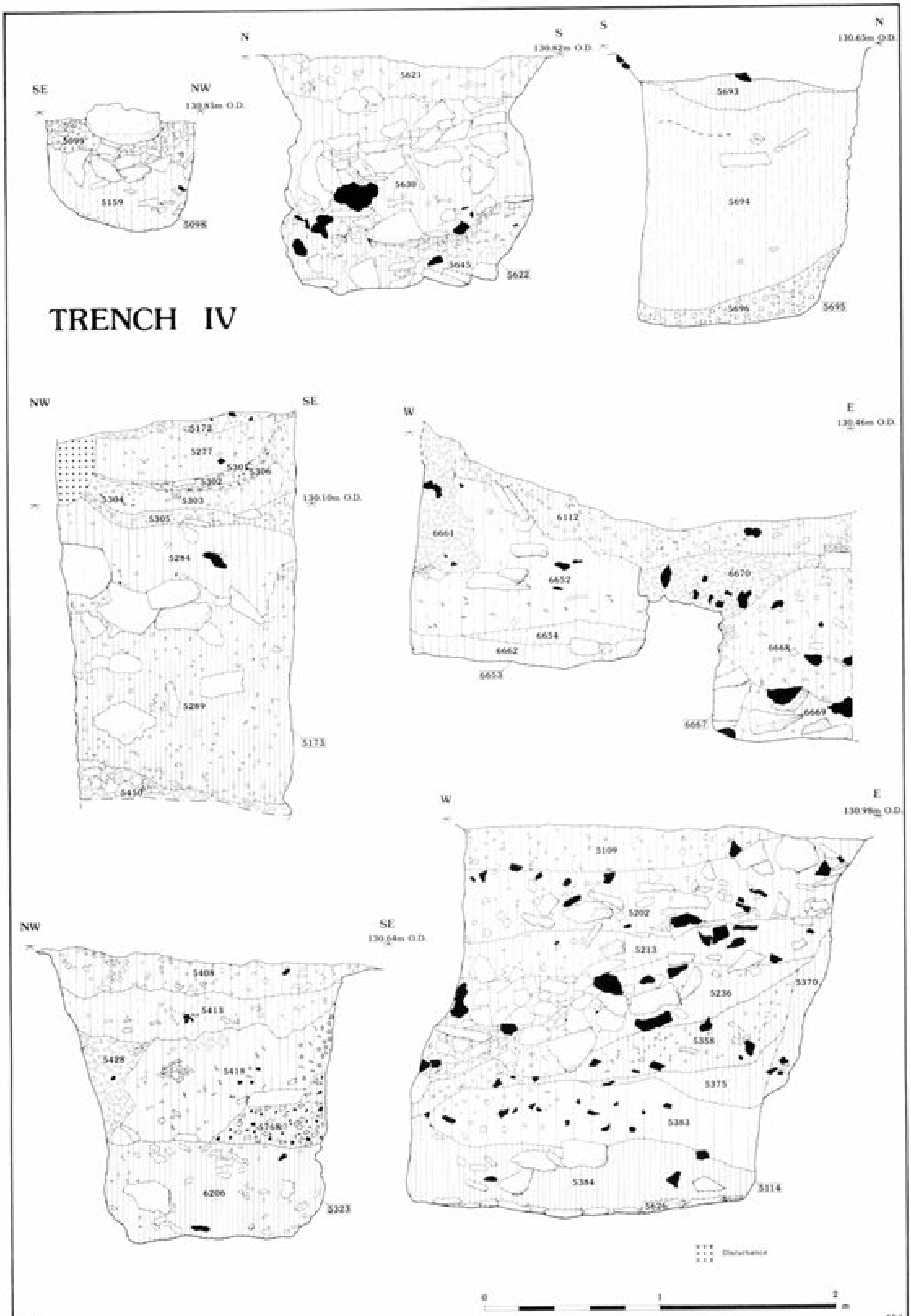


Fig 89 Trench IV: miscellaneous pit sections, of various phases

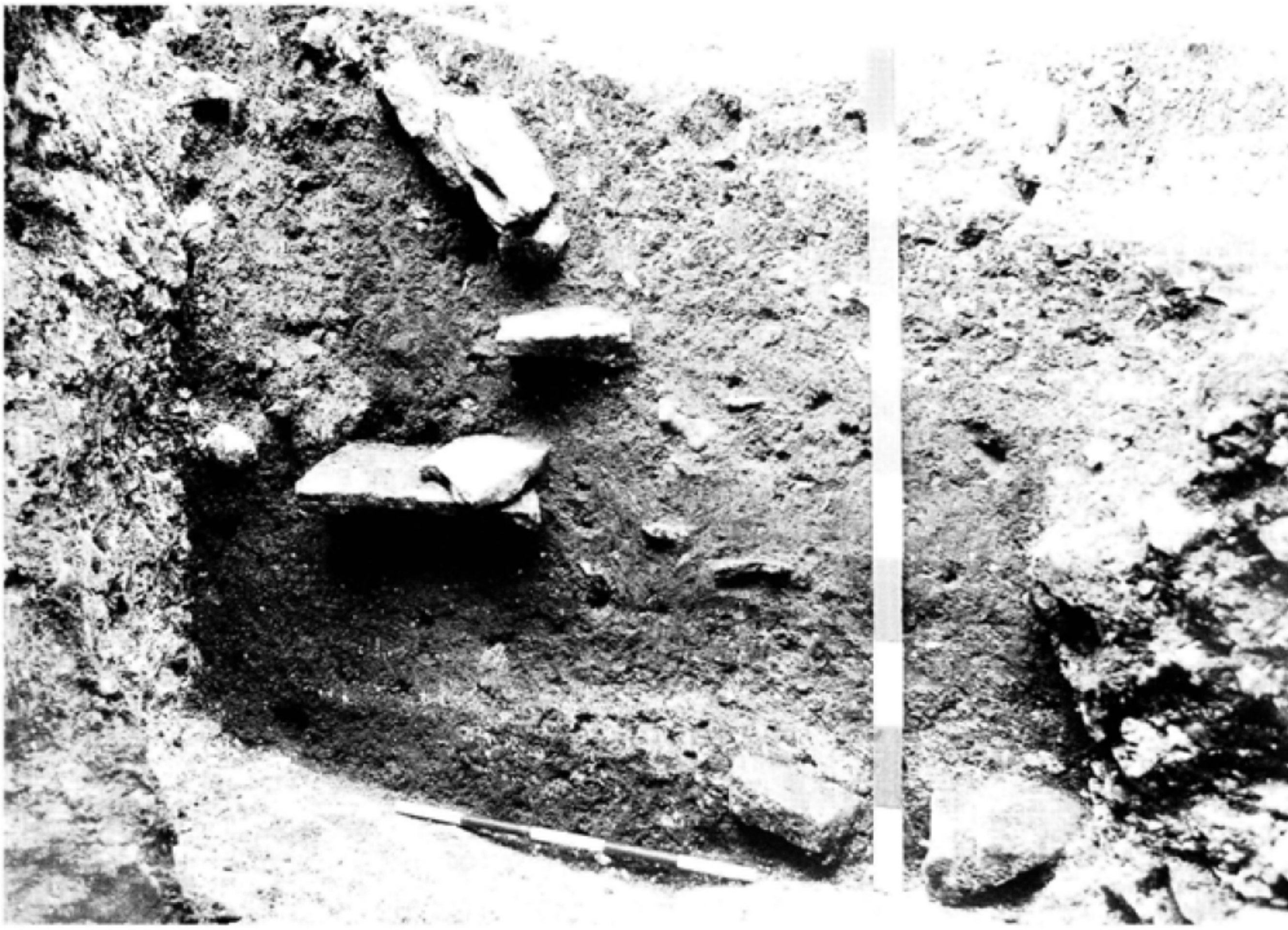


Fig 90 Trench IV: the section through pit 6653, showing the clay lining, phase 6F

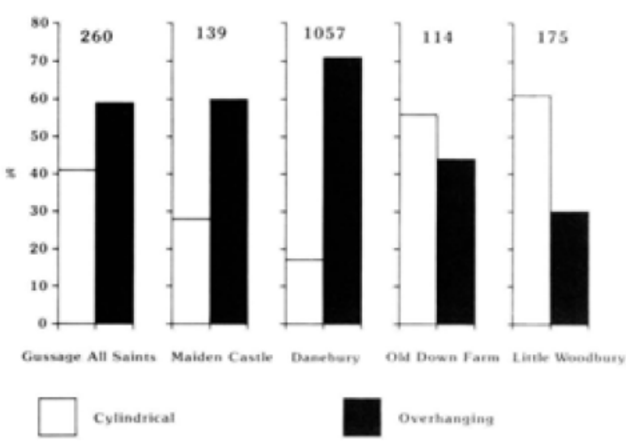


Fig 91 Histogram of the pit profiles from various sites

group consuming it. If hillforts are going to be regarded as possible defended grain stores at the centre of regional territories (Cunliffe 1976, 347), then this brings into the argument topics such as reciprocity and redistribution (Gent 1983). It also highlights another problem in the calculation of population based on the total volume of grain stored. The smaller and less defended settlements, such as Old Down Farm (S Davies 1981) and Little Woodbury (Bersu 1940), may have sent much of their grain, especially that which was surplus to requirements, to the nearby hillfort, and thus the total volume of available storage is less than the total amount of grain produced by the population of the settlement. Conversely, the total volume of available storage in a hillfort is greater than the amount of grain produced by the population of the hillfort. Although this is self-evident and has been pointed out by others (eg S Davies 1981), another twist lies in the identification of settlements with enhanced territories. Are all hillforts to be regarded as having a centralised grain storage function, and can smaller defended settlements also have an enhanced territory?

The minimal excavations on the interior of Maiden Castle are unlikely to provide the answers to these questions, but they do enable us to examine other aspects of social organisation. It has been argued above that variations in pit size could be adaptations to socio-economic criteria, rather than indications of functional diversity. A small pit was originally dug to enable the storage of a small amount of grain, rather than for a function other than storage. There are several reasons for storing grain in small quantities: perhaps this is the grain left over after all the existing larger pits have been filled, or perhaps it represents grain set aside for a specific event later in the year, or the seed corn for sowing an early crop; pits located close to houses may represent the storage facilities of individual households.

Spatial organisation

The question of pit location in relation to the spatial patterns of housing is highlighted by the recent excavations at Maiden Castle. The 53 pits recorded in trench IV were in three clusters (Fig 41). Clustering can also be observed in several of the trenches excavated by Wheeler (eg Site B, Wheeler 1943, plate VII). The clusters in trench IV do not appear to be successive and each cluster includes pits from all the phases in the trench.

There was no distinction within or between the clusters for factors such as profile or size. Clustering was not a result of pressure in terms of available land, unless there was spatial ordering of pit location. The areas used for the pits were limited, although the presence of the pits would not have precluded the use of these areas for other purposes, once the pits had been sealed.

The social forces which caused this clustering would seem to have been strong. Pits within clusters were often cut into earlier pits, and several clusters were situated in areas of friable subsoils, such as ditch fills or ramparts. On some occasions when pits cut into earlier pits, walls had to be constructed to prevent the fills of the earlier pit from collapsing into the later one. The cluster in the north-east corner of trench IV had two such examples of dividing walls and possibly a third which had subsequently collapsed. One was constructed with chalk blocks (Fig 94: 5074), similar to examples from Danebury, but the second (Fig 94: 5504) was a well-built wall of horizontal limestone slabs. The best parallel for this dry-stone walling technique on Maiden Castle is the stone-lined pit found on site Q by Wheeler (1943, plate CX).

Many Iron Age pits cut into the fills of the Bank Barrow ditches (eg Fig 57: 2272). The irregular profiles of some of the pits excavated by Wheeler indicate how much more easily they were eroded compared to pits which were cut into the natural chalk. In the recent excavations, some pits cut clay-filled solution hollows. The seal at the surface would have to be very effective, as a pit cut into clay acts as a pond (Reynolds 1974).

Further evidence of the dominance of the clustering factor can be found in trench IV. On stratigraphic evidence, some pits in the cluster adjacent to the eastern baulk predate the construction of a roundhouse in phase 6G (Fig 69). Others, however, postdate the house and are part of phase 6H (Fig 73). It is possible that some pits are contemporary with the house, but there is no way of demonstrating this. To the north-west of this cluster is an area which is devoid of pits, but which contains numerous postholes with no obvious patterning. This too may indicate the isolation of specific areas for specific activities.

The area excavated at Maiden Castle is too small for analysis of houses in relation to pit locations, but this has been done at Danebury (Whittle 1984, 134). The initial analysis of pit location during ceramic phases i and j (Whittle 1984, 134, fig 4.87) shows clustering of pits in relation to houses and, to a lesser extent, this can be seen in the 1977–8 area for ceramic phases j and l (Whittle 1984, 135, figs 4.89, 4.90). Whittle tentatively suggests that there may be a contrast between the interior and periphery of the enclosed area. The interior of the hillfort was used for centralised storage, assuming extended territories. The exterior, just inside the ramparts, would be characterised by storage facilities associated with individual structures. The evidence from Maiden Castle reinforces the second part of this suggestion, although it is still tentative.

It may be, however, that the apparent link between houses and storage facilities is based to some extent on evidence bias, as the area where this is seen (just inside the ramparts) is the only part where stratigraphy is preserved. Links between pit clusters and structures may have been eroded in the central parts of the hillforts, and certainly there are clusters of pits within the central part of Maiden Castle (eg Trench II/Wheeler Site A). Any attempt to phase pits which are not part of a stratigraphic sequence must be heavily dependent on the ceramic phasing and therefore open to a certain amount of overlap between phases. This problem of accurate phasing affects all aspects of discussion about pits, especially attempts to calculate storage capacity for any one phase. Shennan's (1981) multidimensional scaling analysis of the pits at Old Down Farm showed that the ceramic-based phase boundaries were fairly arbitrary and that the phases formed a continuum.

Pit fills

The fill of the pits varied considerably in character, such that little can be said of their nature without detailed examination of the artefactual and environmental finds within them. Pits ranged from those deliberately filled to those filled entirely by the natural collapse. Pit 5385 (Fig 94) had a completely homogeneous silt layer with many finds, which resulted from deliberate infilling, whereas pit 5061 (Fig 95) was filled by rubble and clay layers which had slumped in from the sides. The majority of the pits, however, had been subject to a combination of deliberate infilling and natural erosion. Unfortunately, it was not always possible to distinguish the two processes. When a pit was excavated through existing archaeological deposits, such as the quarry hollow in trench IV, the erosion of deposits into the pit was similar to deliberate infill. Conversely, some pits had been deliberately infilled with sterile chalk, presumably derived from the digging of an adjacent pit, which can be difficult to differentiate from natural infilling. As so many of the pits examined in the recent excavations were cut through the quarry hollow, it has been impossible to assess the frequency with which pits were deliberately

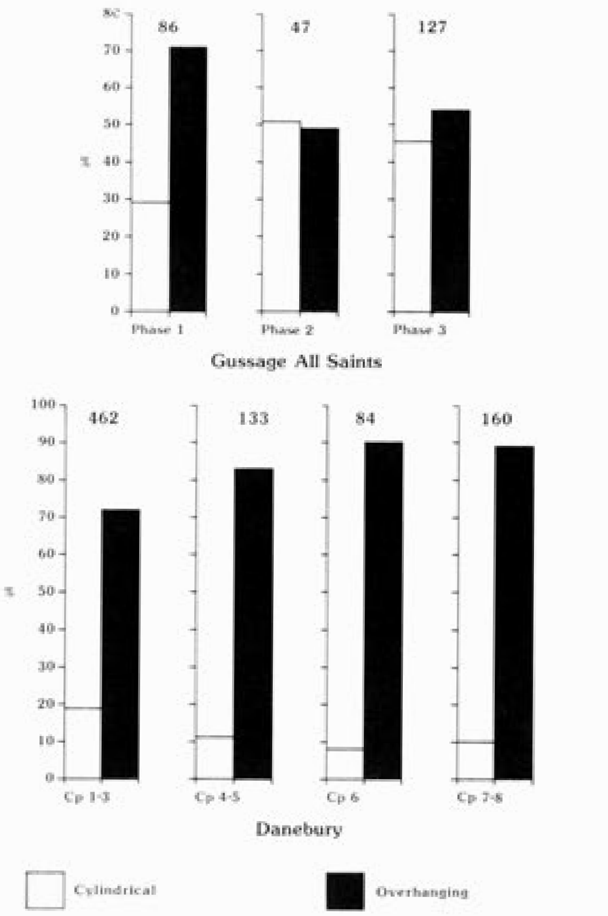


Fig 92 Histogram of the change in pit profiles in the different phases at Danebury and Gussage All Saints (after Whittle 1984 and Jeffries 1979)

backfilled. Most pits seem to have been intermittently used for rubbish deposition which suggests that they were left open, forming potential hazards, for some time.

There was no correlation of fill type with size, date, or position. It is also unlikely that the Late Iron Age levelling, suggested by Wheeler (1943, 58), ever took place. Most of the pits had a series of layers in the upper fills which represented the later occupation of the hillfort. These were present because the fill of the pit had subsided, causing the overlying occupation levels to sink into the pit and thus to remain protected from later erosion. It was, therefore, a post-depositional process unrelated to the filling of the pits.

Recent archaeological work on pits has focused attention on the primary fills as crucial to the understanding of function. This has been for two specific reasons: first, it has been suggested that the pits were cleaned by fire and, therefore, that refuse from any primary storage within the pits would survive on the base (Monk and Fasham 1980); second, it has been observed that there are often articulated remains of both animals and humans on the base of the pits which cannot be interpreted as simply rubbish deposits (Cunliffe 1983, 156–7; A Grant 1984a, 533–43; Walker 1984, 442–6).

A number of pits, in particular 5338, had distinct charcoal-rich, ashy deposits on the base, below layers formed by the erosion of the pit sides. This would suggest that a fire was started almost immediately after the pit had been abandoned. It is not necessarily the case, however, that the fire was created to 'sterilise' the pit (Monk and Fasham 1980, 334), as this would only need to be carried out if the pit was to be reused. It is possible that a fire in the base of a pit was intended to burn rubbish. Hearths are known to occur after a pit has begun to infill, eg pit 5334 (Fig 94), and this could not be related to the original function of the pit. Consequently, it is only when pits have distinct assemblages of carbonised plants, as at Winnal Down (Monk and Fasham 1980, 333), that one can suggest the possibility

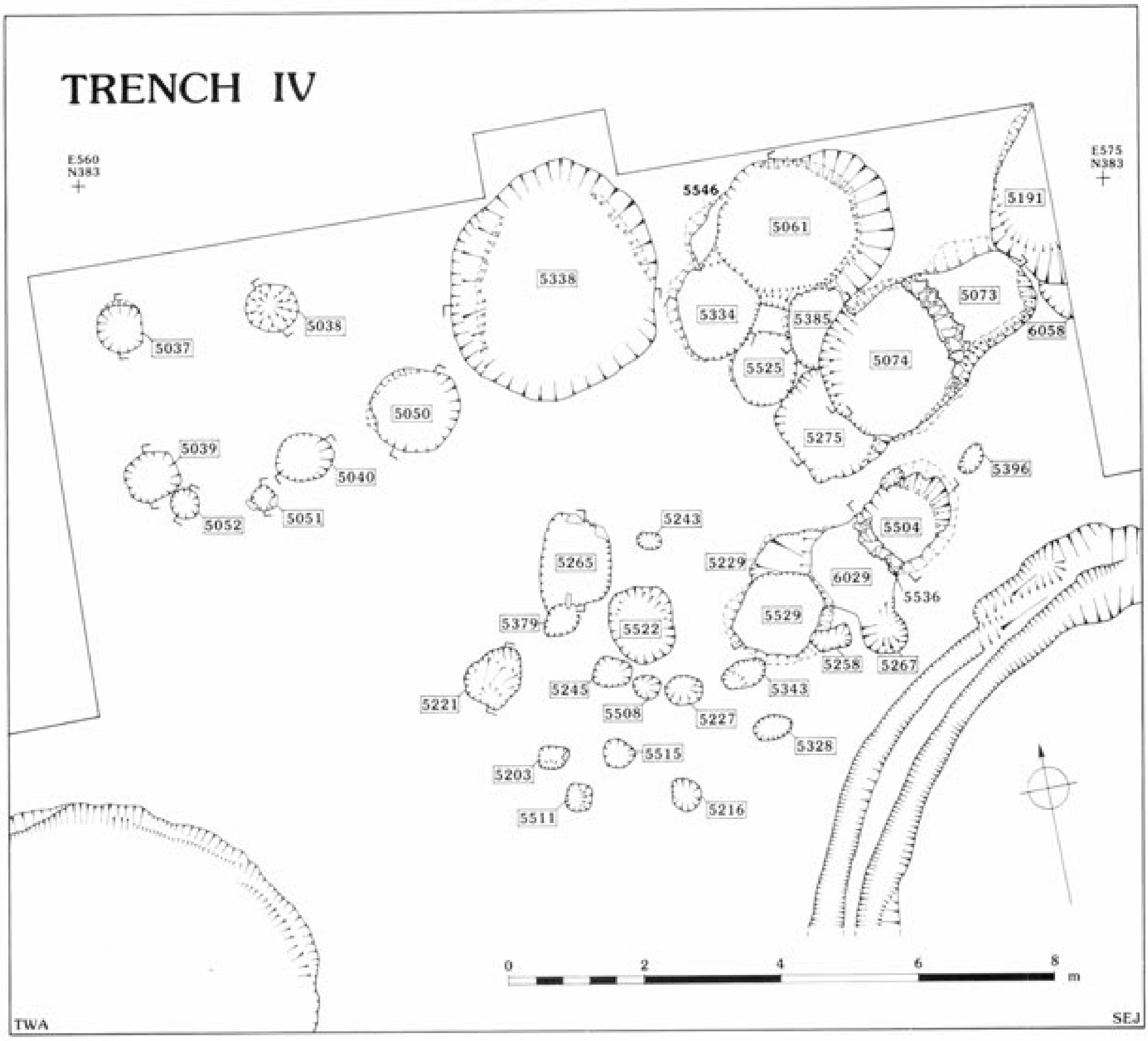


Fig 93 Trench IV: the northern half of the trench

that the remains of the material stored in the pit are present.

The discovery of only one articulated animal burial in the fill of a pit (6113; Fig 73) was disappointing given the relative frequency of burials in the storage pits at Danebury. This may be a feature at Danebury which is not widespread throughout Wessex.

Conclusion

Tentative support for the suggestions made by Whittle (1984) that studies of storage pits are useful in determining aspects of the socio-economic organisation of hillforts, both within the interior of the fort and beyond into the so-called 'extended territory', has been provided by the excavations. The use of clay linings/cappings has been verified, as has the use of small pits for storage. The size of the clay linings provides another variable to be considered in the estimation of population size from storage capacity.

The 'four-post' structures

The excavation of trench IV resulted in the discovery of three good examples of 'four-post' structures and one possible example. One of the three was in the north-west corner of the trench and unstratified (Figs 93 and 65: 6857). The other two lay adjacent to the rampart, were stratified below more than 1.5m of occupation, and belonged to phase 6E (Fig 65: 6859, 6858; Fig 68). The southern posthole (6454) of the eastern structure was stratified between the primary chalk rampart (6469, Wheeler phases 1–3) and the secondary clay and rubble rampart (6328, Wheeler phases 4), which is contemporary with the creation of the quarry hollow. The western structure is of roughly similar date. The remaining structure comprises two postholes to the north of the quarry hollow (Fig 65: 6860). If this structure were contemporary with the stratified 'four-posters', then the creation of the quarry hollow or the central house could have removed the pair of postholes forming the south side.

The size of the sides varies from 2m to 2.7m. The postholes are larger than those associated with any other structure (this was one reason for identifying the pair of postholes in the centre of the trench as a

Fig 94 Trench IV: sections of pits in the northern half of the trench

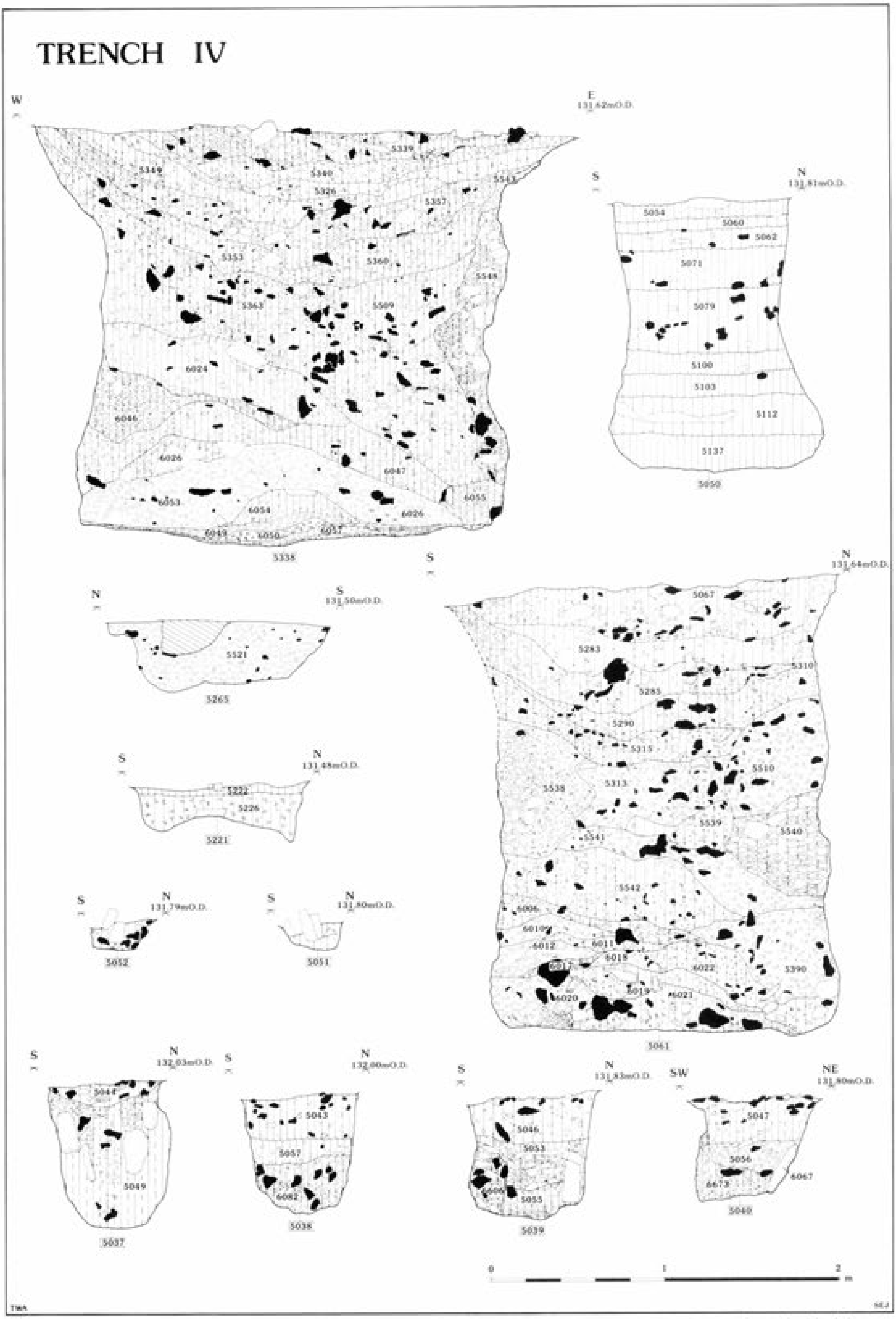


Fig 95 *Trench IV: sections of pits, hollows, and the postholes of a 'four-poster', 6857, in the northern half of the trench*

'four-poster'). The postholes range from 0.85m to 0.45m deep and from 0.9m to 0.55m in diameter. Large limestone and flint slabs were used as packing stones, and, in a few of the postholes, it was possible to distinguish a post-pipe, 0.2m to 0.35m in diameter (eg 5037, Fig 95).

Evidence for the destruction of the structures is ambiguous. All of the structures have evidence for the removal of posts by pulling them out (thereby disturbing the packing stones, eg 5039, Fig 95), and one of the posts in the structure in the north-west was dug out (no packing stones remained in the fill of the posthole 5038, Fig 95). Repeated recutting of the postholes of the structure in the south-west corner of the trench indicates that it was rebuilt at least once, and possibly twice, before it was destroyed.

It was occasionally possible to identify other post structures in the clusters of postholes excavated in trench IV. Pairs of postholes were present: 5052 and 5051 (Fig 93), adjacent to the south side of 6857, and 5317 and 5337 (Fig 73) in the cluster of postholes in the south-west corner of the trench, dated to phase 6H. It is presumed that other structures exist, particularly in the cluster in the south-west referred to above and in the unstratified cluster of postholes in the northern half of the trench (Fig 93). No obvious partners could be identified, as the postholes all have similar vague dimensions and are without distinctive fills.

It would be possible to search through the postholes exposed in Wheeler's excavations for patterns of association, as has been done with the unstratified postholes discovered in the interior of Danebury (Cunliffe 1984a, 87); certain obvious examples do exist (eg on the west side of trench B (Wheeler 1943, plate VII) and amongst the cluster of Iron Age A postholes in trench L (Wheeler 1943, fig 22)). It is felt, however, that, in areas of prolonged and varied occupation, the search for simple patterns is misleading, particularly when computerised techniques are used. It may be possible to find patterns, but these will only be the standardised patterns which can be searched for and not the irregular patterns that are likely to derive from occupation.

Conclusion

The evidence for the sequence of occupation in the extended hillfort has only been subject to a detailed analysis in the excavation of trench IV, and this trench will be the focus for the following discussion. It must be borne in mind, however, that the activity exposed in Wheeler's excavation of the interior of the eastern part of the hillfort and the eastern entrance provide evidence for the spread of occupation crucial to this discussion.

In the period immediately after the construction of the extended hillfort, the eastern area appears to be only sparsely occupied. Concentrations of settlement may be present, but the bulk of the structural activity consisted of the erection of 'four-post' structures which were built in a line immediately adjacent to the inner rampart. Such a position has been used to argue that these structures were fighting platforms or watch towers, but they were too closely spaced to make this a convincing interpretation. The more traditional argument that they were granaries is here preferred. The provision of large quantities of food would be necessary, if the defences of the hillfort were to be created in a short period of time by a substantial workforce.

The dismantling of the granaries was followed by the heightening of the inner rampart and the excavation of a large internal quarry hollow. Occupation was again sparse in the period immediately following this phase of activity, and it was not until the quarry had almost completely filled that occupation involved anything more than the dumping of rubble or rubbish. The paucity of domestic structures and occupation during this, the major period of rampart construction, is important and emphasises the degree of social reorganisation that was involved in the creation of the extended hillfort. Either the hillfort was not intended to be as densely occupied as it became, or it took a long time to uproot the settlements that surrounded the hillfort and relocate them in the space that had been set aside.

The disparate features of occupation at the end of the phase 6E were replaced by a dense cluster of houses, outside hearths, fence lines, and a set of permanent steps which provided access on to the refurbished rampart. The cluster of houses in phase 6F did not seem to be planned or conform to the layout of the hillfort. This may be because only a small area has been excavated, but it is also possible that there was a series of similar clusters scattered across the hilltop, representing extended families which have retained a modicum of social independence.

The phase 6G occupation is in marked contrast to the disorganised clutter that was present in 6F. There appears to be a period of abandonment between the two phases which results in the accumulation in places of over 0.20m of silt, probably deriving from the accumulation of weathered midden and occupation surfaces. This was followed by the construction of a row of houses situated about 15m behind the rampart. Three of these houses have now been excavated and they show a marked variation in form. The area between the houses and the rampart appears to have been divided and apportioned to individual houses. Activity within these allotments did not result in the plethora of features visible in the previous phase, but it included metalworking, which was largely the processing of sheet bronze scrap (see p160). This probably took place in the area excavated by Wheeler, trench D, perhaps immediately south of house DB2, but the debris from the activity was deposited over a much larger area.

It is likely that the construction of these houses took place in the period of maximum activity in the hillfort. Evidence from the excavation of trench B suggests that this occupation was divided into zones of activity by streets, although these streets are likely to have been laid out at the beginning of the occupation of the extended hillfort. The reorganisation of the occupation, in trench IV, was clearly a major event which suggests that the hierarchy that controlled the hillfort had increasing power over the fundamental structure of social life. The construction of regimented rows of houses may have been an attempt to break down the extended kinship ties of individual families and strengthen the importance of the larger urban community. The variability in house design, however, suggests that the identity of individuals had not been totally subsumed by a collective ideology and is a marked contrast to the situation at Danebury. The stratigraphy in the Danebury quarry hollow excavated in 1973–5 was similar to that at Maiden Castle, though the record is capable of more refined analysis due to the larger area excavated. It culminated in a late reorganisation of the settlement with a row of practically identical structures immediately adjacent to the rampart (Cunliffe 1984a, 166, fig 4.113).

The final phase in trench IV, phase 6H, involves the breakdown of this structured settlement and its replacement with a disorganised spread of occupation

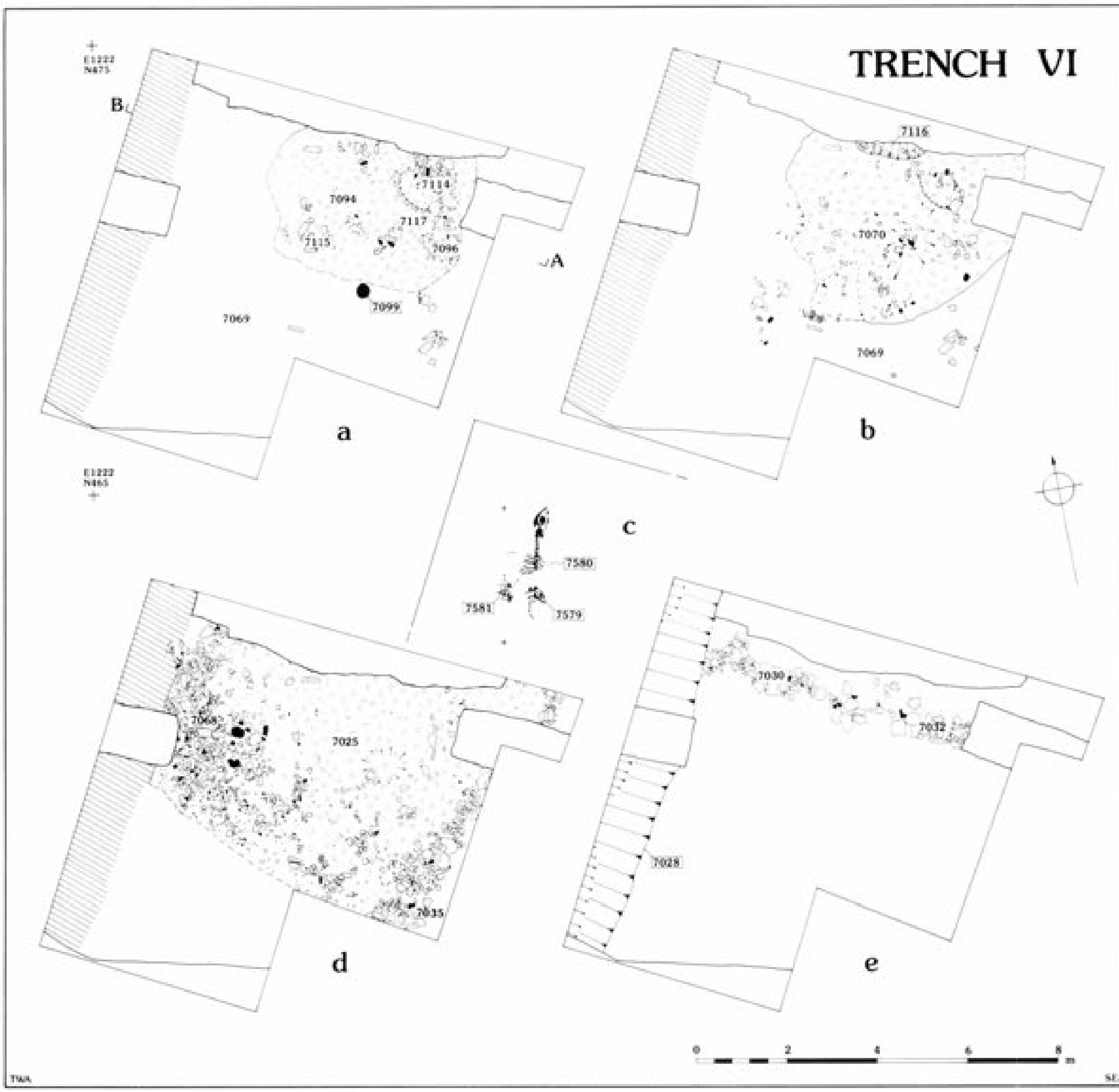


Fig 96 Trench VI: a) metalworking layer 7094; b) metalworking layer 7070; c) skeletons found lying between metalworking layer 7025 and the turfline 7024; d) metalworking layer 7025; e) a line of large chalk blocks which was sealed by mound 7023

features with only one partially convincing house (Fig 73: 6856). The density of features and the quantity and quality of finds recovered in this phase, however, clearly indicate that a considerable amount of activity was taking place in this area. Although this activity was not necessarily continuous, it must have lasted some time, as features are superimposed on each other and indicate marked changes of activity in some areas. It also overlaps with the phase of Late Iron Age occupation identified in the eastern half of the hillfort.

This breakdown in the structure of the occupation in the hillfort is a feature which can be compared with the abandonment of hillforts which takes place in much of southern England outside Dorset (Bradley 1984a, 53). It is in fact one of the features which defines the Late Iron Age. It suggests, therefore, that the sequence in Dorset is not as atypical as has been suggested by some authors (eg Darvill 1987, 172). There is, however, a refurbishment of the ramparts during this period which would be a very unusual feature in hillforts in Hampshire.

The sequence summarised here is based on a very small sample of the interior of the hillfort. It is likely, therefore, to be an oversimplified version of the sequence which would be exposed by more extensive excavations, and even that would be a very partial view of what must have been a complex pattern of occupation. The significant changes seem to be a movement from an early period of sparse occupation to dense settlement which then became reorganised into a systematic pattern of streets. This settlement breaks down in the last century BC and is replaced by a more disorganised occupation. This simple sequence can be paralleled at Danebury (Cunliffe 1984a), though there the hillfort is abandoned after the settlement is reorganised.

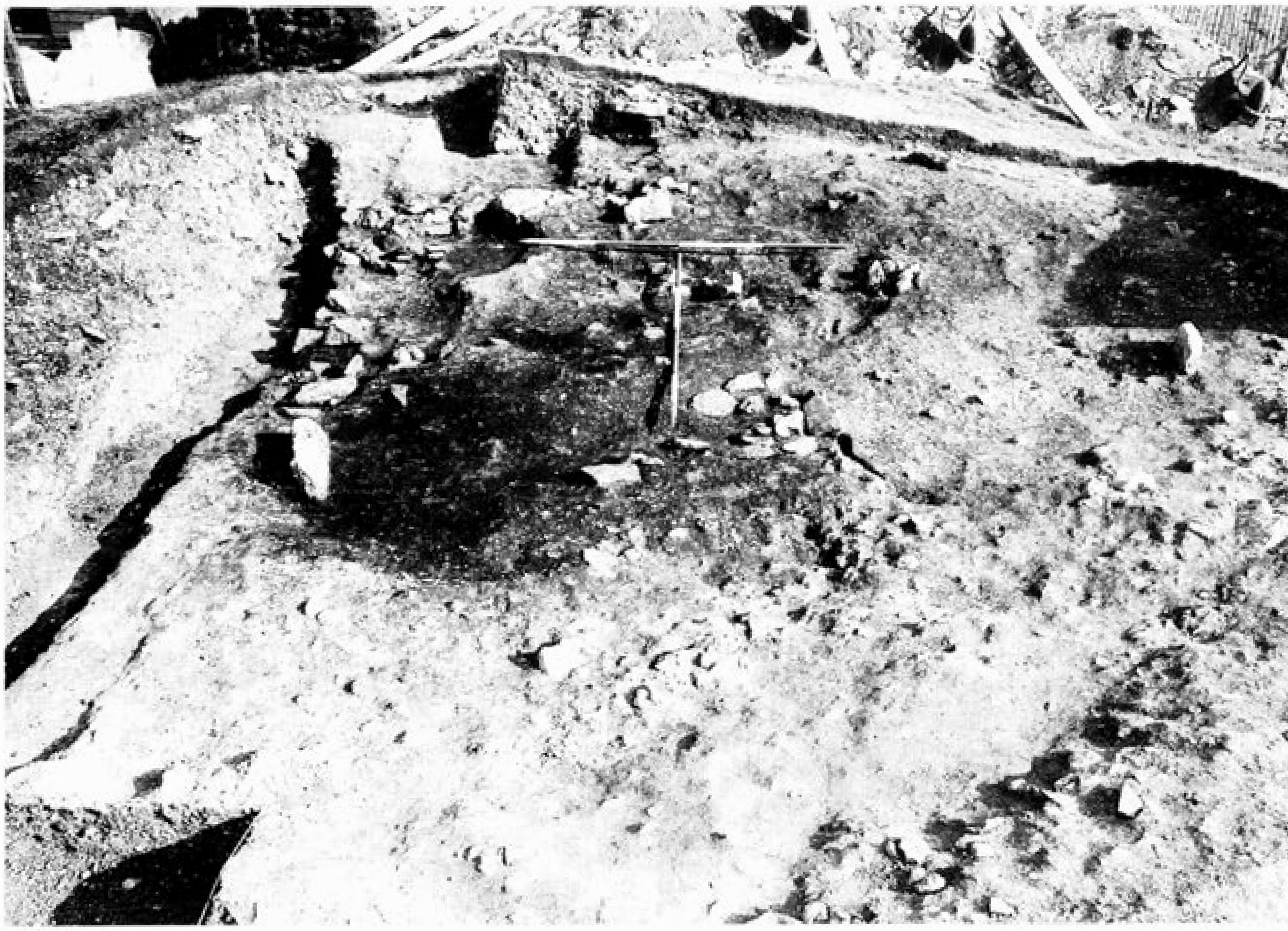


Fig 97 Trench VI: metalworking layer 7070 before excavation

Phase 7: Late Iron Age occupation

The Late Iron Age occupation of the hilltop is difficult to separate from the hillfort occupation, because in Dorset there was apparently no major change in the material culture which was similar to that occurring in the areas to the east. Nevertheless, the excavations clearly indicated that there was a major change in the nature of the hilltop occupation during this period, as domestic occupation extended across features which were essential in defining the structure of the hillfort occupation. This is most notable in the development of occupation in the outworks of the eastern entrance. A similar breakdown in the organisation of settlement in the western half of the hillfort occurs between phases 6G and 6H, and it is likely that some features in phase 6H are contemporary with activity in phase 7, trench VI. It is, however, clear that the hillfort was not totally disregarded, as the rampart was refurbished during this period.

The Late Iron Age occupation exposed in the excavation of the centre of the early hillfort (trench B, L, Q) was not extensive. The main feature was a circular building exposed in trench L (Wheeler 1943, pl XX). This sat astride a street which appeared to have been abandoned in this period and comprised a circular stone wall, 8–9.5m in diameter, with an internal post-ring. The construction of a later Roman building in the centre of this structure unfortunately destroyed much of the evidence for its use. Occupation material contemporary with this structure was found spread across the rest of trench L, but only one other feature, a hearth, was identified (Wheeler 1943, 127).

In the northern half of this area, trench B, evidence for Late Iron Age occupation is very sparse, comprising a single pit and the grave of a child. Considerable quantities of Late Iron Age ceramics (Wheeler 1943, fig 73–5), however, were recorded from occupation layers in this trench. Wheeler also suggested that the road across the northern end of trench D was metalled or remetalled during this period, although the dating evidence for this was not made clear. Nevertheless, it is clear that occupation in this area of the hillfort was seriously reduced in the Late Iron Age. The position of the house indicates that the main routes which structured the hillfort occupation were abandoned.

The smaller trenches in the interior of the hillfort contained a scatter of features of Late Iron Age date. The recent excavations revealed features and ceramics of indeterminate Late Iron Age occupation in trench I and, as has been noted (see p72), some of the features of phase 6 in trench II and IV could date to this period. There was, however, no evidence for Late Iron Age occupation in trench III.

The eastern entrance

The bulk of the evidence for the Late Iron Age occupation of the hilltop is concentrated in the trenches dug in the eastern entrance of the hillfort. The evidence indicates that the hollow-way entering the hillfort was metalled for the first time in this period and that it was resurfaced at least twice. Stratified coins and ceramics provide good dating evidence for these surfaces. The road was then sealed by the collapse of the limestone revetments of the rampart terminals. This was dated to the Roman conquest by Wheeler (1943, 119), as it is sealed by a road surface containing Samian ware of pre-Flavian date. The recent excavations, in trench V, exposed five road surfaces, but only a small area was examined and dating evidence was absent.

In front of the gateways of the hillfort, there was considerable activity during this period. The area immediately behind the inner hornwork appeared to have acted as a settlement focus and there was evidence for at least four circular houses. These houses were sealed by a thick layer of ash, which Wheeler associated with the Roman attack on the fort, but which could be derived from industrial activity identified, in trench VI, immediately in front of the gates of the fort.

The Late Iron Age sequence exposed in trench VI comprised four stratified occupation levels in a hollow over the backfilled ditch, between the gates of the eastern entrance (Figs 42, 96, and 97). The occupation commenced with the construction of a house (Wheeler 1943, 116), but the recent excavations did not involve a detailed examination of this structure. A central hearth, similar to the clay hearths in phase 6, trench IV, was exposed and sampled for an archaeomagnetic date. The result was AD 50–110 (AML-8650299) which provides a *terminus post quem* for the later occupation. This is perhaps a bit later than would be expected for this context: Wheeler had suggested that the house belonged to the 'Iron Age B' occupation.

The house was sealed by a layer of rammed chalk, acting as a foundation for the later occupation which was dominated by ferrous metalworking activity. Three distinct layers of activity were identified (Fig 96: 7094, 7070, 7024), but it is unlikely that these were separated by any prolonged period of abandonment. These layers are discussed in detail in the ferrous metalwork report (see pp168–70) and will only briefly be summarised here. The layers were distinguished by large quantities of charcoal and slag and were sharply defined to the west, south, and east (and truncated by Wheeler's excavation to the north). The lowest layer was the smallest, *c* 4.6m × 3.2m, and the upper layer was the most extensive, 6.6m × 5.8m. Several features within these layers could be the remains of hearths and structures associated with the metalworking activity. All three layers seem to be the result of secondary ironworking processes, including welding and forging.

The final layer was defined by limestone slabs on the east and west sides (Fig 96, d). The line of slabs on the east side clearly represented a robbed-out wall, but, due to the restricted area of the excavations, it is not clear whether this was a more extensive structure unrelated to the metalworking activities. The rubble layer on the west side was truncated by a ditch, 1.0m deep, which separates the metalworking area from the rampart. This ditch must have been dug very late in the Iron Age, and it is possible that it was connected with the Roman invasion. Certainly, there is little occupation in the area until the later Roman period, and a stone-free silt (Fig 98: 7024) which seals the occupation layers may represent a turf-line developed during the early Roman period. The silt contained the skeletons of two partially articulated cows and that of a sheep (Fig 126).

The charcoal layer over the structures behind the inner hornwork was cut by the graves of the 'war cemetery'. These graves were part of an extensive cemetery which was divided into an area inside the inner hornwork referred to as the 'war cemetery' and an area outside. It is possible, however, that this division is a product of the areas excavated and a more appropriate division might be between the graves around the northern access and southern access through the entrance. It should also be emphasised that the number of burials in the 'war cemetery' that demonstrably met a violent death was less than half. The date of the cemetery was the transition between the Late Iron Age and early Roman period, but need not necessarily be connected with the Roman conquest.

Although the excavation of this cemetery was incomplete, it remains the most extensive and detailed examination of a Late Iron Age cemetery in southern England and so deserves some comment. A detailed examination of the Durotrigian burial traditions by Chambers (1978) indicated that the 'war cemetery' burials exhibited a refinement of the typical pattern. The general orientation of Durotrigian burials was in an easterly direction, and burials were normally placed on their right-hand side in a crouched position. In the 'war cemetery', there was a distinct preference for a south-easterly orientation and a supine position. These were features which were found associated with males between 20–30 years of age and, as this type of burial predominated in the 'war cemetery', the pattern seems to indicate a Durotrigian tradition which emphasised age and

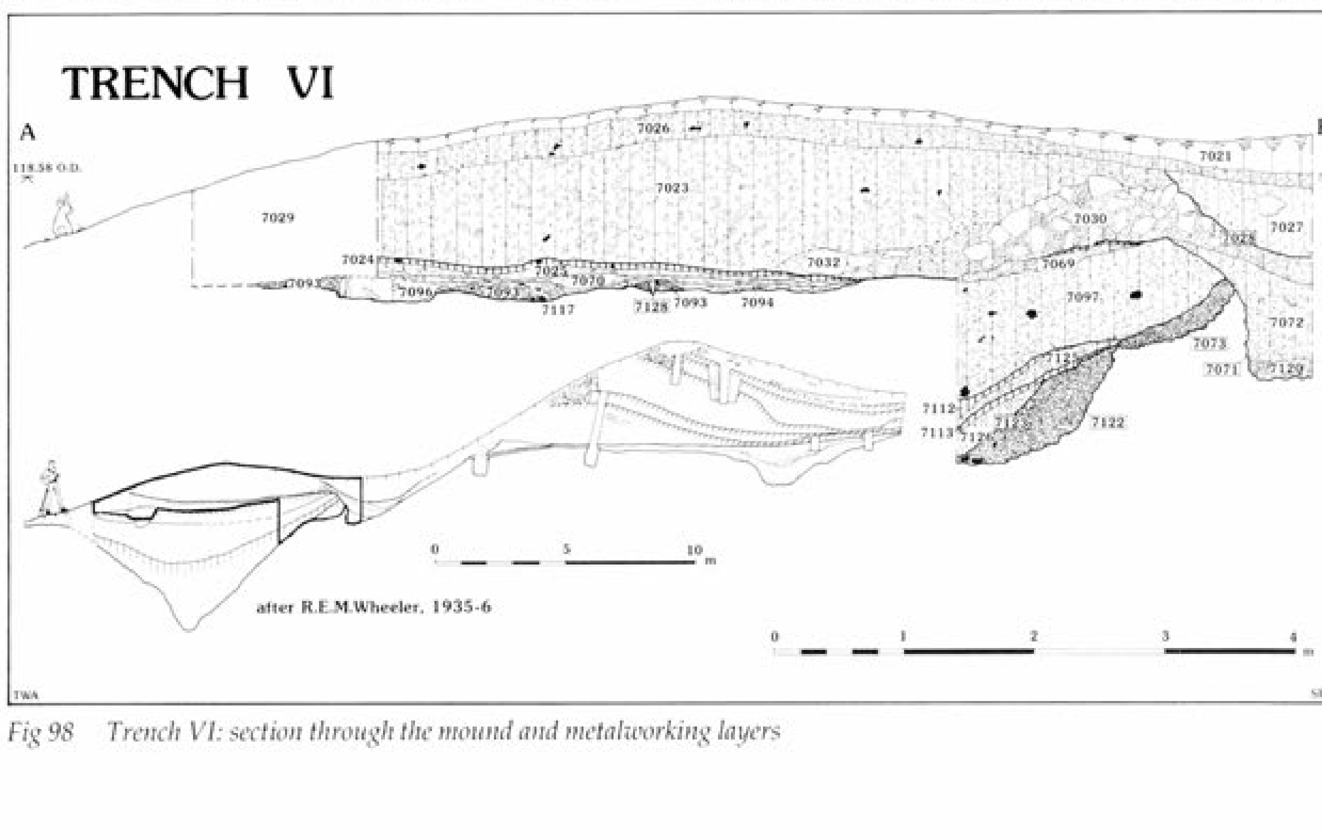


Fig 98 Trench VI: section through the mound and metalworking layers

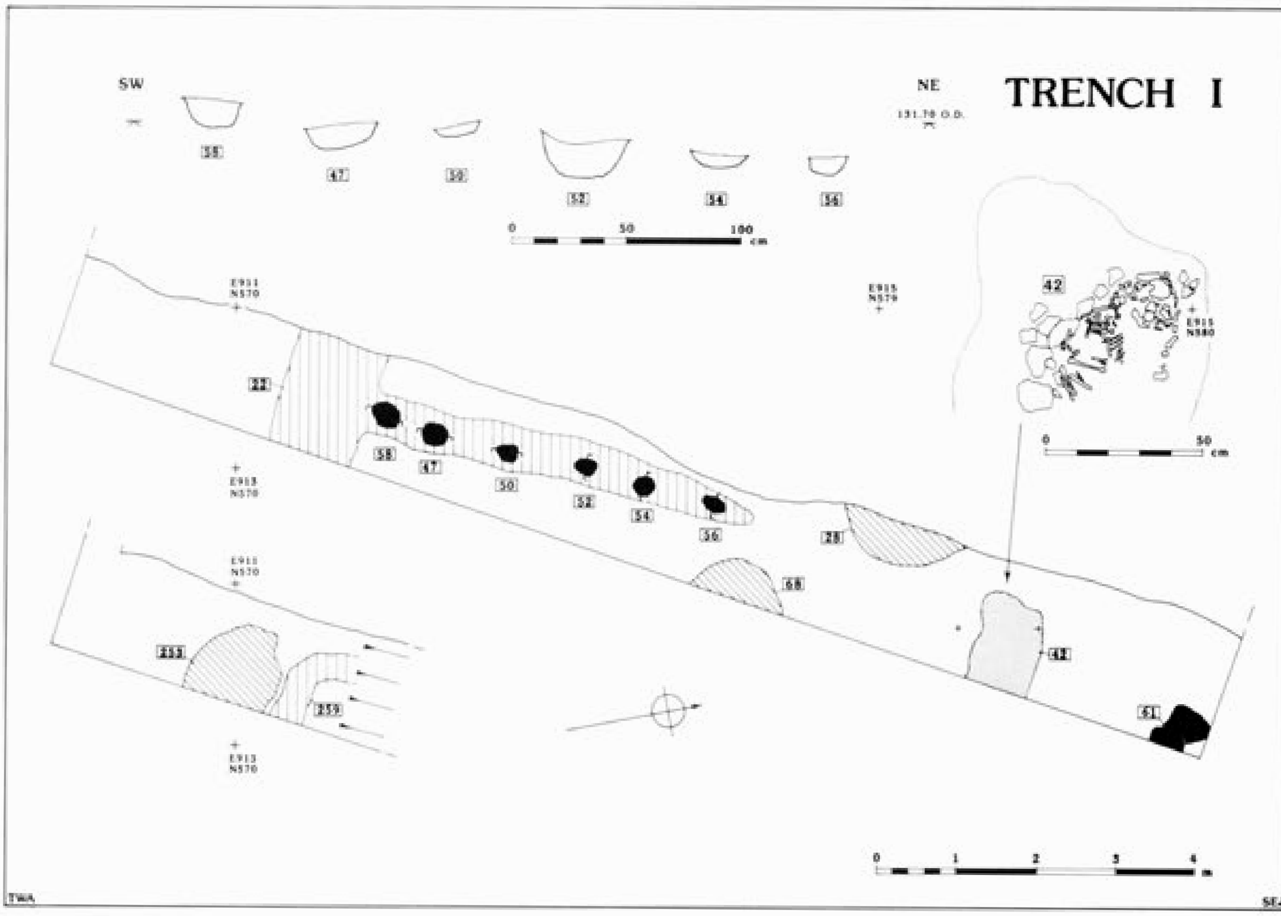


Fig 99 Trench I: features of Roman or immediately pre-Roman date which cut the top of the Early Iron Age rampart

gender divisions. This age group would be that normally associated with warfare and it is, therefore, not that unexpected to find evidence for this. It is noticeable that at least four individuals had evidence for healed wounds, which could not be explained in Wheeler's picture of the Roman conquest.

The 'war cemetery' also had an unusually large number of burials with rich grave goods and double burials, particularly in comparison with the cemetery outside the inner hornwork. The presence of a large number of double burials was also unusual. There were no female/female burials: half were male/male and the other half were male/female burials. One of the male/female burials was of a female aged 25–30 and a male aged 40–50.

It would appear then that the burials of the 'war cemetery' are definable as a group distinct from the average Durotrigian cemetery, but with the careful positioning of the body which conforms to Durotrigian burial practices. The 'slovenly character, betokening haste and anxiety' attributed to these by Wheeler (1943, 119) was a subjective impression which conveniently suited the historical interpretation applied to the evidence.

Phase 8 and 9: the Roman occupation

The present excavations were not designed to examine the post-conquest occupation of the hilltop and consequently any prolonged discussion of the early, late, and post-Roman occupation of the hilltop would be inappropriate in this volume. Nevertheless, during the excavation Roman features were discovered in several of the trenches, and these need to be mentioned because of their relevance to our understanding of the occupation during these periods.

The most important concentration of early Roman activity was in trench I. A variety of features immediately under the turf belong to this period or the immediately preceding Late Iron Age occupation. They included two pits, the grave of a child, and the remains of a building (Fig 99). The latter is the most interesting feature, consisting of a gully cutting across the trench from west-north-west to east-south-east with a slot running off it at right angles. At the base of the slot, running down the centre of the trench, there were the impressions of six postholes. Although only a very small area was examined, it is possible to interpret this feature as a rectangular building with an internal partition (the absence of a north wall could be due to differential erosion). Roman glass and ceramics in this feature were of first and second century AD date, but a more precise chronology is impossible because of the small quantity of material recovered. The burial (2001), of a child 3–6 months old, was crouched with the head oriented to the north-west, facing south-west, and associated with a small bronze bead. The remains of another child burial were found in the topsoil immediately adjacent to this burial.

The discovery of a rectangular building is important evidence of the nature of the hilltop occupation in the early Roman period. The traditional interpretation of the occupation in this period was of continuity of native settlement until the deliberate creation of the town of Dorchester, in the later part of the first century. This interpretation has, however, been challenged by Todd (1984b), who suggests that a military occupation is a more plausible interpretation of the evidence. It is clear from recent work that Roman military occupations of native fortifications are more frequent than had previously been imagined (Hod Hill (Richmond 1968) and Hembury (Todd 1984a) are the clearest examples) and that native continuity on these sites is largely an unproven assumption.

Rectangular buildings can be paralleled at Hembury (Todd 1984a, fig 8) and at South Cadbury (Alcock 1972, fig 10.20) and a military occupation is suggested as more likely. It should be emphasised, however, that a simple dichotomy between Roman and native may be an inappropriate level of analysis, as excavations at South Cadbury have shown that the situation is more complex. A native settlement, established in the abandoned hillfort, is replaced by a Roman military occupation sometime after the initial conquest (Alcock 1972).

The only other trench with extensive Roman deposits was trench

VI in the eastern entrance. In this trench, the Late Iron Age occupation was sealed by a turfline (Fig 98: 7024) which presumably developed in the early Roman period. On top of this layer was a large chalk mound (Fig 98: 7023), 7.2m in diameter and 1.1m in height. This had been interpreted by Wheeler (1943, 121) as a dump of soil which had been created by quarrying in front of the southern gateway in the late Roman period. This modification of the entrance was associated with the construction of the temple.

This hypothesis still seems the most plausible explanation for an otherwise meaningless feature. The mound contained a mixture of Romano-British objects, including Black Burnished I and pre-Roman material, but lacked any form of structure, with the exception of a possible turf revetment and a line of chalk blocks at its base (Fig 96: 7030, 7032). The mound was cut by a ditch (Fig 98: 7028) which followed the line of the Late Iron Age ditch at the base of the main rampart. There seems no particular clear reason for the excavation of this ditch, unless it was needed to drain water from the rampart away from the entrance in use.

In trench IV, pottery and small finds of Roman date were recovered. Most of these were found in the topsoil and the few pieces present in phase 6H come from the uppermost silt layers. As the bulk of material in these layers derives from the early prehistoric occupation, they have been placed in the Iron Age even though their formation may have been by gradual aggradation in later periods. There seems to be no feature which results from Roman or later activity in trench IV, and any Roman presence can be dismissed as negligible.

Radiocarbon dates

by J Ambers, N D Balaam, S Bowman, A Clark, R Housley, and N Sharples

Introduction

A total of 26 samples was submitted for radiocarbon dating. Of these, 10 were analysed using conventional liquid scintillation techniques at the British Museum and 16 were analysed at the Research Laboratory for Archaeology and the History of Art at the University of Oxford, using the Accelerator Mass Spectrometry facility. Despite the differences in the analytical methods used, conventional and AMS radiocarbon dates should be directly comparable.

The material submitted was all collected by hand during the 1985 and 1986 excavation seasons. Charcoal samples were taken from specific deposits recognised in the field; they were not extracted from the bulk samples taken for flotation. Samples were only submitted where it was felt that there was a secure link between the sample and the formation of the context in which it was located.

All of the samples measured were selected from the early prehistoric contexts. It was decided at the outset that no attempt would be made to use radiocarbon dating for the analysis of the Iron Age occupation of the site because of the problems involved in calibrating results from a period where the calibration curve is virtually flat.

Presentation

The results of all radiocarbon determinations from the site are given in Table 8. All results are quoted in the form recommended by Stuiver and Polach (1977) in uncalibrated years BP (before AD 1950) and corrected for measured $\delta^{13}C$ variation. Calibrations are given based on 1σ error terms, using the curves of Pearson *et al* (1986) and Method A of revision 2.0 of the University of Washington Quaternary Laboratory Radiocarbon Calibration Program (Stuiver and Reimer 1986; this uses the intercept method of calibration). Calibrated dates are quoted in the form recommended in Mook (1986), and the end points of the uncalibrated date ranges have been rounded to the nearest five years.

Sample pre-treatment and measurement

British Museum

Three of the samples (BM-2449, -2450, and -2453), all of oak charcoal, were cleaned by treatment with dilute acid and alkali washes to remove contamination. The other samples, all of reasonably well preserved bone, were treated with dilute acid to extract 'collagen' (here defined as the acid insoluble fraction of bone, rather than the true biochemical definition). Only the collagen fraction was dated. After pre-treatment, the cleaned samples were converted to benzene and analysed by conventional liquid scintillation counting (Ambers *et al* 1987).

Errors quoted are the counting error for the sample, combined with an estimate of the errors contributed by modern and background samples. This estimate includes both counting and non-counting errors, the latter being computed from differences in the overall count-rates observed among the individual backgrounds and moderns.

As part of continuing laboratory checking procedures, the sample used to produce result BM-2450 was counted a second time, giving the result BM-2450A. Since these two measurements are for identical material, it is justifiable to use a weighted mean of the two results: this is the result quoted in Table 8.

Oxford

Only one of the samples submitted to Oxford was of charcoal (again mature oak wood), all others being of bone or antler. The methods of pre-treatment used at the laboratory have recently been described in detail elsewhere (R Hedges *et al* 1989) and are briefly described by Housley in the fiche for Chapter 4.

The errors for each sample are quoted as one standard deviation and are the laboratory's estimate for the total error in the system, including the sample chemistry. This includes the statistical precision from the number of ^{14}C nuclei detected (usually the error for dates of less than 5000 years BP), the reproducibility of the mass-spectrometric measurements between different targets, and the uncertainty in our estimation of the contamination background. This background level is taken to be 0.5±0.3% of the oxalic standard (from the measurement of ^{14}C free material). Measurements of known age materials (tree rings) have given results consistent with our estimates of error.

Calibration

It has long been recognised that, because of variations

Table 8 Radiocarbon dates from Maiden Castle

	Radiocarbon result BP	*Calibrated BC age ranges based on quoted one sigma errors using the intercept method of calibration and the calibration curve of Pearson* et al *(1986)*	*Material*	*Context (SD)*	*Group no*
Enclosure ditches					
Inner primary fill					
BM-2449	5040±60	3960–3780	C	2169 (2170)	I
BM-2450	5030±40	3940–3780	C	2169 (2170)	
OxA-1337	5030±80	3960–3710	AB	560	
OxA-1148	4810±80	3700–3510, 3390	HB	140 (215)	
OxA-1144	4550±80	3370–3100	AB	554	
Inner secondary fill					
BM-2454	4830±60	3700–3530	AB	567	II
BM-2447	4800±45	3645–3520	AB	280 (283)	
OxA-1143	4730±80	3630–3370	AB	568	
BM-2448	4710±70	3620–3370	AB	298	
OxA-1147	4690±80	3620–3360	AB	98 (109)	
Outer primary fill					
OxA-1338	4930±90	3900–3890, 3810–3640	HB	324	III
BM-2451	4860±70	3770–3760, 3700–3540	HB	324	
OxA-1339	4740±80	3640–3380	AB	7014	
OxA-1340	4650±70	3510–3350	AB	7014	
BM-2452	4640±50	3500–3350	AB	324	
Bank Barrow ditch					
Primary fill					
OxA-1146	4650±80	3600–3350	AB	2209	IV
Pits cut into primary fill					
OxA-1145	4660±80	3610–3580, 3520–3350	Ant	991	
OxA-1349	4660±80	3610–3580, 3520–3350	Ant	851	IV
Secondary fill					
OxA-1576	4790±100	3700–3500, 3410–3380	AB	2268	IV
BM-2456	4720±100	3640–3370	AB	2263	
Bank between ditches					
BM-2453	14310±100		C		
OxA-1336	4570±80	3490–3110	AB	509 (511)	V
Enclosure ditch					
Inner final fill					
OxA-1142	4750±80	3640–3380	AB	541	VI
OxA-1141	4360±80	3090–2910	AB	529 (530)	
Bank Barrow ditch					
Final fill					
OxA-1341	4460±80	3340–2930	C	984 (985)	VI
BM-2455	3470±70	1890–1690	AB	954 (983)	

Note:
C = charcoal Ant = antler AB = animal bone HB = human bone

in the cosmic ray flux in the upper atmosphere, the rate of production of ^{14}C is not constant and therefore radiocarbon dates are not equivalent to calendar dates and must be calibrated in some way. Until comparatively recently, there has been no international agreement on which of the many available calibration curves should be used. Many archaeologists have therefore taken refuge in the use of uncalibrated radiocarbon dates to produce approximate relative chronologies for their sites. However, the radiocarbon year is not a true unit of time, but varies in length. Such relative chronologies are therefore inappropriate, where there is an agreed calibration system available.

In 1986, two new high-precision calibration curves (with error terms of less than ±20 years) were published. The importance of these curves lies in the fact that they are consensus values from two high-precision laboratories, Belfast and Seattle, using different measurement techniques and different tree species from different geographic regions, and that their individual results agree within the quoted error terms at all points of the calendar scale between AD 1950 and 2500 BC. These consensus curves (Stuiver and Pearson 1986; Pearson and Stuiver 1986) are internationally recom-

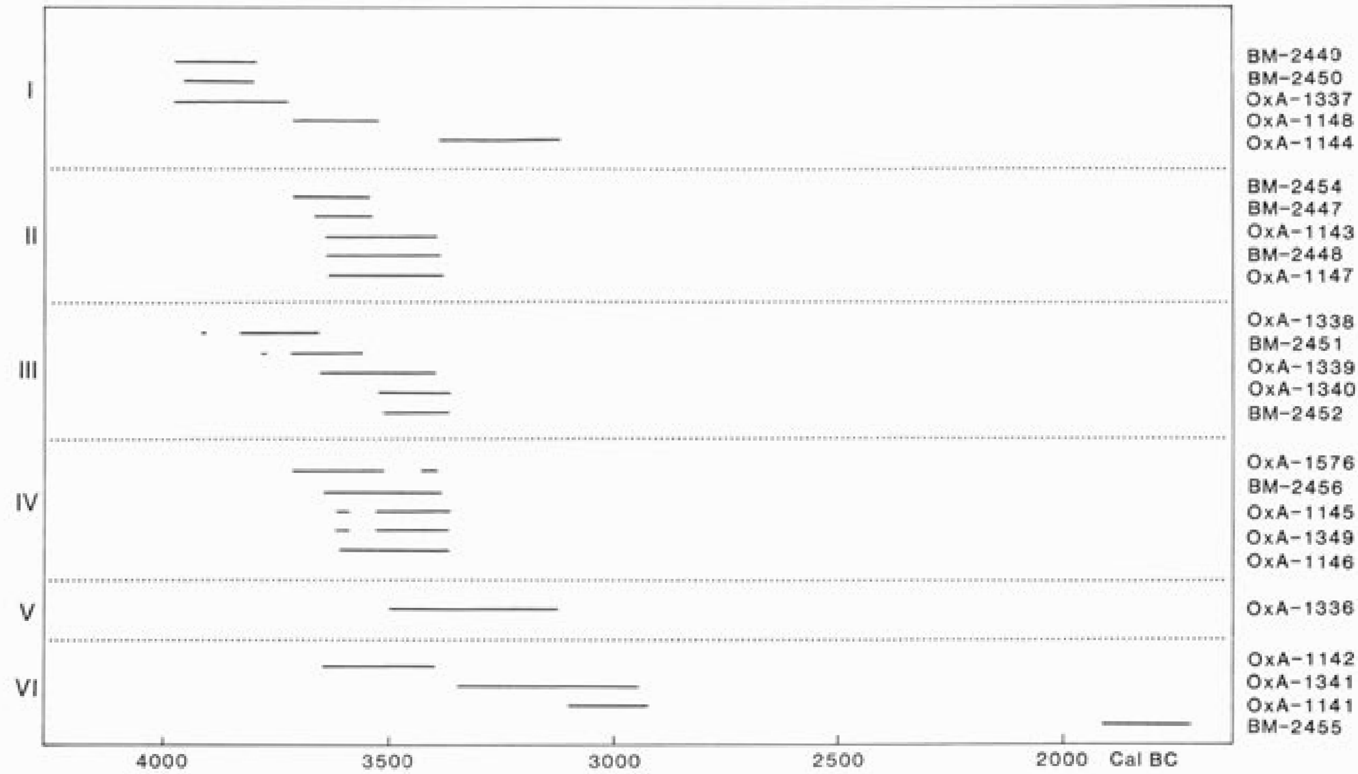


Fig 100 Diagram to show the distribution of radiocarbon dates

mended for use in calibrating radiocarbon results for the period AD 1950 to 2500 BC. In addition, the Belfast laboratory has published a high-precision curve back to 5210 BC (Pearson *et al* 1986). This has yet to be independently verified and hence is not covered by the international recommendation, but, given the close agreement between Belfast and Seattle for the period to 2500 BC, its use for calibration back to 5210 BC is clearly justified.

Since the advent of these two high-precision calibrations, it is no longer acceptable to discuss chronology in terms of raw radiocarbon dates. The results of the radiocarbon analyses from this site are therefore discussed in terms of these recent calibrations.

Interpretation (NS and AC)

The simplest and best way to consider the implications of the Maiden Castle results is to examine the calibrations visually, supported by calculations using the methods of Ward and Wilson (1978). Figure 100 shows all the results (except for the obviously aberrant BM-2453) plotted as date ranges calculated for an error of one standard deviation. The results are arranged in six groups: the primary fills of the inner enclosure ditch (phase 2A/B), the secondary fills of the inner enclosure ditch (phase 2A/B), the outer enclosure ditch (phase 2D/H), the bank between the enclosure ditches (phase 2E), the primary and secondary fills (and associated features) of the Bank Barrow ditch (phase 3B/E/F), and the Late Neolithic occupation in the final fills of the Bank Barrow and enclosure ditches (phase 3C/D/G). These groups are based on the stratigraphic relationships observed during the excavations.

Five dates are from the primary fills of the inner enclosure ditch. Three (BM-2449, BM-2450, and OxA-1337) cluster between 3710 and 3960 cal BC, while the other two are significantly later. The latest date (OxA-1144) is later than the dates from the stratigraphically later secondary fills and cannot represent the primary occupation of the enclosure. The three early dates were from charcoal and bone low in the primary fills of the ditch, while the other date (OxA-1148) came from a human burial in the top of the primary fill (see Fig 51). The stratigraphic position therefore supports the chronological relationship of the results. The charcoal samples were mature oak, and it is possible that the results are from the heartwood of large trees which could be up to 200 years or more earlier than the occupation of the enclosure, but the presence of a contemporary animal bone date, from a sample (OxA-1337) showing no signs of prolonged exposure, suggests that these three dates reflect the early occupation of the enclosure. It is therefore possible that the enclosure was occupied at the beginning of the fourth millennium cal BC.

Five dates are available from the secondary fills of the inner enclosure ditch. These are all from animal bones associated with the layers of charcoal and artefact-rich midden. The dates are tightly clustered and lie between 3700 and 3360 cal BC. There is therefore a gap between the early group of dates from the primary fills and these midden layers. The date from the human burial in the primary fills overlaps with these dates and supports the suggestion (see p51) that it was a late insertion in the primary fills which might immediately precede the deposition of the midden layers.

The dates from the outer enclosure ditch are not clustered and the extremes of the one sigma limits range from 3900 (BM-2452) to 3350 (OxA-1338) cal BC. There is an overlap with the primary dates of the inner enclosure ditch, but most of the dates are contemporary with the dates from the secondary fills. The samples are all from the base of the ditch in a deposit sealed by the deliberate infilling. It is interesting to note that the two dates from human bone (OxA-1338 and BM-2451) are early and that the animal bone dates cluster at the end of the range. An elaborate interpretation of this pattern would be that the human bones represent earlier burials, which were placed in the ditch with fresh animal remains when it was deliberately infilled. Such complicated burial patterns have been used to explain deposits in chambered tombs (C Richards 1989) and would not be incompatible with the evidence from Hambledon Hill (Mercer 1980).

Five dates are available from layers early in the sequence of the Bank Barrow ditch fills and from pits which cut the primary fills. The extremes of the calibrated age ranges for these dates range from 3700 (OxA-1576) to 3350 (OxA-1145,-1349) cal BC. They overlap and are practically indistinguishable from the dates from the outer ditch and from the midden in the inner ditch of the enclosure (the samples were carefully chosen to avoid residual material from the use of the enclosure). It is likely therefore that the Bank Barrow was constructed soon after the deposition of the midden in the inner enclosure ditch. In trench I, where the enclosure ditch was sealed by the Bank Barrow mound, at the top of the enclosure ditch there was a thin, stone-free, soil horizon suggesting only a short period when deposition in the ditch ceased. It is not clear from the stratigraphy or the radiocarbon dates whether the infilling of the outer ditch was associated with the abandonment of the enclosure, the construction of the Bank Barrow, or an entirely separate event.

Two dates were associated with the construction of the bank between the enclosure ditches in trench II. One charcoal date (BM-2453) suggests that this bank was constructed in the Upper Palaeolithic – although our understanding of the origins of the Neolithic may be significantly in error, it seems reasonable to dismiss this date as archaeologically inappropriate for this context. The second date (OxA-1336) from animal bone suggests that the bank was constructed in the second half of the fourth millennium cal BC. This is compatible with the associated ceramics, but one date is not sufficient to associate this bank with the use of the enclosure or the Late Neolithic occupation.

Four dates are available from the Late Neolithic and Early Bronze Age occupation in the upper fills of the Bank Barrow and enclosure ditches. The samples are associated with a layer that resulted from a prolonged period of cultivation, so samples suitable for radiocarbon dating were rare and in some cases broken and eroded by this activity. It is not surprising, therefore, that one sample (OxA-1142) produced an Early Neolithic date which suggests that it was derived material. Two of the dates (OxA-1141 and OxA-1341) suggest that this phase of activity began in the fourth quarter of the fourth millennium. The fourth date (BM-2455) is much later, dating to the first half of the second millennium. This confirms evidence from the ceramics that the creation of these layers involved the mixing of material from up to a millennium of occupation, but it should not be used to suggest a continuous period of occupation or that the nature of the occupation did not change dramatically.

It is clear that the radiocarbon samples from Maiden Castle have provided a very good series of results. Only three dates appear to provide potentially misleading results: BM-2453 is archaeologically unacceptable for the context, OxA-1142 is probably from residual material, and OxA-1144 is 250 years later than other dates from the same context. The chronology the dates provide can be summarised in six points:

a the enclosure was constructed at the beginning of the fourth millennium between 3900 and 3700 cal BC

b a significant change in the nature of the activity at the enclosure occurred after 3700 cal BC, when artefact-rich midden layers were deposited in the inner ditch of the enclosure

c by about 3350 cal BC, the Bank Barrow was constructed

d during or between acts b and c, the outer enclosure ditch was filled in

e sometime after 3350 cal BC and possibly as late as 3100 cal BC the hilltop was reoccupied

f this period of occupation is visible until the beginning of the second millennium, but need not be continuous.

Archaeomagnetic dating

by A Clark

The only scientific dates available for the later phases of the hilltop occupation are three archaeomagnetic dates taken from hearths in phases 6 and 7. The dates, at the 68% confidence level, are:

Clay surface of hearth 6843, in phase 6H: 70–20 cal BC (AML-869999)

Clay surface of hearth 6841, in phase 6F: 200–150 cal BC (AML-8650298)

Clay surface 7124 of a hearth in trench VI, phase 7A: cal AD 50–110 (AML-8650299).

Full details of these dates are available in the fiche for Chapter 4. See also A Clark *et al* (1988, 649).

These dates are clearly insufficient to provide a chronology for the site, and the bulk of the dating evidence for the later prehistoric period derives from ceramics, a small number of chronologically diagnostic small finds, and comparison with similar sites in southern England. This information is summarised in the discussion section at the end of Chapter 6.

5 The environment and agricultural economy

Introduction

One of the most important objectives of the excavations was to recover details of the past environment of the hilltop and the agricultural economy of the inhabitants. These were the two principal areas where recent developments in archaeological techniques have led to a transformation in our understanding of the archaeological record. The information available to Wheeler was limited to a cursory examination of the major species of animals present on the site and some speculation on the influence of the environment on the buried soils which has since proved to be misleading.

The reports presented here are: soil micromorphology, molluscs, charcoal, carbonised plants, and animal and human bone (although the latter was a relatively insignificant assemblage). Other techniques were explored, but proved to be ineffective given the conditions on the hilltop (see Scaife, Chap 5 fiche, for a report on pollen survival). All of these reports provide important information on both the environment and the agricultural economy, but the reports on the soils and molluscs are largely concerned with the environment, and the carbonised plant and animal bones focus on the agricultural economy. The charcoal appears on the site as a result of the human activity, but tells us more about the environment.

Most of the basic techniques used at Maiden Castle are now relatively commonplace applications to archaeological problems and as a consequence do not warrant much discussion. The manner in which the results were analysed, however, was often innovative and produced insights that would not normally be available. The mollusc report has been considerably enhanced by the results of a study of the contemporary snail species on Maiden Castle and the broader overview which came from the analysis of the adjacent valleys. The data derived from analysis of the carbonised plants have been subjected to a range of statistical analysis and comparative approaches which, although rarely carried out in the British Isles, provide valuable insights into the nature of the environment and agricultural economy. Even the charcoal assemblage has benefited from a systematic approach which could be usefully transferred to many other assemblages of this ubiquitous material. Soil micromorphology is a relatively new technique which has only recently been extensively available to archaeologists, so the methods and results are given in some detail.

The recent work at Maiden Castle has undoubtedly transformed our understanding of the environmental history and agricultural economy of the inhabitants. It should be emphasised, however, that much work remains to be done. Many of the assemblages recovered during the excavations were only sampled for the analyses reported here (notably the animal bones and carbonised plant remains) and a substantial archive of accurately recorded samples is available for further study. This archive should provide new information well into the next millennium.

The archaeological soils and sediments

by R I Macphail

A pedological and micropedological study of the archaeological soils and sediments was carried out. There was a non-calcareous brown earth in the mid-Holocene which was altered by Neolithic activities, specifically woodland clearance and cultivation. Cultivation continued intermittently into the Bronze Age alongside domestic occupation. The Holocene soil was increasingly eroded, exposing the Pleistocene palaeosol and chalk in the Late Neolithic and Bronze Age periods. During much of the Bronze Age, there was a second stable phase of soil formation. From the Early Iron Age, occupation of the fort led to the accumulation of midden deposits.

Soil micromorphology

Kubiena, the pioneer in micropedology, expanded a geological technique, petrography, to the study of soils (1938). He overcame the technical problems of impregnating unconsolidated soils, so that they could be investigated in an undisturbed state as thin sections with the thickness of 20–30μm, necessary for their study under the petrological microscope. He used plane polarised light (PPL), crossed polarised light (XPL), and oblique incident light (OIL) to characterise the main soils of Europe and ascribed to each a fabric type that related to its genesis (Kubiena 1953).

The work of Kubiena (1938; 1953) was not only taken up by soil scientists, but was applied, specifically by Cornwall, to archaeological soils and sediments (Cornwall 1958). Cornwall and later Dalrymple (1958) used thin sections to study Quaternary sediments, soils, and archaeological deposits (eg Cornwall in ApSimon *et al* 1961; in Manby 1963; in Ashbee 1966), although the basis was interpretative rather than systematic. Later, Romans and Robertson (1975; 1983a; 1983b) used the technique to examine man's impact on Scottish soils.

During this period, there were several methodological and technological advances. Brewer's (1964) more sophisticated descriptive method took over from Kubiena, but it had the drawback of introducing so many new terms that it almost killed off the subject for non-specialists. Also Brewer's work (1964) was biased towards Australian soils, so that it was difficult for the layman to apply his methodology to European soils. The production of large thin sections (130×60mm), rather than the standard size of 20×40mm used by Cornwall, increased the area of soil that could be studied tenfold.

The publication of a *Handbook for soil thin section description* (Bullock *et al* 1985) introduced a universal

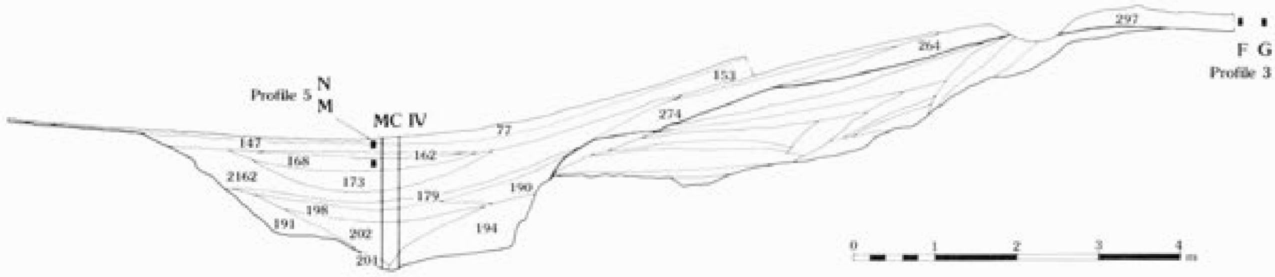


Fig 101 Simplified section of the early prehistoric deposits in trench I, showing the location of the soil micromorphology samples and the mollusc columns

system which has made the systematic description and interpretation of thin sections possible to the non-specialist. There are, however, difficulties for archaeologists when employing descriptive systems or interpretations based purely on pedology to solve archaeological problems (Goldberg 1983). This is not only as a result of man's complicated impact on soils, but because of the various materials and features produced by man and animals that can occur on archaeological sites (Courty 1982; Goldberg 1979a; Macphail and Courty 1985; Macphail 1986b).

Utilising the descriptive method of Bullock *et al* (1985), the experience of micromorphologists working in archaeology (Slager and van der Wetering 1977; Goldberg 1979b; Courty and Fedoroff 1982; 1985), and experimental results (Courty 1982), thin sections of archaeological soils and sediments can be described and interpreted. Much of the rationale for the technique is based on data from pedogenic studies and experiments in modern agriculture. Simply, geological materials are primary, whereas pedological effects upon them are secondary.

If the example of clay translocation to form an argillic horizon is considered, clay coatings can be described on a hierarchical basis. This has been demonstrated experimentally (Brewer and Haldane 1957; Theocharopoulos and Dalrymple 1987). It has also been employed to understand argillic soil development (Weir *et al* 1971; Langhor and Van Vliet 1979) and to identify clearance and agricultural effects upon soil translocation (Jongerius 1970; Kwaad and Mücher 1977; 1979). Part or all of the resulting fabric may be reworked physically (Bullock and Murphy 1979) or faunally (Fedoroff 1982; Courty and Fedoroff 1985). On this basis, a pedological sequence is described, then interpreted. The approach can be applied to any buried soil or archaeological deposit. The dating of soil microfeatures is also based upon the hierarchical nature of the fabrics, with, for instance, the presence of rubified or cryogenic fabrics being recognised as Pleistocene relic features in Holocene soils (Romans and Robertson 1974; Bullock and Murphy 1979).

Thus, micromorphology in the study of archaeological soils and sediments has distinct advantages over other soil science methods, in that it can reconstruct superimposed environmental and human effects (Valentine and Dalrymple 1976; Macphail 1986b). Other advantages are that undisturbed samples allow the arrangement of various particle sizes to be reconstructed and the type and location of soil constituents,

Table 9 The location of the soil micromorphological samples

Thin section	*Trench*	*Phase*	*Context*	*Material*	*Fig*
A	II			Pleistocene palaeosols	104a
B,C, D,E	II	1B/2E	435	Soil and overlying bank	104a–f
F,G	I	2B	292	Soil horizon underlying the Bank Barrow	105a
K,L J H,I	II	3D/4B	304 496/501 501/543	Soil horizon and the underlying causewayed camp ditch fills	105b,c
N M	I	4A 3C	77 168	Soil horizon and the underlying Bank Barrow ditch fills	
P O	III	3G 3E	813 812	Bank Barrow ditch fills	105d
Q	III	11C	808	Modern topsoil	
S T U V W	II	6B	738/737/736 733/729/727/726 722/721 714 713/712/710	Early Iron Age ditch fills	105e
R	IV	4D/6E	'6350'	Soil horizon and the overlying rampart	
X Y	IV	6G	'5264' '5263'	Quarry hollow fills	105f
RMi	II	6B		IA coprolite	
RMii		6B		IA daub	

such as calcium carbonate, to be identified. Thin sections can cross boundaries between soil horizons or archaeological layers, so that relationships between them can be more clearly understood.

The samples

Pleistocene superficial deposits and archaeological and modern contexts were sampled for soil micromorphology (Table 9; Figs 59, 101, 102, and 103). Soil profiles were described according to Hodgson (1974). Major sampling related to micromorphology, with 28 monoliths being taken from 42 contexts.

Restricted areas of *in situ* Neolithic soil (two adjacent profiles beneath the bank 509/434 and one profile beneath the Bank Barrow) were open for study. Under the bank (509/434), only small sections of the shallow soil were exposed. Using box monoliths (generally 75×60mm), the deepest example of the soil (three boxes: Fig 59, B, C, D) and a more charcoal-rich, but much shallower variant (one box: Fig 59, E) were sampled, providing 0.17sq m.

Under the Bank Barrow, a short length of buried soil, 80–110mm

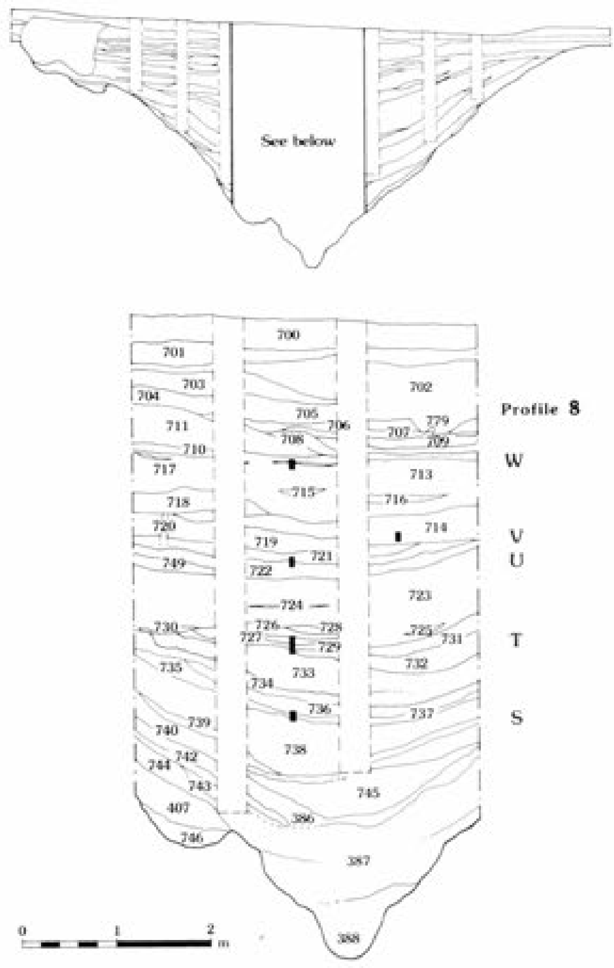


Fig 102 Simplified section of the Early Iron Age ditch in trench II, showing the location of the soil micromorphology samples

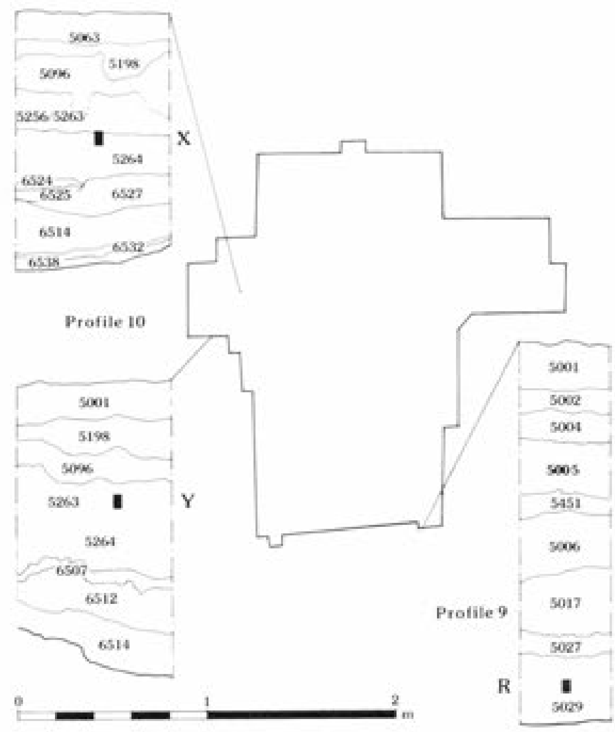


Fig 103 The location of the three soil micromorphology samples in trench IV

in depth, was sampled and studied in two thin sections (0.066sq m; Fig 101, F, G). Here, sampling is considered representative of the Neolithic soil, but very little was excavated compared with, for example, Hazleton long cairn (Saville 1984), where there was total removal of the monument (Macphail 1986a).

In the Neolithic ditches, specific contexts were sampled, including the top 400mm of the enclosure ditch fill in trench II (Fig 59, H, I, J, K, L). The stone-free zone (Bronze Age turfline) at the top of the Neolithic/Bronze Age ditch fills in trenches I, II, and III was sampled in three places, all from the central, lowest, and thickest part (Figs 59 and 101, L, M, N).

For the Early Iron Age ditch, five thin sections (up to 60×130mm; Fig 102, S, T, U, V, W) from 13 archaeological contexts were made. These contexts were considered likely to reveal information on the nature of deposition during the Iron Age and potentially could be contrasted with the *in situ* occupation sediments of trench IV (Fig 103, R, X, Y).

Monolith samples were air dried to rid the soil of water because of its deleterious reaction with the resin. Blocks were impregnated under vacuum with an acetone crystic resin mixture and left for at least two months to allow full impregnation by capillarity (C Murphy 1986). Samples were cured slowly under enhanced temperatures of 60–70°C. Blocks were cut and trimmed and taken to the Institut National Agronomique, Paris-Grignon, where they were sliced and made into thin sections according to the method of Guilloré (1985).

The 28 thin sections were successively observed from low (×1, ×3, and ×10), medium (×25 and ×40), to high (×100, ×250, and ×400) magnification, employing PPL, XPL, OIL, and ultra-violet light (UV). Each layer in each slide was described according to Bullock *et al* (1985) and a preliminary interpretation made (Chap 5 fiche).

Thirty-four bulk samples were taken in association with the box monoliths and elsewhere for grain size, organic carbon, loss on ignition, cation exchange capacity, hydrogen, nitrogen (Avery and Bascomb 1974), and magnetic susceptibility enhancement (MS: G Longworth and Tite 1977; Tite and Mullins 1971) analyses (Chap 5 fiche, Table 106). These were to corroborate or otherwise the interpreted microfabric features and to help the overall pedological comprehension of the site. Magnetic susceptibility assays were made to act as an independent check on anthropogenic influences, such as burning (G Longworth and Tite 1977; M Allen and Macphail 1987), and complement the geophysical/geochemical surveys (see pp37–42).

Results and discussion

Grain-size and chemistry are tabulated in the fiche for Chapter 5 (Tables 105–6). Selected field and micromorphological data and interpretations are summarised in Tables 10 (profiles 1 and 2), 11 (profile 3), 12 (profile 4), and 13 (profiles 5, 6, and 9), where interpretations allow the identification of 'pedo-zones' relating to successive environments and activities. Full soil profile descriptions and their preliminary interpretations are in the fiche for Chapter 5. Figures 104 and 105 illustrate some of the soils in section.

Pleistocene deposits and Neolithic/Bronze Age soils

Pedo-zone 1

Pleistocene deposits in profile 1 beneath a shallow Neolithic/Bronze Age soil consist of chalky involutions overlying mainly decalcified palaeosols (Table 10, thin section A; Chap 5 fiche, Tables 105–6).

Pedo-zone 2

In trench II, the Neolithic/Bronze Age soil occurs as a thicker variant directly on chalk in the north section (profile 2, Fig 59). Thin-section

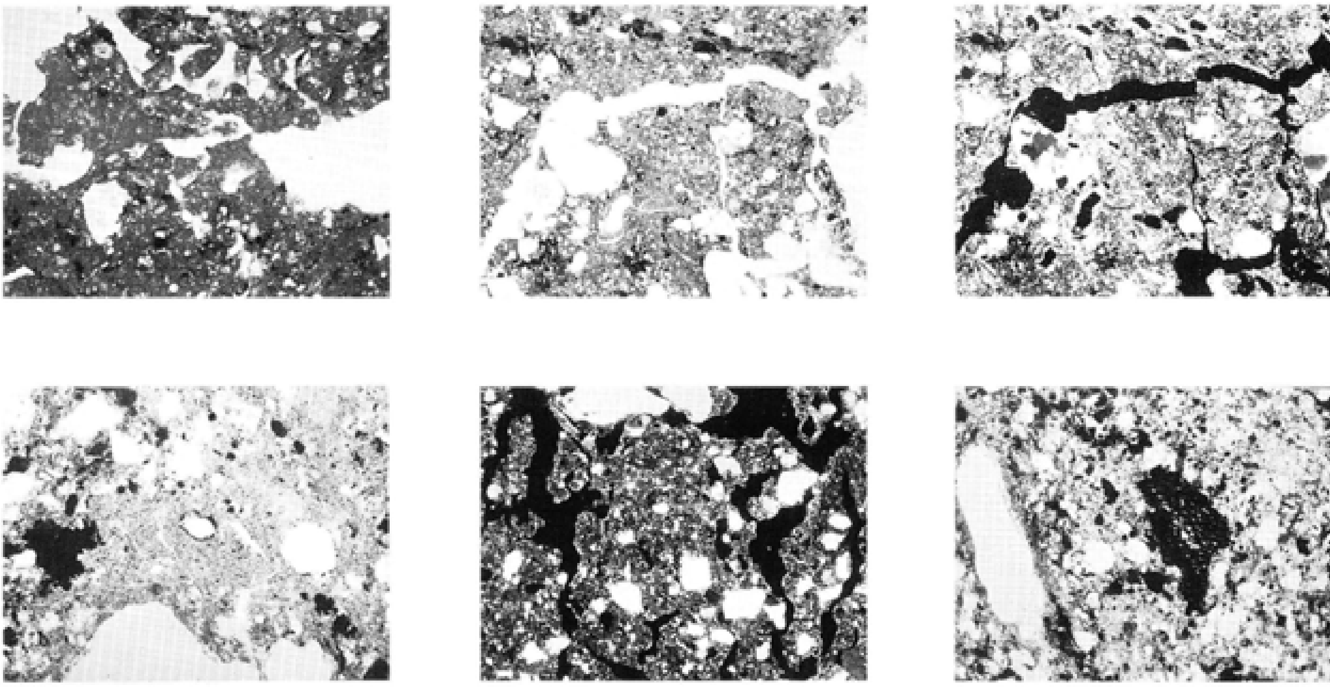


Fig 104 Thin sections: a) thin section B; mid-Holocene soil; junction of weathered chalk and subsoil, showing chalk fragments, grey calcareous soil, and dark brown decalcified soil; PPL; frame lengths = 3.3mm; b) thin section B; mid-Holocene soil; lower subsoil; strong heterogeneous mixture of early Holocene soil horizon elements; soil fragments separated by very dusty clay coatings and infills, creating a closed vughy porosity; the result of clearance; PPL; frame length = 5.3mm; c) as 2; XPL; d) thin section B; mid-Holocene soil; lower subsoil; microfabric as in b), but ferruginised root channels are also present penetrating previously deposited dusty clay infills; the result of revegetation; PPL; frame length = 1.6mm; e) thin section C; mid-Holocene soil; upper subsoil; a combined biological open vughy and mammilated fabric sometimes coated by dusty clay; these result from a combination of probable earthworm activity and slaking of the soil surface, a combination probably indicating cultivation; XPL; frame length = 5.3mm; f) thin section E; Neolithic/Bronze Age surface soil; the presence of fine charcoal and textural features resulting from slaking indicate an anthropogenic origin for this microfabric; occupation; PPL; frame length = 1.6mm

analysis of profiles 1, 2, and 3 (Tables 10 and 11) shows that the shallowest profiles of 1 (thin section E) and 3 (thin sections F, G) are telescoped, with Pleistocene palaeosol fabrics juxtaposed with those of anthropogenic origin. Profile 2 being deeper (thin sections B, C, D) retains elements of horizonation, although the fabrics are not homogeneous.

In profile 2, the junction of the soil with the weathered chalk substrate was examined (Fig 104a). The basal part of the soil is a mainly decalcified clay (Chap 5 fiche, Table 105, samples 6 and 8), whereas the upper Neolithic soils are clay loams with an increased silt and sand content (Chap 5 fiche, Table 105, samples 7, 4, 5). As the superficial Pleistocene deposits bulk as clays and the chalk weathers primarily into clay, it is likely that Holocene soil formation was influenced by an aeolian component of coarse silt and fine sand, as occurred elsewhere on the southern chalk (Hodgson *et al* 1967).

The microfabric of the mid-Holocene soil (Fig 104b) indicates development under woodland (cf Scaife 1987; see pp123, 127, and 250). In thin section B (Chap 5 fiche, Table 105) above the weathering junction with the chalk, the subsoil fabric elements (Fig 104b, c) include traces of reddish, limpid beta B clay (Duchaufour 1982) weathered purely from chalk. The overall characteristics are typical of deeply disrupted soils and, as has been argued elsewhere, such fabrics relate to tree-throw or clearance (Lutz and Griswold 1939; Denny and Goodlett 1956; Macphail 1986a; 1987b; Macphail *et al* 1987). At Maiden Castle, no classic tree-hollows were exposed, but decalcified soil tongues within the chalk at profile 2 were probable rooting features (cf Limbrey 1975) and contain woodland molluscan faunas (see p123).

The B horizon fragments contain little evidence, in the form of intra-ped void clay coatings, of being well developed Bt horizon material (cf Avery 1980; Soil Survey Staff 1975; McKeague 1983). In the case of tree-hollows on more acid parent materials, fragments of Bt horizon soil are readily recognisable and relate to primary soil formation (Macphail unpubl), a feature also recorded from subsoils recently disturbed by deforestation (Courty *et al* 1989, chap 17). As the Neolithic soils at Maiden Castle also do not contain evidence of depleted soil (Eb horizon), it suggests that during early Holocene pedogenesis little clay translocation took place. The Neolithic Bt character (pedo-zones 3/4/5) is thus predominantly the product of soil disruption. This is an important finding, data for which have been found elsewhere (Macphail 1986a; 1988), because soils in the decalcified regolith on chalk have often been regarded as having developed their argillic horizons by the Sub-Boreal/Neolithic period (Weir *et al* 1971; Catt 1979).

Taphonomic changes caused by archaeological burial have affected the organic matter of all the buried soils. In particular, levels of organic carbon and nitrogen have diminished through aerobic/anaerobic biochemical changes that have resulted variously in the formation of ferric oxides and ferric and manganic compounds (eg Chap 5 fiche, Table 106; compare sample 16 with samples 1, 4, 7, 14, and 15; cf Bloomfield 1951; Duchaufour 1982, 95). These often pseudomorphically concentrate in previously organic materials and horizons (Miedema *et al* 1974; Fedoroff and Goldberg 1982; de Geyter *et al* 1985). This is especially the case in the well-sealed Neolithic ditch fills (Chap 5 fiche, Table 106) and has been commonly reported from buried landsurfaces elsewhere (J Evans 1972; M Allen and Macphail 1987; Macphail 1986a).

Fragments of original topsoil material containing root pseudomorphs were identified in the subsoil (thin section B). Strong similarities were noted with the modern Ah horizon (thin section Q) which is very humic (Chap 5 fiche, Table 106, sample 16), although the organic content of the relic topsoil material is more humified (totally amorphous: Babel 1975), as is to be expected after long burial. The Ah fabric of the original woodland soil can therefore be interpreted as that of a mull (Barrat 1964; 1969), especially when compared to other buried soils with mor horizons (Fisher and Macphail 1985). Carbon/nitrogen ratios (Chap 5 fiche, Table 106, samples 5, 6, 8), which reflect the original character of soils after burial, are also low and corroborate the suggestion of rapid organic matter turnover in the original soil (cf Duchaufour 1982).

In short, the woodland soil at Maiden Castle was a decalcified, but eutrophic, typical brown earth, as defined by Avery (1980), little

Table 10 Soil macro- and micromorphological data and interpretation; profiles 1 and 2 (samples A, B, C, D, E)

Context and description	*Sample and material*	*Micro-pedofeatures*	*Interpretation*	*Environment*	*Pedo-zones*
Bank (509) Brown sandy silt loam, very chalky; charcoal	D Massive with packing voids; planes. Strong heterogeneity with chalk, chalky soil, Btg and palaeosol material with burned soil and charcoal.	Strong fabric heterogeneity. Many coarse soil and dusty clay infills. Abundant probable earthworm mammilated excrements. Infills of calcitic micrite and microsparite.	Anthropogenically mixed soil dumped in wet state. Material from many sources. Post-depositional earthworm activity and neoformed calcite.	Post-depositional biological penetration and weathering	
Buried soil 0–60 mm (435) Brown clay loam, few small flints, many Mn stains and charcoal; calcium carbonate efflorescence	D,E Weakly prismatic becoming subangular blocky towards surface. Dominant open vughy porosity in dense fabric with packing voids and channels near surface. Heterogenous fine fabric with a) Common brown birefringent soil; homogenised A/B (tg). b) Common humic dark brownish soil; lightly burned anthropogenic Ah. c) Sharp edge fragments of very dark reddish brown non-birefringent soil; strongly burned (b) The latter two with much fine charcoal. Channel infills of pale greyish brown, highly birefringent soil sometimes charcoal rich. Very coarse wood charcoal. Areas of abundant fine probable Gramineae charcoal.	Common probable earthworm burrows breaking and rotating crust, and mineral excrements, biogenic calcite. Rare neoformed calcite needles.		Re-introduction of earthworms into shallow bank	
		Near abundant dusty clay infills with intercalations and closed vughs; weakly calcitic (like crust).	Dumping of anthropogenic materials. Surface slaking perhaps at time of bank construction. Post burial earthworm burrowing breaking up buried crust. Minor calcium carbonate inwash. Minor biological activity. Strong mixing and slaking. Local formation of anthropogenic soils rich in charcoal some strongly burned. Deposition of weathered ash residue or animal waste.	Dumping of wet bank material. Clearance of local hearth areas and dumping them on occupation soil.	7
		Strong fabric heterogeneity. Many textural features in (a). Occasional textural features in (c). Mixing of fine charcoal into soil. Moderate rounding of (c). Thick dusty clay coatings between different soil materials. Rare amorphous (organic matter and P) yellow infills.		Possible animal stocking/ash midden area. Surface soil disturbance (possible cultivation) with domestic activity. Possible mud floor construction and fireplaces, especially to south.	6
Buried soil 80–170 mm (435) Reddish brown clay loam with reddish yellow mottles; few flints, Mn staining	C 80–120 mm: prisms with intra-pedal closed vughs. a) Dominant pale yellowish brown; homogenised A and Bt. b) Frequent dark brown humic soil; Ah. c) Few poorly birefringent reddish, includes wood charcoals; burned Ah/A d) Rare reddish brown birefringent clay. Dissolution of mollusc shell in rare calcitic fabric.	Strong fabric heterogeneity. Abundant dusty clay coatings and infills around peds.	Mixing of subsoil elements – destruction of biological fabric (110–170 mm) and slaking of soil. Burning of topsoil, and its deeper mixing.	Surface disturbance; probable cultivation possibly post-dating burning/occupation. Burning with cultivation.	5
	110–170 mm: blocky with packing planes, coarse channels and open vughs. a) Dominant dark yellowish brown; homogenised A and Bt. b) Frequent darkish brown, low birefringent humic; Ah. c) Rare red soil. Few wood charcoal; rare decalcifying arionid granules; burned Ah/A.	Biological channels, common mammilated excrements. Moderate heterogeneity. Occasional dusty coatings on biological peds.	Biological (earthworm) activity postdated by at least one phase of soil slaking. Burning of topsoil and its deeper mixing.	Intermittent revegetation, mull A horizon development, with surface soil disturbance and burning (cultivation practices?). (Probable soil erosion.)	4/5

Buried Soil 200–280 mm Brownish yellow clay; common chalk and flint; calcium carbonate efflorescence; irregular boundary to chalk which has brown soil tongues (root holes)	B	Thickening of dusty clay coatings in open voids by soil containing microcontrasted particles.	Surface soil slaking.	Major surface soil disturbance (cultivation); (probable erosion)	4/5
		Rare dusty clay infills in relic root channels.	Surface soil slaking.		
			Renewed fine rooting	Revegetation	4
	Ferruginised roots in dusty clay infills (see below).	Amorphous ferruginisation of roots and organic matter in humic soil.			
	Junction of apedal a) Pale greyish brown, highly birefringent (calcitic) soil and chalk with prismatic subsoil of poorly sorted silt- and sand- size quartz, with few nodules and flint chalky subsoil. b) Dominant pale yellowish brown low birefringent; B(t). c) Frequent brown low birefringent with abundant amorphous organic; Ah. d) Rare limpid reddish clay. Closed vughy porosity; beta B clay.	Strong fabric heterogeneity; fine and coarse humic (c) set in and separated by (b) material as matrix and peds. Abundant dusty clay infills around non-rounded soil peds-infills up to 500 µm; coarse mineral grains also have thick birefringent coatings.	Disruption and mixing of different soil horizons, and infilling of fissures by washed-in fine soil; development of argillic fabric/textural features. Closed porosity and preservation of features suggests not reworked biologically, therefore unlikely to be natural tree/root hollow infill.	Woodland clearance	3
		Fabrics a), b), c), and d).	Development of decalcified eutrophic from relic Pleistocene paleosol and aeolian materials over Holocene decalcifying chalk; with Ah, B(t), Beta B, and B/C horizons, and root holes.	Woodland	2
Palaeosol 450–570mm Beneath chalk involutions. Reddish yellow and yellowish red flinty clay; Mn staining and areas of sand	A Prisms with areas of massive and banded fabric; intrapedal vughs, some with polyconcave walls. Heterogeneous with yellowish brown to dark yellowish brown banded sands and clays, nodular sands, calcitic sands and clays, silts and sands.	Very dusty poorly birefringent clay coatings and infills, with silt; rubified channel clay coatings; complex intercalations. Banded fabrics and strong fabric heterogeneity. Ferromanganese nodules, compound nodules, manganese nodules. Areas of calcitic impregnation.	Relic Pleistocene palaeosols; warm and cold phases; compacted, water-saturated soils mixed by cryoturbation.	Pleistocene	1

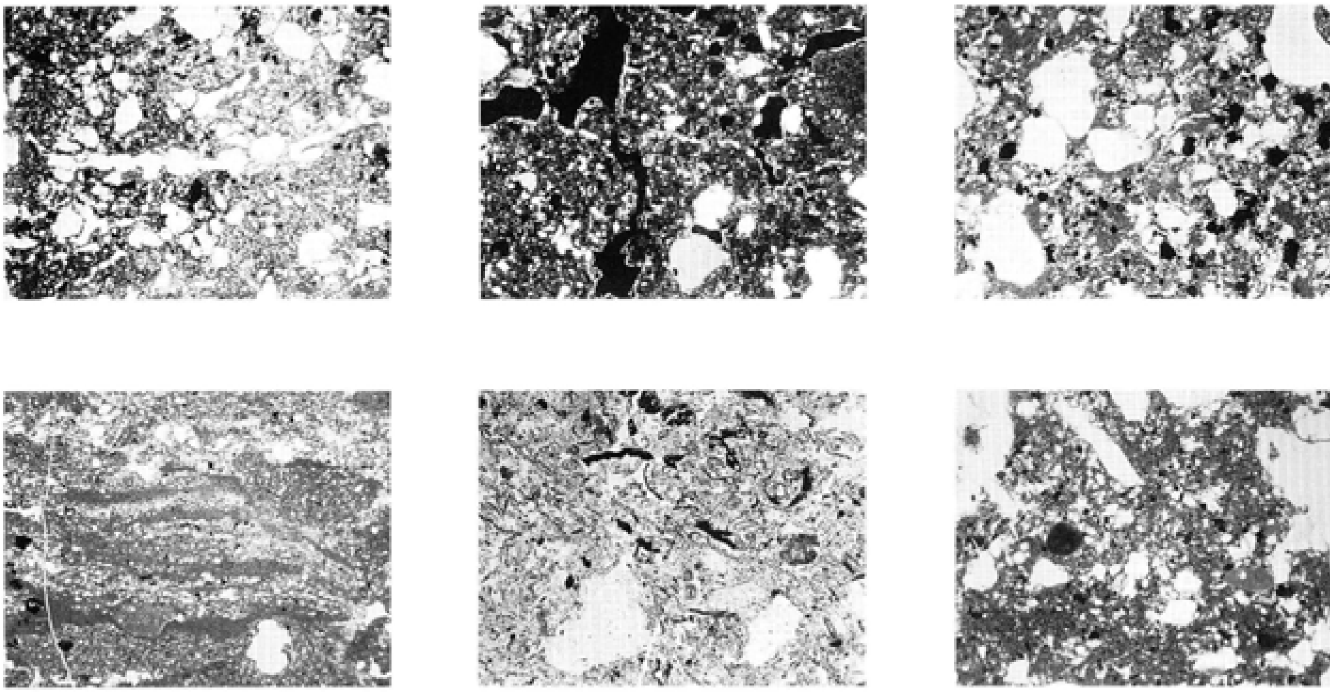


Fig 105 Thin sections: a) thin section G; Neolithic soil beneath Bank Barrow; juxtaposed decalcified soil fabrics – the darker, charcoal-rich anthropogenic fabric contrasts with the more pale, clearer, combination of A and B(t) horizon material; a possible combination of occupation and cultivation soils; PPL; frame length = 5.22mm; b) thin section I; trench II, late Neolithic/Bronze Age fill of enclosure ditch; moderate biological activity has formed soil peds in charcoal-rich colluvium, and these structures have in turn been coated by strongly birefringent dusty clay through the slaking of overlying sediments; XPL; frame length = 1.6mm; c) thin section K; trench II; top of Late Neolithic/Bronze Age fill of enclosure ditch; dense soil containing no charcoal, but many nodules and has a closed vughy porosity caused by the presence of very abundant textural features, resulting from the total slaking of this horizon; PPL; frame length = 3.3mm; d) thin section 0; trench II; fill of Early Iron Age ditch; layer 738; detail of silt and clay laminae with few fine charcoal and a chalk fragment; gentle silting; PPL; frame length = 5.22mm; e) thin section T; trench II; fill of Early Iron Age ditch; layer 729; ash residue material including probable cereal material (phytoliths); crop waste dump; PPL; frame = 3.0mm; f) thin section X; trench IV; western roundhouse; dense interlocated fine charcoal-rich fabric and clay infills suggest layer is a multiple slaked and trampled mud floor; PPL; frame length = 3.3mm

affected by clay translocation. It is likely to have represented the general soil cover of the hilltop, because, despite the variety of parent materials, 5000 years of Holocene pedogenesis produced a moderately deep and uniform epipedon (cf Duchaufour 1958; 1982).

Pedo-zone 3

The microfabric mix and textural features at the base of profile 2 (Fig 59; Table 10; Fig 104b, c) are the result of woodland clearance and, because the soil has retained its heterogeneity and closed vughy porosity relating to this event, it is arguable that the site continued in use immediately after it (cf Macphail 1985; 1987b). This is explained on the theoretical basis that natural tree-throw would leave a pit that would be infilled by leaf litter, which in turn would encourage a high degree of biological activity (Bal 1982; Babel 1975; Courty *et al* 1989). Such activity leads to a homogenised open fabric and this is not the case here.

If woodland clearance is accepted as a Neolithic event, it is worth asking whether there is pedological evidence for pre-Neolithic disturbance: the microfabric sequence outlined in Table 10 indicates that there is not. This is supported by the absence of Mesolithic flints on the site, that elsewhere occur abundantly in soils with evidence of early disturbance (Scaife and Macphail 1983; Macphail in Rudling 1985).

The telescoping of the Neolithic profiles suggests erosion (cf pp13–15). Erosion through Neolithic cultivation is discussed later (pedo-zones 4/5), but clearance itself may have initiated it. Aggregate stability of subsoils is less than topsoils, and woodland topsoils are less stable than those of grasslands (Imeson and Jungerius 1976; Grieve 1980). If at Maiden Castle, soil turbation led to significant down-profile soil movement, it is also likely that soil disturbance through woodland clearance in breaking up and exposing fragile subsoils also led to erosion. Soil erosion following clearance is recorded from the Luxembourg Ardennes through soil micromorphological studies (Imeson and Jungerius 1974; Kwaad and Mücher 1977; 1979) and from southern England through Neolithic polliniferous alluvial sediments (Scaife 1987, 141).

Pedo-zones 4/5

The subsoil porosity infills are pierced by fine roots, now ferruginised (Table 10; Fig 104b, d), which postdate the clearance event. The interiors of these roots are sometimes coated by dusty clay which also succeeds the disturbance soil infills in the larger voids. In thin section C, the soil heterogeneity, seen in thin section B, gives way to a homogeneous pale yellowish-brown fabric which, because it is also characterised by open vughs and mammilated mineral excrements, is regarded as earthworm-worked (cf Bal 1982; Bullock *et al* 1985; the mammilated mineral excrements are distinct from the spherical biogenic calcite of arionid granules: Courty *et al* 1989). This biological fabric (Fig 104e) itself, however, is also sometimes coated by dusty clay. Dark brownish and reddish soil fragments, commonly associated with fine charcoal occur increasingly up-profile in thin section D, and there also appears to be a soil boundary at *c* 130mm depth dividing the biologically worked upper subsoil from the buried topsoil that is once again strongly heterogeneous (pedo-zone 6; Table 10).

These features can be interpreted as follows. The ferruginised roots in the subsoil imply revegetation by a fine rooting vegetation (eg Gramineae?), perhaps associated with the earthworm working. This indicates stabilisation of the soil (probable mull horizon). The various dusty clay coatings, in contrast, suggest surface soil instability and slaking. Such a microfabric combination does not seem to relate to trampling of an occupation mud floor which is slaked but lacks biological activity (see pedo-zone 6), but is more appropriate to cultivation. Tillage homogenises heterogeneous fabrics and coarsely

Table 11 Soil macro- and micromorphological data and interpretation; profile 3 (samples F, G)

Context and description	*Sample and material*	*Micro-pedofeatures*	*Interpretation*	*Environment*	*Pedo-zone*
Buried soil 0-120 (160) mm (292) Dark brown clay loam with few flints, mottles, charcoal and frost shattered chalk	F, G Heterogeneous; massive with areas of blocks and prisms. Variable porosity of packing voids,open and closed vughs, fine and coarse (faunal) channels. Heterogeneous fine fabric: a) Common reddish clay; paleosol. b) Dominant dark yellowish brown,dotted and low birefringent with much charcoal; anthropogenic A. c) Rare reddish brown, non-birefringent; burned soil. d) Few pale yellowish brown; homogenised A and B (t). e) Few greyish brown, calcitic soil, sometimes with charcoal, either as included peds or as coarse channel infills from Bank Barrow above; calcitic occupation soil.	Strong fabric heterogeneity, with little worked relic red clay. Several phasesoftextural features, included in aggregates, around peds and as matrix infills. Abundant manganese impregnation of 'humic'; fabrics common channel infills of calcitic soil associated with sub- rectangular biogenic calcite.	Post-burial hydromorphic effects of organic matter replacement by manganese.	Post-burial earthworm penetration	8
			Post-burial earthworm penetration of buried soil through Bank Barrow.	*In situ* bare ground	6, 7
			Deep mixing but incomplete homogenisation. Erosion and telescoping of profile. Soils from various origins. Homogenisation of A and B(t),sometimes developing Ah characteristics, which may in turn have became slaked. Other parts became mixed with fine charcoal, including probable Gramineae Other soils burned.	Local erosion Local mixture of cultivation and domestic occupation. Probable cultivation of previously occupied areas and revegetation of old cultivated soils. Development of local charcoal rich soils on decalcified and non-decalcified sub-strates; fire places; domestic occupation.	6
			Mixing and biological turnover interspersed with phases of slaking.	Clearance and cultivation homo-genising and eroding decalcified soil cover	3, 4, 5
				Holocene soil development	2
				Relic Pleistocene palaeosol cover	1

Table 12 Soil macro- and micromorphological data and interpretation; profile 4 (samples H, I, J, K, L).

Context and description	*Sample and material*	*Micro-pedofeatures*	*Interpretation*	*Environment*	*Pedo-zone*
Buried soil 0-85 mm (304) Brown stonefree clay with manganese staining	K, L Massive, poor blocky at depth; closed vughs and possible vesicles, with rare channels at depth. Homogeneous; dominant dark yellowish brown with frequent nodules (see A). Occasional amorphous organic matter, rare charcoal; rare calcitic fabric.	Abundant textural features; thick intercalations, matrix infills, and coatings – also around surviving fine rounded aggregates. Abundant manganese impregnation.	Bt and palaeosolic clay with minor Ah. Low-energy infill with poor structural development because of slaking. Low biological activity.	Soil creep from exposed decalcified Pleistocene subsoil; low biological activity and common water saturated conditions. Possibly poorly formed turf. Decalcifying environment.	8
85–185 mm (496/501) Brown clay, many to common flints (no chalk), manganese staining	J Fine prisms (120–180 mm) to massive/poor blocky (85–120 mm); closed vughs and fine channels. Frequent nodules (see A). Homogenous fine fabric a) dark yellowish brown with abundant fine organic matter including charcoal at base. Rounded soil aggregates. Rare calcitic fabric.	Abundant textural features; thick intercalations and infills. Soil peds enclosing textural features not vertical. Abundant manganese impregnation.	Homogenised subsoil clay, Ah, and anthropogenic soil. High energy inwash of subsoil clay (flints and Fe/Mn nodules, no chalk, see N); mixing with Ah and anthropogenic fabrics; major slaking.	Erosion of Pleistocene palaeosols and Neolithic topsoil after removal of occupation soils. Disturbance/cultivation	7
190–270 mm (501/543) Dark brown to brown clay loam, many chalk and flint; charcoal	I Fine prisms with open vughy and channel porosity. Moderately heterogeneous, a) Dominant dark yellowish brown, dotted; anthropogenic A.	Moderate fabric heterogeneity. Abundant total excremental fabric with radial arionid and rectangular earthworm calcite; bow shaped channel infills. Last phase of dusty clay coatings on biological structures.	Second post-depositional phase of soil translocation due to slaking of overlying ditch fills.	Burial by water – saturated colluvium	7
	b) Common dark yellowish brown with high birefringence; calcitic anthropogenic A. Both humic with much charred organic material including charcoal and coarse bone. c) Red soil; burned.		High energy colluviation of decalcified and calcareous anthropogenic soils (Ap/occupation). First post-depositional phase of moderate biological reworking.	Erosion through cultivation, with burning affecting both decalcified and non-decalcified soils and rare occupation areas, followed by stable phase; mull environment in the ditch and also probably locally	7
270–370 mm (543) Dark brown clay loam, many chalk and flint; charcoal present	H Weakly layered with well formed prisms; open vughy and channel porosity, layers of fine fabric a) Dark yellowish brown with abundant fine charcoal; anthropogenic A. b) Yellowish moderately birefringent, fine charcoal and possible ash crystals; calcitic anthropogenic A. c) Grey high birefringent non-humic soil; chalky subsoil. Bone and charcoal present.	Layered fabric; areas of textural features. Abundant total biological fabric; biogenic calcite (arionid and earthworm types) and mammilated mineral excrements.	Moderate energy colluvial infill of decalcified and non-decalcified anthropogenic soils (Ap/occupation) and ditch side material. Incomplete biological reworking.	Erosion through cultivation with burning affecting decalcified, non-decalcified, and domestic occupation soils; followed by short lived phase of mull development	7

Table 13 Soil macro- and micromorphological data and interpretation; profiles 5, 6, and 9 (samples O, M, N, P, Q, R)

Context and description	*Sample and material*	*Micro-pedofeatures*	*Interpretation*	*Environment*	*Pedo-zone*
Topsoil 0–190 mm (808) Very dark grey sandy silt-loam, humose, stone-free, abundant fine roots	O Crumb to blocky at depth, with packing voids and open vughs. Homogeneous; dark reddish brown humic low birefringent soil, increasingly calcitic with depth. Many roots.	Homogeneous; total biological fabric with rare biogenic calcite.	Rendzina Ah. Strongly biologically worked soil, with decalcified top, and poorly calcareous below.	Chalk grassland	
Buried Soil 0–100 mm (6350) Brown clay loam, rare flints, and charcoal; chalky burrow infills from Early Iron Age bank spread; irregular boundary to very stony clay loam	R Massive with blocky in top mm; vughy, and closed vughy with post-depositional channels. Flint and chalk at depth. Heterogeneous fine fabric. a) Dark yellowish brown with charcoal; weakly anthropogenic A/Bt. b) Pale brown calcitic; mixed paleosol, Bt and chalky soil. c) Pale brown charcoal rich calcitic; ash and charcoal from domestic waste. d) Yellowish grey calcitic in channels; bank material in earthworm burrow.	Strong fabric heterogeneity and abundant multi-phase textural features, some very coarse at 70 mm depth.	Strong mixing of paleosol, Holocene soil and chalky fabrics. Multi-phased slaking. Little biological activity. Post burial earthworm burrows.	Erosion of bare ground and disturbance of soil; possibly some cultivation earlier, followed by trampling and mixing-in of domestic waste. Occupation area, but not hut floor.	9
Iron Age rampart 20–0 mm Chalk rubble and soil	N Chalk stones, calcitic and non-calcitic clays and clay loams with rare charcoal and little humic soil material.	Strong mixing (no textural features).	Mixed chalk rubble and palaeosol stones.	Rampart construction	
Buried soil 0-60 mm (77)	N Massive with closed vughs and fine channels. Heterogeneous with mainly a) Yellowish brown at top; decalcified A/B. b) Yellowish brown and weakly calcitic at base; calcitic subsoil. Both poorly humic.	No calcitic contamination of buried soil. Fabric heterogeneity and abundant textural features especially in lower part in non- calcitic fabric. Calcitic soils as aggregates. Biogenic calcite in aggregates.	Well sealed buried soil Moderately low energy inwash of mixed soil, and slaking; followed by low energy inwash, decalcification, and slaking.	No post-depositional changes Erosion of decalcified and calcareous soils/subsoils, followed by soil creep, low biological activity, waterlogging and slaking. Possible chalk grassland with low biological activity.	8
Bank barrow ditch fill 720–900 mm (813) Dark yellowish brown clay loam, moderately stony with chalk	P Blocky with open vughs and channels. Heterogeneous with; a) Yellow brown humic; Ah. b) Yellow brown humic with fine charcoal; anthropogenic Ah. c) Brownish grey, calcitic; calcitic Ah. d) Rare red soil; burned.	Common textural features both within soil aggregates and coating them. Also calcitic soil coatings. Strong fabric heterogeneity with occasional biogenic calcite and excremental fabric. Secondary calcitic infills.	Slaking of original soils before transportation; slaking within ditch fill, including translocation of chalky soil. Minor biological activity and neoformation of calcite.	Erosion of decalcified and rendzina soils – some cultivated and others occupied. Post-depositional washing through of overlying chalky ditch sediments.	7
Bank Barrow ditch fills 0.9–1.24 m (812/168) Dark yellowish brown clay loam, moderately to very stony with chalk	O, M Mainly blocky with crumb,packing voids and open vughy. Moderately homogeneous a) Dominant greyish brown high birefringent, calcitic; calcitic Ah. b) Frequent dark yellowish brown, medium birefringent; anthropic calcitic Ah. Both humic with common charred plant fragments.	Dominant total biological fabric, biogenic calcite and mammilated mineral excrements. Mixing of soil aggregates. Secondary calcitic coatings and hypocoatings.	Ditch fill reworked by earthworms. Secondary calcitic impregnation and coatings.	Erosion of rendzinas and anthropogenically affected rendzinas and occupation soils. Post-depositional percolation of calcareous water from overlying chalky sediments.	7

mixes dark brown topsoil containing fine charcoal, Bt horizon material, and subsoil. The dusty clay coatings are also concomitant with tillage (Jongerius 1970; Macphail *et al* 1987) and, in the upper subsoil, would result from surface soil disturbance through cultivation and the translocation of slaked soil down-profile (cf Romans and Robertson 1983a; 1983b). Fine rooting could relate to crops. Similarly in the Neolithic soil at Kilham, N Yorkshire, root holes are coated by dusty clay (Macphail 1986a, plates 37–9; Macphail *et al* 1987, fig 9), and this soil from on-site pollen evidence was considered to have been cultivated (Dimbleby and Evans 1974).

Biological activity in cultivated soils is known to obliterate tillage fabrics, as in arded soils at Butser Experimental Farm (Gebhardt pers comm). The cultivated soils at Butser, however, are not directly comparable because they are very organic and of high base status, whereas the Neolithic soil at Maiden Castle is poorly calcareous and even slightly acidic. The Neolithic soil was also only moderately organic as would be expected of soil mainly composed of subsoil material. Biological activity would therefore be expected to have been less intense, and reworking of the coated fabric less rapid.

The inclusion of dark brown soil associated with fine charcoal indicates burning, possibly as part of cultivation (compare strongly burned soil relating to occupation in pedo-zone 6), and this was mixed in by tillage and associated biological activity. The dusty clay coating sequence at the base of the subsoil, the presence of biological fabrics with and without coatings, and the common inclusion of burned soil suggest several seasons or episodes of cultivation and can be likened to Kilham (Dimbleby and Evans 1974). The soil fabric was a weakly humic combination of B and A horizon material (some with textural features within the aggregate), that was unstable (cf Imeson and Jungerius 1976) and prone to erosion.

Pedo-zone 6

Cultivation, alongside more intensive occupation, continued probably almost up to the burial of the soil. The apparent depth limit at *c* 100–120mm of burned soil and the strongly heterogeneous upper soil and its variety of textural features indicate that the ard was the major tillage implement (cf Romans and Robertson 1983a; Gebhardt pers comm). The sharp junction and shallower soils at profiles 1 (Fig 59) and 3 (Fig 101) indicate that erosion continued to telescope the profile, causing the juxtaposition of topsoil and palaeosol material: again the probable mechanism was cultivation. The microfabric evidence also suggests that this continued at least intermittently, even when the area of burial was domestic occupation in contrast to the previous arable. It is worth noting that this last Neolithic/Bronze Age phase of occupation and probable cultivation destroyed the topsoil evidence of the earlier biological/tillage activity.

It can be proposed that the reason for the complex juxtaposition of micro-fabrics of cultivation and occupation type is that the area was at the cultivation edge, sometimes being cultivated, sometimes not. This is supported by the later formalisation of the edge by a bank (Fig 59: 509/434).

In the area beneath the Bank Barrow (Profile 3; Fig 101), there is evidence of a complex landuse: i) occupation, ii) cultivation, and iii) revegetation of previously cultivated soils (Table 11). Occupation produced burned soils, the more strongly heated, reddish, non-birefringent fragments probably deriving from hearths (cf Courty 1984). The soil, sometimes weakly burned with high amounts of flaky (Gramineae) charcoal (Fig 104f) and possibly within-aggregate textural features, is developed through the mixing of soil and charred material, probably resulting from daub-making or trampling, as in a mud floor (cf Macphail and Courty 1985; M Allen and Macphail 1987; Courty *et al* 1989). The fabrics were formed in both decalcified and calcareous soils, showing that the chalk had been exposed by this time.

Cultivation during the occupation period mixed various components (Fig 104g). Beneath the Bank Barrow and bank (509/434), cultivation was probably responsible for breaking up and transporting domestic occupation soils. Previously cultivated topsoils with dominantly textural fabrics were revegetated before once more being disturbed. Cultivation of charcoal-rich occupation areas in the Neolithic as documented from Hazleton, Gloucestershire (Macphail 1986a; Macphail *et al* 1987), may be an attempt to offset increased organic poverty (cf Romans and Robertson 1983a), especially if topsoils continued to erode and mainly subsoil material was tilled, as is believed to be the case at Maiden Castle. Old occupation areas and hearths would provide an organic tilth and nutrients, such as calcium, potassium, and phosphorus (Wattez and Courty 1987). Amorphous organic infills beneath the bank (509/434), that probably contain phosphorous compounds, are believed to be organic waste from ash-weathering or animals (Courty *et al* 1989; Macphail 1987a).

Bank Barrow and bank construction

Directly beneath the bank (Fig 59: 509/434), the character of the topmost 10–20mm of buried soil is unrelated to occupation evidence in pedo-zone 6. It records: i) an immediate pre-burial event, ii) burial and the effects of burial, and iii) phenomena dating to the post-burial period up to the construction of the Early Iron Age rampart.

Under bank 509/434, there is a spread of strongly burned soil fragments and coarse charcoal in a soil matrix dominated by intercalations of fine soil and very dusty clay infills. This suggests that the surface was a water-saturated, muddy slurry just prior to burial by similarly slaked bank material, also with coarse charcoal and burned soil (thin section D). Burial probably took place under heavy rainfall, as indicated by the microfabric features of slaking, including calcitic dusty clay infills (originating from the bank) penetrating the generally decalcified buried soil.

Pedo-zone 7

Late Neolithic/Bronze Age sediments in the enclosure and Bank Barrow ditch (profiles 4, 5, and 6) are interpreted in Tables 12 and 13. Thin sections O (Fig 110) and M (Fig 101) show that erosion had exposed the area sufficiently for rendzinas to form, and these, with anthropogenic soils, were eroded in the Late Neolithic. Earthworm and slug activity strongly, but incompletely, homogenised these sediments. Sometimes, mainly decalcified deposits (thin section P, Fig 110) were affected by the inwash of calcareous slurries from overlying sediments giving them an enhanced calcium carbonate content (Chap 5 fiche, Table 106, samples 18 and 19).

Later in the sequence (thin sections H and I), local cultivation, probably with associated burning, affected a variety of decalcified and calcareous soils – some anthropogenic – and these were eroded into the ditches. Layering shows that charcoal-rich colluvium was deposited and mobile soil washed down through the profile to coat earlier fabrics (Fig 105b). The colluvium was then partially reworked by earthworms, creating a mull microfabric under a stable surface (cf Babel 1975). Further colluviation from cultivation thickened the sediments faster than they were biologically reworked. Cultivation is inferred not only from the rapid colluviation, but also from aggregates that have within-ped textural features unrelated to present orientation and that were thus slaked prior to erosion.

The microfabric of the fills near the top of the ditches (trenches I and II) shows that the erosion of charcoal-rich non-calcareous soils (ie the dominant Neolithic cover) ceased and was followed in trench II by the erosion of poorly organic nodular clays (Pleistocene; Chap 5 fiche, Table 105, samples 9, 10, 11) and associated coarse flints (thin section I). In trench I (thin section N), similar sediments occur, but some are calcareous.

In both trenches, the upper layers are interpreted as the result of Late Neolithic/Bronze Age erosion exposing the Pleistocene palaeosol cover, chalky involutions, and chalk, followed by a high energy erosion which transported these unsorted materials into the ditches. The sediment probably came in as a stony slurry, as there is a continuity of textural features upwards, coated biological fabrics (Fig 105b) beneath the stony layer in thin section J, that merge into a fabric of intercalations, closed vughs, and dusty clay coatings towards the surface (upper thin section J) and that dominate the surface soil fabric of the infill (thin sections K and L; Fig 105c). The major erosional event that has been outlined marked the end of Late Neolithic/Bronze Age cultivation on Maiden Castle.

Pedo-zone 8

In trenches I and II, the uppermost stone-free soil has a microfabric typical of a slaked soil (Fig 105c). It was originally interpreted as a slurry from the erosion of pedo-zone 7. Erosion just prior to the construction of the Early Iron Age fort is, however, incompatible with the evidence from across the site, nor had rampart material sunk into the stone-free zone, as would have been the case if it were a fresh slurry. Equally, the microfabric is not a taphonomic response to burial, because the porosity pattern is not compressed, nor were calcitic pedofeatures present at the junction of the overburden (thin section N, Fig 101) to suggest that soil water had penetrated through the rampart to slake the buried soil.

Instead, the tentative interpretation proposed for the stone-free soil (sampled from the thickest part; thin sections K, L, and N, Figs 59 and 101) is that it is a result of soil creep in a decalcified, turfed(?) topsoil which was water saturated because of the clayey nature of the underlying sediment. As a consequence of being often wet, it was either little affected by biological activity or the biological structures were poorly preserved because of continued slaking.

Soils beneath the Bank Barrow and bank (509/434) are affected by post-burial inwash of calcareous water that produced rare neoformed calcite in channels. In addition, common coarse faunal burrows infilled by calcareous soil containing charcoal penetrate the buried soil and are associated with patches of rectangular biogenic calcite that indicates the presence of earthworms (cf Bal 1982). The fauna which lived in the Bank Barrow and bank (509/434) disrupted the buried soil and, with minor calcareous soil water inwash, contaminated the buried soils with calcium carbonate. These post-depositional phenomena could date through the later Neolithic and Bronze Age periods.

The Iron Age (pedo-zone 9)

The *in situ* soil beneath the Early Iron Age rampart (trench IV) was sampled by thin section R (Fig 103, Table 13). The buried soil (profile 9; Chap 5 fiche, Tables 105–6, samples 33 and 34) is heterogeneous and shows little pre-burial biological activity, although perforated by earthworm channels. There is evidence of earlier cultivation, but the dominant features are of disturbed bare ground (rather than a hut floor), into which domestic occupation waste (phytolith-rich calcitic ash and charcoal) is mixed, probably by trampling.

The Early Iron Age ditch fills

The first deposits after stabilisation of the Early Iron Age ditch sides are contexts 736 and 738 (thin section S; Fig 102, Table 9), comprising calcareous, laminated (150–300µm) silts and clays (Fig 105d). These are mainly natural (Chap 5 fiche, Table 105, MS sample 27), originating from erosion of chalk and Pleistocene deposits. Although there are phytoliths in 738, the more common flaky (Gramineae) charcoal may have blown in. Similar laminations occur higher in the sequence at 733 and 727 (separated by ash bands, 729, 726; thin section T), and these are both phytolith- and charcoal-rich, displaying a more enhanced magnetic susceptibility than 738. The Pleistocene deposits from which 738 is derived have a low magnetic susceptibility (Chap 5 fiche, Table 106, samples 2, 3); manganese staining on its own causes little enhancement. The sediments of 733 and 727 (Chap 5 fiche, Tables 105–6, samples 25, 27) differ and are probably influenced by human domestic activity (Table 9). During rainfall, sediment was washed into standing water, and the laminated deposits caused intermittent waterlogging, reflected in hydromorphic phenomena.

Between gentle silting phases are ash dumps (737, 729, 726). These are generally unsorted, but the junction of 738 and 737 displays minor layering, presumably because standing water persisted. Coarse mineral components occur – stone-size flint and chalk, sand- and silt-size quartz – but are less important than the biological materials (Table 14; Fig 105e). Phytoliths contribute to the fine sandy loam component (Chap 5 fiche, Table 105, sample 19) and suggest, with the large quantities of flaky charcoal and fine (*c* 2–3µm) calcite ash, that burned grass or cereal has been dumped (wood ash crystals are generally larger *c* 20µm: Wattez and Courty 1987). In the ditch fills, fragile compound phytoliths and charred spikelet hairs and straw are present with pollen (UV), all probably as the result of waterlogging.

The ash dumps are highly birefringent (calcitic) with high cation exchange capacities (Chap 5 fiche, Table 106, sample 22) because of the ash (Wattez and Courty 1987). *In situ* weathering has caused the neoformation of clay through the release of potassium (cf Slager and van der Wetering 1977; Courty and Fedoroff 1982), whereas liberated phosphorus has combined with iron to form vivianite or amorphous features. Phosphorus may also derive from bone or coprolite containing phosphatised bone (thin section RMi).

The upper ditch fill (U, V, W) was not deposited in standing water and is increasingly worm-worked towards the surface. The sequence starts at 722 with a dump of almost pure Pleistocene clay and gravel. This is succeeded (721) by a chalky deposit containing wood and Gramineae charcoal, rare phytoliths, and patches of chalky soil stained by amorphous organic matter. Similar deposits occur at 714 (V) and 713/712/710 (W), but vary by sometimes containing abundant phytoliths. Their coarse inclusions, such as burned rendzina turf, are listed in Table 14. Ash occurs as crystals diluted by chalky fabric or

Table 14 Summarised micromorphological interpretations of selected contexts of the Early Iron Age ditch fill in trench II

Thin section; context; soil depth	*Interpretation*
W 710/712/713 2–2.12 m	Colluviation of chalky and anthropogenic materials (as 721); deposited as slurry, but reworked aerobically by earthworms (mammilated excrements and gut calcite crystals)
V 714 2.3–2.39 m	As 721, but with minor earthworm penetration
U 721 2.51–2.56 m	Colluviation of chalk and anthropogenic materials (pottery, burned daub, burned chalk, and burned soil – hence strongly enhanced MS, bone, wood, and *Gramineae* charcoal, phytoliths, ash, vitrified ash and weathered ash, and probable coprolitic materials) deposited as slurry. Post-depositional 'organic staining', Fe and Mn impregnation, and vivianite and amorphous Fe/F complex formation under intermittent waterlogged conditions.
U 722 2.56–2.61 m	Dump of pleistocene clay and gravel
T 726 3.39–3.41 m	Ash dump (as 737) with daub and burned soil
T 727 3.41–3.44 m	Erosion and colluviation of anthropogenic soils (high MS) formed on chalk and Pleistocene palaeosols from ditch sides. Laminated sedimentation with many fine charcoal and phytoliths in standing water. Post-depositional effects as 738.
T 729 3.44–3.48 m	Ash dump as 737
T 733 3.48–3.5 m	Mineral colluviation and standing water sedimentation (as 727)
S 736 4.11–4.16 m	Mineral colluviation and standing water sedimentation (as 738)
S 737 4.16–4.21 m	Ash dump of food waste (ash, *Gramineae* – cereal? charcoal, phytoliths, with bone) and hearth material (vitrified *Gramineae* ash). Post-depositional effects include neo-formed clay coatings (K released from ash), and vivianite and amorphous Fe/P features from P released from ash (or bone or animal waste), and indicate intermittent waterlogging.
S 738 4.21–4.23 m	Mainly erosion of natural ditch side chalk and palaeosols (many fine charcoal; few phytoliths). Laminated sedimentation of calcareous clay and silt in standing water. Post-depositional minor decalcification and calcite growth, and Fe and Mn impregnation indicate intermittent waterlogging.
4.23 m+	Dense mineral ditch fills, very coarse chalk rubble over primary fill

as transported ash layer fragments. The patches that are heavily stained by amorphous organic matter are probably coprolite (cf Courty *et al* 1989). There is also is an association between organic matter and post-depositional iron and manganese staining, as lower in the sequence vivianite is a typical component. The fabric as a whole, although reworked by earthworms (V and W), is not laminated, but rather a dense sediment with intercalations, suggesting that the material was deposited as a slurry.

The layers are typically calcareous (Chap 5 fiche, Table 106, sample 28) with magnetic susceptibility values variously enhanced by burned soil (samples 30, 31, 32), in comparison to the dumped natural clays (sample 29).

Soil accumulation in trench IV

The thick soil layers which separate the different phases in trench IV were examined by the two samples (X, Y) of profile 10 (Fig 103). There are two different fabric types in the western house (thin section X). First, there is mainly clay and fine charcoal-rich soil (Fig 105f), interpreted as a hut floor. It has intercalations, very dusty clay coatings, closed vughs, and a high fine charcoal content, all typical of a surface that has undergone trampling and slaking and can be regarded as a house floor (Courty *et al* 1989).

Second is the main deposit (layer 5264) between the floors of house DL which extends outside the house (layer 5263; profile 10; thin section Y). It is a strongly calcareous silty clay loam (Chap 5 fiche, Tables 105–6, samples 35, 36), containing a few ash crystals, bone, and much charcoal, including Gramineae, amorphous organic matter, coprolite, and phytoliths. Post-depositional amorphous infillings (organic matter, iron, and phosphorus) and vivianite also occur. This is not a plough colluvium, but a midden. It has suffered compaction, because of some decalcification, and minor earthworm working. There are no sedimentary structures that suggest transportation. Fragile phytoliths and coarse charred plant remains indicate that the midden formed *in situ* and is comparable to the Early Iron Age ditch fill (Table 14).

Conclusions

a) A Pleistocene palaeosol was present (pedo-zone 1).

b) A uniform decalcified brown earth had developed by the Neolithic (pedo-zone 2).

c) Neolithic woodland clearance produced a disrupted soil with an argillic microfabric (pedo-zone 3).

d) The site was revegetated, worm-worked, and cultivated (pedo-zone 4/5).

e) The site became an area of more intensive occupation, with hearths, huts, possible stock, and continued cultivation (pedo-zone 6).

f) Late Neolithic/Bronze Age cultivation eroded occupation soils into the ditches, eventually removing the decalcified Neolithic soil and exposing chalk soils and Pleistocene palaeosols, which were affected by high-energy erosion (pedo-zone 7).

g) Neolithic ditches continued to be slowly infilled by soil creep during a period of soil stability (pedo-zone 8) and ultimately turfed.

h) Iron Age occupation caused erosion and the development of midden deposits (pedo-zone 9).

The land Mollusca

by J G Evans and A Rouse

The modern Mollusca

The modern fauna was studied on two transects: one across the north ramparts and one across the south. In this way, the effects of factors such as vegetational diversity, aspect, and slope could be investigated. Although the modern fauna differs in several respects from that of prehistory, not least in that it is made up largely of open-country species, while that of prehistory is essentially woodland, it was hoped that some general principles relating to interpretation might emerge.

The methods of recording and analysis and the full results are presented in the fiche for Chapter 5 (Evans and Rouse, Tables 110–12). Here, the results of turf analysis in the laboratory from the south transect are illustrated (Fig 106). The profile of the ramparts is represented to scale, the individual turves are numbered 1–43, the numbers of live and recently dead (not subfossil) individuals are listed, and diversity indexes (H and H′) are plotted. On the basis of relative species composition, diversity, and total abundance, five assemblages are identified.

The main results are:

1 the assemblages relate to habitat

2 the most diverse assemblage (2a) occurs on south-facing slopes with short vegetation, of high diversity, and bare soil on the risers and back parts of the treads of terracettes

3 the least diverse assemblages (1a, 1b, 1c) occur on north-facing slopes and level ground with tall vegetation of low diversity (mainly grasses) or vegetation that is mown (turves 1–5)

4 the boundaries of the molluscan assemblages are often sharp, corresponding particularly with vegetational diversity, as seen in the changes between turves 14 and 15, 22 and 23, 29 and 30, and 34 and 35.

The two main points of archaeological relevance are that discrete molluscan assemblages are present in a small area with often very little overlap and that these reflect differences within a major vegetation type – chalk grassland.

The archaeological deposits

The sampling strategy had two main aims: to obtain a long and detailed sequence and to obtain a spatial picture. With the latter, the aim was to examine the degree to which individual assemblages were representative of the situation beyond the sampling spot.

A known air-dry weight of each sample, usually

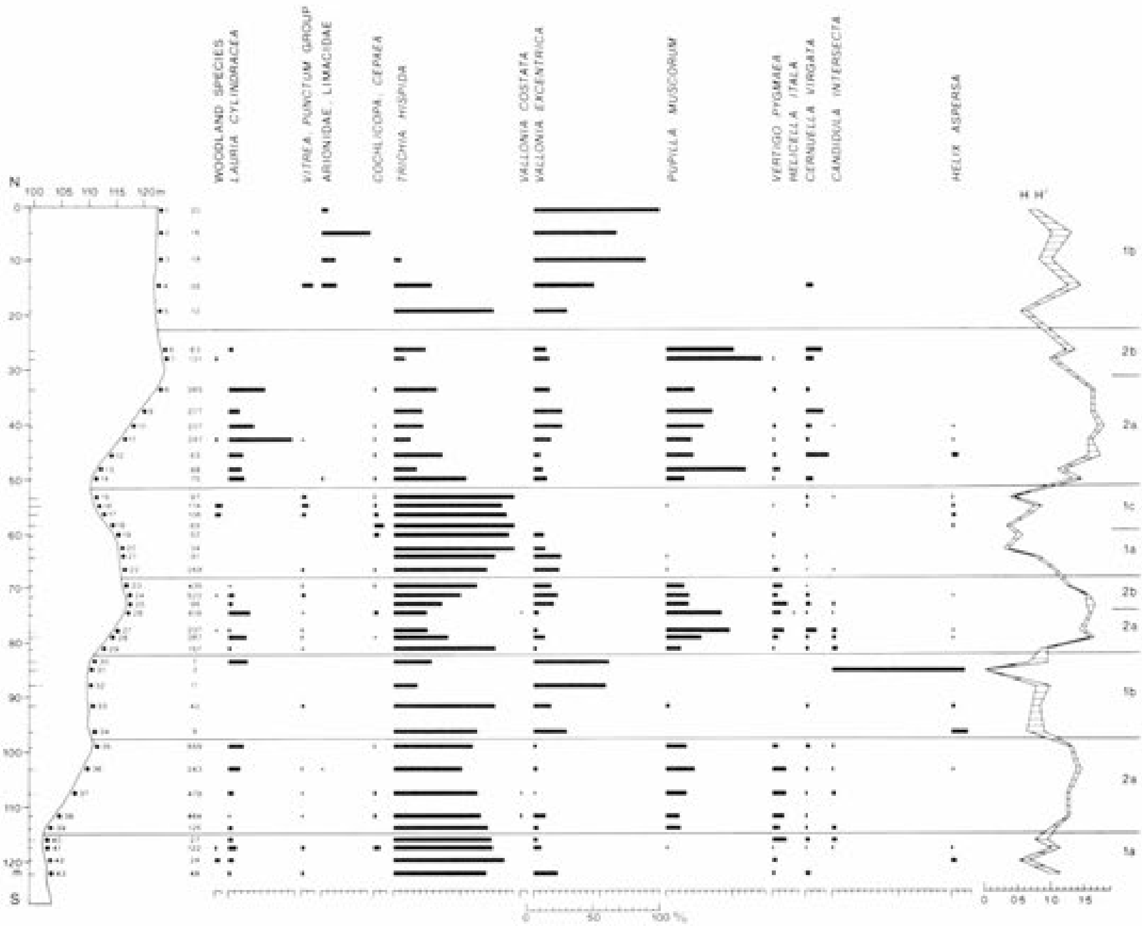


Fig 106 Survey of the modern snails present on a transect across the southern ramparts of Maiden Castle

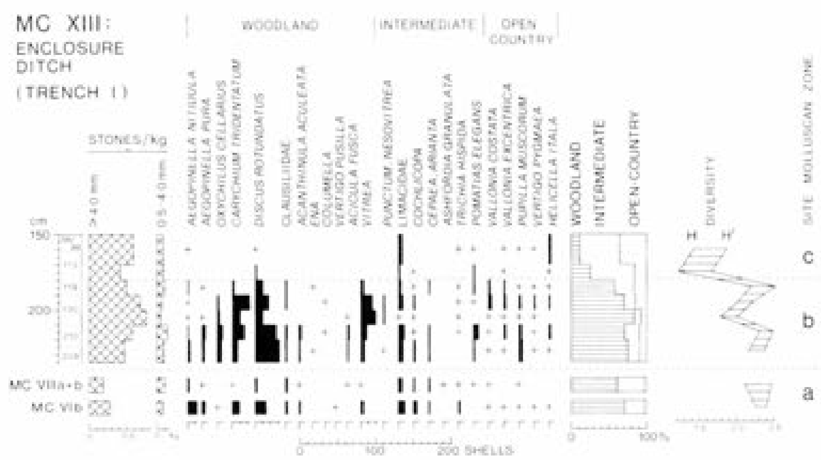


Fig 107 Mollusc column MC XIII from the Neolithic enclosure ditch in trench I

1.0kg, was analysed. The results are presented as tables using the nomenclature of Kerney (1976; Chap 5 fiche, Tables 113 and 122). The numbers used in the histograms are altered, so that they refer to sample weight less all clasts greater than 2.0mm. The results are considered in terms of Site Molluscan Zones (SMZs), which are characterised by total abundance, diversity, the proportions of open-country to woodland species, and the abundance (sometimes simply presence or absence) of particular species.

Two sequences, MC II and MC XXX, are dealt with entirely in the fiche for Chapter 5, and all the lithostratigraphical data are in fiche.

MC VIb, MC VIIa+b (Fig 107)

The earliest molluscan assemblages are from tree-holes low in the buried soil beneath the bank (509, 434) in trench II. Three samples were analysed: VIb from the north section, VIIa+b from the south (Figs 59 and 107). The assemblages are unequivocally indicative of woodland. An interesting record is *Vertigo pusilla* which, although not especially indicative of woodland, is very rare in southern England and is generally unknown from post-Neolithic contexts. It has never been found alive in Dorset. The few open-country shells in the assemblages are likely to be contaminants from above. These earliest assemblages are placed in SMZ 'a'.

Two samples were taken from the surface of the buried soil (435), but they were devoid of shells, probably because the soil was non-calcareous.

MC XIII (Fig 107)

Seven samples were taken through the deposits of the pre-enclosure feature and the overlying deposits of the inner ditch of the Neolithic enclosure in the west section of trench I, where they were overlain by the Bank Barrow (1.5m = the surface of the deposits; Figs 46 and 51).

The assemblages from the pre-enclosure feature (228, 210) are essentially woodland, but with a slight open-country element. The feature was constructed in woodland in which there was a small amount of clearance. The lower part of the enclosure ditch infill (up to 1.8m) contains a similar assemblage. With the assemblages from the tree-holes, there is a group of three rare species, *Vertigo pusilla*, *Columella*, and *Acicula fusca*, which are totally absent from later assemblages at Maiden Castle. Together and in a woodland context, they are indicative of primary woodland.

The assemblages of the pre-enclosure feature and the lower part of the enclosure ditch, which show slight influence of open country in a general background of primary woodland, are placed in SMZ 'b'.

In the upper part of the enclosure ditch (above 1.8m), shell numbers fall, probably as a response to the highly disturbed and rubbish-dump characteristics of the environment. Overall, there is a drop of diversity and an increase in open-country species, although these changes are based on low totals. Nevertheless, since they take place immediately prior to the building of the Bank Barrow, they can be seen as reflecting an increase in the amount of open country on the site. They are accordingly allotted to SMZ 'c'.

MC III (Fig 108)

Thirteen samples were taken through the deposits of the inner ditch of the Neolithic enclosure in the north section of trench II (0m = the surface of the Bronze Age turfline; Figs 59 and 108).

In the lowest part of the primary fill (554), there is a woodland assemblage with a slight open-country component. This belongs to SMZ 'b' and reflects the general background of woodland with local clearing, in which the enclosure was built (cf 1.8–2.25m in MC XIII). The abundance of *Vitrea* reflects the unstable chalk rubble surface of the fill.

Contexts 567, 550, and 317 see a sharp fall in shell numbers, a function largely of their midden and chalk rubble content.

Contexts 549 and 542 are similarly sparse in shells, but there is a slight increase in open-country species, mainly *Vallonia costata*. Although it is impossible to be precise, this is about the time that the Bank Barrow was built, so we may be seeing a response to this renewed activity in the molluscan assemblages; they are accordingly allotted to SMZ 'c', equivalent to the upper part of the MC XIII sequence (1.5–1.8m).

Context 537 definitely postdates the Bank Barrow construction. Here, the first of the two zones of secondary woodland assemblages, which are such a striking feature of the molluscan sequences at Maiden Castle, is apparent. The characteristic species is *Ashfordia*. There is an increase in shell numbers and a decrease in open-country species to the extent that, by the top of the zone, they are virtually absent. This is SMZ 'd'. It indicates the spread of secondary woodland into areas which were previously cleared.

The assemblage in context 529 is characterised by the abundance of *Pomatias elegans*, the absence of *Ashfordia*, a reduction in shell numbers and the continued total absence of open-country species. This is SMZ 'e'. It indicates a second zone of secondary woodland.

The assemblage in the Beaker cultivation horizon (523) sees a return of open-country species, albeit in very low numbers, and a general fall in molluscan abundance. This is SMZ 'f'. It indicates renewed woodland clearance and soil disturbance.

The Bronze Age turfline (496 and 304) is almost devoid of shells (SMZ 'g').

Although this is a very abbreviated sequence, there is a striking correspondence between the molluscan and archaeological stratigraphies; there is also consistency with other sequences.

MC XXXIII and MC XXXII

In front of the eastern entrance to the hillfort, the outer ditch of the Neolithic enclosure was sampled in trench VI. There were two separate features, one possibly a recut of the other, but, because of truncation by the Early Iron Age ditch, the relationship had been destroyed.

MC XXXIII consists of a single sample from feature 7122 (7121; Fig 98). It contained a woodland assemblage. The main species is *Vitrea*, and this indicates sparsely vegetated chalk rubble, but in a general background of woodland. The species is similarly abundant, although not predominant, in the lower part of the other enclosure ditch sequences (MC III and MC XIII).

Sample series MC XXXII is made up of five samples from the fill of feature 7073 (7074; 0m = surface of 7074 where truncated by the Early Iron Age ditch; Fig 98).

The assemblages throughout are practically identical and indicate open country. *Vallonia costata* and *Vallonia excentrica* are both present, with the former being the more abundant. There are some woodland species (*c* 10%), so perhaps a grassland environment with some scrub is indicated. The paucity of *Vertigo pygmaea* suggests that a stable grass sward was absent.

Accepting the general contemporaneity of feature 7073 and the enclosure ditch at the western end of the site, it can be stated that the vegetation on the hilltop was a mosaic of woodland and open country and that there was a greater degree of clearance at the eastern end.

It is unfortunate that the relationship between features 7122 and 7073 is unknown. The assemblages only help to confirm that the two features are chronologically separate.

MC XVII (Fig 109)

Twenty samples were taken through the deposits of the primary

Fig 108 Mollusc column MCIII from the Neolithic enclosure ditch in trench II

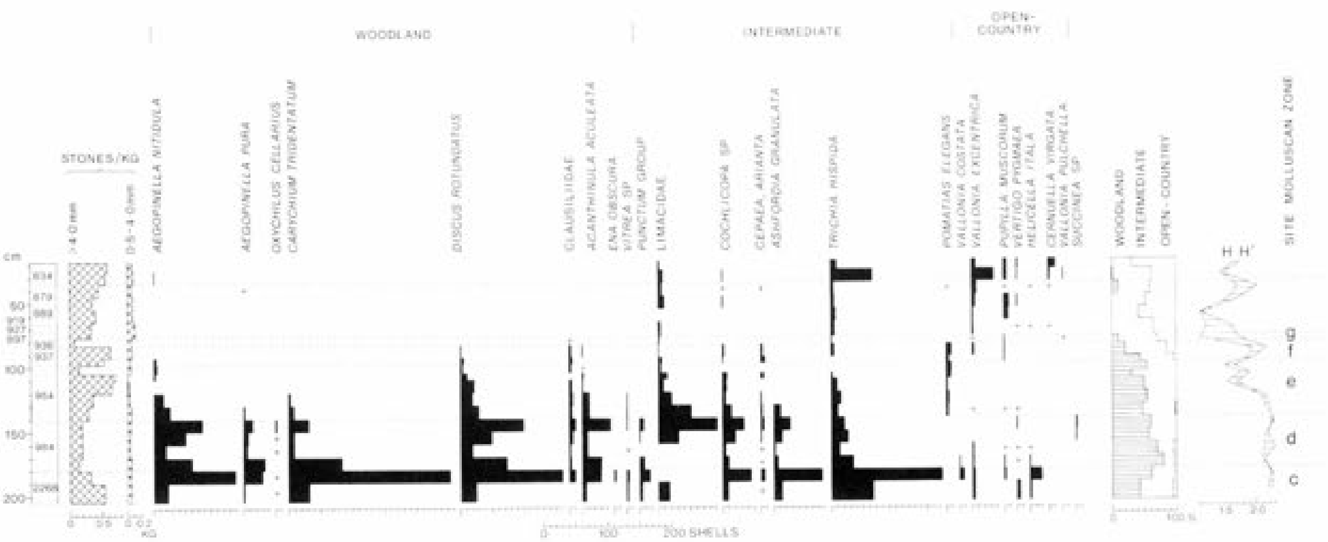


Fig 109 Mollusc column MC XVII from the Bank Barrow ditch in trench III

Bank Barrow ditch and overlying Middle Iron Age levels in trench III, west section (0m = modern surface; Figs 109 and 110).

The Neolithic and Bronze Age sequence is similar to that in MC III, 0–0.9m, but more expanded. The same sequence of SMZs is present.

At the base of the sequence (2268), we are perhaps seeing the last remnants of the open-country assemblages of SMZ 'c', although, since *Ashfordia* is present from the start, we may be straight into the first zone of secondary woodland, SMZ 'd'. Mollusca are abundant and, by the top of context 984, open-country species are totally absent. The deposits are noticeably fine.

Next comes the *Pomatias* zone, SMZ 'e', beginning at around 1.3–1.4m. The abrupt extinction of *Ashfordia* here and in all other sequences is remarkable. The increase in the amount of chalk rubble entering the ditch in this zone is also notable, and again this is a feature of the other sequences. In spite of the implied disturbance, open-country species remain absent, so these events took place in woodland.

A thin turfline (at 0.98–1.05m) separates the assemblages of SMZ 'e' from those of 'f'. The former equates with Late Neolithic activity, the latter with Beaker cultivation (937), but the only effects that cultivation had were to reduce the number of molluscs and cause a minute response in the open-country species: this is unexpected.

Shells are virtually absent in the Bronze Age turfline (936).

The Iron Age (phase 6D) deposits are sparse in shells and there is no sequence. The assemblage is an open-country one with virtually no woodland species. Limacidae, *Trichia hispida*, *Vallonia excentrica*, and *Pupilla muscorum* are the main species.

The modern assemblage is similar, but with the notable addition of *Cernuella virgata*.

MC IV (Fig 111 and Chap 5 fiche, Fig 224)

Seventeen samples were taken through the Neolithic and Bronze Age deposits of the Bank Barrow ditch in the east section of trench I (0m = surface of Bronze Age turfline; Figs 101 and 111).

The lowest assemblage (1.4–1.6m) is characterised by a low, but significant proportion of open-country species and can be placed in SMZ 'c'. This indicates open country with some scrub and woodland and is a continuation of the same environment that obtained at the top of the adjacent enclosure ditch (MC XIII, 1.5–1.8m, Fig 107).

The main part of the sequence, however, reflects undoubted secondary woodland, and the characteristics of the two molluscan assemblages are displayed in this sequence to their fullest. In the lower, *Ashfordia*, zone, SMZ 'd' (0.9–1.4m), shell numbers are high, *Carychium* is extremely common, and *Ashfordia granulata* is a characteristic species; *Pomatias elegans* is absent. Open-country species never completely die out. In the upper, *Pomatias*, zone SMZ 'e' (0.3–0.9m), shell numbers are lower, the relative abundance of *Carychium* is lower, and *Pomatias elegans* is characteristic; *Ashfordia* dies out. Open-country species are virtually absent.

These differences reflect differences in the character of the regenerating woodland, although precisely what these were is difficult to judge. The *Ashfordia* zone, SMZ 'd', is contemporary with a time when human activity on the site was at a low level and when natural accumulation of relatively fine deposits was taking place. The decline of open-country species (if not derived from earlier deposits) suggests a natural development of secondary woodland, with the tree canopy gradually closing in. *Ashfordia* itself provides no clue. It is an eclectic species occurring in woods, damp places, and sand dunes. Even its precise confinement to SMZ 'd' may be due to different factors at each end of its time range. The *Pomatias* zone, SMZ 'e', is likewise difficult to interpret. *Pomatias* is a species that is favoured by disturbed soil, so its increase is ecologically compatible with an horizon which sees an increase in chalk rubble. This is related to a renewal of Late Neolithic activity. There is no doubt, however, that this zone was one of densely shaded woodland.

Between 0.05 and 0.3m, the Beaker cultivation soil, open-country species reappear, there is a relative increase in *Pomatias elegans* (although a part of this probably reflects differential preservation of its tough apex), and woodland species are in low abundance. Shell numbers are low, but there does seem to be some indication of woodland clearance. This is SMZ 'f'.

The assemblage from the Bronze Age turfline (SMZ 'g') shows a further decrease in abundance and the only significant conclusion is that conditions were very unsuitable for molluscs. This probably means partial decalcification in an environment of impoverished grassland.

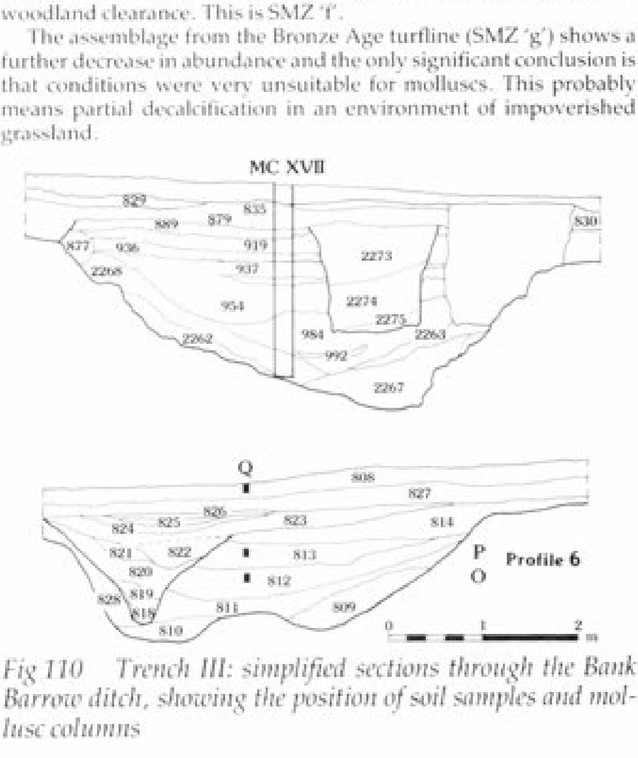


Fig 110 Trench III: simplified sections through the Bank Barrow ditch, showing the position of soil samples and mollusc columns

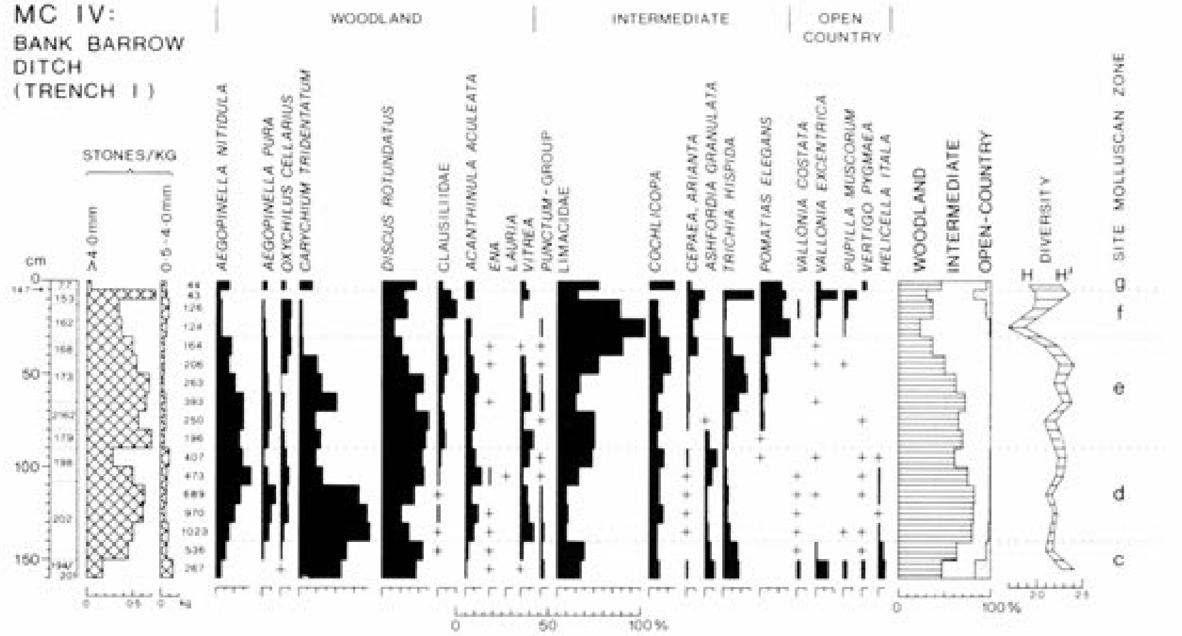


Fig 111 Mollusc column MC IV from the Bank Barrow ditch in trench I

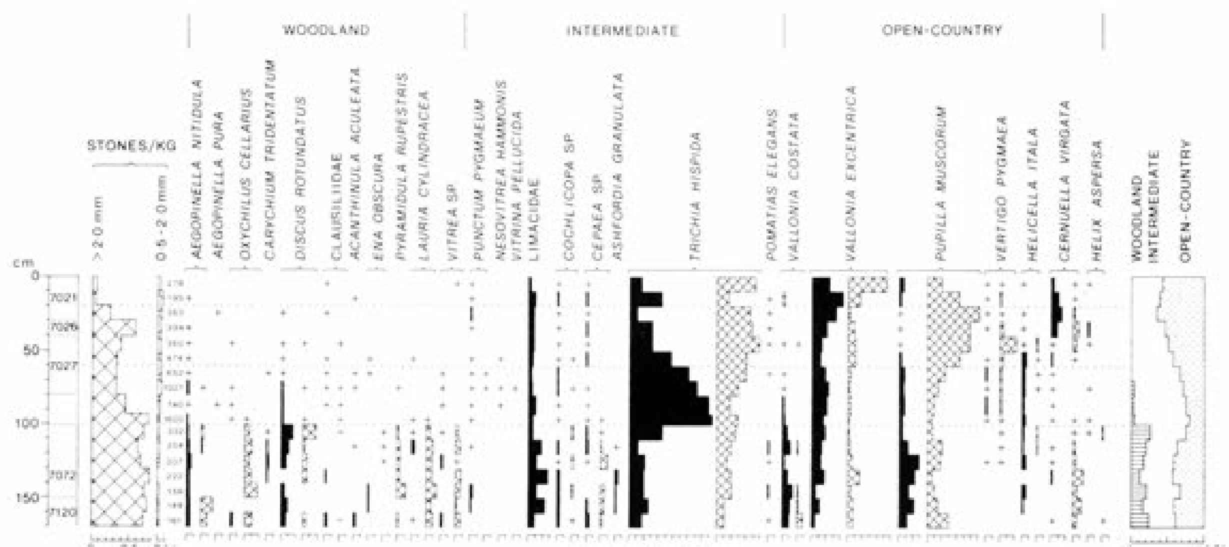


Fig 112 Mollusc column MC XXXI from the Late Iron Age ditch in trench VI

MC XXXI (Fig 112)

Seventeen samples were taken through the infilling of a Late Iron Age ditch (7071) and an overlying Roman ditch (7028) in the area of the eastern entrance (west section of trench VI; 0m = modern surface; Fig 112). A peculiar feature is that a proportion of the shells have characteristics which suggest that they had been preserved in a different kind of depositional environment from the rest. Mostly, this takes the form of the shells being semi-translucent and more brightly coloured than in normal subfossil shells. Whatever their origin, it is clear just on faunal grounds that at least some of them are not modern. Thus, none of the woodland or intermediate species from *Aegopinella nitidula* to *Vitrea* on the histogram are living in the immediate area, and many have never been found alive at Maiden Castle.

A probable origin is in the several limestone features in trench VI (7135, 7117, 7114, 7115, and 7068). One of these (7068) had been cut by the Late Iron Age ditch (7071). Since the infilling of the ditch (7072) contains the shells of the rupestral species *Pyramidula rupestris* and *Lauria cylindracea*, and since this is the only subfossil context in which they occur in abundance, it is likely that they were brought to the site on the limestone. It is also likely that some of the shells in 7072 actually derive from these earlier contexts. This would account, at least in part, for the variation in the condition of preservation, because shells preserved in limestone rubble generally lack the white opacity of shells preserved in chalk deposits.

Below 1m, the assemblage is very diverse and the woodland component is common. *Vallonia costata* is characteristic. If *Cernuella virgata* is indeed contemporary, then this represents the earliest secure record for this species in the British fauna. Grassland and some scrub is indicated. Many of the shells in this context (7072), especially the woodland and rupestral species, probably derive from Iron Age deposits through which the ditch was cut.

At 1m, there is an abrupt fall of woodland species and a dramatic increase in molluscan abundance. The assemblages to 0.6m are dominated by *Trichia hispida*, with *Vallonia excentrica* as the other main species. *Pupilla* and *Helicella itala* are consistently present, although in low numbers, but *Vallonia costata* tails off. Grassland, impoverished in species and with an unbroken sward, is indicated.

Above 0.6m, there is an increase in *Pupilla* and *Cernuella*, suggesting shorter grassland with some broken ground. *Pupilla* shows a peak at 0.2–0.3m and then declines towards the surface, where *Vallonia excentrica* increases. This pattern of change in these two species is paralleled in other modern soils, for example at Stonehenge (J Evans 1983) and Knoll Down (J Evans and Vaughan 1985), and is a very interesting feature which remains unexplained. It could be a reflection of an environmental change from broken ground to a stable grass sward, and this would make sense in the present context. It is also ecologically sound in the light of our modern survey

(Fig 106). On the other hand, it is possible that it is a taphonomic effect caused by earthworms selecting – preferentially because of their more suitable shape – the shells of *Pupilla* (and perhaps also of *Vertigo* and young *Trichia*) to line their aestivation chambers.

Discussion

There is a paucity of shells in comparison with many other chalkland sites. Some deposits are rich, such as the lower fill of the Bank Barrow ditch, but the general picture is of impoverishment. This is probably related to the large component of non-calcareous drift in the soils, which gives them a greater potential for decalcification than is normal for a chalk soil.

There is a problem in the lack of open-country assemblages in the Neolithic. There are three contexts where these might have been expected: soil (435) in trench II, the turfline beneath the Bank Barrow (96 in trench I), and the Beaker cultivation horizon. The first two were in situations where the sampling potential was limited and were therefore not necessarily representative. Soil 435 was a patch of non-calcareous land surface, and layer 96 was a thin, youthful turfline in a charcoal-rich midden, neither of which were especially suitable for Mollusca either during life or for the preservation of their shells. The Beaker cultivation soil presents more problems, because it was widespread and it contained chalk rubble. The soil matrix comprised a non-calcareous component, however, as shown by Macphail's analysis (soil profile 4, samples H, I, J), so again, low shell numbers can be related to conditions of preservation. Whatever the details, the point is that in all three cases, where open-country species might have been present, the preservation and recovery of high quality molluscan data was precluded.

There is also the question of the rate of response of land Mollusca to environmental change. Not a lot is known about this at the timescale of short-term changes that is relevant to archaeology, but the problems and possibilities are usefully discussed by K Thomas (1985). With regard to Maiden Castle, it would have taken some time for open-country communities to become established in the earlier part of the Neolithic. This is partly a question of availability, for species such as *Pupilla muscorum* and *Helicella itala* were not living anywhere near Maiden Castle when it was covered in primary woodland. The south-facing slopes of the coast, 10–15km away, were probably the closest refugia. Nor was there any tradition of grassland molluscan communities or, at least, not of the type that is familiar from the grazed downlands of the Middle Neolithic and Bronze Age. The various species needed to adapt to the new habitats of the Neolithic. Concepts like these cannot be quantified, but should be given some consideration.

The zonation of the molluscan assemblages is aimed at identifying events on a site or local scale, not the individual features: characteristics of the assemblages that are common to all sequences at any one time are considered, the sequences being cross-matched with reference to their lithostratigraphy and archaeology, and not to their molluscan assemblages. Different criteria are used at different stages. Thus, SMZs 'a' and 'b', the zones of background primary woodland, are characterised by a small group of species which, although rare, are totally absent from later zones. The proportion of open-country species is used to characterise most of the zones, but this breaks down with zones 'c' and 'd', where values vary from one sequence to another. The clearest indicator species, in terms of their precise contemporary behaviour across the site, are *Ashfordia* and *Pomatias* which occur hardly at all outside the zones which they characterise. Absolute abundance is also quite a good guide, there being clear episodes characterised by this criterion, although, as discussed, preservation is a factor here. Diversity has not been found to be particularly useful, although the data have been presented in some cases.

Although the modern data indicate that the molluscan communities are very closely related to habitat and that the boundaries between communities are often sharp, we consider the sequence of SMZs to be representative of the hilltop generally; there may have been local variations, however, as indeed was the case in the Early Neolithic.

SMZ 'a' (MC VIb, MC VIIa+b)

The assemblages, which come from tree-holes low in the Early Neolithic soil, indicate primary woodland. Like other areas of chalkland in southern Britain (J Evans 1972), the Maiden Castle hilltop was wooded in the mid-Postglacial. The nearest pollen diagram is Rimsmoor (Waton 1982), 15km to the east (SY 814922), where woodland was attested in the mid-Postglacial (although not directly related to chalkland).

SMZ 'b' (MC XIII 1.8–2.1m, MC III 0.9–1.3m)

The assemblages, which come from the pre-enclosure feature and the lower levels of the Early Neolithic enclosure, indicate woodland with slight open country. The woodland was the same primary woodland as represented in SMZ 'a' as shown by the presence of *Vertigo pusilla*, *Columella*, and *Acicula fusca* which are unique to these two zones. At the eastern end of the enclosure, there is also evidence for woodland in feature 7122 (MC XXXIII). On the other hand, in the same area, there are penecontemporary, open-country assemblages (7073, MC XXXII), although these have a considerable woodland element. There was, therefore, variation in the Early Neolithic landscape, but the general picture is of woodland with some clearance. So, the situation at Maiden Castle is similar to that elsewhere on the chalk for the environment of Neolithic enclosures: Knap Hill (Connah 1965) and Windmill Hill (J Evans 1972; Dimbleby and Evans 1974) in north Wiltshire and various sites in Sussex (K Thomas 1982). However, at none of these sites is there really good molluscan evidence, and even at Maiden Castle there is an element of doubt in that there is no good, immediately pre-enclosure assemblage.

SMZ 'c' (MC XIII 1.5–1.8m, MC III 0.7–0.9m, MC XVII 1.8/1.9–2.05m, MC IIa 1.2–1.4m, MC IV 1.4–1.6m)

The assemblages are from the Early to Middle Neolithic levels of the enclosure ditch and the lowest levels of the Bank Barrow ditch. They indicate a general increase in the influence of open country. There is variation across the site. In one part of the enclosure ditch (MC XIII), shells are sparse because of the midden nature of the fill, in the other part (MC III), they are abundant and open-country species amount to around 25%. In the primary Bank Barrow ditch (MC XVII), there is hardly any indication at all of open country (5%), whereas in the extension ditch, the values are higher (15% in MC IV and 50% in MC IIa). So, there was variation across the site even in quite a small area. There is no evidence for widespread clearance and cultivation, however, as has been found under some long barrows on the chalk, for example Thickthorn Down in Dorset (Drew and Piggott 1936), South Street in Wiltshire (Ashbee *et al* 1979), and various Sussex sites (Drewett 1975; K Thomas 1982). At Rimsmoor, there was a general background of woodland through the third millennium (Waton 1982).

SMZ 'd' (MC III 0.4–0.7m, MC XVII 1.4–1.8/1.9m, MC IIa and b 0.95–1.2/1.3m, MC IV 0.9–1.4m)

The assemblages come from context 537, the lowest part of 529 in the enclosure ditch, and the lower fill of the Bank Barrow ditch, in a deposit which is generally pale, fine, and stone-free. The characteristic snail is *Ashfordia granulata*, and the general character of the assemblages is woodland, with open-country influence to start with, but totally closed by the end. The boundary with the previous SMZ is not precise, although this is due to the fact that two criteria are being used: the first appearance of *Ashfordia* and the disappearance of open-country species. The latter is probably reflecting very local conditions, as the species are relatively fastidious in their habitat requirements, whereas the appearance of *Ashfordia* is a better indicator of contemporaneity across the site, the snail being a generalist. The particular conditions that caused the sudden increase of this species are unknown. There was one shell in the primary woodland, but this may be a contaminant. Otherwise, the species probably got to the site in the Middle Neolithic, spreading from nearby wetland habitats in the valley bottoms, and was favoured by the opportunities offered by the developing secondary woodland. It was present in the mid-Holocene at Blashenwell (Preece 1980b).

The assemblage is equivalent to a time when the site was largely devoid of human activity, although this was not total, for, in the enclosure section, the relevant context is the primary fill of a Late Neolithic cut.

SMZ 'e' (MC III 0.3–0.4m, MC XVII 0.98/1.05–1.4m, MC IIb 0.75–0.95m, MC IV 0.3–0.9m)

The woodland nature of the assemblages in this zone is undoubted. In all four relevant profiles, open-country species are virtually absent. However, there was a certain amount of disturbance as shown by the increase in chalk rubble in the deposits, and the characteristic snail, *Pomatias elegans*, is a species that likes a broken ground surface, but with shade and moisture.

This situation is unusual at a time of renewed human activity on the site associated with Late Neolithic occupation. In the enclosure ditch, there is Peterborough pottery at this level. It may be that there was a time-lag in the response of the molluscan communities to human activity, but this is unlikely, in view of the establishment of open-country communities in the area generally by this time and their immediately earlier presence in SMZ 'd'. There is also a very similar situation at South Street in north Wiltshire (Ashbee *et al* 1979), where Late Neolithic activity with Peterborough pottery occurred in secondary woodland. What sort of activity went on in these woodlands and why did it have no effect on the vegetation?

SMZ 'f' (MC III 0.18–0.3m, MC XVII 0.85–0.98m, MC IIb 0.65–0.75m, MC IV 0.13–0.3m)

The main characteristics of the assemblages are the reduction in shell numbers and the reappearance of open-country species, although the latter is slight in MC XVII and non-existent in MC IIb. This is the Beaker cultivation horizon. Clearance of the secondary woodland took place in an interval between the end of the previous zone and the formation of this deposit, the clearance horizon itself having been destroyed by cultivation.

We need to ask why there was a reduction in molluscan abundance and why the response of the open-country species was so slight. The possibility that the first effect was due to partial decalcification of the soil has already been discussed, although why this should be, when it contains so much clastic chalk, is unclear. Ecology is another possibility: tillage has varying effects on molluscan communities, depending on its quality and intensity. Modern ploughed fields are often more or less devoid of molluscs except for enormous populations of the grey field slug, *Deroceras reticulatum*, although recently-harvested fields may also have abundant *Candidula gigaxii*. On the other hand, prehistoric cultivation soils are often very rich in snails, as is the case with the pre-barrow horizon at Wayland's Smithy (M P Kerney pers comm) and the Beaker ploughsoil at South Street (Ashbee *et al* 1979), the latter being in a comparable situation to that at Maiden Castle. We can propose, therefore, that cultivation at this site in the Beaker period was particularly savage.

Other sites on the chalk, where woodland clearance and Beaker cultivation took place as documented by molluscan analysis, are South Street (Ashbee *et al* 1979) and Cherhill (J Evans and Smith 1983) in north Wiltshire and the Giants' Hills 2 Long Barrow, Skendleby, Lincolnshire (J Evans and Simpson 1986).

SMZ 'g' (MC III 0–0.18m, MC XVII 0.78–0.85m, MC IV 0–0.13m)

The assemblage is characterised by the virtual absence of shells. This is the Bronze Age turfline, and the absence of shells is largely a function of decalcification. In addition to the potential of the soil to decalcify due to the non-calcareous drift component, vegetation may also have been responsible. A dense, unbroken vegetation mat, in a regime of reduced or absent-grazing by large stock, inhibits the germination of seeds of woody species and leads to impoverished grassland. This and the lack of soil disturbance can in turn lead to decalcification. In the other direction, an increase in grazing intensity would break up the surface and maintain the calcareous nature of the soil.

The chemistry and ecology of chalk soil decalcification are complicated and the subject requires thorough study from the archaeological point of view. Several examples of chalk-soil decalcification are known from the Holocene, some prior to or early on in the Neolithic, such as Kilham in Yorkshire (Manby 1976) and Maiden Castle itself, others later in the Neolithic and Bronze Age as at Avebury (J Evans *et al* 1985) and Giants' Hills 2 (J Evans and Simpson 1986). The establishment of grassland and its maintenance over long periods is a related phenomenon. In conditions of oceanic climate, reduced grazing, and low pH, a vegetation mat which is almost a peat and up to 1.0m thick develops. This would pose considerable technological and ecological problems for human communities wanting to cultivate the land.

The Iron Age and Romano-British assemblages

The later assemblages at Maiden Castle are almost entirely open-country in character. They are low in numbers of shells, perhaps as a result of the long period of impoverishment during the Bronze Age. Accordingly no attempt has been made to establish formal SMZs, but the main features of the assemblages and their correlation are presented in the fiche for Chapter 5 (Table 124).

There is a woodland component in the lower part of the MC IIc sequence, but this is probably residual, deriving from Neolithic deposits. The woodland component in the lower part of MC XXXI probably derives from an earlier Iron Age limestone structure, since it contains rupestral species: the woodland nature of the assemblage is seen as a function of the microclimate of a rock-rubble environment, not of woodland *per se*. Elements of this fauna were probably imported on limestone building material, and there were no doubt several areas around the site, where local rock-rubble faunas developed in collapsed building debris.

Otherwise, the environments in the Iron Age were of disturbed ground and some grassland. The latter was probably diverse and not heavily grazed, as indicated by the equal abundance of *Vallonia costata* and *V. excentrica*. By the Roman period, *V. costata* was very rare and this may reflect a shift to more intensive grazing and a greater degree of trampling over the site.

Cernuella virgata, a species that entered Britain late on in the Postglacial, was almost certainly present in the Late Iron Age (MC XIII), and this is probably the earliest secure record for the species in this country. It was certainly present at Gore Cliff in the Isle of Wight by the Roman period (Preece 1980a).

In the absence of evidence for the re-establishment of scrub or woodland on the hilltop during these later periods, we can state that the origin of the open-country environment generally on Maiden Castle was in the Beaker period. It is also likely, if the evidence of the two *Vallonia* species is accepted, that the origin of the present grassland was in the Roman period.

Comparison with Mount Pleasant

The only other detailed molluscan sequence from close to Maiden Castle is that from Mount Pleasant (Wainwright 1979b). Here, by the Late Neolithic, if not before, woodland clearance and the establishment of grassland had taken place. This was by about 2100 uncal BC, equating approximately with the time of our SMZ 'e' at Maiden Castle, the zone of closed secondary woodland. At Mount Pleasant, there was woodland regeneration over at least a part of the site, recorded in three separate contexts and dated to between around 2000 and 1500 uncal BC, spanning our SMZs 'e' and 'f'. Clearance of the woodland can be attributed to either Beaker or Early Bronze Age communities: the archaeology and radiocarbon dates are not precise enough to determine this. There was no Beaker cultivation, but substantial reorganisation of the site by Beaker communities took place around 1700 uncal BC, and it is unlikely that this was in woodland. So, perhaps the period of secondary woodland here was shorter than suggested by radiocarbon dating.

From the Early Bronze Age to the Romano-British period, the environment was rich, calcareous grassland. A calcareous soil with a high abundance of shells developed in some places and this supported very open, but probably quite rich grassland. In other parts of the site, a thick deposit of wind-blown material was laid down. This too was highly calcareous, although showing incipient decalcification in one horizon. It contained a similar grassland fauna. So, throughout the Bronze Age there was calcareous grassland here.

In the Roman period, the site was ploughed. *Vallonia costata* tails off, although perhaps slightly later than at Maiden Castle, while *Cernuella virgata* appears and increases.

Charred wood

by R Gale

Although the identification of wood charcoal from archaeological sites is standard, most work has been of a fragmentary nature, based on material collected in an *ad hoc* way during excavation. Rarely has there been an attempt at systematic sampling and identification of large quantities of material that would allow proper quantification of the results. The problem is partly one of paucity of specialists willing to take on the often unrewarding work (Godwin 1956, 9), and partly of the lack of a clear knowledge of the limitations of the material in terms of what can and cannot be identified to species. Difficulties of quantification and interpretation are contributory factors, especially the taphonomic problems engendered by the various and often uncertain ways in which charcoal reaches a site and is incorporated into archaeological deposits. The only certain way forward is to make large collections of material from contexts of known age and character, and from these to detail trends spatially and temporally at a variety of scales – site, local, regional, and country-wide – as has been done at Maiden Castle.

Although Wheeler's excavations at Maiden Castle in

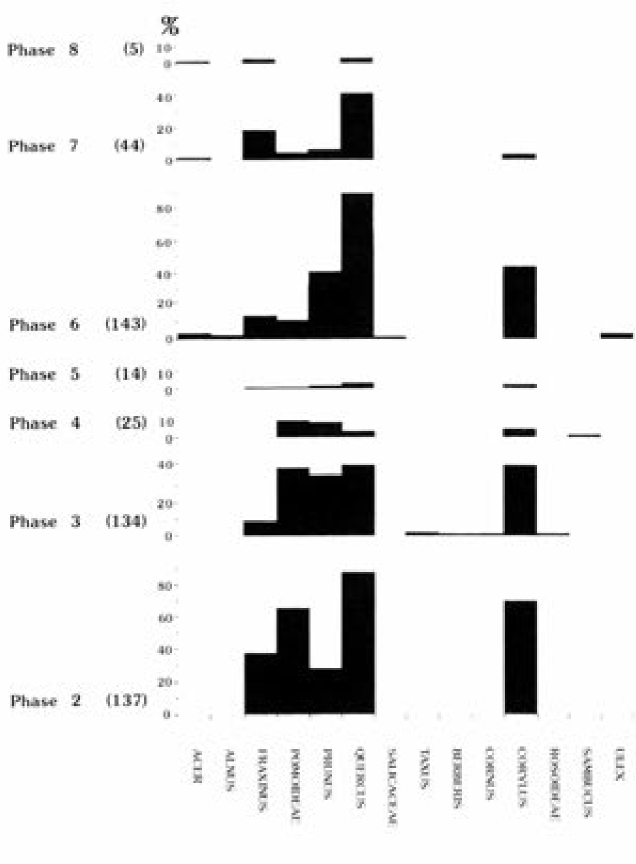


Fig 113 The distribution of wood charcoal by phase: the figures represent the number of samples in which the species occurred; the number of samples examined in each phase is in brackets after the phase

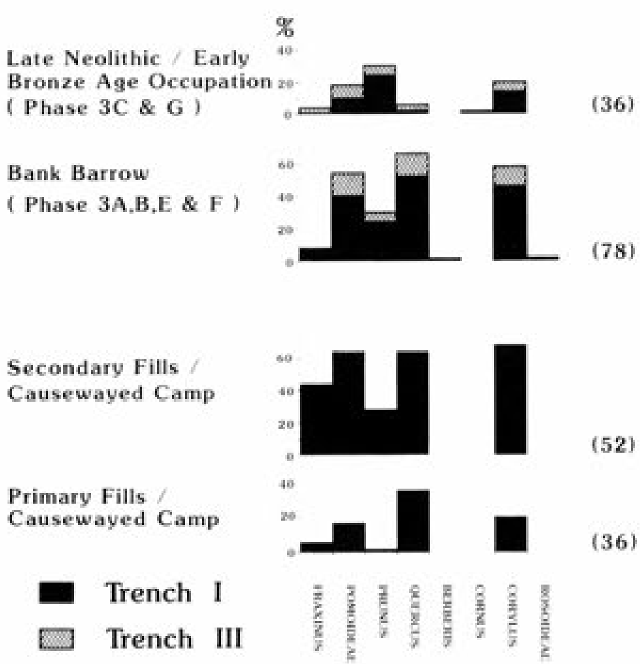


Fig 114 The distribution of wood charcoal in phases 2 and 3 subdivided into context groups; the figures are calculated in the same way as those in Figure 113

the 1930s brought to light a considerable quantity of charcoal, the report on this material was disappointing. The charcoal was examined and identified by Salisbury and Jane (1940), who made overambitious claims as to the vegetation, soil, and climate of the site, which were dismissed the following year by Godwin and Tansley (1941). Bearing in mind the difficulties in separating certain genera to species level, particularly when carbonised, the present author also has doubts as to the specific naming of some of the material.

Methods

Many of the recently excavated contexts produced carbonised wood that was suitable for identification. Over 650 samples were examined, selected from the samples processed by flotation on site. The material was identified using comparative anatomical methods. The selection of material for identification was planned to correlate with the contexts from which seeds, bones, and Mollusca were also examined, so that a composite picture of the environment could be formed.

Individual specimens were pressure fractured to expose clean, flat surfaces in the transverse, tangential longitudinal, and radial longitudinal planes and mounted in Plasticine on microscope slides. The specimens were examined using an epi-illuminating microscope at magnifications up to ×400. The carbonised cellular structure of the wood was generally well preserved, although some samples had suffered from compression or distortion. The latter had a vitrified appearance, a condition usually caused by pyrolysis at excessively high temperatures, ie over 700°C. The material was very fragmented and some pieces were so small that minimal diagnostic characters were present. Identification beyond generic level is not usually possible when based on anatomical features alone. Any genus represented by several fragments of material within the same sample bag has been listed only once, since these may represent the fracturing of a single sample. The fragmented nature of much of the material reduced the possibility of establishing the maturity of the wood.

The results

A list of identifications showing the genera present in each context, each subdivided context, and each sample is listed in the fiche for Chapter 5. This list has been summarised in Figures 113 and 114.

Species identified

Material matching the structure of the following species was present and is listed alphabetically in family order. Classification is based on *Flora Europaea* (Tutin and Heywood 1964–80).

Aceraceae, *Acer campestre* L., (field maple)

Berberidaceae, *Berberis vulgaris* L., (barberry)

Betulaceae, *Alnus glutinosa* (L.) Gaertner, (alder)

Cornaceae, *Cornus sanguinea* L., (dogwood)

Corylaceae, *Corylus avellana* L., (hazel)

Fagaceae, *Quercus robur* L., (English oak), and *Quercus petraea* (Mattuschka) Liebl., (durmast oak)

Leguminosae, *Ulex europaeus* L., (gorse)

Oleaceae, *Fraxinus excelsior* L., (ash)

Rosaceae, subfamily Pomoideae: *Crataegus monogyna* Jacq., (hawthorn) and *Crataegus laevigata* (Poiret) DC., (hawthorn); *Malus sylvestris* Mill., (crab apple) and *Pyrus communis* L., (wild pear); *Sorbus aria* (L.) Crantz., (whitebeam); *Sorbus aucuparia* L., (rowan);

Sorbus torminalis (L.) Crantz., (wild service tree)

Rosaceae, subfamily Prunoideae: *Prunus avium* L., (wild cherry or gean); *Prunus padus* L., (bird cherry); *Prunus spinosa* L., (blackthorn)

Rosaceae, subfamily Rosoideae, *Rosa canina* L., (rose) and *Rubus fruticosus* L., (blackberry)

Salicaceae: *Populus alba* L., (white poplar); *Populus nigra* L., (black poplar); *Populus tremula* L., (aspen); *Salix alba* L., (white willow); *Salix fragilis* L., (crack willow)

Caprifoliaceae, *Sambucus nigra* L., (elder)

Taxaceae, *Taxus baccata* L., (yew)

Species not represented in the assemblage

The species identified from the site probably represent only those selected for a particular purpose, for example fuel or building and thereby give a misleading impression of the full range of woody species growing in the vicinity. Many other species flourish in habitats similar to those at Maiden Castle and, although notably absent from the charcoal identifications, may have been present in the area. These include *Pinus sylvestris* L. (pine), *Tilia cordata* Mill. (small-leaved lime), *Tilia platyphyllos* Scop. (large-leaved lime), *Fagus sylvatica* L. (beech), *Ilex aquifolium* L. (holly), *Buxus sempervirens* L. (box), *Ligustrum vulgare* L. (privet), and *Euonymus europaeus* L. (spindle). *Ulmus* and *Betula*, although not evident in the assemblage from the current excavation, were identified in minimal quantities from material from the earlier excavation (Salisbury and Jane 1940).

Material from Wheeler's excavations

Charcoal samples from Wheeler's excavations were examined and identified by Salisbury and Jane (1940). The material is comparable in date to that reported on here; however, the collections differ in that Wheeler's material would have been collected only when observed during hand excavation (either as individual fragments or as discrete deposits), whereas the recently excavated material has come from the routine sieving of all excavated contexts. The consequence of this difference is that the earlier collection is predominantly comprised of relatively large fragments, while the material excavated in 1985–6 is more truly representative of the full range of charcoal (both in terms of size and taxa) present at the site.

Salisbury and Jane named members of the Pomoideae, Prunoideae, and Salicaceae to species level and designated percentage populations for each. However, in view of the anatomical similarities of some species, and genera, within these groups, the present author feels a more cautious approach is called for – particularly when examining carbonised material. If allowance is made for the over-ambitious specific identifications of Salisbury and Jane, the material from the two excavations can be seen to be broadly comparable.

In the Neolithic period, *Quercus*, *Corylus*, *Fraxinus*, and the Pomoideae are dominant in both assemblages. Wheeler's excavation also produced evidence of *Salix/Populus* and *Rhamnus cathartica*, which have not so far been identified amongst the material from the recent excavations. These have, however, produced specimens of *Cornus*, *Berberis*, and *Rosa/Rubus*, which Salisbury and Jane did not find.

Both assemblages produce similar suites of taxa for the Iron Age contexts. The only differences being that Salisbury and Jane also identified a few specimens of *Ulmus* and *Betula*, but did not find any evidence of *Ulex*.

From their identifications, Salisbury and Jane concluded that the area immediately around the site supported a closed *Quercus/Corylus* woodland during the Neolithic period and up to the Late Iron Age. However, the present work suggests a rather more open environment with a greater variety of species. These findings are more in line with the work of Godwin and Tansley (1941), who suggested that during the densely populated Neolithic period large areas must have been cleared for habitation and agriculture, and following this, in the Bronze Age, wide tracts of uninhabited grassland remained.

Discussion

The woodland environment

In the absence of pollen, the former pattern of woody vegetation must largely be based on the charcoal remains. These will, of necessity, give a less reliable picture of the environment, since the taxa present reflect the selection of materials for specific purposes, rather than the true proportions present in the natural woodland.

Natural woodland

The evidence from phase 2 (Fig 114) shows the presence of *Quercus* and *Fraxinus*. These were probably the dominant species of the natural woodland, flourishing on the slightly acidic soil of the river valley and spreading up the slopes onto the hilltop. There was perhaps an understorey of *Corylus*, which is also well represented, although to fruit successfully (and many contexts yielded an abundance of cobnut shells), *Corylus* requires sunlight. This suggests glades within the wood, and indeed the relatively high proportion of *Fraxinus* would support this.

The woodland margins almost certainly supported *Crataegus*, *Prunus* (cherry and blackthorn, the latter being the most likely), and *Corylus*. Other members of the Pomoideae – *Pyrus*, *Malus*, and *Sorbus* – may also have been present. Godwin (1956, 200) suggests that *Corylus* may have grown in pure copses at this time. *Prunus spinosa* and *Crataegus* would also have flourished in more open terrain.

Phase 2: the enclosure

Quercus (Fig 114) is the dominant taxon and this may indicate its preferential use for building and fuel. *Fraxinus* may have been used for similar purposes. If the summit were less densely wooded than the lower slopes and clothed with a scrubbier growth, the abundance of *Prunus spinosa* and *Crataegus* may be explained by localised clearance of vegetation by burning. The twiggy growth of these species would not make them very suitable as fuel, although they may have been used in wattle work (see p207). The same may apply to *Corylus*.

Phase 3: Late Neolithic and Beaker occupation

Figure 114 shows an interesting change in the dominant taxa during this phase. Both *Quercus* and *Fraxinus* are less obvious and the shrubbier species of the Pomoideae (?hawthorn), *Prunus* (?blackthorn), and *Corylus* have taken on more importance. In addition, several other taxa are present, including *Taxus*, *Berberis*, *Cornus*, and *Rubus/Rosa*, suggesting that the woodland has given way to more open vegetation.

Phase 4 and 5: turfline and Iron Age fort construction

Very little carbonised material was examined from these phases, and there is insufficient evidence to indicate significant changes in the environment. Phase 4 included a sample of *Sambucus*. This invasive shrub quickly colonises the nitrogen-rich soils around areas of habitation and the seeds are freely dispersed by birds after feasting on the berries. Traditionally, *Sambucus* has been planted by latrines for its insecticidal properties.

Phase 6: extended hillfort occupation

Large quantities of charcoal from several contexts within the houses and pits suggest the selection of species for varying purposes. *Quercus* very much predominated in the samples, with *Corylus* and *Prunus* (?blackthorn) also much in evidence. The *Quercus* was probably used for fuel and all three genera for the fabric of the dwellings (see pp74–88). Other, obviously less important taxa also present included *Fraxinus*, the Pomoideae group, *Acer*, *Alnus*, *Ulex*, and *Salix*/*Populus* – the last four appearing on the site for the first time. *Alnus* and *Salix*/*Populus* prefer moist habitats and were therefore brought in from river banks or floodplains. By contrast, *Acer* and *Ulex* favour, respectively, drier calcareous and sandy/calcareous soils. These may have been a supplement to the fuel supply or put to some other use. For example, *Acer* has long been used to make bowls and plates, since the wood is even-grained and imparts no flavour to food; *Alnus* has also been used for similar purposes. *Ulex* has traditionally been used as fuel, fodder, and for barriers.

Phase 7: industrial activity

Contexts yielding charcoal in this phase are associated with iron smelting. Although several species are represented (Fig 113), the most significant are *Quercus* and *Fraxinus*, and these must have been fired in great quantity to maintain the heat needed for such an industry.

Phase 8: the Roman occupation

The minimal material available showed the presence of *Acer*, *Fraxinus*, and *Quercus*.

Selection and use of wood

Construction and building

Positive evidence for the use of wood in Iron Age buildings comes not so much from the charcoal, as from the impressions in daub fragments (see p207). These show wattle panels constructed from rods ranging from 4 to 30mm in diameter and sails from 14 to 35mm in diameter. Many of the slivers of charred wood from Iron Age pits in trench IV, phase 6, originate from stem material and, although too incomplete to warrant measuring, these include *Quercus*, *Corylus*, and *Prunus* (?blackthorn). Other species from the same contexts, but too fragmented to ascertain maturity, included *Fraxinus* and *Salix*/*Populus*. All of these species are suitable for the manufacture of wattle hurdles, but positive confirmation of their use has yet to be found. Only one sample (from pit 5334) showed signs of having been worked, one end having been pointed (the other end is fractured). This possibly indicates a small stake or sail. The sample measured 20mm in diameter with ten annual rings visible from the central axis to the incomplete outer zone. It was identified as *Prunus* (?blackthorn). Examples of hurdle-making in the Somerset Levels as early as 3500 BC have been described by Coles and Orme (1982, 21).

Wood as fuel

Small samples of charred fragments associated with the hearths and ovens in the central roundhouse (phase 6) were identified as *Quercus*, *Fraxinus*, *Prunus* (?blackthorn), and *Corylus* (Chap 5 fiche). The material was too fragmented to determine its maturity. Similar species were present in the western house (phase 6), where many of the samples were mixed with charred beans and grain.

Industry

Phase 7 produced a mass of charcoal as residue from the Late Iron Age metalworking. *Quercus* and *Fraxinus* were dominant in a ratio of about 2:1 with minimal inclusions of *Prunus* (?blackthorn) and *Corylus*. The maturity of the wood could not be established. The thermal capacity of *Quercus* and *Fraxinus* is far superior to any other wood identified and would have been the prime choice to sustain temperatures high enough for activities such as metal smelting. No comment can be made as to whether seasoned wood was used, except to note that *Fraxinus* can be burnt green with minimal heat loss. The possibility that the wood was carbonised prior to use as a fuel also exists.

Food and fodder

Many of the species identified bear edible fruits, which were quite likely to have been gathered and incorporated into the diet. The fruits of the shrubbier plants, such as *Sambucus*, *Berberis*, *Rubus*/*Rosa*, and *Prunus spinosa*, and trees, such as *Prunus avium* and those of the Pomoideae group (which include *Crataegus*, *Sorbus*, *Pyrus*, and *Malus*), would have been eaten in season. The latter were sometimes dried and stored in pits. Charred nutshells of *Corylus avellana* were much in evidence, particularly during the Neolithic period, and would have made a nutritious contribution to the winter diet (see p133).

Domesticated animals may have had a diet supplemented by woody species such as *Ulex*. Toxins develop in this species after flowering (Usher 1974) and, for this reason, hill sheep were traditionally fed on the young stems which sprouted after annual burning (Edlin 1949). Likewise, cattle were fed on the crushed young branches (Usher 1974; Lucas 1960). Godwin (1956, 107) notes that *Ulex* was deliberately planted in historic times on the Welsh hills as a source of winter protein for livestock. Leaves of trees such as *Fraxinus* are known to have been used in the past as a food (Troels-Smith 1960).

Barriers and enclosures

Dead or living hedges of spine-bearing species, such as *Crataegus*, *Prunus spinosa*, and *Ulex*, form an effective barrier for containing livestock or for defence, and it has been suggested by Groenman van Waateringe (1978) that barriers such as these have been used since the Neolithic period.

Woodland management

Initial site clearance of the primary woodland may have been by felling or burning. In either case, providing the root systems were still alive, this would have initiated regeneration with coppice growth, but not if a determined effort had been made to burn out the stumps. The woodland trees of *Quercus*, *Fraxinus*, and *Corylus* coppice very readily.

Inconclusive evidence of woodland management arises from the charcoal and, once again, we must consider the wall daub analyses by Poole (see p207). The diameters of the wattle impressions in the daub range from 4mm to 30mm with the predominance of rods falling between 11mm and 18mm. The sails are larger, varying from 14mm to 35mm. This indicates a methodical selection of roundwood and suggests that woodland management in the form of coppicing might have been in operation.

Coppicing of woods, which include *Corylus*, stimulates this species to bear fruit. This is directly caused by the increase in light. *Corylus* begins to bear fruit at about six years of age and the crops increase annually until maximum production at approximately 15 years (Masefield *et al* 1969, 27). Traditionally, the harvesting of coppice rods for hurdle-making usually rotates on a seven-year cycle, when the stems are 7–10ft (2–3m) long (Edlin 1949); at Walton Heath in the Somerset Levels, these rods ranged from three to nine years (Coles and Orme 1982). Vigorously growing coppice stools provide good crops of nuts (F Stevens pers comm). With the evidence of hurdle-making and the abundance of nutshells in the Neolithic period, one could speculate that woodland management was organised from the early habitation of the site, possibly with a longer cycle for the production of firewood and nuts, than for wattle-making. It was impossible to calculate the age of the stems in the daub impressions, but, for comparison, those from Walton Heath measured 18–26mm.

Plant resources

by C Palmer and M Jones

Introduction

Maiden Castle sits within a region of considerable diversity with regard to geology and soils and bears occupation debris spanning several millennia. It is in these two features that its potential contribution to palaeoeconomic studies lies.

The physical diversity of the region distinguishes Maiden Castle from Danebury, to date the most intensively studied hillfort in southern Britain (Cunliffe 1984a). The regional context of Danebury is dominated by chalk downland and its associated soils, while between Maiden Castle and the Dorset coast lies a far richer diversity of soils and sediments (see p12), ideally suiting it to the kinds of botanical catchment studies carried out at Danebury (M Jones 1984a).

The timespan of archaeological contexts, ranging from Neolithic to Roman date, is still unusual for a single location, and the potential richness of the earliest botanical samples is unparalleled in published work. For these reasons, a research design was formulated, emphasising the following aspects:

1 a direct comparison with the other major data-set from an Iron Age hillfort, ie Danebury, Hants (M Jones 1984a)

2 an analysis of change through time

3 an analysis of the exploitation by the occupants of plant resources from the wider environment.

The realisation of these goals was constrained by the reduction in the scale of fieldwork in 1986. This more or less eliminated the possibility of assembling a useful data-set for the earlier parts of the Iron Age, as the major part of the excavation was conducted away from the earlier hillfort enclosure. The potential for analysis of change through time was consequently reduced. The decision to extend trenches 1 and 2 in 1985, however, allowed an even greater collection of Neolithic plant material than had been anticipated, providing probably the best data-set for the period in Britain. A further amendment to the programme followed the recognition of mineralised seeds within certain contexts. As so little is known about this category of macrofossil, chemical analyses were undertaken.

Background

As with many facets of archaeology, the county of Dorset has a long history of plant macrofossil analysis. General Pitt-Rivers (1898) discussed charred seeds from Cranborne Chase in some detail, and John Percival's early study *Wheat in Great Britain* (1934) includes reference to some excellently preserved material from Corfe Mullen. Percival also examined the charred seeds from Wheeler's excavation, but it should be noted that his criteria for carbonised grain identification have since been queried, and Hans Helbaek's identifications are normally preferred. The most detailed record of the data from Wheeler's excavations is in Jessen and Helbaek (1944). For the Neolithic period, impressions in pottery of both naked and hulled barley, bread wheat s.l., and emmer were recovered, alongside a number of charred hazelnuts from a single pit. The Iron Age charred seeds were dominated by spelt wheat, with some emmer, bread wheat, rye, hulled barley, oats, *Bromus* spp., and *Polygonum lapathifolium*. The few Iron Age grain impressions were of naked barley and emmer.

Helbaek (1952) examined charred seeds and grain impressions from two other Iron Age sites in the county: Portland and Worth Matravers. In M Jones' 1981 review of crop records, there are more Iron Age sites mentioned (eight) for Dorset than for any other county. However, each of these records is scant by modern criteria, and they were likely to be dwarfed by the results of the present project.

Nationally, a more substantial database now exists for the Iron Age, but for the Neolithic and Bronze Age it is still scant. The data collected by Helbaek (1952) for Neolithic Britain could be assembled on a single (admittedly hybrid!) head of grain. A series of causewayed camp studies have since improved Helbaek's record, notably Briar Hill (Perry 1985), Abingdon (P Murphy 1982), and Hambledon Hill (G Jones and Legge 1987).

Method

An intensive sampling strategy was employed for both seasons of excavation. The samples were processed onsite using a self-contained, recycling flotation and wet-sieving unit. A mesh size of 500 microns was used for both flot and residue. The full technical details of this unit are given in the fiche for Chapter 5.

Throughout the excavation, the standard sample size for plant

Table 15 Summary table of the carbonised remains other than wood

Phase	*No of samples*	*Cereal indet*	*Wheat*	*Wheat chaff*	*Barley*	*Barley chaff*	*Culm nodes*	*Hazel*	*Dogw'd*	*Weed no*	*Weed div*	*Buds*	*Vicia faba*	*Litres*
1A	6	0	0	0	0	0	0	0	0	0	0	0	0	120
2A	32	42	38	3	15	0	1	42	0	39	15	0	0	602
2B	12	66	26	2	16	0	0	26	0	17	9	4	0	200
2C	14	56	36	4	13	0	2	13	0	6	6	3	0	300
2D	1	0	0	0	0	0	0	0	0	0	0	0	0	20
2E	3	3	0	0	0	0	0	4	0	0	0	0	0	60
2G	2	0	1	0	0	0	0	0	0	0	0	0	0	40
2H	1	0	0	0	0	0	0	0	0	0	0	0	0	20
3A	4	6	2	1	1	0	0	1	0	4	4	0	0	90
3B	8	0	0	0	1	0	0	1	0	0	0	0	0	152
3C	5	2	0	0	0	0	0	1	1	7	4	0	0	100
3D	11	8	2	2	2	0	0	3	0	4	4	0	0	212
3E	9	11	9	3	15	0	0	0	0	1	1	0	0	126
3F	9	1	0	0	1	1	0	0	1	1	1	0	0	160
3G	2	1	2	3	0	0	0	6	0	1	1	0	0	40
4A	3	1	0	0	0	0	0	0	0	0	0	0	0	40
4B	5	0	1	1	0	0	0	0	0	0	0	0	0	100
4C	1	3	0	8	0	0	0	0	0	2	1	0	0	20
5A	1	0	0	0	0	0	0	0	0	0	0	0	0	20
5B	2	0	0	0	0	0	0	0	0	0	0	0	0	40
5C	5	18	2	9	2	0	0	0	0	2	1	0	0	80
6B	2	17	6	32	4	0	1	0	0	15	4	0	1	10
6C	3	125	28	1244	11	3	2	0	0	199	26	0	0	15
6D	4	10	5	39	3	1	0	1	0	23	10	0	0	20
6E	3	32	3	229	6	2	0	0	0	135	20	0	0	15
6F	7	112	23	743	22	8	4	1	0	362	35	0	1	35
6G	5	50	6	418	6	11	5	0	0	135	25	0	5	25
6H	4	149	36	703	20	1	1	0	0	331	32	0	5	20
6I	10	154	66	1152	98	14	9	1	0	1959	58	0	6	50
7A	3	1	0	7	5	0	0	0	0	16	14	0	0	15
8A	7	72	19	39	28	0	0	0	0	33	13	0	457	35

Note: Unless otherwise stated the figures refer to absolute numbers of fragments
'Weed no' refers to seeds and fruits
'Weed div' refers to the minimum number of species

Table 16 The distribution of unidentified structureless starch fragments, possibly derived from heavily combusted seeds or roots

		A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*
Phase 1	*grams*	.05								
	litres	120								
Phase 2	*g*	5.02	6.23	2.38	0.01	0.28		0.09	0.01	
	l	602	200	300	20	60		10	5	
Phase 3	*g*	1.21	0.68	0.43	0.87	1.72	0.19	0.35		
	l	90	152	100	192	206	100	40		
Phase 4	*g*	0.10	0.20	0.0						
	l	60	100	20						
Phase 5	*g*	0	0	0.26						
	l	20	40	80						
Phase 6	*g*		0.59	3.37	0.31	1.06	5.19	1.91	2.20	8.18
	l		10	15	20	15	45	25	10	50
Phase 7	*g*	0.08								
	l	15								
Phase 8	*g*	1.55								
	l	35								

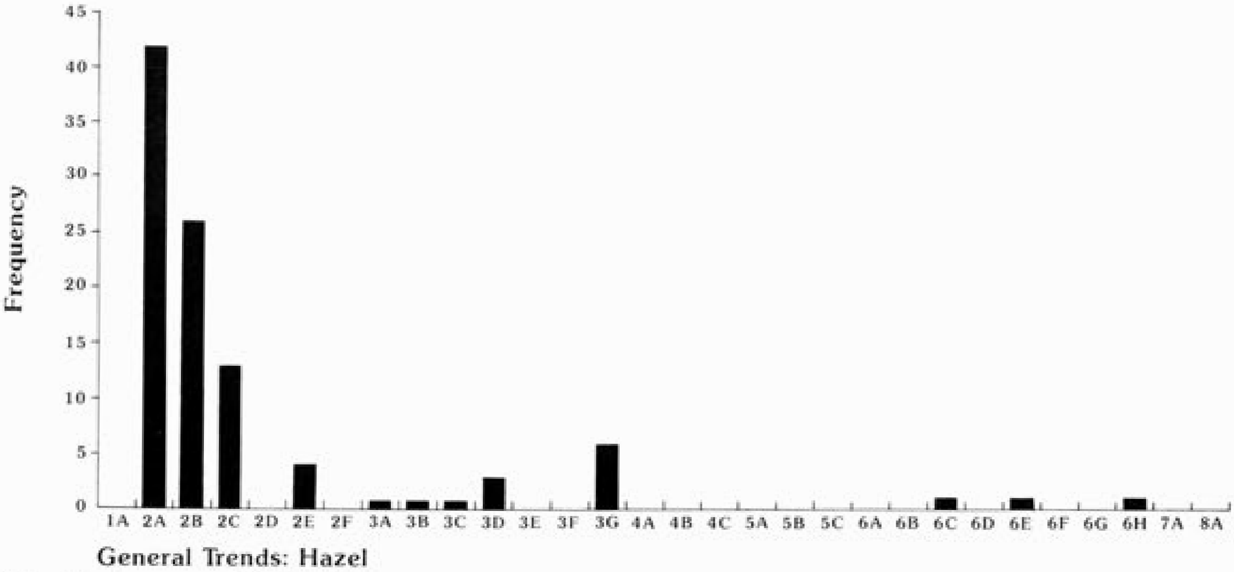


Fig 115 The frequency of hazelnut fragments according to phase subdivision

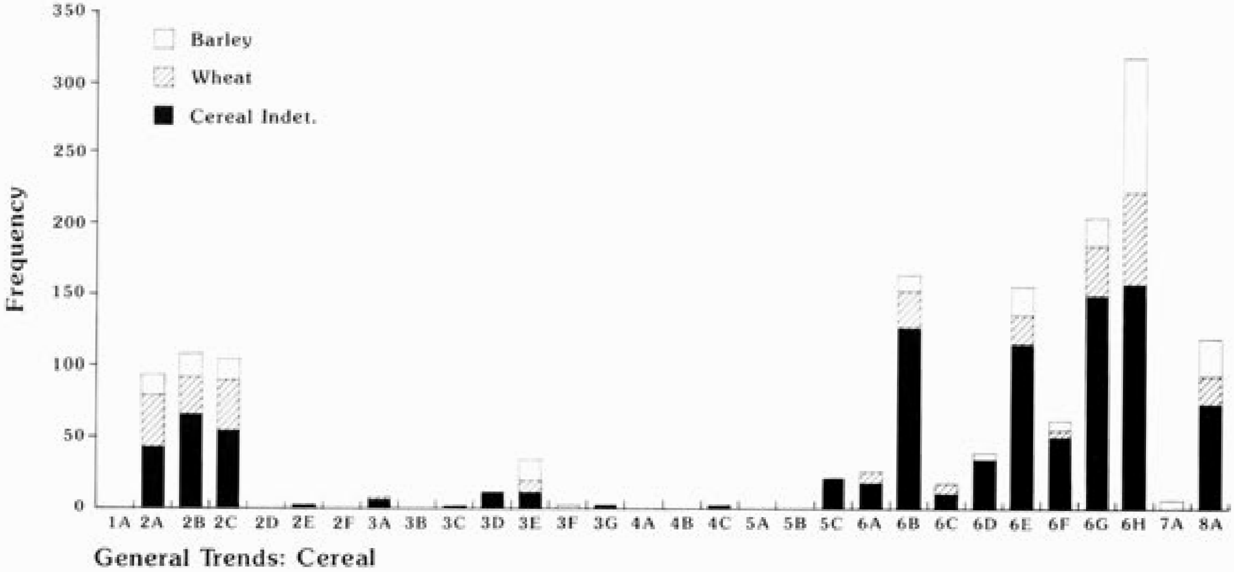


Fig 116 The frequency of cereal grains according to phase subdivision

macrofossil analysis was 20l of excavated sediment. For the early phases, the causewayed enclosure, the Bank Barrow, and the Bronze Age turfline, samples were taken from every metre square in every context. In addition to this, samples were taken from every half metre square of the very rich contexts from the ditch of the causewayed enclosure. For the Iron Age, one sample was taken from each context (some contexts excavated towards the end of the project unfortunately remained unsampled through pressure of time). Over the two years' fieldwork, just over 1200 samples were processed in the field. These samples provide a coordinated archive, not only for plant macrofossils, but also for small fragments of bone, flint, pot, and shell.

In order to accommodate both the stated research design and constraints of economy and time, laboratory analysis focused upon an approximately 15% sample of the material retrieved. The basis for and the means of this selection were as follows.

The British Neolithic is a period for which scant macro-botanical data currently exists. For this reason, every context received microscopic examination, a single sample being randomly selected from the total number of spatial replicates from each context. Seventeen further samples were selected for analysis from the richer contexts. The same strategy was employed for Bronze Age samples.

On account of the greater number and richness of the Iron Age samples and the existence of a greater body of contemporary data, a more selective strategy was adopted. A stratified random sampling procedure was adopted along the lines employed at Danebury, among other Iron Age sites (M Jones 1984b; 1985). The sample population was stratified into four feature groups: linear features (eg ditch fills), spot features (eg postholes), occupation layers, and other extensive features (banks, spreads, and soils). Microscopic analysis was carried out on 10% of each sampling stratum. Each selected sample was divided into four by means of a riffle box, and one of the quarters was fully scanned.

The random selection of pits was also made, and, within each pit, a purposive strategy was adopted on the basis of prior knowledge of vertical distribution of plant material in the Danebury pits (M Jones 1984a), which suggested that the lower levels within such pits contained the more complete and taphonomically uncomplicated evidence. The three lowest layers from five randomly selected pits were thus selected for analysis.

The number of Romano-British contexts was small. All were therefore analysed in order to establish as large as possible a set of comparanda.

All samples were scanned at ×20 magnification, using a Zeiss stereoscopic microscope. All fruits, seeds, and recognisable parts of the cereal plant were picked out and identified as far as possible using the Department of Archaeology Biolab reference collection at Durham University. Cereals were identified with reference to the second author's collection. Reference was also made to Beijerinck (1947), Berggren (1981), and C Hubbard (1954).

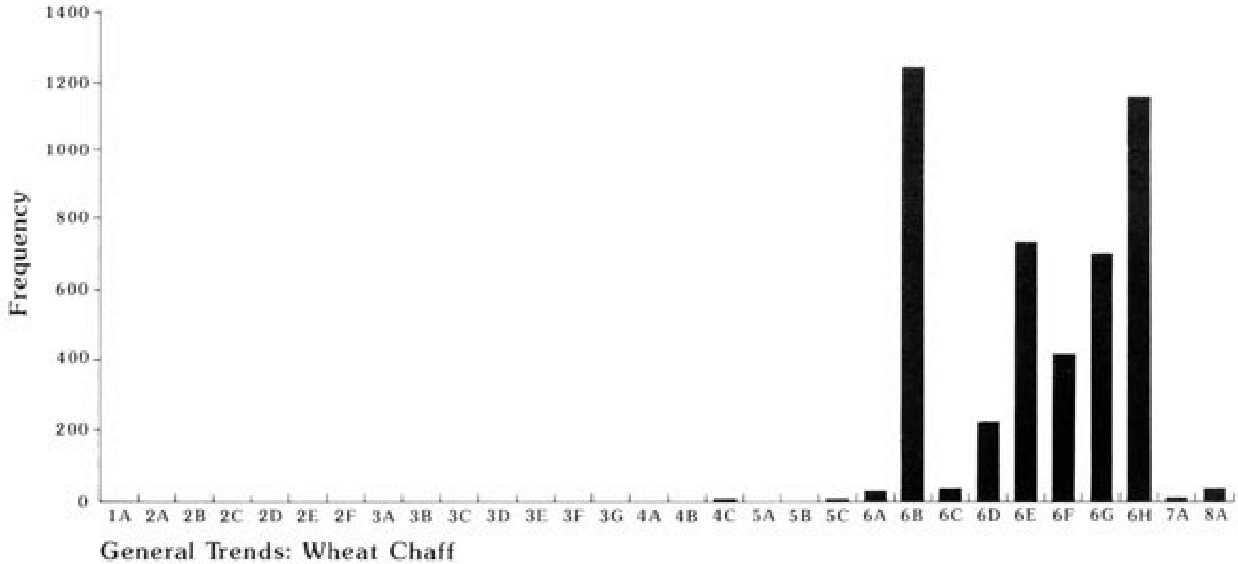


Fig 117 The frequency of wheat chaff fragments (principally glume bases) according to phase subdivision

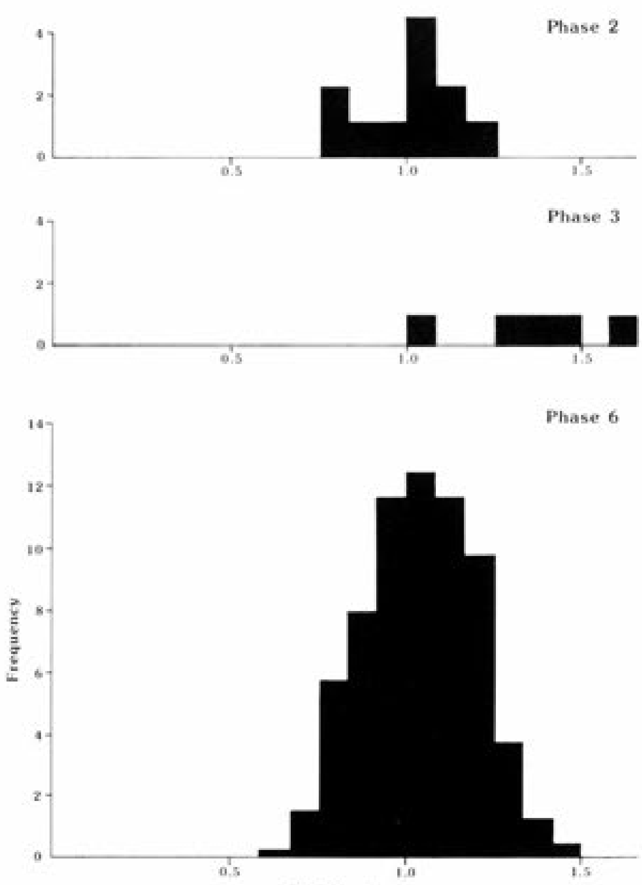


Fig 118 The size of Triticum glume base widths in phases 2, 3, and 6

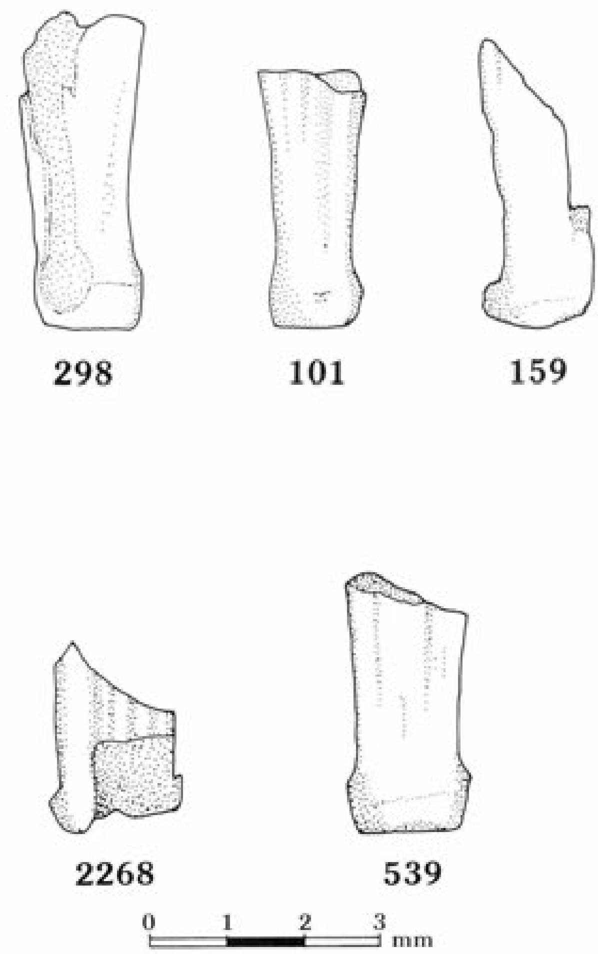


Fig 119 Dorsal views of selected Triticum glume bases

The components referred to as 'starch fragments' in the tables are black and slightly shiny fragments, probably deriving from cereal grains that have been heavily denatured, by either processing or carbonisation. All starch fragments above 500 microns for the pre-Iron Age and above 800 microns for the Iron Age samples were collected and their weights recorded in Table 16.

The data

The carbonised material is summarised in Table 15 (in complete form in Chap 5 fiche). The only measurements taken were those of clear taxonomic significance, ie the basal glume widths of *Triticum* spp., presented in Figure 118. All completed glumes were measured at their base of articulation, by means of a Wild stereo-microscope with

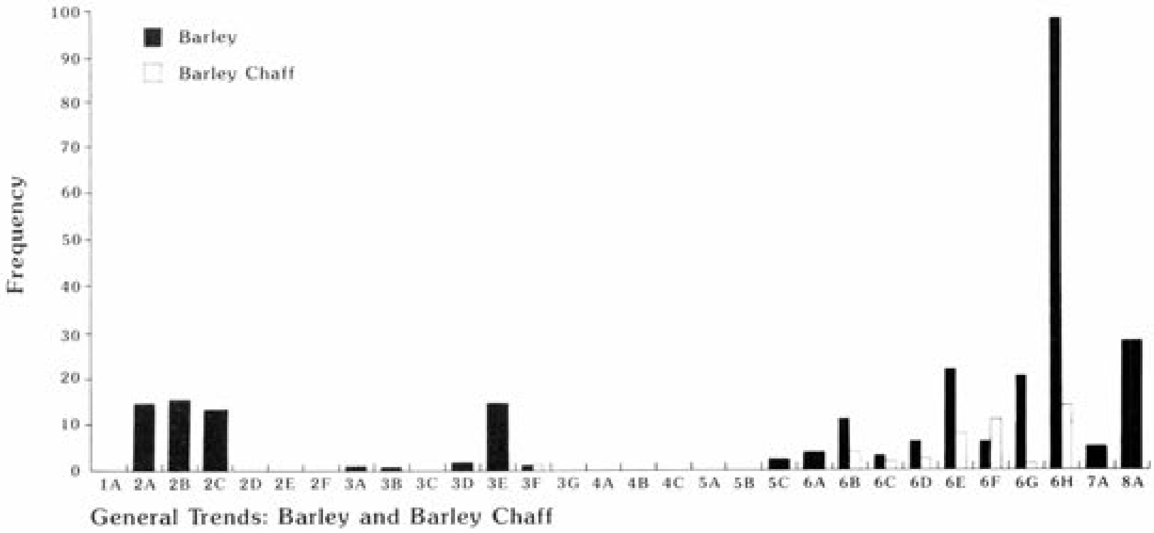


Fig 120 The frequency of barley grains and barley chaff fragments (rachis nodes and internodes) according to phase subdivisions

an eyepiece graticule at ×12 magnification. Out of a total of 4641 glumes, 677 were sufficiently intact for such measurement.

A list of the mineralised seeds found at Maiden Castle is presented in Table 17. They could well represent no more than a partial fraction of those present, as the flot residues were sorted by eye, not microscopically. Small seeds were only recovered from the flots, to which only a few of the relatively dense mineralised seeds would have arrived. All the seeds recovered come from the basal layers of pits. In view of the little that is known about mineralised macrofossils, a chemical analysis was considered appropriate. That analysis is presented in the fiche for Chapter 5.

The analysis

General patterns

The main aspects of the data are presented graphically in Figures 115, 116, 117, and 120 from which some general observations may be made. The horizontal axis is in chronologically ordered groups, rather than being fully ranked (eg the subdivisions of 2C, 2D, and 2E are broadly contemporary, but not stratigraphically interrelated). The quantity of information varies greatly from phase to phase.

Within the cereals, wheat grains are generally more abundant than barley grains. There is a contrast between the Neolithic and Iron Age wheats, both in terms of the predominant species (*T. dicoccon* in the earlier period, *T. spelta* in the later) and in terms of the quantity of glume bases (low in the earlier period and high in the later). Barley internodes were absent from the Neolithic samples, but present in small quantities in the Iron Age samples.

There is a marked drop in the abundance of hazelnut fragments through time (Fig 115) and an equally marked rise in the abundance of weed seeds.

Statistical analyses

In order to explore patterning within the data, they were run through two computer programs commonly used for living vegetation groups. These programs are TWINSPAN (Hill 1979a) and DECORANA (Hill 1979b). The authors are grateful to Mrs J Huntley for her assistance with these analyses. A summary of relevant results is provided in the fiche for Chapter 5.

Table 17 The mineralised seeds

Nodum	*Code nos*	*524*	*5373*	*5517*	*5547*	*5549*	*5774*
3277	Indeterminate	1				3	
3432	Gramineae <2mm		1			4	1
3049	*Plantago lanceolata*			1	2		
3124	Cerealia undiff				1		
3142	cf *Cirsium* sp.				1		
2023	Chenopodiaceae undiff				5		
3310	*Thlaspi arvense*					1	
3053	*Polygonum* sp.					1	
3501	cf *Calluna anther*						1
Number of species		1	1	1	4	3	2

The economic taxa

Fruits and nuts

Corylus avellana (hazelnuts): 97 nutshell fragments were recovered from Neolithic samples, in contrast to three from the Iron Age samples. This marked contrast is all the more striking when viewed alongside the quantity of grains from each respective phase (compare Fig 115 and 116). Hazelnut fragments were found during Wheeler's excavations of the Neolithic features and in various other Neolithic contexts from southern Britain (M Jones 1980; Perry 1985; Wheeler 1943); the contrast observed on this site is evident in contemporary sites throughout southern Britain.

Prunus spinosa (sloe): one possible sloe stone of Neolithic date was recovered from the Bank Barrow ditch fill (context 2257). Owing to its poor state of preservation, the identification is not secure. The stone is fairly rounded in outline, with evidence of some surface ridging on one side. The stone also has a small, perfectly round, weevil hole on one side.

Empetrum nigrum: the black fruits or 'crowberries' are edible, but apparently make for poor eating. Its presence in Iron Age context 5373 is therefore enigmatic.

Cereals and grasses

Triticum spp. (wheat) was the most abundant economic genus throughout, present as grains, glume bases, spikelet forks, and internode fragments. Identification of grains was carried out further where preservation of the original grain shape permitted, but even here should be regarded as a statement of high probability, rather than certainty. Those grains ascribed to *T. dicoccon* were deeper than broad, with flat ventral surfaces and gradually tapering ends. Those ascribed to *T. spelta* were relatively long with broadly blunt apex and base. Those ascribed to *T. aestivum/compactum* were squatter, more rounded grains, whose broadest cross section was closer to base than apex.

A more secure identification is possible with chaff fragments, of which the most numerous were glume bases. The measurements of their basal widths have been presented in Figure 118. For the Iron Age, the general distribution of widths corresponds well to *T. spelta* (Fig 118), as does their surface venation (cf Helbaek 1952; M Jones 1978a). The small number of Neolithic glumes has been divided into the earlier specimens from the causewayed enclosure (period 2) and the later specimens associated with the Bank Barrow (period 3). The breadth of these glumes in comparison with their Iron Age counterparts is of particular interest: although only small numbers are involved, they clearly spread into the size range of spelt wheat. The period 2 glumes, however, have a narrower range of basal widths than the period 3 glumes (Fig 118) and the pattern of dorsal venation of *T. dicoccon* (Fig 119). Not only are the basal widths of the period 3 glumes easily of sufficient breadth to correspond with spelt wheat, at least one glume, from context 2268 (phase 3E; Fig 118), bears the dorsal venation associated with hexaploids. While a single instance of Early Neolithic spelt wheat in Britain is attested (Helbaek 1952), the glume from context 2268 is still an unusually early record for spelt wheat. With this background on identification in mind, we can move to a species by species discussion of the wheats.

Triticum dicoccon (emmer): this would appear to be the principal wheat species of Neolithic and Bronze Age Northern Europe. In the Wessex region, it has been recorded, for example, from the causewayed camps at Windmill Hill and Hambledon Hill (G Jones and A Legge pers comm). At Maiden Castle, the majority of fully identified wheat seeds of Neolithic age, and a small number of the Iron Age, are of this species. Helbaek found a number of impressions of both spikelets of and grains of *T. dicoccon* in Wheeler's Neolithic and Iron Age pottery from the site, in addition to 17 carbonised grains and one spikelet in Iron Age features.

Comments on the ecology of *T. dicoccon* vary: Columella (*De Re Rustica* II, 9.3) suggested that heavy clay wet soil is suitable for *far adoreum*, which is normally translated as emmer; Percival (1921) associated emmer wheat with light, dry soils; and most recently, M Davies and Hillman (1988) have observed that its flooding tolerance is relatively high. Either one or more authors is mistaken, or this discrepancy relates to a greater within-species variation than is encountered among modern strains.

Triticum spelta: in addition to the possible indication of Late Neolithic spelt wheat discussed above, the great majority of Iron Age and Roman period carbonised wheat fragments are of this species, at Maiden Castle as in southern Britain as a whole. This is also true of Helbaek's material from the site, though pottery impressions of this species are sparse in comparison with those of *T. dicoccon*.

T. spelta will grow both on the heavier and on the drier, lighter soils. It is noted for its hardiness to cold, wind, diseases, and pests. This hardiness allows it to be grown at 900m altitude in the Schwabian Alps (Percival 1921).

Triticum aestivum/compactum (bread wheat/club wheat): two grains of this type were recovered from the Neolithic contexts, and one Neolithic impression was recorded by Helbaek. In the absence of chaff, these identifications rest on grain shape and are consequently less certain. The main criteria are the squat shape of the seed and a cross-section that is at its largest close to the embryo.

Such grains have been recovered in small quantities on several sites from the Neolithic onwards. It is during the Iron Age that the first sites with larger numbers of free-threshing hexaploids emerge and, by the medieval period, this becomes the norm. This transition has been related to two factors: its favourable response to intensive farming in terms of deep cultivation, weeding, and fertilisation (M Jones 1981), and secondly, the ease of chaff removal, facilitating crop transport (F Green 1981).

Hordeum spp. (barley): *Hordeum* was present in most contexts of all dates. One sample associated with the late Bank Barrow and one Iron Age pit sample were dominated by barley. Owing to the poor preservation, most *Hordeum* grains could not be identified beyond genus. However, the presence of some twisted grains indicates six-row barley, and the presence of dorsal ridges on two Iron Age grains indicates hulled forms, as their clear absence on at least one Neolithic grain indicates a naked form. Helbaek records both naked and hulled barley as grain impressions in both the Neolithic and the Iron Age and large numbers of carbonised Iron Age *H. polystichum*.

Both naked and hulled six-row barley grains have been found on other British sites of Neolithic and Iron Age date. *Hordeum* is perhaps the most adaptable cereal: it can be grown on both heavy and light soils, to heights of 12,000ft (3700m) in South-East Asia, is particularly tolerant of drought and saline conditions, and may be sown either in winter or in spring (G Bell 1948; Bland 1971). In Britain, *Hordeum* is only restricted in areas of poor drainage and in acid soils (pH less than 6: Bland 1971).

Avena spp. (oats): on this site, *Avena* is confined to the Iron Age samples. It occurs almost exclusively as awn fragments, but one grain was recovered from a phase 6I pit fill (context 5373). It is possible to determine the species in these cases. In Wessex, the evidence for cultivation of oats is patchy and inconclusive. However, Helbaek recovered oats from Wheeler's excavations and was able to identify two cultivars, *A. sativa* and *A. strigosa* – group.

Avena tolerates both acidity and low fertility, but prefers a milder, moister growing season than either *Triticum* or *Hordeum* and is less frost hardy. It is therefore generally better suited to spring than winter sowing, although winter sown varieties do exist (G Bell 1948).

Bromus spp.: the seeds of *B. secalinus/mollis* and *B. sterilis* are among the most frequent in the Iron Age contexts. Helbaek recorded two seed impressions of the latter species in Iron Age pottery from the site. *Bromus* spp. occur in various segetal and ruderal contexts, but have also served as famine food in the recent past (Hjelmqvist 1955). Several authors have speculated about their use as a food plant in prehistory (Knörzer 1967; R Hubbard 1975; M Jones 1978a).

Legumes

At Maiden Castle, crop legumes were restricted to the later, ie Iron Age and Roman, periods. All legumes can compete well on nitrogen-poor soils through their ability to derive fixed atmospheric nitrogen from symbiotic bacteria. *Vicia faba*, *Pisum*, and *Lens* are not as tolerant of cold winters as some of the cereals; for this reason, they are more likely to be found in the south of Britain.

Vicia faba var. *minor*: a large number of these beans derive from a small pit of Roman date in trench I (context 43); 5l of sediment produced 457 seeds and seed fragments. The majority were extremely well preserved and, on most, the hilum remained intact. Scattered British records of this crop now run from the early fifth millennium BP (P Murphy 1982).

Pisum sativum: two specimens, characterised by their almost spherical shape and ovate hilum, were identified from phase 6I pit fills (contexts 5517 and 5550). They were approximately 6mm in diameter. British records of *Pisum* are even patchier than those of *Vicia faba*. They are first encountered in the Bronze Age (Legge 1981).

Lens culinaris: one specimen was tentatively identified from an occupation layer (phase 6G, context 5263). The seed had a flattened, convex cross-section, with a circular face to its cotyledons. Traces of a lanceolate hilum were discernible, but poorly preserved. There is another tentative identification of Iron Age date from Gussage All Saints in Dorset (A Evans and Jones 1979), but the crop has never been prominent in the British crop record.

Vicia spp. (vetches): several small seeds of this genus were recovered. Owing to the variable state of the hilum on these specimens and the difficulty in any case of separating species, they are presented collectively in the data lists. However the presence of both *Vicia sativa* (common vetch) and *Vicia cracca* (tufted vetch) is discernible.

These two species both grow commonly as weeds of arable and waste ground, but both have also been cited as economic plants, in particular *V. sativa* which is still grown as a fodder crop in places.

Other potential crops

Chenopodiaceae: Both the leaves and the seeds of several members of this family have a long tradition of use as food. Of the species present at Maiden Castle, the use of *Chenopodium album* as a food plant has been most often discussed. The Neolithic record of *Atriplex littoralis* must presumably indicate human transport to the site, although we lack evidence for the purpose.

Brassica spp.: this genus includes a wide range of economic plants, including the seed crops of rape and mustard, the leaf crops of cabbage, brussel sprouts, and kale, the inflorescence crops of cauliflower, broccoli, and kohlrabi, and the root crops of turnip and swede. We shall not be able to fully elucidate the prehistoric use of Brassicas, until we are better able to locate and identify vegetative tissue from archaeological contexts.

As with the Chenopodiaceae, some *Brassica* spp. are also arable weeds. However, the high numbers of *Brassica* seeds recovered from pits 5334 and 5546 may indicate their economic use.

Spergula arvensis (corn spurry): an important arable weed of nutrient poor land, this species has been used as a food plant and cultivated. The Shetland name *meldi*, the meal plant, recalls a time when its seeds were ground for human food.

The weedy taxa

It is possible to examine the ecological implications of past plant assemblages in terms either of the individual ecological preferences of their constituent taxa, the 'autecological approach', or in terms of the ecological behaviour of groups of species that tend to occur together, the 'synecological approach'. Both possibilities have been followed at Maiden Castle.

An autecological approach

The main focus of autecological work within the context of the aims of the botanical part of the project was the identification of ecological zones from which the crops arriving at the site were ultimately derived. Simon Allen has examined this question in relation to an area contained by the coast and an arc of hillforts lying at approximately 15km from Maiden Castle, as the basis for his undergraduate dissertation (1987). Drawing from this project in the context of the more intensive survey of soils closer to the site (see p12), broad categories of source area can be considered.

The chalk downland dominates the immediate vicinity of Maiden Castle, including Upper, Lower, and Middle Chalk. Several of the taxa could well have come from this category. In comparison with Danebury, we note the absence of *Papaver* spp., *Fumaria* spp., and *Urtica urens* – all species appropriate to dry chalk downland.

The clays and marls, which encircle the downland with extensive areas towards Weymouth, include London Clay, Reading Beds, Gault, Kimmeridge Clay, Oxford Clay, Fuller's Earth, and Black Marl. There are no taxa present that we would specifically relate to heavy soils (eg *Anthemis cotula* and *Sinapis arvensis* are absent).

The sands and sandstones lie around the margins of the chalk and as numerous patches within the chalk downland, including Bagshot Beds, Upper Greensand, Lower Greensand, Wealden Sand, Bridport Sands, and Down Cliff and Thorncombe Sands. *Empetrum nigrum* and *Sieglingia decumbens* would both be reasonably associated with soils subject to podzolisation, such as survive in patches on and around the Dorset chalk, for example east of Stinsford, around the Hardy Monument, and possibly close to the site on Hog Hill (Staines pers comm). The second species is of particular interest as its frequency in carbonised assemblages in the north and west have led to the suggestion that it was an arable weed of heathy, but cultivated, fields (cf Hillman 1981). The calcifuge weed *Spergula arvensis* may have grown here and *Hyoscyamus niger* is also a plant of sandy soils.

The glacial and fluvial drift, which is along valley bottoms and the coast, includes Alluvium, Plateau Gravels, Valley Gravels, and Head. There are one or two damp ground taxa present (eg *Carex* spp., *Polygonum hydropiper*, and *Montia fontana* which suggest the exploitation of some damp, low-lying ground. The absence of *Eleocharis* spp. marks a striking contrast with contemporary sites further east (cf M Jones 1984b). The most coastal of the taxa is *Atriplex littoralis* found in a Neolithic context, strongly suggesting a visit to the estuarine muds around Weymouth in this period. The later periods lack anything as clear cut. *Hyoscyamus niger* is particularly common near the sea, but grows freely inland. There is also the possibility that wild *Brassica oleracea* was being gathered from the coast. However, definitive evidence that coastal plant resources were used after the Neolithic is lacking.

The limestones other than chalk interleave with clay vales towards Weymouth and also to the north of the Chalk Downland and including Portland Beds, Purbeck Beds, Corallian Limestone, Cornbrash, Forest Marble, and Oolite. The evidence is essentially neutral: while many of the taxa could happily grow here, we are unaware of any taxa present that might discriminate between this category and chalk downland.

In general, although we suggest that sandy patches in the chalk downland were exploited and sometimes cultivated, we do not see strong evidence in the Iron Age for exploitation of the heavier soils and coastal strip to the south. In the Neolithic period, however, plant material does seem to have been brought from this latter zone.

Within the arable landscape, there is very little evidence of nutrient depletion. The predominantly nitrophilous Chenopodiaceae constitute a large proportion of the weedy taxa throughout, and other nitrophiles such as *Stellaria media* are often recovered in abundance. Conversely, weedy taxa among the Leguminosae, a group which competes well in conditions of low soil nitrogen, are sparsely represented throughout.

Of the taxa often found on poor, depleted arable soils, *Spergula arvensis* and *Rumex acetosella* may have come predominantly from the sandy areas mentioned above.

The second author has argued elsewhere that the behaviour of certain recurrent weedy taxa reflects a transition from non-inverting cultivation with ards to inverting cultivation with ploughs (M Jones 1984b). Certain large-seeded grasses, such as *Bromus* spp., thrive in the former situation, and certain dicotyledons, such as *Anthemis cotula*, *Agrostemma githago*, and *Centaurea cyanus*, thrive in the latter. The high proportion of *Bromus* spp. throughout at Maiden Castle, and absence of the three dicotyledons cited above, would suggest that traditional ard cultivation continued around the hillfort throughout its occupation.

A synecological approach

Considering a plant in relation to the community of plants of which it is a part, rather than as an isolated species, may have considerable potential in studies of carbonised plant material. Indeed, this approach has formed an integral part of central European studies for some time (cf Knörzer 1971), but runs counter to much of the British tradition of ecological research. Just as there are difficulties in defining and describing individual species in the past on the basis of their present counterparts, so do such difficulties arise with plant groupings in the past. The boundaries between groupings are, and presumably were, fuzzy, and we do not really know the extent to which component species have tended to regroup through time (Holzner 1978; M Jones 1984b; 1988a). These ecological problems are compounded by taphonomic problems, not only those that apply to all carbonised material, but also directional biases through crop processing towards particular syntaxa (or plant sociological groupings: cf G Jones in press). We may, however, be justified in comparing our data with the broader subdivisions of modern weed communities, principally following Silverside (1977) on the classification of British weed communities, complemented by Tüxen (1937) on related north-west German communities.

The majority of taxa at Maiden Castle may be subsumed within the following two orders of Silverside's class Stellarietea.

Polygono-chenopodietalia: these tend to be found on nutrient-rich, disturbed ground. Related syntaxa in mainland Europe have been associated with spring sowing and hoe-plot cultivation. In Britain, the latter may hold, but not the former on account of the milder Atlantic climate, which fails to exclude this group from winter growth.

Character/differential species of this syntaxon found at Maiden Castle are:

Brassica campestris
Polygonum persicaria
Spergula arvensis

Centauretalia cyani: these species are generally thermophilous, and consequently reach their northern limit somewhere within Britain. They are associated with extensive cultivation of cereals and some legumes.

Character/differential species of this syntaxon found at Maiden Castle are:

Aphanes arvensis
Lithospermum arvense
Sherardia arvensis
Valerianella dentata

Although not identified to species, the following may tentatively be added to the list:

Avena sp.
cf *Odontites* sp.
Veronica sp.
Viola sp.

Molinio-arrhenatheretea Tx. 37: here, Tüxen's north-west German syntaxon is used to encompass a group outside the remit of Silverside's account, but discussed for Britain in Rieley and Page (1990). The class is generally associated with neutral pasture, but also includes habitats that can be described as disturbed grasslands, for example, at the sides of fields, roadside verges, and grassy edges of fields. There is an overlap with the Stellarietea class.

Character species of this syntaxon present at Maiden Castle are:

Arrhenatherum elatius
Chrysanthemum leucanthemum
Plantago lanceolata
Prunella vulgaris
Ranunculus sp.
Stellaria graminea
Trifolium sp.

There is a marked difference in quantity and range between the earlier and later wild plant groups at the site. The Late Iron Age group is dominated by disturbed ground and arable field communities. The Neolithic by contrast contains a narrower range of species from a wider range of environments. Alongside the coastal and water-edge plants, the weedy taxa are dominated by members of the Chenopodiaceae and Polygonaceae. This may either indicate the active collection of them for food in their own right, or incidental collection from nutrient-rich plots in which such taxa were thriving. G Jones (in press) has linked assemblages of this type to garden plot husbandry.

Crop evidence and site activity

Figure 121 depicts the Iron Age and Roman data in the manner outlined and discussed in M Jones (1985). The aim is to depict the general patterns within the data in a way that allows comparisons to be made between phases and between sites. Each assemblage is indicated by a circle, whose diameter corresponds to the overall concentration of identified fragments in each deposit and whose position within the triangle indicates the relative proportions of cereal grains, weed seeds, and quantifiable chaff fragments (ie glume bases, rachis fragments, and culm nodes).

Even with the very small number of Romano-British samples that were examined, a contrast is immediately evident between them and the Iron Age samples; indeed, the two distributions occupy distinct zones within each triangular diagram. Whereas the Roman pattern could be produced in various ways, and there are too few data to be definitive, one aspect of the Iron Age pattern is worthy of especial comment: the frequency of rich samples dominated by chaff.

Of the various Iron Age sites discussed in M Jones (1985), only one produced a series of rich samples made up of over 50% chaff fragments, and that was another hillfort, Danebury. There are some other factors in common with Danebury: the very wide range of fragment densities, from 0 to 270 identifiable fragments per litre of deposit, and the particular richness of the basal pit deposits. The Maiden Castle data differ from the Danebury data in the absence of deposits rich in grain as opposed to chaff, giving the Maiden Castle 'total Iron Age' scattergram a far more flattened appearance than the Danebury scattergram. Three reasons for this difference may be proposed.

1 A sampling factor: the sample fraction excavated at Maiden Castle has been minute. It may be that grain-rich deposits lie elsewhere and remain to be found.

2 A taphonomic factor: the samples were also notable for large quantities of amorphous starch fragments, the majority of which may well be heavily carbonised grains. It is difficult to say how likely it is that such a factor could consistently remove the kind of dense grain finds recovered at Danebury. Pilot experiments have shown glumes to be more easily combustible than grain (G Jones pers comm), but this in itself does not explain differences between carbonised data sets.

3 A cultural factor: the scale of grain storage and, consequently, the scale of grain burning were much less at Maiden Castle.

As at Danebury, the Iron Age carbonised remains from Maiden Castle indicate grain cleaning and de-husking as major activities. No firm inference is drawn at this stage from the absence of the kind of grain-rich deposits which we might associate with storage accidents.

Within the Iron Age, there is some further variation. The pits, taken alone, are marginally more concentrated into the 'chaff sector' of the diagram than for all Iron Age features combined, and this is mirrored in the smaller data-sets from every feature category except 'banks and spreads'. It seems that the latter features incorporated a more generalised form of crop debris than seen in the accumulation during and after use of the subsoil features, which are the ones accumulating de-husking debris. It should also be mentioned that smaller samples are more likely to be widely scattered, and we may in part be looking at a sampling bias in the case of banks and spreads.

The small number of Roman period deposits have crop seeds as the dominant component and therefore suggest different depositional processes.

The substantial number of earlier deposits, which have not been included in this part of the analysis, are quite different again. They provide the most comprehensive data-set so far collected in Britain of the 'prehistoric muesli' type assemblage of hazelnuts, cereals, and a few, often edible, wild plants that is known in fragmentary form from a number of other Neolithic sites (cf Figs 115, 116, 117, and 120).

The Maiden Castle data have also been classified according to the approaches to the analysis of site activity elaborated by Hillman (1984) and G Jones

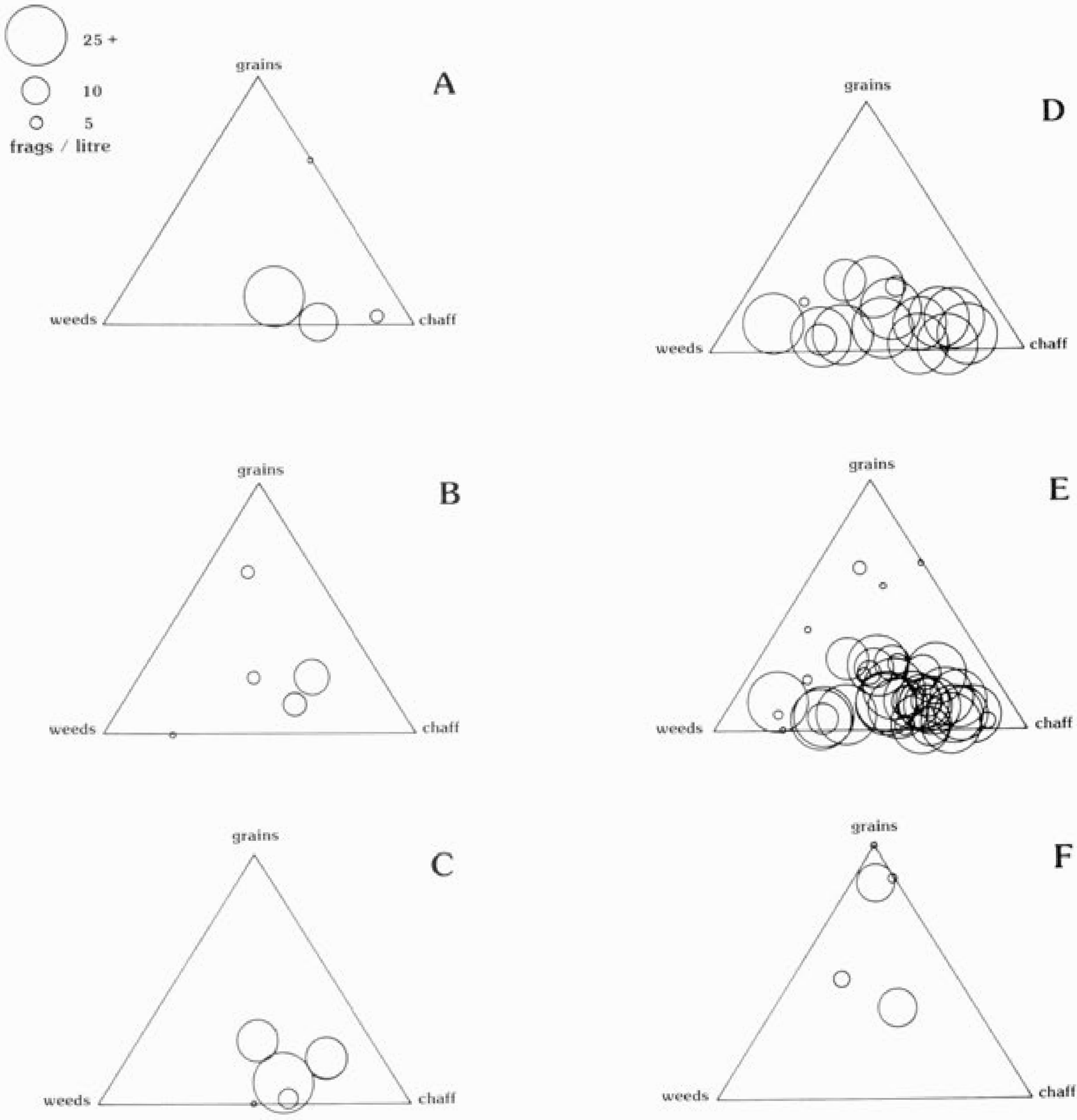


Fig 121 Triangular scattergrams of Iron Age and Roman carbonised seeds, weeds, and chaff: A) Iron Age gullies and postholes, B) Iron Age spreads and banks, C) Iron Age soil layers, D) all Iron Age pits, E) total Iron Age, and F) total Roman

(1984). In Table 18, each taxon has been allotted an 'A' code and 'B' code, following Hillman, and a 'BHH code' following G Jones. Fruiting height (taken from M Jones 1984b) is also included here, in respect of possible implications for harvesting height. As with most contemporary assemblages, they show the later prehistoric data to be broadly consistent with the products and byproducts of fine sieving of the crop.

We have discerned no segregation of processing categories in the TWINSPAN and DECORANA analyses, perhaps relating to the heavy emphasis on the final stages of crop processing throughout the Iron Age samples, which swamps any other variation.

Conclusions

The results of the archaeobotanical work within the project allow us to draw conclusions, not only about the plant economy of the communities under study, but also about the success and potential of the various methodological and analytical approaches which we have adopted. These are here dealt with in turn.

The work has revealed a broad pattern of change through time that, whilst previously apparent within a scattered and variable database, is for the first time evident within a consistently collected database from a single site. This pattern comprises a marked change during prehistory in the overall composition of carbonised assemblages. The Neolithic and Bronze Age yield 'muesli-like' mixtures of grains, nuts, fruits, and edible wild plants in small quantities. In contrast to this, Iron Age assemblages yield monotonous, but plentiful assemblages of grain crops, chaff, and arable weeds.

Such assemblages are widespread throughout southern Britain and indeed temperate Europe. The second author has related this change to a shift from small volume collection and consumption of a range of cultivars and non-cultivars to what amounts to a large-scale arable 'industry' producing more copious waste (M Jones 1984b). The scantiness of the current database for the Bronze Age makes it difficult to date this transition, but data collected nationally would suggest a shift around the Middle Bronze Age, at a time which may be linked to a period of extensive land enclosure. Each major phase is now summarised.

Phase 2

The material is at its richest in the lower levels of the ditch fill. The assemblages here are made up of hazelnuts, emmer and bread wheats, naked and hulled barley, a range of 'weeds' dominated by the largely edible Chenopodiaceae and Polygonaceae, alongside traces of water pepper (*Polygonum hydropiper*) which grows along the banks of lakes, ponds, and rivers, and of the coastal species shore orache (*Atriplex littoralis*). The impression is of the collection of a range of cultivated and wild plants from a variety of habitats.

Table 18 Crop-processing characteristics of recovered taxa (see Hillman 1984 and G Jones 1984 for clarification of the column headings)

Family	*Species*	*A Code*	*B Code*	*BHH Code*	*Height mm*
Boraginaceae	*Lithospermum arvense*	A1	B3	BFH	100–900
Caryophyllaceae	*Silene alba*	A1	B3	SEH	300–1000
Caryophyllaceae	*Spergula arvensis*	A1/A3	B3	SEH	75–400
Caryophyllaceae	*Stellaria gramineae*	A1/A3	B3	SHH	200–900
Caryophyllaceae	*Stellaria media*	A1/A3	B3	SHH	50–400
Chenopodiaceae	*Atriplex littoralis*	A1	B3	SHH	up to 1000
Chenopodiaceae	*Atriplex* sp.	A1/A3	B3	SHH	
Chenopodiaceae	*Chenopodium album*	A1/A3	B3	SHH	100–1000
Compositae	*Carduus/Cirsium* sp.	A1/A3	B4 & B5	SEL	
Compositae	*Chrysanthemum leucanthemum*	A1	B3	SEH	200–700
Compositae	*Hieracium* sp.	A1	B3	SEL	200–700
Compositae	*Senecio* sp.	A1	B3	SE?H	
Compositae	*Tripleurospermum maritimum*	A1	B3	SEH	100–600
Cornaceae	*Cornus sanguinea*	A3	B2	BFH	250–4000
Coryllaceae	*Corylus avellana*	A3	B2	BFH	1000–6000
Crucifereae	*Brassica nigra* type	A1/A3	B3	SFH	up to 1000
Crucifereae	*Brassica oleraceae* type	A1/A3	B3	SFH	up to 1000
Crucifereae	*Thlaspi arvense*	A1	B3	SEH	100–600
Cyperaceae	*Carex* sp.	A1	B3	SHH	
Empetraceae	*Empetrum nigrum*	A3	B4 & B5	BFH	140–450
Geranaceae	*Erodium* sp.	A1	B3	SEH	
Gramineae	*Aira* sp.	A1	B3	SEH	up to 300
Gramineae	*Arrhenatherumelatius* tuber	A1	B4 & B5	BFH	600–1000
Gramineae	*Avena* sp.	A1/A3	B4 & B5	BEH	300–1500
Gramineae	*Bromus sterilis*	A1	B4 & B5	BEH	300–1000
Gramineae	*Bromus mollis/secalinus*	A1	B4 & B5	BEH	1000–1200
Gramineae	*Festuca* sp.	A1	B4 & B5	SEH	
Gramineae	*Poa annua/Phleum* sp.	A1	B3	SEH	30–300
Gramineae	*Sieglingia decumbens*	A1	B3	SEH	100–400
Labiatae	*Prunella vulgaris*	A1	B3	SHH	50–300
Leguminosae	*Lens culinaris*	A3	B4 & B5	BHH	
Leguminosae	*Medicago* sp.	A3	B3	SHH	
Leguminosae	*Pisum sativum*	A3	B3	BEH	300–2000
Leguminosae	*Trifolium* sp.	A1	B3	SEH	600
Leguminosae	*Vicia fabia*	A3	B1	BEH	300–2000
Leguminosae	*Vicia/Lathyrus*	A1/A3	B4 & B5	BEH	
Plantagonaceae	*Plantago lanceolata*	A1	B3	SHH	150–400
Polygonaceae	*Polygonum aviculare*	A1	B3	SFH	30–2000
Polygonaceae	*Polygonum convolvulus*	A1	B3	BFH	300–1200 tw
Polygonaceae	*Polygonum hydropiper*	A1	B3	SEH	250–750
Polygonaceae	*Polygonum lapathifolium*	A1	B3	SEH	up to 1000
Polygonaceae	*Polygonum minus*	A1	B3	SFH	100–300
Polygonaceae	*Polygonum persicaria*	A1	B3	SFH	250–750
Polygonaceae	*Rumex acetosella*	A1	B3	SFH	300
Polygonaceae	*Rumex obtusifolius* type	A1	B3	SEH	300–1600
Portulaceae	*Montia fontana* ssp. chond.	A1	B3	SFH	20–500
Rosaceae	*Prunus spinosa*	A3	B2	BFH	1000–4000
Rubiaceae	*Galium aparine*	A1	B4 & B5	BFH	500–1200
Rubiaceae	*Sherardia arvensis*	A1	B3	BFH	50–400
Scrophulariaceae	*Veronica* sp.	A1	B3	SFH	
Scrophulariaceae	*Euphrasia/Odontites*	A1	B3	SEH	500
Solanaceae	*Hyoscyamus niger*	A1	B3	SEH	800
Umbellifereae	*Torilis* sp.	A1	B3	SFH	up to 1000
Valerianaceae	*Valerianella dentata*	A1	B3	SFH	70–400

Phase 3

The range of species is similar to that of the preceding assemblages, with the addition of a sloe stone (*Prunus spinosa*) and a dogwood fruit (*Cornus sanguinea*). These species are also found as charcoal and are discussed further by Gale (pp125–9). A further, important distinction is the series of *Triticum* glumes which fit *T. spelta* in terms of basal width and, in one case, reasonably preserved morphology.

Phase 6

The bulk of the Iron Age material is derived from trench IV and associated with later ceramic phases. During the Late Iron Age, the crop refuse generated during the use of the area is heavily dominated by de-husking debris, ie assemblages with a substantial component of *Triticum* glume bases, presumably pounded from the grain. The activity directly preceding deposition may be fine sieving of the pounded crop, rather than pounding itself. We can only speculate about the spatial extent of this pattern within the fort.

The arable weed flora lacks certain species of the wetter and drier extremes of contemporary fields, although some wet ground species are present. Weeds of sandy and heathy soils are also found, but not in conjunction with evidence for nutrient depletion. The overall picture is of cultivation of the soils overlying the chalk bedrock, whose moisture retention is in many places tempered by overlying sediments, in some places creating a heathy element within the weed flora. There is neither the evidence of nutrient depletion, nor of the use of soils that are marginal in relation to ard cultivation, to suggest pressure on agricultural land.

In association with this, the weed assemblages retain throughout a significant proportion of *Bromus* seeds, which may be associated with ard cultivation, and lack any of the 'new weeds', ie *Agrostemma githago*, *Anthemis cotula*, and *Centaurea cyanus*, that seem in Britain to accompany changing agricultural method (M Jones 1984b). It is, however, worth remembering that from earlier in the Iron Age on the site, Helbaek recovered rye and two species of cultivated oats, reflecting innovative agriculture earlier in the Iron Age.

In addition to revealing the traditional patterns of extensive Iron Age spelt and six-row barley cultivation into the Late Iron Age, there is interesting evidence of more intensive cultivation of other crops. This shows most clearly in the DECORANA analysis, where Brassicas, legumes, and emmer separate out with a weed community often associated with intensive cultivation, typically in small plots.

The only other site known to contain carbonised debris at a similar variety of densities and the only site with features so dominated by de-husking debris is Danebury. The presence of a greater taphonomic range at Danebury may well be a consequence of the much larger area excavated there.

Danebury is more limited in its crop range and Maiden Castle more restricted in its weed ecological range in relation to the surrounding environment. We can perhaps contrast the extensive spread of core grain crops at Danebury to the margins of cultivation at Danebury, with the mixed extensive and intensive farming at Maiden Castle which may be experiencing less stress in relation to soil fertility.

Phase 8

The plant debris of Roman date is no longer so dominated by de-husking debris, but we lack sufficient data to comment in any detail on the related shift in site formation processes. Qualitatively, the source material is very similar to that of the preceding Iron Age.

The faunal remains

by M Armour-Chelu

One of the primary research objectives of the excavations was to provide a well-excavated database of biological evidence, in order to enable a detailed analysis of the environmental and economic history of the site. The aims of the faunal analysis were to quantify the proportions of the species recovered from the prehistoric levels at the site, to describe the stature, age, and sex where possible, and to record the evidence for butchery techniques and the incidence of pathological specimens.

The faunal remains excavated by Sir Mortimer Wheeler from the Neolithic and Iron Age levels at Maiden Castle were analysed by Jackson (1943) and, in an additional note, a dog skeleton recovered from the eastern entrance of the hillfort was described by D Watson (1943). Jackson's report was of a high standard for its time, although some material was misidentified and the assemblage was not quantified, so that it is not possible to estimate the relative proportions of the species present. The five skulls from the southern ditch of the Bank Barrow which were identified as domestic cattle by Jackson were re-examined by Jewell (1963), who suggested that the specimens were from aurochs, *Bos primigenius*. This material was discussed more fully by Grigson (1984), who reported that three of the skulls were definitely aurochs and one of these was from a male animal.

Recovery and sampling

The faunal material on which this study is based was collected by a combination of hand excavation, water-sieving, and flotation. All faunal material observed during the hand excavation of contexts was collected by the excavators. Additionally, whole earth samples of measured volume (usually 20l, but subject to the size of the context) of all excavated contexts were reserved for flotation/water-sieving, using a modified Siraf-type flotation machine (using a mesh size of 0.5mm for both flot and residue). During the excavation of Trench IV, samples additional to those processed by flotation were sieved to 4mm using a high-pressure water spray. All samples were separately numbered, so that the recovery rates from the different processes could be assessed.

Not all the material produced by the various methods of collection could be studied in the time available. It was therefore necessary to subsample the assemblage. The subsample studied and reported on here comprises all the material recovered from the early prehistoric features (both hand-collected and sieved) and 50% of the later prehistoric material, selected to be representative of all context types. Individual contexts were selected on a random basis as described in further detail by Jones and Palmer (see p131). The term 'early prehistoric' used here relates to the Neolithic and Bronze Age; 'later prehistoric' refers to the Iron Age.

Identification

Over 57% of the material from the early prehistoric period and 54% from the later prehistoric period was not identifiable to species due to fragmentation, either as a consequence of butchery, depositional processes, or modern breakage. This introduces some bias into the assemblage, as Uerpmann (1973) has pointed out that fragments from large species are more difficult to identify than fragments of smaller-bodied species. Additionally, the bones of some species, for example pig, are more recognisable than others, even when highly fragmented.

It was possible to assign most of the fragments to an animal-size category, using the criteria of size, cortical thickness of the shaft, or morphology of the trabecular structure. Assigning material to size categories reduces discrepancies of over- or underrepresentation amongst the identifiable categories due to fragmentation. The size categories of material not identifiable to species were defined as: large ungulate size, small ungulate size, or as unidentified when these criteria could not be determined.

Quantification

Several methodologies have been devised to assess the importance of the contribution of the different taxa to the palaeoeconomy of the site. Uerpmann (1973), Maltby (1979), O'Connor (1982), and Armitage and West (1985) have shown that frequency counts of fragments can distort assessments of a species' importance. In this report, the 'weight method' was used in conjunction with the frequency counts to give a truer indication of the economic importance of animals regardless of how fragmented the bones are.

The 'weight method' assumes that some relationship exists between the weight of the bones of some species and the amount of meat that the animal would have yielded. This method has been proposed by several authors (T White 1953; Kubasiewitz 1956; Chaplin 1971), some of whom have devised refinements in order to overcome the difficulties of applying this methodology. Problems arise in the use of the weight method, when there are differences in the state of the preservation of the material. There was variation in the preservation of the bones from the earlier and later prehistoric periods, in that the material from the earlier levels was more mineralised and therefore heavier than the later material, but preservation within each period was fairly uniform. This allowed comparison within the two chronological periods which was found to be useful in estimating species importance, especially when this incorporated material that could only be allocated to a size group.

Partial or complete skeletons were recorded separately and are not incorporated into the frequency counts.

Measurements

All the bone measurements (Chap 5 fiche) were taken in millimetres after von den Driesch (1976), with some additional measurements which are listed in the fiche. The measurements were used to discriminate between sheep and goats (Boessneck 1969; Payne 1969) and to assess the stature of the animals and to record any change in size through time.

Butchery recording

The processing of animals for food and other products, such as skins and raw materials for boneworking, can be deduced from the evidence of cuts and chop marks. Identification of these processes is made by observation of the position and direction of the toolmark and on which particular bone element the evidence is located. Cutmarks which run in a transverse direction around the extremities of the limbs generally denote skinning, although if these occur at an articulation, they may indicate dismemberment of the joint. Filleting meat off the bone is indicated by cutmarks that run parallel to the long axis of the bone (Binford 1981). Bones may be chopped through to produce joints and then further chopped to produce bones that are of a suitable size for cooking. There are considerable difficulties in computerising butchery data other than at a gross scale, so all the cutmarks were recorded by hand-drawn sketches which were then tabulated (Tables 37 and 38). Quantification of the butchery evidence was restricted to the description of the cutmarks recorded from the bones. Chopmarks were observed and are described, but are not as easily quantified because of the difficulties of distinguishing between bones chopped during butchery, bone which has been smashed for marrow extraction, and that which has been broken by other processes, such as trampling (Andrews and Cook 1985). The results of the butchery analyses are only summarised in the main report and the full description is given in the fiche for Chapter 5.

Preservation

The material from the earlier and later prehistoric levels was well preserved, but rather brittle, and this factor, combined with the rather intractable nature of the chalk rubble, led to a higher percentage of recently broken material than is normally encountered. Considerable effort was made to conjoin all the recently fragmented material, in order to minimise the number of fragments recorded for each species and also to increase the amount of material available for measuring.

Forty-five (2.5%) bones from the causewayed enclosure had been gnawed compared to two (0.5%) bones from the Bank Barrow. All the bones had been gnawed by canids with the exception of a red deer antler from the Bank Barrow which had been chewed by a rodent. A higher percentage of bones were found to be gnawed from the Iron Age levels (5% where N = >50). Most of these were canid gnawed, although rodent-gnawed bone was recorded from phases 6D (1), 6F (2), 6G (1), and 6I (2).

The bones from the Bank Barrow were more weathered (27%) than those from the causewayed enclosure (11%). These findings may reflect the manner in which the ditches of the two monuments became backfilled. The causewayed enclosure ditch was deliberately backfilled shortly after excavation, whereas the Bank Barrow ditch slowly silted up, exposing any bones lying on or near the surface to a more prolonged period of weathering.

Consistently higher proportions of burnt bone were recovered from the Iron Age pits (4%), than from the soil layers (2%). The frequency of bones in a 'fresh' condition in these pits (4%) was also higher than that (2%) from the soil layers. The bones from the pits were also less weathered (5%), than those from the soil layers (8%). These figures indicate that pits were used for dumping in a more regular manner than the bones from the soil layers. Burnt bones would have accumulated around hearths and the higher incidence of these remains in pits suggests the organised disposal of refuse. Bone will only be preserved in a 'fresh' state, if it has been rapidly buried and the higher frequency of bones in this condition from the pits indicates deliberate disposal, rather than casual backfilling. Maltby (1983) has also recorded a high incidence of burnt bone from a Late Iron Age pit at Cowdery's Down and notes that this material was less weathered than that from other levels at the site.

Cattle, sheep, red deer, and horse bones were used for boneworking. This will have resulted in underrepresentation of certain elements, especially the metapodials. All the worked bone from the site has been incorporated into the fragments count by number and by weight.

The archive

The faunal remains are housed within the collections at the Dorset County Museum, Dorchester, Dorset. The archive is stored on magnetic tape at the Ancient Monuments Laboratory of English Heritage.

Description of the assemblage

Larger mammals: the earlier prehistoric period

Some 2319 bones were recovered from the early prehistoric levels (excluding the remains of small mam-

Table 19 Numbers and weight of the taxa from the early prehistoric period

Phase	*Pig*		*Red deer*		*Roe Deer*		*Aurochs*		*Cow*		*Goat*		*Sheep*	
	N	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*
1	–	–	–	–	–	–	–	–	2	132	–	–	1	8
2	139	1369	19	151	9	229	1	151	405	10077	1	49	203	1252
3	32	265	21	2289	–	–	–	–	93	2584	–	–	40	238
4	5	44	–	–	–	–	–	–	21	698	–	–	7	53
Total	176	1678	40	2440	9	229	1	151	521	13491	1	49	251	1551
%	17	9	4	12	+	1	+	+	52	69	+	+	25	8

Note: 1 = Pre-enclosure activity 3 = Bank Barrow
2 = Causewayed enclosure 4 = Bronze Age turfline

mals, amphibians, reptiles, and fish). The sample consisted of all the bones excavated from the pre-enclosure levels (phase 1), the causewayed enclosure (phase 2), the Bank Barrow (phase 3), and the Bronze Age turfline (phase 4), and of these, 999 bones were identifiable to species.

Table 19 shows the proportions of species represented during the early prehistoric period. As the sample size is rather small, these data have been amalgamated in the discussion of the species in the text. Table 20 shows the importance of the different skeletal elements in this assemblage.

Figure 122 shows the proportions of species by number and weight from the causewayed enclosure and the Bank Barrow. The predominant species at the causewayed enclosure was cattle (52%), followed by sheep (26%) and pig (18%). Although sheep exceed pig by the number of fragments present, the weight of the bones gives a truer indication of their importance in the economy. Pig and sheep each accounted for 10% of the bones by weight, whereas cattle comprised 77% of the assemblage identified to species. Wild animals made an insignificant contribution to the diet.

Cattle (50%) was also the most numerically abundant species recovered from the Bank Barrow, with

Table 20 Representation of skeletal elements, early prehistoric period

	Pig	*Red deer*	*Roe deer*	*Aurochs*	*Cow*	*Goat*	*Sheep*
Horn core/Antler	–	27	–	–	49	1	9
Skull	18	1	–	–	44	–	16
Mandible	18	3	–	–	29	–	29
Teeth	30	5	–	–	63	–	49
Vertebrae	8	2	–	–	50	–	9
Rib	–	–	–	–	94	–	3
Scapula	8	–	–	–	15	–	7
Humerus	18	–	–	–	15	–	20
Radius	5	–	–	–	12	–	25
Ulna	8	–	–	–	8	–	5
Carpal	–	–	–	–	8	–	–
Metacarpal	9	–	–	–	21	–	8
Innominate	10	–	–	–	14	–	9
Femur	2	–	–	–	8	–	16
Patella	–	–	–	–	1	–	–
Tibia	17	–	–	1	11	–	27
Fibula	10	–	–	–	1	–	–
Calcaneum	3	–	–	–	12	–	1
Astragalus	–	–	–	–	5	–	1
Navicular cuboid	–	–	–	–	1	–	–
Tarsal	–	–	–	–	1	–	–
Metatarsal	2	–	–	–	18	–	5
Phalange 1	4	1	–	–	7	–	3
Phalange 2	1	1	–	–	7	–	–
Phalange 3	–	–	–	–	9	–	–
Metapodial	5	–	–	–	18	–	9
Total	176	40	–	1	521	1	251

sheep represented by 22% of the assemblage identified to species, followed by red deer (11%) and pig (7%). The cattle bones from the Bank Barrow accounted for 48% of the identified assemblage by weight, followed by red deer (43%), pig (5%), and sheep (4%). The importance of the red deer in terms of food value was, however, minor, as antler accounted for 14 of the elements recovered from the Bank Barrow and they weighed 90% of the total identified to this species.

Cattle

Numerically, cattle accounted for 52% of the identifiable fragments recovered, but represented 69% of the assemblage by weight.

There were no complete adult horncores, mandibles, innominates, or metapodials, and this hampered the interpretation of age and sex. The age of the animals at death was assessed using bone fusion data (Table 22), which can be unreliable (J Watson 1978) because the time at which a bone fuses is dependent upon factors such as breed and nutrition (Benzie and Gill 1974) and sex (Purdue 1983). The majority of the animals died at three years old and upwards, but there was also a small proportion of juvenile and perinatal material.

Measurements show that the bones were derived from large animals, comparable in size to the material recovered from other southern Neolithic sites (Grigson 1984).

A third molar recovered from context 159 (Bank Barrow) had a reduced posterior cusp. A case of osteomylitis was recorded from an ox cervical vertebra which entailed some degeneration of the intervertebral disc (context 7012). Bony remodelling was recorded from around the distal epiphysis of a mature scapula (context 2211) and a healed, fractured rib was recovered from context 493.

Sheep and goat

A single horncore from the causewayed enclosure ditch was identified as goat. Sheep was represented by 251 bones, which accounted for 25% of the fragments identified to species and weighed 9% of the total identified.

Six mandibles could be aged according to the system of A Grant (1982). These were from adult animals with the majority of the animals dying at approximately four years old or more. Some perinatal material was recovered from amongst the post-cranial remains and these accounted for 1% of the sheep that could be aged. The fusion data (Table 23) supported the results from the mandibular wear analyses and indicated that a high proportion of the flock survived to maturity.

The remains of the innominates and horncores were fragmentary, so that only a very small number of bones could be sexed. One sheep innominate (from context 283) was female, and a broken specimen from context 291 was very gracile, indicating that it too was probably from a female. There was one fragmentary horncore (from context 285) which had a very rugose texture and its dimensions were similar to that of a modern Soay ram.

The numbers of measurements that could be taken were limited, but indicated that the sheep were gracile and of a small stature, although larger than their counterparts from the later prehistoric period. The withers height of two individuals could be calculated from two radii, using the method of Teichert (1975). These individuals were approximately 0.60 and 0.62m tall at the shoulder, which

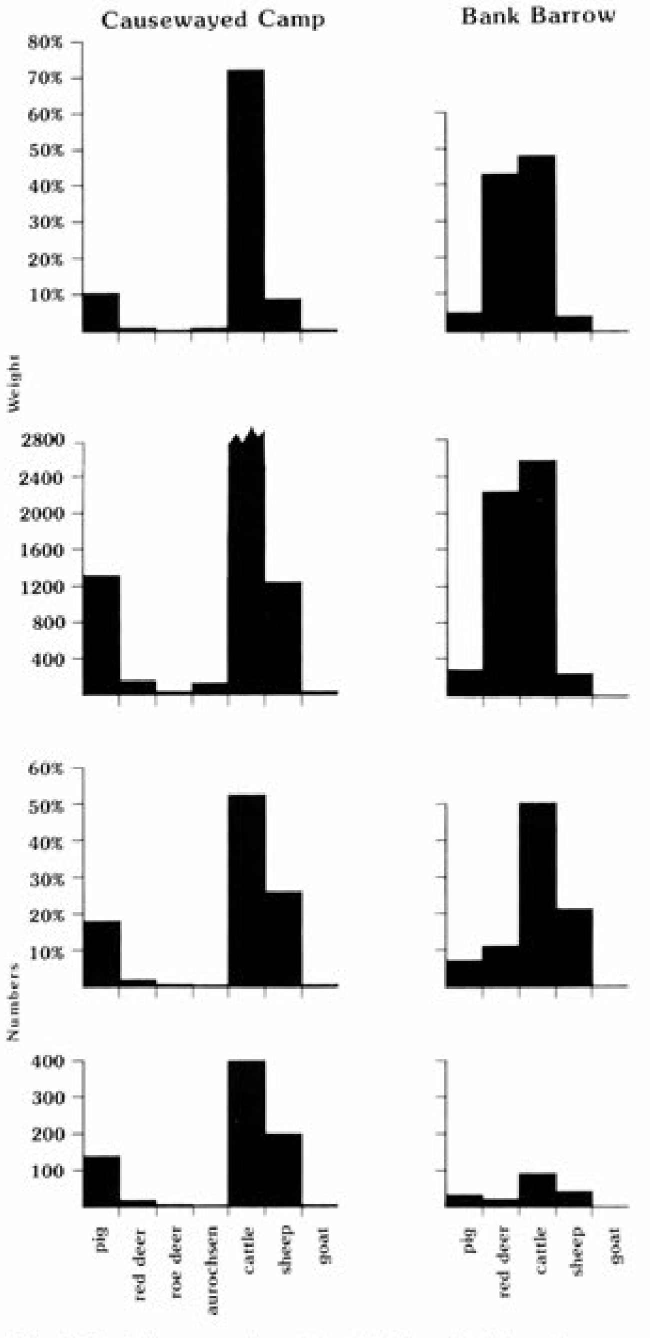


Fig 122 The proportion of species identified from the causewayed enclosure and the Bank Barrow

Table 21 Bone fusion of pig in the early prehistoric period

	Fused	*Total*	*Percentage fused*
Early	4	9	44
Intermediate (a)	9	10	90
Intermediate (b)	1	7	14
Late	0	4	0

Table 22 Bone fusion of cattle in the early prehistoric period

	Fused	*Total*	*Percentage fused*
Early	33	36	97
Intermediate	30	47	64
Late	12	19	63

Table 23 Bone fusion of sheep in the early prehistoric period

	Fused	*Total*	*Percentage fused*
Early	8	9	89
Intermediate	3	5	60
Intermediate (b)	10	14	71
Late	5	6	83

is close to the range of 0.58–0.60m observed at Windmill Hill (Grigson 1965).

A sheep innominate from context 298 (causewayed enclosure) showed eburnation and bony remodelling around the acetabulum, indicating that the animal had suffered from osteoarthritis.

Pig

One hundred and seventy-six pig bones were recovered, representing 18% of the assemblage identified to species, but only accounting for 9% of the assemblage by weight.

A small proportion could be aged according to the eruption of the mandibular teeth and the fusion data from the post-cranial elements. One mandible showed a small degree of wear on the first molar, suggesting that the animal had died at approximately six months. In two mandibles, the second molars had erupted and were slightly worn indicating an age of 7–13 months. One mandible had the third molar erupted and in medium wear, suggesting that the animal was approximately two years old at death (Silver 1969 – modern data).

Table 21 shows the proportions of fused to unfused epiphyses recorded from the early prehistoric period. The bones have been subdivided into early, middle, and late fusing bones after the method of O'Connor (1984).

A limited number of measurements could be taken and from these there was no indication of the presence of wild pig, *Sus scrofa*, although, as has been pointed out by Grigson (1981), wild and domestic pigs may have interbred which would be difficult to identify.

Roe deer

Roe deer was represented by two shed antlers and seven bones. The epiphyses of all the long bones were fused, indicating that the animals were fully mature or almost fully mature at the time of death.

One of the antlers bore two tines, but was broken at the crown, and the other was broken through at the beam. These antlers were almost certainly derived from male animals, as they were well grown (female roe deer occasionally bear antlers, but these are usually poorly developed: Prior 1968).

A limited number of measurements was taken from one humerus, one femur, and four tibiae. These fell within the upper range of comparable measurements taken from modern animals in the collections at the British Museum (Natural History). The five specimens with which the material was compared were collected from Petworth Park, Sussex, and Scotland. It has been suggested that roe deer attained larger proportions during the Neolithic period (Ritchie 1920; Jackson 1934), but, with due consideration for the smallness of the sample, there does not seem to be any great variation between the two populations. It is possible that the specimens collected from Maiden Castle were all female animals, which are proportionally smaller than males, so that only the lower range of measurements is represented from this assemblage.

Red deer

The remains of red deer accounted for approximately 4% of the assemblage. This figure does not accurately reflect the number of slaughtered animals, as it has has been inflated by the presence of shed antlers, some of which had been worked, and indicates the minor importance of venison in the diet. This overrepresentation of antler compared with the number of bone elements is analogous to the majority of assemblages excavated from the southern English causewayed enclosures.

Four out of the nine bones recovered from the site were measurable and all of these specimens were derived from well-grown individuals (see Chap 5 fiche).

One complete antler pick was recovered from the Bank Barrow. This had been manufactured from a shed antler, where the brow tine had been partially detached in antiquity by cutting and chopping. There was evidence of the presence of the trez tine (recently broken), and the bez tine was absent, suggesting that this pick derived from an individual aged three years or more. Burn marks were visible on the beam and in the area around the trez tine. The burr of the antler was extremely battered. The circumference of the burr was 200mm which falls very close to the mean of 198.5 obtained from the picks at Durrington Walls (Clutton-Brock 1984). Two antler crowns and three tines also showed evidence of having been worked.

Aurochs

Bos primigenius was represented by a single tibia from the causewayed enclosure ditch. Seven bones were recovered from Wheeler's excavations (1943), most of which have been described by Jackson (1943) and Jewell (1963). An immature axis was not described in the original report and its measurements are recorded in the fiche for Chapter 5.

The later prehistoric period

From the later prehistoric period (phases 5, 6, and 7), 11,681 bones were examined (excluding the remains of small mammals and amphibians), and of these, 4642 bones were identified to species (Table 24). Table 25 shows the importance of the different skeletal elements in these assemblages.

Cattle

Cattle accounted for 977 bones (21%) of the remains recovered from the later prehistoric levels and these weighed 52% of the assemblage.

The number of mandibles with a complete molar row was limited to three specimens which had mean tooth wear stages of 38, 39, and 46 (A Grant 1982). Three juvenile mandibles had mean tooth wear stages of 1, 2, and 7. The fusion data (Table 27) showed that over 75% of the sample survived the first 18 months of life and that 75% lived to approximately 30 months of age. Over half (55%) of the sample survived to at least three and a half years.

Metrical analyses of seven complete metacarpals gave slightly different results according to which indices were used. One castrate was tentatively identified and the other specimens probably came from five females and two bulls.

The measurements of the cattle bones showed that they were of a similar size to the animals excavated from Danebury (A Grant 1984a). The size of the animals was calculated from the metacarpals,

Table 24 Numbers and weight of taxa from the later prehistoric period

Phase	*Pig*		*Dog*		*Red deer*		*Horse*		*Cattle*		*Sheep*		*Goat*		*Badger*		*Hare*	
	N	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*	*N*	*W*
5A	–	–	–	–	–	–	–	–	2	25	–	–	–	–	–	–	–	–
5C	5	14	–	–	–	–	–	–	5	236	3	3	–	–	–	–	–	–
6A	5	92	–	–	1	9	1	109	2	48	10	38	–	–	–	–	–	–
6C	56	585	1	1	1	5	1	62	26	591	117	622	–	–	–	–	–	–
6D	16	123	–	–	–	–	1	69	42	752	94	416	–	–	–	–	–	–
6E	27	445	5	34	–	–	4	156	85	2733	192	1239	1	14	–	–	–	–
6F	60	870	25	208	–	–	14	838	132	4488	357	2044	–	–	–	–	–	–
6G	66	834	13	124	–	–	20	1776	235	7586	573	3546	2	12	1	4	1	6
6H	110	1465	5	60	1	10	20	1077	272	7421	1013	5350	–	–	–	–	–	–
6I	65	712	17	121	–	–	11	603	156	5723	650	3823	–	–	–	–	–	–
7A	8	62	–	–	1	4	6	194	8	254	29	138	–	–	–	–	–	–
8A	3	13	–	–	–	–	–	–	4	195	12	67	–	–	–	–	–	–
8B	1	40	–	–	–	–	5	276	5	169	18	104	–	–	–	–	–	–
11B	1	3	–	–	1	4	–	–	2	101	3	14	–	–	–	–	–	–
11C	1	10	–	–	–	–	1	–	1	19	7	39	–	–	–	–	–	–
Total	424	5268	66	548	5	32	84	5149	977	30378	3078	17443	4	43	1	4	1	6
%	9%	9%	1%	1%	+	+	2%	9%	21%	52%	66%	30%	+	+	+	+	+	+

Table 25 Representation of skeletal elements, later prehistoric period

	Pig	*Dog*	*Red deer*	*Horse*	*Cattle*	*Sheep*	*Goat*	*Badger*	*Hare*
Horn core/Antler	–	–	2	–	13	38	1	–	–
Skull	70	5	–	–	53	86	–	–	-
Mandible	36	5	–	5	71	286	–	–	-
Teeth	40	1	1	8	88	321	–	–	-
Vertebrae	41	7	–	3	79	164	–	–	–
Rib	8	9	2	5	116	51	–	–	–
Scapula	42	1	–	3	43	37	–	–	–
Humerus	30	–	–	2	45	210	–	1	–
Radius	18	1	–	6	59	347	–	–	1
Ulna	24	3	–	–	37	93	–	–	1
Carpal	–	–	–	2	7	5	–	–	-
Metacarpal	8	3	–	5	48	177	2	–	–
Innominate	18	8	–	4	35	113	–	–	–
Femur	8	2	–	4	41	171	–	–	–
Patella	3	–	–	1	3	1	–	–	–
Tibia	15	4	–	6	41	291	–	–	–
Fibula	6	–	–	–	–	–	–	–	–
Calcaneum	6	5	–	6	17	28	–	–	1
Astragalus	2	3	–	2	11	32	–	–	–
Navicular cuboid	–	–	–	–	6	4	–	–	–
Tarsal	–	–	–	4	1	2	–	–	–
Metatarsal	9	5	–	5	52	266	1	–	–
Phalange 1	7	2	–	7	43	105	–	–	–
Phalange 2	7	–	–	3	29	17	–	–	–
Phalange 3	7	–	–	3	13	14	–	–	–
Metapodial	22	2	–	–	24	20	–	–	–
Sesamoid	–	–	–	–	2	–	–	–	–
Total	424	66	5	84	977	3078	4	1	3

using the factors of Fock (1966) which gave a range of 0.9–1.1m at the shoulder. As the metacarpals could only be tentatively sexed, the range can only be seen as approximation of the shoulder height, but the measurements indicate that the cattle were of a small stature.

Several pathological specimens were recorded from the cattle bones. Two examples of eburnation were observed on the posterior side of the head of the femur (contexts 5333 and 5950), and eburnation was recorded from one acetabulum (5082). Three first phalanges showed expansion of the bone around the proximal margin (context 5458 and 6286) and one second phalange exhibited similar symptoms (5412). There were three examples of bony remodelling at the distal end of the scapula – all the specimens came from mature animals (contexts 5042, 5095, and 6122). Two hoofcores had necroses (927 and 5412). One rib showed some inflammatory reaction of the distal end with some new bony growth (5487). A metacarpal from context 5276 showed an inflammatory reaction at the proximal end of the bone on the medial side. There was also a superficial swelling of the bone in the midshaft area on the medial side. A metatarsal from context 5264 had a superficial swelling on the anterior side of the midshaft.

Sheep and goat

Goat was only present at a very low frequency. Four bones were positively identified, two of which were from juvenile animals. Metrical analyses of all the sheep/goat metapodials (Payne 1969) failed to distinguish any further specimens of goat and it is therefore assumed that most of the remaining material identified as sheep/goat was sheep.

A total of 3078 sheep bones was identified: this represented 66% of the sample which could be identified to species, although only 30% of the assemblage by weight. Over 50% of the population survived to at least five years (according to the tooth wear data, Fig 123). This pattern is fairly consistent in all phases analysed, although phase G has a higher proportion of animals dying between one and two years old. This is at variance with the fusion data (Table 28), which indicates that only 25% of the flock survived to beyond three to four years of age. This anomaly is probably due to a bias in the preservation of elements which may be correlated with age. Perinatal long bones survived better than the more fragile juvenile mandibles, but mature mandibles were one of the best represented elements.

Four hundred and ninety-six of the bones (excluding the loose teeth), which could be assigned to an age category, came from perinatal animals. This figure is unlikely to represent a deliberate policy of slaughter of newborn animals, but reflects natural losses during the lambing season and indicates that sheep were being brought into the site during the parturition period.

It was possible to sex 17 animals on the basis of measurements taken on the acetabulum (Armitage 1977) and on the morphology of the pelvis. The majority of specimens (15) were female. Two male animals were identified and one of these was juvenile, as the pelvis had just fused. The evidence suggests that the females were being kept to old age, principally for lamb and wool production. It is possible that male/castrate animals were selectively slaughtered at a younger age. It is likely that the majority of the male animals were castrated, which would improve their meat and wool yield, but this was not detected from an examination of the pelves or the horncores.

The measurements of the material indicate that the sheep were gracile and small boned, similar in size to the Soay breed (withers-height calculations follow Teichert 1975). There is a small discrepancy in the results of withers-height calculations, if the elements from the same individual are compared (cf the data from the partial skeletons). As metapodials are amongst the most commonly recovered complete bone, this element has been used for intersite and intrasite comparison of stature. From a total sample of 25 complete metapodials, the sheep from Maiden Castle appear to be marginally smaller than those from other southern Iron Age sites (see Table 29).

No hornless individuals were recovered from the sample, although one specimen from context 5486 only bore a small scur. The measurements show that both sexes were present in the sample and that the male/castrate animals did not attain the proportions of present day Soay rams. This may indicate that these horncores were all derived from castrated animals.

A high incidence of pathological specimens was recorded from the sheep remains. These are described below, except for the examples from the partial skeletons which are reported separately.

Fifty mandibles showed evidence for oral pathologies, including anomalies such as congenital tooth absence. The most commonly occurring pathology was that of peridontal disease with 22 recorded

Table 26 Bone fusion of pig in the later prehistoric period

	Fused	*Total*	*Percentage fused*
Early	20	23	92
Intermediate a)	6	9	67
Intermediate b)	3	20	15
Late	1	16	6

Table 27 Bone fusion of cattle in the later prehistoric period

	Fused	*Total*	*Percentage fused*
Early	86	111	77
Intermediate	48	64	75
Late	34	62	55

Table 28 Bone fusion of sheep in the later prehistoric period

	Fused	*Total*	*Percentage fused*
Early	140	221	63
Intermediate a)	118	190	62
Intermediate b)	101	284	35
Late	54	219	25

Table 29 Comparison of sheep withers height from southern Iron Age sites

Site	*Range*	*Number*
Maiden Castle	51–61	25
*Ashville	53–64	14
*Appleford	60–63	2
†Gussage All Saints	53–64	62

* data from Wilson (1978)
† data from Harcourt (1979)

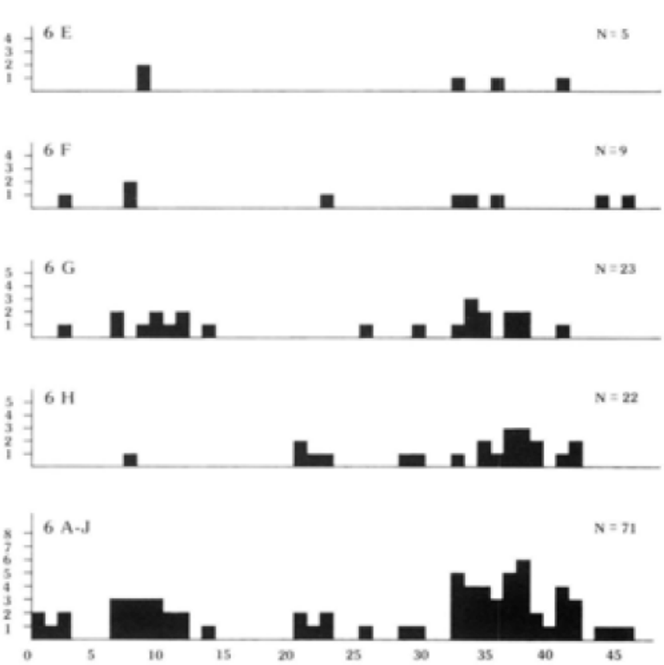


Fig 123 The wear stages of the sheep mandibles from the four stratified Iron Age phases and all the Iron Age contexts

Fig 124 A sheep premolar with caries

cases. It was found that the incidence of this complaint was linked to the animal's age, as recorded by A Grant (1984a) and Levitan (1985). Abscess formation was recorded from two mandibles, which also had some alveolar bone destruction and uneven wear of the molars (contexts 365 and 6648). Caries is only rarely recorded from ungulate teeth which have been recovered from archaeological excavations. Colyer (1936) recorded caries from the incisors of modern juvenile sheep and suggested that there may be a causal dietary link in the cases cited with the provision of 'artificial cake'. A relationship between diet and early tooth loss has been observed by Benzie and Gill (1974), and it seems probable that the provision of supplementary feeding engenders the processes of tooth decay and loss. One example of caries was recorded from the second permanent premolar of a sheep which had died shortly before the third molar had fully erupted (Fig 124). The caries occurred at the neck of the tooth which is a common site for this lesion. Calculus was present on both the lingual and buccal sides of the tooth row and there was some alveolar absorption.

Frequencies of congenital absence of teeth may give some information about isolated gene pools (O'Connor 1984). There were four cases of congenital absence of the second permanent premolar, and there was also one example of a third molar with a reduced posterior cusp. One mandible had suffered the loss of a second permanent premolar and the bone had regrown over the cavity (context 5789).

C Richardson *et al* (1979) have demonstrated that the mandibles of poorly nourished sheep show loss of bone density and that the trabeculae at the angle of the jaw and in the coronoid process may become exposed as a consequence of bone resorption. Thirteen complete mandibles were recovered from the site and these were X-rayed. Six of the thirteen mandibles were found to show evidence

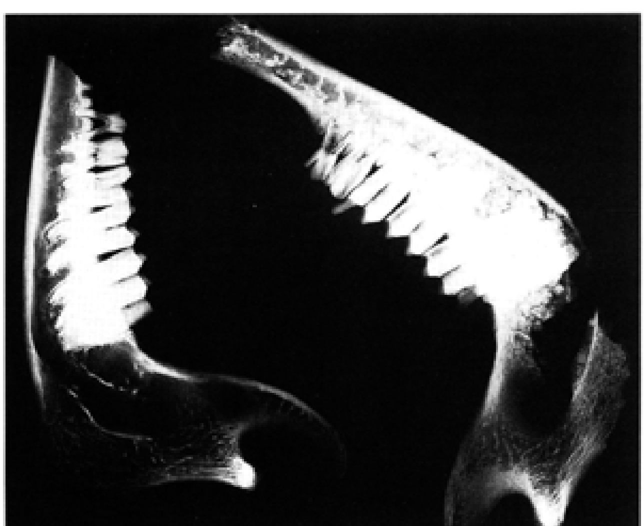


Fig 125 X-ray of a sheep mandible showing evidence for bone resorption and exposure of the trabecular bone in the coronoid process

of bone resorption and exposure of the trabecular bone in the coronoid process (Fig 125). In five of the six specimens, the third molar had erupted and was in wear and, in one mandible, the second molar was half erupted, indicating that the animal was approximately between nine months and a year at death. These results indicate that a proportion of the sheep population was malnourished, either as a consequence of ill-health or poor diet.

Further evidence of malnourishment is provided by four cases of late eruption of the fourth permanent premolar. These teeth were fully calcified and their roots had partially penetrated the border of the mandible, causing a small, round swelling. Tonge and McCance (1973) have shown that in undernourished juvenile pigs the growth of the jaw is delayed, whilst the development of the teeth is relatively unaffected, which results in overcrowding and displacement of the dentition. It is possible that the specimens described above indicate poor development of the jaw which hindered normal eruption of the fourth, permanent premolar. This condition was only noted from immature animals which shows that other sections of the sheep population, other than breeding ewes, could have been malnourished.

Several other disorders were recorded. A mature lumbar vertebra from context 5550 had a healed fracture of the spinous process. A humerus from context 6091 had a superficial inflammatory reaction on the medial side of the distal shaft. Exotoses were recorded from around the proximal margin of a metatarsal (context 7045).

Dog

Dog bones comprised approximately 1% of the fragments, which were identified to species and recovered from the later prehistoric levels, and these also accounted for 1% of the assemblage by weight. All age groups were represented, including two bones from a young puppy. Withers height was calculated using the factors of Harcourt (1974), which gave a range of 350–540mm at the shoulder (three specimens). The size of the animals falls into the range described by Harcourt (1979a) for Gussage All Saints (350–580mm) and by Wilson (1978) for the Iron Age levels at Ashville (480–600mm).

Four groups of associated bones were recovered from scoop and pit contexts and the majority of these remains could be interpreted as food refuse. Cutmarks were recorded from the femur, ulna, and pelvis, suggesting that these elements had been disarticulated, probably while the dog was being prepared for consumption. Cutmarks were also recorded from the astragali and calcanea, indicating that the animals had been skinned. Butchered dog bones have also been recorded from Balksbury (Maltby 1981) and Danebury (A Grant 1984a).

An interesting aspect of the remains is that the butchered material was recovered as discrete groups of either meat-bearing or waste bones in contrast to the generally scattered elements of sheep, pig, and cattle. The preservation of the bones within each group was uniform and they had not been gnawed, which also suggests that they were discarded as a distinct entity. This could indicate that there was some special significance attached to the disposal of these remains.

Harcourt (1974) suggested that dogs may have fulfilled several roles within prehistoric societies. Some animals may have been scavengers around the settlement or possibly used for hunting, whereas others were skinned and eaten, as is attested by the butchery evidence.

No pathological bones were recorded.

Horse

Of the bones, 2% were identified as horse, and these comprised 9% of the assemblage by weight. Most of the elements came from mature animals with the exception of one tibia which was unfused at its distal articulation, although from an animal which was at least a year old. The degree of wear from the cheek teeth of one mandible suggested that the animal had died between six and eight years old.

Harcourt (1979a) suggested that during the Iron Age horses may have been selected and captured from feral herds and then broken in and trained. This interpretation is corroborated by the results from Danebury (A Grant 1984a), where male animals appear to dominate the assemblage suggesting selection. There are no data from Maiden Castle for the distribution of the sexes, but the general maturity of the bones and the absence of neonatal remains could support Harcourt's theory.

Withers height was calculated according to the method of Kieswalter (1888) which gave a range of 1.18–1.40m, indicating that these animals were the size of a small pony. A similar range (1.02–1.45m) was reported from Gussage All Saints (Harcourt 1979a) and from Danebury (1.10–1.50m: A Grant 1984a).

One navicular cuboid from 5089 was fused to the metatarsal. A similar example was also recorded from context 7024 and the proximal articular surface of the metatarsal was eburnated around the margin. Both of these pathological specimens were consistent with the symptoms described for spavin (Baker and Brothwell 1980).

Pig

Pig was represented by 424 bones, accounting for approximately 9% of the assemblage by number and by weight. Approximately 30% of the bones were from the skull or mandible, showing that there has been better survival of this part of the body. The limb bones were not so well represented, which may reflect a more thorough processing of pig compared with other species.

Epiphyseal fusion data (Table 26) indicate that 87% of the pigs lived for at least a year and that 67% survived into the second year of life. Most animals had been slaughtered by their third year. The mandibles were too few and fragmented to be of use in interpreting the mortality pattern of the pigs from the site. Two mandibles had the first molar just erupting or in early wear, one mandible had the second molar just erupting, and seven mandibles had the third molar just erupting or in early wear. This suggests that the more mature mandibles had better survivorship, than those from the juvenile individuals.

Six canine teeth were of a size to suggest that they had derived from male animals, and one canine from a fairly mature mandible was from a female animal.

The measurements of the pig bones indicate that these were small, gracile animals and that there were no wild boar present.

Four bones were pathological. The deciduous second premolar was congenitally absent from a mandible from context 7075. One juvenile scapula showed an inflammatory reaction and bony remodelling along the vertebral edge of the blade (context 5694). A large swelling with much inflammatory reaction of the surrounding bone was recorded from an adult pig mandible (context 5651). A fractured rib had healed with some bony regrowth (context 5767).

Red deer

The value of deer as a food resource during the Iron Age was negligible. Sixteen elements were recovered: one was a red deer upper molar and the rest were from antler which had been worked to manufacture artefacts.

Badger

A mature badger humerus was recovered from context 5676.

Hare

Three mature bones of hare, *Lepus* sp. were recovered. One calcaneus had a transverse cutmark on the lateral side, indicating that the animal had been skinned.

Cetacea

A fragment of burnt cetacean bone was found from a floor level of the western roundhouse (context 5264).

The partial skeletons

Special significance has been attributed to some of the complete or partial skeletons and skulls recovered from Iron Age sites. These may occupy certain types of contexts within a site, such as the primary fills of pits, and are typically found in articulation and not butchered (A Grant 1984a). The remains described below were identified during excavation as possible examples of ritual deposition, but the evidence suggests that they are butchery waste which has been disposed of in discrete groups. All the remains showed some evidence for butchery, including skinning, disarticulation, and filleting the meat from the bones. They differ from the usual domestic refuse recovered from the site, in that the bones were collected up and deposited as a single unit and that none of the elements had been broken for marrow extraction. It is possible that the dog remains from context 6265 and the sheep from contexts 5114 and 6197 represent 'special' meals or feasts. The three groups of bones from context 7035 were dumped alongside what was probably a robbed-out wall. This may indicate the organised disposal of butchery waste during this period (7A), as has been suggested by Maltby (1985) in his analysis of the bone assemblage from Winnall Down.

Phase 6F

One hundred and sixty-one dog bones from at least two adult individuals were recovered from context 6265. The elements represented were cranium, mandible, caudal vertebrae, and the distal extremities of the long bones. Transverse cutmarks were recorded from the calcaneum and the astragalus, indicating that the animals had been disarticulated. One axis vertebra had been chopped transversely, as had one of the caudal vertebra. Cutmarks were recorded from an ulna, innominate, and a femur which were consistent with the preparation of these animals for consumption.

Phase 6G

The partial skeleton of a sheep was recovered from a pit (context 5114). This was an adult male/castrate with a mean tooth-wear stage of 37, indicating that the animal was approximately five years old at death (Table 30). The caudal epiphyses of one of the cervical and four of the thoracic vertebrae had only just fused. The animal had been extensively butchered. The skull had been disarticulated from the atlas vertebra and cleaved sagitally to extract the brain. The femur had been disarticulated from the pelvis and the lumbar vertebrae had been chopped through to detach the transverse processes. There were heavy deposits of calculus on the buccal side of the upper molars. One rib had been fractured and healed, and there was some evidence of necrosis on three of the hoofcores.

The partial skeleton of a sheep was recovered from a scoop fill, context 6197. This was a female and had a mean tooth wear stage of 35, indicating that death occurred at approximately four years old (Table 31). The caudal epiphyses of three of the cervical and of three of the thoracic vertebrae had only just fused. There were transverse cutmarks on the anterior face of the navicular cuboid, suggesting that the animal had been skinned. The skull had been cleaved sagitally and the transverse processes had been chopped off on seven of the lumbar vertebrae. One rib bore cutmarks on the medial side, at the dorsal end, suggesting that the flanks of the animal had been detached from the vertebral column.

Table 30 Measurements of the complete elements of the sheep from context 5114

Element	*GL*	*Bp*	*Bd*	*SD*	*Withers height*
Metacarpal	119	20	22	12	57
Femur	156	40	33	13	55
Tibia	197	36	23	12	59
Metatarsal	130	17	21	10	57

Table 31 Measurements of the complete elements of the sheep from context 6197

Element	*GL*	*Bp*	*Bd*	*SD*	*Withers height*
Humerus	126	32	26	13	53
Radius	133	26	22	14	53
Metacarpal	114	19	22	12	55
Metatarsal	123	18	20	10	55

Phase 6H

The partial remains of a horse, comprising the atlas, axis, cervical, and thoracic vertebrae and some ribs, were recovered from context 5894. The caudal epiphyses of the cervical and thoracic vertebrae had only just fused. There were cutmarks running transversely across the ventral side of the atlas, suggesting that the animal had been decapitated. Seven ribs had been chopped through at the proximal end.

Phase 7A

Three partial skeletons were recovered from context 7035 (Fig 126). One consisted of the skull, mandible, atlas and axis vertebrae of a cow. The mandible tooth wear stage was 38, indicating an animal of at least three years old. The horncores were broken and appeared to be of a small size. There were cutmarks running in a transverse direction across the right nasal process of the incisive bone and the frontal bone, suggesting that the hide had been removed from the skull. The axis vertebra had been chopped through from the dorsal to the ventral side.

The skull, mandible, axis, cervical, thoracic vertebrae and ribs of another cow were recovered from this context. The mean tooth wear stage was 39, indicating that the animal had died aged at least three years old. The caudal epiphyses from the cervical and thoracic vertebrae had only just fused.

Cutmarks were recorded running transversely across the right nasal process of the incisive bone, indicating skinning. The horncores had been sawn through and detached. The axis had been chopped through from the dorsal to the ventral side, and one of the thoracic dorsal spines had been chopped through from the caudal to the cranial side.

The partial skeleton of an adult, female sheep was recovered from this deposit and intermingled amongst the remains were a few bones from two juveniles. The mean tooth wear stage of the mature animal was 45, indicating that this was a very elderly animal (Table 32). The left mandible had been chopped through the ascending ramus and the transverse processes had chopped off the lumbar vertebrae.

There were heavy calculus deposits on the buccal surface of the upper molars and some alveolar recession around the gingival margins. There was a healed fracture of the spinous process of a lumbar vertebra.

Table 32 Measurements of the complete elements of the sheep from context 7035

Element	*GL*	*Bp*	*Bd*	*SD*	*Withers height*
Humerus	129	33	27	14	55
Radius	143	29	25	13	57
Femur	159	38	32	13	56
Metatarsal	123	–	–	–	55

The bird remains

No bird remains were recovered from the early prehistoric period at Maiden Castle.

Bird remains accounted for an insignificant proportion of the assemblage recovered from the later prehistoric period levels, although they may be underrepresented due to the fragile nature of their bones.

Five domestic fowl bones were identified from contexts 5063, 5111, 5458, and 6605. One femur had small transverse cutmarks along the shaft, and a humerus had a small cutmark just below the proximal epiphysis. These cutmarks indicate that the meat was defleshed from the bone. Goose and two raven bones were identified from contexts 5111, 5767, and 5950 respectively. The humerus, ulna, and metacarpus of a fieldfare were recovered from context 7; the present-day status of this species is that of a winter visitor.

The small mammal remains

Small mammal remains were recovered in low frequencies by both wet-sieving and flotation. Identification was made from the lower first molar teeth. Four species were found to be present from the early prehistoric period and five species from the later prehistoric contexts.

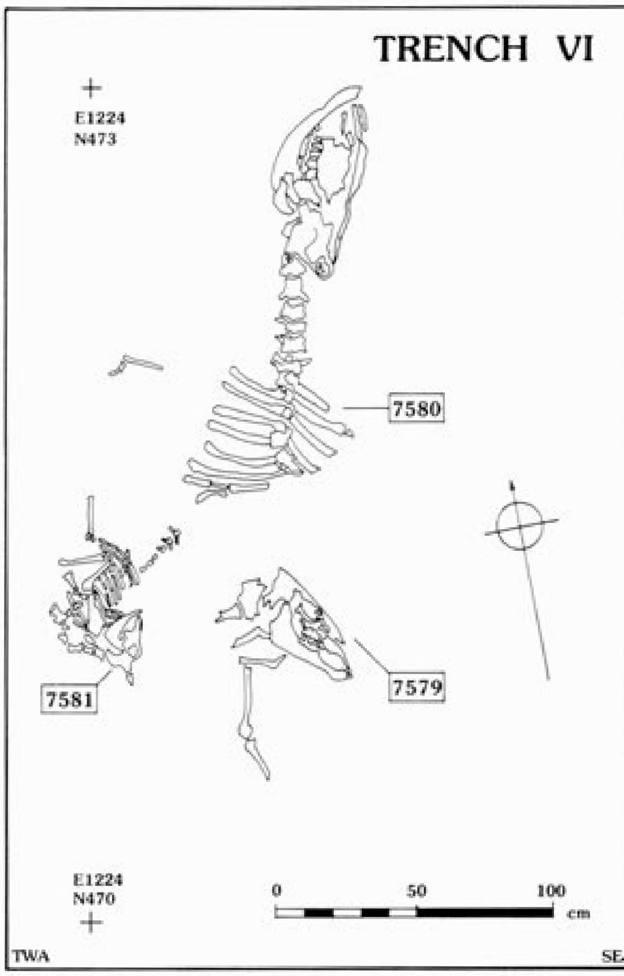


Fig 126 The partially articulated skeletons in trench VI

Early prehistoric period

Seventy-three small mammals were identified from the early prehistoric contexts (Table 33). These remains were scattered fairly evenly, but at low frequencies throughout the earlier prehistoric contexts.

A taphonomic analysis (see Chap 5 fiche) indicates that this assemblage is largely a reflection of the local small mammal population present at the site during the earlier prehistoric period, although the sample had been subjected to biological resorting which may have resulted in some mixing between contexts. The taphonomic history and small sample size allows only a generalised palaeoecological interpretation of the remains. The field vole is found in rough grassland and the bank vole prefers scrub, hedgerows, or woodland. Both the common and the pygmy shrew are found in most types of habitat, although the pygmy shrew avoids woodland (Lawrence and Brown 1974). The numbers of bank vole are proportionately high, suggesting that there was scrub or woodland either at or in the vicinity of the site.

Table 33 The small mammal remains from the earlier prehistoric period

Species	*Causewayed enclosure*	*Bank Barrow ditch*	*Bank Barrow make-up*	*Bronze Age turfline*
Common shrew	1	3	1	2
Pygmy shrew	–	4	–	1
Sorex sp.	–	2	–	–
Bank vole	4	8	2	5
Field vole	6	22	2	5
Apodemus sp.	–	5	–	–

Later prehistoric period

The material was in excellent condition and, typically, damage was confined to the especially vulnerable elements, such as the innominates, scapulae, and mandibles. The majority of the remains were recovered from the primary fills of the deep storage pits which had acted as pitfall traps. Modern work has shown that pitfall trapping is an efficient means of estimating the local population of small mammals, although there may some bias against certain age groups and species. It can be assumed that the sample recovered from the Iron Age levels at the site are fairly representative of the local small mammal fauna.

Table 34 The small mammal remains from the later prehistoric period

Species	*Number identified*
Common shrew	3
Bank vole	16
Field vole	25
Wood mouse	2
House mouse	7
Mus sp.	3
Total	56

The most commonly recovered species was field vole, indicating the presence of rough pasture, but the relatively high numbers of bank vole indicate that cover must have been locally available (Table 34). This might have been scrub or hedgerow, although this species may adapt to live in humanly created environments, such as woodpiles. The house mouse is commensal with humans and has been recovered from several Iron Age sites in southern England, such as Gussage All Saints (Harcourt 1979a) and Danebury (Coy 1984).

Pit 5061 contained the skeletons of three weasels (*Mustela nivalis*), which were excavated from contexts 6021 and 6026. The bones were largely unmodified, showing that they had been rapidly buried. The bones of two individuals were fused and the long bones from the third animal had just fused with the exception of the tibia, where the proximal epiphyses were unfused. It was possible to age the young individual to between three to six months at death, according to the state of fusion of the nasal sutures and degree of postorbital constriction of the skull (King 1980). The recovery of a baculum from amongst the remains of the juvenile weasel indicated that this was a male animal. The modern habitat of the weasel is agricultural land and farm buildings, although it also common in woodland.

The amphibians and reptiles

by M Armour-Chelu and E N Arnold

Early prehistoric period

Frog (*Rana temporaria*) was represented at low frequencies throughout the deposits. Most of the bones were in a similar state of poor preservation as the small mammals from these levels, suggesting that they had shared a similar post-depositional environment. The exceptions were the two partial skeletons from the Neolithic human burial recovered from within the causewayed enclosure ditch. These were in good condition, suggesting that they had been rapidly interred and not subjected to much post-depositional disturbance (see Chap 5 fiche for a discussion of the preservation of these species).

Five vertebrae of snake were recovered from contexts 166, 176, 181, 182, and 507 (Bank Barrow), three of which were positively identified as grass snake, *Natrix natrix*.

Later prehistoric period

Sixty-four frogs and seven toads (*Bufo bufo*) were recovered from the later prehistoric contexts (Table 35).

The fish remains

by A Wheeler

Six individual bones from as many samples were submitted for examination: four of these were from Neolithic levels and two from Iron Age levels (Table 36).

Despite their small numbers and damaged condition, these bones are of some interest. Unfortunately, because they are damaged, the two most interesting bones are unidentifiable except to possible ordinal level. If these centra from 534 and 551 are members of the order Cypriniformes, then they are important as evidence for the presence of these fish in Dorset rivers in Neolithic levels. As all members of this order are confined to freshwater, they can only have been captured in nearby rivers. The rivers of this region have hitherto been considered not to have contained freshwater fishes, other than those which have migrated from the sea.

The vertebral centra of *Salmo trutta* (12013) and *Salmo* sp., probably from *Salmo trutta*, come from small salmonids of 200 or 180mm FL. Both were probably trout which are common today in the rivers in the region of Maiden Castle. It is not possible to be absolutely certain that they did not come from young salmon, *Salmo salar*, but the probability is in favour of trout which are more widely dispersed in the region and live in smaller streams.

The recognition of a vertebra of a smelt, *Osmeruseperlanus* (12003), is interesting, as this fish is not today notably common in the area, although it has been recorded occasionally in Dorset rivers. A relative of the trout, it belongs to the same order, but to a different family. It breeds in freshwater, but at the upper limits of tidal influence; the eggs are adhesive at first, but later break free from their substrate or vegetation and float downstream. The young fish move out into the estuaries and feed in the sea, before returning to spawn. Smelt tend to migrate into the rivers in winter to early spring, before spawning in spring; while migrating, they can be very numerous and comparatively easy to catch. The occurrence of this centrum suggests fishing in the lower reaches of the Piddle (in which the species still occurs) or the Frome. It is likely that young trout could be captured

Table 35 The minimum numbers of amphibians from the later prehistoric period

Context	*Context description*	*Bufo bufo*	*Rana temporaria*
5264	soil layer		1
5358	pit		6
5384	pit		1
5548	pit		8
5712	pit		2
5793	pit	3	6
5870	pit	1	
5946	pit		
6007	pit		5
6021	pit	1	9
6026	pit	1	5
6200	pit		2
6206	pit	1	15
6309	pit		3
7568	pit		1
Total		7	64

Table 36 Fish bones

Neolithic

Salmoniforms: *Salmo* sp., probably *S. trutta* (trout)

Context no	*Sample no*	
531	14280	Vertebral centrum from a fish about 180mm fork length (FL)
536	14287	Vertebral centrum, post-abdominal region, with broken neural spine and deformed centrum (possibly by pressure)

Teleost fish, possibly *cipriniform*

534	14282	Vertebral centrum
551		Vertebral centrum

Iron Age

Salmoniforms: *Salmo trutta*

45	12013	First abdominal centrum from a fish of about 200mm FL
	12003	Abdominal vertebral centrum from a fish of about 150mm FL

in the same area, but they are also found well into the headwaters of these rivers.

Discussion

The early prehistoric period

The faunal remains from the early prehistoric levels are typical of Neolithic assemblages recovered from southern Britain (Grigson 1984), with cattle accounting for over 50% of the fragments identified to species, both numerically and by weight. The number of sheep bones (25%) exceeded those of pig (18%), but each species comprised approximately 9% of the assemblage by weight, suggesting that they made a fairly equal contribution to the diet. A single horncore of goat was recorded, indicating the relative scarcity of this species, although it is probable that it is marginally underrepresented, because of the difficulties of distinguishing between fragmented bones of sheep and goat.

Most of the skeletal elements from domestic livestock were represented in the assemblage, suggesting that the animals were slaughtered and processed on-site. Although the butchery evidence from the early prehistoric period was rather limited, it indicates that the domestic animals were all processed in a similar manner (Table 37). Cutmark evidence shows that cattle and possibly sheep were skinned and that the skull (cattle only) was severed from the atlas vertebra. The bones were disarticulated and the flesh was filleted from the major meat-bearing bones. The bones of the domestic species were fragmented to extract marrow fat.

Dog was not represented, but the number of canid-chewed bones attests to its presence at the site.

Table 37 Summary of the evidence for cutmarks in the earlier prehistoric period

	Pig	*Cattle*	*Sheep*
Skull		D,S	
Jaw			D,?S
Atlas			
Axis			
Cervical vert		F	
Thoracic vert		F	
Lumbar vert		F	
Sacrum			
Rib		F	?F
Scapula	D	D,F	
Humerus	D,F	D,F	D
Radius		D	D,F
Ulna			
Carpal		D	
Metacarpal		D	D
Innominate	D	D	
Femur			D,F
Tibia			
Patella		D	
Calcaneum		D	
Astragalus		D	
Navicular cuboid			
Metatarsal		?D,S	
Phalange 1			
Phalange 2			

Note: D = disarticulation
F = filleting
S = skinning

Wild animals (red deer, roe deer, and aurochs) only accounted for a small percentage (5%) of the assemblage numerically, with red deer the commonest (4%). Any assessment of the contribution of these animals to the diet is complicated by two factors. First, wild species would normally be hunted at some distance from the site, and only selected parts of the carcass may have been transported back. This would result in the underrepresentation of bones from wild animals in the assemblage, when compared to those of domestic animals. Second, the presence of antler within an assemblage does not necessarily indicate that deer was hunted, as shed antler was regularly collected to manufacture tools and artefacts. The small number of bones from wild species within the assemblage makes it difficult to assess whether complete carcasses were brought back to the site. However, it is possibly significant that red deer is represented only by elements from the skull, cervical vertebrae, and the extremities of the long bones, whereas roe deer is represented largely by the major meat-bearing bones. This could indicate that different strategies were employed to transport these two species back to the site, which may in turn be related to carcass weight. Red deer weigh considerably more than roe deer; Huxley (1931) records a range of 94–235kg for red deer stags, as opposed to 14–35kg for roebucks (dressed weight without antlers for both species). Although it is difficult to estimate the carcass weight of prehistoric cervids, it is likely that they would fall into the upper end of the range recorded by Huxley (1931). Transport of red deer would have been eased, if the low utility parts of the carcass, such as the viscera and bones, were discarded at the kill site and the meat carried back to the site in the skin. Conversely, the smaller bodied roe deer would have been of a more manageable size and the complete carcass could have been taken back to site.

None of the red deer bones had butchery marks, but the humerus, tibia, and femur of the roe deer bore cutmarks, indicating that the long bones had been disarticulated. Although no butchery data were recorded from the aurochs tibia, two of the aurochs skulls excavated from the Bank Barrow by Wheeler had cutmarks across the occipital condyles and around the margin of the foramen magnum. This indicates that the skull had been disarticulated from the atlas vertebrae in a similar manner to that recorded for the domestic cattle. The butchery evidence from the wild animals suggests that they were processed in a similar fashion to that recorded for the domestic livestock.

The age data from the domestic stock suggest that over 50% of the cattle and sheep survived to at least three to four years old, but pigs were slaughtered before they reached maturity. Similar age data have been recorded from Neolithic assemblages in southern England (Grigson 1965; Harcourt 1971; 1979b), which indicates that the emphasis of the economy was not solely upon meat production. The cattle remains from Maiden Castle were too fragmentary to assess the sex structure of the adult population, but Grigson (1984) has shown that the mature cattle bones from Windmill Hill were predominantly female. Grigson (1984) suggests that cows were maintained for breeding and possibly milking, but the young bulls were culled, not least because they would have presented a management problem.

Red deer antler was widely used during the Neolithic for the manufacture of tools, notably antler picks. Aside from the antler pick recovered from the Bank Barrow ditch, two worked antler crowns and three tines were recorded from the causewayed enclosure and Bank Barrow. The antler crowns were cut and probably represent manufacturing waste, indicating that antler was worked at the site. It is not possible to comment whether the chopped tines represent working debris or 'punches', as described by I Smith (1965), without microscopic analysis. A few striations were visible at the tips of the tines, but this does not necessarily indicate that it was used as a tool. Many species of cervid, including red deer, use their antlers for a variety of functions, including digging and fighting, so that the tines are frequently striated and polished and this is not easily distinguished from wear due to tool use (Olsen 1984).

Two shed roe deer antlers which had not been worked were recovered from the early prehistoric levels. It is curious that, although shed roe deer antler is quite frequently found at British Neolithic sites (cf Grimes Graves, Woodhenge, and Windmill Hill), indicating that it was regularly collected, there is little evidence to suggest that it was used to manufacture tools or artefacts. Armstrong (1932) suggested that roe deer antler had been used as picks at Grimes Graves, and I Smith (1965) considered that a roe deer antler from Windmill Hill showed signs of use. Legge and Rowley-Conwy (1988) have also reported that roe deer antler was not procured for industrial uses at the Mesolithic site at Star Carr. It is possible that this type of antler was not modified for tool use or that it was collected for other purposes.

A low incidence of pathological specimens was recorded from the domestic animals (4 examples out of 999 bones identified to species). This may indicate that livestock were well cared for during this period. Low frequencies of pathological specimens have also been reported from Durrington Walls (2 examples out of 8500 bones: Harcourt 1971), and none was found in an assemblage of 630 bones at Mount Pleasant (Harcourt 1979b). It is possible, however, that only a selection of the stock were imported to the site and that diseased animals were normally slaughtered elsewhere.

The later prehistoric period

Sheep accounted for 66% of the bones identified from the later prehistoric levels at Maiden Castle followed by cattle (21%), pig (9%), horse (2%), and dog (1%). Although sheep are the most commonly represented animal numerically, they are of secondary importance, if the weight of cattle and sheep are compared (52% and 30% respectively). It is difficult to calculate the relative value of cattle and sheep in the economy, except to comment that sheep were of far greater importance during this period than in the early prehistoric levels.

Examination of the relative numerical frequency of species from the phases, where more than 300 bones were recovered, shows that sheep increase from 61% in the earlier phases (6E and 6F) to 71% in phase H (Table 24). Pig marginally declines from the earlier to the later phases and cattle fluctuates in numbers between the first three phases, but drops to 19% in phase 6H. A Grant (1984b) has commented that there seems to be an increased emphasis upon sheep rearing from downland sites during the later Iron Age, which may reflect decreased fertility of the soil.

A few domestic fowl were present in the assemblage: these would have supplied the community with eggs and feathers. The butchery evidence suggests that the birds were also eaten.

The butchery data (Table 38) from the later prehistoric period suggest that the livestock were processed in a similar manner to that recorded from the early prehistoric period. The evidence indicates that all the domestic animals were skinned, certain elements were dismembered, and the flesh was filleted from the primary meat-bearing bones. Many elements from pig, cattle, and sheep had been broken up to extract marrow fat, but the bones of dog and horse were not as fragmented which suggests that these species were not generally exploited for this purpose. Cattle and large ungulate-sized ribs were chopped to a roughly uniform size, suggesting that these were butchered to be of a manageable size for the cooking pot (Fig 127). Marshall (1986) has reported a similar pattern of butchery from the Neolithic village of Ngamuriak, Kenya, where the bovid long bones appear to have been chopped to a consistent size in order to accommodate the bones in cooking pots.

The partial skeletons of dog and sheep had been disarticulated and in some cases the meat had been filleted from the bone. The long bones were largely

Table 38 Summary of the evidence for cutmarks in the later prehistoric period

	Pig	*Dog*	*Horse*	*Cattle*	*Sheep*
Skull	F			D,S	D
Jaw	D,F			D,F	S
Atlas	D		D	D	D
Axis					
Cervical vert					
Thoracic vert				F	D,F
Lumbar vert	F		F		F
Sacrum					F
Rib	D			D,F	D
Scapula	D		D,F	D,F	D
Humerus	D			D,F	D
Radius	D			D	D,F
Ulna	D	D		D	D
Carpal					
Metacarpal			D,S	D,S	?D,S
Innominate	D	D		D,F	D
Femur		D		D,F	D,F
Tibia			D	D,F	D,F
Patella					
Calcaneum	D	S	?D	D	D
Astragalus		S	D	D	D
Navicular cuboid				D	D
Metatarsal	D		?D,S	D,S	D,S
Phalange 1			S	S	
Phalange 2			D,S	S	

Note: D = disarticulation
F = filleting
S = skinning

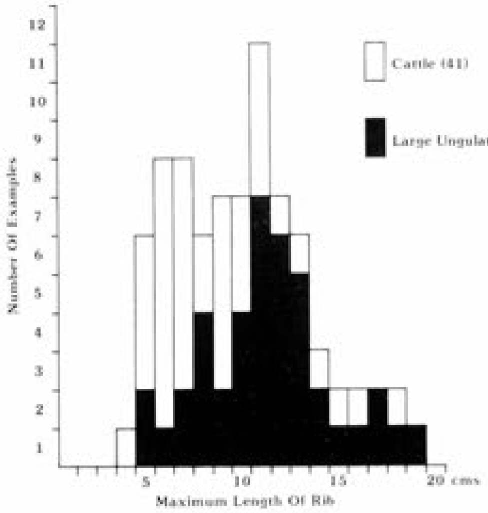


Fig 127 The length of chopped cattle and large ungulate-sized ribs

complete suggesting that they had not been processed for marrow fat. The manner of their deposition and the fact that they had not been gnawed by dogs, or so thoroughly processed as the usual domestic refuse, suggests that these animals represent 'special' meals or some type of celebratory event. It is noteworthy that the majority of the butchered dog remains were recovered as partial skeletons or a small group of bones (contexts 5192 and 6265).

Wild animals made an insignificant contribution to the economy, as has been commonly reported from this period (Wilson 1978; Maltby 1981; A Grant 1984a). Hare made an occasional supplement to the diet, as did freshwater fish which were probably caught from local rivers and streams, such as the Frome and Piddle.

The age structure of the commonly represented domestic animals suggests that approximately 50% of cattle and sheep were maintained until they were at least three to four years old. This is past the optimum age for meat production and indicates that these were multi-purpose animals, supplying the community with meat, milk, and manure. Cattle would have also provided traction power, and the large number of artefacts associated with spinning and weaving demonstrates the importance of wool. Pigs have few useful byproducts, except for manure and bristles, and they would have been primarily reared for meat. The frequent occurrence of perinatal bones of cattle and sheep indicates that these animals were maintained at the site during the parturition period.

Red deer antler was used to manufacture weaving combs and other artefacts (see pp234–8), but no antler waste was recovered from the assemblage. This could suggest that antler artefacts were imported to the site, or that antler was not worked in the area of excavation.

There was a higher frequency of pathological specimens from the later prehistoric assemblage compared to those from the early prehistoric period. Two examples of spavin were recorded from horse, and J Baker (1984) reports that this disease is commonly found in the bones of draught horses from urban sites dating to the nineteenth and twentieth centuries. This suggests that heavy traction on hard surfaces is one of the causes of this complaint which is most commonly found from cattle and horses. Horse harness fittings are recorded from this period (Cunliffe 1978), and it is possible that these pathological specimens may be linked with the use of horses for riding or as draught animals.

A high incidence of oral pathology was recorded from the sheep mandibles, which would have affected the productivity of the animals in terms of their wool and meat yield and their ability to reproduce successfully. Poor oral health may be linked with malnutrition (C Richardson *et al* 1979).

Ewes are prone to malnutrition during the period of pregnancy and lactation, as also are animals that are not provided with supplementary feeding during the winter months (Benzie and Gill 1974). The presence of the affliction in juvenile animals, which would not have been at an age to breed, suggests that these pathologies may reflect several circumstances. They could in part indicate the presence of poorly nourished breeding ewes, but could also show that insufficient fodder was available during the winter months. It is also possible that the grazing area around Maiden Castle was overstocked. In this context, it is interesting to compare these results with those from Danebury, where A Grant (1984b) records a higher incidence of diseases from the bones retrieved from the Late Iron Age levels and suggests that these could be correlated with overgrazing. A Grant (1984b) suggests that this may reflect a period of environmental stress possibly related to declining soil fertility.

Human bone

by N Sharples (identifications by J Henderson)

Human burials were very rare in the recent excavation. Seven child burials, but not one complete adult burial, were present. A scatter of unassociated bones was also recovered which suggests some form of excarnation was practised, but even these bones were not numerous (see full catalogue, Henderson, Chap 5 fiche).

There were only two substantial deposits of bone in the early prehistoric period. The primary fill of the inner ditch of the causewayed camp in trench I contained the complete skeleton (only partially excavated) of a three- to four-year-old infant. The primary fill of the outer ditch of the causewayed camp in trench II contained the badly preserved and disarticulated remains of at least three individuals. The skull and jaw fragments present indicate that there was an adult about 45 years old, a child between five and ten years old, and a child between three and five years old. Many other bones from the adult were recovered, but there were no bones from the bodies of the two children. The only other human bone of this date was a fragment of an adult tibia from the base of the Bank Barrow mound.

In the Iron Age, human bone was found in phases 6C, 6F, 6G, 6H, and 6I. There were only two fragments in 6C and 6F and seven fragments in 6G. Phase 6H contained six fragments and three infant burials, all of which died between birth and six months. In phase 6I, there was another child burial which may be contemporary with the phase 6H burials.

Trench I contained at least two child burials, both between three and six months old. One of these was placed in a shallow grave and was crouched with the head oriented towards the north-west and facing south-west. The other was a disturbed burial in the topsoil. Both of these burials may belong to the late Roman activity associated with the temple. About 30m to the south were three extended inhumations, excavated by Wheeler, which date to the late Roman or Saxon period.

6 The finds

Introduction

There were sufficient numbers of finds to provide a detailed picture of the activities undertaken in all of the periods and areas examined on the hilltop. Although this is admittedly a small sample of the assemblage which could survive here, it nevertheless can be used to examine general changes in the material culture during the use of the hilltop.

It was not possible to carry out a complete analysis of the material retained from Wheeler's excavations. The project's resources were limited and focused on the recovery of new material. It was necessary, however, to make a thorough analysis of the surviving material in several crucial groups of finds, ie the Neolithic and Iron Age pottery and the flint. Clearly, although important information is still recoverable from the Wheeler collection, it requires a careful consideration of the biases within the archive.

This chapter presents detailed reports on the finds by various specialists. These reports summarise the information that has been recorded and discuss some of the important features of the assemblage; more extensive reports and catalogues have been placed in the fiche for Chapter 6.

Recovery of artefacts

The finds were recorded and processed using the Central Excavation Unit system and are stored along with the paper archive in the Dorset County Museum in Dorchester.

Objects were recorded either as small finds or as bulk finds by context. During excavation, there were two principal objectives:

1 to recover detailed information on the location of all artefactual material at recording levels appropriate to subsequent analysis

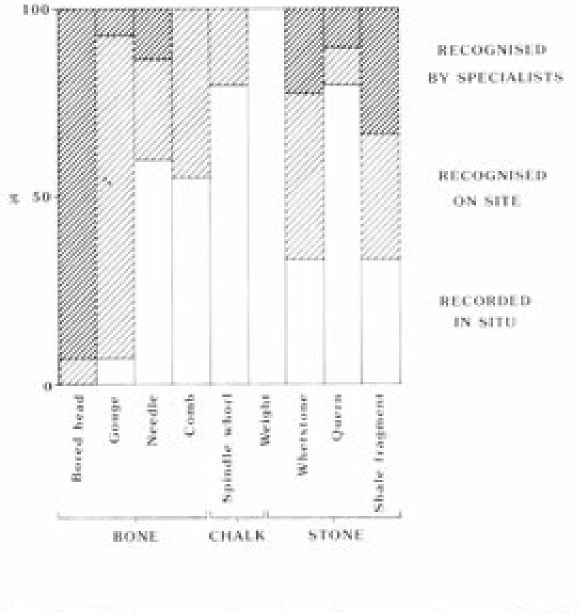


Fig 128 Histogram showing the percentage of finds recovered on site, during site processing, and by specialists

2 to carry out the excavation and recording within the time limits imposed by the the project budget.

Individual recording, using three-dimensional coordinates, was restricted to the following: all worked bone, worked stone, worked chalk, iron, bronze, glass, non-structural daub, large feature sherds of pottery, and flint tools.

There were, however, exceptions to this division, as some contexts were thought to deserve more detailed recording. In a few restricted, but important contexts, all objects were treated as small finds. In more extensive contexts, layers were subdivided into units of 1m or 0.5m which were recorded as separate contexts. The latter technique was an integral part of the environmental sampling, which was designed to maximise the recovery of material from early prehistoric contexts.

The quality of data recorded for each small find is also constrained by a number of important factors. During the excavation, some objects which should have been recorded as small finds, as they were removed from their context, were missed. Most of these were subsequently identified during onsite cleaning, but some were only recognised during specialist examination.

The most important factor in the recognition of objects is likely to be their character: namely their shape, size, and colour. To examine this, finds were split into three categories: finds recognised during excavation, finds recognised in the site hut, and finds recognised by specialists after the end of the excavations. The ratios of these categories for a restricted number of finds are illustrated in Figure 128. The data suggest that, although the size of the object is an important factor in its recognition, the shape and degree of transformation from the raw material are crucial factors. Size is the most plausible explanation for the identification of all the chalk weights, but only 12 out of the 15 spindle whorls on site. It does not, however, explain why nine bone needles were recognised on site, but only one bone gouge. Consequently, when the distribution of objects in trench IV is examined, this bias will have to be taken into consideration.

Post-depositional processes

The preservation of the material on Maiden Castle is fairly typical of a chalk site. There is excellent preservation of copper, iron, stone, chalk, shale, flint, and bone, but no preservation of organic artefacts. It is, however, important to emphasise some localised peculiarities. The western half of the hilltop is capped by tertiary sand and gravel, which formed the natural surface of the hilltop in trench IV. This has sufficiently raised the pH of the soil to destroy molluscan remains and seriously inhibit environmental interpretation in the Iron Age. It is also possible that it has affected the preservation of some of the more fragile animal bones. This is exacerbated by the presence of a significant, decalcified turfline across the hilltop which represents a prolonged period of stable grassland development about 1700 to 600 cal BC. Shell is almost completely absent in this layer, bone is only rarely preserved, and it is likely that most of the more fragile ceramics have been destroyed.

The copper alloy objects

by K Laws with contributions by N Palk, D Mackreth, and R D Van Arsdell

In the recent excavations, 342 copper alloy objects or fragments were recovered (see Table 39), representing a total weight of 333.4g (see Chap 6 fiche for a full catalogue). The majority of pieces belong to phase 6, but a few belong to Late Iron Age (phase 7A) and early Roman (phase 8A) occupation levels. The objects are discussed in their typological groupings. A brief summary only is warranted with some groups and more detailed descriptions are provided in the fiche for Chapter 6.

Sheet and strip

This is by far the largest group of copper alloy objects; there are over 298 fragments of sheet and strip metal, weighing 139g. The high amount of sheet metal and associated studs and rivets was not apparent in Wheeler's report.

The bulk of these pieces, 278 examples, were small, thin, and irregular in shape. Eight fragments are, however, cut to shape and a further 12 were cut into strips (three were parallel-sided). Some of the sheets and strips were perforated by rivet or stud holes. Most of this material must come from the destruction of fine copper alloy vessels, but the strips could be from some sort of binding.

Stud and rivet

Nine of the ten copper alloy studs are 'dome-headed' with circular-sectioned shafts. In more than one example, the shaft flares at the end furthest from the stud head and, in some cases, it is riveted. Some are found piercing fragments of sheet copper alloy or iron (Fig 129: 1, 2, 5).

One example, 2624, is much larger: it might be more correctly termed a 'boss'. It is a domed, roughly circular disc with a maximum diameter of 6mm and a rivet hole at the centre. It is associated with a chain fragment (2625) and a strip of sheet metal (7776) in a rubble layer in the northern part of the trench (phase 6I).

Studs are represented on a number of Iron Age sites, normally in association with beaten copper alloy vessels/bowls (Bulleid and Gray 1911, fig 40), where they serve both a useful and an ornamental purpose in riveting the composite parts of the vessel together.

Nine rivets or rivet fragments have relatively short, circular-sectioned shafts. The illustrated example (8259; Fig 129: 17) has a particularly long shaft. Their heads are small, circular, and flat or slightly domed. A few are found in copper alloy and iron sheet-metal fragments.

Rod and wire

There are ten fragments of fine metal wire and three rod fragments with circular or oval cross sections. Two of the rod fragments are curved and may be fragments from small rings.

Brooches

(A summary of an archive report by D Mackreth, prepared by Niall Sharples). Fifteen brooches and brooch fragments were recovered: four complete fibulae, the remains of nine broken fibulae, and two penannular brooches. Eight of these are copper alloy, the rest are iron (the iron brooches are described here for convenience). All but two of the fragments can be ascribed to type.

Typologically, the earliest brooches were the two penannulars

Table 39 The distribution of copper alloy objects

	5C	*6B*	*6C*	*6D*	*6E*	*6F*	*6G*	*6H*	*6I*	*6J*	*7A*	*8A*	*9A*	*11*	*Total*
Sheet, strip				14+	1	17	169+	37+	49+	3	1	1		6	289+
Stud, rivet				2		2	10	4	2						20
Rod, wire					2	3	1	4	1	1				1	13
Waste, slag	1				1	2	13	5	10			1		1	34
Brooch			1		1		1	3	1				1	2	10
Coin							1						1		2
Ring							2	3						1	6
Miscellaneous								3	2				1	2	8
Total	1	4	1	16+	5	24	197+	59+	65+	4	1	2	3	13	

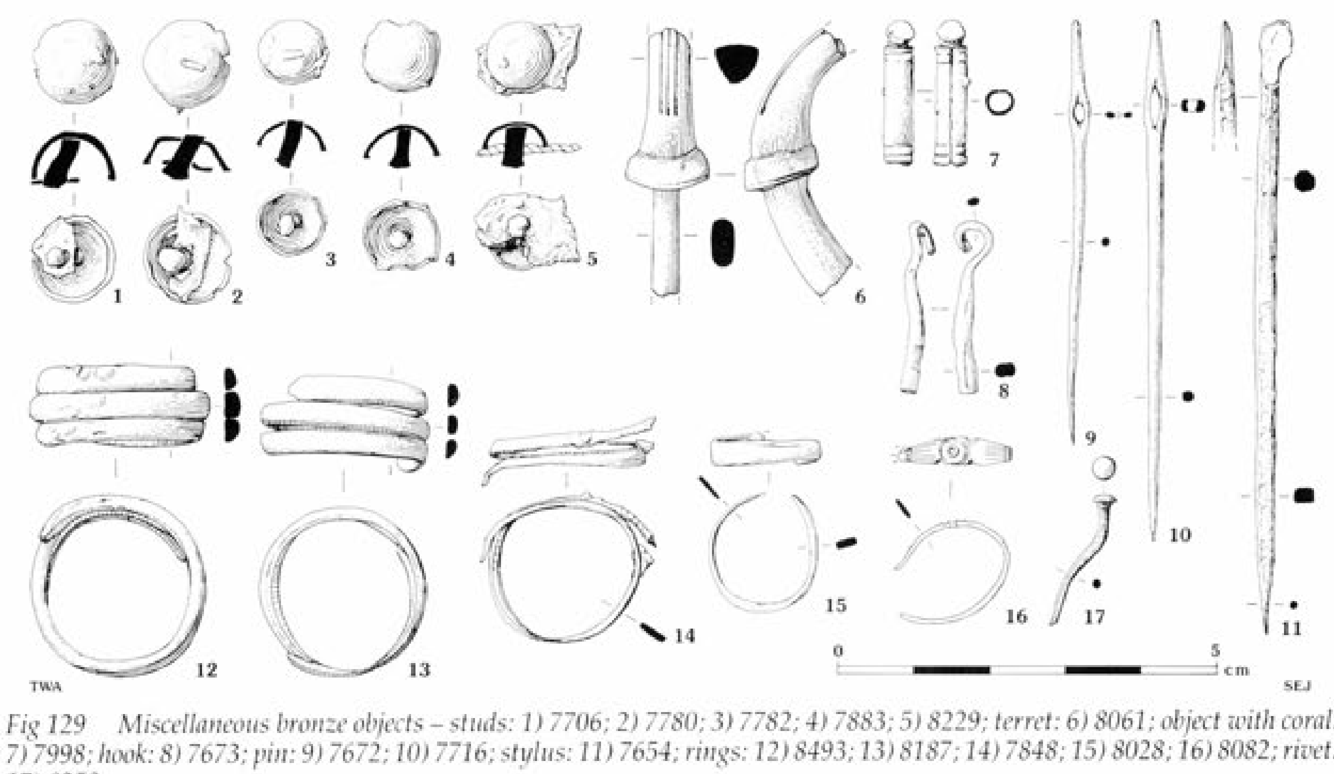


Fig 129 Miscellaneous bronze objects – studs: 1) 7706; 2) 7780; 3) 7782; 4) 7883; 5) 8229; terret: 6) 8061; object with coral: 7) 7998; hook: 8) 7673; pin: 9) 7672; 10) 7716; stylus: 11) 7654; rings: 12) 8493; 13) 8187; 14) 7848; 15) 8028; 16) 8082; rivet: 17) 8259

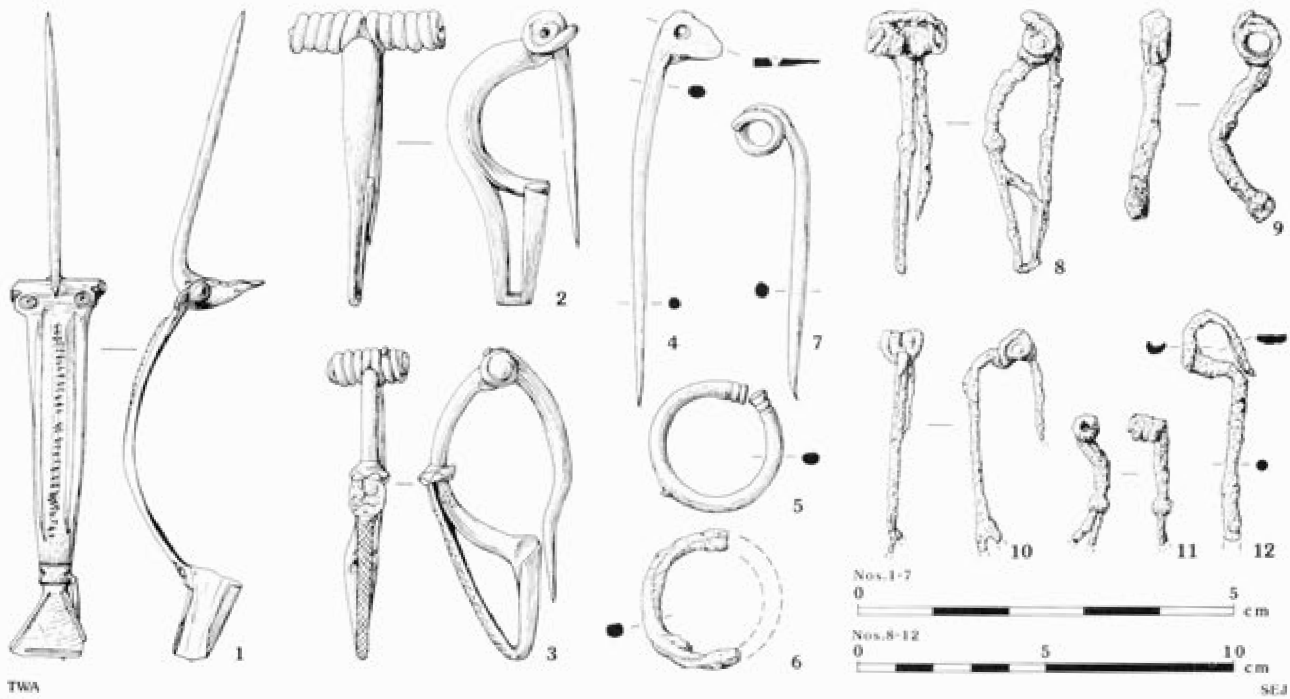


Fig 130 Brooches – bronze: 1) 8057; 2) 1073; 3) 1051; 4) 1002; 5) 8517; 6) 7702; 7) 7643; iron: 8) 8506; 9) 1074; 10) 1061; 11) 1071; 12) 8632

and the La Tène 1 fibula, 8632. Both penannulars are small and the complete example (8517; Fig 130: 5) has distinct mouldings at the terminal which can only be accurately paralleled on a brooch (Wheeler 1943, fig 86.1) recovered during the original excavations at Maiden Castle. Although the recent brooch cannot be accurately placed in the typological sequence devised by Fowler (1960), the pin associated with the original brooch is an early type, and this is appropriate for the stratigraphic position of 8517 (phase 6E) and the cultural associations of the original brooch (Wheeler 1943, 264). The other penannular brooch (7702; Fig 130: 6) has no diagnostic features and is in a stratigraphically later position. The La Tène I fibula (8632; Fig 130: 12) was a type 1CA, which is dated by Hull and Hawkes (1987, 70) to the end of the period 480–225 BC. The presence of a slight involution in the bow of this example could indicate a date as late as 200 BC. It was found in the fill of a phase 6H pit (6192) and must therefore be in a derived position.

There are seven La Tène II fibulae, two type 2CA (1074, 7887; Fig 130: 9, and unillustrated), three type 3B (1051, 1071, 8506; Fig 130: 3, 11, 8), and two type 6 (1073, 7674; Fig 130: 2 and unillustrated). The only well-preserved example of the type 2CA (1074) is probably early in the sequence, before 150 BC, as it has an imitation spring. The three type 3B date 'towards the end of the second century BC' (Hull and Hawkes 1987, 173). 8506 is probably later than 1051, as the end of the catch-plate is squared: a feature more common in later types. The type 6 examples are derived from continental types by Hull and Hawkes (1987, 193, 197) and, therefore, would be dated to about the middle of the first century BC. It can be argued, however, that they derive from the type 3B and this would suggest a date before the middle of the first century BC. The dates for these fibulae largely confirm the stratigraphic evidence for the site: 1074 comes from the phase 6 occupation in the abandoned hillfort ditch in trench II, 1071 and 1073 come from the upper fills of a large pit (331, containing Durotrigian ceramics), cutting the rampart in trench II, 7887 is from a pit (5114) in phase 6G, trench IV, and 7674 came from an occupation layer in phase 6H, trench IV. 8506 comes from a pit in phase 6H and is probably residual, and 1051 is unstratified.

There are three La Tène III brooches. The most distinctive was a very good example of an 'Aucissa' brooch (8057; Fig 130: 1). This is clearly a British copy of a continental type and probably dates to the period 25 BC to 50 AD. This example came from the fill of the recut ditch, at the base of the inner rampart in trench VI, and is thought to be a late Roman feature. It is possible that the brooch derives from erosion of the adjacent pre-Roman deposits. Pre-Roman examples of this type are known in Dorset, and Wheeler's excavation of the eastern entrance to the hillfort produced an example (Wheeler 1943, 261, fig 84.26). A pin (1002; Fig 130: 4) from a similar brooch was found in the topsoil in trench II, where there is good evidence for early Roman activity. The last brooch (1061; Fig 130: 10) is an unusual type with few good parallels – the best is from Maiden Castle (Wheeler 1943, fig 83.9). The profile of the bow, the voided catch-plate, and the presence of mouldings suggest a date in the second half of the first century BC. This date is confirmed by its association with brooch 1073 in pit 331 in trench II.

Coins

Two ancient coins were recovered. One (8050) was a Roman sestertius minted under Augustus, belonging to the 'Altar II' series, *c* AD 9–14 (identified by D Darwish), and was found in the late Roman mound in trench VI. The other was Iron Age and the following comment was supplied by R D Van Arsdell.

The coin (8610; Fig 131) is a Thurrock Type – a cast bronze from Essex. Table 40 gives its metal content. It is classified as Trinovantian A, catalogue number 1418–1 (Van Arsdell 1989). The coin was found in context 6210, trench IV. This was a silt layer which was thought to seal phase 6E. This would be too early for the date of the coin (see below): consequently, either the date of this coinage is wrong, which seems unlikely, the context and location was incorrectly recorded during the excavation, or a feature cutting down from the later phase 6G occupation was not recognised. It is at present impossible to choose between the last two alternatives.

Thurrock Types were unknown before 1983, when a hoard of 100–300 pieces was dispersed at coin shows on the continent. The coins were described as 'British and found at Folkestone'. During the

Table 40 The composition of the Thurrock Type cast bronze coin

Cu	81.62%
Sn	17.48%
Fe	0.30%
Co	0.28%
As	0.09%
Pb	0.09%
Ag	0.06%
Ni	0.05%
Sb	0.03%
Au	none
Bi	none
Zn	none

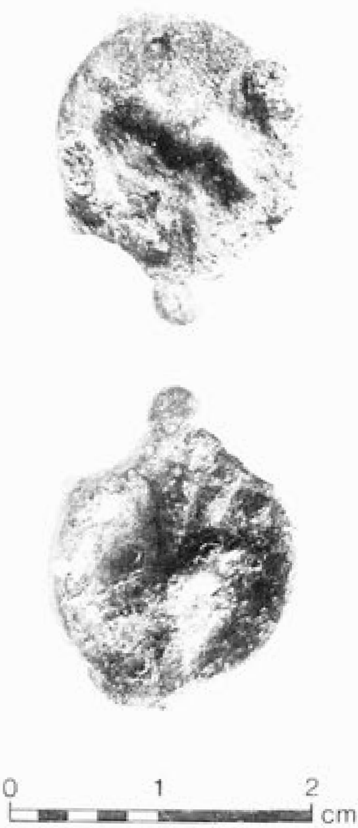


Fig 131 The cast bronze coin: 8610

summer of 1987, the Thurrock Hoard was discovered, producing sixteen varieties of cast bronzes. These have been tentatively identified as the earliest coinage of the Trinovantes or Catuvellauni, dating to 100–90 BC. It was a short-lived coinage and did not circulate widely. The Thurrock Hoard appears to be scrap culled from a local mint: the coins were never placed in circulation.

The appearance of the coin at Maiden Castle is surprising. Cast bronzes from Kent and Essex are rare finds in Durotrigian territory. Ten Kentish coins have been found: two from Hod Hill, seven from Hengistbury, and one from Ham Hill. The Maiden Castle coin is, however, the first find of an Essex type. It was found close to an area associated with bronze-working, and so it may have been imported as scrap and not used as a coin.

Rings

Six rings were recovered from the recent excavations, five of which are clearly finger rings. The stratified examples were recovered from phase 6 contexts.

Two rings (Fig 129: 12, 13) are of the typical Iron Age spiral type, examples of which exist at Glastonbury (Bulleid and Gray 1911, pl XLI) and Meare (Coles 1987, fig 3.10, E18, E28). The Maiden Castle examples have approximately two and a half coils of ribbon. The previous excavations produced several similar examples (Wheeler 1943, fig 86). One further example of this type is made from a much finer metal strip, and, though it is unusual, the spiral form is clear (Fig 129: 14).

One Roman ring (8082; Fig 129: 16) was found in Wheeler's backfill in trench VI. This is a small 'trinket ring' with triangular shoulders, analogous to Henig type 8 (Henig 1978). It has one bezel setting and is probably of third century AD date (Henig pers comm). Similar examples are seen at Lankhills Roman cemetery (eg grave 139; G Clarke 1979).

The fifth finger ring (8028; Fig 129: 15) is somewhat undiagnostic. Although a similar example from Wheeler's excavations (1943, fig 86.22) was thought to belong to the early part of the first century AD, this example was securely stratified in phase 6G, trench IV.

Miscellaneous objects

The remaining eight objects consist of two needles (7672 and 7716; Fig 129: 9, 10), the fragment of a pin shaft (8191), a Romano-British type I stylus (7654; Fig 129: 11; Manning 1985, 85), a small hook (7673; Fig 129: 8), three joining oval chain links (2625), a terret fragment (8061; Fig 129: 6), and a cylinder with a small sub-spherical piece of pink coral gripped in one end (7998; Fig 129: 7). The stylus was found in a soil layer immediately below the topsoil in trench IV and the terret fragment was found in the late Roman mound in trench VI. With the exception of a pin (8191), which was unstratified, all the other objects were found in Iron Age contexts.

Details of these objects can be found in the fiche for Chapter 6, but N Palk has contributed a note on the terret. The fragment of terret is of simple form with only the strap bar, one terminal, and a portion of the ring remaining. The external edge of the ring is decorated with a small, doubled flange. The top of the terminal has been worn.

Simple terrets of similar form have been found at Cadbury Castle, Copse Farm, and Glastonbury Lake Village (Bulleid and Gray 1911, 229–30, fig 45; Bedwin and Holgate 1985, 229–30, fig 9.1; Bulleid and Gray 1905, 90; 1911, 229, 231–2, pl XLIII E8). These examples all have a flange around their external edge, though the exact nature of the flange varies. The small double flange of the Maiden Castle terret is unique, although pit 209 at Gussage All Saints produced mould fragments for the type (Foster 1980, 10, fig 3, type VII).

The dating of terrets is complicated by the possibility of the longevity and coexistence of types, and simple terrets of one form or another were in use for at least three centuries (Palk forth). The moulds from Gussage All Saints (Spratling 1979) show that the flanged variety was in production in the mid to early first century BC. It is probable that the Maiden Castle terret was produced in the first century BC, then had a protracted period of use (as evidenced by the wear to its terminal) to be finally discarded some time in the first century AD.

Waste and slag

A number of indeterminate fragments and amorphous nodules of waste metal, mostly casting waste and a small amount of bronze melting slag were found.

Non-ferrous metalwork and metallurgy

by J P Northover

One hundred and forty-four groups of material thought to be of copper-based alloys were submitted for metallurgical examination, as well as two iron objects coated with copper alloy (see p165); from these, 151 samples were taken (Chap 6 fiche). The material comprised brooches and brooch fragments, other artefacts, many scrap fragments of sheet (some with rivets), small pieces of wire, and some casting waste. The study demonstrated the presence of an early Celtic cast bronze coin (see p155), bronze rivets attached to iron sheet, other small fragments of iron sheet, and a small amount of crucible slag and crucible fragments, almost certainly from bronze melting. In order to provide a reasonable assessment of this quantity of material within the available budget, it was necessary to restrict the precision of the analyses. The analytical methods used are described in the fiche for Chapter 6, as an introduction to the tabulated analyses.

Many fragments were more or less completely corroded and, although their analysis yielded some useful information, they are largely omitted from this discussion. One hundred and five samples proved to retain sufficient metal for a quantitative analysis, as well as the two plated iron objects. Most of these samples were concentrated in the successive phases of the extended hillfort in trench IV, although there are examples from the other Iron Age and early Roman phases. The complete table of analyses is to be found in the fiche (Chap 6, Table 127).

It is only recently (Barnes 1985; Northover 1984a; 1987; 1989; forthcoming; Stone 1987) that sufficient analyses of Iron Age copper alloy metalwork have been available to construct a classification of impurity patterns and alloys. A preliminary attempt was made in the discussion of non-ferrous metallurgy at Hengistbury Head (Northover 1987); this was unsatisfactory, based as it was on too limited a database. Although some of its groups are carried over, the classification used here should be regarded as superseding previously published versions. There is still no general metallurgical study of Iron Age non-ferrous metalwork, so the definitions of impurity patterns must be evolved in the course of post-excavation studies. The material from Maiden Castle was sufficiently extensive to permit a sounder description of a number of groups, and other sites have provided data for the remainder.

Metalwork types

The metalwork from the site as a whole can be roughly sorted into sheet, rivets/studs, rod/wire, casting waste/slag, and artefacts; if the occurrences of these categories are plotted against phase, the scores in Table 41a are obtained. The largest concentration of metalwork is in trench IV, phase 6G, and this is broken down in more detail in Table 41b with three contexts which appear to be particularly connected with metalworking separated out.

Some patterns are quickly apparent. For example, identifiable copper-alloy artefacts are most common in the later phases 6H/7–8/11; to a lesser extent the same is true of the iron (see p162). In the earlier phases, notably 6E–G, the material is dominated by fragments of sheet and other metalworking waste. This is especially true of 6G, where the bulk of the material is connected with metalworking. If the distribution from the non-metalworking contexts of 6G is compared with other phases, notably 6E–F and 6H, the general proportions of the different types of object are not dissimilar with the exception of the greater number of artefacts in 6H. Although there is metallurgical activity in all these phases as attested by casting waste, it was clearly not centred in trench IV except in 6G.

The contrast in 6G is marked. From pits 5514, 5622, and contexts 5262–4, in the area of the western house, we have a range of metalworking debris concentrated in a small number of locations. Within each of the pits mentioned, the debris is largely concentrated in a single layer, ie 5236/5114 and 5630/5622, both layers with large quantities of rubble, although of rather different character in each case. The contexts could each contain the results of a single clearance of a metalworking area into the pit. There are some differences in the debris in each case. In 5236/5114, all but one of the fragments recovered are from sheet bronze of various types, the other piece being a small drop of melted bronze. Sheet bronze is also the main element in the layer immediately above and possibly arrived in the pit at about the same time. The other layers have a greater variety with a piece of iron sheet, with a bronze rivet, in the bottom layer and a pinhead and a piece of wire close to the top. In 5630/5622, sheet bronze is also the major category, but there are also pieces of iron with bronze rivets, small pieces of iron sheet, and crucible and fuel-ash slags, but in this case no melted waste.

As noted elsewhere by Salter (p166), 5263 presented an important group of metallurgical debris. This silt layer seals the abandoned western roundhouse, but the floor layers which it sealed also contained evidence for the working of copper alloys (FAS1), suggesting that the metalworking could have started during the lifetime of the house, earlier in 6G. The pattern of debris in 5263 (sheet, copper-working waste, FAS1, FAS2), hammer-scale and slag spheres, FLM, and a little iron slag and fragments of iron (see p166 for definitions) suggest material trampled into the floor in the course of working mainly bronze and iron sheet. In the later Iron Age in Britain, a number of composite bronze/iron types were made, for example sword scabbards and large sheet-metal vessels.

There is a further small concentration of metalworking waste in 6G, in pit 5915. It is mainly composed of sheet and does not relate compositionally to the rest. It is reasonable to regard this material simply as scrap and not directly related to the other activity.

Table 41a Non-ferrous metalwork – classification of finds

Phase	*Sheet*	*Rivets/studs*	*Rod/wire*	*Waste/slag*	*Artefacts*
5C/6C–D/J	3	2	1	1	1
6E/F	4	1	3	3	1
6G	45	11	2	9	4
6H	14	4	4	4	9
6I	8	2	1	6	3
7A/8A/9A	2	0	0	1	3
US/recent	5	0	1	1	6

Table 41b Classification of finds from Phase 6G

Phase	*Sheet*	*Rivets/studs*	*Rod/wire*	*Waste/slag*	*Artefacts*
5114	12	4	1	3	0
5262–4	6	0	0	2	1
5622	14	3	0	2	0
5915	5	1	1	0	0
Other	10	3	0	4	3

Alloys

Aside from those samples which yielded only copper oxide or copper chloride corrosion products, the great majority of objects analysed comprised plain tin bronzes. Of those where the measurement of tin content was largely unaffected by corrosion, the distribution of tin contents (Fig 132) has a peak at 11–13% Sn. A finer subdivision of the histogram is not advisable with the imprecision of the analyses mentioned earlier, but there is some evidence for a second peak in the distribution around 8–9%. The lower tin contents may be associated with specific impurity patterns. The majority (65%) of the analyses lie in the range 10–14%.

The tin contents are typical of the analyses so far collected from Iron Age sites. There is no obvious correlation of tin content with impurity pattern. There may be some change in alloy type with time,

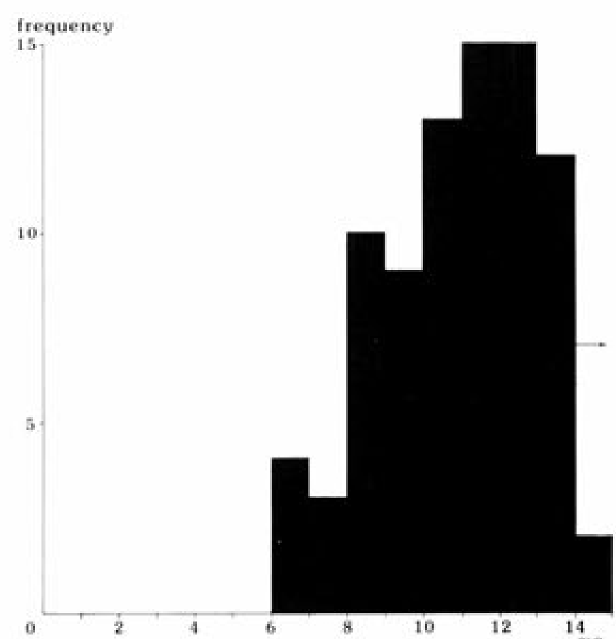


Fig 132 Tin contents of bronze at Maiden Castle

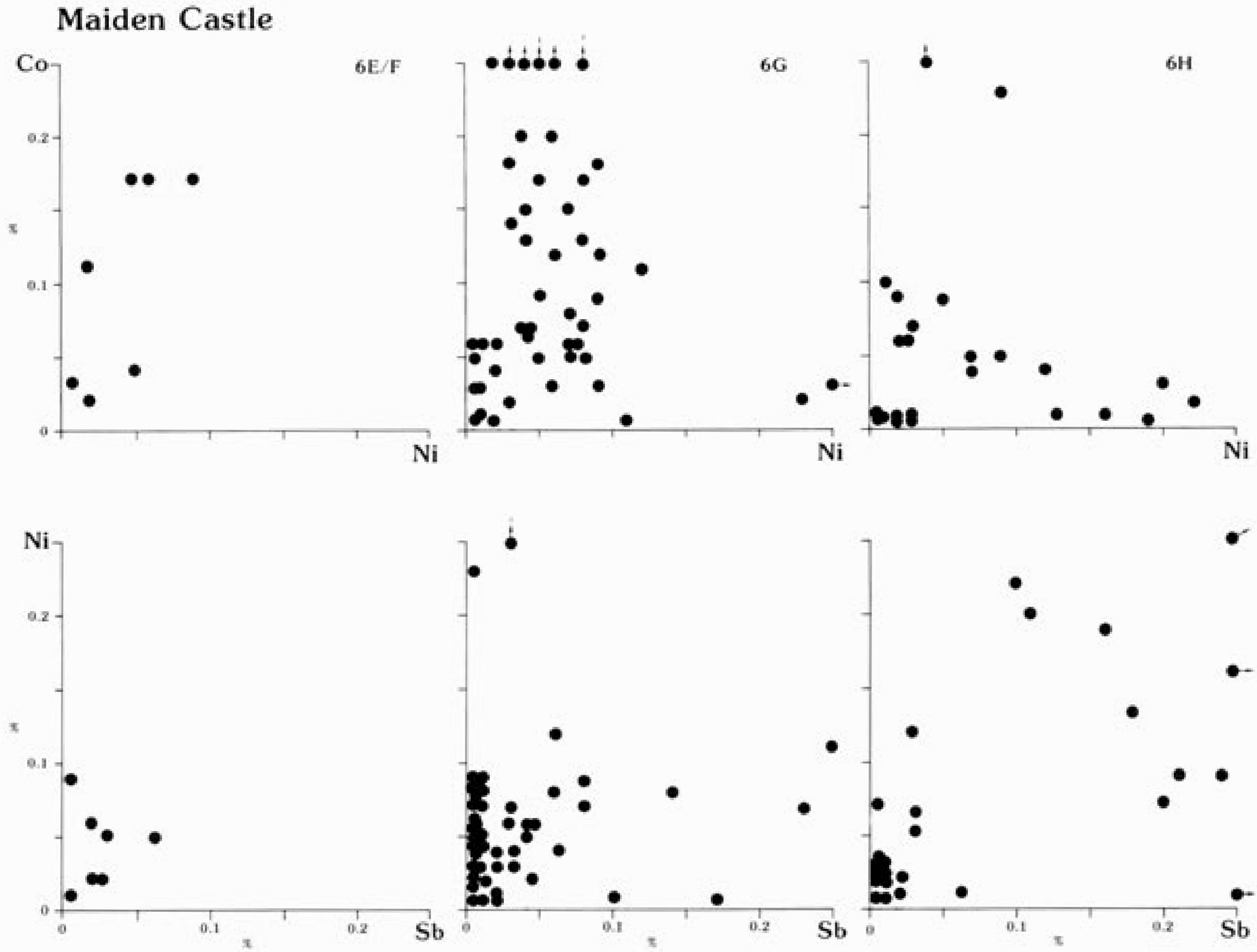


Fig 133 The variation in impurity patterns in the stratified phase subdivisions in trench IV

in that the tin contents of 6E–F tend to be rather lower than in subsequent phases, a feature noted on other Iron Age sites. There are three examples of the very high tin alloys referred to by numismatists as potin: two lumps and a potin coin. Two are essentially very high tin bronzes, but the third (7756) has very high concentrations of other elements (eg 22% antimony), strongly suggesting that the metal had its ultimate source in central Europe.

There are only seven objects with more than 1% lead; of these, only two have what are likely to be alloy levels of lead: a piece of bronze strip from 6G and one potin lump from 6H (7756). This is the normal pattern for southern Britain for most of the pre- Roman Iron Age. The Late Bronze Age/Early Iron Age finds from Mount Batten (Northover 1989) show very clearly how lead contents tail off with time. At the other end of the period, analyses from elsewhere (Northover unpubl; Stone unpubl) suggest that lead contents began to increase again during the second half of the first century BC. This trend was not consistent, and at Maiden Castle there is no evidence for a general increase in lead contents at this time.

There was one example of brass: a small piece of sheet (1009) from the topsoil; given its context, further discussion is pointless.

Impurity patterns

The large body of data from Maiden Castle, allied with the expanding database of bronze analysis from other Iron Age sites referred to earlier, at last permit a reasonable definition of impurity patterns for the Iron Age in southern Britain. Until recently, the detailed analysis of copper alloy impurity patterns has been concentrated on the Bronze Age, but the results from several sites show that it is of equal relevance in the pre-Roman Iron Age. By way of introduction, the variation in three important impurities is plotted in Figure 133 for successive Iron Age phases within trench IV (the data from 6E and 6F have been combined to give a reasonable population). Phases

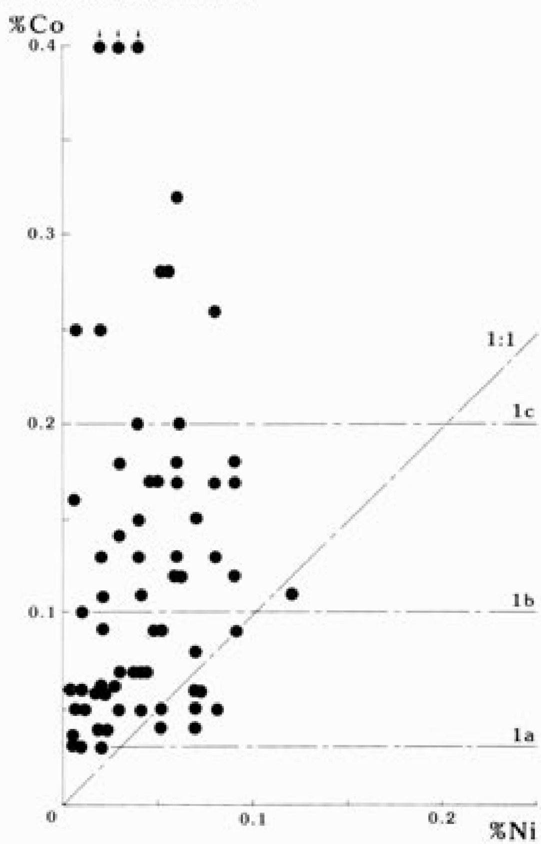


Fig 134 A plot of Co vs Ni for Group 1 impurity patterns

6E–G show basically similar plots of Co:Ni and Sb:Ni, but there is a marked change between 6G and 6H with a considerable decrease in the proportion of metal with an important cobalt impurity and a corresponding increase in the number with an antimony impurity.

The classification of the impurity patterns is based on five significant impurities: arsenic (As), antimony (Sb), cobalt (Co), nickel (Ni), and silver (Ag); levels of iron (Fe) and lead (Pb) are considered where appropriate. The major divisions, as implied by the results of Figure 133, depend on the antimony and cobalt contents. Any definition of impurity groups is bound to be rather arbitrary and this effect is increased because there was no rigorous statistical examination of the data. Ideally, the boundaries of groups should be shaded, rather than exact, but this is inconvenient. For example, it would be better to see the band 0.05–0.10% Sb as representing the border between those groups with a significant antimony content and those without, but for convenience this is set simply at 0.10%.

These impurities are used to define nine major divisions, labelled for the moment 0–8; these definitions are set out in detail in the fiche for Chapter 6, but are summarised in Table 42. In a system which is still likely to grow, a strictly logical labelling system is difficult to achieve, but the one presented here is reasonably straightforward. One fixed point has been the retention of the label 1 for a majority of those groups with cobalt from the Danebury and Hengistbury Head reports (Northover 1984a; 1987). Although not all the groups defined in Table 43 are observed at Maiden Castle, it was felt to be helpful to include the whole system.

The distribution of impurity patterns by phase is summarised in Figure 135. Group 0, with no significant impurities, occurs sporadically throughout the Iron Age with a slight concentration in phase 6H and also in the Roman period. Group 1, characterised by Co>Ni and Sb<0.10%, was subdivided on the basis of cobalt content (Fig 134); this subdivision has no significance at Maiden Castle, but may do so at Beckford (Northover forthcoming). This is the largest group at Maiden Castle and the distribution shows that it is common from the beginning of the second century BC until the middle of the first century BC. A source in the south-west, perhaps around the Tamar valley, seems likely (Northover 1987).

Group 2 has the cobalt and nickel contents of Group 1, but has an additional antimony impurity and is similarly subdivided. It is not common at Maiden Castle, but reaches a peak in 6H. This confirms other evidence that cobalt and nickel have become rare impurities by Roman times. There are only two pieces with the As/Sb/Ni/Ag pattern of Group 2c and three with the As/Sb/Ag pattern of group 3 at Maiden Castle. One of these is a pin from an 'Aucissa'-type brooch which would indicate a late date for the group, while two others are a finger-ring and La Tène III brooch from phase 6H. Group 4, with Sb>As, is distinctive and to an extent must represent specific source areas. It is present in the sheet waste in pit 5915, differentiating it from the other sheet groups in 6G, but is relatively more common in the later phases of the site. It is characteristic of the Durotrigian bronze coinage and occurs in similarly late contexts at Hengistbury Head (Northover 1987). Group 5 has arsenic and nickel as its principal impurities, is divided on the basis of nickel, and always has Co<Ni. Like Group 1, it is concentrated in phase 6G and may, in part, be related to the use of Group 1. The only other group represented at Maiden Castle is 7, with As and Ag impurities, but there is only one example.

The overall distribution of impurity patterns with time is neatly reflected in the analysis of the brooches summarised in Table 44. The earliest brooch in this series, a La Tène II type, unfortunately from a topsoil context, dates to the second century and is entirely consistent with its group 1bc analysis. Given its occurrence at Maiden Castle, it is very likely to have been made in southern or south-western England from metal from the south-west. The other fibulae studied all fall in impurity groups with Sb 0.10%. As we have seen, they become increasingly common during the first century BC and become the major element in the metal supply. Nevertheless, there are earlier examples, so that the analyses do not contradict the relatively early date for Hawkes and Hull type 6 suggested by Mackreth (archive report). The date of the Aucissa brooches is somewhere between the last quarter of the first century BC and the middle of the first century AD, and an analysis characterised by Sb, as here, is to be expected. The two penannular brooches both have group 1 compositions which are typical of their phases.

The only other artefacts of which there is any significant quantity are rings. Their analyses are shown in Table 45. Once again, the analyses reflect the phase with group 1bc in phase 6G and groups with Sb 0.10% in 6H.

Table 42 Classification of impurity patterns

Significant impurities are As, Sb, Co, Ni, Ag

Group 0

All significant impurities at low levels (<0.03%): there may be some Fe, Pb

Group 1

Co>Ni>0.03%; Sb <0.10%; As 0–1.0%; Ag 0–0.10%; both Pb, Fe in range 0–1.0%; Bi variable
Group subdivided on basis of Maiden Castle and Beckford data; essentially Co is independent of Ni and:

1a : 0.03%<Co<0.10%
1b : 0.10%<Co<0.20%
1c : 0.20%<Co

A large majority of analyses in group 1 have Sb<0.05%, hence examples with Sb in the range 0.05–0.10% are labelled as 1a*, 1b*, 1c*.

Group 2

Sb>0.10%; generally As>Sb; Ag 0–0.30%
The group as a whole is subdivided with:

2a : Co>Ni (i.e. group 1bc + >0.10% Sb)
2b : Co=Ni (i.e. group 1a + >0.10% Sb)
2c : Co<Ni (i.e. As/Sb/Ni/Ag pattern: Ni>0.05%)

Group 3

Sb>0.10%; As 0–1.0%; Ag 0–0.30%; Co low; Ni variable In effect an As/Sb/Ni/Ag pattern; many of this group found with Zn impurity, perhaps from imported scrap

Group 4

Sb>0.10%; Sb>As; Ni<0.50%; Ag variable
Sb contents generally exceed 0.20%

Group 5

Sb<0.10%; As 0–1.0%; Ag 0–0.10%
Subdivided by nickel content:

5a : Ni>0.5%
5b : Ni<0.5%

In both cases, Co<0.03%<Ni; essentially those groups with As/Ni pattern

Group 6

Sb<0.10%; As 0.5–1.0%; Ni 0.05–0.15%; Ag variable; Zn 0.1–1.0%
In this case, Zn appears to be a genuine impurity deriving from the original ore source

Group 7

Sb<0.10%; As 0.10–1.00%; Ni<0.075%; Ag>0.10%
Essentially an As/Ag pattern; generally Ag 0.20%

Group 8

Sb<0.10%; Ni 0.20–0.30%; Ag 0.5–0.75%

Table 43 Distribution of impurity patterns by phase

Phase	*0*	*1a/**	*1bc/**	*2a*	*2b*	*2c*	*3*	*4*	*5a*	*5b*	*6*	*7*	*8*
5C/6C–D/J	1	1	1	0	1	1	0	0	1	0	0	0	0
6E/F	0	2	5	0	0	0	0	2	1	1	0	0	0
6G	0	15	21	0	2	0	0	1	3	2	0	0	0
6H	4	7	1	1	2	1	1	3	2	2	0	0	0
6I	1	6	3	0	0	0	0	0	0	1	0	1	0
7A/8A/9A	2	0	1	0	0	0	0	2	0	0	0	0	0
US/recent	0	0	1	0	1	0	2	3	0	0	0	0	0

Table 44 The impurity patterns of the copper alloy brooches

Small find no	*Type*	*Phase*	*Analysis*	*Impurity*
1051	La Tène II (Hawkes & Hull 3B)	11C	MC 147	1bc
1073	La Tène III (Hawkes & Hull 6)	6C	MC 145	2c
7674	La Tène III (Hawkes & Hull 6?)	6H	MC 150	2b
8057	Aucissa	9A	MC 143	4
1002	Aucissa (pin)	11A	MC 146	3
8517	Penannular, diminutive	6E	MC 149	1bc
7702	Penannular, diminutive	6H	MC 144	1a
7643	Brooch pin/coil	6H	MC 148	2b

Table 45 The impurity patterns of the copper alloy rings

Small find no	*Description*	*Phase*	*Analysis*	*Impurity*
7848	Ring, 1.5 turns, dec	6H		
8028	Finger ring, strip, 1 turn	6G	MC 131	1bc
8502	Wire ring	6G	MC 128	5a
8187	Finger ring, 2.5 turns	6H	MC 136	5b
8493	Finger ring, 3.5 turns	6H	MC 129	2c
7022	Finger ring	11F		

Metalworking

Sheet bronze

Sheet bronze, with its associated studs and rivets, is quantitatively the most important single class of copper alloy metalwork recovered from the present excavations. During the Iron Age, sheet bronze was produced in a variety of gauges for vessels, bindings, and strappings for wooden vessels, such as buckets and tankards, shield and scabbard plates, bindings, and a variety of decorative functions.

Although 81 occurrences of sheet bronze are recorded in the catalogue of finds (over 50% of the number of copper alloy finds), the total weight of metal recovered is quite modest at 139g – insufficient for even one complete vessel of any size. Sheet bronze is spread through all periods, but is especially concentrated in phase 6G, both by weight and by number of finds, as shown in Table 46.

There are very good reasons for thinking that much of the sheet bronze in 6I (Iron Age unphased) correctly belongs to 6G as many of the compositions are in group 1. In fact, 70% of the analysed sheet bronze from all contexts is of group 1 composition. Of the 30% with non-group 1 compositions, only five examples are in 6G and, of these, three are from group 4 and come from pit 5915, relatively remote from the metalworking areas in trench IV. In each of the other phases with several finds of sheet, there is a variety of compositions. In those phases, the few finds of sheet represent little more than a random scatter of scrap fragments.

The 78g of bronze in 6G are made up of over 183 fragments from 20 contexts: of this quantity, 65.6g (over 152 fragments) or 90% are from just three groups of contexts – the pit groups 5114 and 5622 and layers 5262–4, all associated with the western house in trench IV. These contexts also contain rivets and studs associated with iron and wood as well as with the bronze sheet, iron scrap, bronze casting waste, and crucible and fuel-ash slags that can be associated with the melting of copper alloys. Thus, for a period in 6G, this house was associated with industrial activity which had a great deal to do with sheet bronze. The surviving debris is too sparse to tell us exactly what this activity might be. However, given that much of the metal is relatively thin and was originally flat, even if now folded, it is reasonable to suggest that the manufacture, repair, and demolition of sheet-bronze vessels and fittings might well be involved. The claddings of wooden vessels and the manufacture of rivets and studs for use on bronze, as well as on iron and wood, could also be included.

Although much of the sheet bronze is in scrap condition, such as offcuts of sheet folded up into a form that will easily go into a small crucible for remelting, there are two important clues in favour of a manufacturing activity. The first is simply the association with metalworking waste in the form of droplets and spills of bronze and of crucible and fuel-ash slags. The most important, perhaps, is the fact that all but one of the samples of sheet bronze analysed from the 'metalworking contexts' (5114, 5622, 5262–4) in the western house were of a single group of compositions, namely group 1. At the same time, all the samples of waste analysed from these contexts were of group 1, while the sample of crucible slag analysed from 5622 was used for the melting of group 1 bronze. In other phases, the distribution of sheet compositions was essentially random.

The association of the sheet and waste with a single composition group in 6G indicates a certain stability of metal supply. Also it implies that much of the sheet bronze is indeed waste and offcuts from the manufacturing process, rather than recycled scrap. Although group 1abc was almost certainly the dominant composition group in central southern England at the time of 6G, the evidence from the nearest comparable site, Danebury, shows that metal from other composition groups was in circulation (Northover 1984a; Fig 135). Consequently, it is probable that recycled sheet would show signs of mixing with other groups, notably the presence of antimony. Objects with Sb greater than or equal to 0.10% do occur in 6G: a small sheet fragment from a non-metalworking context and two rivets from pit 5114, one attached to iron sheet. These show that metal of other types was reaching Maiden Castle, but was not having an impact on the composition being worked there. We have seen earlier

Table 46 Weight of sheet by phase

5C/6C–D/J	1.9g
6E/F	3.2g
6G	78.3g
6H	6.9g
6I	44.7g
7A/8A/9A	0.2g
11A–D	4.4g

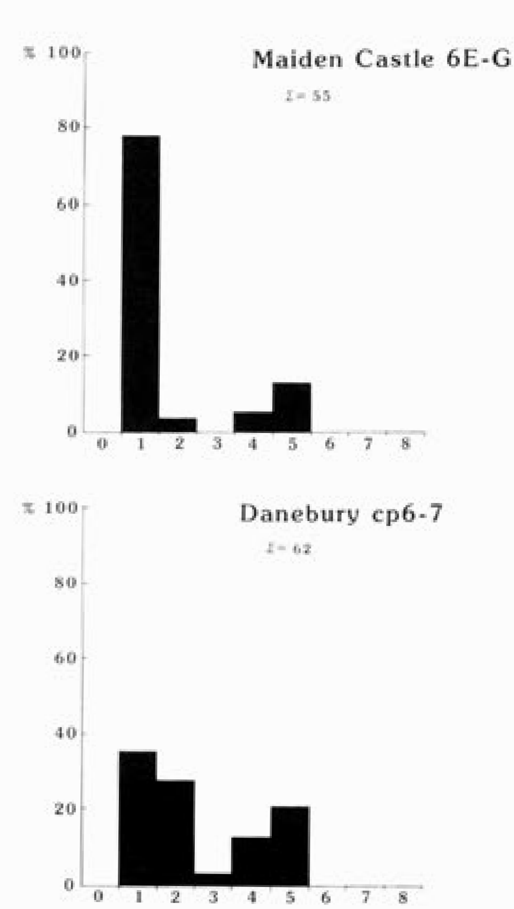


Fig 135 The distribution of impurities in phases 6E–G at Maiden Castle and cp 6–7 at Danebury

that a likely source for group 1 metal is in the south-west of England, perhaps the Tamar valley area or in Cornwall. There is, however, no evidence from Maiden Castle to suggest in what form that metal arrived at the site.

Rivets and studs

As with sheet bronze, the majority of rivets and studs, as might be expected, are associated with the metalworking contexts of 6G. They comprise both domed rivets/studs with a hollow head and a variety of small solid rivets. The former are principally associated with some fabricated sheet-bronze vessels deriving from cauldrons of a type seen at La Tène (Vouga 1923; Eggers 1951, Types 4–5). In England, the only intact examples are the bowl from Glastonbury, Somerset (Bulleid and Gray 1911) and the cauldron from Spettisbury, Dorset (Gresham 1939). The vessels from La Tène itself have a bronze base sheet and iron upper parts. This composite construction is typical of the majority of British examples: a complete iron upper section was found at Letchworth (Moss-Eccardt 1965), and some vessels from the London area (R A Smith 1907) clearly had an iron upper section. The small cauldron from Spettisbury has an all bronze body with iron fittings, while the Glastonbury bowl is in effect a model of one of these vessels in a single sheet with the rivets serving a purely decorative function. There is a strong probability that at least some proportion of the sheet bronze and rivets at Maiden Castle is connected with the manufacture and use of such cauldrons. Cauldrons of this type had been in use for much of the La Tène period, but they were superseded by other types from the second half of the first century BC. A further connection may lie in some of the iron rings, eg 7779, which may belong to the iron ring handles and fittings of cauldrons or to cauldron hooks (Manning 1983), rather than to horse harness.

The domed rivets are also found attached to wood and iron, but to what type of artefact is unknown: one possibility is in the assembly and decoration of scabbards. Some examples attached to bronze may also fall into this category, as in the Wittenham and Hunsbury scabbards (eg Barnes 1985).

The small rivets could come from a wider range of material, but vessels may still be included. It was probably during the first century BC that a new type of cauldron appeared – the Santon or projecting-bellied type – again deriving from European prototypes (Eggers 1951, Types 6–8; C Hawkes 1951; MacGregor 1976), where the sheets are joined with very many small rivets. Some of the smallest nails/rivets may have served to attach bronze bindings to wood or, perhaps, leather.

Overall, the rivets add to the picture of a metalworking industry at Maiden Castle concerned with fabricating sheet-bronze products.

Rod and wire

This category of material at Maiden Castle is very heterogeneous. Besides wire, it probably includes small scraps of pins and brooches. The total amount is very small and only two points deserve remark. First, there are samples of both plain hammered wire and wire probably made by tightly twisting a thin bronze strip. Second, wire is noticeably absent from phase 6G.

Bronze-coated iron rings

Two iron rings coated with bronze were found (nos 7952 and 8181), both from contexts in 6G (5249 and 5729). The iron rings were made from a thick wire or bar bent into a circular shape. The ring was then dipped in bronze, both coating the iron and, effectively, brazing the joint. The analysis of the bronze coating is listed at the end of the main analysis table (Chap 6 fiche, Table 127). It is not included within the table, as it was not possible to take an adequate sample for analysis. The bronze coating appears to be applied directly to the iron without the intermediate tinning, seen in the example described by Spratling *et al* (1980) from Gussage All Saints.

Waste

Casting waste occurs in all phases, and the crucibles published by Wheeler (1943, 377–8) also demonstrate the presence of metalworking activity from the Iron Age into the early Roman period. All of Wheeler's crucibles came from his site D, adjacent to trench IV.

As with the sheet bronze, all the casting waste as well as the bronze-melting slag analysed from 6G was in impurity group 1. This is also true of the casting waste from 6E/F. This shows some continuity of metal supply through these phases. There is not sufficient evidence from phases 6E/F to suggest the nature of the metalworking connected with this casting. The sheet bronze from 6E/F is noticeably more varied in composition, so that other products may have been more important. If metalworking was a significant activity in 6E/F, the centre of it has not been located in the present excavations. In contrast, we have seen that the casting waste in 6G is clearly connected with the working of sheet bronze. If blanks were being cast for the working of sheet, no moulds are known, like those from Glastonbury (Bulleid and Gray 1911) or Dinorben (Guilbert 1979), or semi-finished blanks, like that from Ringstead, Norfolk (R Clarke 1951).

The casting waste from 6H is of particular interest in containing two fused lumps of potin. The label 'potin' is used to describe a range of high-tin alloys used in the cast bronze coinage of the Iron Age, from about 100–50 BC, subsequent bronze coinages tending to have lower tin contents. At its highest, potin can reach 22–6% Sn and in that form is equivalent to a modern bell-metal. However, the analysis of the Snettisham potin coins (Stone 1987) and some continental examples (Castelin 1983) shows that other elements can reach very high concentrations. However, the 8.6% As, 22.6% Sb, 11.6% Pb, and 10.6% Ni of sample 7756 (MC 83) is rather extreme. The ultimate source of the metal was undoubtedly in central or Alpine Europe. The other potin sample, 2551 (MC 87B), is much more restrained with, besides the tin, simply an alloying addition of lead. The potin coinage did not circulate in the area of the Durotriges, so that the presence of potin at Maiden Castle indicates that potin coins were melted down as part of a scrap supply or that potin arrived at the site in some other form, with some other purpose as yet undetected. Similar sporadic occurrences of potin are found at other sites, eg the two examples from Beckford (Northover forthcoming) and Meare (Coles 1987).

Discussion

As has already been emphasised, the collection of copper alloy metalwork from the recent excavations at Maiden Castle was dominated by material relating to the working of sheet bronze in phase 6G. At the same time, the proportion of other artefacts of bronze was at a minimum for 6G, despite the fact that there was very considerable domestic activity. Conversely, in the succeeding 6H, where evidence of domestic activity was more restricted and more diffuse, the number of artefacts and artefact types was increased.

We still know far too little about the organisation of non-ferrous and precious metalworking in the pre-Roman Iron Age in Britain (Northover 1984b). Although extensive evidence of bronze-working occurs on a variety of sites, only a small proportion has been systematically studied. At present, there is good evidence that until some time in the first century BC, the industry was divided up according to product and that certain types can be specifically associated with certain types of site. Present evidence associates sheet bronze with hillforts, as at Maiden Castle. Sheet bronze is also important at Danebury and, to a lesser extent, at Hunsbury (Barnes 1985). The hillforts at Bredon Hill (Hencken 1939) and South Cadbury (Spratling 1970) have tools that could be associated with sheet-working, while Dinorben has moulds for sheet blanks (Guilbert 1979). In contrast, much simpler open, ditched settlements have yielded extensive residues from bronze casting, usually of vehicle and harness fittings: Beckford (Wills and Dinn forthcoming), Gussage All Saints (Wainwright 1979a), and Wheelsby Avenue, Grimsby, Lincolnshire (Howard 1983).

A third category of site appears to have a more complex metal economy with a much wider variety of non-ferrous metallurgy. Two examples are Glastonbury and Hengistbury. One function possibly seen at these sites and not elsewhere is the actual manufacture of copper alloys. There are still important classes of material where we have no certain idea of their manufacture, notably brooches and sword scabbards and fittings. Further, we are only just beginning to learn how metalworking was carried on in areas without hillforts, such as East Anglia. Finally, the changes in society and settlement from the first century BC on, for example with the rise of the oppida, will have led to a different organisation of metalworking and probably increased the range of sites on which bronze-working was carried on. The needs of the coinage would also have added a new strand to metalworking.

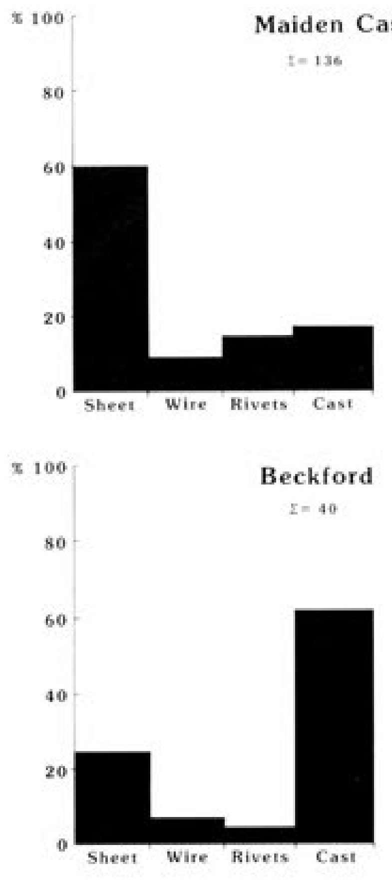


Fig 136 The distribution of sheet, wire, and waste at Beckford ('casting site') and Maiden Castle ('sheet site')

Although sheet-bronze working appears to be at present a preserve of the hillfort, some aspects of metallurgy are shared with other sites. Before briefly describing them, it is useful to point out the contrast between a 'sheet' site (Maiden Castle) and a 'casting' site (Beckford). This is easily done in terms of the proportion of finds of sheet, casting waste, and so on from each site, as in Figure 136; in fact, the proportions of waste and sheet are reversed. Nevertheless, before sheet can be made, bronze must be cast, so crucibles must be manufactured and bronze melted. The technology involved and the form of the crucibles is basically the same in both types of site. At both Maiden Castle and Beckford, the metal industries also relied on a single source of supply, at least until some time towards the middle of the first century BC. At that time, Beckford switched to another single source, but the later position at Maiden Castle is not clear. For both the industry in phase 6G at Maiden Castle and that in the earlier metalworking phases at Beckford, the single source was that yielding group 1 metal: at Beckford succeeded by group 5.

The relationship between bronze- and iron-working is further outlined in the discussion of iron-working residues and in the discussion of the bronze-plated iron objects (see p165). The evidence from the western house clearly shows that bronze and iron were worked in the same area and, as we know, composite objects were made. Trench IV is an important area for some form of iron-working (see p166), so that we have a picture of an intimate mixture of domestic and industrial activity in trench IV, especially during 6G.

The iron objects

by K Laws with contributions by N Palk and G Grainger

In the recent excavation, 884 iron objects or fragments were recovered (Table 47), representing a total weight of about 5200g (Chap 6 fiche for a full catalogue).

Table 47 The distribution of iron objects by phase subdivision

Object	*5C*	*6A*	*6B*	*6C*	*6D*	*6E*	*6F*	*6G*	*6H*	*6I*	*6J*	*7A*	*8A*	*9A*	*11A*	*11B*	*11C*	*11D*	*11E*	*11F*	*US*	*Total*
Waste	2	1		5	2	1	3	9	5	2	14	423		9	1	1						478
Sheet, strip			1	4	1	1	4	56	19	9	3	49		12	1	1		2	10		1	174
Bar, rod				4	3		5	18	36	7	4	14		2	4	1	1	11			2	112
Tack, stud, etc		1	1	2	1			3	5			8	1		10	1		5			4	42
Hook, cleat								3	4			2			1			1				11
Blades			1				2	4	6	3	1	2		1						1		21
Chisels									2	1												3
Spearheads									3									1				4
Rings								4	2													6
Brooches			1	2					2													5
Misc objects							1	5	3	6		3	1	1	1			5			2	28
Total	2	2	4	17	7	2	15	102	87	28	22	501	2	25	18	4	1	25	10	1	9	

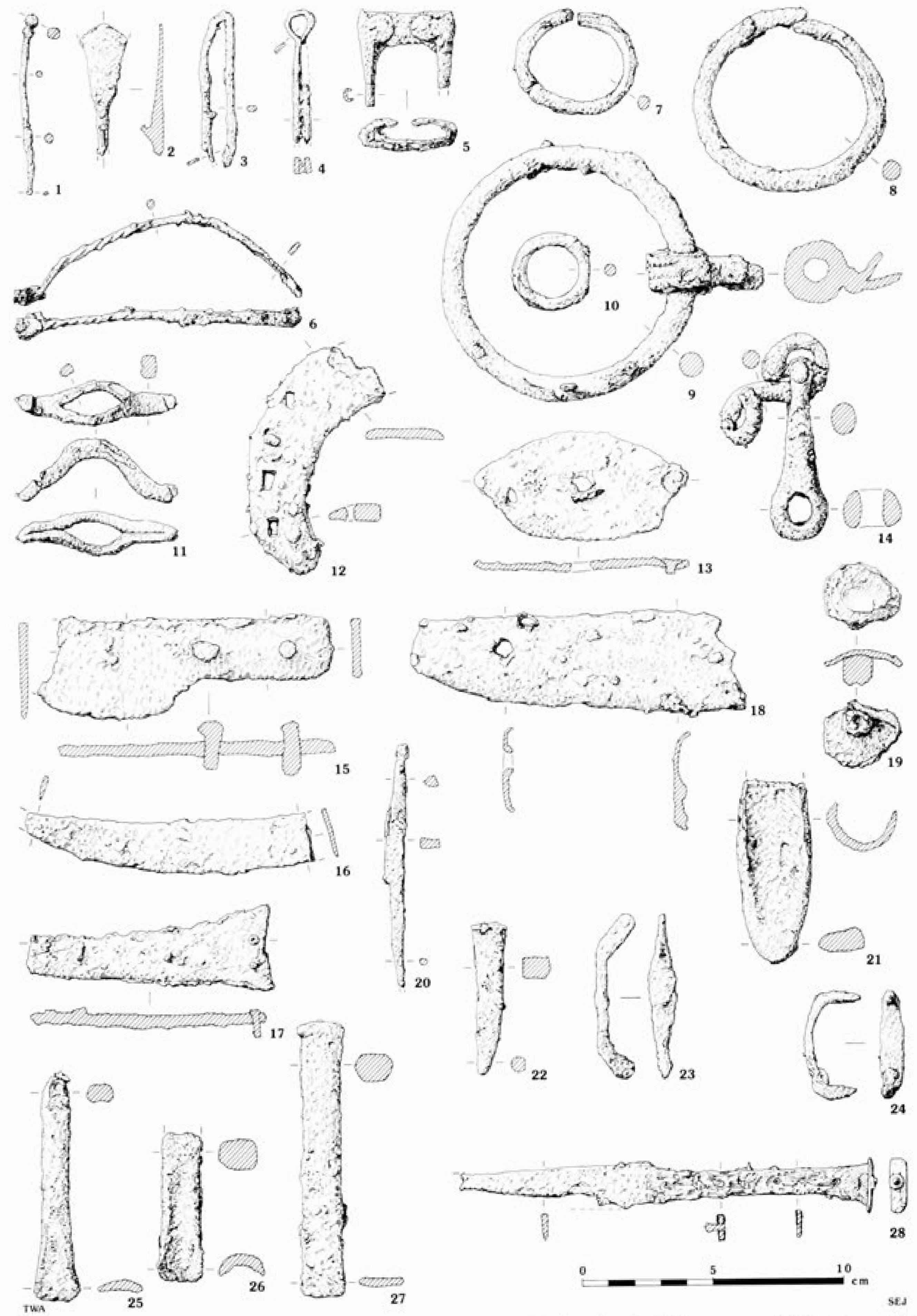


Fig 137 Miscellaneous iron objects – pin: 1) 8133; tanged blade: 2) 7743; bent bar: 3) 8124; tweezers: 4) 1006; strap end: 5) 7973; rings: 7) 8181; 8) 7642; 9) 7779; 10) 7952; hilt guard: 11) 7698; horseshoe: 12) 7672; sheet: 13) 8126; bridle bit: 14) 8413; blades: 15) 8115; 16) 7704; 17) 8288; sheet: 18) 7621; stud: 19) 1008; bar: 20) 1115; ploughshare: 21) 7609; wedge: 22) 7656; cleat hook: 23) 7649; 24) 7881; chisel: 25) 7675; 26) 7914; 27) 7703; knife: 28) 7637

Waste

These are mostly small amorphous nodules of metal or irregular-shaped pieces of manufactured iron. The majority of this group (over 400 fragments) were recovered from the metalworking area in trench VI, phase 7A (see p165), the remainder were largely from Iron Age contexts in trench IV.

Sheet and strip

Of the 152 fragments in this group, 96 pieces can be described as sheet-metal fragments or cut sheet and 56 fragments are parallel-sided strips. Some of the sheet fragments have a regular shape and might more correctly be termed 'platelets' (one of the larger pieces is 8126; Fig 137: 13). A few examples have rivet holes or *in situ* rivets and studs. The strips are normally fairly narrow, the illustrated example (7621; Fig 137: 18) is an exception. The majority of pieces in this group belong to phase 6G, with a secondary concentration in phase 7A.

Bar and rod

There are 36 bar fragments and 76 rods. The bars have noticeably flattened, rectangular sections; the ends are normally broken, although a few are cut across. However, three are pointed at one end (1113; Fig 137:20) and a fourth is pointed at both ends. The rods are mostly short, broken fragments of metal, normally circular but sometimes square, rectangular, sub-rectangular, or oval in section.

Although some of the rods may be nail shafts, most of these objects probably represent waste or pieces prior to manufacture into an object or tool. One bar (8108; Fig 137: 6) is curved and at one end is folded over and crumpled. Towards this end, the bar becomes more square in section and is twisted four times, possibly as a form of simple decoration. The piece bears some similarities to a small handle, but seems somewhat fine. Another bar (8124; Fig 137: 3) is bent double and is somewhat similar to a rod (3869) bent double with the two ends fused together.

Most pieces within this group belong to phase 6, although a few belong to phases 7 and 8.

Tack, stud, rivet, nail, bolt, and staple

There are five tacks, one stud (Fig 137: 19), three unattached rivets, twenty-eight nails, four bolts, and one staple.

The tacks are very small, nail-like objects with circular- or sub-rectangular-sectioned shafts, sharply pointed at one end. All are unstratified. The stud has a roughly circular, flat head above a broken, circular-sectioned shaft; it is also unstratified. The rivets have small, circular-sectioned shafts with flat circular or square heads. There were two from phase 7A and one from phase 6H. The majority of nails have square or rectangular-sectioned shafts with roughly circular- or sub-rectangular-shaped flat heads. They are mostly unstratified, although two belong to phase 6 and four belong to phase 7A. The bolts have either square-, rectangular-, or circular-sectioned shafts with large sub-rectangular heads. The shafts tend to taper towards the end without the head, although one (7625) has a head at both ends. Three belong to phase 6, the fourth is unstratified. The staple was from phase 6 and is a narrow, rectangular-sectioned bar, rounded off at each end and bent over into an 'U'-shape.

Hook and cleat hook

There are seven rectangular or sub-rectangular rods or bars of metal, bent or curled at one end to form a hook. One example is also flattened into a strip and folded in the opposite direction to the hook at the other end.

There are a further four flat bars or strips of metal, which were bent at 45 or 90° to the central portion, approximately one-quarter of the way along the length of the bar from each end, to form what might be described as a cleat hook (Fig 137: 23, 24).

Most of these objects belong to phase 6, although two of the hooks belong to phase 7.

Blades

There are 21 blades that can be subdivided into saw blades, tanged blades, and blade fragments and tips.

There are two saw blades. One example, 8510, is a fragment with small 'V'-shaped teeth along the cutting edge. A rivet, in a roughly central position, was surrounded by wood fragments, the grain running parallel to the saw edge, indicating that a portion of the saw blade was attached to the haft. The other (8288; Fig 137: 17) has very few teeth remaining; it flares towards one end which has two *in situ*, circular-sectioned rivets, presumably for securing a handle. Both examples belong to phase 6. Saw blades are found at Danebury (Cunliffe 1984a, fig 7.11), Glastonbury (Bulleid and Gray 1917, 385), and Hunsbury (Fell 1936, 66).

The tanged blades normally had one straight and one curved (cutting) edge and a tang for insertion into the handle (ie 8115; Fig 137: 15). They are equivalent to group 3b Danebury knife blades (Sellwood 1984, fig 7.10, 2.34). One exception is 7743 (Fig 137: 2): a very small kite-shaped blade with a small, square-sectioned tang projecting below it. The cutting edge is across the end of the blade. It was found in a pit in the north half of the trench. All of these blades are either from phase 6 or are unstratified. Only one is clearly not Iron Age (7637; Fig 137: 28) and the following note on this example is provided by G Grainger.

The knife has been classified as a Noll type 1b on the basis of the narrow blade with bent back. This classification is based on knives from the Roman cemetery at Salurn, Austria (Noll 1963, 76–87), but is applicable to the north-western area of the Empire (McCulloch 1982, 23–4) and has been used in describing the small groups of Roman knives from the Lankhills cemetery, Winchester (G Clarke 1979, 250). At the Salurn cemetery, seven examples were found in graves ranging from the second half of the second century through to the fourth century (Noll 1963, 79).

The knife was found in a soil layer immediately below the topsoil, in trench IV, and is effectively unstratified. The blade tip and a substantial part of the original cutting edge of the blade are missing. The shape of the surviving cutting edge suggests that it was well-ground, rather than corroded.

The remaining pieces are small, fairly indistinguishable fragments from blades and blade tips (see Chap 6 fiche for details).

Chisels

Three rectangular or sub-rectangular bars have flattened and, in two cases, slightly flared ends to form square-ended chisels. All examples are of similar widths, ranging from 15–17mm and belong to phase 6 (three examples are illustrated – 7675, 7914, and 7763; Fig 137: 25, 26, 27); 7763 is best paralleled at Gussage All Saints (Wainwright 1979a, fig 82; 1105).

Spearheads

Three spearheads and one very small spearhead or arrowhead were recovered in the recent excavations. Two spearheads and the arrowhead were in phase 6H contexts, in trench IV, the other example was in the topsoil, in trench IV. They are all illustrated in Figure 138.

All four examples are of similar form, having a leaf-shaped, double-edged blade above a conical socket. The sockets are formed by the metal at the base of the blade simply flaring and curling round. The edges meet or slightly overlap, thus encompassing the haft. One example (7922) has a rivet hole on one side of the socket, another an *in situ* rivet (7623).

Spearheads are more commonly found on Roman sites, although there are examples from Iron Age excavations. One of the four published Danebury examples (2103; Cunliffe 1984a, fig 7.19) is of this form. Only one example of this form was recovered from previous excavations (Wheeler 1943, fig 91.5), from a Belgic level dated at *c* AD 25–45. A number of arrowheads similar to the recent example were recovered from Roman contexts. The arrowhead can, however, be paralleled in an Iron Age context at Gussage All Saints (Wainwright 1979a, fig 83; 1114).

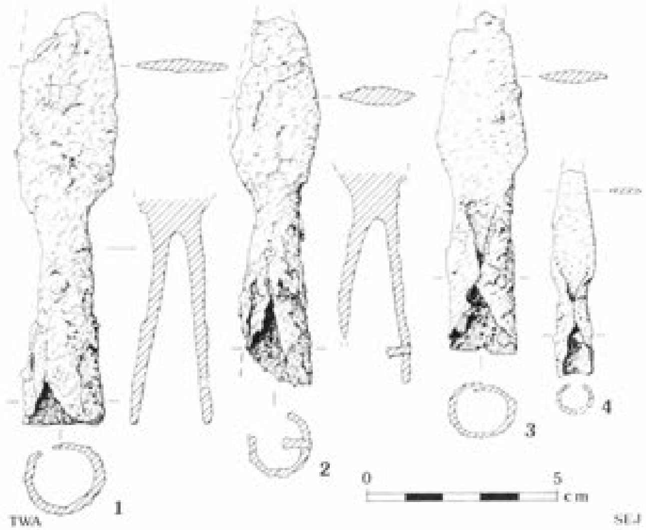


Fig 138 Iron spearheads: 1) 7922; 2) 7623; 3) 7762; 4) 7664

Rings

N Palk has contributed the following note on the rings.

Three of the six examples are small rings composed of circular-sectioned rods with a butt join visible or, in one example, from circular-sectioned wire where the join is not evident. One example (7952; Fig 137: 10) has patches of copper alloy coating in one or two places and apparently within the join. Another (8181; Fig 137: 7), which bears traces of copper alloy plating, is possibly a harness ring which performed the functions of a terret. A plain iron ring (7642; Fig 137: 8) may have been the rein-ring to bridle-bit 8413. The graded join in the ring is visible and is similar to the joins on the rein-rings of the bridle-bit from Strand-on-the-Green (Palk 1984, 38 DJ 35, fig C22). All of these rings belong to phase 6.

A large iron ring with a tripartite attachment loop (7779; Fig 137:9) is similar to six examples discovered by Wheeler, which he suggested were the rings of bridle-bits (1943, 275). It is possible that all seven examples may have been items of horse harness, although with diameters in the region of 100mm they are much larger than the average bridle-bit rein-ring. Northover has suggested that the rings were cauldron handles (pers comm), and this is the most probable explanation of their function. The six rings from Wheeler's excavations came from the 'early Belgic level' on site L, dated by him to AD 25–45. Doubts have since been cast on this dating (Grimes 1945, 6–10; Spratling 1972, 77–9). The phase 6G context of the recent example suggests a date in the early to mid first century BC.

Brooches

These have been discussed in the section on copper-alloy brooches.

Miscellaneous objects

There were 12 other identifiable finds and 16 unidentifiable objects. The identifiable objects consist of a bridle bit (8413; Fig 137: 14), ferrule tip (7842), hilt guard (7698; Fig 137: 11), horseshoe (7627; Fig 137: 12), ploughshare (7609; Fig 137: 21), pin (8133; Fig 137: 1), two strap ends (7973; Fig 137: 5; and 3830), three wedges (7656; Fig 137: 22; 8060; and 3905), and a pair of tweezers (1006; Fig 137: 4). Most of these objects are from Iron Age contexts, phase 6, in trench IV. The exceptions are the two wedges and the tweezers, which come from Roman contexts, and the horseshoe and ploughshare, which are unstratified. Detailed descriptions of these objects can be found in the fiche for Chapter 6, but a few of the objects are worth commenting on.

The general style and moulded decoration of the pin (8133; Fig 137: 1) fits roughly within type 4 Roman styli (Manning 1985, no 85), but the spherical enlargements at head and point would make the object difficult to use as a stylus. The alternative interpretation is as a hair pin. It resembles Roman metal-type 2 hair pins from Colchester excavations (Crummy 1983, 29, fig 27), although none of these have an enlargement at the point. The object comes from a secure Iron Age context in phase 6G, which emphasises the uncertain nature of these parallels, but there seem to be no close parallels for this object from Iron Age collections.

The bridle bit (comments by N Palk) consists of part of the mouthpiece of an iron, double-jointed snaffle. It would originally have comprised two side-links which articulated round a centre-link. The free ends of the side links would in turn have been joined to rein-rings (see Palk 1984 for further details). All that remains of the Maiden Castle example is one side-link joined to an S-shaped centre-link. The iron ring (7642; Fig 137: 8) may possibly have been one of the rein-rings.

The side-link is of simple form, its profile having an uninterrupted gradation from one end of the link to the other. Similar side-links are found on iron bridle-bits from Bigbury, Kent (Palk 1984, 26 DJ17, fig C5) and Danebury (Palk unpubl) and a pair of bronze examples from Hagbourne Hill, Oxfordshire (Palk 1984, 28–9 DJ 16 and DJ **, fig C9 and C10.1).

The S-shaped centre-link can be paralleled with those of bridle-bits from Danebury (Palk unpubl) and Bredon Hill, Gloucestershire (Palk 1984, 26 DJ8, fig C6). Examples of this type are in the minority, the centre-links of British double-jointed snaffles usually being in the form of two small, thick rings placed end-to-end and spaced by a central dividing baluster (ie Palk 1984, figs C18–20 and C23).

Double-jointed snaffles have been classified by Palk, according to the composition of their elements (1984, 3–11). According to this classification, the Maiden Castle example belongs to categories F or G (the absence of articulating rein-rings prevents exact determination). However, although not detected by Northover, it is possible that the mouthpiece parts were originally plated with copper alloy, in which case the bridle-bit would be allocated to category C.

Many finds of iron, double-jointed snaffles have come from, or been related to, domestic contexts (Palk 1984). In keeping with this, the Maiden Castle bridle-bit was found in the fill of a pit in 5915 in trench IV. This trend might suggest that iron and bronze-plated types (which are less prone to wearing) were preferred for domestic environments, whilst bronze examples were used in non-domestic situations where decoration and display were additional requirements. Unfortunately, there are too few accurately recorded contexts of both iron and bronze types to sustain this suggestion.

Some attention has been paid to the technology of bridle-bit production and, in particular, to the order of casting of the three mouthpiece elements of double-jointed snaffles (Spratling 1979; Foster 1980). Foster (1980, 13–14) concluded that double-jointed examples at Gussage All Saints were manufactured in a two-stage process: first, the two side-links were cast separately, and then these side-links were partially invested together in a centre-link mould, so that the centre-link could be cast on to them. This is likely to have been the standard method of manufacture for the majority of British bronze, double-jointed snaffles (excluding category E and all the Irish types; Palk 1984 and forthcoming). The technology involved in the production of mouthpieces for iron double-jointed snaffles has not been detailed, but it is likely that a similar two-stage process was operated. The bending round of a simple piece of iron to form the centre-link of a mouthpiece would greatly curtail the production time needed for a bridle-bit, and it is possible that S-shaped centre-links were fashioned as a labour-saving device. Alternatively, they could have been used as replacements for damaged or worn centre-links, although the wear facets on the side-link heads of the Bredon Hill example suggest that its S-shaped centre-link is the original.

The dating of double-jointed snaffles is difficult, especially when, as has been shown for the terrets, certain types could have continued in use more than a century after their incipience. Independent of its context, in phase 6G, the Maiden Castle bridle-bit could be dated 100 BC – AD 50.

The ferrous metalworking evidence

by C Salter

The extensive environmental sampling during the excavations resulted in the recovery of considerable evidence for ferrous and non-ferrous metalworking. The total quantity of non-metallic metalworking debris recovered was 77.9kg (Table 48). This would put the site in an intermediate position between sites connected with secondary reworking of iron, such as Danebury, where there is *c* 20kg of slag, and sites connected with primary production, where hundreds of kilograms of slag are present, for example Gussage All Saints, Dorset, and Bryn y Castell, Gwynedd (Crew 1987). It might indicate that either Maiden Castle was a large-scale secondary metalworking site, or it had a short period of primary production, or it was an intermittent producer.

Primary production is possible, as iron ores are available in the immediate vicinity of Maiden Castle. Marcasite (sulphide) nodules erode from the local chalk bedrock and tertiary ores occur in the sand and gravel capping the chalk on Maiden Castle and more extensively around the Bridport Road, immediately to the north of the site. Detailed examination of the ores present (Chap 6 fiche) indicated that a significant quantity had been roasted, but this did not seem to be connected with metalworking areas and thus apparently not an important source of iron in the areas excavated.

Table 48 The distribution of all classes of ferrous metalworking debris by phase

Trench	*Phase*		*Weight g*	*Percent of total*
I	Neolithic enclosure	2B	1.5	<0.005
I	Bank Barrow	3A	1.0	<0.005
I	Bronze Age turfline	4A	0.5	<0.005
II	Early Iron Age fort	5B	134.0	0.17
II	Extended fort rampart	6C	39.1	<0.005
III	Extended fort	6D	1031.3	1.32
IV	Extended fort	6E	813.6	1.04
IV	Extended fort	6F	1755.8	2.25
IV	Extended fort	6G	1606.3	2.06
IV	Extended fort	6H	1838.4	2.36
IV	Extended fort	6I	618.5	0.79
V	Extended fort	6J	1206.5	1.55
VI	Late Iron Age	7A	62354.0	79.97
VI	Late Roman	9A	3291.7	4.22
III	Modern/unstratified	11C	97.0	0.12
IV	Modern/unstratified	11D	476.1	0.61
VI	Modern/unstratified	11F	2374.0	3.04
	no context		332.0	0.43
Total			77971.3	

The slag

The classification system used is similar to that outlined in the Hengistbury Head report (Salter 1987), the major classes being lining material (LM) and slag-furnace lining reaction product (LRP), fuel-ash slags (FAS), furnace/hearth slags (FS), which have been subdivided into six subtypes in the full catalogue, plano-convex slags (PC), hammer-scale (HS), and slag spheres (SS). These small, spherical slag particles (SS) can be formed by the layer of molten slag, which covers iron during hammer welding, being expelled as spray by the force of the hammer blows. The small slag particles cool sufficiently quickly for them to solidify in the air, hence their near spherical shape.

It is possible to subdivide the fuel-ash slags on the basis of external morphology and internal colour, as this is a reflection of their chemistry. The material allocated to class FAS1 was lighter in internal colour than the normal FAS2. This was due to lower iron content of these fuel-ash slags compared with the FAS2 material. The FAS1 slags, generally, occurred as smaller pieces with complete surfaces, whereas the FAS2 material tended to occur as larger fragments with a high proportion of fractured surfaces. Work on a number of Iron Age and Romano-British sites suggest that the FAS1 material was usually associated with the working and especially the casting of copper-based alloys, while FAS2 was associated with the working of iron. Although it must be remembered that other processes may generate FAS-like slags (Henderson *et al* 1987), at Maiden Castle it seems almost certain that the FAS slags were generated by metalworking activity.

Distribution

Very small quantities of slag were found in phases 1–5 and most of these were not diagnostic of metalworking processes. Therefore, it may be concluded that no significant amount of metalworking took place during these phases. Some metalworking debris was recovered from the Roman phases, but this was probably residual from the debris of the Iron Age activity. Thus, effectively all the metalworking activity seems to occur in the Middle and Late Iron Age, with the majority of the debris (almost 80%) coming from the Late Iron Age (Table 48).

Trench I–III

The Iron Age contexts in these trenches contained very little material. Apart from two small lumps of slag and a copper-working crucible in pit 330, trench II, it was restricted to trench III. In this trench, there were 41 fragments of slag, which derive from secondary smithing activity, and a plano-convex hearth bottom. The latter was probably created in the primary stages of an iron production cycle (smelting and bloom forging) or possibly during the welding of a very large complex object.

Trench IV

This trench, in contrast, has evidence for a significant amount of metalworking. The earliest phase of activity, 6E, produced debris very similar to the evidence from trench III and it may be significant that the ceramics suggest that these are roughly contemporary. A large plano-convex hearth bottom is the most significant find. Attached to one side was a fragment of fully vitrified hearth lining. This would be the result of relatively prolonged high temperatures involved in smelting iron or possibly forging a large billet. Furnace/hearth slags and hammer-scale from this phase would indicate secondary iron-working activity, and the type 1 fuel-ash slags indicate small-scale copper-working and iron-smelting. None of this material was associated with hearths and appears to result from secondary deposition.

In the occupation layers of the central house in phase 6F, there is a very limited amount of fuel-ash slag and hammer-scale which indicates small-scale forging activities. Elsewhere in the trench, there is a limited scatter of slag types with no particular focus, which must be the result of secondary deposition. The largest piece recovered weighs 491g and could have been created by the primary forging of a bloom of mixed slag and iron into a billet.

Phase 6G contained only 1.9% by weight of all the slag recovered during the excavations, but 11.9% of the total weight of iron. The iron and slag were found together and were associated with the contexts containing bronze-working evidence. Silt layer 5263, lying between the two floors of the western house, had 18 fragments of iron and 59 fragments of slag. Slags present include copper- and iron-working fuel-ash slags, hammer-scale, slag spheres, and furnace lining material. Iron and bronze sheet were present and it has already been suggested that this material derives from an area associated with the production of sheet-metal objects, perhaps cauldrons and buckets (see p160). None of the slag or metal present was very large and the small quantity of hammer-scale present suggests that this was secondary refuse and that there was no extensive forging in the vicinity. The debris from pit 5114 included a block of slag (type 5) indicative of the welding of iron. Evidence for some small-scale smithing occurred in the base of the hollow between the eastern and western house, and there was some slag from forge- welding in the soil layers at the back of the rampart.

Phase 6H contained a similar quantity of slag (1.9% by weight) to phase 6G, but had a greater proportion of the iron objects. The slags were scattered amongst several contexts in the south-western part of the trench and is either material derived from earlier phases of activity or secondary refuse from elsewhere on the site. There were, however, a number of technically interesting iron objects and slag types, including two bronze-coated rings (Northover and Salter

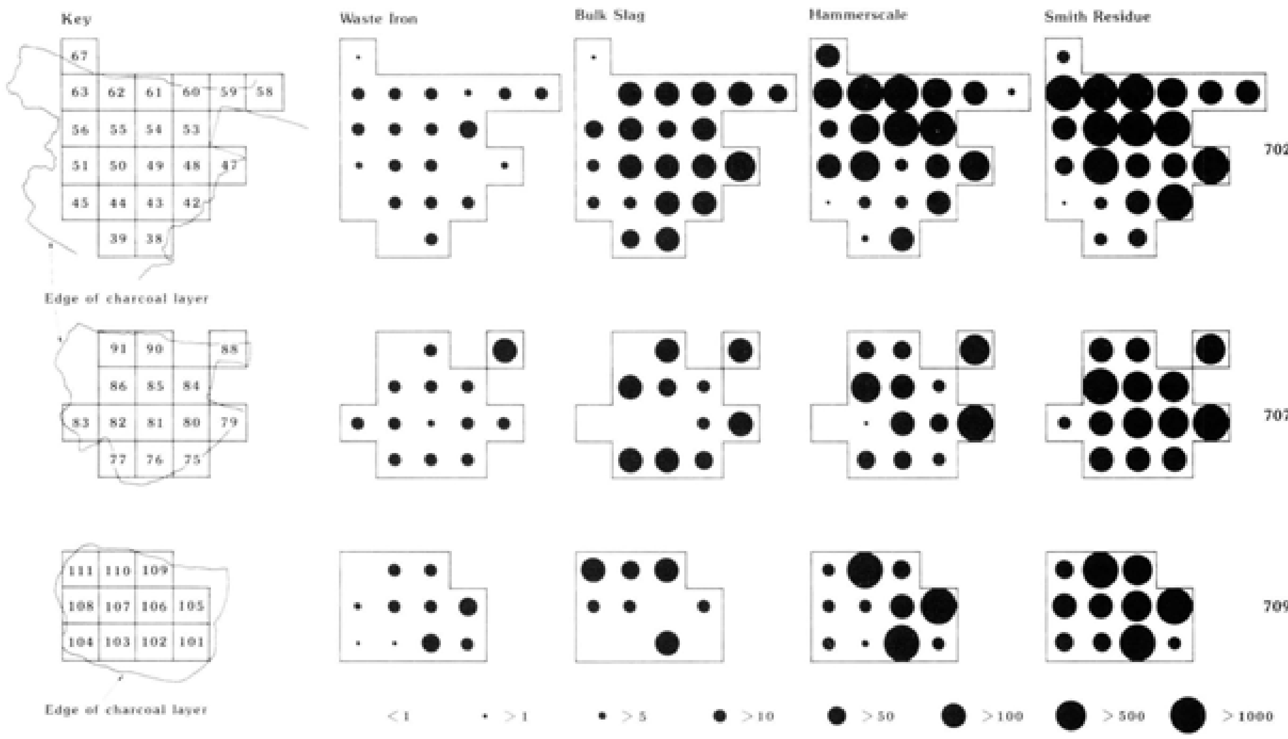


Fig 139 The distribution of waste iron, bulk slag, hammerscale, and smith residue in layers 7025, 7070, and 7094 in trench VI (the identity of the samples is indicated by the context subdivision number which should be prefixed by 7000)

1990) and FS5 and FS6 slags, which will be fully discussed in technical reports.

Trench V

There were relatively large quantities of metalworking evidence in the road surfaces of trench V. The bulk of this was hammer-scale (66%) and LPR debris. This is very different from the evidence from trench IV and results from a blacksmith forming and repairing objects. The position of this trench would suggest that the material derives from the metalworking area in trench VI and that these road surfaces have a Late Iron Age date (as suggested by Wheeler 1943, 118).

Trench VI

The majority of slag types found during this excavation came from Late Iron Age contexts in trench VI. The weight distribution between the various slag types differed from that seen in most of the other phases (Table 49). Over 20kg of hammer-scale were recovered, whereas in trench IV only 11.5g of hammer-scale were recovered. The hammer-scale made up over 30% of the total weight of slag recovered from this phase of the site. As the adjacent area was covered with a 'thick layer of ash containing great quantities of iron-slag' (Wheeler 1943, 118), it is likely that the total weight of scale in this region of the site should be at least double this figure. Unfortunately, Wheeler made no attempt to quantify this ash and scoria and most of the comments made in the metallurgical report (1943, 377) are misleading.

The coarser residues (5–10mm) were found to consist of fragments of FAS type 2, LRP, and some furnace lining material. This material, together with hundreds of fragments of similar material collected in the 10mm sieve, was collectively classed as Type 2 smithing residues (SMR2). Also found were small pieces of low-density, porous material with one flat side which was usually coloured black by a thin film of iron oxide. This material has been designated LRPF in the detailed catalogue. Recent experiments (Crew and Salter unpubl) suggest that it was formed by the partial fusion of regions of the sides and bottoms of the smithing hearth (see Chap 6 fiche).

The fine smithing residues (SMR1) consisted of a mixture of crushed slag, fired clay from the hearth linings, a small proportion of soil, and small fragments of chalk. The soil component of the SMR1 was typically between 5 and 20% by weight. It was difficult to determine proportions of the various slags types represented in the SMR1 due to the crushed nature of the slag component. However, examination under an optical microscope showed that the material was largely composed of low-density types of material, ie fuel-ash slags (FAS), the vitrified surface of lining material (LM), and lining reaction products (LRP normal and F type). This material (SMR1) also contained high concentrations of fine non-magnetic slag spheres between 0.1 and 3mm in diameter. Similar-sized magnetic spheres were collected with the hammer-scale. The size and number of these spheres is indicative of welding and forging operations (J Allen 1986; Salter 1983).

Relatively few intact lumps of FAS and no examples of FAS type 1 were found in these Late Iron Age levels. This was probably due to the nature of the contexts excavated, as FAS-type material would be easily crushed underfoot, whereas the denser, less porous material had a better chance of surviving intact. Therefore, although the lack of FAS1 would suggest that no melting of copper based alloys took place, we cannot be certain that the copper-working activity of phase 6 had ceased.

Only a single small piece of PC1 type slag was recovered from the Late Iron Age levels. Considering that the vast majority of the material was typical of the type of debris produced during artefact (secondary) smithing, it would seem reasonable to suggest that the PC1 was also generated by secondary iron-working processes, rather than primary iron production. The PC1 was probably produced during the production of a larger and more complex object than was the case for most of the smithing operations during this phase. In the extended hillfort (6) phase, there were large pieces of PC type slag (evidence of smithing operations during primary iron production) and far less evidence of secondary smithing.

It has been estimated that about 10% of the metal could be lost as hammer-scale (Salter and Ehrenreich 1984) during the forging of simple items, such as knives. However, the losses of metal to scale could be as much as 25% during the forging of complex objects, such as a piled-structured sword (Pleiner pers comm). As the 20kg of hammer-scale could represent about half the total weight of scale originally within the hut, it is likely that at least 200kg of iron artefacts were manufactured at Maiden Castle in the Late Iron Age.

Table 49 The distribution of slag types by phase subdivision

Type	*6D*		*6E*		*6F*		*6G*		*6H*		*6J*		*7A*		*9A*	
	Wght	%	*Wght*	%	*Wght*	%	*Wght*	%	*Wght*	%	*Wght*	%	*Wght*	%	*Wght*	%
Furnace lining material	10.8	1.1	12.6	1.5	149.0	8.0	32.9	2.2	172.1				1298.7	2.09	157	4.7
Lining reaction product	0.2	< 0.1	15.9	2.0	191.3	10.2	39.8	2.7	22.4				839.0	1.35	298.0	9.0
Lining reaction product type F											207.0		1402.9	2.26	54.5	1.6
Fuel ash slags type 1			0.2	0.03	2.5	0.1	7.1	0.5					94.8	0.15	52.0	1.5
Fuel ash slags type 2			5.1	0.6	12.9	0.7	134.2	9.1	28.1							
Slag type 1–4	134.3	13.0	58.5	7.2	171.8	9.2	508.3	34.6	475.3		83.5		4205.3	6.77	1223.0	37.1
Slag type 5			208.6	25.6	111.0	5.9	748.0	50.8	819.5				1321.0	2.12	1063.0	32.2
Slag type 6					723.0	38.7			339.0				327.0	0.52	126	3.8
Plano convex slag	884.5	85.9	503.0	61.8	491.0	26.3							126.0	0.20		
Unclassified slags					15.2	0.8			16.0				673.0	1.08	193.2	5.8
Hammmer scale			9.3	1.1	1.4	0.1	0.8	0.0			916.0		20269.0	32.66	20.0	0.6
Fine residues													19124.4	29.19		
Coarse residues													12857.9	20.72		
Overheated iron					0.1	0.0							177.0	0.28	6.0	0.1
Rock and slag aggregate													315.0	0.5	99.0	3.0
Concretion													21.0	0.03		
Total	1029.8		813.2		1869.2		1471.1		1872.4		1206.5		62052		3291.7	

Table 50 Slag from the metalworking levels in trench VI

Layer	*7094*		*7070*		*7025*	
	Wght	*%*	*Wght*	*%*	*Wght*	*%*
Type						
Furnace lining material	239.5	1.9	334.0	2.3	972.2	2.9
Lining reaction product	101.0	0.8	313.0	2.1	320.0	1.0
Lining reaction product type F	355.0	2.8	235.3	1.6	711.6	2.1
Fuels ash slags			47.0	0.3	47.8	0.1
Slag type 1–4	528.0	4.2	842.1	5.8	2448.2	7.3
Slag type 5	74.0	0.6	680.0	4.7	441.0	1.3
Slag type 6	182.0	1.4	145.0	1.0		
Hammer scale	4695.3	37.2	4174.2	28.6	11186.2	33.3
Unclassified slags	77.0	0.6	68.0	0.5	504.0	1.5
Fine residues	3674.3	29.1	2825.9	19.4	11284.2	33.6
Coarse residus	2708.0	21.4	4890.1	33.5	5316.8	15.8
Overheated iron			43.0	0.3	49.0	0.1
Rock and slag aggregate					315.0	0.9
Concretion					21.0	0.1
Total	12634.1		14597.6		33617.0	

Table 51 Metallic iron from the Late Iron Age and Roman phases

Phase or layer	*7A*		*7094*		*7070*		*7025*		*9A*	
	wght	*no*	*wght*	*no*	*wght*	*no*	*wght*	*no*	*wght*	*no*
Waste	1067.4	315	271.1	95	391.5	90	368.3	122	108.0	9
Object	169.9	52	1.0	1	73.0	29	95.9	23	46.5	3
Rod	135.2	20	0.6	1	106.6	14	36.0	6	13.3	1
Strip	79.6	15			27.4	10	62.2	11	12.0	1
Sheet	177.3	51	17.0	4	68.0	22	92.3	25	70.6	11
Nail	31.1	8	2.8	1	3.4	1	24.9	6		
Others	139.5	10	4.4	2	52.7	9	94.9	4	13.0	1
Total	1800	471	269.9	104	722.6	175	774.5	197	263.4	26

Although almost 80% of all the slag debris was recovered from phase 7A, only a third of the total weight of iron artefacts was found in these Late Iron contexts. A comparison of the iron small finds from the extended hillfort contexts (phase 6) with those of the Late Iron Age (phase 7), given in Table 47, shows that there was a tendency for the iron from phase 7 to be in the form of irregular fragments (waste) or small rods and strips, rather than recognisable artefacts. These fragments probably represent fragments of metal cut from the blank during forging that were considered too small to be worth recovering. In addition to this small-scale waste material, there were also larger pieces of iron which had been accidentally overheated in the smithing hearth, such that they had become very heavily oxidised or slagged. This material was classified as OHFE.

The bulk of the debris from this trench was restricted to three successive layers (Table 50). The lowest layer (7094) formed a distinct circular area *c* 4.20m in diameter which may have been within a walled structure. It is probable that the curving mass of burnt clay (7117) represented a wall of a smithing hearth. A piece of FLM with a segment of a tuyère was found immediately to the north-west of this feature and this would have been an integral part of the hearth wall.

The distribution of iron-working debris was irregular (Fig 139), but the concentration of slag and hammer-scale decreases markedly towards the south-west. This pattern could have been the result of the random dumping of material cleared out of the hearth. However, the presence of the tuyère fragment in context 7109 does suggest that the hearth 7117 was being blown from this area. This would explain the low concentration of hammer-scale in 7109. Hammer-scale would tend to concentrate around the anvil, as the scale is shed from the artefact while it is being forged. Large quantities of scale would also fall from the artefact around the hearth. Therefore, the concentration of scale in the immediate vicinity of the south end of the hearth (7105) may indicate that the forge was operated by two people. One person to pump the bellows on the north and the smith manipulating the iron from the south end. There were two other regions with high concentrations of hammer-scale (7110 and 7102). It is possible that these contexts represent the positions of anvils used during this period.

The flat-bottomed gully 7095 (fill 7096) contained secondary smithing debris that was very similar to that recovered from layer 7094. It also contained vertically set limestone blocks which could be interpreted as kerbstones used to restrict the spread of charcoal in a hearth. If this was a hearth, it is not clear whether it contributed to the debris of layer 7094 or the following floor 7070.

The second ash layer (7070) was larger (*c* 5.2m) than the earlier layer and the material from it was slightly coarser than material from context 7094. The proportion of hammer-scale dropped from 37.2% to 28.6% by weight, and the proportion of coarse smithing residues and heavier slags (type 1–6) increased (Table 50).

The distribution of slag debris showed two maxima: on the west side of the floor (7086) and on the eastern edge (7079 and 7088). The eastern deposits may be associated with the continued use of the hearth 7117, but with the focus changed from south and west of the hearth to east of the hearth. The region north of feature 7117 was notable for a lack of debris in general and hammer-scale in particular. The western concentration of debris does not appear to be associated with any particular feature. The distribution of the hammer-scale over the floor more or less follows the same distribution as total slag weight.

As well as the change in the nature of the slag debris noted above, there was a change in the character of the iron small finds between 7094 and 7070. Although the number of fragments and weight of iron was roughly the same, there was a noticeable increase in the number of fragments of rod, strip, and sheet (Table 51). This may indicate that there was a change in the type of iron-work being produced, but the fragments were too small to identify the artefact being forged.

The pattern of distribution of slag types in the upper ash level (7025; Table 50) was very similar to that in the earlier levels. The distribution of the metallic iron followed the pattern found in layer 7070, rather than that of layer 7094. The material classified as waste only constituted about half the total weight of iron. In general, each individual iron fragment was heavier than those recovered from the lowest ash level. However, the total weight of iron recovered per kg of slag for context 7025 was very similar to that for context 7094, whereas about twice as much iron per kg of slag was recovered from

Table 52 Iron and slag from Late Iron Age layers in trench VI

Layer	*Slag weight*	*Slag ratio*	*Iron weight*	*Weight ratio*	*Number*	*Number ratio*	*Wt iron/kg of slag*
7025	33617	2.66	775.0	2.61	197	1.89	23.1
7070	14597	1.16	722.6	2.34	175	1.68	49.5
7094	12634	1	296.9	1	104	1	23.6

the middle ash layer (Table 52).

The distribution of slag across the site did not show any of the obvious concentrations seen in 7094 and 7070. However, it would appear that the context could be divided into two distinct regions on the basis of the concentration of slag recovered (Fig 139). To the north and east of the boundary, the samples had a high slag concentration (over 1.5kg per 20l), whereas in the zone to the south and east the slag concentrations were below 1kg/20l. The boundary seems to deviate to include a shallow pit in the region of 7049.

Three pieces of burnt and vitrified clay (LM), each with traces of an air blast hole (tuyère), were recovered from this level. These were all found in samples around the pit area (7049; Fig 139). One possible interpretation of these distributions is that the pit represents the position of a hearth, hence the discovery of the tuyère. This hearth was probably blown from the south and the majority of the forging activity was carried out in the area to the north.

The slag found in the Roman levels in trench VI probably all derives from the Late Iron Age activity, except for a piece of LRP in ditch 7028 which is probably a fragment of crucible heated so fiercely that it has almost melted. This is one of the few pieces of evidence for copper-working in this area.

Conclusion

The evidence from Maiden Castle suggests that there was metalworking activity in or near all the areas examined. The earliest phase examined in the recent excavations included some evidence for smelting, but this was not *in situ*. In phase 6F, smithing debris is associated with one of the hearths in the central house. The amount of debris increased in phase 6G, where it was associated with bronze-working which probably derives from a small workshop located immediately to the west of trench IV. By phase 6H, iron-working appears to have ceased in the immediate vicinity of the trench. During phase 6, the smelting of local iron ores, for which there is only indirect evidence, would have been sufficient to supply iron for the limited amount of blacksmithing that seems to have been carried out.

In phase 7A, the scale of the operation increased considerably. Large quantities of hammer-scale and other debris characteristic of artefact forging were recovered. Although inter-site comparisons are difficult, as only a very few sites have been sampled and analysed in a quantified manner, it is clear that the iron-working site in the eastern gateway is one of the most important artefact production centres discovered in southern England. This forge produced a minimum of 200kg of finished artefacts. It is unlikely that this quantity of iron could have been smelted in the vicinity without leaving some detectable trace.

The iron could have come from one of the specialised iron production centres, such as Bryn y Castell, in North Wales, Trevelgue in Cornwall, and Wakerley in Northamptonshire. Closer to Maiden Castle, the iron-smelting activity at Gussage All Saints must have produced several hundred kg of iron, as 750kg of smelting slag was discovered. However, it is debatable as to when the iron production at Gussage took place (R Clough 1985). Hopefully, a programme of chemical analysis of the artefacts and their slag inclusions will indicate the source or sources for the iron at Maiden Castle. When this information becomes available, a more comprehensive view of the trade in iron will be possible.

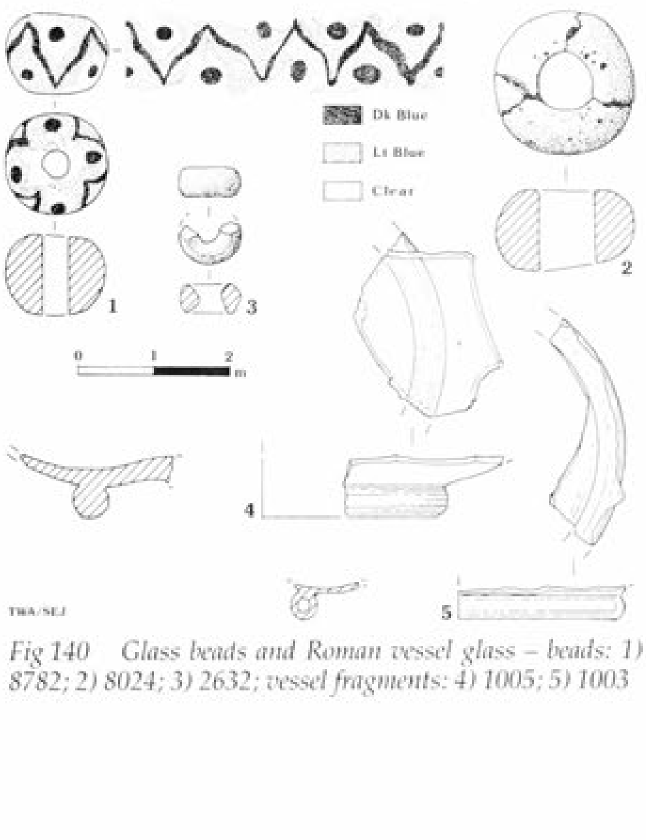


Fig 140 Glass beads and Roman vessel glass – beads: 1) 8782; 2) 8024; 3) 2632; vessel fragments: 4) 1005; 5) 1003

The glass

by J Henderson

Only a small collection of glass was recovered during the recent excavations. One bead (8782; Fig 140: 1) and two fragments of Roman glass vessel (1005, 1002; Fig 140: 4, 5) were sufficiently well preserved for analyses of unweathered samples to be undertaken (Table 53). Another four beads (2632, 8024, 8201, 8418) were considered to be too weathered for a meaningful quantitative analysis, although analysis of weathered remnants of 8024 and 8201 was carried out in order to attempt to suggest what the original material might have been. The artefacts were analysed using electron-

Table 53 Electron probe analysis of the glass (weight % oxide)

Element	*1003 colourless vessel*	*1005 colourless vessel*	*8782 colourless bead*	*8201 op yellow bead*	*8024 brown bead*
Na_2O	18.0	17.9	16.5	ND	ND
MgO	0.5	0.4	0.4	0.1	1.0
Al_2O_3	2.0	2.9	2.4	0.9	ND
SiO_2	69.6	71.2	71.4	22.3	0.5
P_2O_5	ND	ND	ND	0.7	0.5
SO_3	0.3	0.3	0.3	0.2	0.2
Cl	1.3	1.2	1.2	0.9	0.4
K_2O	0.5	0.4	0.7	ND	0.1
CaO	5.9	5.4	6.5	19.8	39.4
TiO_2	MDL	MDL	MDL	0.1	MDL
MnO	0.2	ND	ND	ND	ND
Fe_2O_3	0.4	0.4	0.3	1.8	11.2
CoO	ND	ND	ND	ND	ND
NiO_2	ND	ND	ND	ND	ND
CuO	ND	ND	ND	ND	ND
ZnO	ND	ND	ND	ND	ND
As_2O_3	ND	ND	ND	ND	ND
SnO_2	ND	ND	ND	ND	ND
Sb_2O_3	0.6	0.9	1.4	0.4	ND
PbO	ND	ND	ND	43.9	ND

Note: 1 – The antimony is probably present in 8201 as pentoxide
2 – ND = not detected; MDL = minimum detectable level

probe microanalysis (for a full description of the technique, see Henderson 1988).

Later prehistoric beads

The one indisputably Iron Age glass bead is the only recorded example of its kind. It shares characteristics with one of the types of beads made at Meare Lake Village, Guido's class 11a (1978), a transparent, colourless type of bead with opaque yellow zigzag decoration. There are, however, important differences between this bead (8782; Fig 140: 1) and the other related examples found at Meare. The globular bead bears a very thin layer of pale cobalt blue glass over a large proportion of the surface of its colourless core. The colourless core was probably dipped in fluid blue glass and the areas of the colourless matrix, which are visible at the surface, were evidently blanked off in some way. It is difficult to suggest precisely how this was achieved, since there is no remnant material adhering to the surface which might provide a clue. Instead of opaque yellow zigzag decoration found in the closest Meare examples, the decoration is a deep transparent blue (where this has weathered, it appears opaque yellow). Blue blobs of glass have been applied between each zigzag. None of these last three characteristics have been found on comparable Meare beads (Henderson 1987).

Although it could be suggested that these differences are sufficient to infer that the bead was not made at Meare, this technique of zigzag decoration is only found on the beads of this dimension that were made at Meare during the Iron Age (probably between the fifth century and third century BC). Since Meare has produced both a very high concentration of beads and evidence for their manufacture in both blue and colourless glass (Henderson 1980; 1987), in the absence of other possible production sites, Meare can be strongly suggested.

Taking these factors into account, the fact that the chemical composition of the colourless bead matrix is very similar to the colourless glass found at Meare (characteristic levels of calcium, iron, and antimony oxides with no detectable manganese oxide), this bead is important because of the archaeological inferences that can be made about it. The distinct features of this bead infer that it was manufactured at Meare 'to order' for a specific client or to commemorate a particular occasion or ceremony. It is very unusual to be able to suggest such an interpretation with any confidence and it is unfortunate that, due to historical factors, it has not been possible to chemically analyse the other glass beads of Meare type from Maiden Castle found by Wheeler (1943). If this had been possible, one would have been able to monitor any variation in chemical composition from the 'typical' stock of Meare colourless and opaque yellow glass.

Another bead of Iron Age type (8201), a fragmentary opaque yellow ring bead, had some of the chemical characteristics common to such glass from Meare (specifically the levels of lead, antimony, and iron oxides). The levels of the remaining components have, however, been radically altered by weathering. One would expect to detect *c* 8% sodium oxide in such a glass in an unweathered condition, yet it is apparent that soda has been greatly reduced in level by leaching of the glass. Thus, it is impossible to assess whether this bead was a product from the Meare glass workshop or not.

Chemical analysis of a globular, cracked bead (Table 53: 8024) revealed that the predominant elements were calcium and iron, with traces of magnesium, silicon, phosphorus, sulphur, chlorine, and potassium. Examination of the bead under the microscope at ×40 revealed the presence of many iridescent surface pits inferring that the bead is composed of badly weathered glass. Its weight indicates that the glassy structure has almost totally broken down and that the detected iron had been absorbed from the burial medium.

Roman vessel glass

The two fragments of Roman vessel glass have similar soda-lime-silica compositions (Table 53). The presence of antimony trioxide in both is of interest and particularly in 1003 (Fig 140: 5), where it is accompanied by manganese oxide. A group of Roman glasses from Italy and the Rhineland of second to fourth century AD date was analysed by Sayre (1963, 279) and found to contain both manganese and antimony oxides. Since the change from predominantly antimony decolourised to manganese decolourised glasses occurred in *c* second century BC (each can act mutually exclusively as a decolouriser), it is possible that the presence of both antimony and manganese oxides in 1003 reflects a level of recycling of antimony-clarified glasses, when the later manganese-clarified glasses were in use.

The other fragment (1005; Fig 140: 4) contains only antimony trioxide as the decolouriser. This also departs from the norm established for Europe being rather later than expected: it is possible that the glass was manufactured using an atypical recipe. In sum, it is very difficult to attempt to place these Roman glass vessel compositions into a secure technical framework, since too few comparable chemical compositions of well-dated glass are available.

The earlier prehistoric pottery

by R Cleal with contributions by J Cooper, I Freestone, and D Williams

The recent excavations produced a total of 1198 pre-Iron Age sherds, weighing 10,342g. At least 602 sherds were recovered during Wheeler's excavations. The pottery from the earlier excavations was examined and recorded in the same manner as the material from the recent excavations, but, as almost no plain body sherds were found, it is probable that this assemblage is incomplete. Consequently, the two assemblages have to be treated separately. However, it is assumed that totals based on rim count are comparable, so, at certain points in the discussion, the two assemblages are treated as one. Throughout this report, there will be clear differentiation between the assemblages and, where they are combined, this will be made clear.

Earlier Neolithic pottery

Fabric

The fabrics of the earlier Neolithic pottery fall into two major groups and eight minor types (Table 54), which are fully described in the fiche for Chapter 6. By weight, the shell-tempered fabrics are in the majority, but, on the basis of the sherd count, flint-tempered

Table 54 Earlier Neolithic pottery: fabric groups (Wheeler and 1985/6 assemblages)

Fabric groups (ie inclusion type)	*Weight (g)*	*%*	*Sherd count*	*%*	*Rims count*	*%*
Flint (Flint and sand)	6325	35.0	702	44.7	171	39.2
Shell[1] (Shell and sand)	8460	46.8	643	41.0	171	39.2
Calcareous[2]	286	1.6	14	0.9	12	2.8
Gabbroic	1638	9.1	84	5.4	27	6.2
Sand	467	2.6	54	3.4	19	4.4
Sand and unidentified	41	0.2	13	0.8	2	0.5
Voids[3]	210	1.2	19	1.2	14	3.2
Flint and shell[4]	511	2.8	27	1.7	11	2.5
Quartz and sand	76	0.4	6	0.4	1	0.2
No inclusions[5]	82	0.5	8	0.5	8	1.8
Total	18096		1570		436	

Plus 7 rims representing vessels (mainly reconstructed), where sherd count and weight were not ascertainable

Notes: [1] Includes shell and voids fabrics
[2] Other than shell; includes CaF fabric
[3] Not voids left by shell, ie not any of the shelly fabrics already represented
[4] Includes flint, shell, and sand
[5] Rims only counted, as fabric is mainly Beaker, and contexts mainly ambiguous

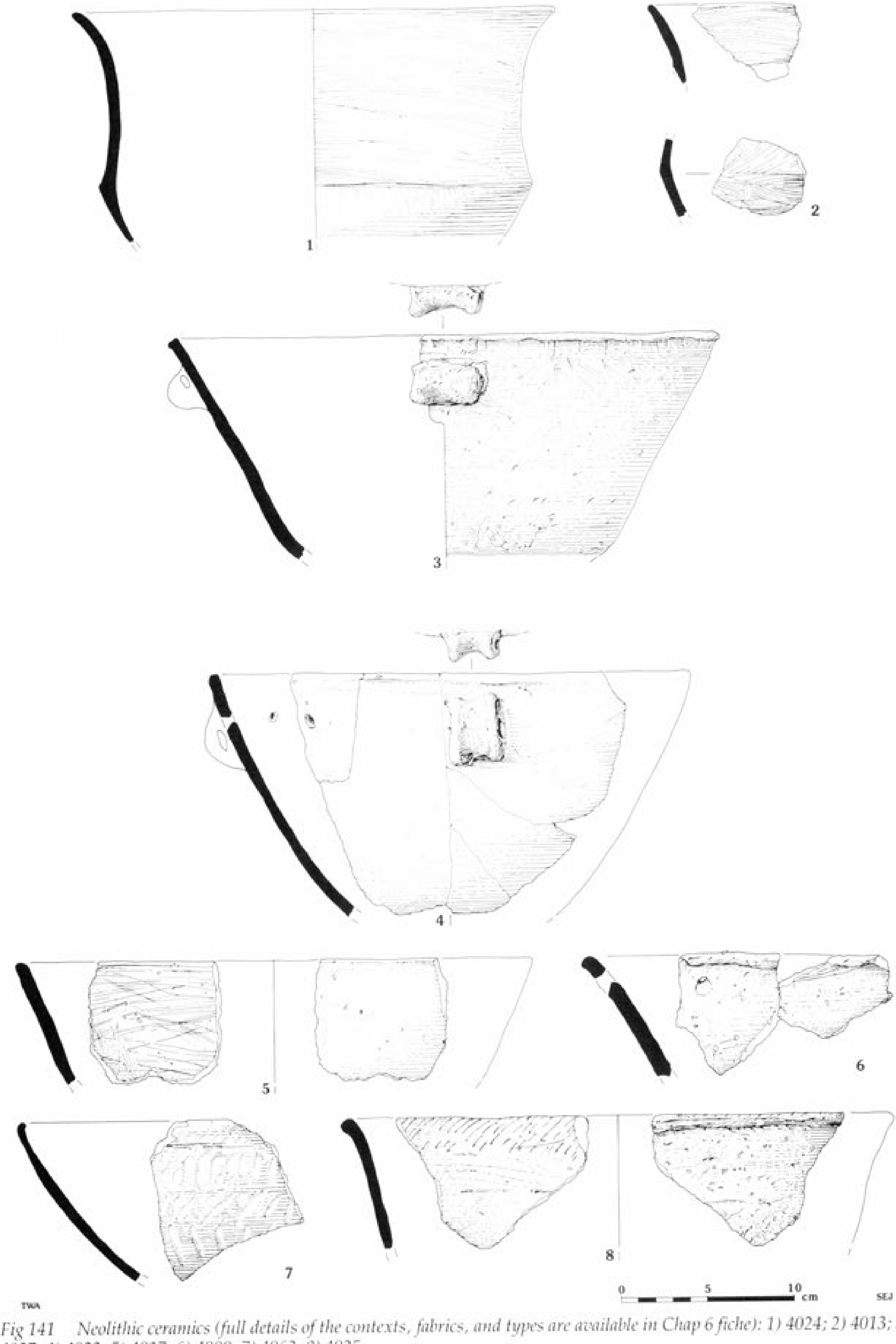


Fig 141 Neolithic ceramics (full details of the contexts, fabrics, and types are available in Chap 6 fiche): 1) 4024; 2) 4013; 3) 4037; 4) 4022; 5) 4017; 6) 4000; 7) 4063; 8) 4025

fabrics show a slightly higher percentage and, in the rim count, both are of equal importance. By each method, the only other fabric type to account for more than 5% of the assemblage is gabbroic ware, which varies according to the method of calculation from 5.4% (sherd count) to 6.2% (rim count) and 9.1% (weight).

An attempt was made to source the different fabrics with limited results. There were no distinct characteristics in the flint-tempered fabrics which could distinguish a source. There are patches of clay with flints in the area and a local source is possible. Samples taken from areas exposed on Maiden Castle suggest that these were not used as a raw material source either. Detailed examination of the molluscs in the shelly fabrics indicates that all these fabrics could be derived from the same area, probably from the area around Burton Bradstock, Shipton Gorge, and Walditch, approximately 14km to the west of Maiden Castle (Chap 6 fiche). The clay, however, may not be from the same area, but must come from somewhere to the west of the site and is of Jurassic date. A small number of sherds had 'beef calcite' inclusions. The nearest source for this material is in the Purbeck Beds, 5km to the south of Maiden Castle. This outcrop of the 'Chief Beef Beds' is associated with clay and limestone and would be a good source for the fabric. The only other sourced fabric is the gabbroic ware, and, in spite of the report on the pottery from Carn Brea (Sofranoff 1981; Williams, Chap 6 fiche), there is little evidence for a source other than the Lizard in Cornwall.

Rim morphology

Rim form was recorded by means of a slightly expanded version of Smith's classification, as used for the analysis of the assemblages at Windmill Hill and Carn Brea (I Smith 1965; 1981). The basic forms of rim identified by Smith constitute the framework of the system used here, but with more detail recorded for each rim.

Three main elements of form were recorded:

a the physical form of the rim, ie A: simple, B: rolled-over, C: externally enlarged, D: expanded or reinforced, E: T-shaped, and F: internally extended (I Smith 1965, 48)

b the attitude of the rim in relation to the vertical, ie 1: out-turned, 2: upright, 3: inturned

c the finish of the rim, ie the minor detail of the rim's form; a: rounded, b: pointed, and c: squared.

In many cases, rims could not be classified in all three sections, so 'Indeterminate' codes of O, 0, and o were also incorporated. In this way, each rim could be described as fully as possible in code, and these codes are used in Tables 55–6 and Figure 143, which summarise the frequencies of each type within the assemblage.

A minimum number of 443 vessels was established by counting all rims as separate vessels: 105 from 1985–6 and 338 from Wheeler's excavations. The percentages of rim type by fabric for each assemblage are practically indistinguishable, and there seems to be no obvious reason for treating the assemblages separately. Rim form A (Simple) is the most common form. It accounts for nearly 87% of all rims, with only type B (Rolled-over) occurring in more than a few cases and comprising nearly 10% of the total. Type E (T-shaped) is not represented in the assemblage, the thickened types C and D by just over 1% each, and type F (Inturned, flat-topped) by less than 1%. In terms of attitude, most of the rims are out-turned or upright, with the latter accounting for 57% of rims, and the former 37%. In finish also, there was a clear preference for one type – type a (rounded) – as 77% of rims were finished in this way, with pointed and squared rims accounting in similar amounts for the remainder (at, respectively, 10% and 13% of total rims).

The overall composition of the assemblage is important, because it is fairly well established that assemblages from causewayed enclosures generally show little variation through time. At Carn Brea, for example, I Smith could find no indications of change through time, although the site appears to have been occupied for half a millennium (1981, 161). However, for the Maiden Castle analysis, an attempt was made to identify variation in three areas which might define change through time or differences in the spatial organisation of the enclosure:

a variation in preferred rim types between different fabric types

b variation in preferred rim types between different areas of the site

c variation in preferred rim types throughout the enclosure ditch fills.

a There are three main types: Flint, Shell, and gabbroic ware and the percentages of rim types for these are given in Table 55 and Figure 143, which show that form and finish preferences for rim types are similar in all three fabric types. Only in attitude is there any marked variation: between the gabbroic ware, with a preference for out-turned rims, and the other two fabrics, which show a preference for upright rims. The difference between the gabbroic ware and the rest is not unexpected, but the similarity between the shell-tempered pottery, which appears to have been made a few kilometres to the west of the site, and the flint fabrics, which are of unknown origin, suggests that the latter were probably not made much further afield than the shell-tempered ware.

b As the majority of material was recovered from the fill of the inner enclosure ditch, little spatial variation might be expected. There are, however, other contexts (mainly pits), which might be thought more likely to show some variation. In particular, one group of outlying pits in the area of the eastern entrance, excavated by Wheeler and numbered T1 to T9 (Wheeler 1943, 85–6), seemed to merit special attention. Unfortunately, it is clear that the pottery surviving does not include all the pottery from these pits (see Fig 145: 12–25).

The subjective impression gained was that the pottery from these pits was different to the main assemblage and, as a test of this, the frequency of rim types from this area was compared with those from Wheeler trench Q and A. Chi-squared tests were carried out between the Area Q rims and the Area A rims, and between the rims from the 'T' series pits and the Area Q rims. The results were:

for Q and T $\chi_{(calc)2} = 29.5984$ (17 degrees of freedom)
$\chi_{(0.05)2} = 27.587$ (17 d.f.)
for Q and A $\chi_{(calc)2} = 9.335$ (15 d.f.)
$\chi_{(0.05)2} = 24.996$ (15 d.f.)

Therefore, the null hypothesis, that there is no difference between the pottery in Area Q and that in Area T, may be rejected. In the case of the pottery from Areas Q and A, the null hypothesis, that there is no difference between the pottery from the two areas, may not be rejected.

Table 55 Earlier Neolithic pottery: rim types by fabric groups (Wheeler and 1985/6 assemblages)

Rim type	*A1a*	*A1b*	*A1c*	*A2a*	*A2b*	*A2c*	*A3a*	*A3b*	*A3c*	*A0a*	*A0b*	*A0c*	*A0o*	*B1a*	*B1b*	*B1c*	*B2a*	*B2b*	*B2c*	*B0a*	*B0b*	*C1a*	*C2a*	*C3a*	*D1a*	*D2a*	*D1a/ D2a*	*F2c*	*O2o*	*Total*
Flint	8	1	2	21	1	5	2		2	21	2			1	1		5	1	1				1							75
Flint and sand	20		4	20	3	2	3			23	6	2		1		2	2	3		3	1								1	96
Shell	24	2	5	37	1	11	4	2		36	5	2	1	2			8	2	1	2				1	1	4	1	2		154
Shell and sand	3			4	1	1	1			3					2						1									16
Shell and voids						1																								1
Calcareous	2	1				1	1			4	1						1													11
Calcareous and flint	1																													1
Gabbroic	12	1	2	1	1	1	1			3				2								2						1		27
Sand	2		1	8	2					4	1	1																		19
S unident inc A										2																				2
Voids	2			6						4		1													1					14
Flint and shell	1			3		1		1		1									1			1								9
Quartz and sand				1																										1
No visible inclusions	1		1			1				4	1																			8
Flint, shell, and sand			1			1																								2
Fabric unknown	1			4		2																								7
Totals	77	5	16	105	9	27	12	3	2	105	16	6	1	6	3	2	16	6	3	5	2	3	1	1	2	4	1	3	1	443
Percentage	17.4	1.1	3.4	23.7	2.0	6.1	2.7	0.7	0.5	23.7	3.6	1.4	0.2	1.4	0.7	0.5	3.6	1.3	0.7	1.1	0.5	0.7	0.2	0.2	0.5	0.9	0.2	0.7	0.2	%

Table 56 Earlier neolithic pottery: form, attitude, and finish (Wheeler and 1985/86 assemblages)

A Form	*A (simple)*	*B (rolled over)*	*C (externally enlarged)*	*D (expanded)*	*F (internally extended)*	
	384	43	5	7	3	*Total* 442
	86.9	9.7	1.1	1.6	0.7	%
B Attitude		*1 (everted)*	*2 (upright)*	*3 (inturned)*		
		114.5	175.5	18		*Total* 308
		37.2	57.0	5.8		%
C Finish		*a (rounded)*	*b (pointed)*	*c (squared)*		
		338	44	59		*Total* 441
		76.6	10.0	13.4		%

c It is clearly important to try and identify change through time, but the homogeneity of the assemblage and the dominance of type A rims render this difficult. In addition, the numbers of rims recovered from any one section through the ditch is small and, if sections from different parts of the site are compared, it is possible that spatial, as well as temporal, variation might be represented. It seemed possible, however, that the use of unusual rim types might have been confined to particular periods of the site's use.

In the 1943 pottery report, Piggott suggested that 'bead' rims were more common in the earlier layers of the causewayed enclosure ditch than in the later (1943, 146; 'bead' rims are type B). Seven out of twenty-two type B rims from the Wheeler excavations occur in the lower or middle fills of the causewayed enclosure ditch (Chap 6 fiche, Table 135). However, of eight stratified type B rims from the recent excavations of the enclosure ditch, six were from the middle to upper layers of the causewayed enclosure ditch in Trench I and only two from the lower. The distribution of Type B rims, therefore, does not appear to be restricted to the lower fill of the causewayed enclosure ditch.

Wheeler (1943, 88) drew attention to pit Q1 between the eastern terminals of the Bank Barrow ditches and suggested that it was related to the building of the Bank Barrow, rather than to the occupation of the enclosure. Stratigraphically, it could belong to either phase: only its position suggested that it was related to the Bank Barrow. The pottery found in it, however, is more likely to belong to the enclosure occupation than to the Bank Barrow construction. No Type B rims were found in the lowest layers of the Bank Barrow ditch, but the type is found throughout the causewayed enclosure ditch and is a feature of the small group of pottery from pit Q1: 15 rims were examined from this context, of which 3 were type B (Wheeler 1943, fig 29, 40–9).

There seem to be no obvious patterns in the distribution of rims C, D, and F and the numbers of rims involved are much smaller than for Type B. It is perhaps of interest, however, that the very unusual type F2c (inturned flat- topped/upright/squared) occurs only in the upper levels of the causewayed enclosure ditch and in one of the pits in area T. This is perhaps an indication that it is a late type and that the 'T' assemblage is unusual, because it is later than the majority of the enclosure assemblage.

Comparison of the Maiden Castle rim assemblage shows clearly that its affinities are with the South-Western (Hembury) style (I Smith 1974; Whittle 1977). The only South-Western assemblage published recently and which can therefore be used for comparison with Maiden Castle is that from Carn Brea, Cornwall (I Smith 1981). In that report, I Smith presents the data on rim forms in a slightly different form to the scheme used here. However, the information given does enable a conversion into Types A, B, C, and D (it appears that only one type in the Carn Brea report – Everted rolled-over – represents Type B, and only four rims, classified as miscellaneous, are of Types C and D). The figures for Carn Brea are as follows (Maiden Castle percentages are in brackets):

Type A	318	85.0%	(86.9%)
Type B	52	14.0%	(9.7%)
Type C	2	0.5%	(1.1%)
Type D	2	0.5%	(1.6%)
Type F	0	–	(0.7%)

Clearly, these two assemblages are very similar in terms of rim form. Although there are no figures for the large assemblage from Hembury, it is clear that there is about the same percentage of Type B rims in that assemblage also.

Vessel form

The vessel forms were divided into cups and bowls, and the latter were further subdivided into size classes: Small, Medium, and Large. One possible jar is also represented (Wheeler 1943, 151, no 77), though this may be an underestimate. The size divisions used for the bowls were arbitrary, but for the Cup class there is a well-established upper limit of 120mm (I Smith 1965, 49). The size classes used for the Bowls were as follows:

Small	130–200mm
Medium	210–300mm
Large	310+mm

Wherever possible, the actual rim diameter of a vessel was measured, but in many cases it was only possible to establish a range within which the diameter must lie.

In addition to the general division into Cups and Bowls and the size classes, the forms of the vessels were recorded as Open, Neutral, or Closed, and Carinated or Uncarinated. These were coded as follows:

Type A	Open	Type 1	Carinated
Type B	Neutral	Type 2	Uncarinated
Type C	Closed		

Open Bowls are those with the maximum diameter at the rim, Neutral are those with belly and rim diameters equal, and Closed are those with the maximum diameter around the belly.

For the analysis of vessel form, an estimate of vessel numbers, calculated during the examination of the assemblage, was used. This is necessarily subjective, based as it is on often minor variations of form, fabric, and surface finish, but in early prehistoric assemblages, in which vessels tend towards individuality, there is some justification for it. This method produces an overall total of 199 vessels.

All but 30 of the 199 vessels have produced some Form or Size data, but only 67 vessels survive sufficiently to enable their form to be established with any confidence (Table 57). Excluding two vessels where the

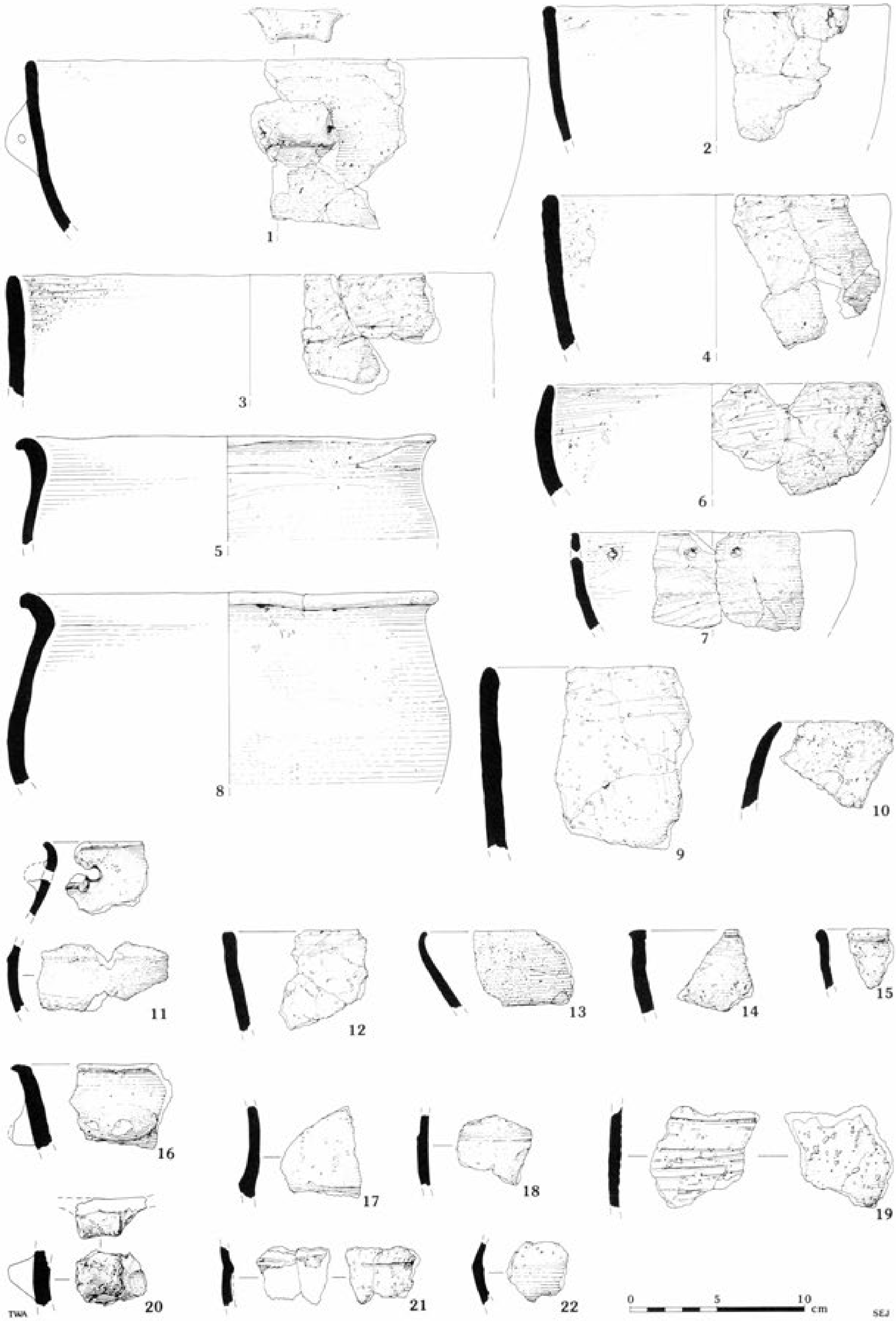


Fig 142 Neolithic ceramics (full details of the contexts, fabrics, and types are available in Chap 6 fiche): 1) 4004; 2) 4014; 3) 4011; 4) 4027; 5) 4029; 6) 4009; 7) 4036; 8) 4008; 9) 4023; 10) 4031; 11) 4021; 12) 4005; 13) 4026; 14) 4050; 15) 4002; 16) 4010; 17) 4367; 18) 4373; 19) 4280; 20) 4012; 21) 4339; 22) 4345

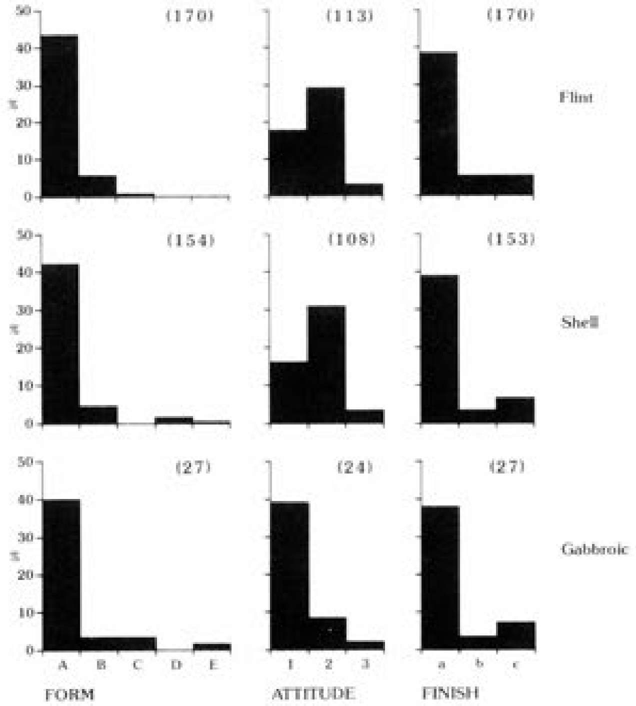


Fig 143 The form, attitude, and finish of the rims in three major fabric types

Table 57 Earlier Neolithic pottery: vessel form (Wheeler and 1985/6 assemblages)

Type	*No of vessels*	*%*
(A1)Open, Carinated	3	4.5
(A2)Open, Uncarinated	14	20.9
(A0)Open, Indeterminate	1	1.5
(B1)Neutral, Carinated	1	1.5
(B2)Neutral, Uncarinated	35	52.2
(B0)Neutral, Indeterminate	2	3.0
(C1)Closed, Carinated	0	0.0
(C2)Closed, Uncarinated	5	7.5
(C0)Closed, Indeterminate	4	6.0
(O1)Indeterminate, Carinated	1	1.5
(O2)Indeterminate, Uncarinated	1	1.5
	Total 67	

Table 58 Vessel size class (Wheeler and 1985/6 assemblages)

Type	*No of vessels*	*%*
Cup (< 120mm)	12	7.8
Cup/Small Bowl (< 200mm)	3	2.0
Small Bowl (130–200mm)	20	13.0
Small/Medium Bowl (130–300mm)	3	2.0
Medium Bowl (210–300mm)	37	24.0
Medium/Large Bowl (210mm +)	28	18.2
Large Bowl (310mm +)	7	4.6
Bowl (130mm +)	44	28.6
	Total 154	

rim angle is uncertain, the overall classes are Open: 18 (28%), Neutral: 38 (58%), Closed: 9 (14%); and excluding the indeterminate carinated/uncarinated vessels, the total Carinated vessels are 5 (8%) and Uncarinated 55 (92%). The assemblage is therefore dominated by Neutral, Uncarinated vessels, with only Open, Uncarinated vessels being present in anything other than small quantities.

One hundred and fifty-four vessels had measurable rim diameters, excluding the jar (Table 58; the rim diameters of vessels with measurable diameters are given in the fiche for Chapter 6 (Table 138). Vessel form and size details for the 64 vessels which have produced both types of information are available in the fiche for Chapter 6 (Table 139).

The most common form, the Neutral, Uncarinated bowl, is represented in all the size classes, although it is most common in the Medium size range (210–300mm), which is the commonest size class. Open bowls occur mainly in the larger size classes, while the very few closed forms occur in the Cup, Small, and Medium Bowl ranges. The minimum and maximum diameters for each vessel form type are: Open – 220mm and 320mm, Neutral – 70mm and 290mm, and Closed – 120mm and 220mm (Chap 6 fiche, Table 137). The impression is that the assemblage is an unspecialised one, as there is no strong relationship between form and size. It is generally accepted that open-mouthed vessels would be preferred for eating, food preparation, and food display, while closed forms are better suited for storage.

Fabric

The number of vessels of each size range and form in each fabric is shown in Tables 59 and 60. This seems to show no marked relationship between inclusion type and form or size of vessel. The most common inclusion types occur in almost all forms and sizes, but gabbroic ware is confined to vessels larger than 200mm in diameter and open forms; type A1 – carinated open bowls – only occurs in gabbroic ware, although there are only two certain examples.

The fabrics represented among the vessels were also divided into those likely to have good thermal shock resistance (TSR) and those unlikely to (Braun 1983; Howard 1981; see fabric catalogue in Chap 6 fiche). Of 30 fabrics considered, 16 would seem likely to have good thermal shock resistance, 11 are indeterminate, and 3 are likely to have little resistance to thermal shock. Most of the common fabrics have good thermal shock resistance and are represented widely throughout the vessel form and size classes. However, most Cups are in fabrics with poor thermal shock resistance (only one out of ten is likely to have good resistance). This would support the interpretation of these as individual eating or drinking vessels. At the other end of the size range, of seven vessels classifiable as Large, all but one are in fabrics with good TSR.

Sooting

In the case of vessels with sooted exteriors or burnt residues on the interior, which must have been put onto fires, the fabrics do not accord with the expectation that good TSR would be favoured. Six vessels from the recent excavations have sooting and two have burnt residues on the interior. Of these eight, only four are in fabrics with high TSR, three are in indeterminate fabrics, and one is in a fabric likely to have low TSR. Only three of these vessels are classifiable by shape: two are of type B2, and one type A0; all three have diameters in the range 220–40mm. It is impossible to reach many conclusions, as to which vessel types constituted the cookwares of the assemblage, because of this paucity of information, although it is clear that at least medium-sized Neutral Uncarinated Bowls and Open Bowls were used in that role.

Carination

This is a rare feature at Maiden Castle. Only nine vessels were present in the entire assemblage. The fabrics represented are as follows:

gabbroic ware: 4 vessels (5 sherds)
shell temper: 3 vessels (4 sherds)
voids (round): 1 vessel
unknown fabric (completely restored vessel): 1.

The seven carinated sherds from the recent excavations constitute

Table 59 Earlier Neolithic pottery: vessel form by fabric group (Wheeler and 1985/6 assemblages)

	Open		*Neutral*		*Closed*		*Open*	*Neutral*	*Closed*	*Indeterminate*	
	A1 carinated	*A2 uncarinated*	*B1 carinated*	*B2 uncarinated*	*C1 carinated*	*C2 uncarinated*	*AO indeterminate*	*BO indeterminate*	*CO indeterminate*	*O1 carinated*	*O2 uncarinated*
Shell		3		10		1		1	2	1	
Shell and sand				1			1	1			
Flint		1		12							
Flint and sand		5		6		3			2		1
Sand				3							
Gabbroic	2	5									
Flint and shell						1					
Calcareous		1		1							
Quartz and sand				1							

Table 60 Earlier Neolithic pottery: vessel size by fabric group (Wheeler and 1985/6 assemblages)

	Shell	*Shl/Snd*	*Flint*	*Flnt/Snd*	*Sand*	*Gabbroic*	*Flnt/Shl*	*Flnt/Ferr*	*Cal/Flnt*	*Calcareous*	*NVI*	*Qrtz/Snd*	*Voids*	*Flnt/Snd/Shl*
													1	
Cup, 0–120 mm	4	1	1		3					1				
Cup or small bowl, 0–200 mm	2									1				
Small bowl, 130–200 mm	5	1	5	8										
Small to medium bowl, 130–300 mm	1			2								1		
Medium bowl, 210–300 mm	10	2	8	6		5	1			1	1			
Medium to large bowl, 210+ mm	7	2	3	7		5	2			2			1	1
Large bowl, 310+ mm	4		1	1		1								
Bowl, 130+ mm	13	2	9	11	3		2							
? Jar									1					

0.5% of the total sherd count, 6.7% of the rim count, and 12% of the possible 58 vessels present. These percentages do not remotely approach the 38% of sherds in the Carn Brea assemblage (I Smith 1981, 166). Whittle (1977) notes the paucity of carinated sherds at Maiden Castle, and I Smith (1981) notes their rarity there and at Windmill Hill and Hembury, in contrast to the abundance of such sherds at Carn Brea and their relatively high occurrence in small assemblages at Haldon and Hazard Hill (Whittle 1977, 81; I Smith 1981, 176). Carinated bowls are also a minor component of the assemblage from Hambledon Hill, approximately 33km north-west of Maiden Castle. There, they constitute only 3.8% of all vessels. Hambledon Hill has also produced two exact parallels for the rare carinated cups form at Maiden Castle (Wheeler 1943, fig 29.59; I Smith pers comm).

The abundance of carinated vessels in some small assemblages is emphasised by the recent excavation of a pit at Rowden in the South Dorset Ridgeway, 5km to the south-west of Maiden Castle (S Davies *et al* 1991). The assemblage is roughly contemporary with Maiden Castle and consists of seven or eight vessels. Of the seven vessels with known forms, four have clearly defined carinations, one is probably carinated, and two have ill-defined shoulders. The vessels from Rowden are all in local fabrics, whereas, in the Maiden Castle assemblage, gabbroic ware vessels constitute nearly half the carinated vessels.

Lugs

In contrast to the paucity of carinated sherds, lugs are a fairly common feature in the assemblage. The types of lug represented are tabulated in Table 61, where they are arranged by fabric type. Two types dominate the assemblage: the trumpet lug (28%) and oval lugs (57%). These lugs are all horizontally applied: only 4% of lugs were applied vertically. Perforated and unperforated trumpet lugs occurred in similar proportions, but only 9% of oval lugs are perforated. Three lugs occurred in gabbroic ware: one of these was fragmentary, but two were perforated trumpet forms, a type common at Carn Brea. Within the oval type, a subtype was distinguished which was characterised by flattened surfaces, giving a rather rectangular impression and one oval lug had a cupped upper surface (Fig 145: 14). Other types of lug were represented in very small numbers. The divided lug (Wheeler 1943, no 151), the two round lugs, and the lug applied on top of a cordon (Wheeler 1943, no 139) are unusual. The latter is a minor feature of the South-Western style at Carn Brea and Hambledon Hill (I Smith 1981, 168, 170, 176). In almost all the cases of lugs detached from vessels, the method of attachment was simply pressing the clay of the lug onto the vessel

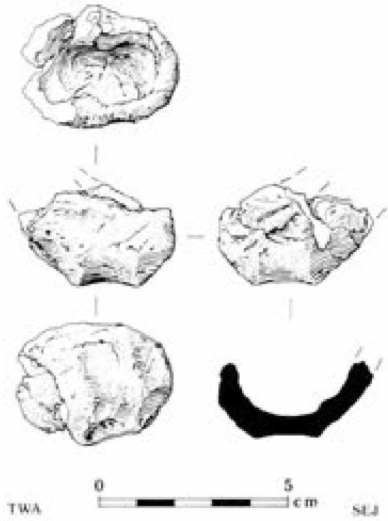


Fig 144 The Neolithic spoon, 4311

Table 61 Earlier Neolithic pottery: lug forms (Wheeler and 1985/6 assemblages)

Fabric		*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*		
Trumpet	Horizontally/ Perforated	4	3	2	1	2				1					13	16.5
	Unperforated	2	1	5			1								9	11.4
Oval	Horizontally/ Perforated		1												1	1.3
	Vertically/ Perforated			2				1							3	3.75
	Unperforated	5	4	11	1		2	3	1	1			1	1	30	38.0
	Rectangular/ Unperforated	1	2	4				1			1	1			10	12.65
	Cupped/ Unperforated			1											1	1.3
Divided	Unperforated	1													1	1.3
Lug on cordon			1												1	1.3
Unclassifiable			1	4											5	6.3
Oval	Horizontally Perforated		1												1	1.3
Rectangular	Horizontally Perforated	1													1	1.3
Unclassifiable						1									1	1.3
Round	Unperforated			1			1								2	2.5
Totals		14	14	30	2	3	4	5	1	2	1	1	1	1	79	
%		17.7	17.7	38.0	2.5	3.8	5.1	6.3	1.3	2.5	1.3	1.3	1.3	1.3		

Notes: A = Flint
B = Flint and Sand
C = Shell
D = Shell and sand
E = Gabbroic
F = Flint and shell
G = Sand
H = Flint, sand, and shell
I = Voids (not shell)
J = Flint and iron oxide
K = Calcareous
L = Shell and non-shell voids
M = Unknown

wall, but one lug (Fig 145: 10) has a plug or tenon to fit into the vessel wall (as illustrated at Windmill Hill: I Smith 1965, fig 12: P15) and, in another, two small depressions on the underside of the lug may be meant to assist attachment (Fig 145: 11).

Lugs of all types are widely distributed across the site; of the seven unperforated trumpet lugs excavated by Wheeler, however, six occur on the eastern side of the site.

The 'spoon'

This object (Fig 144) consists of a small bowl probably formed by holding a 'sausage' of clay in one hand and pressing the thumb of the other hand deeply into it. This action would also create the slight ridges of clay on the underside of the bowl, as the clay is forced between the closed fingers of the hand. An extension at one end of the bowl has been broken off. The fabric of the clay is not identical to that of the classifiable pottery, but shows a general similarity: it contains sparse calcareous inclusions, possibly chalk or limestone, and sand.

The object resembles the spoons or scoops known from Neolithic contexts both in this country and the continent. Spoons are known from Ightham, Kent, Nether Swell, Gloucestershire, Hassocks, Sussex, and Niton, Isle of Wight (Leeds 1927; Piggott 1935). Not all of these objects were found in Neolithic contexts, but they have been assumed to be Neolithic, because of the European parallels and the similarity of fabric to Neolithic vessels. In form, these objects are better finished than the Maiden Castle artefact, but the identification as a spoon seems inescapable. It was found in the upper fill of the enclosure ditch in trench I, where this ditch is sealed by the Bank Barrow mound.

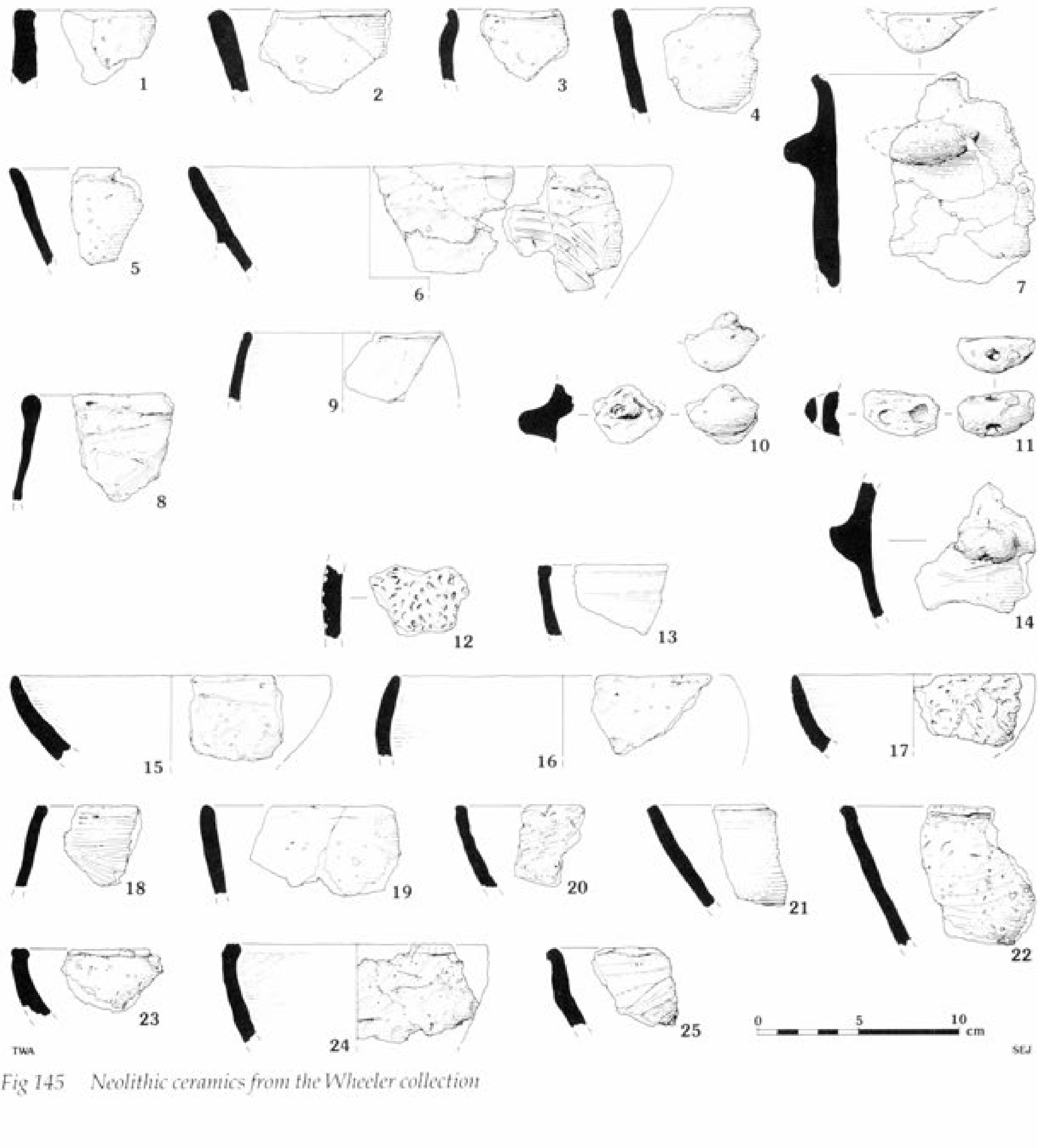


Fig 145 Neolithic ceramics from the Wheeler collection

Decoration

Six vessels from the site have been decorated. Four have light incisions on the rim sherds, particularly extensive on Figure 141: 8, one has parallel rows of small round impressions, immediately below the rim (Wheeler 1943, 34), and another has punctuation in conjunction with an applied boss (Fig 142: 11).

Decoration of any sort is very rare in South-Western style assemblages: at Carn Brea four carinated bowls carry faint ripples on the interior of the rim or neck, and oval impressions occurred on three sherds (I Smith 1981, 172). The only other occurrence of decorated South-Western pottery is in the small group from Pamphill, Dorset (Field, Matthews, and Smith 1964, 19). In view of this, a very small element of decoration must now be accepted as a normal part of the repertoire of this style.

Although the vessels with incised decoration from Maiden Castle may be explained in this way, the vessel with impressions (Wheeler 1943, no 34) and the punctuated vessel (Fig 142: 11) are difficult to see as part of this tradition. Impression is a common feature of the Decorated or Windmill Hill tradition, (I Smith 1965), and punctuation occurs in conjunction with a strap handle and cordons at Carn Brea (I Smith 1981, P146), but there are no exact parallels for either vessel. Both are almost certainly neutral or closed carinated bowls and are in fabrics likely to have been derived from a source in the Burton Bradstock area. It is not surprising that there should be a small, decorated element at Maiden Castle, as the assemblage from Hambledon Hill, which shows some similarity to that from Maiden Castle, includes a considerable number of decorated vessels (40 vessels, or 5.6% of rims; I Smith pers comm).

A noticeable feature of the gabbroic wares is the black shiny finish to the surface which contrasts with the reddish brown oxidised core. I Smith has suggested that this is the remains of an organic paint, but it could also be the result of smudging during firing. This process is suggested as the likely cause by A Woods (pers comm) of the Experimental Firing Group, who has produced a similar surface appearance and combination of core and surface colour by smudging. Whatever the technique used, the gabbroic ware is very different to the rest of the assemblage, which is generally fired to dull colours, indicating incomplete oxidation and probably incomplete combustion of the carbonaceous material present in the clay. Temperatures are unlikely to have been high.

Perforations

A maximum of nine vessels have holes drilled after the vessel has been fired (eg Fig 141: 4). Such holes are assumed to be used for binding cracks or breaks in vessels. Three of the vessels are of gabbroic ware, two have flint and sand fabrics, and there is one each in flint, shell, sand and quartz, and sand fabrics. The repair of the gabbroic ware vessels is not surprising, given the source of these vessels, but the repair of locally produced vessels seems more difficult to explain. It would be a relatively simple task to make a new pot, and although clay suitable for the production of pots was available on the site, it does not appear to have been used. It is possible, therefore, that the nature of the activities associated with the use of the enclosure precluded the production of ceramics on site.

Peterborough Ware

All three substyles of this tradition appear to be present in the assemblage, although the quantities of each are small. Thirty-four sherds, weighing 568g, were examined, from both the recent excavations and the Wheeler assemblage; one other vessel which was not located, but which is illustrated by Wheeler (1943, no 123), is also of this tradition.

Fabric

The fabrics represented are similar to those of the earlier Neolithic pottery (Table 62), although lacking some of the inclusion types occurring in those fabrics (see Chap 6 fiche, Table 140). The assemblage includes a small amount of pottery with grog which does not occur in the earlier Neolithic pottery. As with the earlier Neolithic pottery, the majority of the sherds are in fabrics containing flint or flint with sand (38% of the total by count, 33% by weight) or contain shell (41% and 38% respectively); of the remaining inclusion types, only flint and shell combined occur in more than 10% of the assemblage: at 12% by count and 16% by weight. This contrasts with the earlier Neolithic pottery, where flint and shell is a fairly rare combination (approximately 2% of the total).

No Peterborough Ware was submitted for analysis, as the quantities were small and the sherds were all decorated, but in appearance the fabrics were similar to the earlier Neolithic fabrics. If the source of the shell is the same as for the earlier Neolithic pottery, the only non-local inclusion type is likely to be the sandstone in fabric SSa:1, which only occurred in a highly decorated Ebbsfleet Ware rim. The sandstone was pale brown in colour and is not calcareous. Sandstones occur in the Middle Lias, the Corallian Beds, and the Portland group of deposits in Dorset (Melville and Freshney 1982, 8–10, 16, 18, 36–8, 43, 72–5), but it has been suggested that the source might be the ball clays containing sandstone from the Bovey Tracey area in Devon (P Ensom pers comm).

Table 62 Peterborough Ware: sherd count and fabric group (Wheeler and 1985/6 assemblages)

Inclusion type	*Sherd count*	*Weight (g)*	*Ceramic style*
Sand and sandstone	1	56	Ebbsfleet Ware
Shell	1	15	Fengate Ware
Shell	2	79	Mortlake Ware
Shell	10	117	Indeterminate
Flint	12	181	Indeterminate
Flint and sand	1	5	Indeterminate
Flint and shell	2	43	Mortlake
Flint and shell	2	48	Indeterminate
Grog	1	5	Mortlake
Grog and shell	1	12	?Mortlake
Unknown fabric	1	–	Indeterminate
	1	7	Indeterminate

Form

Only one vessel of Ebbsfleet ware has been definitely identified (Wheeler 1943, fig 34, 118). This vessel has an unusual sandstone fabric and is a 'cupped' rim, which, although it has no close parallels for its form, is clearly an exaggerated type of Smith form E3 (I Smith 1956). Three rim sherds can be confidently attributed to the Mortlake substyle (Fig 146: 2; Wheeler 1943, fig 31.88, 33.110), and one other vessel (Wheeler 1943, fig 31, 94), though an unusual fabric, is probably Mortlake Ware. Only one sherd of Fengate Ware is present (Wheeler 1943, fig 30, 65). This is illustrated as an everted rim, but examination suggests that it is an upright rim, with a slight internal bevel, and a very slight external curvature. The remaining 27 sherds, all decorated, cannot be certainly ascribed to one substyle, although they are most likely to be Mortlake or Ebbsfleet Ware.

Context and distribution

The contexts of the Peterborough Ware from the recent excavations are easily summarised: apart from one sherd under the bank between the two enclosure ditches, all the sherds come from the upper layers of the enclosure ditch, in trench II. The earliest layer with Peterborough Ware sherds is 537 (Fig 59), a layer which also contains one small undiagnostic Beaker sherd. This layer is probably the primary fill of a hollow cut into the side of the ditch and extending across the upper ditch fills. The size and condition of one of the sherds suggests that it was buried quickly and thus provides a date for the creation of the hollow.

The material from the Wheeler excavations is less easy to summarise: in general, the Peterborough Wares occur in the upper middle to upper layers of the enclosure ditch and in similar layers in the Bank Barrow ditch. Wheeler (1943, 153) claims that the stratigraphically earliest sherd is vessel 88, from the central filling of the Bank Barrow ditch in trench I. (Wheeler 1943, 153). Unfortunately, the quality of the archive sections varies considerably and the adjacent section in I. is not clear. Several sherds of Peterborough Ware were found in the Bank Barrow ditch in trench I. at only slightly higher levels, and there were also large sherds from the enclosure

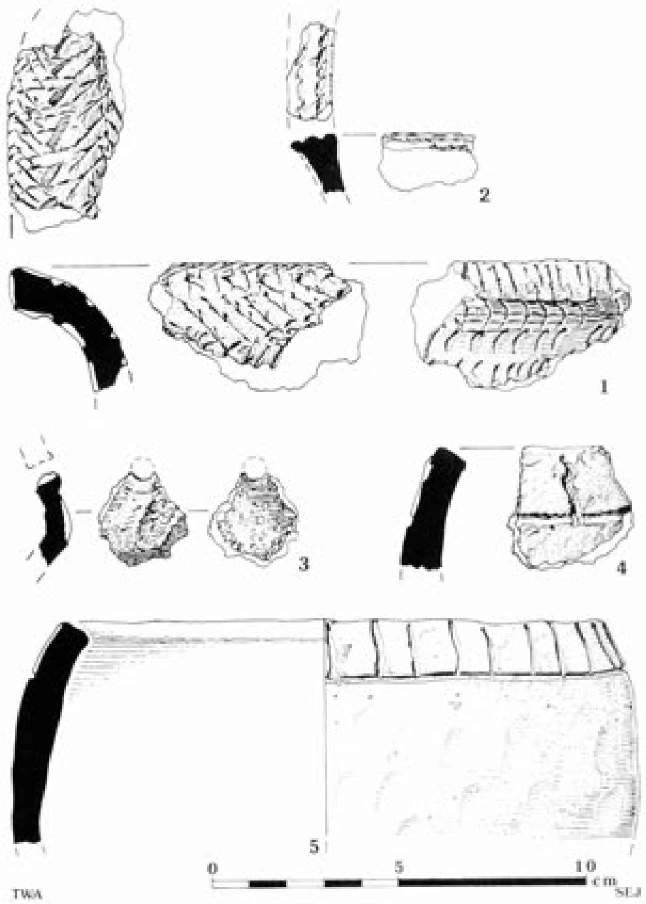


Fig 146 Late Neolithic and Bronze Age ceramics from the recent excavations – Ebbsfleet/Mortlake: 1) 4028; Mortlake: 2) 4045; 3) 4386; Trevisker: 4) 3213; 5) 7714

ditch in trench R and G on the east and west sides of the enclosure.

The use of Peterborough Ware does not appear to substantially predate the use of Beakers on the site. Only the sherd in trench L and a sherd in the enclosure ditch in trench G were in stratigraphically earlier layers than Beaker pottery. Most of the Peterborough Ware was found in layers with Beaker and did not appear to be markedly worn.

The spatial distribution of the Peterborough Ware in the Bank Barrow ditch closely follows that of the earlier Neolithic pottery. It is largely confined to the lengths of ditch inside the interior of the causewayed enclosure (Fig 147).

Grooved Ware

Only six sherds, weighing 90g, can be confidently identified as Grooved Ware; two other sherds were illustrated (Wheeler 1943, nos 96 and 98) and described as Grooved Ware in the original report, but cannot be located.

Fabric

All the sherds (with the exception of 96) are of fabric V:1. This is a fabric with leached or burnt-out inclusions of either organic or calcareous material: two types of void are present and probably represent fired-out, or leached-out, oolites and shell inclusions.

Decoration

As none of the sherds are very large, the decorative schemes are impossible to reconstruct. The incised, obliquely filled triangle, surrounded by short grooves, of vessel 99 (Wheeler 1943), is reminiscent of the Clacton style (I Longworth, Wainwright, and Wilson 1971). Another unillustrated sherd is possibly of this substyle, as it has parallel lines of grooving beside small oval impressions. Vessel 97 (Wheeler 1943), however, has an area of incised oblique lines bounded by a cordon, which may indicate that the vessel is in the Durrington Walls substyle.

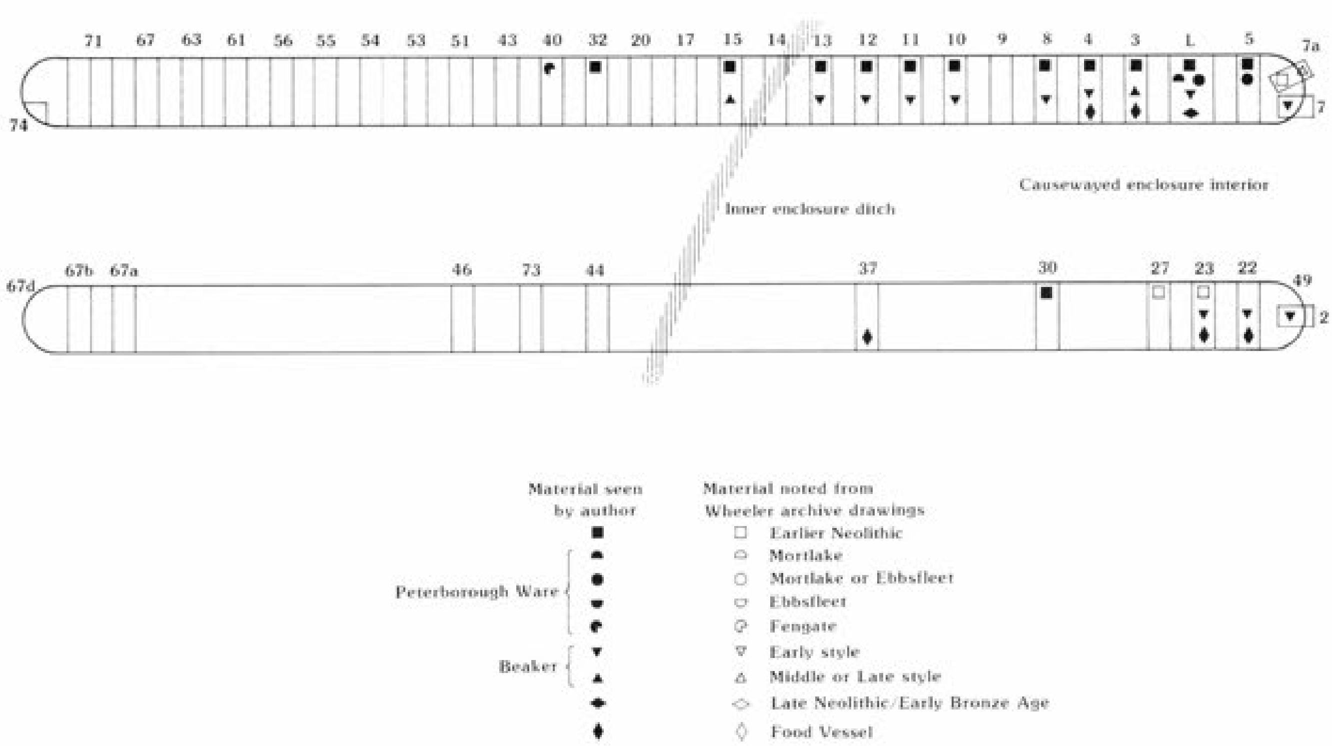


Fig 147 The location of the early prehistoric pottery in the Bank Barrow ditch

Context

All the Grooved Ware sherds, except 96 (Wheeler 1943), were recovered from pit T1, in the eastern entrance. This pit contained four layers and was 2ft 8in (0.8m) deep. The Grooved Ware came from the final fill, the layer beneath contained some Beaker and Early Neolithic pottery, and the lowest layer only Early Neolithic pottery (Wheeler 1943, 83, 153).

Beaker

One hundred and twenty-nine sherds, weighing 723g, have been examined. This is less than the number excavated, as some sherds illustrated in the Wheeler report cannot now be located. Unlike the earlier Neolithic pottery, Beaker was illustrated by photographs, in which most of the details are often obscure, and the contexts are not individually described. In the case of the drawn pottery, missing sherds have been included in sherd counts for all periods, as details of the sherds and their contexts are available, but this is not possible for the missing photographed Beaker sherds and these have been omitted. Throughout the discussion, the main typological divisions used are Case's Styles (Case 1977).

Fabric

Sherd counts and weights are given for each inclusion type in Table 63. The most common form is one without any visible inclusions, although sparse fine sand is identifiable at ×30 magnification. This type of fabric occurs in all styles of Beaker, as do fabrics with sand alone, which constitute 10% of the assemblage. The second most common fabric type is one with flint and sand (17%), followed by grog and sand (11%).

Type

Thirteen sherds (53g) have twisted-cord impressions and are likely to be All-Over-Cord Beakers (D L Clarke 1970). The average sherd size is 400mm^2 and the range 100–900mm^2. Only two rim sherds survive (Wheeler 1943, pl XXIII and XXIV). The former has a fairly thick section and uncertain angle and may be similar to Clarke fig 1–9 (1970), although it has no undecorated zone beneath the rim exterior. The latter rim is from an unusually fine, thin-walled vessel and is markedly everted.

Only eight sherds (76g) can be certainly assigned to the Late Style, and all belong to Clarke's Southern tradition. They are all derived from the final fill of the enclosure ditch between the eastern gates of the hillfort (trench G, M1) and are associated with a large number of small, unclassifiable sherds which may belong to this Style. The sherds are illustrated in Wheeler (1943, pl XXIIIB) and will be referred to by enumeration from the top left-hand corner. Only two rim sherds can be classified as Late: pl XXIIIB, 3–4 and 1. The latter is similar to Clarke, fig 822 or 862 (1970), which are classified as Developed Southern Group (S2). No 3–4 belongs to either the Late or Final Southern Beaker groups (S3 or S4), as the closest parallels are Clarke figs 934 (S3), 1069, and 1076 (S4) (1970). The remaining classifiable body sherds seem to belong to S2 or possibly S3 groups.

The majority of Beaker sherds are too small to be able to assign them to Clarke groups or Lanting and van der Waals Steps (Lanting and van der Waals 1972); most are clearly not Early, as they are decorated with comb impressions or incision rather than cord. As there is only positive evidence for Late Style Beakers and none for the Middle Style, it is tempting to presume that there was no use of the site during the currency of the latter. However, the material is fragmentary and the only identifiable Late Style Beakers are from a single context, so a Middle Style element cannot be entirely dismissed.

Context and distribution

The context of the AOC Beaker is important. It has been suggested by J Thomas (1984, 167) that the first Beakers at Maiden Castle were AOC Beakers and that they represent one of the earliest appearances of Beakers in Dorset. In the Wheeler assemblage, the stratigraphically earliest sherds are from trench Q3, layer 4 of the Bank Barrow ditch. These sherds can be identified and come from the top of layer 4. In the recent excavations, AOC Beaker occurs only in trench III, in the Bank Barrow ditch fill. It occurs in the first layer of the secondary fill (Fig 57: 984). This is below the layer which has been assumed to represent the start of Late Neolithic activity on the hilltop (Fig 57: 954) and is certainly the deepest occurrence of Beaker in the Bank Barrow ditch. AOC Beaker sherds also occur in the middle and upper layers of this ditch section.

The occurrence of these AOC Beaker sherds would seem to support the suggestion by J Thomas that AOC Beakers are the first to appear at Maiden Castle and that they appeared at a very early date. The sherds in question, however, are small. The sherd from the recent excavations is only 100mm^2; although the twisted cord impressions are clear, it is possible that the sherd reached its context by post-depositional activity and this, combined with the fact that the contextual information for the position of the Wheeler material is minimal, means that this must be treated as a tentative conclusion.

In the recent excavations, the stratigraphically earliest context in which Middle or Late Beaker-Style sherds occur is the upper fill of the enclosure ditch in trench II (Fig 59: 537, 541), where they are associated with Mortlake Ware sherds. In trench I, Middle or Late Style Beaker was recovered from the upper fill of the Bank Barrow ditch (Fig 49: 173).

In Wheeler's excavations, the Middle to Late Style Beaker pottery is concentrated in trench G between the gates of the eastern entrance, other concentrations were in trench Q and R. All the Beaker sherds found during the excavation of the Bank Barrow ditches come from the upper fills. The distribution of these sherds is shown in Figure 147: presence/absence only is illustrated as an unknown number of sherds have been lost. The distribution is similar to the earlier Neolithic pottery, as it concentrates in the area within the enclosure ditches. This distribution is understandable in the case of the earlier Neolithic pottery, as the enclosure is likely to have been the main focus of activity, but it seems unlikely that the enclosure should still be a focus in the period in which Middle or Late Style Beakers were in use. It may be that many of the trenches marked by Wheeler in the western half of the hill were not fully excavated.

Early Bronze Age pottery

There is very little material which can be confidently

Table 63 Beaker fabrics (Wheeler and 1985/6 assemblages)

	Early style		*Middle or Late style*		*Late style*		*Indeterminate*		*Totals*			
	no	*wght*	*no*	*wght*	*no*	*wght*	*no*	*wght*	*no*	*%*	*wght*	*%*
No visible inclusions	6	32	47	208	2	12	5	41	60	46.5	293	40.5
Flint and sand			17	90	3	38	2	15	22	17.1	143	19.8
Grog and sand	5	14	6	29			3	22	14	10.9	65	9.0
Sand	2	7	8	52	3	26			13	10.1	85	11.8
Grog			10	67			1	24	11	8.5	91	12.6
Flint			5	20					5	3.9	20	2.8
Calcareous and sand			2	10					2	1.5	10	1.4
Flint, grog, and sand			2	16					2	1.5	16	2.2
Total	13	53	97	492	8	76	11	102	129		723	

attributed to either the Food Vessel or Collared Urn traditions. The only unequivocal Food Vessel is a vessel represented by two sherds (Wheeler 1943, 92) from the upper fill of the Bank Barrow ditch in trench L. Two vessels (Wheeler 1943, 67, 127) are certainly Collared Urns: 67 is from the final fill of the Bank Barrow ditch and 127 from the final fill of the enclosure ditch, trench R. Both sherds are small and their typological position is uncertain. However, neither appear to be early or primary vessels (I Longworth 1984; Burgess 1986). In the recent excavations, two sherds of Trevisker-style urns were recovered from residual contexts in trench IV. Both are in a grog-tempered fabric with some calcareous inclusions, decorated by deeply grooved lines (Fig 146: 4, 5), and they almost certainly came from the same vessel.

The distribution of the Early Bronze Age sherds of this class is given by presence/absence in Figure 147.

Discussion

Relationships of the earlier Neolithic assemblage

The earlier Neolithic assemblage clearly belongs within the South-Western region: long-distance links with the extreme south-west are attested by the presence of gabbroic ware, and the vessel, rim, and lug forms are all well paralleled in the assemblages from Carn Brea and Hembury. There is evidence that sources within a few kilometres were used for the raw materials from which the other vessels were made, but suitable clay sources on the hilltop do not appear to have been used. The presence of several vessels with repair holes hints at a preference for repair of damaged vessels, rather than manufacture.

Although Maiden Castle lies towards the eastern edge of the area dominated by the South-Western Style, there is only very slight evidence of influence from the Decorated or Windmill Hill style, characteristic of the area to the north and east. Only two vessels (Wheeler 1943, fig 28, 34, and Fig 142:11) are completely uncharacteristic of South-Western Style assemblages, and the vessel from the Wheeler assemblage could be accommodated in the mixed, and more highly decorated, assemblage from Hambledon Hill.

If the assemblage is taken as a whole, it appears a relatively homogeneous one, even allowing for the limited repertoire of the South-Western Style. One or two vessel forms account for the majority of vessels present, and the quality of the vessels does not vary markedly, apart from the very fine component represented entirely by the gabbroic ware. According to Whittle (1977, 82), Maiden Castle differs slightly from Hazard Hill and Hembury in this respect, as they have a small, local, fine-ware component, in addition to the imported fine ware. At Carn Brea, I Smith (1981, 162) was able to divide the assemblage into three types of ware: Fine, Medium, and Coarse. At Maiden Castle, although there is some variation within the assemblage, the differences are not as clear as this.

The later Neolithic and Beaker pottery

The appearance of Beakers and Peterborough Ware seems to be contemporaneous at the site. However, there are differences between the two traditions: the AOC Beaker sherds are in striking contrast to the earlier Neolithic pottery in fabric, whereas the Peterborough Ware, with the exception of the Ebbsfleet Ware vessel in fabric SSa:1, has similar fabric types to the earlier Neolithic assemblage. Activity focused on the causewayed enclosure ditches still appears to be taking place at this time, as attested by the sherd of Mortlake Ware recovered from the ground surface buried beneath the enclosure bank, which seems unlikely to be a primary feature of the enclosure (see p57).

The minor and peripheral occurrence of Grooved Ware is in contrast to the presence of the Peterborough and Beaker pottery; with the exception of one dubious sherd (Wheeler 1943, fig 30, 96), it is absent from the ditches of both the causewayed enclosure and the Bank Barrow and occurs only outside the area of the causewayed enclosure, in the 'T' series pits. Such a minor presence must be of significance, as it is in contrast to its occurrence as an important ceramic elsewhere in the area. At Poundbury, about 3km to the north of Maiden Castle, two pits have produced Grooved Ware: a Durrington Walls-style vessel and a Woodlands-style vessel were identified in separate pits (Smith 1987). Four kilometres north-east of Maiden Castle, the henge monument at Mount Pleasant has a large Grooved Ware assemblage of the Durrington Walls substyle, with a very small Clacton-style element (I Longworth 1979, 85).

Beakers seem to have entered the Maiden Castle area early in their currency, on the evidence of the Bank Barrow ditch fill. However, at Mount Pleasant, there is evidence of very late survival of AOC Beakers, and it is possible that some of the AOC Beakers at Maiden Castle were in use at the same time as the Late Style Beakers.

The apparent absence of Middle Style Beakers is also problematic, as, although much of the Beaker is strictly unclassifiable, it could all belong to a very short period of use within Clarke's Southern Tradition, or Lanting and van der Waals Step 6.

Spatial variation

The distribution of material in the Bank Barrow ditch also poses the question of what type of activity is represented by the pottery in its fill. The distribution of pottery in its lower fill (ie earlier Neolithic pottery only) is mainly concentrated in the lengths of ditches within the causewayed enclosure. As this is virtually indistinguishable from the pottery in the causewayed enclosure ditches, this may be an indication that the area of the causewayed enclosure was still a focus of activity, although some of the pottery must be residual and derived from the use of the enclosure. This does not explain why the area of the ditches within the enclosure should still contain most of the pottery in the later Neolithic/Early Bronze Age, when the ditches would only have been hollows in the ground surface.

As already noted, J Thomas has suggested that the ends of the Bank Barrow ditches were foci of activity (1984, 167), but this is not strictly the case in terms of ceramic deposition, as the emphasis appears to be on the entire length of each ditch within the enclosure. Indeed, it might be suggested instead that there is a focus of activity along the eastern side of the causewayed enclosure, which is much more clearly maintained into the later Neolithic than the end of the Bank Barrow. There, a number of pits within about 100m of the outer causewayed enclosure ditch have a number of unusual items in their fills (Wheeler 1943, 85–6). Three out of ten stone axes found at Maiden Castle are from these pits, two associated with earlier Neolithic pottery and one with Beaker; the chalk figurine was found in one (Pit T1), and Pit T6, as well as producing one of the stone axes, also contained two dog skeletons, apparently the only canine bone from the Neolithic levels of the site. Only two of these pits (T1 and T4), which are situated within 1m of each other, contained later Neolithic and Beaker pottery, and although the Beaker pottery was not located, it is tempting to link this with the Late Style Beakers in the uppermost layer of the inner causewayed enclosure ditch in Area G. Wheeler describes the latter as a 'great scatter of Beaker sherds ..., representing at least half a dozen vessels in a cutting only 3 feet wide' (1943, 82). This deposit also contained the bones of at least two individuals (Wheeler 1943, 343–4), which might indicate that the deposit is not from domestic settlement.

The final period of use of the eastern part of the hilltop in the earlier prehistoric period is represented by the Early Bronze Age material. This is difficult to classify, but it probably dates to the first half of the second millennium cal BC. However, west of the causewayed enclosure, at the western limit of the Iron Age hillfort, two sherds of a Trevisker vessel, found during the 1986 excavations (Fig 146: 4, 5) attest to occupation in the later second millennium cal BC.

Later prehistoric pottery

by L Brown with contributions by B Colston, J Cooper, I Freestone, M Hughes, and D Williams

The 1985–6 excavations produced 22,225 sherds of Iron Age pottery weighing 222.78kg (this does not include sherds recovered from flotation residues). Some 2145 sherds from the Wheeler collection were recorded, accounting for approximately 75% of the total in store and on display. Details of the methods of examination employed and the results of the petrological analyses undertaken are provided in the fiche for Chapter 6. Throughout the report, these analyses are referred to in abbreviated form as follows: thin section analysis (TSA), neutron activation analysis (NAA), and heavy mineral analysis (HMA).

Various problems of classification were posed by the nature of the assemblage and its recovery. Where contexts did not have a reliable date, small fragments of coarse wares were difficult to distinguish from Neolithic sherds, but, once the two fabric series had been established, confusion would have been minimal and quantification not seriously affected.

It was originally envisaged that parts of the Wheeler assemblage would be republished in full under new constraints. It became clear, however, during the process of recording the pottery, that the original recovery of sherds had either been extremely selective, or that much of the material had been discarded since that time (Fig 148 demonstrates the discrepancy between the proportions of sherd categories in the Wheeler and the recent assemblages). It was, therefore, not possible to reconstruct, in detail, stratified groups of pottery without writing in a bias of uncertain proportion (results of an initial attempt to do so are available in the archive). Furthermore, it was found that Wheeler's publication includes virtually every sherd worthy of illustration still surviving in the collection. It was decided, therefore, to include none of the old collection in illustrated form, but it was noted that there is a fairly consistent error in the size of Wheeler's published drawings, many of which are approximately 5% too small. Most of this assemblage was, however, totally characterised under the new recording scheme, the data entered on computer, and a selection of sherds subjected to petrological analysis. The data is, therefore, compatible with that from the recent excavations. Information gleaned from the examination of the Wheeler assemblage has been incorporated in the discussion sections of this report. In some cases, this material was used to enhance the conclusions drawn from the recently recovered material.

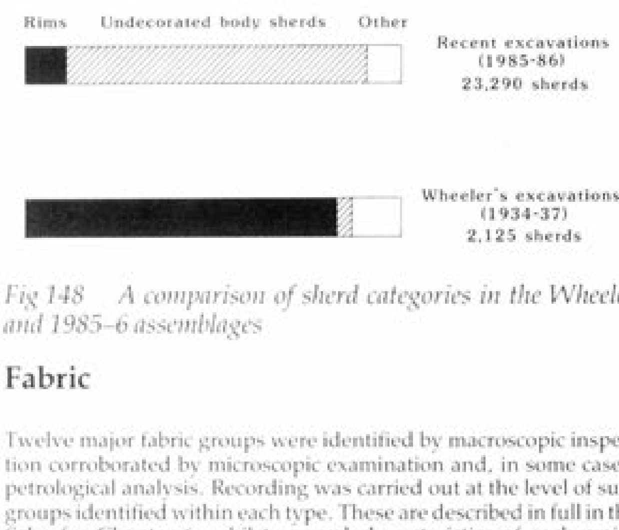


Fig 148 A comparison of sherd categories in the Wheeler and 1985–6 assemblages

Fabric

Twelve major fabric groups were identified by macroscopic inspection corroborated by microscopic examination and, in some cases, petrological analysis. Recording was carried out at the level of subgroups identified within each type. These are described in full in the fiche for Chapter 6, whilst general characteristics of each major category are provided below. When a fabric is discussed in detail in another publication, this is cited.

A Quartz sand tempered fabrics derived from sources in the Wareham-Poole Harbour area

(Four subtypes: A0–A3)
The distinction between the four subtypes is based on quartz grain size, A0 being the coarsest. NAA indicates that fabric A3 is chemically distinct from the other types, although compositionally similar. In fresh fracture, the sherds display abundant light coloured angular quartz grains set against a black or dark grey background, the grain size ranging from a maximum of 1.80mm for type A1 and 2mm for type A0. TSA indicates the presence of mica, shale, mudstone, flint, and calcite (including beef calcite), either separately or in various combinations in types A0–A2. Type A3 has few or no inclusions of this type. HMA produced suites of heavy minerals dominated by tourmaline, suggesting the Tertiary sands of Poole Harbour as the source of the quartz. The colour of the fabric ranges from grey to very

dark grey or light to dark reddish-brown. Types A0–A2 are infrequently coated by a slip of haematite-rich clay slurry.

B Predominantly flint temper

(Four subtypes: B1–B4)
All subtypes contain white or grey calcined flint, but in varying quantities and degrees of coarseness. B1, B3, and B4 have a fine sandy paste, whilst B2 has a smooth, soapy texture.

C Predominantly shell temper

(Four subtypes: C1–C4 and two miscellaneous sherds)
The shell-tempered wares were subdivided in hand specimen with the aid of a hand lens (at 10× magnification). Examination (Cooper, Chap 6 fiche) indicated that, with few exceptions, the shell inclusions were of Jurassic date and seem to derive from related clay sources. The major differences between the four subtypes are the quantities of temper, hardness of fabric, and presence of non-shell temper, such as chalk, lignite, and carbonised organic material.

D Predominantly quartz sand temper of non-Poole Harbour origin

(Fifteen subtypes: D1–D17, excluding D7 and D11 which analysis identified as south-western British Wares)
The major variations between the subtypes are in type and grade of sand filler and in occurrence of non-sand tempers (including haematite, calcite, glauconite, sparse flint or shell, and organic material). The most common subtypes are D1 and D6. D1 is a dark grey to black, hard-fired compact clay, containing abundant fine sand and silt-grade quartz with little or no other visible temper. D6 is similar to D1, but contains a coarser grade quartz. NAA was carried out on several examples of D1.

E Compact fine clays

(Four subtypes: E1–E4)
The four varieties are very similar and some are compositionally related to D1, although chemically distinct. E2 and E3 have a soapy texture, in contrast to E1 and E4 which contain very fine grade sand. E3 contains sparse, tiny shell fragments and E4 is micaceous. Specimens of E1 and E3 were subjected to NAA.

F Predominantly oolite temper

(Two subtypes: F1 and F2)
Type F1 contains abundant oolite inclusions in a fine, sandy fabric. NAA indicates a similar fabric for F2, but oolite temper is much sparser and additional tempers (flint, chalk, shell, calcite, or grog) common.

G Grog tempered

(Two subtypes: G1 and G2)
G1 is a fine, sandy fabric with few inclusions other than grog. G2 is a soapy, slightly micaceous fabric with additional temper of shell and/or beef calcite.

H Mixed coarse temper

(Five subtypes: H1–H5, H4 is equivalent to D4)
These types share a common composition which includes very coarse, generally ill-assorted temper, in most cases several of the following in combination: flint, shell, quartzite, Fe pellets, haematite, and limestone. H2 is the most common type and is a soft, friable fabric which invariably contains beef calcite in addition to one or more of the above-mentioned tempers. Vessels made from these fabrics are early types with a coarse finish.

I Predominantly limestone temper

Dark grey to black, soapy fabric containing common to abundant ill-assorted limestone fragments: 0.5–0.75mm common, but up to 2mm infrequent. It may have additional temper of beef calcite up to 4mm. Possibly from a local source near Poxwell.

J South-western British Wares ('Glastonbury Wares')

(Peacock 1969, 41–61)
J1 Gabbroic (Peacock Group I)
J2 Sanidine (Peacock Group V)
J3 Calcite (Peacock Group III)
J4 Shell (Peacock Group IV)

K Armorican fine ware

(Cunliffe 1987, 213)
Hard, smooth fabric, dark grey to black surfaces with reddish-brown to dark grey core. Fine textured compact clay. Thin-section analysis indicates that the fabric is largely composed of amphibole grains with some quartzite and plagioclase feldspar. The source is the Armorican Massif of north-west France (Hengistbury Head fabric A1).

Table 64 The Iron Age vessel forms present in assemblages from Maiden Castle 1985–6, Danebury 1969–78, and Hengistbury Head 1979–87

		Maiden Castle		*Danebury*		*Hengistbury Head*	
		no	*%*	*no*	*%*	*no*	*%*
Form	JA1	1	0.03	77	0.2	–	
	JA2			26	0.09	–	
	JB1	2	0.07	2342	8.8	7	0.4
	JB2			1309	4.9	52	3.1
	JB3			97	0.3	1	0.06
	JB4	63	2.2	928	3.5	4	0.2
	JC1	54	1.8	834	3.15	4	0.2
	JC2	203	7.1	2711	10.2	36	2.2
	JC3	743	26.1	453	1.7	122	7.4
	JC4	204	7.1	–		25	1.5
	JD1	–		87	0.3	–	
	JD2	-		411	1.5	3	0.18
	JD3	15	0.5	391	1.4	3	0.18
	JD4	142	4.9	–		340	20.8
	JD5	–		95	0.3	–	
	JE1	–				27	1.6
	JE2	–				2	0.1
	JE3	–				4	0.2
	JE4	55	1.9			249	15.2
	BA1	1	0.03	125	0.4	1	0.06
	BA2	40	1.4	1091	4.1	25	1.5
	BB1	1	0.03	1132	4.2	7	0.4
	BB2	–		4	0.01	–	
	BB3	–		5	0.02	–	
	BC1	4	0.14	73	0.2	2	0.1
	BC2	7	0.2	15	0.05	–	
	BC3	851	29.8	–		352	21.6
	BD1	4	0.14	–		69	4.2
	BD2	3	0.10	30	0.1	72	4.4
	BD3	2	0.07	–		42	2.5
	BD4	32	1.1	10	0.03	56	3.4
	BD5	–		–		21	1.2
	BD6	71	2.4	5	0.02	8	0.4
	BD7	Wheeler		–		4	0.2
	DA1	1	0.03	113	0.4	–	
	DA2	Wheeler		3	0.01	–	
	DB1	–		1	0.00	–	
	DB2	–		2	0.00	–	
	DB3	–		2	0.00	–	
	PA1	6	0.2	1539	5.8	–	
	PA2	28	0.9	1364	5.1	12	0.7
	PA3	12	0.4	5	0.02	–	
	PB1	50	1.7	10826	40.9	79	4.8
Total		2847		26462		1629	
Assemblage total		22225		103417		17968	

L Armorican micaceous ware

(Cunliffe 1987, 264)
Hard-fired, light buff to dark grey sandy fabric characterised by plates of silver and gold mica. Thin-section analysis suggests derivation from granitic source, probably Armorican (Hengistbury Head fabric B1/3).

Form

The vessel forms were classified according to a modified version of the hierarchical scheme employed at Danebury and Hengistbury Head (Cunliffe 1984a, 231; 1987, 206), since there is a considerable degree of overlap between the three assemblages (Table 64). Descriptions of forms present at Danebury and Hengistbury Head are not repeated in this report, but references to each type can be found in the fiche for Chapter 6. Four levels of classification are available for each sherd: basic class (ie jar, bowl, dish, etc), type, form, and variety. At the most basic level, a sherd may be described in terms of its class, but a more complex classification may be applied, depending on how much of the vessel survives. At the level of 'variety', a subdivision has been allowed for the Hengistbury Head and Maiden Castle assemblages to accommodate further minor variations not classifiable at the other four levels.

The Maiden Castle excavations produced no new major categories, but a small number of variations of known types were identified. These consist of lid-seated or channelled varieties of jar forms JC3 and JC4 (Maiden Castle forms JC3.11 and JC4.11, JC4.21 respectively; Fig 157: 15, not illustrated, and Fig 159: 1) and a cabled-rim variety of form JC3 (JC3.12; Fig 153: 21 and 22). The 1934–7 assemblage produced a few miscellaneous forms which were not codified (Wheeler 1943, fig 74, 217, 228). Other variations in the Maiden Castle assemblage were classifiable under decoration (Table 65).

Fabric and form: discussion

The range of pottery recovered from the earliest phases in trench IV was dominated by situlate and ovoid jars (forms JB1–JB4 and JC1–JC2) accompanied by tripartite bowls (BA2 and BB1). The situlate jars are mostly of devolved form, slack shouldered, and undecorated and the bowls, although sometimes red-finished, lack decoration of the furrowed or scratched-cordoned varieties on the whole. These points were noted by Wheeler and the material recovered in 1986 bears out his observations (Wheeler did, however, ascribe 'haematite coating' to a disproportionate number of vessels, mistaking surface oxidisation for haematite slip or surface concentration). The implications of the characteristics of these early wares are discussed elsewhere (see p198), but it should be noted here that the paucity of early decorated pottery may be due to factors other than chronology. Additional significance may attach to site-specific exploitation of clay sources and to highly localised features of style.

Analysis of the fabrics from Maiden Castle indicates an extensive use of oolite-rich clays, not surprisingly considering the proximity of these Jurassic outcrops (approximately 7km to the south and 12km to the west of the site). Oolitic wares (fabric F) account for over 6% of the total of fabrics for all phases and the vast bulk of this is restricted to phases 6D, 6E, and 6F. The figure is exceeded only by the Poole Harbour fabrics (A at 72%) and all other sandy wares combined (D at 13%), whilst shell-tempered wares (fabric C) account for 2.5% and flint-tempered (fabric B) form a mere 1% of the total (Table 66; Fig 149).

Much of the fabric used in the manufacture of the early pottery seems, on the basis of petrographic analysis, to form compositionally related groups, although in hand specimen they are distinct from one

Table 65 The occurrence of decorative motifs on Poole Harbour wares in the Iron Age phases

Decorative motifs		*6C*	*6D*	*6E*	*6F*	*6G*	*6H*	*7A*	*9A*	*Total*
10.1	Wave			1	2	3	9		1	16
10.2	Boss				5	2	2			9
10.3	Boss and circle				3					3
10.4 a	Linear chevron, single line						2	1	1	4
10.4 b	Linear chevron, indented line							1	1	2
10.5 a	Acute lattice					1		1	1	3
10.5 b	Obtuse lattice						1			1
10.6	Line and dot						1		3	4
10.7	Simple line	Wheeler assemblage								
10.8	Single eyebrow	1			3	11	13	1	1	30
10.9	Double eyebrow						3			3
10.10	Petal					1	1			2
10.11	Repouse petal	Wheeler assemblage								
10.12	Petal with more than 4 arms	Wheeler assemblage								
10.13	Dimple	1			5	7	12		1	26
10.14	Dimple and circle					1	1			2
10.15	Arc and dimple					1				1
10.16	Diagonal lines					2				2
10.17	Elongated dimple					7	7			14
10.18	Loop (spiral)	Roman								
10.19	Fingernail impression					1	1			2
10.20	Basal dimples	Wheeler assemblage								
10.21	Basal cross hatch	Wheeler assemblage								
10.22	Basal spiral								2	2
10.23	Not allocated									
10.24	Not allocated									
10.25	Not allocated									
10.26	Rib	Wheeler assemblage								
10.27	Continuous arcs	Wheeler assemblage								
10.28	Spiral-ended flourish	Wheeler assemblage								

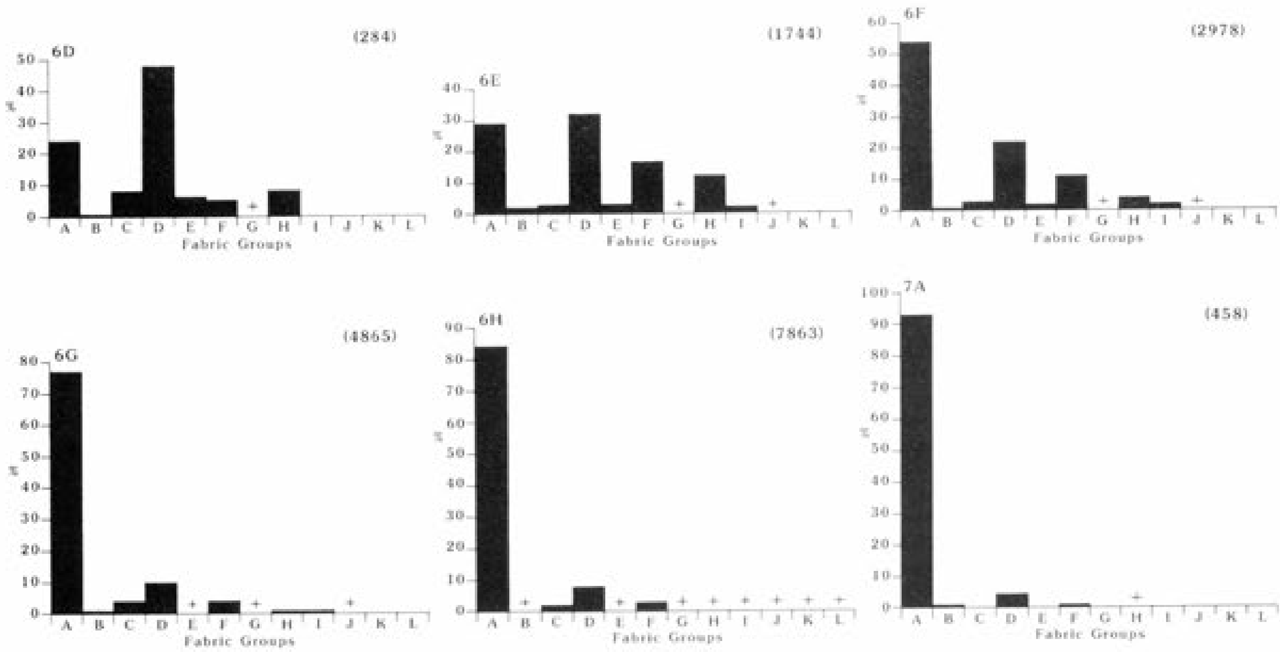


Fig 149 The proportion of the main Iron Age fabric types in the main phase subdivisions

Table 66 The distribution of later prehistoric fabrics by phase

		6D	6E	6F	6G	6H	7A
Fabric	A	69	502	1604	3749	6623	427
	B	2	35	39	33	50	4
	C	23	55	97	218	157	
	D	135	560	674	487	602	22
	E	17	44	47	23	24	
	F	14	290	335	199	253	4
	G	1	10	7	7	12	
	H	23	215	115	68	48	1
	I		32	49	64	59	
	J		1	11	17	21	
	K					3	
	L					11	
Total		284	1744	2978	4865	7863	458

another. For example, fabrics D1 and E1 (fine clays) are chemically and petrologically related, as are fabrics H2, D9, and D16 (which contain varying quantities of calcite). This probably implies, in each case, the exploitation of a single major clay type from a number of localities or horizons, the macroscopic discrepancies being accounted for by variability in quality and quantity of temper and by potting techniques in general.

The range of fabrics used during the early period is, on the whole, represented across the style range with a few exceptions. The very coarse tempered wares (H fabrics) were not used in the manufacture of bowls, nor were the calcite-tempered sandy wares (D9, D16). A limited range of fabrics, including D6, withstood the onslaught of the developed Durotrigian industry and continued to be used into the latest phases, although in restricted quantities.

'Saucepan pots' (form PB1; Fig 159: 5 and 12; Chap 6 fiche) and associated jars (JC2.3; Fig 157: 3; and JD3.0) and bowls (BC1; Fig 157: 11; and BC2; Fig 158: 9) occur in a wide variety of fabrics at Maiden Castle (A2, B4, C3, D1, D2, D5, D6, D8, F1, G1), though represented by a relatively small number of vessels (121 rim sherds in total, of which 33 are form PB1). This heterogeneous scatter indicates the limited presence of elements of the so-called 'saucepan-pot continuum', deriving from areas to the north and east (Cunliffe 1974, 42), amongst the types belonging to the 'Maiden Castle-Marnhull' style in use from about the third century in the Dorset region. Although the 'saucepan pot' form seems to have been a relative rarity in the area, a maximum number of 11 vessels in Poole Harbour ware (fabric A) have been identified. These are presumably local copies of the type.

An even wider range of fabrics was used in the manufacture of the 'saucepan-pot' types PA1–PA3 (Fig 155: 2; Fig 153: 10; Fig 155: 13), which may be prototypes of the PB1 form. A total of 57 rim sherds of these categories produced a fabric range of 15 types (A2, B3, C1, C3, C4, D1, D5, D6, D10, D16, D17, E3, F1, F2, H2). Only six examples are in Poole Harbour fabric (A), perhaps suggesting that the forms were in use in the period between the earliest assemblage and the development of the 'Maiden Castle-Marnhull' styles. This pattern is reflected at Danebury, where the forms span the cp3–cp6 date range, predating the development of the decorated saucepan-pot style (Cunliffe 1984a, 293).

Seventy-one sherds of south-western British ware (form BD6, fabric J), commonly known as 'Glastonbury ware' (and henceforth referred to as such), were recovered from the recent excavations (the larger sherds are illustrated in Fig 162). Sixty-one of these were submitted for TSA (Wheeler's smaller collection was not analysed). The group proved to be significant in that just under one half of the total (29 sherds) matched Peacock's group 5 which contain inclusions of orthoclase felspar, in particular sanidine. The likely source for the fabric is the Permian beds of south-west England, in particular the area north of Watcombe to Exeter and along the Crediton Valley as far as Colebrook. Maiden Castle appears, on present evidence, to represent the easternmost extent of the distribution of

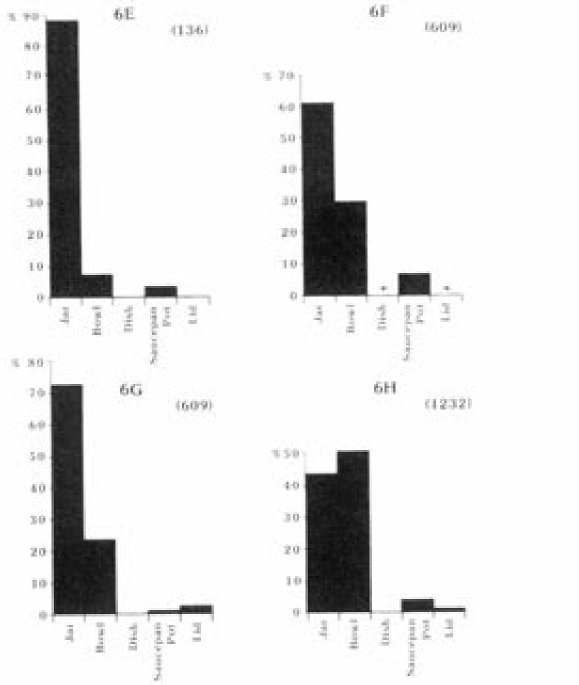


Fig 150 The distribution of the main vessel types by phase subdivision

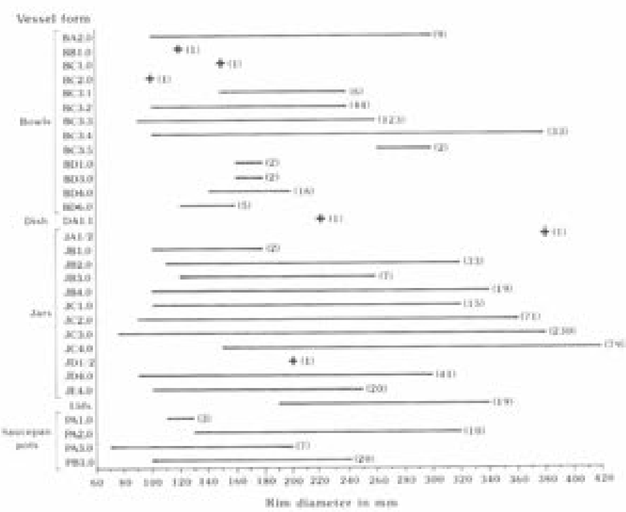


Fig 151 The vessel size range (rim diameter) in the Iron Age

this fabric type. Of the remaining 32 sherds, 28 belong to Peacock's group 1, probably derived from clays overlying the gabbro deposits on the Lizard, Cornwall. There were three shell-tempered sherds (Peacock 1973, group 4) with a possible Jurassic origin and one calcite-tempered sherd (group 3) with a source in the Mendip region.

It is now generally thought that 'Glastonbury wares' were being produced and distributed from the beginning of the fourth century BC. At Maiden Castle, they occur in small quantities from phase 6F. The single, calcite-tempered sherd was recovered from a 6E deposit, a silt layer (6485) in the quarry hollow. Of the remainder of the stratified sherds, 9 were from 6F contexts, 21 from 6G, and 29 from 6H. Marginally more of the sanidine type were from 6F and 6G deposits than the gabbroic type, of which over half belong to phase 6H. This may indicate a displacement of sanidine wares in favour of gabbroic wares in the latest period. Wheeler ascribed a date range of 25 BC – 30 AD to all of his 30 or so sherds of 'Glastonbury ware'. This he seems to have done purely on the basis of association with bead-rim vessels of his types Bii and Biii, which, he argued, do not predate the mid first century AD (Wheeler 1943, 209). This chronology is clearly no longer acceptable and must throw some doubts on his dating of various features containing such pottery, if it is not corroborated by stratigraphic evidence.

The utilisation of fabric A derived from Poole Harbour has rarely been discussed, other than in the context of the first century BC/AD Durotrigian assemblage and the Roman Black Burnished Ware I industry. At Maiden Castle, there is evidence for much earlier exploitation of this clay source. Phase 6D and E deposits have produced jars of forms JB2, JB4 (Fig 152: 8) and JC1 (Fig 153: 3) and bowls of type BA2 in fabrics A1 and A2. Wheeler's 'period A' collection also contains Poole Harbour wares, including two 'haematite-coated' bowls (Wheeler 1943, fig 56, 12 and 15) and jars (Wheeler 1943, fig 57, 33 and fig 59, 56 and 63). Furthermore, phase 6E contexts in the 1985–6 excavations have produced a form of ovoid jar with a distinctive cabled rim, form JC3.12 (Fig 153: 21 and 22) and another with a lid-seating, form JC3.11 (Fig 153: 23), all in fabric A2. A small number of these occur in later contexts, but the type almost certainly has an early origin. There are no examples of typologically early forms in the coarse A fabric, AO. This may be a reflection of the small quantity of this textural subtype recovered, but equally it may prove to have chronological significance.

The demonstrably early exploitation of the Wareham-Poole Harbour clay source is not surprising, but it complicates even further the long-standing issues of chronology and continuity within the Durotrigian ceramics industry. The developed industry of the mid first century BC was clearly the product of a gradual process. The early use of the Poole Harbour fabrics has been demonstrated and, by the third century at the latest, a well-established stylistic tradition, now commonly referred to as the 'Maiden Castle-Marnhull' style (Cunliffe 1974, 47–8), was dominant in the region. The assemblage includes flat-based, bead-rimmed bowls and jars, some with countersunk lugs, frequently decorated with scrolls, waves, 'eyebrows', dimples, and other motifs. The commonest forms of decoration in the Maiden Castle assemblage are single eyebrows, waves, and dimples (Table 65). Examples of all of these are present in phase 6F deposits, but they occur far more commonly in phases 6G and H. The majority of sherds recovered were so fragmentary that combined motifs are underrepresented. The lattice design so common in the Black Burnished Ware I assemblage does appear to be a very late feature, occurring almost exclusively on sherds from post-conquest deposits.

Several examples of vessels in fabric A with a boss motif occur in the assemblage. The type is not noted by Wheeler, although his collection contains at least three examples (1943, fig 56, 15). The motif is a feature present from 6F onwards, although the early examples are applied bosses and the later ones formed by push-

Table 67 The presence of residues on Iron Age vessel forms

Ceramic type	*Organic residue*		*Limescale*		*Soot*		*Vessel total*
	no	*%*	*no*	*%*	*no*	*%*	
BA2	1	3	–		8	21	38
BC1	1	25	–		1	25	4
BC2	–		–		4	100	4
BC3	28	6	11	2	19	4	458
BD3	–		–		1	50	2
BD4	1	5	–		1	5	20
BD6	14	20	–		3	4	71
JA1/2	1	100	–		1	100	1
JB1	2	50	–		–		4
JB2/3	41	28	1	0.7	22	15	145
JB4	18	37	1	2	9	18	49
JC1	5	12	–		6	14	42
JC2	38	28	1	0.7	22	16	138
JC3	58	13	1	0.2	12	3	463
JC3.CSL	2	18	–		4	36	11
JC4	3	2	1	0.5	2	2	168
JC4.CSL	–		1	50	–		2
CSL	23	18	4	3	10	8	129
JD4	7	9	1	1	5	6	82
JE4	1	2	–		1	2	51
PA1	1	17	1	17	1	17	6
PA2	4	20	–		5	25	20
PA3	5	42	1	8	2	17	12
PB1	4	13	–		3	9	32
LID	5	11	–		6	13	47

Note: This table represents an attempt to assess more accurately the function of various vessels. The presence of residues adhering to sherds was recorded. Carbonised organic residues (food remains), soot, and limescale were noted. The results are inconclusive, but it appears that fewer vessels were used for boiling water than for cooking food. The presence of soot has controversial implications, because sooting can easily occur as a result of activity unrelated to vessel function. Two or three of the residues sometimes occur in combination on one sherd.

ing outwards from the interior of the pot. The boss is sometimes emphasised by a circular depression (Fig 160: 6, 9), apparently only in the latest phases. Ten examples of sherds with the boss motif were recovered from the recent excavations, five from phase 6F, two from 6G, and three from 6H (Fig 160: 11 may be a residual sherd, since it is precisely paralleled by Wheeler's fig 56, 15 which is from a mid-period A context). This example of continuity in decorative technique may have implications for the development of the industry as a whole. The presence of a lug (Fig 153: 7) in fabric D9 from a phase 6E context may support the argument that the later, countersunk lug forms in fabric A were drawing on an established local tradition, rather than deriving from a Breton source as suggested by Wheeler (1943, 56). Furthermore, his allocation of a mid first century BC date for the bead rim has rightly been reconsidered. Wheeler (1943, 213) and Brailsford (1958, 104) both believed that the flat-rimmed jar (JC4.O; Fig 159: 2) was a survival of an 'Iron Age A' type (JC1.O; Fig 155: 15) and, whilst there is little doubt of this, it is probably no less true of several other forms.

It seems worthwhile to reconsider the status of several vessel styles within the mid first century BC Durotrigian industry. The flat-based bead-rim bowl (BC3.3; Wheeler 1943, fig 66, 100; Fig 158: 5) is omitted from Brailsford's (1958) assemblage, although at Maiden Castle and several other sites these are present in considerable numbers in association with pedestalled and 'war cemetery' bowls (BC3.21, BC3.22; Wheeler 1943, 171–82, fig 72). Fragmentary sherds of these three types are difficult to categorise, especially where basal profiles are absent, but the war cemetery bowls can often be distinguished by their superior (sometimes wheel-turned) finish. Brailsford considered the flat-rimmed jar (JC4.O) to be somewhat of an outlier to the assemblage – an 'associated form' (Brailsford 1958, fig 1). In fact, assemblages from Hengistbury Head and Maiden Castle both prove this to be among the commonest forms of the developed industry. Phase 6H at Maiden Castle produced sherds representing 67 individual vessels, as compared to 34 in phase 6G and 9 each for phases 6F and 6E.

Examples of Brailsford's type 3 (BC3.42; Fig 152: 4) are quite rare in the Maiden Castle assemblage and occur, with a single exception, in the latest phases (6G, 6H, 7A). His type 7, the olla, is absent altogether from the site and may prove to be a strictly post-conquest type. Only two handled tankards (BC3.12) have been recovered, both by Wheeler. Petrographic analysis (Colston, Chap 6 fiche) carried out on one of these (Wheeler 1943, fig 74, 227) indicates that its fabric composition does not correlate well with Poole Harbour wares, although macroscopically it resembles fabric A3. Analysis on examples of this form from other sites may indicate whether a distinct clay source was being used by a specialised sector of the industry to produce these vessels in small numbers, perhaps for a specialised market.

Jars with upright rims (JE4.O; Fig 161: 19 and 20; Brailsford 1958, type 5) and squat-necked jars (JD4.5; Fig 164: 3) occur in small numbers at Maiden Castle in the latest phases (6G, 6H, 7A, 9A, and Wheeler's 'Belgic levels'). Whilst form JE4.O was equally rare at Hengistbury Head, form JD4.5 was relatively common. Although the evidence is tenuous, this may reflect differing market demands. Brailsford did not recognise JD4.5 as a standard type, although it occurs in most major Durotrigian assemblages, including Tollard Royal (Wainwright 1968, fig 17, 42) and Gussage All Saints (Wainwright 1979a, fig 65, 701).

The tazza (BD7) and cordoned bowl forms (BD1, BD2) were regarded by Brailsford (1958, 104) as types often found in association with the Durotrigian products. Examination of these forms as part of the present project and NAA carried out on examples from Hengistbury Head (Cunliffe 1987, figs 166, 437; 163, 438; 179, 1277) indicate that the forms were copied in Poole Harbour or related fabrics and must not, therefore, all be regarded as exotics. Maiden Castle produced few tazza, but Wheeler's vessel 215 (1943, fig 74) is a Poole Harbour product.

The recent excavations produced a small number of sherds of wheelmade pottery from Armorica (Chap 6 fiche), all from phase 6H deposits. Fourteen sherds of these imports were recorded, of which seven were positively identified by TSA, one of fine ware (fabric K) and six of micaceous ware (fabric L). With one exception (Fig 160: 1), the sherds were too fragmentary for vessel form identification, but at Hengistbury Head, where the wares were present in large quantities, fabric K was represented by cordoned bowls (forms BD1,

Table 68 The distribution of vessel type by phase

		6D	*6E*	*6F*	*6G*	*6H*	*7A*
Form	JA1/2		1				
	JB1				2		
	JB2	6	10	8	22	2	
	JB3		1	4	4		
	JB2/3	2	26	11	11	13	1
	JB4		15	19	11	4	
	JC1		11	17	10	15	
	JC2		20	29	37	83	3
	JC3	2	17	46	233	180	4
	JC2/3	1	3	16	8	5	
	JC4	1	8	12	35	85	3
	JD3					13	
	JD4		5	10	25	68	1
	JE4				6	9	5
	BA2	4	3	8	7	10	
	BB1				1		
	BC1			1	1	1	
	BC2	3			1	1	
	BC3		4	56	76	323	
	BC3/JC3		3	17	40	260	
	BD1					2	
	BD2					2	1
	BD3					1	
	BD4			2	3	12	1
	BD6			10	14	15	
	BD7	Wheeler only					
	DA1			1			
	DA2	Wheeler only					
	PA1			1		2	
	PA2		4	15	4	4	
	PA3		1	4		6	
	PB1	1		2	3	35	3
	LID			2	16	14	4
	CSL	1	4	22	39	67	2
Total		21	136	313	609	1231	51

BD2) and fabric L by rilled bowls (BD3). These wares and their sources have been discussed in detail in the report on the excavations at Hengistbury Head (Cunliffe 1987, 211 and 310). Maiden Castle produced eight copies of the cordoned bowl forms, one each in fabrics A1 and A2 and six in A3. All were recovered either from the topsoil or from late deposits (phases 6H, 7A, 9A). Five vessels of the form were identified in the Wheeler collection, of which at least four were in fabric A3 (one vessel was not examined). The rilled bowl form (BD3) does not seem to have been copied by the Poole Harbour industry.

Deciding on an approach to examining and recording the apparently monotonous Poole Harbour fabrics, which make up the 'Maiden Castle-Marnhull' and developed Durotrigian assemblages, has always been problematical. Williams (1977) and Peacock (1973) have traced the sources of Durotrigian and Black Burnished I fabrics. It is necessary, however, to attempt to delineate variations of fabric in vessel forms through time, in order to broach the problem of specific dating and to shed light on the nature of the industry and its market in general. The most obvious variation within the general fabric type (A) is the quantity and grain size of sand temper within what is an apparently homogeneous clay matrix. For the purposes of recording and analysis, the fabric was subdivided into four groups based on textural variation. Results of NAA, TSA, and HMA so far indicate that these analyses offer a reasonable basis for identifying the fabric in vessel forms not conventionally regarded as belonging to the Durotrigian tradition (eg early jar and bowl forms and cordoned bowl copies) and in isolating petrographic anomalies, such as handled tankards. Analyses of a sample of 285 sherds (a preliminary analysis by Colston is presented in Chap 6 fiche) have indicated no clear correlation between specific vessel forms and fabric subtypes, but have produced clear groupings of sherds which, whilst including a range of the standard forms, are chemically anomalous. Analysis of a larger sample from Maiden Castle and comparisons of Poole Harbour wares from a number of assemblages may produce clearer results in the long term. Maiden Castle has produced sherds in a wide variety of textures, whereas products from Hengistbury Head, on the fringes of the distribution area, are confined to textural groups A2 and A3. Maiden Castle may represent the widest part of the receiving end of the industry, perhaps drawing on a large number of production centres, whilst Hengistbury Head was served by a limited sector of the industry.

In an attempt to assess the function of vessel types, the presence of residues (Table 67) and the vessel size ranges (by rim diameter, Fig 151) were recorded. No direct correlation between vessel size and presence of residues could be drawn, although it can be noted that form JC4, the overall largest form, seems rarely to have been used for cooking or for boiling water, perhaps indicating its use primarily as a storage vessel. A surprisingly high number of bowls, even decorated types (20% of 'Glastonbury wares') produced carbonised organic residues, indicating their use in cooking. A smaller range of vessels seems to have been used for boiling water than for cooking.

Stratigraphic groups

Much of the later prehistoric pottery, by its very nature, defies precise dating. Categorisation was, therefore, carried out with the stratigraphic phases clearly in view and parallels have been drawn with stratified groups from other sites in the region (see discussion). Tables 66 and 68 and Figures 149 and 150 indicate quantities of fabrics and forms present in the six major Iron Age phases of the recent excavations (the Wheeler assemblage was not quantified in the same way, because of its obvious selective recovery).

It must be recognised when dealing with the Maiden Castle assemblage that even the presence of a stratified sequence and comparable material from other sites is of limited value. It has become increasingly clear in the assessment of ceramic assemblages that redeposition, especially on a site with stratified deposits, is a major problem. Recent work on the Danebury material indicates that, for a large proportion of contexts, up to 100% of the pottery is residual. Table 68 demonstrates that most of the early-style bowls (BA2, BB1) and many of the early jar forms (JB1–JB4) were recovered from late contexts. The problem is compounded by the very nature of the Poole Harbour industry. Conservatism of production techniques and pottery styles makes any distinction between the Iron Age and Roman material difficult to discern until the development of the Black Burnished industry proper. Furthermore, internal

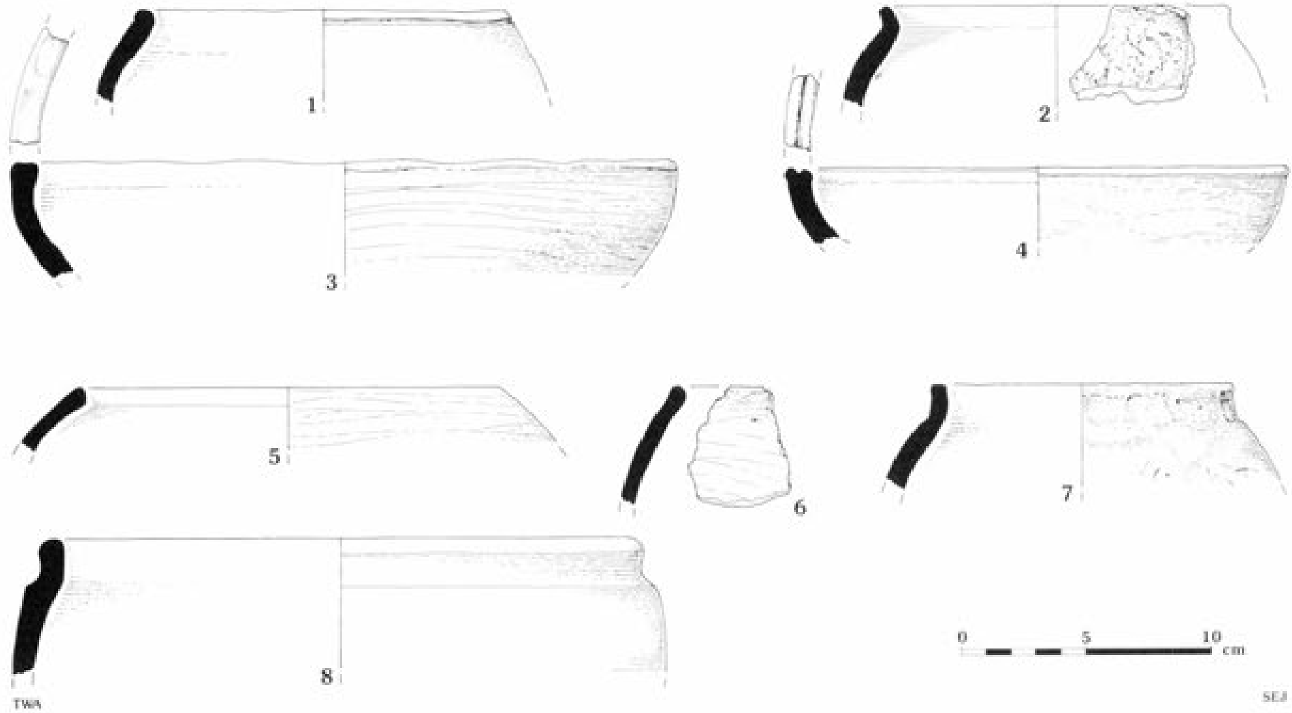


Fig 152 Iron Age ceramics (information recorded in order: illus no; AOR no; form; fabric; context), Phase 6C: 1) 3012; JC2.3; A2; Tr II 331 (425); 2) 3027; JC2.3; D13; Tr II 331 (431); 3) 3018; BC3.41; A2; Tr II 331 (330); 4) 3019; BC3.42; A1; Tr II 331 (330) Phase 6D: 5) 3020; JC2.2; A2; Tr III 858; 6) 3021; JC2.3; A2; Tr III 858; 7) 3023; JB2.3; E1; Tr III 894; 8) 3022; JB4.1; A1; Tr III 858

chronological divisions in the pre-Roman period must, at this stage, be largely dependent on three factors: a reliable stratified sequence, a comparison of quantities of Poole Harbour wares with other fabrics, and association of these wares with other pottery types, datable artefacts, and materials which can provide sound absolute dates.

The stratified sequence, although somewhat restricted in physical size, has provided a broad view of the emergence of the Poole Harbour industry as the major source of ceramics for Maiden Castle (72% altogether), but this development occurred fairly early on in the sequence (phase 6F), and we are left with few chronological indicators for the latest phases. Very generally, it appears that the higher the quantity of Poole wares in relation to other types, the later the date, but this conclusion can provide nothing more than a very broad relative dating system. Few datable artefacts were recovered and many of these have a wide date range (of a century or so). Furthermore, only three magnetic dates and no radiocarbon dates were obtained for the Iron Age sequence. Most of the diagnostic pottery types (eg 'Glastonbury wares' and decorated 'saucepan' pots) themselves span a wide date range. It is hoped that the current programme of research on Poole Harbour wares being undertaken by this author will throw some light on the problems of chronology of the Iron Age in Dorset.

For reasons suggested above, precise dates are difficult to assign for much of the Iron Age pottery. The dates suggested below derive from a combination of conventionally accepted dating, in particular the Maiden Castle-Marnhull style sequence (Cunliffe 1974), and the proposed chronologies of assemblages from Gussage All Saints (Wainwright 1979a), Tollard Royal (Wainwright 1968), Hengistbury Head (Cunliffe 1987), and Danebury (Cunliffe 1984a).

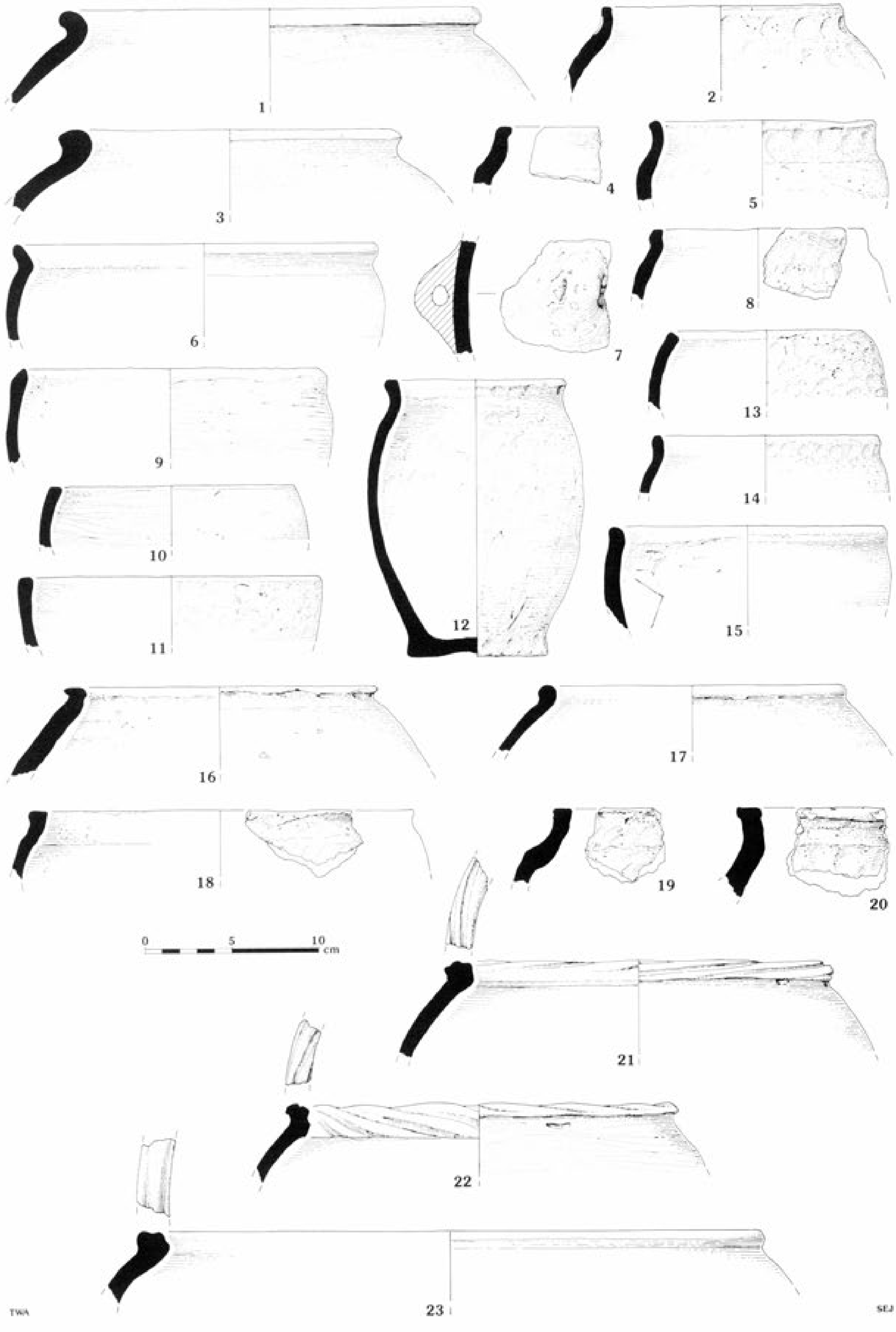
Phase 5

The recent excavations produced a negligible quantity of pottery from contexts relating to the Early Iron Age. The primary and secondary rampart and ditch in trenches I and II (phases 5A, 5B, 5C) together produced only eight sherds in a variety of fabrics. Wheeler's excavations produced Early Iron Age types, mostly situlate jars in oolitic and fine sandy fabrics.

Phase 6

Most of the Iron Age pottery from the recent excavations was recovered from trench IV and belongs to the Middle and Late Iron Age occupation of the hilltop. The stratigraphy in trench IV has been divided into four successive phases: 6E, 6F, 6G, and 6H, which can be used to subdivide the assemblage. The only other trenches which produced sufficient pottery to compare with these subdivisions were

Fig 153 (opposite) Iron Age ceramics, Phase 6E: 1) 3376; JC3.1; A1; Tr IV 6602; 2) 3380; JB4.0; H4; Tr IV 6602; 3) 8702; JC1.1; A1; haematite coated; Tr IV 6602; 4) 3388; JB3.1; D1; Tr IV 6485; 5) 3032; JB2.0; F1; Tr IV 6602; 6) 3377; JC2.0; A2; haematite coated; Tr IV 6602; 7) 8651; Lug; D9; Tr IV 6498; 8) 3381; JB4.1; E1; Tr IV 6602; 9) 3379; JC2.2; D5; Tr IV 6602; 10) 3383; PA2.1; D6; Tr IV 6485; 11) 3390; PA2.1; H2; Tr IV 6485; 12) 8681; JB2.3; F2; Tr IV 6602; 13) 3384; 14) 3389; 15) 3382; JC2.1; D1; Tr IV 6485; 16) 3117; JC1.1; D1; Tr IV; 5962; 17) 3386; JC2.3; A2; Tr IV 6485; 18) 3387; JB4.1; H2; Tr IV 6485; 19) 3385; JB2.2; H2; Tr IV 6485; 20) 3378; JB2.1; H5; Tr IV 6602; 21) 8623; JC2.0 (misc); A2; Tr IV 6485; 22) 8689; JC2.0 (misc); A2; Tr IV 6609; 23) 8625; JC2.0 (misc); A2; Tr IV 6485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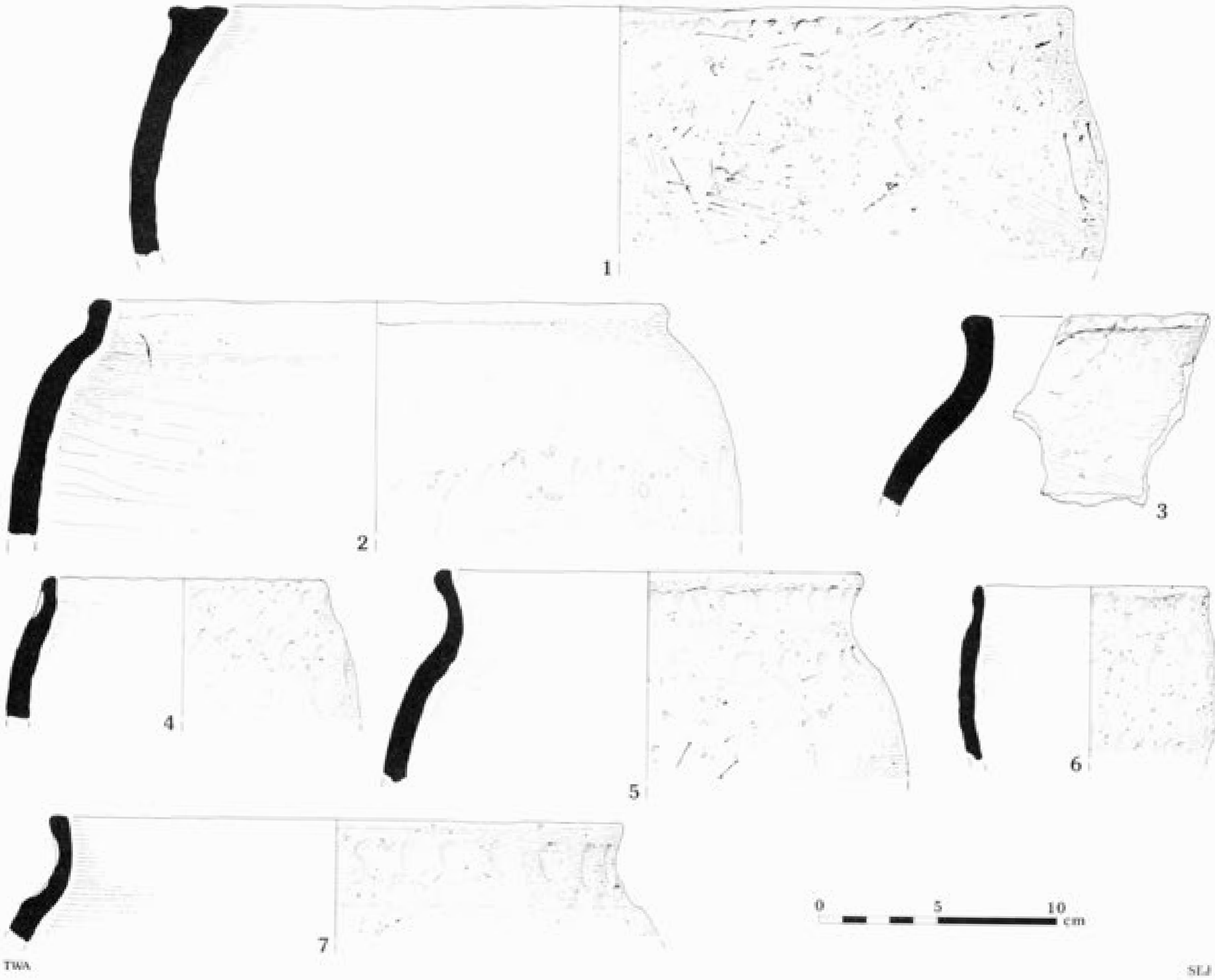


Fig 154 Iron Age ceramics, Phase 6E: 1) 8615; JA1.2; C3; Tr IV 6512; 2) 8619; JB2.3; D1; Tr IV 6487; 3) 8624; JB3.0; D16; Tr IV 6487; 4) 3132; JB2.3; D8; Tr IV 6039; 5) 3033; JB3.1; D5; Tr IV 5062; 6) 3160; JB4.1; D5; Tr IV 5062; 7) 3159; JB2.3; D6; Tr IV 5062

trench II and III, in the centre of the hilltop. In trench III (phase 6D; Fig 24), the assemblage contains no forms necessarily later than the third century BC, which would suggest that the occupation in this trench is contemporary with the earliest features in phase 6E. In trench II (phase 6C; Fig 152), pit 331 contained a large quantity of Poole Harbour Wares, which suggests a date late in the first century BC, contemporary with phase 6H or possibly 6G.

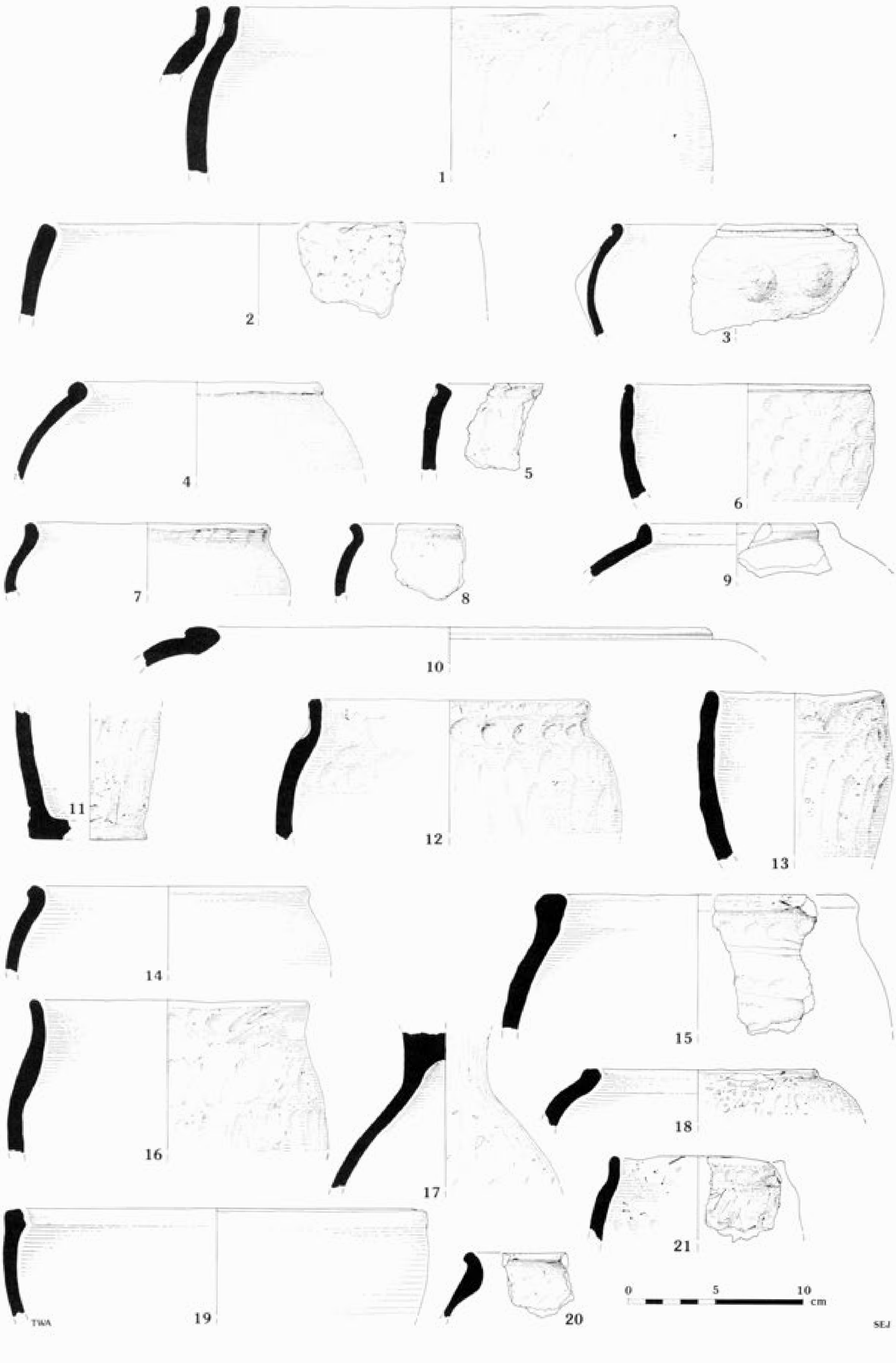
The pottery recovered from the earliest phase, 6E (Figs 153 and 154, and from the contemporary material in the Wheeler collection), was not typologically distinguishable from the Early Iron Age fort material (Wheeler's period 'A' pottery), apart from the appearance of bead-rim bowls and jars in Poole Harbour fabrics (Wheeler 1943, 103), which were used to distinguish 'B' forms.

The largest assemblage, over 800 sherds, came from the fills of the central quarry hollow. 20% of this was composed of Poole Harbour products (some with red finish). Many fabrics were present and most recognisable vessels were situlate jars (see Fig 153). Amongst these were vessels with distinctive twisted-rim forms (Fig 153: 21, 22). A date in the third century BC, or perhaps earlier, would be appropriate for this group.

Very little material came from the other features, but what there was suggested that the western quarry hollow and 'four-poster' were later in date (they produced relatively large quantities of Poole Harbour Wares), and that the chalk rubble structure at the top of the central quarry hollow was not necessarily associated with the adjacent eastern gully. The silts sealing the central quarry hollow showed only a slight rise in the proportion of Poole Harbour Wares, 28%, and the forms are mainly Early Iron Age types (Fig 153: 16; Fig 154: 2, 3).

The assemblage recovered from phase 6F contexts (Figs 155 and 156) is broadly homogeneous in all the areas examined and, in general, supports the argument that the three houses were occupied contemporaneously. Poole Harbour Wares constitute approximately 60% of the fabrics and many of the classic Dorset forms are represented. Isolated sherds of 'Glastonbury Wares' are a recurrent feature of all three houses. It should be emphasised that very few sherds were recovered from the western and south-western houses (64 and 37 sherds respectively). The relatively large assemblage from the

Fig 155 (opposite) Iron Age ceramics, Phase 6F: 1) 8499; JB4.1; D1; Tr IV 6359; 2) 8318; PA1.1; C4; Tr IV 5960; 3) 7797; BC3.3; A2; Tr IV 5006; 4) 3375; JC3.1; A2; Tr IV 6310; 5) 3028; JA1.0; D1; Tr IV 5960; 6) 3107; PA3.1; D8; Tr IV 6122; 7) 3263; BC1.1; A2; Tr IV 6091; 8) 8650; BC1.1; D12; haematite coated; Tr IV 6091; 9) 3371; JC3.1; A2; Tr IV 6198; 10) 3370; JC4.2; A2; Tr IV 6198; 11) 8694; BS5.5; F1; Tr IV 6593; 12) 8682; JB2.3; D1; Tr IV 6569; 13) 8722; PA3.1; F1; Tr IV 6652; 14) 8675; JC2.3; A1; Tr IV 6582; 15) 8684; JC1.1; H2; Tr IV 6077; 16) 8469; JB2.2; D1; Tr IV 6265; 17) 8401; Lid; D5; Tr IV 6264; 18) 8509; JC1.1; H5; Tr IV 6287; 19) 8436; BC3.42; A1; Tr IV 6205; 20) 3374; JD4.4; A1; Tr IV 6355; 21) 3131; JB4.1; D5; Tr IV 5937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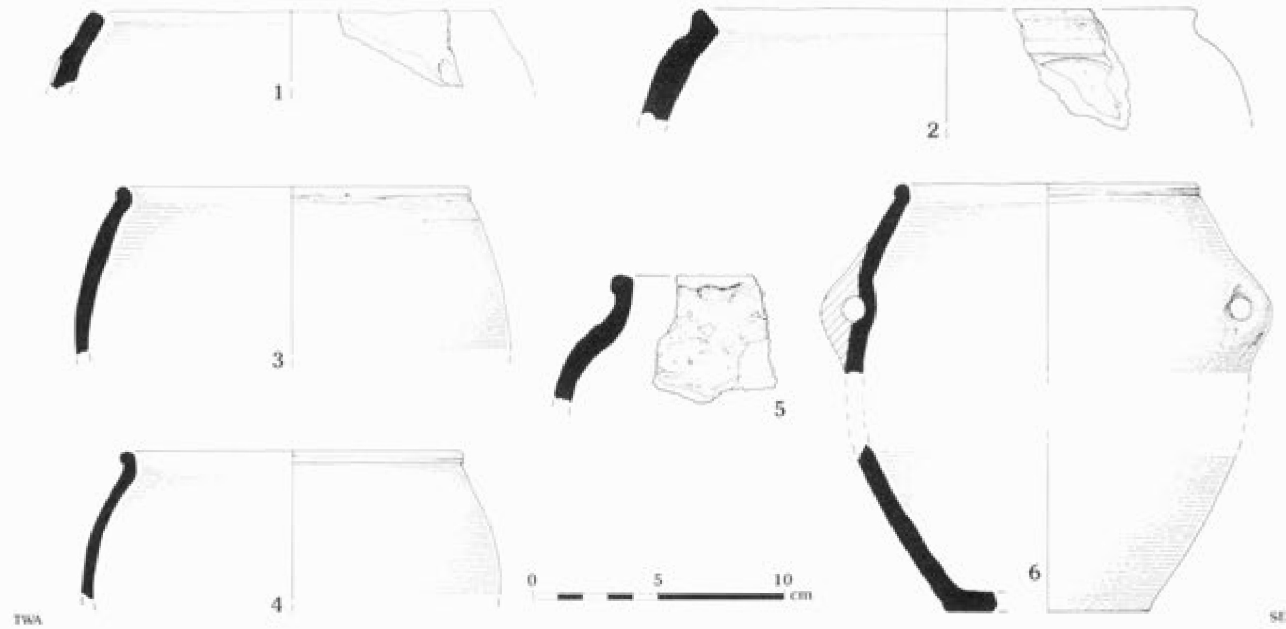


Fig 156 Iron Age ceramics, Phase 6F: 1) 3373; JC2.0; A2; Tr IV 6623; 2) 8707; JB4.1; C4; Tr IV 6623; 5) 8705; JB2.0; H5; Tr IV 6623; Phase 6G: 3) 3106; JC2.2; E1; Tr IV 5916; 4) 3122; JC2.3; D1; Tr IV 5916; 6) 8402; JC3.1.CSL; E1; Tr IV 5914

central house shows some variation in the percentage of Poole Harbour Wares. The bank surrounding the houses contained 40% fabric A, the chalk dump in front of the entrance 33%, and the occupation layers in the interior 60%. This would suggest that the first two contexts contain a large quantity of derived material, as is probably the case with the chalk rubble layers which form surfaces between the houses. Taken together, the pottery assemblage suggests a date in the late second century BC for phase 6F.

The assemblage from phase 6G is dominated by Poole Harbour Wares which make up 77% of the assemblage. The thick silt layers which separate phase 6G from phase 6F produced almost 900 sherds, of which 83% were of fabric A. Most of the vessels are Dorset forms (Figs 157: 7, 8, 9, 10, 14; 158: 1). A date from the early to middle of the first century BC would be appropriate for the assemblage from this phase.

The rubble floors of the eastern house produced over 300 sherds (50% Poole Harbour Ware) with bead- and flat-rimmed jars (Fig 157: 11, 15) and 'Glastonbury Wares'. The pottery from the two outer gullies was chronologically indistinguishable, apart from some residual Early Iron Age material in the earlier gully (Fig 157: 2). The late gully contained a sherd of rouletted shell-tempered ware (Fig 158: 12), identical to a type associated with Armorican imports at Hengistbury Head (Cunliffe 1987, 227–8). This would support a date in the first half of the first century BC for this assemblage.

The increasing importance of Poole Harbour Wares during this phase is clearly apparent in the material from successive western houses. The assemblage from the early house contained 90%, whereas the assemblage from the later house had 95% Poole Harbour Wares. The silt layer between the two houses produced 84% and a sherd of rouletted, shell-tempered ware (Fig 158: 14), which is possibly from the same vessel as no 12 in the eastern house. The proportions of Poole Harbour Ware in the assemblage from the linear bank, which divides the trench, and the hollow (5499), lying to the north-west of the bank, are similarly high.

The outstanding feature of the phase 6H assemblage is the very high proportion of Poole Harbour Wares, in particular forms BC3 and JC3 (Table 68). This was 85% overall and this figure is set against a certain proportion of redeposited material.

The complex of features in the south-west corner of the trench contained a mixed assemblage with a very high percentage of Poole Harbour Wares. No specific chronological distinctions were visible between contexts, but some of the stratigraphically later layers contained sherds of Armorican rilled ware. These are present at Hengistbury Head in contexts dating to the first half of the first century BC (Cunliffe 1987, 211, fig 168–72). Sherds of Armorican rilled and cordoned wares were also recovered from two pits (5708 and 5338) which, having no secure stratigraphic location, have been placed in phase 6H on the evidence of the pottery.

A relatively large number of 'saucepan pots' (form PB1) were recovered from phase 6H contexts, 35 sherds in all. Two examples (Fig 159: 3, 5) were associated with a possible house in the south-east corner of the trench, one of the latest features (a complete list of saucepan pots recovered in the recent excavations, with their provenances, is given in Chap 6 fiche).

The area of the phase 6G eastern house was abandoned and cut by pits in phase 6H. One of these, pit 6192, was particularly prolific (510 sherds), but contained a high component of residual material, including a third century BC brooch. The presence of this material casts some doubt on the date of several boss-decorated bowls (Fig 160: 6, 9, 11), especially since the motif appears to have early origins (Wheeler 1943, fig 56, 15) and is present on sherds from phases 6F and 6G. The pits which produced these three sherds, however, were apparently securely stratified in phase 6H.

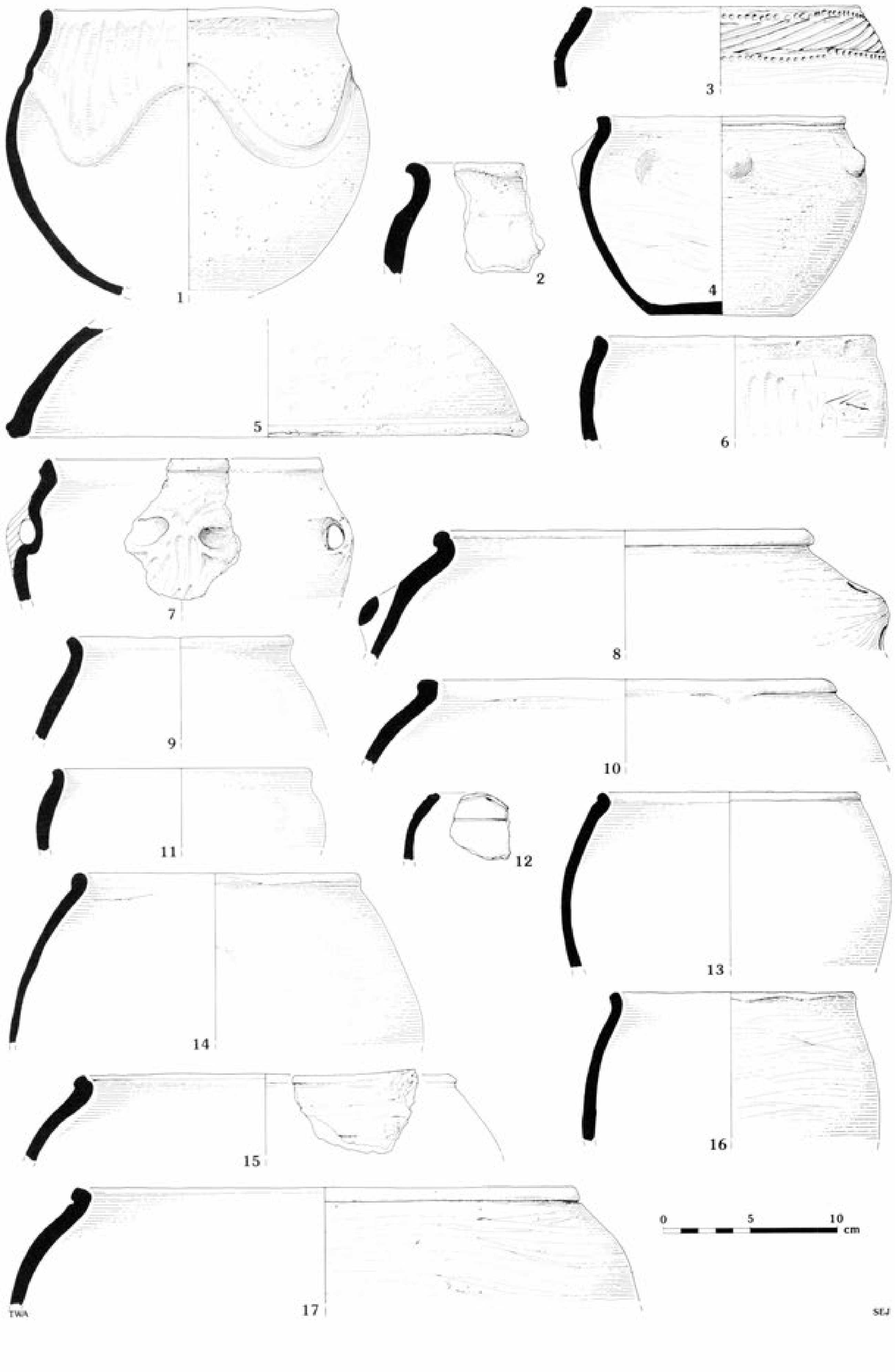
Phase 7

Trench VI produced relatively little pottery, and fabric A accounts for 93% of the total (100% in some contexts). The most common vessel forms are bead-rim bowls (BC3) and necked jars (JE4). In addition to the standard Durotrigian forms, necked bowls and cordoned bowls with pedestal bases imitating Armorican forms were present in small numbers (Fig 161: 6, 7).

Phase 9

The material of the mound, in trench VI, produced 449 sherds of which 95% were fabric A. Of this group, 27% were positively identified as Black Burnished 1. The figure is likely to be even higher, but it is rarely possible to distinguish between Durotrigian Wares and Black Burnished 1 without diagnostic sherds. A high proportion would be consistent with a late Roman date for the reorganisation of

Fig 157 (opposite) Iron Age ceramics, Phase 6G: 1) 8142; JC3.1; A1; Tr IV 5614; 2) 3240; JB2.3; F1; Tr IV 5155; 3) 7798; JC2.3; D1; Tr IV 5263; 4) 7938; BC3.3; A3; Tr IV 5263; 5) 8134; Lid; A1; Tr IV 5684; 6) 7946; JC2.0; D1; Tr IV 5263; 7) 7885; JC3.1.CSL; A0; Tr IV 5412; 8) 7894; JC3.1.CSL; A1; Tr IV 5412; 9) 7975; JD4.4; A2; Tr IV 5483; 10) 8148; JC3.1; A2; Tr IV 5412; 11) 3111; BC1.1; D1; Tr IV 5884; 12) 8648; BC2.0?; D9; Tr IV 6139; 13) 8138; JC3.1; A2; Tr IV 5778; 14) 8159; JC3.1; A2; Tr IV 5778; 15) 3372; JC3.11; A2; Tr IV 5884; 16) 8193; JC2.1; A2; Tr IV 5778; 17) 8613; JC3.13; A1; Tr IV 6330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the eastern entrance. Similarly, 25% of the pottery from the ditch (7028) between the rampart and mound is Black Burnished 1.

Discussion

Taken as a whole, the assemblage divides naturally into two broad chronological groups. In the early period, an apparently large variety of clays and tempers collected from numerous sources were used in the manufacture of a range of coarse wares. The later period is characterised, at its outset, by a doubling in quantity of one fabric group (A) which, at that point, accounts for over half of the pottery. By the end of this period, there was a virtual saturation of the market by Durotrigian wares. In both periods, imported pottery was present only in small quantities.

The earliest material seems to have derived largely from local stylistic traditions and from local clay sources, in particular the Ridgeway. The range of vessel forms is relatively small and the fabrics, although in detail quite varied, represent a few compositionally or chemically related clays, variously tempered and treated. This group correlates reasonably well with assemblages from period II at Eldon's Seat (Cunliffe and Phillipson 1968), site D at Chalbury Camp (Whitley 1943), period 1 at Gussage All Saints (Wainwright 1979a), and period 2 at Rope Lake Hole (S Davies 1986). Maiden Castle produced, in common with Eldon's Seat, Chalbury Camp, and Gussage All Saints, a high component of devolved, largely undecorated situlate jars and with all four sites a number of undecorated, flared-rim bowls which are frequently red finished. The extensive use of fingertip and nail decoration typical of the Kimmeridge II assemblage (H Davies 1936) and present at Hengistbury Head (Cunliffe 1987) is largely absent at Maiden Castle, suggesting either a later date for the site's initial Iron Age occupation, or a lack of direct derivation from the early Purbeck types. Furthermore, Maiden Castle produced very few of the steeply-angled, carinated, bipartite bowls which dominate in period 1 at Rope Lake Hole (S Davies 1986, fig 79: 8–10) and in the Kimmeridge group (Cunliffe and Phillipson 1968, fig 23: 18–25). This lends further support to the argument for a somewhat later start to the Iron Age occupation of the hillfort – perhaps between the fifth and third centuries BC.

The provenance of the 'saucepan pots' and associated jar forms is problematical. Most were recovered from phase 6H or later contexts (Table 68). At Danebury, the forms are assigned a 'ceramic phase' range of 6–7, with *c* 400 BC as the starting point (Cunliffe 1984a, 293). At Gussage All Saints, 76% of 'saucepan pots' derive from period 2 deposits and the 4% from period 3 were considered to be residual (Wainwright 1979a, 56). If the proposed date of the third century BC for period 2 at Gussage All Saints is accepted (and this accords well with the Danebury dating), the discrepancy is obvious. The direct association of saucepan pots with Armorican imports at Hengistbury Head (Cunliffe 1987) does, however, suggest the probability that the type was being produced well into the first century BC and that the style should no longer be considered a mainly Middle Iron Age feature. Significantly at Maiden Castle, as at Hengistbury, it is not only locally produced copies which occur in the late contexts, but also examples identical to the Danebury types (compare Fig 159: 12 with Cunliffe 1984a, fig 6.70–6.76) which could be products of the same production centres.

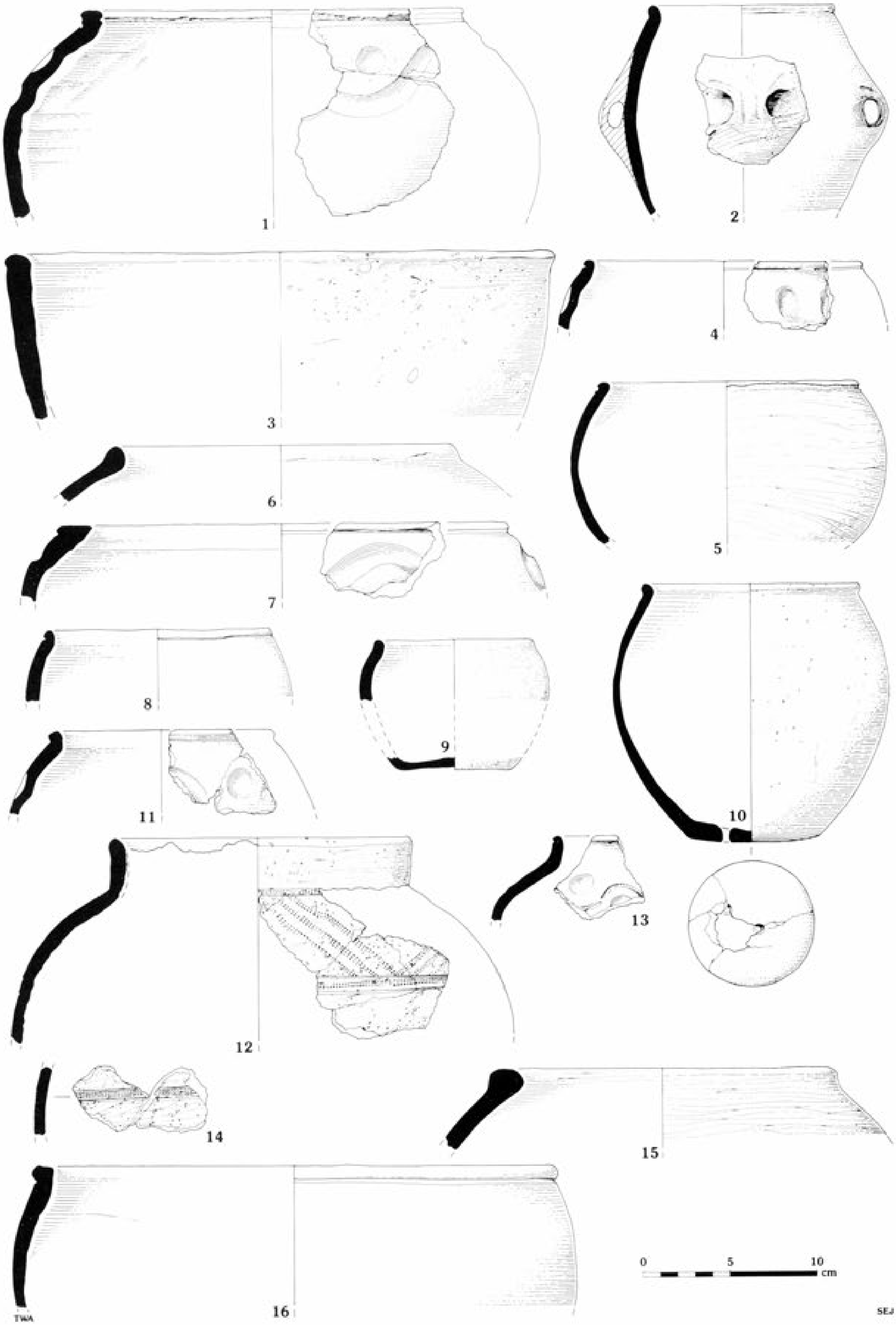
The paucity of saucepan pots in all phases of occupation could be construed as a sign of the continuing insularity of the region, but Durotrigian potters were, from about the third century BC, copying the type in Poole Harbour fabrics, and flint-tempered imports are present, though rare. Furthermore, from phase 6F 'Glastonbury Wares' were imported, demonstrating contact with their neighbours to the west.

The developed Durotrigian pottery industry of the mid first century BC clearly had its roots in the Maiden Castle-Marnhull tradition dating from the third century BC onwards. Products of the same clay sources are present in small quantities in the earliest ceramic assemblage, however, and stylistic features, such as the bead rim and lug handle, can be traced back to early local types. The industry survived the Roman conquest and, by about 120 AD, the Dorset potters had cornered the market on wholesale supply to the Roman army (Gillam 1976, 57).

The increasing proportion of Poole Harbour products from phase 6F onwards at Maiden Castle is paralleled at Gussage All Saints (Wainwright 1979a) and Rope Lake Hole (S Davies 1986). By period 3 at both sites (dated to the mid first century BC–first century AD and the later second century BC–first century AD respectively), the preponderance of raw materials from the Wareham-Poole Harbour region and the high degree of standardisation and commercialisation of the production centres are clearly reflected. At Tollard Royal (Wainwright 1968), the overwhelming proportions of Poole wares, the large number of necked jars (form JE4), and the lack of derived material suggest that the late pre-conquest date proposed for the occupation of the site is correct. The Tollard Royal assemblage and the Late Iron Age element of the Poundbury assemblage (S Davies and Hawkes 1987) in fact closely resemble the material recovered from phase 7A at Maiden Castle.

The significance of the presence of small quantities of Armorican wares is difficult to assess. No more than half a dozen vessels are represented by the sherds recovered and the rilled bowl form outnumbers the imported cordoned bowls. At Hengistbury Head, although the two are present in large and nearly equal quantities, the reverse is true (Cunliffe 1987, 310). That the cordoned bowl form was imitated by the native potters attests to the fact that the type was well known

Fig 158 (opposite) Iron Age ceramics, Phase 6G: 1) 3241; JC4.1; A2; Tr IV 5223; 2) 7985; JC3.1 Lug; A3; Tr IV 5256; 3) 8110; PB1.1; C3; Tr IV 5630; 4) 8336; BC3.3; A1; Tr IV 5946; 5) 8549; BC3.3; A2; Tr IV 5694; 6) 3026; JC3.1; A1; Tr IV 5761; 7) 8372; JC4.1; A1; Tr IV 5946; 8) 7807; BC3.3/JC3.1; A2; Tr IV 5281; 9) 3223; BC2.1; B3; Tr IV 5872; 10) 8248a; JC3.1; A1; Tr IV 5793; 11) 7800; JC3.1; A1; Tr IV 5025; 12) 3259; JD4.3; C2; Tr IV 5896; 13) 8284; JD4.4; A2; Tr IV 5869; 14) 8315/8239; ; C2; Tr IV 5872/5263; 15) 8324; JC4.1; A1; Tr IV 6118; 16) 8039; JC3.1; A1; Tr IV 5766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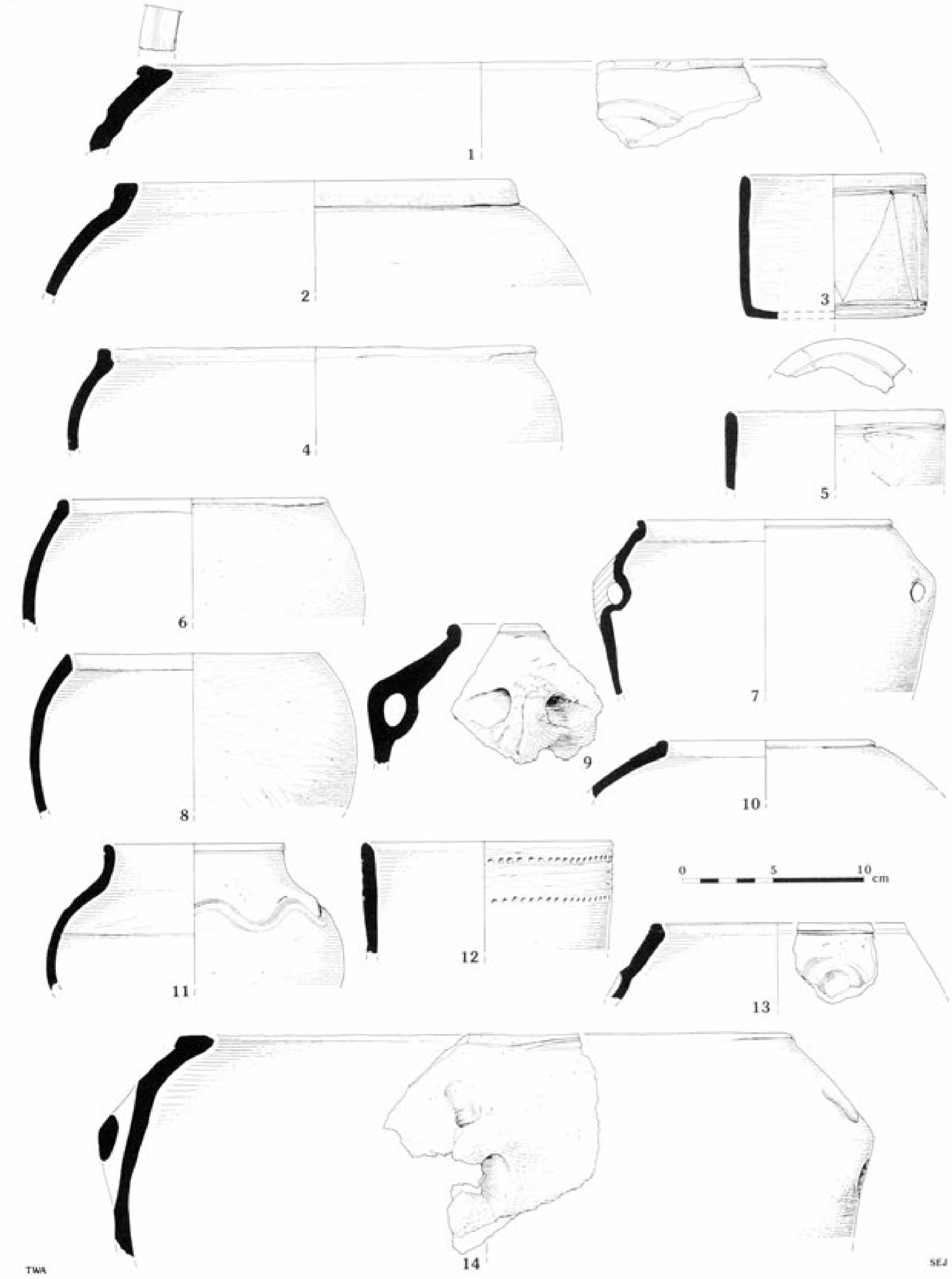


Fig 159 Iron Age ceramics, Phase 6H: 1) 7869; JC4.2; A1; Tr IV 5199; 2) 3138; JC4.1; A2; Tr IV 5199; 3) 3162–4; PB1.1; B4; Tr IV 5004, 5042, 5142; 4) 3141; JC3.1; A1; Tr IV 5309; 5) 3050; PB1.1; D5; Tr IV 5042; 6) 7624; JC3.1; A1; Tr IV 5024; 7) 7705; JC3.1; A1; Tr IV 5088; 8) 8156; JC3.1; A2; Tr IV 5811; 9) 7833; JC3.1.CSL; A0; Tr IV 5199; 10) 3127; JC3.1; C4; Tr IV 5887; 11) 8160; JD4.4; A2; Tr IV 5825; 12) 8140; PB1.1; D6; Tr IV 5827; 13) 7770; JC3.1; A1; Tr IV 5095; 14) 7730; JC4.2.CSL; A0; Tr IV 5095

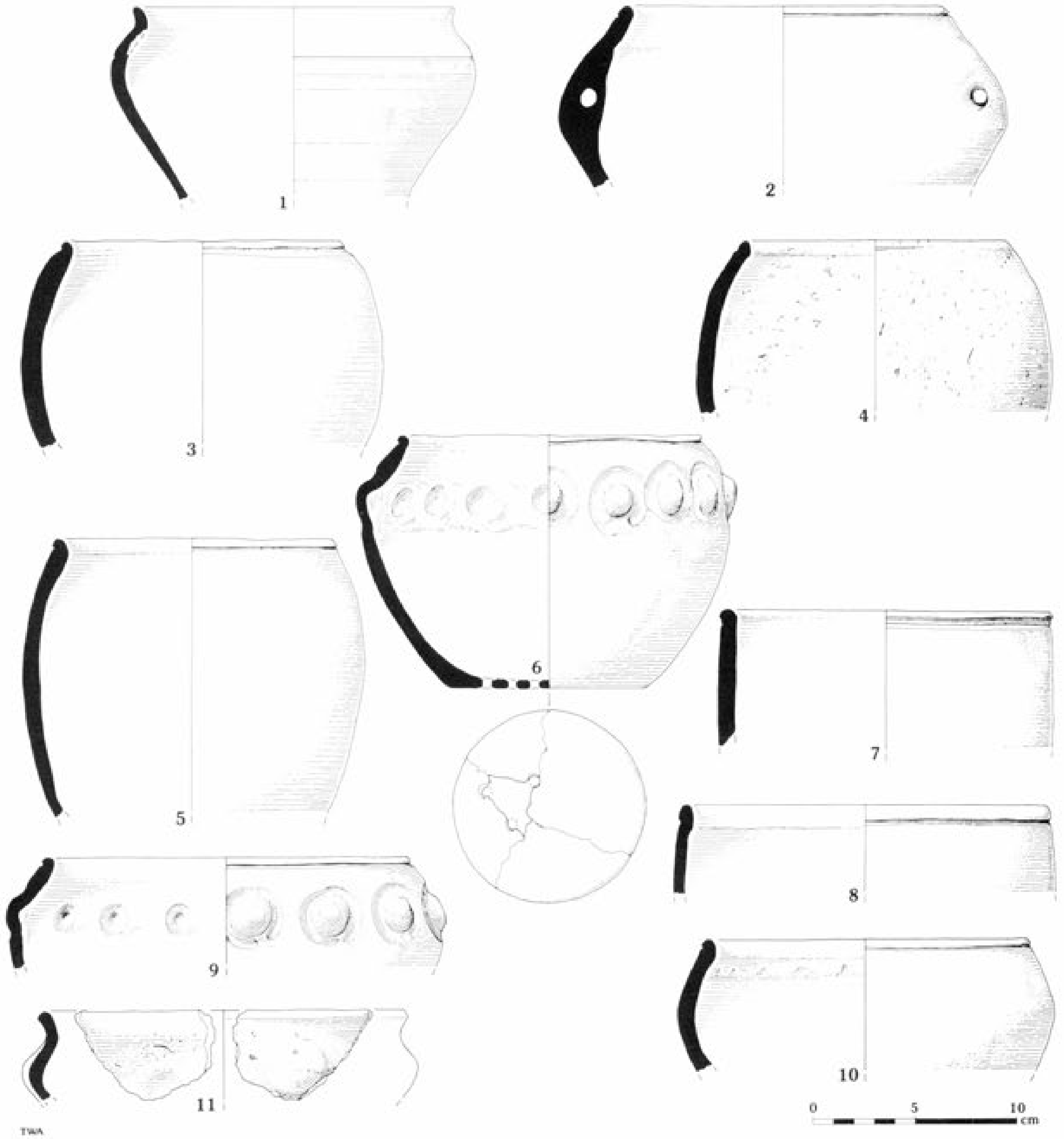


Fig 160 Iron Age ceramics, Phase 6H: 1) 8319; BD3.2; L3; Tr IV 5509 (Armorican import); 2) 8330; JC3.1.CSL; A2; Tr IV 5886; 3) 3232; JC2.3; D6; Tr IV 5353; 4) 3091; JC2.3; F1; Tr IV 5500; 5) 3168; JC2.3; D6; Tr IV 5894; 6) 8519; BC3.3; A1; Tr IV 6191; 7) 3255; PB1.1; A2; Tr IV 5712; 8) 3120; PB1.1; F1; Tr IV 5894; 9) 8598; BC3.3; A2; Tr IV 6121; 10) 8495; BC3.3; A2; Tr IV 8495; 11) 8693; BA2.2; A2; Tr IV 6595

in the region, probably within a very short time of its initial introduction to Britain and may indicate that the rilled bowl form is, in fact, the more exotic. The significant point seems to be not that these wares are present at Maiden Castle, but that, in view of the position of Hengistbury Head on the margin of the Durotrigian territory, they are present in such small numbers. It may be necessary to question the status of Hengistbury Head as a distribution centre for, at any rate, this particular commodity.

Conclusion

The point most clearly illustrated by an assessment of the Iron Age pottery is a process of gradual saturation of the regional market by a single industry based in the Wareham-Poole Harbour region. Preliminary results obtained by statistical and petrographic analyses indicate, however, that some traditionally held assumptions concerning the social and economic organisation of the tribal region and of the industry may be challenged.

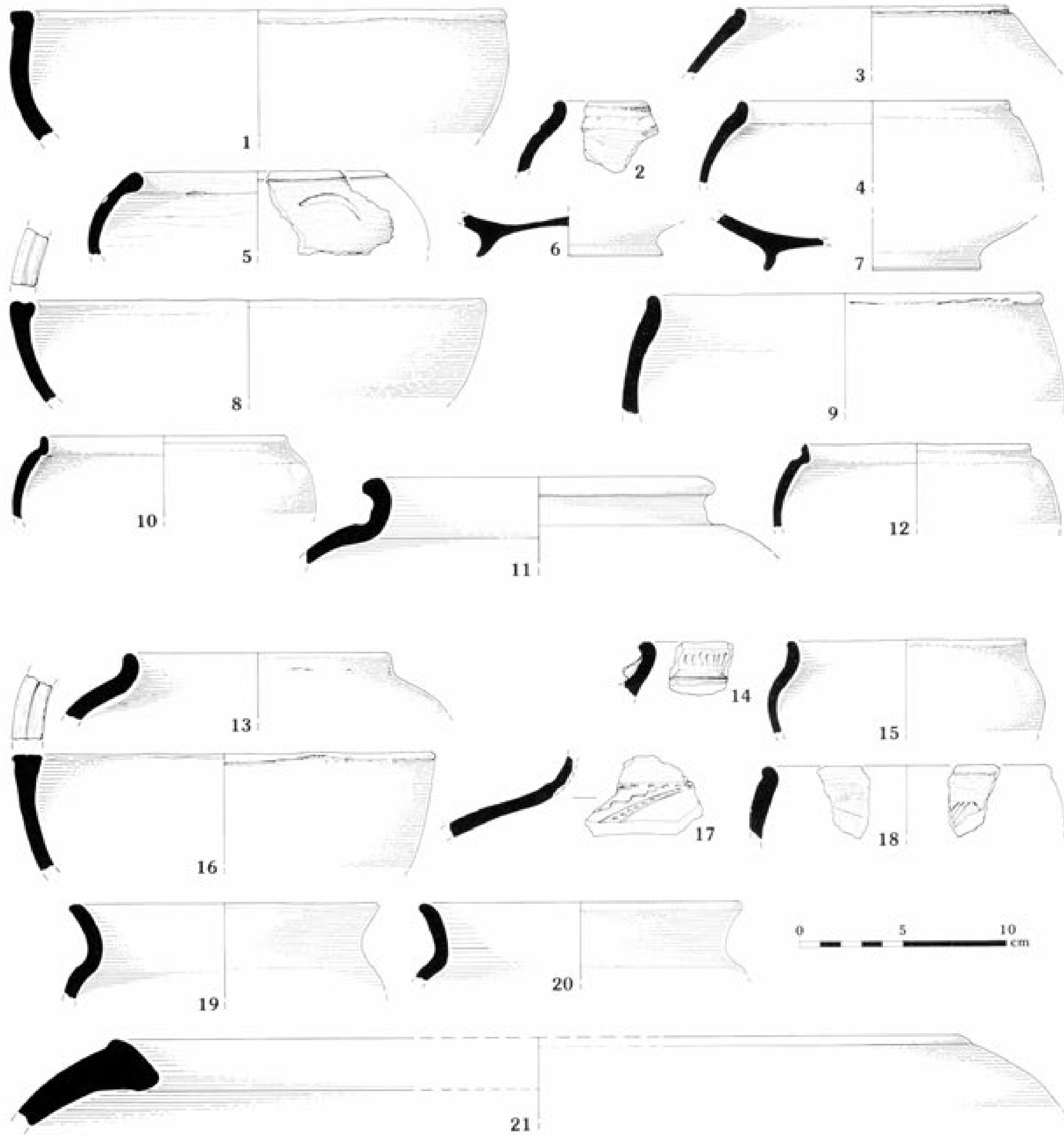


Fig 161 Iron Age ceramics, Phase 7A: 1) 8084; BC3.41; A1; Tr VI 7075; 2) 3400; JC3.1; A2; Tr VI 7079; 3) 3392; JC3.1; A2; Tr VI 7101; 4) 8069; BC3.2; A2; Tr VI 7053; 5) 3395; BC3.3; A2; Tr VI 7101; 6) 3391; BS1.01; A2; Tr VI 3391; 7) 8064; BS1.01; A2; Tr VI 7054; 8) 8089; BC3.42; A2; Tr VI 7082; 9) 8712a; JC3.1; A2; Tr VI 7069; 10) 8068a; BC3.3; A3; Tr VI 7068; 11) 3281; JE4.2; A2; Tr VI 7097; 12) 3399; BC3.3; A2; Tr VI 7069; Phase 9A: 13) 3401; JD4.1; A2; Tr VI 7023; 14) 3282; BD1/2; A2; Tr VI 7024; 15) 3398; BD4.2; A2; Tr VI 7024; 16) 3396; BC3.42; A1; Tr VI 7023; 17) 8086; JD3.0; D6; Tr VI 7023; 18) 8093; BC3.2; A3; Tr VI 7024; 19) 3397; JE4.2; A2; Tr VI 7026; 20) 3394; JE4.2; A2; Tr VI 7030; 21) 3393; JC4.1; A2; Tr VI 7030

The source of raw materials exploited by the Durotrigian potters has been identified and seems, generally considered, to be sufficiently restricted geographically that no further analysis is necessary. In taking the petrological programme a stage further, however, by asking whether textural and chemical fabric variation within the assemblage correlates with distribution and typology within the region, new light may be thrown on the organisation of the industry.

Furthermore, a reassessment of the traditionally accepted vessel typology (particularly that outlined by Brailsford), with an adherence to quantitative methodology and with the aid of petrology, has made it clear that the status of several Durotrigian vessel forms must be redesignated.

The production techniques and products of the Durotrigian industry are considered to have been conservative and even primitive. In many respects, this is

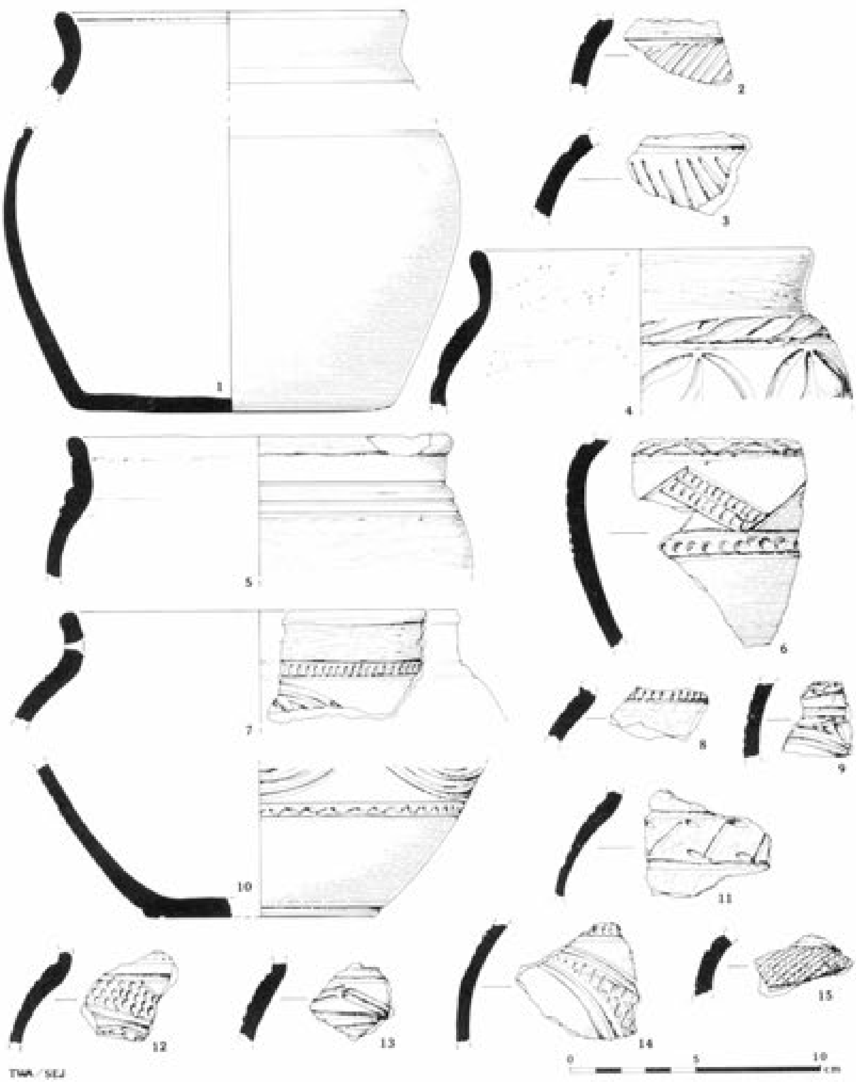


Fig 162 Iron Age ceramics, Glastonbury Wares: 1) 3097; BD6.0; J; Tr IV 5497; Phase 6G; 2) 8278; BD6.0; J1 (Gabbroic); Tr IV 5771; Phase 6G; 3) 7967; BD6.0; J; Tr IV 5263; Phase 6G; 4) 8246; BD6.0; J2 (Sanidine); Tr IV 5264; Phase 6G; 5) 8283; BD6.0; J2 (Sanidine); Tr IV 5788; Phase 6G; 6) 8118; BD6.0; J2 (Sanidine); Tr IV 5498; Phase 6G; 7) 8438; BD6.0; J1 (Gabbroic); Tr IV 5950; Phase 6H; 8) 8692; BD6.0; J1 (Gabbroic); Tr IV 5949; Phase 6H; 9) 3105; BD6.0; J1 (Gabbroic); Tr IV 5949; Phase 6H; 10) 8605, 8611, 8699; BD6.0; J1 (Gabbroic); Tr IV 5949, 6193; Phase 6H; 11) 8446; BD6.0; J1 (Gabbroic); Tr IV 5950; Phase 6H; 12) 8023; BD6.0; J2 (Sanidine); Tr IV 5577; Phase 6H; 13) 3065; BD6.0; J; Tr IV 5002; Phase 6H; 14) 3034; BD6.0; J1 (Gabbroic); Tr IV 5084; Phase 6H; 15) 8242; BD6.0; J4 (Shell); Tr IV 5869; Phase 6H

clearly true, but seems to have been more a result of choice than ignorance. Hand manufacture by a skilled potter and bonfire firing can be highly efficient production methods, and it seems clear that, by the mid first century BC, certain sectors of the industry had developed to a high level the skills of wheel-throwing, selection of tempering material, and complex stylistic imitation. Furthermore, the industry was sufficiently adaptable and innovative to cater to the needs of the conquering Roman army.

Lastly, the view that the region in which the industry developed was culturally isolated can be reconsidered. The notion of cultural isolation must be clearly defined. In the first century BC, the Durotriges shared a coinage metal standard and a ceramic technology with northern France. Certainly, there was a degree of isolation from other parts of Britain, but even as early as the second or third centuries BC, Durotrigian potters produced Wessex style pottery in local fabrics, as well as importing them. This must indicate some degree of contact.

Roman amphorae

by D F Williams

The following contexts produced five fragments of Dressel 2–4, representing a minimum of three vessels: 5001, 5002 (two sherds), 5077, and 5355. All were simple bodysherds, except that from 5355 (7616; Fig 165: 2) which was the junction between a handle, possibly of a bifid type, and the amphora body, and a possible handle fragment from 5002. All, but the sherd from topsoil (5001), are from phase 6H. Context 5002 was a soil layer immediately below the topsoil, 5077 was a chalk layer above the western house, and 5355 is a fill of pit 5338 which also contained an Armorican import.

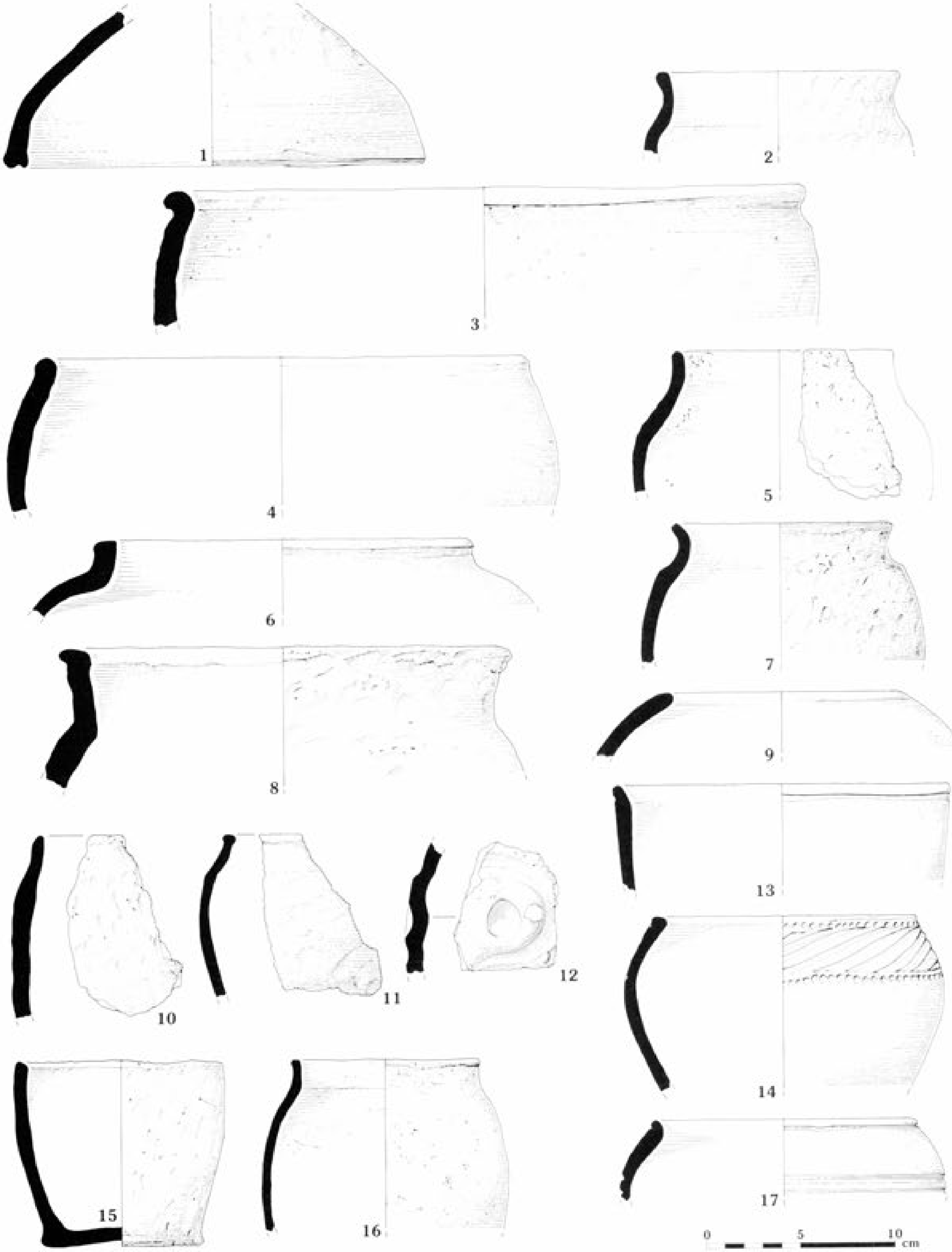


Fig 163 Iron Age ceramics, Phase 6I: 1) 8207; Lid; A2; Tr IV 5630; 2) 3227; JB3.1; C1; Tr IV 5219; 3) 3236; JB4.1; I; Tr IV 5547; 4) 3277; JC2.3; A2; Tr IV 6027; 5) 3068; JD1.0; D17; Tr IV 5075; 6) 3249; JD1.0; A1; Tr IV 5075; 7) 3177; JB2.3; F1; Tr IV 6023; 8) 7815; JB2.0; F1; Tr IV 5283; 9) 3230; JC2.2; D6; Tr IV 5067; 10) 3145; JB4.1; E3; Tr IV 5359; 11) 8044; JB4.1; D1; Tr IV 5387; 12) 8025; ; D1; Tr IV 5387; 13) 3229; PB1.1; D6; Tr IV 5067; 14) 7908; JC2.3; D6; Tr IV 5283; 15) 7823; PA1.1; D10; Tr IV 5230; 16) 3188; JB2.2; D5; Tr IV 5505; 17) 3056; BD5.0; A2; Tr IV 5044

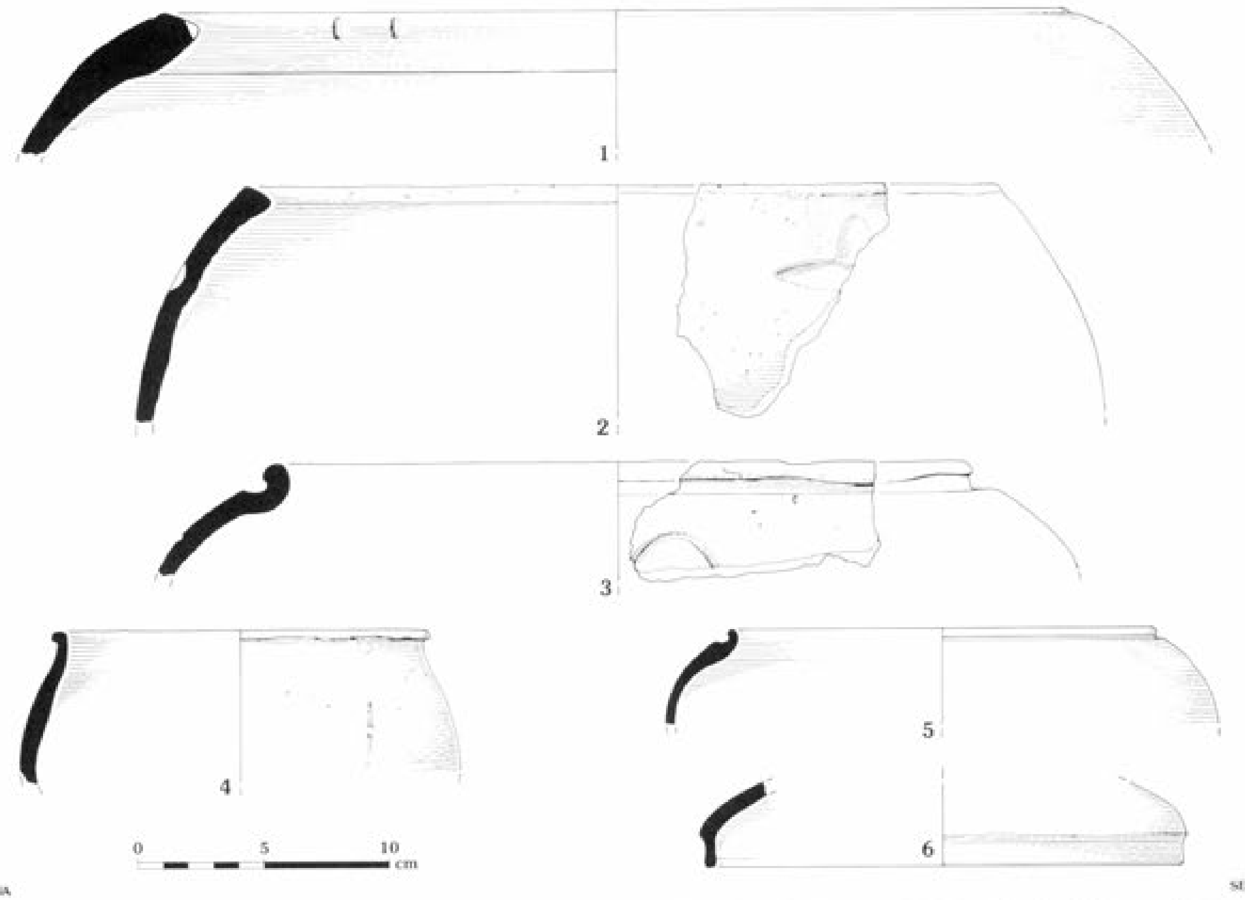


Fig 164 Iron Age ceramics, unstratified: 1) 7614; JC4.2; A2; Tr IV Topsoil; 2) 7611; JC4.2; A2; Tr IV Topsoil; 3) 3015; JD4.5; A2; Tr I Topsoil; 4) 3024; JB2.1; E1; Tr III Topsoil; 5) 3016; JD4.5; A2; Tr I Topsoil; 6) 3014; Lid; A2; Tr I Topsoil

All the above sherds are in a distinctive 'black sand' fabric, caused by frequent inclusions of dark coloured grains of augite protruding through the surfaces. This particular fabric is generally thought to indicate an origin in the area around Pompeii and Herculaneum in southern Italy (Peacock and Williams 1986, 87–8). The 'black sand' fabric was used for the Republican Dressel 1 varieties of amphorae, but the comparatively thin walls of the sherds from Maiden Castle point on balance to the later Dressel 2–4 form, with its characteristic bifid handles, simple rounded rim, and a solid, slightly flared, or knobbed spike (Peacock and Williams 1986, class 10). This amphora type appears to have been made in Italy earlier than originally thought, perhaps in the 30s or 50s BC (see Sealey 1985 with references). Dressel 2–4 was produced until the mid second century AD, although quantitative trends suggest that it was in decline by the latter first century AD (Panella 1973). The eruption of Vesuvius in AD 79 may well have directly or indirectly affected production of the 'black sand' variety, which in all probability carried the local wines of the Bay of Naples region. The Dressel 2–4 'black sand' fabric occurs at the Lexden Tumulus, dated *c* 15–10 BC (D F Williams 1986), and at a range of Late Iron Age sites, as well as being fairly common during the early Roman period.

The following contexts produced a total of eight fragments of Dressel 1–Pascual 1, representing a minimum of four vessels: 5001 (two sherds), 7033 (two sherds), 7069, 5005, and 5042 (two sherds). One rim was found in 5005 (7724; Fig 165: 3) and there were handles in 7033 (7083; Fig 165: 1, rounded with a vertical groove) and 5001. The stratified contexts include two in phase 9 (context 7033, the turf revetment to the mound in trench VI), one in phase 7A (7069, a soil layer associated with the lower levels of metalworking in trench VI), and three in phase 6H (two sherds in 5042, the soil layer sealing the house 6856, and one from 5005, a soil layer in the rampart sealed by the final phase of construction).

This type of amphora, modelled on the Italian Republican Dressel 1B, is characteristic of the Catalan region of Spain, particulary around the Barcelona area, and probably carried wine for which the region

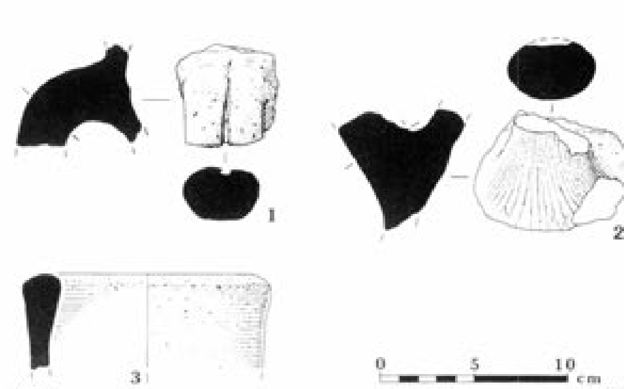


Fig 165 Roman amphora: 1) 8054; 2) 7616; 3) 7724

was famous (Pascual 1962; 1977). It was made from the end of the Republican period and is found as late as AD 79 at Pompeii (Tchernia 1971), although the majority of datable finds from north-western Europe are generally Augustan in date (Deniaux 1980; Galliou 1984). In Britain, sherds of this form are usually found on Late Iron Age pre-Roman sites, and the distribution tends to concentrate in the central southern area (D F Williams 1981; 1989). In addition to those sites listed in 1981, Dressel 1–Pascual 1 sherds have recently been identified at Hengistbury Head (Cunliffe 1987), Chichester (Theological College), Silchester, and Dorchester (Greyhound Yard). All the sherds from Maiden Castle are in Fabric 2, except for the rim sherd which is in Fabric 1 (D F Williams 1981).

A further two undesignated sherds were found in contexts 5001 and 5002. The former was a small fragment of oval-shaped handle in a light grey, sandy fabric.

The briquetage

by C Poole

A small quantity of briquetage containers have been identified. There were 153 sherds, from 51 samples, with the majority of samples from phases 6G, 6H, and 6I (Table 69).

In many cases, there was not enough of the sherd to indicate the form (S4). Of the remainder, the majority appeared to be fragments from the small cylinders (S1) known from other sites, where there is evidence that they were sliced in half before use and were used to transport the cakes of salt (Calkin 1948; Poole 1984b, 428). One basal fragment appears to come from a more trough-like form (S5; Fig 166: 7), which elsewhere has been thought to be used as part of the evaporating process (Farrar 1963; Poole 1987b, 178). However, the examples from Maiden Castle appear to be somewhat smaller and were most probably another type of container for transport. Three fragments are possibly from a type of hemispherical bowl (S3), as described by Calkin (1948) from Kimmeridge. There is one example of a flat-based vessel with flaring straight sides (S2) with a base diameter of 90–100mm (Fig 166: 8). A similar example occurs at Danebury (Poole 1984b, 429).

Four fabrics were identified: the most commonly used is a chaff tempered clay (X1), sometimes with a fine silt component (X2). Although these were separated in the original analysis, they are not considered sufficiently different to be really regarded as separate fabrics. Slightly less common is a sandy ware having 25–30% of coarse quartz sand and occasionally with small fragments of limestone and shell (X3). Another sandy ware (X5), which only occurs in

Table 69 The distribution of briquetage forms and fabrics by phase

	Fabric					*Form*				
	X1	*X2*	*X3*	*X4*	*X5*	*S1*	*S2*	*S3*	*S4*	*S5*
Phase										
1B	1					1				
2F			1						1	
6C			1						1	
6D				1		1				
6F			3			1			2	
6G	8	2	4			5		2	7	
6H	9	1	4	4		10		1	6	1
6I	2		2	2	3	3	1		4	2
8B					1				1	
11				1		1				
Total	20	3	15	8	4	22	1	3	22	3

Table 70 The distribution of briquetage forms by fabrics

	Fabric					
	X1	*X2*	*X3*	*X4*	*X5*	*Total*
Form						
S1	9	1	7	5	–	22
S2	–	–		–	1	1
S3	1	–	1	1	–	3
S4	10	2	7	2	1	22
S5	–	1		–	2	3
Total	20	4	15	8	4	51

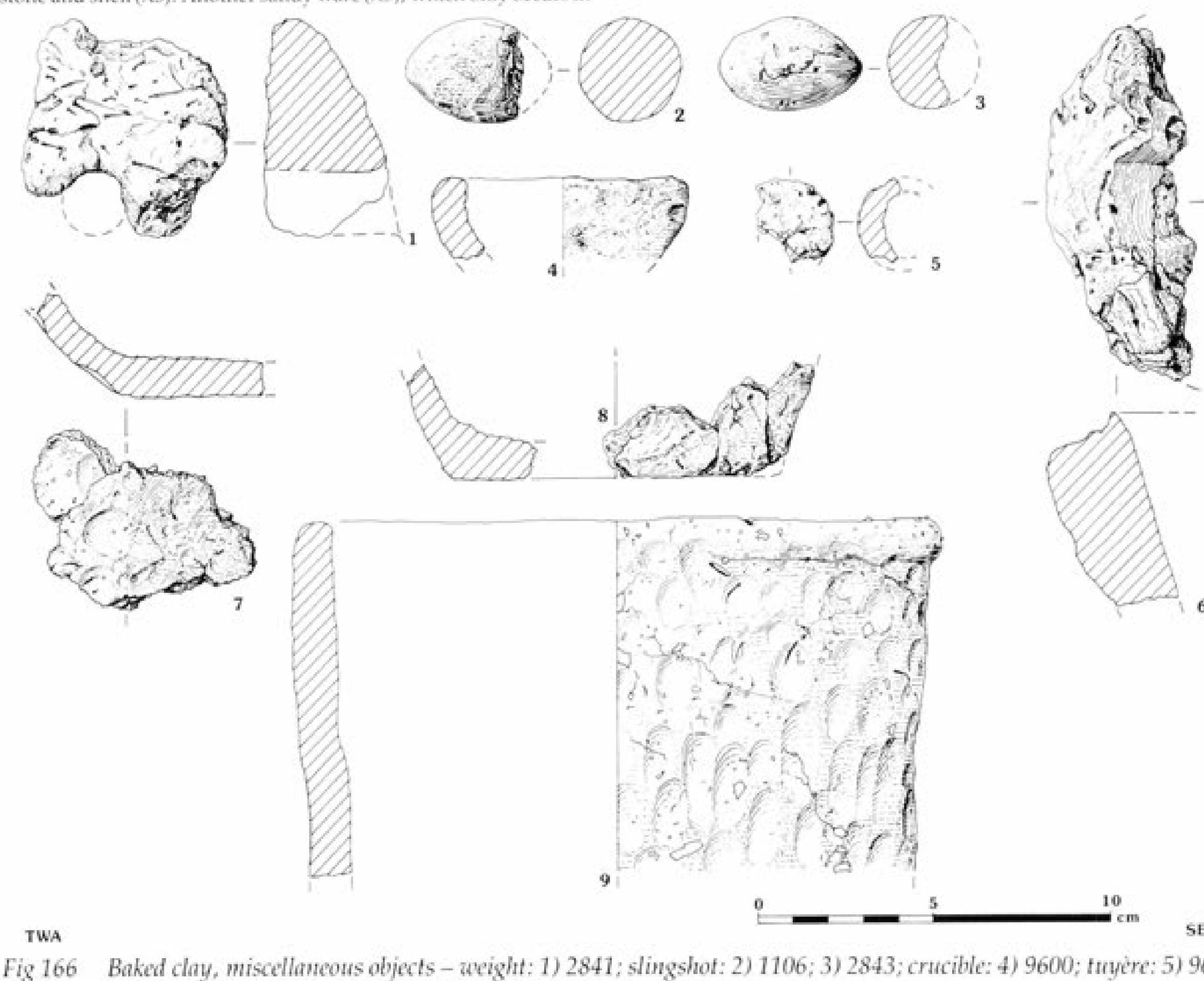


Fig 166 Baked clay, miscellaneous objects – weight: 1) 2841; slingshot: 2) 1106; 3) 2843; crucible: 4) 9600; tuyère: 5) 9601; bellows guard: 6) 2842; briquetage: 7) 2979; 8) 2979; 9)

two samples, could be a subgroup of X3, but it has a high proportion of coarse limestone fragments and, without a larger number of samples, it is not clear whether they are genuinely separate. There is another small group of samples formed of a silty clay with about 30% fine shell temper (X4), which is similar to daub fabric H and possibly both used the same source.

Nearly all the fabrics are fairly porous, especially those with a high proportion of chaff tempering, and even the sandy fabrics sometimes had chaff temper. Porous containers were unsuitable for boiling brine, but were suited for drying the salt out as a cake at 60–70°C (Riehm 1961). Presumably once dried, the salt was transported in these same containers, which appear to be much smaller than the evaporating troughs found in the salterns. Apparently, all the briquetage at Maiden Castle represents containers for transporting the salt.

There appears to be no significant relationship between fabrics and forms (Table 70). Nor do there appear to be any major changes through time (Table 69). There is perhaps a slight indication that the sandy fabric (X3) is more common in the early phases and then declines slightly. Apart from this, there is an apparent general increase in the quantity of briquetage in the later phase. The briquetage seems not to be confined to any particular context type, being disposed of equally in pits or incorporated in the stratigraphic layers. However, the largest group of samples occurred in Pit 5073.

The structural daub and clay

by C Poole

During the two years of excavation, 342 structural daub and clay samples were obtained and, additionally, 242 samples from the sieving and flotation. The total weight is 45.772kg, of which nearly half is accounted for by three samples. The size of samples varies from a couple of grams to over 14kg.

Of the daub and clay, 139 (36%) could be assigned to some type of function, leaving 247 samples (64%) of unknown function. Much of the latter was in the form of small fragments with no vestige of shape or only the remains of a smooth surface, or a single wattle impression, which was considered insufficient to indicate the function. The structural daub could be divided into wall daub (15%), oven plates of type 1 (8%), other miscellaneous oven daub (2.5%), hearths (2%), and tiles (1.3%) (Table 71).

A total of twelve fabrics (A–L) could be identified by visual inspection (Chap 6 fiche). Of these, three were raw clay: H was a reddish-brown clay with broken shell, K a mottled red and grey clay, and M an olive green, sandy clay. All were probably derived from the Reading Beds and were utilised to some extent in the daub fabrics. Of the remaining daub fabrics, A was a fine sandy/silty clay, B and E were sandy clays with a lot of coarse inclusions, C had a distinctive coarse quartz sand content, F and D were medium and coarse sandy clays, the latter with a lot of additional shell or flint fragments, G was a soft, porous, chalky clay, and L was similar to B, but extremely hard.

Wall daub

There were 44 samples (15%) identified as wall daub, representing 58% by weight (26.667kg) of all the daub. However, 73% of this is accounted for by the associated samples found on the upper floor of the western house. A small number of samples of wall daub survive from Wheeler's excavations from sites R and Q. All are small fragments and have the same characteristics as that from the present excavations.

The daub fabrics most commonly used for wall daub are B, C, and E, which are the coarser fabrics, with tempering material of coarse sand, quartz pebbles, and flint and chalk fragments. Fabrics A, F, and G have been used for wall daub on rare occasions.

The wall daub was generally roughly finished on the outside surface. This was often irregular and undulating with many depressions, often from the fingertips and ridging from dragging the fingers across the surface to smooth it. The thickness of the daub may be up to 50mm, though it generally averages 20–25mm.

The inner surface of the wall daub is normally covered by the wattle impressions, but, on rare examples, the inner surface between the wattles has been smoothed. Usually, there is some indication from the wattle impressions of the interwoven effect of the horizontal rods around the upright sails. Where only a small number of impressions survive, the daub is not automatically regarded as wall daub solely on that feature, but other general characteristics need to be considered also. Descriptions of all the wall daub samples occur in the fiche for Chapter 6.

Wattle diameters were measured on all samples, whenever possible. They are recorded in the fiche for Chapter 6 and illustrated in Figure 167. One individual sample from a pit (458) is shown by itself, and all the samples from the upper floor of the western

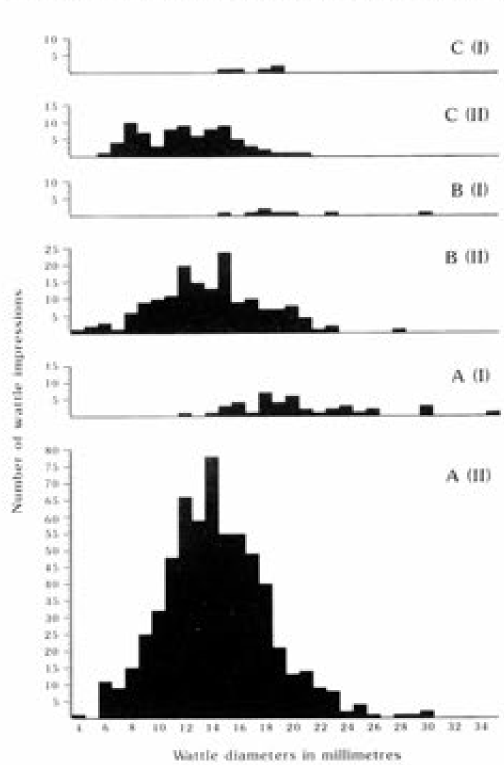


Fig 167 Baked clay, the diameter of wattle impressions in the structural daub: C(I) Vertical sails from pit 458, trench II; C(II) Horizontal rods from pit 458, trench II; B(I) Vertical sails from all the daub, excluding that in pit 458 and that associated with the house 6853; B(II) Horizontal rods from all the daub, excluding that in 458 and that associated with house 6853; C(I) Vertical sails from contexts associated with house 6853; C(II) Horizontal rods from contexts associated with house 6853

Table 71 The distribution of structural daub by phase subdivision

	6A		6B		6C		6D		6E		6F		6G		6H		6I		7A		9A		11	
	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%	Wght	%
Wall			2320	8.7			240	0.9			145	0.5	2542	9.5	19475	73.0	310	1.2					1635	6.1
Oven									30	0.3	110	1.0	5878	56.0	3475	33.2	305	3.0					670	6.4
Hearth											15	1.0	305	20.9	650	44.5			490	33.6				
Tile															1040	63.0							610	37.0
Unknown	5	0.1			25	0.5	10	0.2	105	1.9	325	6.0	1524	28.3	2344	43.5	697	12.9	35	0.65	70	1.3	210	3.9

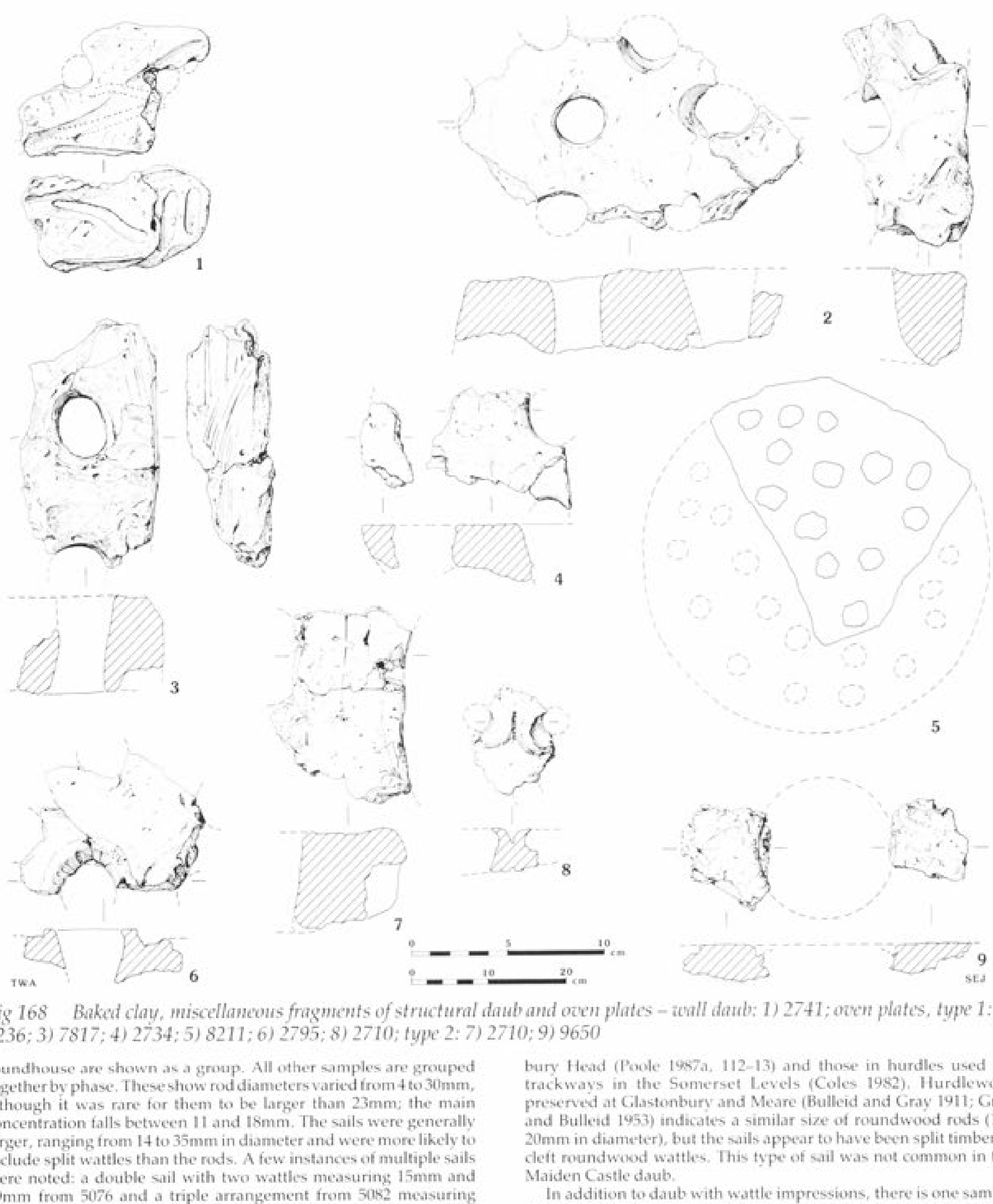


Fig 168 Baked clay, miscellaneous fragments of structural daub and oven plates – wall daub: 1) 2741; oven plates, type 1: 2) 8236; 3) 7817; 4) 2734; 5) 8211; 6) 2795; 8) 2710; type 2: 7) 2710; 9) 9650

roundhouse are shown as a group. All other samples are grouped together by phase. These show rod diameters varied from 4 to 30mm, although it was rare for them to be larger than 23mm; the main concentration falls between 11 and 18mm. The sails were generally larger, ranging from 14 to 35mm in diameter and were more likely to include split wattles than the rods. A few instances of multiple sails were noted: a double sail with two wattles measuring 15mm and 19mm from 5076 and a triple arrangement from 5082 measuring 15mm, 18mm, and one which could not be measured. It is possible that the sails were doubled up when they were smaller than average. Alternatively, the double impressions may occur where a longer sail was needed and the narrow ends of the wattles were overlapped.

The interwoven effect of the horizontal rods around the upright sails was generally clear on most of the better preserved fragments. In some cases, however, it was apparent that adjacent rods would both go over or under a sail. One well-preserved example from 5076 (2741; Fig 168: 1) shows a double pair of sails only 50mm from the next one, with one rod clearly interwoven between them, whilst other rods go on the same side of both sails.

The wattle sizes are very similar to those preserved as impressions in the wall daub from Danebury (Poole 1984a, 113–14) and Hengistbury Head (Poole 1987a, 112–13) and those in hurdles used for trackways in the Somerset Levels (Coles 1982). Hurdlework preserved at Glastonbury and Meare (Bulleid and Gray 1911; Gray and Bulleid 1953) indicates a similar size of roundwood rods (10–20mm in diameter), but the sails appear to have been split timber or cleft roundwood wattles. This type of sail was not common in the Maiden Castle daub.

In addition to daub with wattle impressions, there is one sample from 5082 (2752, recovered with 2750), which had flat impressions, possibly from planks. These took the form of flat areas, between which were straight ridges, rather irregular and knobbly, which had the appearance of daub pressed against planks and squeezing between them. The daub is 8–16mm thick and ridges stand 8–15mm high; no complete widths of planks were preserved.

Although the function of wall daub is clear, it is not possible to tell from the daub itself from what type of structure it derives. The fragments are too small to reflect the curvature of a circular house as opposed to the straight surface of a rectangular, post-built structure. The only possibility is the distribution on site and association with any structures.

The majority of the samples consist of only a few fragments, which have been randomly incorporated into the the accumulating stratigraphy or disposed of in pits. Most of the samples in pits were probably mixed up with other material that was thrown in, except for one large sample from pit 458, which was deliberately disposed of, presumably after a building had been destroyed or demolished. An insufficient area was exposed around this pit in trench II to produce any evidence of contemporary or associated structures. The wattle sizes are more suggestive of wattle panel infill in a timber-framed structure, than a circular structure.

In trench IV, where most of the daub samples were found, rectangular post-built structures all belong to phase 6E, whilst most of the daub is dated to phases 6G and 6H (Table 71). This suggests that the daub is more likely to derive from the circular structures.

One clear example of this is the collection of samples of wall daub directly associated with the upper floor of the western house. There are 15 samples from nine layers, plus two samples from pit 5622. The individual samples are described in the fiche for Chapter 6 and are so similar that an association was considered, before the author knew their relationship. The major part of each sample is of fabric B/C with a smaller quantity of fabric E. The only factor differentiating fabric E from the rest is the high proportion of chalk temper, which is perhaps merely a result of poor mixing.

The largest sample is derived from the soil layer (5082) that accumulated over the house, with lesser amounts from a soil layer over the house (5063), the chalk wall (5076), the collapsed wall (5077, 5090), and a silt layer (5096) to the north of the wall. Some of the layers associated with the structure (5090, 5091, 5097) produced daub without wattle impressions, which is likely to be fragments from the walls. Similarly, the sieving produced many very small fragments, probably fabrics B/C/E, with only a couple of fragments with actual wattle marks, but it is likely that much of it derived from the walls, although some came from the house floor (5249 and 5263).

The wattle sizes cover the normal range for these, with a high proportion of the horizontal rods clustering between 10mm and 18mm (78%) and the rest equally distributed above and below these sizes. The sails mostly measure between 15mm and 30mm, which is smaller than might be expected, if compared with the size of stakeholes for circular houses. However, in view of the evidence of a chalk wall and posts as the major structural elements of this house, it is likely that wattle-and-daub was more in the nature of panel infill, rather than structural.

Oven daub

Forty-one samples of oven daub were identified. The majority (32) were pieces of type 1 oven plate, whilst the others were more tentatively identified as type 2 oven plates (2 samples), oven covers (6 samples), and an *in situ* oven.

Only one clay oven base was found in the recent excavations and is fully described in Chapter 4, with a brief note on the ovens found by Wheeler.

Type 1 oven plates were by far the commonest type of oven daub to have survived. The most commonly used fabric is A, with just one or two examples in B, C, D, and L. This suggests that a finely tempered clay fabric was felt to be desirable here, whereas comparable samples from Danebury (Poole 1984a) were generally made with much coarser fabrics.

The basic form of this type of plate is a flat, circular slab of daub pierced by numerous small holes. The surfaces of the plate are generally smooth and sometimes undulating or with parallel ridges from finger-wiping of the surface. The underside may be slightly rougher or more irregular; any other distinguishing features, such as straw impressions (cf Danebury: Poole 1984a), are virtually non-existent. The plates are generally 15–30mm thick, although they may be more than 50mm and, on many examples, they thicken by 10–15mm around the base of the perforations.

The major characteristic of these plates is the random arrangement of circular or oval perforations piercing the plate, between 10 and 30mm apart. These measure between 20 and 60mm in diameter, though the majority fall between 25 and 35mm. The profile of the perforations can vary between cylindrical and conical or biconical: one decreases from 40mm at the top to 28mm at the base. Nearly half the samples have raised-rounded or flattened ridges encircling the base of the perforations and several have ridges round the top also (Fig 168: 6, 8).

The plate edge has been preserved in a number of cases, showing that a variety of shapes existed. The most common is circular in plan with a narrow angled or rounded edge which sloped down to form the undersurface (Fig 168: 4). Another variety indicates a polygonal shape (probably very close to a circle) with an angled edge with smooth surfaces (possibly cut flat; Fig 168: 3). One fragment appears to have a straight edge, suggesting the possibility of a rectangular oven plate (Fig 168: 2).

There is one sample (8211; Fig 168: 5) which represents a large portion (about 42%) of one of these oven plates. Part of its edge survives and the overall shape is clearly circular. Its diameter can be estimated at about 0.45m and the surface area is calculated at 1.59sq m, of which 0.675sq m survives. The edge of the plate was in the form of a narrow, rounded rim about 10mm thick. The underside of the plate is convex, as it reaches a maximum thickness of 50–60mm. There are remains of 15 perforations, ranging in size from 22–40mm, and, if the same density occurred throughout the plate, the total number of perforations would be about 35.

Wheeler records a large number of fragments of this type of oven plate and several are still available for study. All are made of daub fabric A. They are basically similar to those from the present excavations, though some are distinctly thinner (*c* 15mm) with smaller perforations (15–20mm). Some of the samples have the edge surviving, which is generally circular in plan with a rounded profile sometimes with a scalloped effect from fingertip depressions. There is one example of a polygonal faceted edge. The diameters of the plates can very roughly be estimated at 0.45–0.6m.

The evidence from Maiden Castle suggests that these were all prefabricated, individual, movable objects and not necessarily integral parts of oven structures. There are only two examples which provide any evidence of added support, where a criss-cross pattern of wattle impressions suggests some sort of supporting framework, when they were first constructed. A few of the edge fragments have angled recesses on the underside, which could have slotted over the edge of the oven wall or some other form of support.

Comparable material from Danebury is in most characteristics more substantial, suggesting that they were part of larger, more permanent structures, though having the same basic design as the Maiden Castle material. The latter is clearly part of a smaller structure and very likely movable and reusable.

There are only two samples which may have come from type 2 oven plates. Better preserved examples are known from Danebury, Boscombe Down West, and Highfield, and these have a central circular flue of 120–50mm diameter, surrounded by up to nine smaller perforations about 25mm in diameter. There is only one small fragment (2933), that is very similar to such a form. The second example (2710; Fig 168: 7) has a central flue of *c* 150mm, but the one smaller perforation represented is *c* 50mm in diameter, which suggests that it may have had a slightly different design.

There are six samples that could be fragments of oven cover, having evidence of a circular flue. However, none were well enough preserved to estimate the diameter of the flue. All were made of daub fabric A, except one of C.

Wedges

There are three samples that have produced similar wedge-shaped pieces of daub. They have smooth, flat surfaces, diverging from a straight, angular edge and reaching thicknesses of 15–35mm, although they may have had a greater maximum thickness. One piece has two edges at right-angles. Exactly what these objects were used for is not clear, but they may have been some sort of oven furniture, as a similar object has been reported in association with briquetage from a salt production site at East Huntspill, Somerset (Leech, Bell, and Evans 1983).

The small objects of daub and clay

by C Poole

Twenty-two small objects of baked clay or daub were found during the recent excavations (Table 72). All but one of the objects came from the Iron Age occupation of the hilltop (phase 6 or 7), and these objects are defined and described below by type. Full descriptions of the individual objects will be found in the fiche for Chapter 6.

Table 72 The distribution of small objects of daub

	3	6D	6E	6F	6G	6H	6I	Total
Weight					2	3	2	7
Spindle whorl	1					5	1	7
Bead				1				1
Slingshot		1				1		2
Firebar						1		1
Crucible						2		2
Bellows guard							1	1
Tuyère					1			1

Early prehistoric

One spindle whorl was found in the Late Neolithic/Early Bronze Age layers at the top of the enclosure ditch in trench II, phase 3D. This spindle whorl is distinct from the Iron Age examples. It is larger, with an estimated weight of 84g, and the only example in fabric C.

Spindle whorls of this date are very rare and, although the Maiden Castle example cannot be precisely dated, it is likely to be no later than the first half of the second millennium BC. This would make it one of the earliest, securely stratified spindle whorls in Britain.

Later prehistoric

Weight

Fragments of seven weights were identified, six of which appear to be of the triangular type. The seventh is a small fragment, which appears to be bun shaped, rather like a traditional paper weight; its identification as a weight is only tentative, but it has some affinity with a larger, similar type of daub object described from Danebury (Poole 1984b, type 7, 403).

Of the triangular weights, there were no complete examples, nor any with one complete side to give an indication of size. None had the complete width preserved, though this was estimated at about 70mm in two cases. Two fragments were from the curving corners of the weights, the rest were from the central body area. All fragments had part of a perforation surviving and, from the angle of perforation to the existing outer surfaces, the form of a triangular weight could be confirmed. The sizes of the perforations measured 12mm, 13mm, 17mm × 2, and 20mm; one could not be measured.

The fabrics used for the weights were A, B, C, and F, and all are fine fabrics; where inclusions coarser than sand occur, these are all small in size and few in frequency (less than 6mm and 5%). Chaff appears to have been used as a temper in two cases.

Wheeler recorded 25 or more clay weights during his excavations, of which a group of seven were oblong and the rest triangular (1943). He mentioned in detail only four particularly large examples from Site R and these are the only ones still available for study. They have, however, been grossly over-restored with plaster of Paris, so it can be difficult to determine the original features. They are clearly very similar: all measure approximately 190–210mm along their sides, only one side could be accurately measured at 205mm, and their thicknesses measure between 80 and 105mm. The perforations across the corners measure from 15 to 20mm in diameter. The corners and edges were sharp and angular. These are unusually large and two comparable fragments are known from Danebury (Poole 1984b, type 3, 403). However, the fact that Wheeler particularly commented on these implies that all the other weight fragments were of the more usual size (about 150mm long, 60–80mm thick, and perforations 12-15mm in diameter).

Spindle whorl

Of the six clay spindle whorls, three were nearly complete (Fig 166: 13, 14, 15) and, of the remaining three, between a third and a half was usually present. The sizes were remarkably consistent, averaging about 40mm diameter (35–54mm) and 30mm height (23–43mm). The weights are also similar, being about 40g for the more complete examples.

The most common shape is spherical or spherical-biconical. Some of these have the top slightly flattened, while the base is more pointed and one is flattened slightly both top and bottom. The only other shape represented is discoidal with the top and base flattened, but still fairly convex. The perforations are all about 6–7mm in diameter. Some are plainly cylindrical, but two are more conical, being wider at the top than the base, and one is biconical. The clay fabrics used are all fine sandy wares with no coarse tempering: three each are of fabrics A and D, and one of C.

All the spindle whorls are from trench IV, five from phase 6H and one from phase 6I.

Bead

There is one bead (Fig 166: 16), spherical in shape and slightly flattened at one end. The perforation is incompletely preserved: it decreased in size from 4 to 2mm and may not have completely pierced the object, as this and the flattening effect are characteristics typical of partly perforated clay balls found elsewhere (Danebury: Poole 1984b, 398; Glastonbury: Bulleid and Gray 1917, pl XC; All Cannings Cross: Cunnington 1923, pl 26). This example comes from a pit belonging to Phase 6F.

Slingshot

There are two well-preserved examples (Fig 166: 2, 3), which are both of the typical pointed ovoid shape. They are of similar size: *c* 40mm long and 30mm wide. Fine clay fabrics, A and C, have been used. They weigh 20g and 30g (the latter estimated to be 40g complete). They were found in phases 6D and 6H. The difference in weight could suggest different uses: the lighter one being used for hunting birds and the heavier one as a military missile.

Fire bar

This is an incomplete clay object from Phase 6H, that could be the end of a fire bar for use in an oven or kiln, or possibly the end of a clay reel, examples of which are known from Danebury (Poole 1984b, 398). Insufficient survives to be sure of its function.

Metalworking accessories

There are two possible fragments of crucible. One is a small piece of fabric A daub with a vitrified surface. The other is a rim from a small hemispherical bowl (Fig 166: 4), about 10mm in diameter and 30mm deep, made of fabric C. However, there is no evidence of vitrification or slag adhering, so it could have had some other function.

In addition, there are nine small fragments of daub, mostly of fabric F, from nine of the sieve samples, which have some vitrification on the surface. These may be fragments of furnace lining. These all come from Trench VI and belong to a phase associated with Late Iron Age industrial occupation.

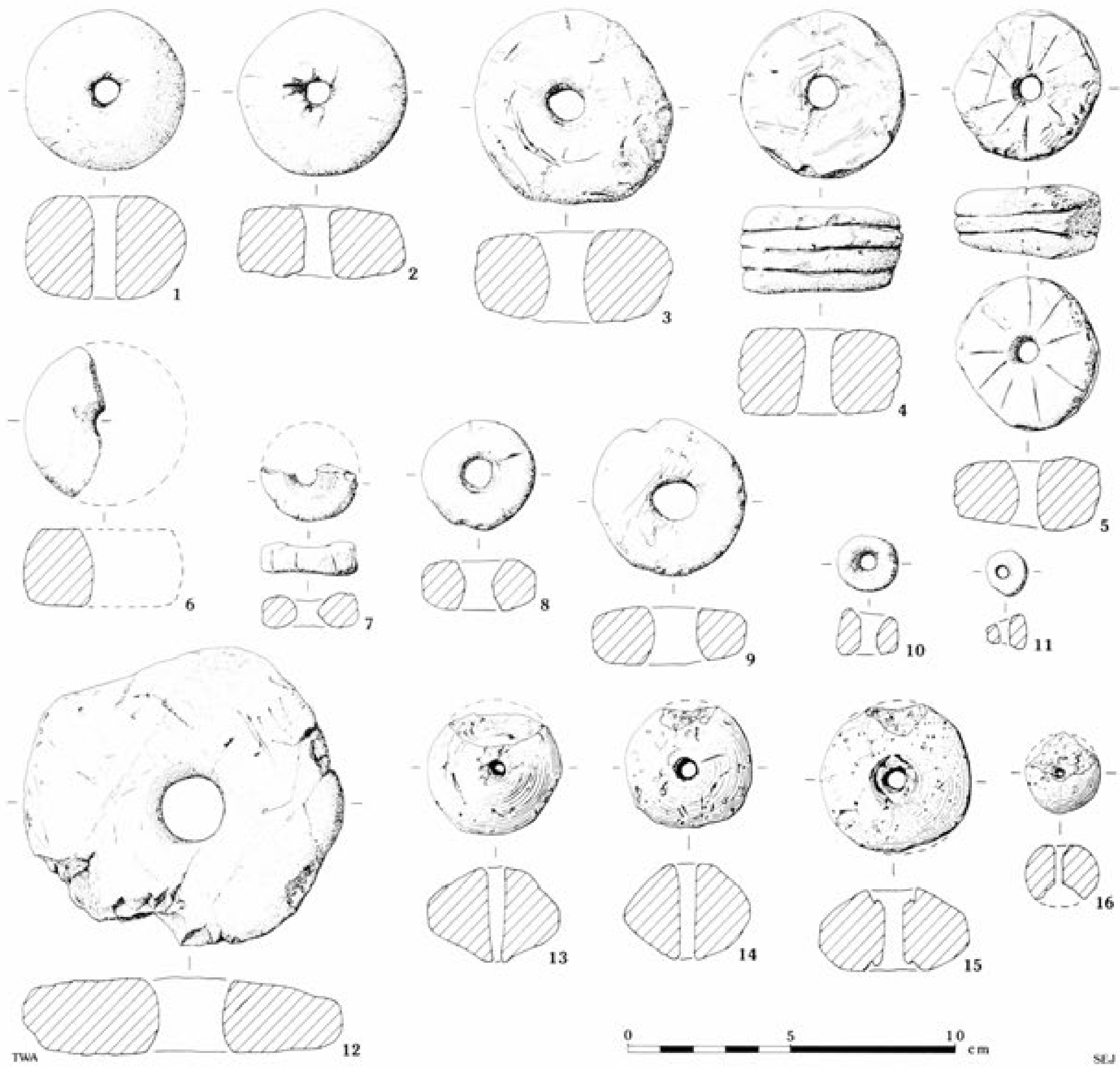
A funnel-like object (Fig 166: 6) about 120–40mm in diameter could be a bellows guard. The closest parallels, though not exactly similar, are from Danebury (Poole 1984b, 406–7), Glastonbury (Bulleid and Gray 1911), and Little Woodbury (Brailsford 1949).

A small fragment of daub from the end of a cylindrical object 27mm in diameter could be the end of a tuyère (Fig 166: 5). However, there is no slag or vitrification and, in view of its incompleteness, the function assigned must remain tentative.

The chalk

by K Laws

The recent excavations produced 49 worked chalk ob-



1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

Fig 169 Miscellaneous perforated objects – chalk spindle whorls, class 1: 1) 8337; class 2: 2) 8014; 3) 8496; 4) 8202; 5) 8241; 6) 7916; class 3: 7) 8716; 8) 8098; 9) 8130; chalk bead: 10) 7697; stone bead: 11) 7747; chalk disc: 12) 8715; daub spindle whorls: 13) 8329; 14) 8628; 15) 7896; bead: 16) 8690

jects (Table 73). Apart from four worked blocks from the enclosure ditch, the objects all belong to phase 6 or 7 (Table 73). The Neolithic objects are discussed first, then the Iron Age objects are discussed in their typological groupings (see Chap 6 fiche for full catalogue).

Table 73 The distribution of worked chalk by phase and phase subdivision for trench IV

Object/Phase	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*11*	*Total*	*6E*	*6F*	*6G*	*6H*
Scored lump	4							2	6				
Spindle whorl					14	1			15		6	3	2
Disc					2				2		2		
Bead					1				1				1
Weight					16+				16+	1	4	5+	5
Chalk marl disc					1				1				1
Miscellaneous object					8				8		2		3
Total	4				42+	1		2	49+	1	14	8+	12

Early prehistoric

The four pieces recovered are roughly cut blocks of chalk with one or more faces bearing scored lines. In some cases, the scores run roughly parallel, possibly suggesting the use of a serrated tool to produce the mark. The majority of these pieces have a weathered appearance. The illustrated example (2635; Fig 170: 1) is typical of the size and shape of these pieces. Another two unstratified objects are similar to these four blocks. 8296 (Fig 170: 2) came from trench IV and, although it is probably associated with the Iron Age activity, it may be a derived Neolithic object or a piece that has been reused in the Iron Age.

Neolithic worked chalk finds are reasonably well documented. From previous excavations on the site, a possible figurine was discovered in a Neolithic pit (Wheeler 1943, fig 49). Four fragments of rough slabs of chalk with 'hour-glass' (countersunk) perforations were recovered from Whitehawk Camp (Ross Williamson 1930, pl XVI). A number of carved pieces, including cups, perforated blocks, balls, representations of the human figure, and incised pieces were found at Windmill Hill (I Smith 1965, fig 27).

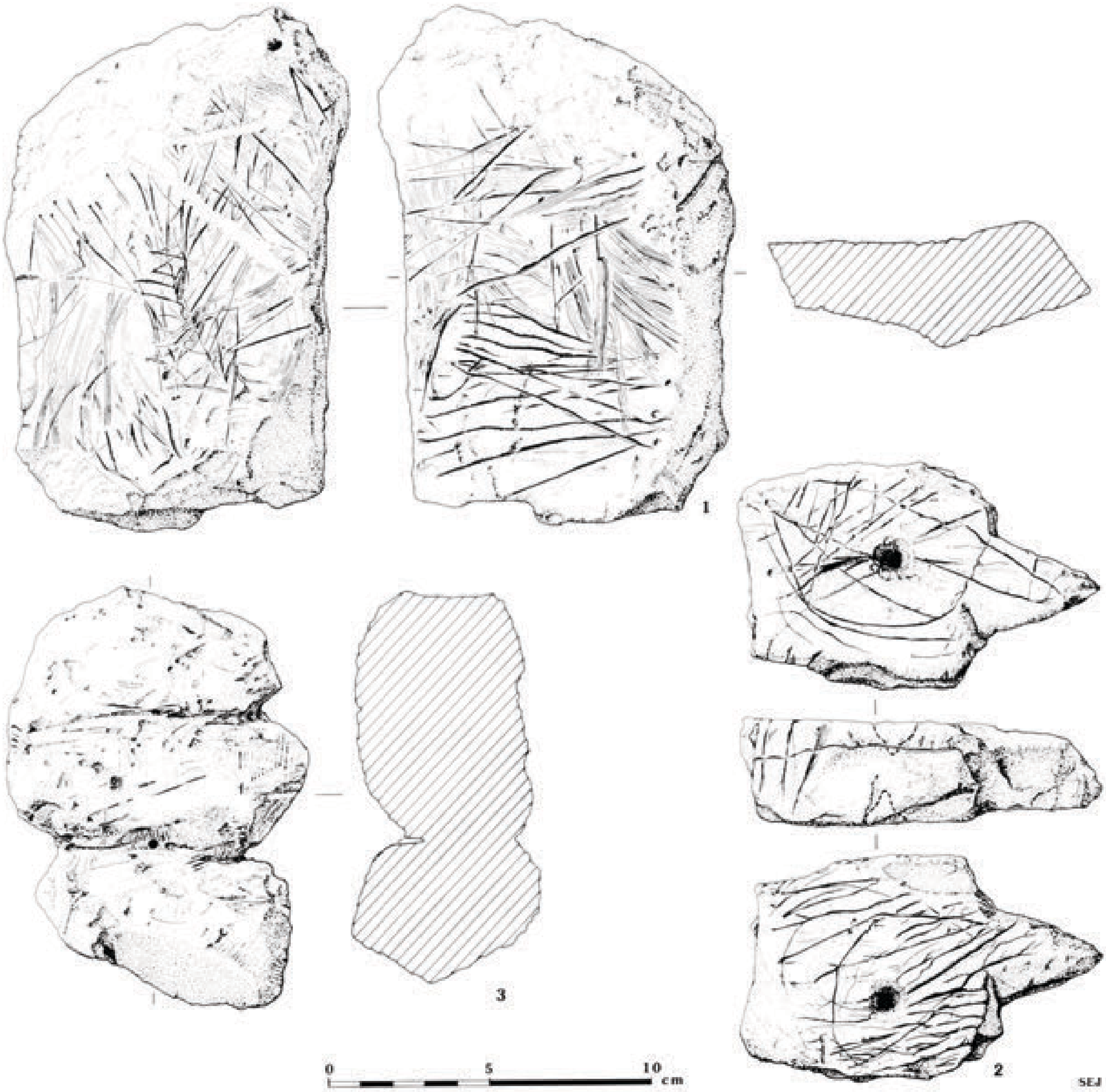


Fig 170 Miscellaneous chalk objects: 1) 2635 from the Neolithic enclosure ditch; 2) 8296 unstratified trench IV; 3) 8492 from phase 6F, trench IV

Later prehistoric

Spindle whorls

The recent excavations produced 15 chalk spindle whorls, 13 of which are complete. Three examples were decorated. A variety of shapes, sizes, and distinguishing characteristics are represented, but the group can be roughly divided into three main types according to cross-section, shape, and weight.

Type 1: Sub-spherical cross-section, heavy (8337; Fig 169: 1)

Type 2: Sub-rectangular cross-section, heavy (8014, 8496, 8202, 8241, 7916; Fig 169: 2, 3, 4, 5, 6)

Type 3: Disc-like, light (8716, 8098, 8130; Fig 169: 7, 8, 9)

Six out of the 14 examples belonging to phase 6 were found in phase 6F, and only one example belongs to phase 7 (Late Iron Age occupation). The collection is fairly typical of those from other sites and similar examples were found during Wheeler's excavations (1943, 294).

In only one case does more than one spindle whorl occur in the same context: 8714 and 8716 both occur in pit fill 6652. In three instances, however, spindle whorls occur in the same context as chalk weights.

Discs

These are a larger version of a spindle whorl: roughly circular, flat discs with centrally placed perforations countersunk from both sides. The one complete and more convincing example (8715; Fig 169: 12) weighs 189.6g and has a maximum external diameter of 97mm; it is too large to serve as a spindle whorl and seems too light to be a weight. Similar examples from Danebury have been tentatively suggested to have uses as drill weights or small flywheels (Brown 1984, 422). Wheeler (1943, pl XXXIII) includes five such objects amongst the spindle whorls, while pointing to the doubt over their correct identification.

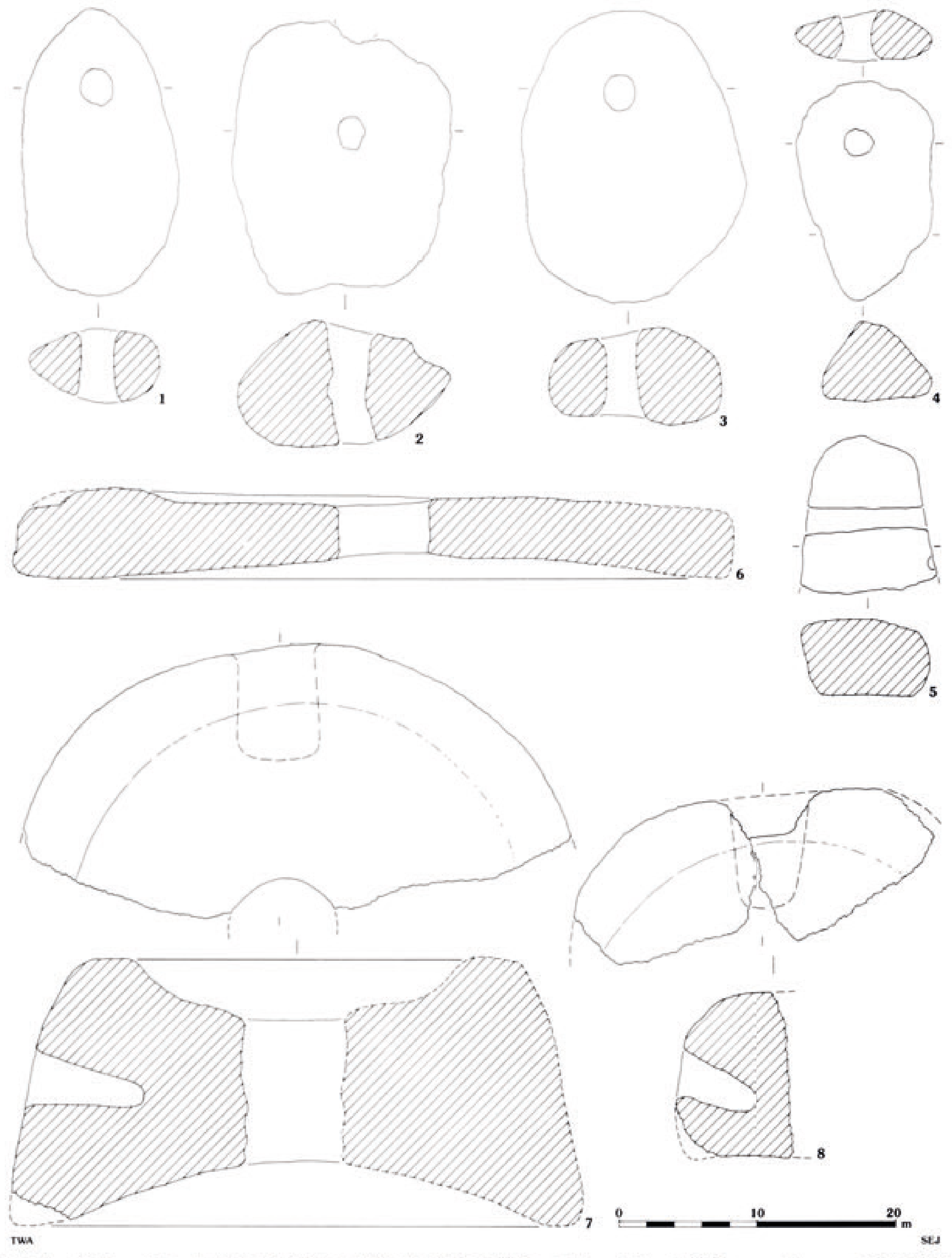


Fig 171 Chalk weights: 1) 8158; 2) 8290; 3) 8286; 4) 8463; 5) 1126; chalk marl disc: 6) 7736; quern fragments: 7) 8548; 8) 7829 and 7732

Bead

At the other extreme, one circular, centrally pierced chalk object (7697; Fig 169: 10) seems too small and unbalanced to function as a spindle whorl. Its function remains uncertain, although 'bead' is a convenient label. One or two of the spindle whorls from Wheeler's excavations (1943, plate XXXIII) seem to be of similar dimensions, but weights are not given.

Weights

Over 16 chalk weights were discovered, 9 of these are complete or near complete, the remaining examples are fragments or uncertain weights. One example (8614) is composed of over 100 small fragments, for which it is impossible to correctly estimate a count, thus '16' is the minimum number of weights represented.

A majority of these have characteristics typical of weights generally thought to be associated with the loom. The more light-weight examples may have served an alternative purpose. Of those complete or near complete examples, two stand out as being unusual (1126; Fig 171: 5, and 8463; Fig 171: 4). Both of these examples are light and relatively well finished.

Of the remaining examples, two (8452; 7696/not illustrated) have very little attention paid to surface finish. 7696 is irregular in shape, shorter than other examples, and light-weight. However, wear marks running through the perforation leave little doubt as to its use as some type of suspended object. 8452 has more attention paid to its sub-rectangular shape, and again distinct thread wear marks within and around the perforation certify to its function. 8025 (not illustrated) is unusual in that the perforation runs widthways. 8290 (Fig 171: 2) possibly bears the remains of an old and broken perforation above the existing one.

All other examples are relatively well finished. Each has its own distinguishing characteristics (Chap 6 fiche), but in general they are either oval, pear-shaped, or sub-rectangular in section, they have maximum lengths of *c* 200mm, and they weigh in the range from *c* 1 to 3kg. Perforations are towards the narrower end, each showing thread wear marks.

Wheeler (1943, 297) recovered over 208 chalk loom weights, many fragmentary, and grouped them into five types according to shape. There are too few examples from the recent excavations to do this, but all examples seem to fit into one or other of his groups. Wheeler also discusses weights occurring in groups of two or more. This is supported by the recent finds: two weight fragments (7750 and 7752) occur close together in soil layer 5095, two (8452 and 8463) were both within pit fill 5946, and three weights all came from rubble layer 6106, all within a reasonable proximity of one another. These three weights are particularly close to one another in maximum lengths and weights, although they differ slightly in shape.

Chalk marl disc

The term chalk marl is used for the hard chalk from the lower chalk levels (one of the spindle whorls, 8337, is also made of this type of chalk). The object (Fig 171: 6) is half of a large, flat, roughly circular disc, with a somewhat off-centre perforation. One face is reasonably well finished and smooth, while the other is rougher with signs of tooling and multi-directional score marks. Slight signs of burning occur on the rougher face.

Whilst the function of this type of object remains uncertain, it resembles objects from Danebury and it has been suggested (Brown 1984, 419) that these are some form of oven or kiln lid. Large chalk or limestone discs from Hod Hill (Brailsford 1962) are described as flywheels.

Miscellaneous objects

The remaining eight pieces are partially worked and somewhat irregular. Some are possibly unfinished weights, others are merely rather fresh blocks of chalk bearing adze marks, probably the result of pit digging. 8492 (Fig 170: 3) is unusual: it is scored around twice, with one shallow score, the other relatively deep. Its function is unknown.

The flaked stone

by M Edmonds and P Bellamy

During the recent excavations, 21,437 pieces of flaked stone were recovered (Table 74). The majority of this assemblage consisted of chalk flint readily available on or near the site. A certain amount of tertiary gravel flint was also present, but given that a number of problems confound the characterisation of flint from different sources (cf Bush and Sieveking 1979), it was decided not to differentiate between these flint types in the bulk of the analyses. A number of observations regarding the relationship between raw material and technology (Saville 1981a) will be explored in the final discussion. Portland Chert also formed a small proportion of the assemblage (Table 75).

There were three principal objectives in the analysis of the assemblage: a technological analysis of the debitage to characterise the nature of raw material use, a morphological and quantative analysis of artefact categories from both the recent and old excavations, and an assessment of broad contrasts between material from the enclosure and data derived from recent fieldwork in the region.

For the morphological analysis of the artefacts and the technological analysis of the debitage, the assemblage is divided into the phases outlined at the beginning of Chapter 4. Although these divisions reflect the broad periods of activity, a greater chronological and spatial control can be achieved by subdividing the phases into the major feature groups.

Phase 2: Neolithic enclosure subdivisions

A, B, and C	inner enclosure ditch
D, G, and H	outer enclosure ditch
E	a bank in trench II
F	a pit in trench IV

Phase 3: Bank Barrow and Late Neolithic occupation subdivisions

A and B	Bank Barrow mound and ditch, trench I
E and F	Bank Barrow ditch, trench III
C, D, and G	later Neolithic/Early Bronze Age occupation

Table 74 Total assemblage of flaked stone

Trench	*Trench area (m sq)*	*Total assemblage*		*Stratified assemblage Phase 2*		*Phase 3*		*Phase 4*	
		no	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*
I	57	9695	51039	5925	34730	2649	10544	651	2522
II	117	4542	20509	1472	6496	722	2148	1018	5010
III	72	2203	23421			986	9972	405	5759
IV	620	4439	53427	172	1073			753	6810
V	20	148	4236	127	3874				
VI	72	410	5806	32	244				

Table 75a Total flint assemblage, catalogued by phase

Category	*Phase 1*		*Phase 2*		*Phase 3*		*Phase 4*		*Phase 5*		*Phase 6*		*Phase 7*		*Phase 8*		*Phase 11*		*Total*	
	no	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*	*no*	*wgt*
Cores, complete			80	12655	28	4895	35	3833			25	7022	2	847			12	1903	182	31155
Cores, broken	1	75	8	450	4	600	5	423			9	911							27	2459
Flakes, complete	47	463	2038	20211	832	9873	743	9781	60	675	1313	23762	92	1600	36	797	351	6738	5512	73900
Flakes, broken	90	142	2716	6155	1383	4767	953	3401	133	326	1487	9371	83	748	28	153	244	2694	7117	27757
Flakes, burnt	5	8	213	1070	99	341	22	273	9	26	140	837	5	23	1	66	21	198	515	2842
Flakes, retouched	4	68	189	1504	43	747	28	808	8	186	22	723					17	171	311	4207
Artefacts	1	1	55	3591	26	821	20	767	1	12	54	4432	1	72			8	1032	166	10728
Miscellaneous	251	42	2406	740	1918	351	1009	782	297	87	1448	2421	99	48	35	16	33	105	7496	4592
Total	399	799	7705	46376	4333	22395	2815	20068	508	1312	4498	49479	282	3338	100	1032	686	12841	21326	157640

Table 75b Total chert assemblage, catalogued by phase

Cores, complete					1	50					1	318							2	368
Cores, broken					1	20													1	20
Flakes, complete			1	5	1	5	1	3			6	100							9	113
Flakes, broken			7	15	12	44	4	10			16	77					4	77	43	223
Flakes, burnt			2	12															2	12
Flakes, retouched									1	3									1	3
Artefacts							1	16			1	8							2	24
Miscellaneous	8	3	13	9	9	8	6	4	2	2	13	9							51	35
Total	8	3	23	41	24	127	12	33	3	5	37	512					4	77	111	798

Phase 4: Bronze Age turfline

Phase 6: extended fort subdivisions

A, B, C, D, J, and K	Iron Age occupation in the eastern half of the hilltop
E, F, G, H, and I	Iron Age occupation in the south-west corner of the hilltop

Technological analysis

Previous work indicated that it was necessary to go beyond the simple question of the presence or absence of artefact types, in order to examine the nature of technological practice. At one level, an attempt has been made to characterise the productive tasks undertaken at the site and to identify changes in the nature of those tasks through time. Attention was also focused upon the organisation of manufacturing and use. This required assessments of the levels of control and efficiency in manufacturing in different contexts. Measurements of efficiency, standardisation, and control have been employed in a number of studies of production sites, through the quantification of a variety of attributes (eg Torrence 1986). These range from evidence for the preparation and rejuvenation of cores and control over the form of flakes, through to errors such as mis-hits, hinge fractures, and discard rates. They allow us to establish a number of relative indices which are helpful in identifying changes in technological practice.

Standard methods of morphological and metrical analysis widely described in the literature were employed throughout this study (Bamford 1985; Saville 1980). Given the problems of varying sample size and integrity, comparisons between contexts must be made with caution. All intact flakes over 20mm in length were measured for length, breadth, and thickness. These dimensions were then employed in the calculation of breadth:length and thickness:length ratios (see Saville 1980; 1981a for a concise discussion of methodology). Whilst research has indicated that statistical indices of breadth:length ratios may have some utility as chronological markers (Pitts 1978), the assemblage at Maiden Castle throws up a number of problems. In the first instance, the incorporation of residual material in many later contexts will have the effect of homogenising the statistical profile to some extent. In addition, the subdivision of the main phases produces a great disparity in sample sizes, thus limiting the extent of comparisons.

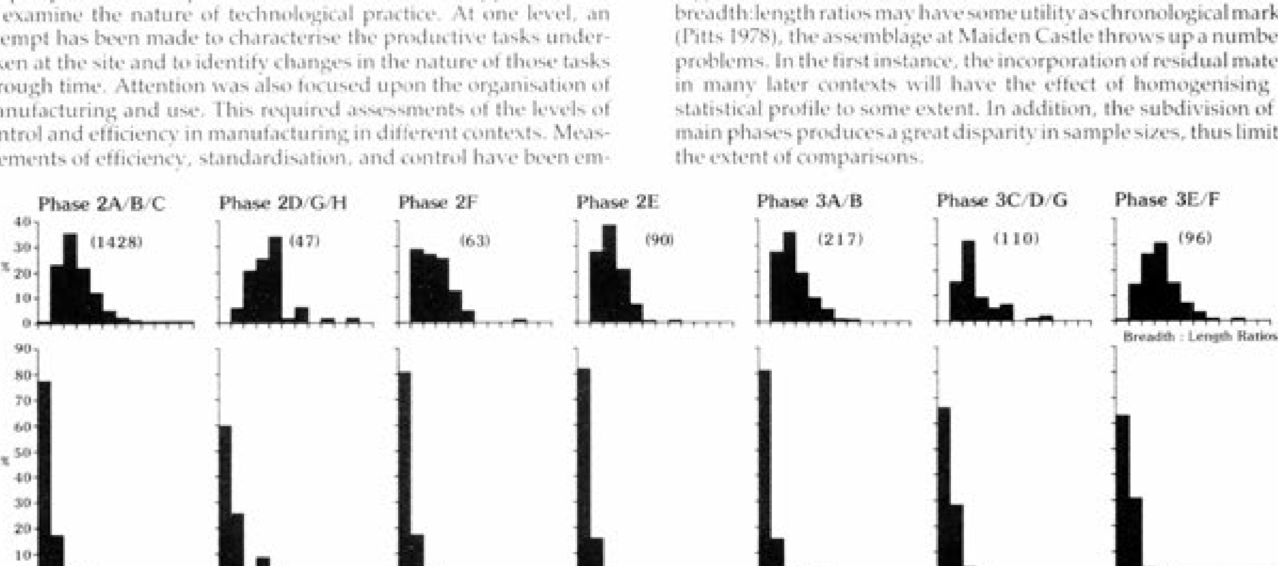


Fig 172 Histograms of breadth:length and thickness:length ratios for the flint flakes; Phase 2A/B/C: the inner ditch of the causewayed camp; Phase 2D/G/H: the outer ditch; Phase 2F: the pit in trench D; Phase 2E: the bank in trench II; Phase 3A/B: the Bank Barrow ditch and bank in trench I; Phase 3E/F: the Bank Barrow ditch in trench III; Phase 3C/D/G: the Late Neolithic occupation

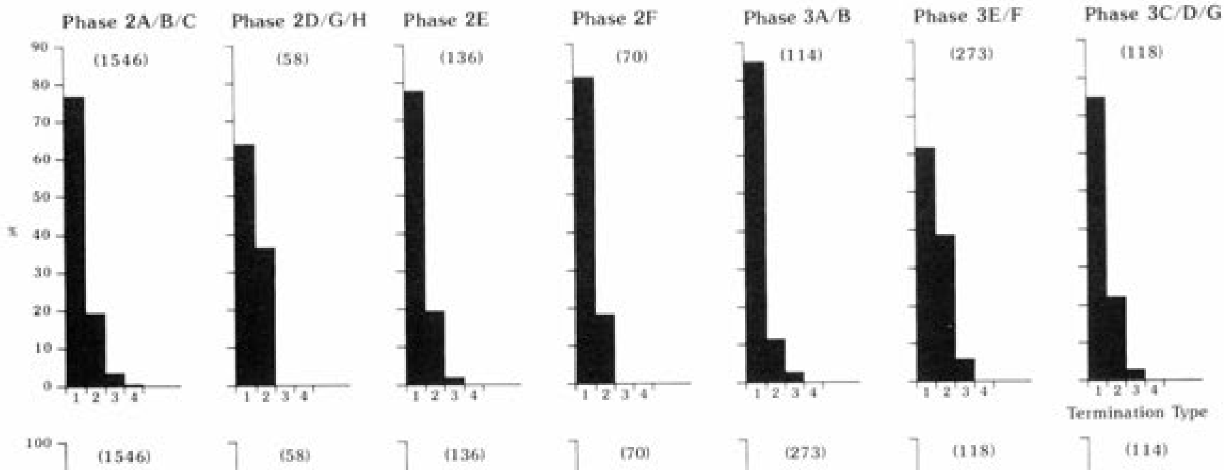


Fig 173 Histograms of the distribution of termination type, flake category, and reduction sequence by phase; termination types: 1) feather, 2) hinge, 3) step, 4) indeterminate; flake categories: F1 flake, F2 blade, F3 thinning, F4 rejuvenation, F5 polished, F6 crested; reduction sequences: 1) no cortex, 2) <25% cortex, 3) <50% cortex, 4) <75% cortex, 5) <100% cortex; Phase 2A/B/C: the inner ditch of the causewayed camp; Phase 2D/G/H: the outer ditch; Phase 2F: the pit in trench D; Phase 2E: the bank in trench II; Phase 3A/B: the Bank Barrow ditch and bank in trench I; Phase 3E/F: the Bank Barrow ditch in trench III; Phase 3C/D/G: the Late Neolithic occupation

At a more general level, the character of the statistical profile will be dependent upon the nature of the productive activities represented in the assemblage. The character and frequency of different classes of waste is a function of technology and not a passive reflector of change through time (Burton 1980; Edmonds 1987; Healey and Robertson-Mackay 1983). Thus, an Early Neolithic assemblage resulting from flake and blade production will present a very different profile to one which contains debris from the production of large core tools. With these problems in mind, standard statistical indices have been employed alongside a wider range of attributes as indicators of the character of activities in each group of contexts.

Phase 2

The bulk of the material in this phase reflects the exploitation of the chalk flint sources located on the hilltop. Pieces of tertiary gravel flint, bearing a thin eroded cortex, were also noted, together with 23 pieces of worked Portland Chert (Table 75). As the histogram of breadth:length ratios indicates (Table 76; Fig 172), narrow flakes and blades predominate in the inner ditch of the enclosure (phase 2ABC). Characterisation of the flakes in terms of their position within a general reduction sequence suggests that, whilst wholly non-cortical flakes represent the largest single class of waste (42%), considerable quantities of primary and secondary material are also present (Fig 173). When taken together, this group contains a significant industrial component, with a marked emphasis upon the testing, preparation, and working down of large cores (Fig 173).

The high frequency of feather terminations on flakes and the low thickness:length ratios of the majority of pieces support the view that care and control were exercised in the avoidance of errors during production (Fig 173; Table 77). When these fields are broken down still further, it is evident that the level of control increased as production progressed from primary working to the final finishing and working down of the cores. Debris from testing, preliminary platform, and core face preparation is generally thicker, with a higher frequency of hinge and step terminations on individual flakes. This can be taken to indicate that, whilst there was little stress on the efficiency of raw material use *per se*, the finishing and subsequent use of cores was undertaken in a more controlled manner. This may reflect an emphasis upon the production of distinct core types which could be worked down in a reliable fashion. Such a view is supported by the presence of large numbers of small platform-trimming chips, small, prepared platforms on individual flakes, and a number of rejuvenation flakes (Fig 173). This latter category includes plunging

Table 76a The breadth/length ratios for flakes

	2ABC		2DGH		2E		2F		Phase 2 Total		3AB		3EF		3CDG		Phase 3 Total		Phase 4 Total	
Ratio	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%
1:5<	7	0.49			1	1.09			8	0.50			1	0.90			1	0.23		
1:5	350	23.10	3	6.38	26	28.57	18	28.57	377	23.14	60	27.64	16	14.44	15	15.78	91	21.46	18	6.76
2:5	498	34.87	10	21.27	35	38.46	17	26.98	560	34.37	76	35.02	29	26.12	27	28.42	132	31.13	70	26.31
3:5	309	21.63	12	25.53	20	21.97	16	25.39	357	21.91	42	19.35	34	30.63	30	31.57	106	25.00	84	31.57
4:5	153	10.11	16	34.04	7	7.69	8	12.69	184	11.29	21	9.67	17	15.31	9	9.47	47	11.08	48	18.04
5:5	71	4.97	1	2.12	1	1.09	3	4.76	76	4.66	11	5.06	8	7.20	5	5.26	24	5.66	21	7.89
6:5	28	1.96	3	6.38					31	1.90	3	1.38	4	3.60	6	6.31	13	3.06	15	5.63
7:5	17	1.19			1	1.09			18	1.10	2	0.92	1	0.90			3	0.70	6	2.25
8:5	6	0.42	1	2.12					7	0.42	1	0.46			1	1.05	2	0.47	3	1.12
9:5	4	0.28					1	1.59	5	0.30	1	0.46			2	2.10	3	0.70		
10:5	4	0.28	1	2.12					5	0.30									1	0.37
11:5	1	0.06							1	0.04			1	0.90	1	1.05	1	0.23		

Table 76b The thickness/length ratios for flakes

	2ABC		2DGH		2E		2F		Phase 2 Total		3AB		3EF		3CDG		Phase 3 Total		Phase 4 Total	
1:5<	1105	77.28	28	59.57					1170	75.97	176	81.10	70	63.06	63	65.62	309	72.87	127	47.92
1:5	252	17.64	12	25.53	75	82.41	51	80.95	290	18.83	34	15.66	34	30.63	27	28.12	95	22.40	125	47.16
2:5	33	2.31	2	4.25	15	16.48	11	17.46	37	2.40	3	1.38	4	3.60	4	4.16	11	2.59	11	4.15
3:5	19	1.33	4	8.51	1	1.09	1	1.58	23	1.49			2	1.80	2	2.08	4	0.94	2	0.75
4:5	8	0.56	1	2.12					9	0.58	1	0.46	1	0.90			2	0.47		
5:5	8	0.56							8	0.51	3	1.38					3	0.70		
6:5	2	0.14							2	0.12										
7:5																				
8:5	1	0.07							1	0.06										

Table 77a The whole and broken unretouched flakes

	2ABC		2DGH		2E		2F		Total		3AB		3EF		3CDG		Total		Total	
	no	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%	*no*	%
Whole	1325	92.46	43	81.13	84	65.62	53	92.98	1505	90.00	203	78.99	110	94.01	85	83.33	398	83.61	144	90.00
Broken	108	7.54	10	18.87	44	34.38	4	7.02	166	10.00	54	21.01	7	5.98	17	16.66	78	16.38	16	10.00

Table 77b Termination types

Feather	1186	76.71	37	63.79	106	77.94	57	81.43	1386	76.57	233	85.35	73	61.86	86	75.44	392	77.62	227	68.17
Hinge	303	19.50	21	36.21	26	19.12	13	18.57	363	20.05	32	11.72	39	33.05	25	21.93	96	19.01	92	27.63
Step	53	3.43			4	2.94			57	3.15	8	2.93	6	5.08	3	2.63	17	3.37	14	4.20
Indeterminate	4	0.26							4	0.22										

Table 77c Utilised flakes

Microgloss	242	67.59	1	16.66	10	52.63	14	53.85	267	65.28	31	65.96	9	90.00	8	42.10	48	63.15	24	53.33
Gloss	7	1.95			1	5.26			8	1.93										
Retouch	108	30.16	5	83.33	8	42.11	12	46.15	133	32.50	16	34.04	1	10.00	11	57.89	28	36.85	21	46.66
Indeterminate	1	0.27							1	0.24										

Table 77d Reduction sequences: cortex on dorsal surface

No cortex	579	42.38	12	29.26	41	45.55	22	40.74	654	41.94	111	52.11	38	37.25	51	55.43	200	49.14	100	40.81
< 25% cortex	422	30.89	15	36.58	29	32.22	11	20.37	485	31.10	62	29.10	21	20.58	24	26.08	107	26.28	69	28.16
< 50% cortex	200	14.64	6	14.63	12	13.33	12	22.22	230	14.75	27	12.67	23	22.54	10	10.86	60	14.74	38	15.51
< 75% cortex	113	8.27	6	14.63	7	7.77	9	16.66	135	8.65	13	6.10	15	14.70	3	3.26	31	7.61	28	11.42
< 100% cortex	52	3.80	2	4.87	1	1.11			55	3.52			5	4.90	4	4.34	9	2.21	10	4.08

Table 77e Flake categories

Flake	1332	86.15	50	86.24	112	82.35	64	91.42	1558	86.01	209	76.55	102	86.44	100	87.71	411	81.38	303	90.99
Blade	126	8.15	3	5.17	14	10.29	4	5.71	147	8.12	30	10.98	7	5.93	7	6.14	44	8.71	9	2.70
Thinning	44	2.84	4	6.89	7	5.14			55	3.04	31	11.35	9	7.62	6	5.26	46	9.10	15	4.50
Rejuvenation	40	2.58	1	1.72	3	2.20	2	2.85	45	2.48	2	0.73			1	0.87	3	0.59	6	1.80
Polished	1	0.06							1	0.05	1	0.36					1	0.19		
Crested	3	0.19							3	0.16										

flakes which run down the long axis of the core, together with lateral recovery pieces – removing crushed or overhanging platforms on cores already in use. The direction of ripple marks and the position of cortex on the dorsal surface of flakes suggest that the majority of cores were worked along one principal axis with a single platform. Secondary platforms, either opposed or at 90° to the first platform, appear to have been created on cores which had already been worked along one axis to a considerable extent (Fig 177).

Although core production would appear to dominate this assemblage, it is also evident that a wider range of tools were also being produced. Recognising flakes which are diagnostic of other forms of manufacturing is somewhat problematic, since only unequivocal examples can be assigned to different categories with any confidence. This is particularly so in the production of large core tools, where flakes from the initial and final stages of working closely resemble those struck from cores at similar points. However, the presence of thinning, mass reduction, and retouch flakes attests to the production of axes and other large core tools. The recovery of a single thinning flake with a polished dorsal surface provides an insufficient basis for interpretation, but it may indicate that the reworking of tools may also have taken place on the site.

The sample recovered from the outer ditch of the enclosure (2DGH) is considerably smaller than that attributable to 2ABC. However, a number of general points of contrast can be made. Due to the small sample size, breadth:length ratios are of little value as chronological markers, although it is interesting to note the extent to which the profile is skewed towards broader flakes (Fig 172). This may not indicate an appreciably later date for the material in the outer ditch, due to the character of the waste itself. Here, there is a marked emphasis upon primary working debris together with a few characteristically broad axe thinning flakes. The high frequency of hinge and step terminations and the spread of thickness:length values again reflect a low level of efficiency in raw material use during the initial stages of manufacturing, echoing the patterns noted in the inner ditch (Figs 172 and 173). In addition, this group contains a small number of broken blades and rejuvenation flakes, together with a considerable number of snapped and shattered pieces. Given that these contexts have been truncated, inferences drawn from what may be an unrepresentative sample must remain open to question. However, this small group may represent part of an assemblage generated during the production of large core tools, such as axes. Whilst the number of diagnostic thinning flakes is relatively low, the shattered material closely resembles that which is frequently generated during the secondary and tertiary stages of axe-making. A greater degree of doubt hangs over the primary working debris: given the close similarities that exist between material discarded during the initial stages in the production of a wide range of artefacts, raw material form and size exert a considerable influence over the character of working. If the vast majority of artefacts were produced using the same local stone, then this overlap in debitage types is to be expected.

The sample attributed to phase 2E appears to be residual material from the enclosure ditch incorporated into the bank, although the possibility of some mixing cannot be ruled out entirely. Histograms of breadth:length and thickness:length ratios indicate the presence of a significant narrow flake/blade component in this group, although again the sample size is small (Figs 172 and 173). Evidence for the preparatory trimming of platform crests prior to flake removal suggests a high degree of control over the intended form of flakes: a characteristic noted in contexts 2ABC. Similarly, the presence of plunging flakes and lateral crest rejuvenation pieces echoes that observed in the inner enclosure ditch. The higher frequency of broken flakes and crushed fragments in this sample can tell us very little in technological terms, although they may reflect disturbance.

The material recovered from 2F – a small pit to the south-west of the enclosure – appears to contain debris associated with the secondary working of cores and the production and utilisation of flakes. When taken as a whole, the group is far from industrial in character and may represent the deposition of material associated with an episode of activity other than tool or core manufacturing. Large core-face preparation flakes and a number of pieces from two platform cores create a profile of breadth:length ratios which masks the significant component of narrow flakes and blades, 26 of which have either been utilised or retouched.

In this sample, as with other contexts, the question of raw material characterisation is of considerable importance. Whilst the majority of pieces reflecting secondary core working appear to be made of the chalk flint found at Maiden Castle, many of the narrower flakes and blades display qualitative differences which indicate that they may be made of flint from the tertiary gravels. Many of these pieces have carefully trimmed platforms and parallel scars on their dorsal surfaces. It is possible that they may represent a subgroup within the pit, reflecting the transport of material to the site in the form of prepared narrow flake/blade cores.

Phase 3

Sample 3AB comprises material from both the mound and the ditch of the Bank Barrow and, as might be expected, shows a technological profile very similar to that described for the fill of the inner enclosure ditch (2ABC). Here again, there is a clear emphasis upon the production and use of cores, including A1 and A2 types, generating large numbers of narrow flakes and blades. A relatively high degree of control is evident in the high percentage of feather terminations on flakes, and in the domination of pieces with a thickness:length ratio of less than 1:5 (Fig 172). Significant quantities of small platform trimming chips, prepared butts, and parallel scars on the dorsal surfaces of many flakes and blades add weight to this interpretation, although the incidence of rejuvenation or recovery pieces is very low.

Although the calculation of breadth:length ratios reflects this pattern, the occurrence of a smaller percentage of broader flakes attests to both the primary working of cores and the removal of large, broad, thinning flakes in the production of axes. Given the nature of the sample, it is not possible to determine whether the entire group is the product of the recutting of the enclosure ditch, or whether production of a similar nature continued during the construction of the mound.

Sample 3EF bears a close similarity with the patterning described above, even in terms of the number of flakes of Portland Chert (five in 3EF, compared with eight in 3AB). The recurrence of debris from the primary and secondary working of cores, the production of narrow flakes, and the thinning of axes are again persistent characteristics of this material. However, this sample also contains a high frequency of broken and shattered flakes, representing tertiary core flaking and axe thinning. Whilst there is a higher incidence of hinge fractures on material from 3EF than in 3AB, the patterns of breakage on pieces too small to measure indicate that material from these contexts may have been exposed to trampling.

Sample 3CDG displays a number of differences to those contexts associated with the Bank Barrow. In this case, the likelihood that we are dealing with a mixed assemblage containing earlier and later Neolithic/Early Bronze Age components must be considered as high. This is evident in the profile of breadth:length ratios, which shows a broader spread of values, despite peaks in the 1:5 and 2:5 range. Evidence for the production of narrow flakes and blades in a controlled manner is still apparent, but no longer dominates, whilst debris attributable to the production of other tools also appears to be of a lower frequency. Although some similarities with 3AB and 3EF can be identified (such as the frequency of hinge fractures between 3EF and 3CDG), this group does not display the characteristics of an industrial assemblage apparent in the samples discussed above.

Phase 4

The material associated with the Bronze Age turfline displays a number of differences from the material associated with the enclosure and the Bank Barrow. In general terms, the character of working does not reflect any significant level of control: we find an overall increase in the frequency of hinge and step terminations on individual flakes (Fig 173), and a wider spread of values for breadth:length ratios, centring on a peak in the 3:5 range. Butts on flakes show few signs of preparatory trimming and the small percentage of rejuvenation flakes indicate little stress upon rectifying errors in production. Analysis of the position of cortex on the dorsal surfaces of flakes would seem to reflect a persistence of core production and use, a view borne out by the spread of material from all stages in the reduction sequence (Fig 173). Here, however, the emphasis appears to be upon the production of larger multi-platform cores, with little control placed upon the form of flakes being produced (although the presence of one discoidal core should be noted). The presence of a small number of thinning flakes may indicate that the production of other tools also took place. However, their low frequency and the fact that little attention has been paid to the preparation of platforms suggest that production was undertaken under different constraints.

Table 78 Tool types by phase subdivision

Tool type	*1*	*4*	*5*	*7*	*8*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Phase														
1A								1	2					
1B	1								1					
Total	1							1	3					
2A	3			21	2	2	2	31	88		1	1	1	3
2B	1			1				8	21					
2C				4			1	1	9		1			
2D				1			1							
2E				2			1	3	8					
2F				1			2		14					
2G				2				1	5			1		
Total	4			32	2	2	7	44	145		2	2	1	3
3A	1			5	1			6	15					
3B	1			3					5		1			
3C				2			1		3					
3D				3		1	2	1	9					
3E				1					1					1
3F				2					1		1			
3G									2					
Total	2			16	1	1	3	7	36		2			1
4A				1		1			3					
4B				5	1				10					1
4C				1	2		3		12					
4D				5					3					
Total				12	3	1	3		28					1
5A														
5B				1					3					
5C									1					
Total				1					4					
6A														
6B				1										
6C				1					1				1	
6D				10	1		3		22					1
6E					1				3					3
6F		1	1	3	1				2	1	1			2
6G				6	1	1			6				1	2
6H				5					3					1
6I				5					1					
6J					1									
6K														
Total		1	1	31	5	1	3		38	1	1		2	9
7A				1										
11A				2			1							
11B				1					3					
11C				4			1		10					
11D				1										
Total				8			2		13					
Overall total	7	1	1	100	11	5	18	52	264	1	5	2	3	14

Table 79 The flaked stone: the artefact assemblage from Wheeler's excavations

Trench	*A*	*B*	*D*	*E*	*F*	*G*	*H*	*J*	*K*	*L*	*O*	*P*	*Q*	*R*	*T*	*Total*
1 Leaf arrowhead				1	3				1				9	2	5	21
2 Transverse arrowhead												1	1		1	3
3 Oblique arrowhead	1				1										1	3
4 Barbed-and-tanged arrowhead													1			1
5 Unclassified arrowhead																
6 Laurel leaf						1	1									2
7 Scraper	22	3	5	5	28	28	11			38	3	4	68	73	33	321
8 Piercer										3		1	1		1	6
9 Rod/fabricator					1	1							2			4
10 Knife	1					3							1	1	1	7
11 Misc flake tool				1		1				4		1	4	1	2	14
12 Serrated flake						1							6		3	10
13 Misc retouched flake	12		3	1	8	5	3	1		9	1		10	2	9	64
14 Polished axe	1				1	2				1			2	1		8
15 Flaked axe	4				4	2	1			3			7	2	7	30
16 Pick				1										2		3
17 Misc core tool	1		1		2	2				2					1	9
18 Hammerstone						2				4						6
Total	42	3	9	9	48	48	16	1	1	64	4	7	112	84	64	512

Assemblage description

The composition of the assemblage from the recent excavations is presented in tabular form (Table 75). Individual artefact categories are described in conjunction with the data from the Wheeler excavations in the fiche for Chapter 6 (Tables 78 and 79). Any comparison between these two assemblages must take into account the very different recovery strategies that were employed. The preferential recovery of distinctive 'fine' artefacts by Wheeler, coupled with a disregard for the more abundant waste material, mean that comparisons can only be made in relation to retouched tools (Fig 175). Indeed, this is not without its difficulties, since certain, less distinctive artefact types, such as miscellaneous retouched flakes, are likely to be seriously underrepresented. In addition, it is also likely that crude examples of particular artefacts may have also been discarded or ignored.

For the purposes of comparison, all of the Wheeler material stored in the Dorset County Museum was re-examined. Although additional information is also available in the written archive (also stored in the museum), this was disregarded due to the often rudimentary nature of descriptions and the lack of contextual information.

Phase 2

The artefact assemblage from phase 2 has both the largest number of pieces and the greatest range of types (Fig 176). The most distinctive feature of the assemblage is the high frequency of serrated flakes. These are almost exclusively associated with phase 2, with only a few in phase 3 and none in the later phases. When this is broken down still further, it is apparent that a clear association exists between serrated flakes and the inner enclosure ditch. 77% were found in the inner ditch (phase 2ABC), compared with a single example from the outer ditch (phase 2DGH). Six of those found in the inner ditch (2ABC) possessed a distinct gloss close to the edge on one surface. Most of those found in phase 3 occur in contexts which are likely to contain residual material from the enclosure ditch (3AB). A roughly similar pattern is reflected in the distribution of leaf arrowheads (Fig 178). The scrapers on the other hand do not display any significant variation between phases. The occurrence of several core tools (Fig 182) adds weight to the interpretation of the debitage: that the production of artefacts, other than cores, took place on site. The large number of miscellaneous retouched pieces (Fig 180) is likely to reflect the fact that a range of activities other than simply manufacturing were undertaken within the enclosure, a possibility which is also suggested by the range of tools.

The occurrence of two denticulate scrapers in the inner ditch of the enclosure is unusual given that these are generally regarded as being a later tool type, often found in Bronze Age assemblages (P Harding 1991; Saville 1981b). The denticulations on the pieces from Maiden Castle are generally less coarse than those in Bronze Age assemblages, such as Rowden, Winterbourne Steepleton, Dorset, and thus may be a chronological variant.

Phase 3

The general composition of the phase 3 assemblage bears a strong similarity to that described for phase 2 with the exception of the serrated flakes. If we subdivide phase 3, the reasons for this similarity become apparent. The majority of the artefacts are from 3AB, which contains a large residual component from the enclosure ditch. Very few artefacts were recovered from 3EF. No significant differences in artefact assemblage structure could be drawn between these contexts and the later Neolithic occupation (3CDG), although the presence of a double-end scraper and a 'Y-shaped' tool should be noted.

Phase 4

The material incorporated in the Bronze Age turfline displays a number of points of difference with the earlier groups from phases 2 and 3. Here, we find a comparatively higher frequency of piercers, miscellaneous retouched flakes, and flake tools (including one denticulate). In technological terms, the degree of finishing and control over the form of these artefacts in this phase reflects the downward trend noted in the analysis of the debitage. One of the piercers and one of the scrapers were manufactured on thermal blanks.

Phase 6

With phase 6, we find a marked change in assemblage composition, with a far higher frequency of scrapers and hammerstones, a slight increase in the number of piercers and fewer miscellaneous retouched flakes. Many of the artefacts display qualitative characteristics similar to those associated with artefacts in phase 4. The scrapers, for example, include many more unclassifiable types. The vast majority of retouched flakes with thinned or removed butts were recorded in this phase. The differences in assemblage composition becomes more apparent when the two subdivisions are examined separately. The material from the eastern hillfort (6ABCDJK) is similar in composition to that attributable to phase 4 and is likely to contain residual material from both Early Neolithic and Bronze Age episodes of activity. The western hillfort (6EFGHI), on the other hand, is strikingly different. Whilst it too is likely to contain residual material, the Early Neolithic component does not appear to be substantial. The majority of the group is likely to be Late Neolithic/Early Bronze Age in date. It contains the only barbed-and-tanged arrowhead and polished axe fragment recovered during the recent excavations. Very few miscellaneous retouched flakes were found: in fact, scrapers are more numerous. The large number of hammerstones in this group (Fig 183) may well be associated with Iron Age activity, rather than Neolithic or Bronze Age.

Sampling bias

Comparison of the original artefact assemblage and the recent assemblage highlights the problem of sampling bias which any interpretation must take into account. Scrapers dominate the Wheeler assemblage, whilst miscellaneous retouched and serrated flakes are underrepresented (Fig 175).

A comparison between trenches from the two excavations is presented in Table 80. Due to the restricted size of samples, it is not possible to draw any meaningful comparisons using site D, trench V, and trench VI. Once the biases created by recovery strategies are taken into account, the assemblages from site A and trench II display

Table 80 The flaked stone: a comparison of artefacts from the recent excavations and Wheeler's excavations

Type	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Site A			1				22			1			12	1	4		1	
Trench II	1						19	1		1	5	5	50				1	1
Site D							5						3				1	
Trench IV							25	3		1	2		35	1	1		1	8
Site F	3		1				28						8	1	4		2	
Trench V							2	1				1	1			1		
Site G						1	28		1	3	1	1	5	2	2		2	2
Trench VI							1											
Site Q	9	1		1			68	1	2	1	4	6	10	2	7			
Trench I	6						33	3		3	7	46	138		2	1	1	3
Trench III							15	3			6		30					

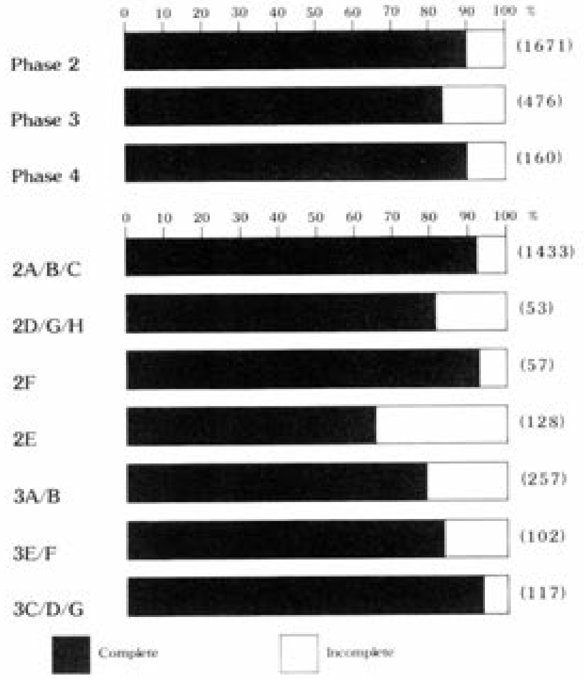


Fig 174 The proportions of broken and complete unretouched flint flakes in each phase; Phase 2A/B/C: the inner ditch of the causewayed camp; Phase 2D/G/H: the outer ditch; Phase 2F: the pit in trench D; Phase 2E: the bank in trench II; Phase 3A/B: the Bank Barrow ditch and bank in trench I; Phase 3E/F: the Bank Barrow ditch in trench III; Phase 3C/D/G: the Late Neolithic occupation

Table 81 The flaked stone: artefacts from site Q

	Causewayed enclosure ditch	*Bank Barrow mound*	*Bank Barrow ditches*	*Pits*
Leaf arrowhead	2	6		
Chisel arrowheads			1	
Barbed-and-tanged			1	
Scraper	6	19	26	7
Rod			1	
Knife				1
Flake tools	1		2	
Serrated flakes	4			1
Retouched flakes			7	
Polished axe		2		
Flaked axe		2	2	3

broad similarities, although the absence of serrated flakes from site A is noteworthy. The assemblage from site Q bears a stronger resemblance to that derived from trench I, than it does to material from trench III. However, if the material from site Q is divided according to the major features (Table 81), it can be seen that this close similarity reflects the fact that both assemblages contain a high proportion of residual material from the inner ditch of the enclosure.

When the Wheeler assemblage is divided along the lines of the major stratigraphic units on the site (Table 82), a broad correspondence between the two data sets can be discerned. This is particularly evident in the association of serrated flakes and leaf arrowheads with the enclosure ditches. It would appear that polished flint axes are more closely associated with the enclosure ditches than flaked flint axes, which have a wider spatial and contextual distribution (notably their incorporation in pit fills). The general similarities between the two assemblages associated with the Bank Barrow undoubtedly reflect the high proportion of residual material which appears to be present. The two waisted flake tools in the Wheeler assemblage and the 'Y-shaped' tool in the recent material appear to be associated with the later Neolithic/Early Bronze Age occupation levels in the Bank Barrow ditch.

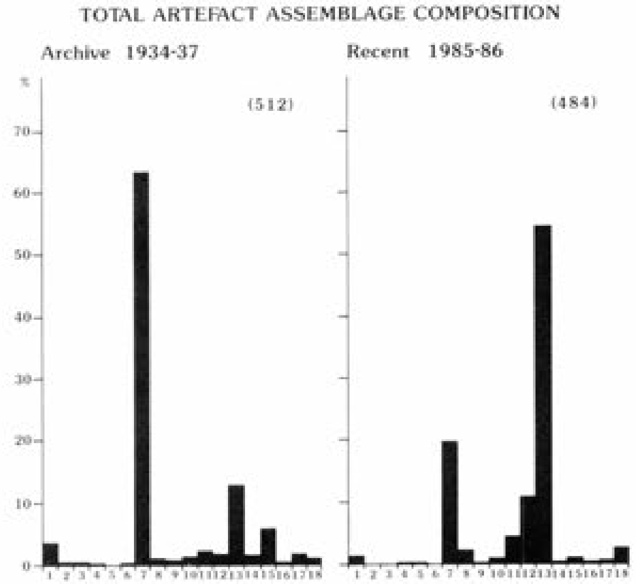


Fig 175 The composition of the archive and recent assemblages of flint artefacts: 1) leaf arrowhead, 2) transverse arrowhead, 3) oblique arrowhead, 4) barbed-and-tanged arrowhead, 5) unclassified arrowhead, 6) laurel leaf, 7) scrapers, 8) piercers, 9) rods/fabricators, 10) knives, 11) misc flake tools, 12) serrated flakes, 13) misc retouched flakes, 14) polished axe, 15) flaked axe, 16) picks, 17) misc core tools, 18) hammerstone

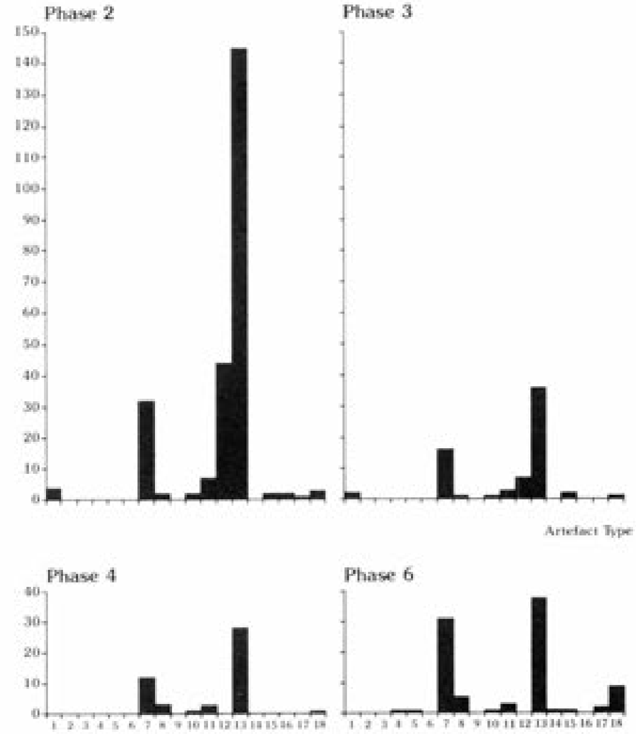


Fig 176 The distribution of flint artefacts by phase: 1) leaf arrowhead, 2) transverse arrowhead, 3) oblique arrowhead, 4) barbed-and-tanged arrowhead, 5) unclassified arrowhead, 6) laurel leaves, 7) scrapers, 8) piercers, 9) rods/fabricators, 10) knives, 11) misc flake tools, 12) serrated flakes, 13) misc retouched flakes, 14) polished axe, 15) flaked axe, 16) picks, 17) misc core tools, 18) hammerstone

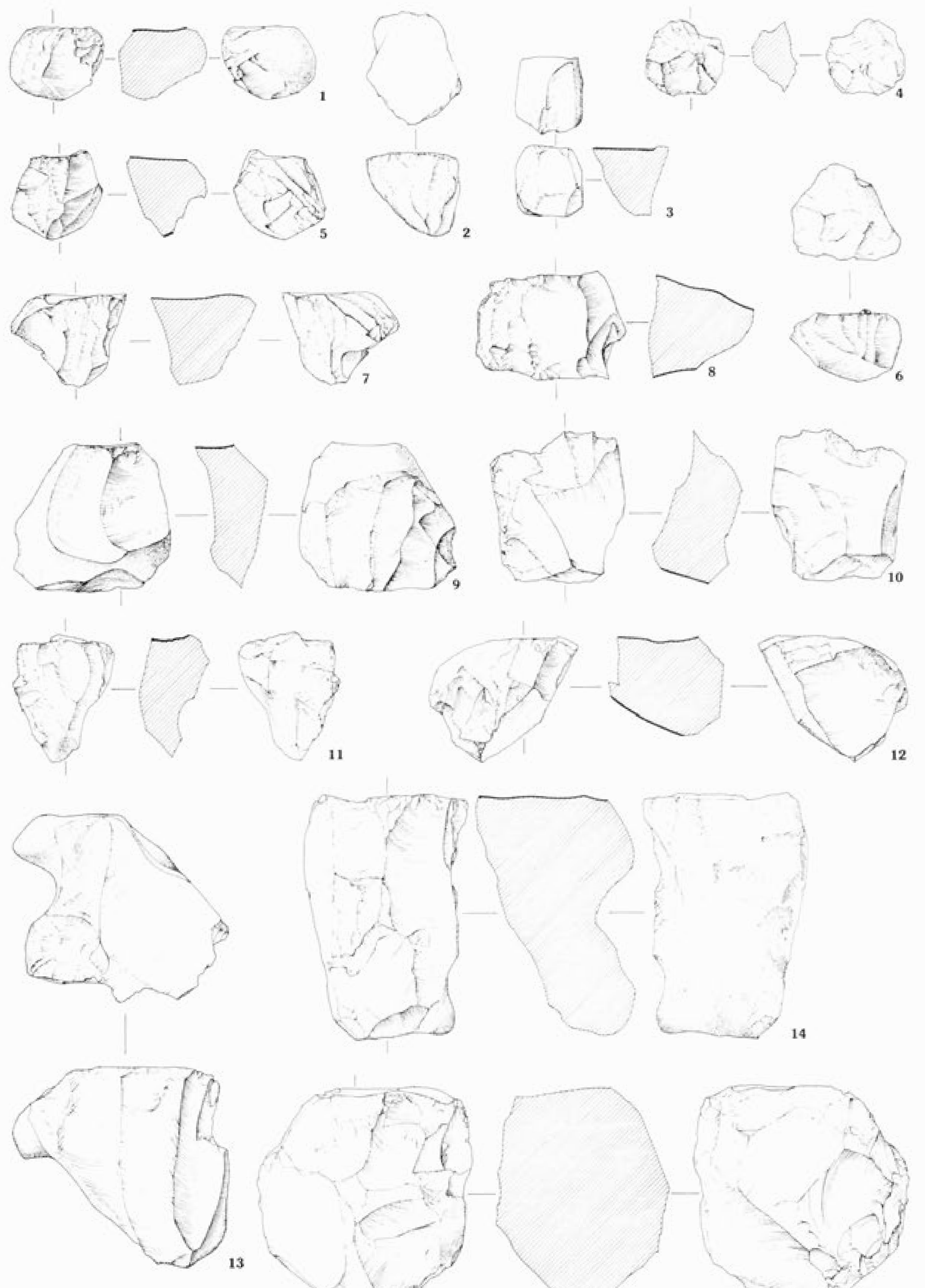


Fig 177 Flint cores, Phase 2A: 2/4659, 3/4663, 5/4664, 6/2211, 7/4660, 9/4669, 11/4657; Phase 2B: 1/4658, 4/4675, 8/4673; Phase 2G: 13/4684, 15/4685; Phase 2H: 12/4687; Phase 6D: 10/4679, 14/4665

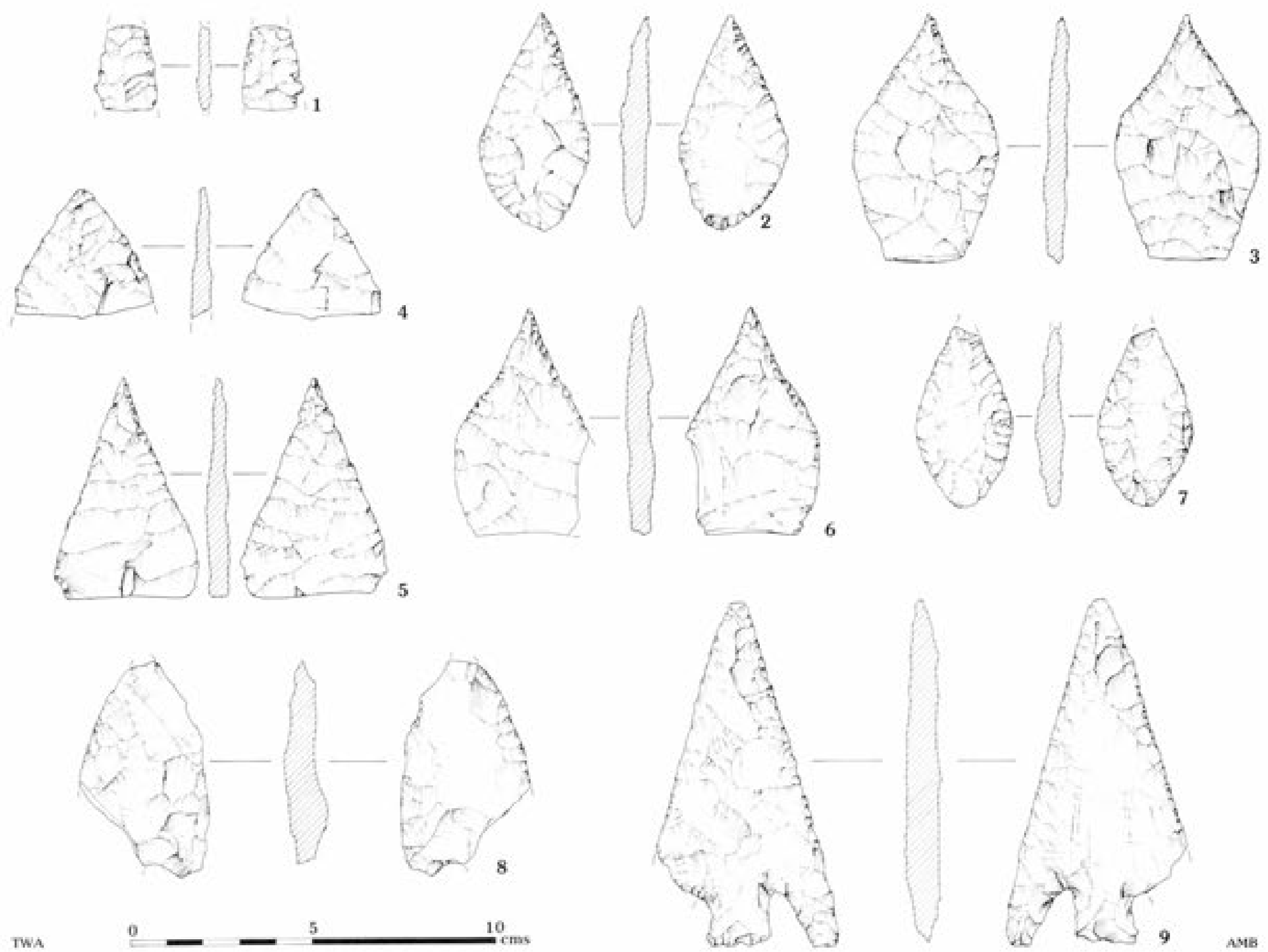


Fig 178 Flint arrowheads, Phase 1B: 1/4581; Phase 2A: 2/2425, 3/2334, 4/4688; Phase 2B: 5/2407; Phase 3A: 6/1878; Phase 3B: 7/4653; Phase 6F: 8/4611, 9/8514

Table 82 The flaked stone: Wheeler's artefacts by monument phase

Type	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Causewayed camp	4		1				88				2	4	3	4	4	2	2	
Bank Barrow mound	6						19							2	2			
Bank Barrow ditch		1		1			52		1		4		11	1	2		1	3
Bronze Age turfline							5	2					1				1	
Total	10	1	1	1			164	2	1		6	4	15	7	8	2	4	3

Discussion

Only one other secure and well stratified Early Neolithic assemblage in the vicinity of Maiden Castle has been the subject of detailed analysis: Rowden, Winterbourne Steepleton, on the South Dorset Ridgeway (P Harding 1991). Additional sites, which may be contemporary with the enclosure, take the form of unstratified flint scatters identified during the landscape survey. Other stratified assemblages from the Dorchester area, for example Alington Avenue (Bellamy forthcoming a), Greyhound Yard (Bellamy forthcoming b), Mount Pleasant (Wainwright 1979b), and Poundbury (Saville 1987), tend to be all later in date.

A number of interesting comparisons can be drawn between the assemblage from Maiden Castle and that from Rowden. The proportion of cores in both assemblages is roughly similar (*c* 0.7%), as is the range of types, with higher frequencies of class A2 and class C types, although greater numbers of keeled cores (class D) occur at Rowden.

In contrast to the Maiden Castle material, the data from Rowden appear to reflect the manufacture and use of cores alone. On both sites, core production appears to have been undertaken in a relatively controlled manner. This is reflected by evidence for careful core production, platform trimming, abrasion, and rejuvenation. At both sites, cores generally appear to have been worked down one principal axis, indicating a preference for long narrow flakes and blades. However, one source of contrast lies in the more frequent use of an alternate flaking technique at Rowden, a practice reflected by the greater numbers of keeled cores.

Indices of breadth:length ratios from the two sites indicate a far lower frequency of very narrow flakes/blades in the Rowden group. This contrast takes on an added significance, when we consider the position of flakes within a general reduction sequence. At Rowden, primary and secondary waste predominate, whilst tertiary flakes and blades appear to be underrepresented, a pattern which suggests that this latter

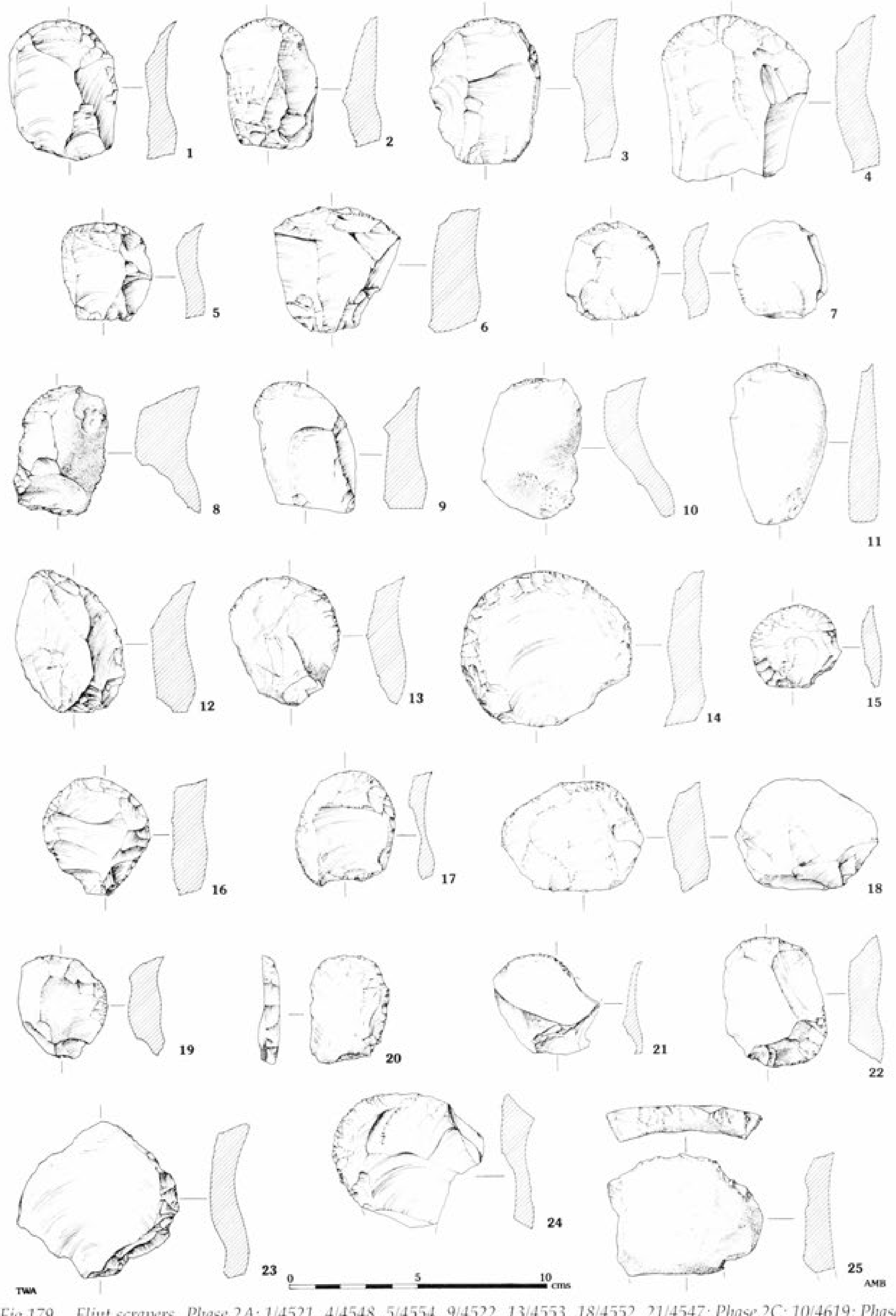


Fig 179 Flint scrapers, Phase 2A: 1/4521, 4/4548, 5/4554, 9/4522, 13/4553, 18/4552, 21/4547; Phase 2C: 10/4619; Phase 2F: 2/4614; Phase 3A: 11/4512; Phase 3C: 3/4587; Phase 3D: 15/1792, 22/4534; Phase 3F: 20/4570, 24/1125; Phase 4B: 6/4503, 19/4537; Phase 4C: 7/4580; Phase 4D: 25/4626; Phase 6F: 14/4509, 16/8448; Phase 6H: 8/4608, 23/4600; Phase 11A: 12/4571; Phase 11C: 17/4533.

Fig 180 Miscellaneous retouched flint tools, Phase 1B: 6/4589; Phase 2A: 9/4543; Phase 3A: 5/4516, 14/4510; Phase 3B: 8/4575; Phase 3E: 1/4508; Phase 3G: 15/4507; Phase 4B: 2/4585, 7/4583; Phase 4C: 13/4579; Phase 4D: 11/4531, 16/4623; Phase 6F: 10/4655, 18/8541; Phase 6H: 3/4601, 4/8234, 12/4643, 17/4636

Fig 181 Miscellaneous retouched flint tools, Phase 2A: 6/4566; Phase 2B: 7/4517, 16/4584; Phase 2D: 15/1553; Phase 3C: 13/4588; Phase 3D: 10/4586, 11/4561, 14/4590; Phase 4B: 8/1661; Phase 4C: 1/1123, 2/4504; Phase 6G: 4/4632, 12/4604; Phase 6J: 5/4594; Phase 7A: 9/4596; Phase 11F: 3/4595

material may have been selected for some form of use.

Although both assemblages contain a roughly similar range of artefact types, the absence of large core tools at Rowden is particularly interesting. This distinction is strengthened by the absence of waste which can be unequivocally attributed to core tool production. Given that both sites are situated on outcrops of good chalk flint, this contrast cannot be related to different raw material constraints.

Comparisons between the material from the enclosure and that recovered from flint scatters in the surrounding area must necessarily be more limited in detail, particularly in chronological and technological terms. However, a number of important distinctions in spatial patterning can be identified (see pp32–4).

Immediately to the north-east of Maiden Castle, there was a discrete concentration of material (sample area 15) which contained incomplete or burnt flaked flint axes and polished axes, two of which have been reworked as cores. The presence of two removals from a polished axe should also be noted. Given that the associated waste does not include any byproducts diagnostic of axe production, the character of this deposit remains unclear. It is likely that this assemblage is derived from a pit or series of pits truncated by modern landuse.

Similar patterning is also evident in a series of pits, excavated by Wheeler outside the eastern end of the enclosure (1943, 85–6). The condition of the seven flint axes recovered from these pits emphasises this similarity. Two are broken, three appear to be unfinished, one has been burnt, and another reworked as a core. These pits also contained a number of other artefact types, including serrated flakes and leaf arrowheads, although the presence of later Neolithic elements indicates that the group is not chronologically homogeneous (see p185). The landscape survey revealed a fairly high concentration of artefacts immediately outside the eastern end of Maiden Castle. This included a broken, reworked axe and a small axe, which appears to have been formed by reworking a larger, broken polished axe.

A very different situation was observed outside the western end of the enclosure. The single pit (2F), found in trench IV, which has already been discussed in some detail, appears to reflect a single episode of activity of a character very different to that apparent in pits outside the eastern entrance. The suggestion that site E, situated close to this pit, was a Neolithic working floor (Wheeler 1943, 100) requires some further comment. Very few pieces have survived from this site, a single leaf arrowhead being the only diagnostic element. Most of the other material which survives bears a strong resemblance to waste recovered from trench IV and is likely to be Late Neolithic/Early Bronze Age in date. It seems reasonable to suggest that this does not constitute a Neolithic working floor, but rather a sorted horizon at the base of the Bronze Age turfline.

Further west, on Hog Hill, evidence of earlier Neolithic activity was revealed in the survey. Sample area 3 (Fig 25) contained evidence for the procurement and testing of raw material, but it is not clear whether this was contemporary with the use of the enclosure. It might be the case that this area, which had witnessed earlier Neolithic activity, only became important for procurement in the later Neolithic.

Evidence for earlier Neolithic activity on other excavated sites in the Dorchester area is somewhat sparse. At Mount Pleasant (Wainwright 1979b), several serrated flakes were recorded in the pre-enclosure soils and in the later silts: they are all likely to be residual. The same may also be said for the polished and flaked flint axes and the leaf arrowhead recovered from this site. At Alington Avenue, the flint assemblage is associated with the long barrow. It consists of largely primary and secondary waste generated during the production of single platform cores. The low incidence of tertiary flakes/blades and other artefacts suggests that this assemblage may be the result of the working of raw material encountered in the long barrow ditch. In the absence of any evidence for settlement, it seems likely that the products of this procurement activity may have taken place elsewhere. A similar situation exists at Greyhound Yard, where procurement and production appear to be associated with the digging of sub-surface features.

Conclusion

Given these broader patterns, it is possible to draw a number of inferences concerning the character of the Maiden Castle assemblage. In raw material terms, there is little evidence to suggest that Portland Chert was regarded as intrinsically important. The low frequency of this material on the site cannot in itself be taken as evidence that the site was not a focus for exchange. However, given that it does not appear to be worked in any markedly different way and that small worked pebbles occur in a number of areas outside, this hypothesis remains open to question.

The problem of differentiating between flint from different sources has already been noted. It is likely that the Maiden Castle assemblage contains flint derived both from *in situ* deposits and from more distant sources. This distinction is to some extent reflected in the character of technology. A large proportion of those pieces made on tertiary gravel flint are either secondary or tertiary narrow flakes and blades, many of which have trimmed platforms and parallel scars on their dorsal surfaces. It therefore seems possible that this material may have been introduced to the site in the form of small, prepared, narrow flake/blade cores. This may be a reflection of some form of emphasis being placed upon the use of portable and flexible artefacts by relatively mobile groups (Ebert 1979; Edmonds 1987).

There seems to be little doubt that the enclosure witnessed a great deal of productive activity, a pattern which is also evident at other enclosures situated on sources of raw material (Healey and Robertson-Mackay 1983). The combination of core working and core tool production is, however, not apparent elsewhere in the region. Given that chalk flint occurs throughout the area, this distinction cannot be attributed simply to the problems associated with raw material acquisition. This would appear to contradict Care's (1979) suggestion that axe production took place outside the enclo-

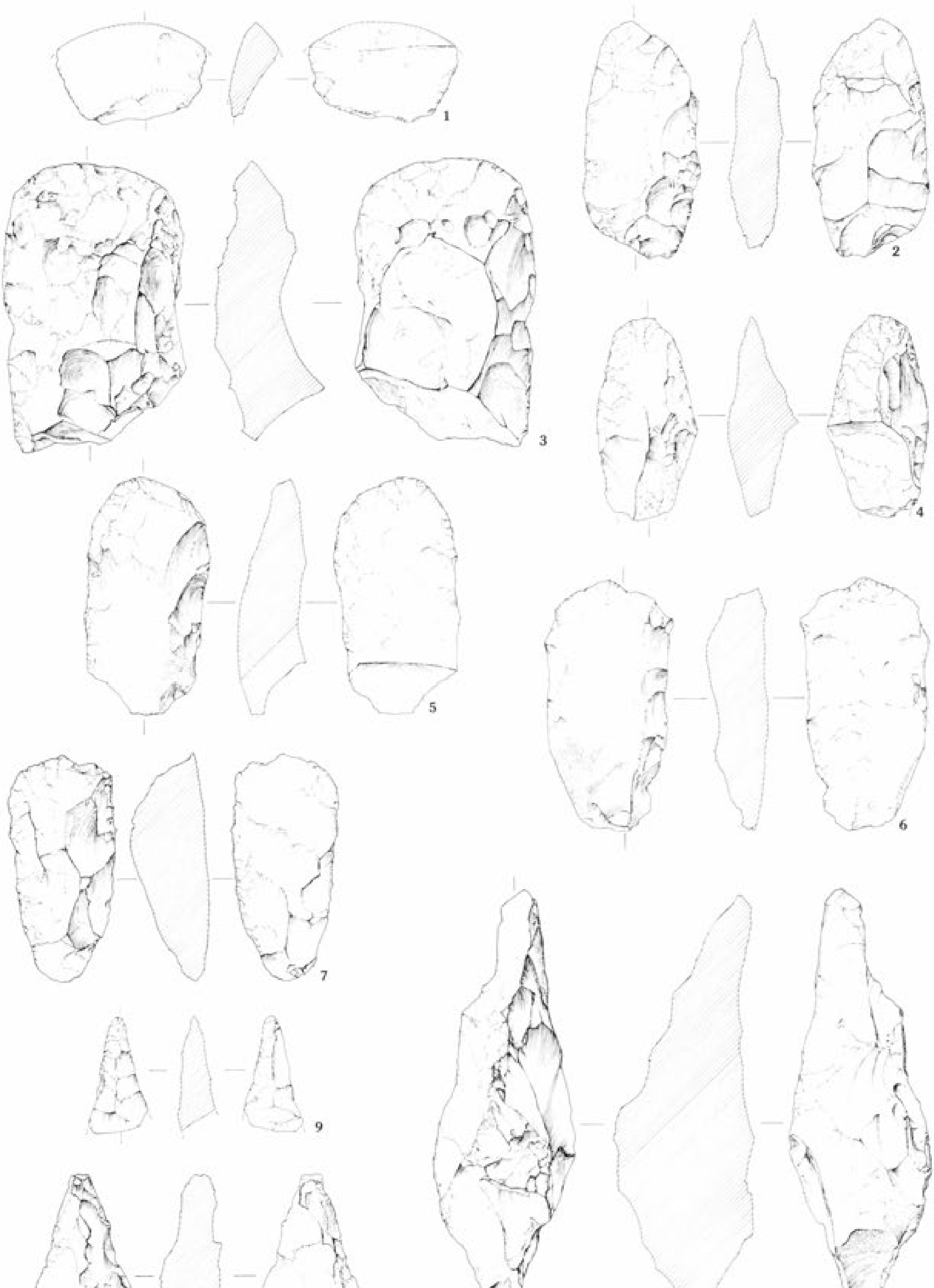


Fig 182 Flint core tools, Phase 2A: 2/2409, 7/4524, 9/4558, 10/4526; Phase 2C: 3/1843; Phase 3B: 6/2419; Phase 3F: 5/1124; Phase 6F: 1/8168, 4/8464; Phase 7A: 8/4592

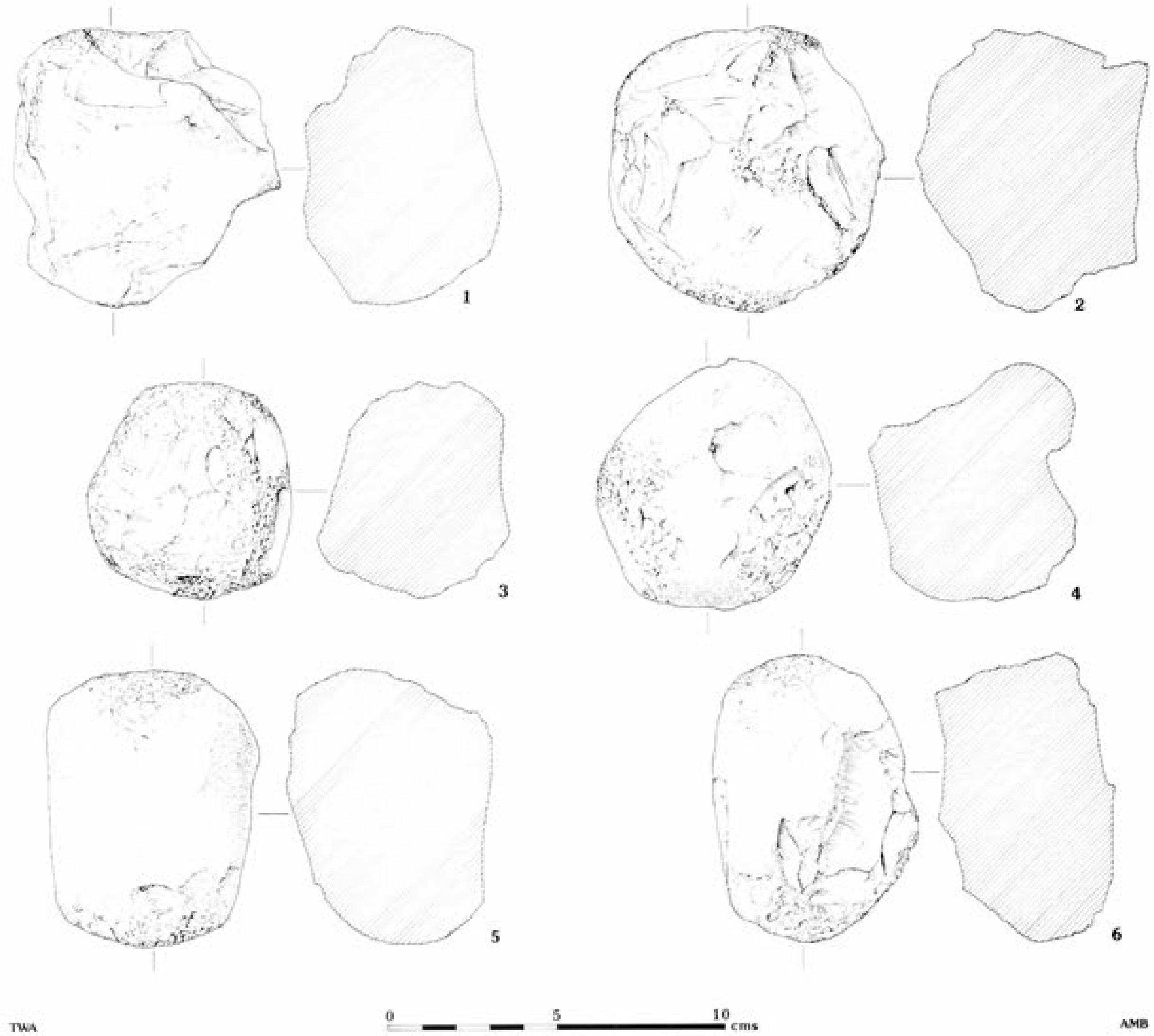


Fig 183 Flint hammerstones, Phase 6E: 4/4621, 5/4616, 6/4617; Phase 6G: 1/8459, 2/4606, 3/7981

sure. However, it can be argued that the distribution of complete, partially finished, or broken axes may actually reflect a range of activities other than production *per se*. If the focus is narrowed to the diagnostic byproducts of manufacturing, it is apparent that core reduction and use does occur in many contexts, and core tool production does not appear to be so widespread. The full significance of this pattern must remain unclear, until we have further excavated samples from other Early Neolithic contexts in the area.

The evidence that we have for the procurement and working of stone at Maiden Castle must not be taken in isolation. The presence of a large number of artefacts, notably serrated flakes, and burnt material in the inner enclosure ditch suggests that other tasks must also have been undertaken on the site. Thus, procurement and production should be regarded as one element within a hierarchy of activities, a pattern suggested by excavations at other sites (Mercer 1980).

The incorporation of residual material in many of the later Neolithic/Early Bronze Age contexts limits the extent to which we can identify the point at which this pattern changes. There does appear to be, however, a major contrast between the material from the enclosure and that which is associated with the Bronze Age turfline. The qualitative downturn in the character of technology respects the general trend noted for southern Britain as a whole (Ford *et al* 1984; Pitts 1978).

The foreign stone

by K Laws with contributions by F E S Roe, D P S Peacock, and M Edmonds

Fifty-two pieces of worked foreign stone, excluding flaked stone and slingstones, were recovered from the recent excavations (Chap 6 fiche for full catalogue). At least 19 pieces are of early prehistoric date, the remaining 33 pieces are probably Iron Age in date. For the purpose of this discussion, the objects are split into early and later prehistoric and then examined by type (in Table 83, however, they are split first by type and then by phase).

A relatively wide variety of stone types and sources are represented (Table 84; source identification was by

Table 83 The distribution of foreign stone objects

Object/Phase	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*11*	*Total*	*6E*	*6F*	*6G*	*6H*
Querns														
saddle	4				2					6		1		1
rotary					3					3			1	2
Axes	2	1								3				
Whetstones					10					10			4	4
Slingstones	9	5	6	204	6260	20	15	61	1100	7680	120	301	2124	2053
Miscellaneous objects														
Hammerstones	1			5						6			1	2
Whetstone?					1				1	2			1	
Ironstone				1	1					2				1
Bead					1					1				
Disc					1					1				1
Worked fragments	8	3			3		1		3	18				2

Table 84 The source of foreign stone

	Source Dist	*Source Direc*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*11*	*6E*	*6F*	*6G*	*6H*
Limestone	4.5	S		2				1		1		1				1
Sandstone (Jurassic)	4.5	S						1						1		
Sandstone (Tertiary)	6	E						2								2
Heathstone	6	E		12	2			15				2			12	1
Sarsen	10	NE		4												
Quartz pebbles	10	SW		9	5	6	20	6266	204	15	61	1100	120	301	2124	2053
Shale	25	E				1		14				6		2	6	2
Miscellaneous (Igneous)	>50	W		2				1								1
Potterne	75	NE		1												
Staddon Grit	100	SW						10							4	4
Greenstone	140	W		2	1											
Miscellaneous (unknown)	?			2	1		1	5				1			1	3

F E S Roe and D P S Peacock). Local rocks from a radius of *c* 10km form the greater proportion of the collection, although there are examples from further afield. During the excavations, no attempt was made to systematically collect unworked foreign stone, so it is impossible to quantify the relative sources exploited.

The only clearly preferred stone types for any particular phase are: Lower Devonian Staddon Grit, Quartzite/Flint pebbles, belonging without exception to phase 6, and Sarsen, which belongs to phase 2. All other stone types are evident in more than one phase.

Early prehistoric

Querns

The three, clearly identifiable saddle querns are all of the small neatly shaped type with one flat or slightly convex face displaying wear, equivalent to the Hengistbury Head type S2 (Laws 1987, 171). Two examples (2410 and 2413) were found in the causewayed camp ditch in trench I, but the third (7899) came from an Iron Age context in trench IV (phase 6H). The only apparent distinction between the Neolithic and Iron Age examples is that the Iron Age example has a smoothly worn grinding face, while the Neolithic examples have a more pitted appearance.

The three possible saddles are all blocks of imported stone of a shape suitable to serve as saddle querns, but with no clear evidence of use, equivalent to Hengistbury Head type S1 (Laws 1987, 171). Once again, two examples (2396, 2534/2398) were found in the causewayed camp ditch and one example comes from an Iron Age context in trench IV (phase 6F).

Saddle querns were recovered from Neolithic and Early Iron Age contexts only during the previous excavations (Wheeler 1943, 321–3). This might point to the use of these types of quern up to the Early Iron Age. The examples in trench 6 are, however, in later Iron Age contexts and must be either residual or reused blocks of stone.

Axes

(F E S Roe and M Edmonds) Three stone axes were found during the recent excavations (Fig 184). Only one of these (2335) was complete, and this was of tapering form with pecked side facets and a squared-off butt. The cutting edge had been damaged by use. 1572 is the remains of a larger axe which has been drastically modified by heavy pecking, either for use as a hammerstone or possibly to fit a haft. 1135 is the butt of a larger axe which, unlike the previous two, had a lenticular cross-section.

Petrological identification of thin sections from these axes has shown that the two from the Neolithic enclosure (1572 and 2335) are made from Group IVa sheared greenstone of south-western origin, possibly from near Balstone Down, near Callington, Cornwall. These have been numbered 1828/DO 165 and 1829/DO 166 in the implement petrology lists for the south-west. The third axe, which comes from the Bank Barrow ditch in trench III (1135), is made from an ungrouped greenstone which probably also has a source in the south-west. This has been numbered 1827/DO 164.

Such results are entirely consistent with those obtained for the axes from the Wheeler excavations. Fourteen of these were thin sectioned previously, and the results yielded four Group IVa axes and a further three greenstone ones (Evens *et al* 1962, 247). These are best considered in context with the other axe finds, which included ones made of Groups IV, XVI, and XVII, these all probably of Cornish origin, and one each of metamorphosed slate, chert, and Group XIII Presely stone.

Group IVa continues to be considered as a rare axe material, with a distribution restricted to Devon, Dorset, and Somerset (I Smith 1972, 250). It is in approximately this area that the presumably related Group IV is the dominant axe material (Cummins 1979, 8, fig 3). Group IV has a suggested source at Balstone Down, near Callington, Cornwall (Evens *et al* 1962, 215), and fieldwork in 1987 has confirmed that a matching rock can be obtained from a small area of altered picrite on either side of the A388 road approximately 1.2km south-

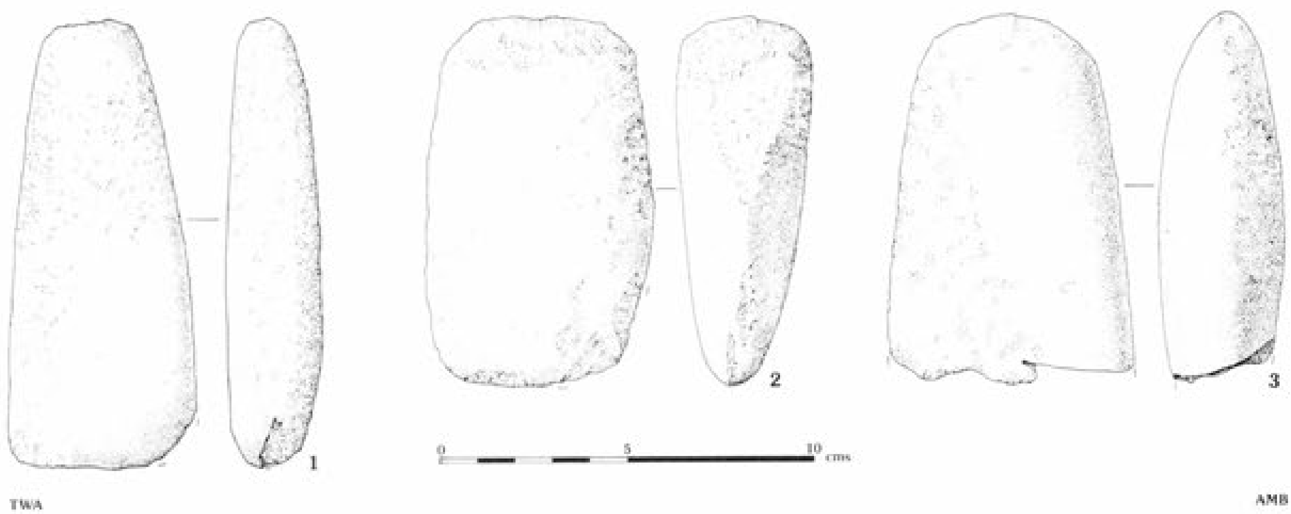


Fig 184 Stone axes; 1) and 2) are from the group IVa source; 1) (2335) from the inner causewayed camp ditch in trench II; 2) (1572) from the outer causewayed camp ditch in trench I; 3) (1135) from the Bank Barrow ditch in trench III

Table 85 Distribution of stone axes on earlier Neolithic sites in south-west England (after I Smith 1979 and 1981, with additions)

			Cornish groups			Other rocks	
	I	*IV*	*IVa*	*XVI*	*XVII*	*Jade*	*Misc*
Hembury	–	–	4	–	1	–	11
Maiden Castle	–	1	6	1	2	–	7
Carn Brea (after I Smith 1981, 154)	4	2	–	11–18	2	–	19
Hazard Hill	–	1	1	2	2	–	9
High Peak	–	1	–	–	–	1	2
Hambledon Hill (main enclosure)	2	1	–	2	1*	2	10
Hambledon Hill (Stepleton enclosure)	–	–	–	–	1*	–	2
South Cadbury	–	–	1	–	–	–	–
Helman Tor	2	–	–	–	3	–	2
Totals	8	6	12	16–23	c 12	3	62

Note: *near XVII

east of Callington. There appears to have been no commitment in print to a suggested source for Group IVa, and the assumption seems to have been that it comes from much the same outcrop or area as Group IV.

The finds from Maiden Castle bring the total of known Group IVa axes to 18, a high proportion of these coming from associated contexts. In addition to the six Maiden Castle axes, there are four from Hembury, one from an early context at South Cadbury, and one that was a surface find from Hazard Hill, so that currently two-thirds of the known Group IVa axes come from sites of Early Neolithic date.

As at Maiden Castle, where four different Grouped rocks of Cornish origin have been recorded together with further greenstones, at other sites further imported materials are to be expected, in particular the Cornish Groups IV, XVI, and XVII. The situation has been summarised by I Smith (1979, 17, table 1). There are now 8–9 of these Early Neolithic sites (Hambledon Hill being a double site) that have produced this consistent assortment of stone axe materials (Table 85), Helman Tor being a recent addition to this group (Mercer forthcoming). On current evidence, Group XVII appears to be the common denominator at these sites, being absent only from South Cadbury and High Peak.

The chronology for this group of sites has also been summarised by I Smith (1979, 17, fig 1). Maiden Castle now holds the position of second oldest amongst these sites. It may be noted that use of the Group IVa sheared greenstone appears to have started early, since four of the finds are from Hembury, and a further six come from Maiden Castle.

Hammerstone

There was one possible Neolithic hammerstone from the enclosure ditch, 2537. Macroscopic examination of this piece by F E S Roe suggests that it may be a weathered igneous rock of possible south-western derivation.

Later prehistoric

Querns

The rotary querns were all found in trench IV: two, 7829/7732 and 8548 (Fig 171: 8, 7), belong to phase 6H and one, 8325, belongs to phase 6G. All three are fragments of upper stones; the two more complete examples are thick and heavy with handle holes projecting into the side, one also has a distinct hopper. These are comparable to the 'Wessex Type' quern, as described by Curwen (1937), the R(u)5 group of the Hengistbury Head querns (Laws 1987, 168), or the R4 type from Danebury (Brown 1984, 415).

Wheeler found a number of similar examples associated with Iron Age B, and this type is typical of querns found on many Iron Age sites in southern Britain. The source for the stone of the only two sourceable querns (8325 and 8548) was local.

Whetstones

There are ten whetstones, all of Lower Devonian sandstone, in phase 6. One example (7845) might be more correctly described as a hammerstone, as it is large and has a bashed/pitted facet at one end. These stones have in common an overall smoothness and evidence of use, usually in the form of a particularly smoothed area within, or forming, a concavity, or a smoothed/worn

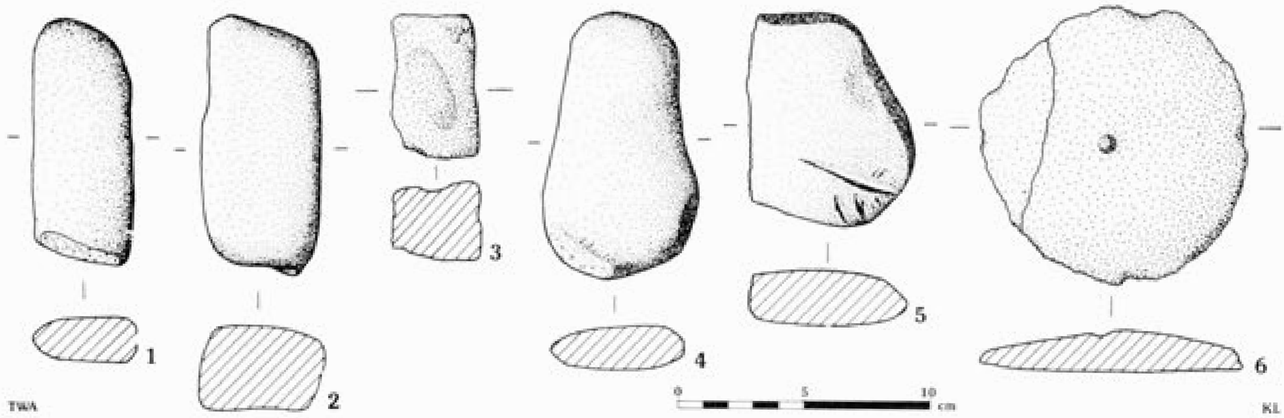


Fig 185 Miscellaneous stone objects – whetstone: 1) 7989; 2) 2543; 4) 8686; 5) 8638; worked ironstone: 3) 2546; disc: 6) 7645

facet on one of the edges or ends.

The stones can be subdivided into two groups according to basic shapes. One group, of four examples, consists of flat, roughly square or sub-rectangular pieces of stone with rectangular cross-sections. This is broadly comparable to group W2 at Hengistbury Head (Laws 1987, 173). The illustrated example (Fig 185: 5) displays on one face a 'V'-sectioned groove possibly for sharpening or polishing a point. The other group of six examples (Fig 185: 1, 2, and 4) consists of bar-shaped stones/pebbles with roughly rectangular, or square cross-sections. Some show a pinching towards the centre of the stone (Fig 185: 4). These are broadly comparable to W1(a)+(b) at Hengistbury Head (Laws 1987, 173).

Wheeler (1943) makes no mention of whetstones in his published report, although archival index cards record the following:

Polishing stones	2
Hones	4
Whetstones	23
Rubbing stones	117
TOTAL	146

Although it is unclear exactly what is meant by rubbing stones, this group of objects was certainly of significant size. Whetstones, hones, etc are found in small quantities on most other Iron Age sites. Danebury has produced *c* 90 artefacts of this type (Brown 1984, 412).

Petrology

(F E S Roe) The whetstones all come from phase 6 (D–I) and are made from fine-grained sandstone in varying shades of grey, grey/pink, and grey/brown. The presence of small flakes of mica in the stone may be detected with the naked eye. Five whetstones were selected for thin sectioning and the results of this are described in greater detail in the fiche for Chapter 6. It was found that the stone could be compared with that used for four of the thin-sectioned whetstones from Danebury (Roe forthcoming), which suggested a type of rock which had been obtained from a specific source. It was also noted that the whetstones from both sites took the form of waterworn pebbles (Fig 185: 4), so that quarried stone seemed unlikely, while a source from a river or beach appeared to be more probable.

Extensive fieldwork has led to the identification of a similar stone in the Lower Devonian Staddon Grit of south Devon. The fieldwork and related research are still continuing, so that this must be an interim statement, liable to future amendments. The two main coastal exposures of the Staddon Grit, neither of which are very large in extent, outcrop on either side of Plymouth Sound. The eponymous Staddon Heights lie just over 2km south of the port-of-trade at Mount Batten (Cunliffe 1988), and, although future fieldwork may show that other areas could also have provided suitable stone, it is from below Staddon Heights that beach pebbles have been collected which can be matched with finds from Maiden Castle. Mount Batten is situated on limestone and the intervening outcrop is slate, so that the Staddon Grit would have been the nearest source of usable hard stone for this site. Its ready availability suggests that there would have been no difficulty in including a consignment of beach pebbles in a boatload of goods being traded out from here.

It may not be irrelevant in this context that the source of ores for much of the copper-alloy metalwork from Maiden Castle appears to be local (see p159). Sheet bronze was being worked in phase 6, and the source for the materials for this and other Group I non-ferrous metalwork may have been in the area of the Tamar valley. This being so, one can readily visualise the pebbles for whetstones as being only one item in sea-borne trade from Plymouth, with Weymouth being the most likely port of arrival for Maiden Castle, while other goods could then have been taken on to the Southampton area for transport to Danebury. It now remains to be shown whether the use of the Staddon Grit for whetstones also extended to other Iron Age sites.

Slingstones

From the recent excavations, 7680 slingstones were recovered with a total weight of 396.462kg. Six hundred and thirty-one contexts contained slingstones, some only one or two, while context 5011 contained 739 slingstones. The average slingstone weight is 51.6g, with measurements ranging from 14 to 78mm across. The pebbles used are mostly roughly oval in shape.

The likely source of these pebbles is Chesil Beach *c* 11km to the south-west. Also included within the collection are a number of spherical fossils, probably originating from the local Jurrassic limestones. Although somewhat more lightweight than the pebbles, these are of similar basic dimensions.

Table 83 indicates the distribution of slingstones in trench IV and demonstrates that they occur mainly in the later part of the Iron Age at Maiden Castle. Slingstones from previous excavations are attributed mostly to Wheeler's Iron Age B. These often occurred in hoards, the largest of 22,260 stones occurred on a hut floor close to the eastern gateway. The largest slingstone group from recent excavations was a dump of 989 within phase 6G, pit 5915. At Danebury, although slingstones are found in pits of all periods, the quantity increases dramatically in cp7 (Brown 1984, 425).

Miscellaneous objects

This group consists of 12 objects which do not fit into any particular category.

Five are waterworn pebbles, which may or may not have been used, but are probably not suitable to serve as slingshot. These are referred to as utilised pebbles or hammerstones. There is one flint (8507), one limestone, and three quartzite (2541, 7996, 8280) pebbles. All could have been collected on Chesil Beach.

One piece of ironstone (2564; Fig 185: 3), sub-rectangular in shape and cross-section, has smooth concave grooves worn on two faces. Another piece of ironstone (2542) is hollowed, as if it were part of a palette or shallow bowl. One possible interpretation is that they were worked as a source of haematite, perhaps as a slip for pottery (Oakley 1943, 380). Possible sources for this ironstone include local Jurassic or Tertiary rocks, but it could have been brought from further afield, for example the Forest of Dean.

The remaining four pieces are of various stone types and consist of two possible whetstones, a bead (7747; Fig 169: 11), and a sandstone disc (7645; Fig 169: 6). A number of oval fossils with holes were also recovered. These were thought initially to be beads, but closer examination proved that they are merely small calcareous fossils.

Worked fragments

The 18 fragments of possible worked stone are mostly of local Tertiary and Jurrassic origin, heathstones, and limestones. These are mainly small fragments with one or more face showing possible signs of working or use-wear.

The shale

by K Laws

The recent excavations produced 21 fragments of shale, weighing in total 1231.30g (Table 86; see Chap 6 fiche for full catalogue). Of those stratified pieces, all but one belong to phase 6. Wheeler's excavations produced 94 shale fragments (1943, 311). The likely source for the raw material is to be found *c* 25km from the site, at the natural coastal exposures of Kimmeridge shale on Purbeck.

Early prehistoric

One possible bracelet fragment is of pre-Iron Age date (1130; Fig 186: 1); it was found at the base of the stone-free 'turfline' in trench IV (phase 4C), which would suggest that it dates to the second millennium BC. This example differs significantly from the other bracelets in its flattened, triangular cross-section and in the presence of decoration on its outermost face. It has an estimated internal diameter of *c* 60–70mm.

Bronze Age bracelet manufacture is rare and, where examples are known, they tend to be generally undecorated and Late Bronze Age in date. Assemblages have been recovered from Potterne, Wiltshire (Gingell and Lawson 1984) and Eldons Seat (Cunliffe and Phillipson 1968, 226), and similar cannel-coal bracelets are known from Derbyshire (Machin 1971; 1975). None of these sites have, however, produced any bracelets similar to 1130.

Another possible interpretation of this object is that it is the handle of a cup (a shale cup was found at Clandon Barrow only 1.2km to the west). The decoration is not similar to known Beaker cups and could be described as a Grooved Ware motif (Cleal pers comm), although Grooved Ware cups are unknown.

Table 86 The distribution of shale

Object/Phase	*4*	*6F*	*6G*	*6H*	*6I*	*11*	*Total*
Bracelet	1	1	1		4	1	8
Platter			1				1
Fragment		2	2	3		5	12
Total	1	3	4	3	4	6	21

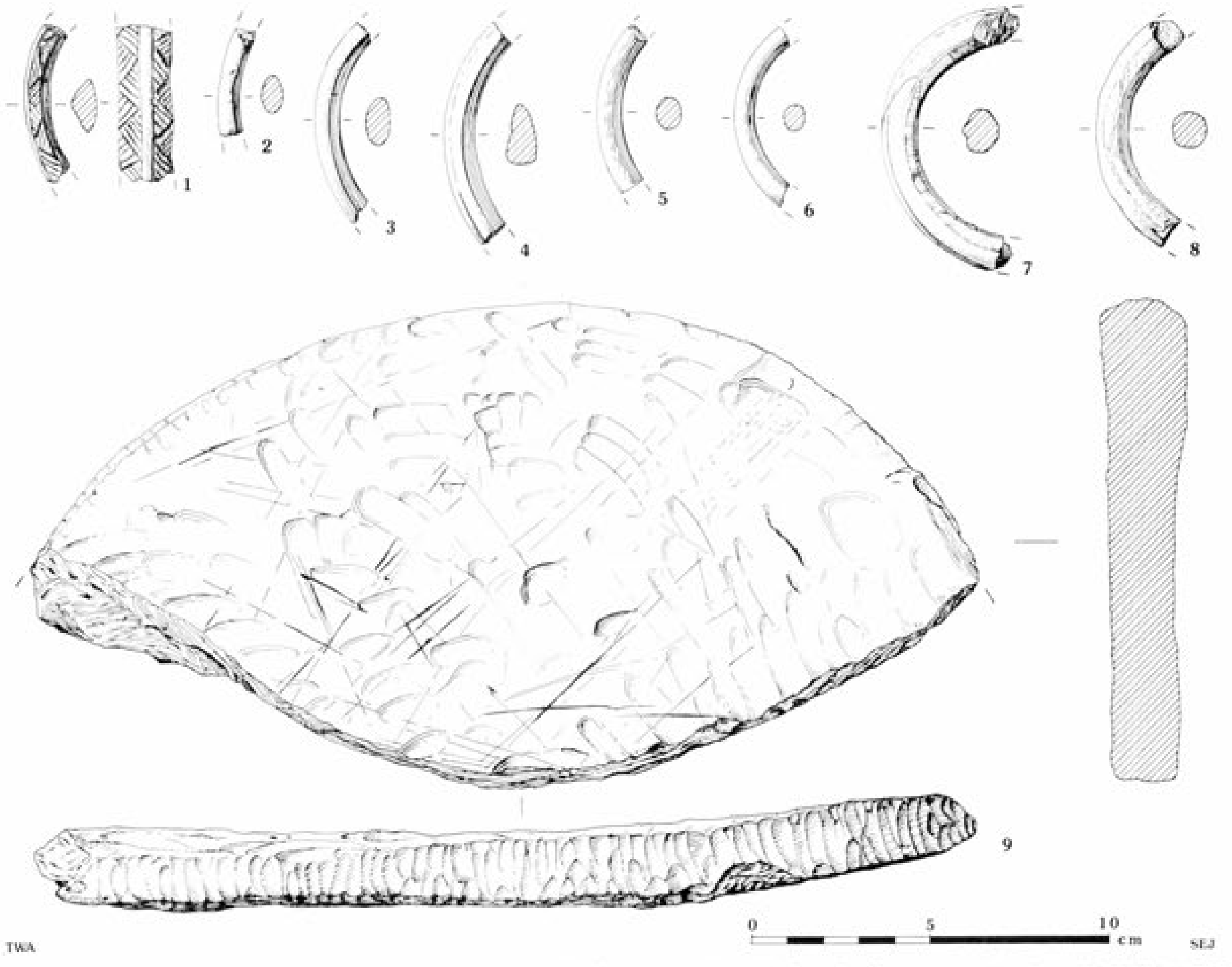


Fig 186 Shale objects – early prehistoric handle or bracelet fragment: 1) 1130; bracelet fragments: 2) 1101; 3) 8033; 4) 8276; 5) 8251; 6) 7682; 7) 8021; 8) 8019; platter: 9) 7983

Later prehistoric

Bracelets

Six bracelets were recovered from phase 6 contexts and one bracelet, though unstratified, probably belongs to the Iron Age occupation. These are mostly circular or oval in cross-section, although two examples (8276 and 8021; Fig 186: 4, 7) display more precisely shaped sections, while also being particularly well finished. Five are apparently lathe-turned, while the sixth (8019; Fig 186: 8) has a smooth, yet somewhat undulating surface finish with visible tool marks, suggesting hand tooling. One of the lathe-turned examples (8021; Fig 186: 7), however, while being finely and precisely turned around its outer edge, has clear faceted tool marks on its inner edge, perhaps used to obtain the more unusual cross-section shape of this example. Estimated internal diameters range from 55–80mm.

Wheeler recovered 37 similar bracelets, the majority of them from phase B and C, the Middle and Late Iron Age. His excavations also recovered evidence for on-site manufacture, discs and rings associated with hand-cutting, and cores associated with lathe-turning, which were absent from the recent excavations. The number of miscellaneous fragments present in this small collection might indicate some form of shale-working on the site.

Iron Age bracelets of similar form to these are relatively frequent discoveries in this region (for a large collection from recent excavations, see Woodward 1986b, 165–71). Although they are referred to as bracelets in this report, this should not exclude the possibility that some of the examples acted as armlets, anklets, or necklets.

Platter

One large, curving slab of shale (7983; Fig 186: 9) was found between the floors of the western house in phase 6G. It was possibly originally circular with a diameter of *c* 300mm and a maximum thickness of 22mm. The unbroken edge is curving and shows clear signs of hand-tooling marks made vertically with a small blade. The apparent upper face is concave with signs of working, blade marks, and smoothing. A plate-like object is suggested.

Although no precise parallels are available, Wheeler's excavations produced from Iron Age levels shale slabs which had apparently been used as cutting boards, and from Roman levels a 'tablet or platter' with a diameter of 1ft (*c* 305mm). Objects of this type are not common in Iron Age contexts.

Miscellaneous fragments

Four recognisably worked fragments display cut edges, curved or rounded in some cases, and a smooth finish. Their function is for the most part uncertain, although one fragment (7602) may be part of a vessel. A further eight fragments are mostly fairly small, show no clear signs of working, and are probably waste. All the stratified pieces belong to phase 6.

The worked bone and antler

by K Laws with identifications by M Armour-Chelu

The recent excavations produced a total of 139 objects of bone or antler. The 16 pieces of antler were all Iron Age or unstratified; five pieces of bone are early prehistoric; 118 pieces of bone or horn core are Iron Age or unstratified. Apart from the five early prehistoric objects, all bone and antler objects are discussed together in their typological groupings, summarised in Table 87 (see Chap 6 fiche for full catalogue).

Early prehistoric

Five fragmentary pieces of worked bone were recovered from Neolithic contexts. Three are very small and were recovered from environmental samples. The fourth is recognisable as a point. It is composed from a slice of longbone, tapering to a smooth circular-sectioned point at one end. The fifth is comparable to the utilised longbones with bored heads amongst the later prehistoric material.

Two Neolithic bone points were recovered from Wheeler's (1943, fig 48) excavations. Neolithic worked bone implements have also been recovered from Windmill Hill and Avebury (I Smith 1965, fig 54) and Whitehawk Camp (Ross Williamson 1930, pl XIV).

Later prehistoric

Combs

Eighteen combs (four bone and 14 antler) were found in the recent excavations (all but two of these examples have been illustrated, Fig 187). Seven of these, all antler, are complete or near complete examples. The most notable example of the group is 8083 (Fig 187: 1), a complete double-headed, decorated antler comb. Double-headed combs are unusual: none were recovered during previous excavations, although examples are known from Meare, Glastonbury, and Wookey Hole. The discovery of this comb extends

Table 87 The distribution of worked bone

	2	*3*	*4*	*5*	*6*	*7*	*9*	*11*	*Total*	*6E*	*6F*	*6G*	*6H*
Comb					15	1		2	18	2	2	2	5
Plaque					7				7	1	1	1	2
Ring					2				2				1
Needle					15				15	1	1	4	5
Point	1				10			1	12			1	6
Utilised long bones													
Gouge					13	1		1	15	1	1		8
Point					4			1	5		2	1	1
Bored Head	1				12			2	15	1	1		8
Centrally pierced					3	1			4			1	1
Bobbin					2		1		3				1
Miscellaneous				1	9			1	11	2		1	3
Miscellaneous object					7	1		1	9			3	3
Worked fragment	1	2		1	13			1	18			3	6
Cut horn core					5				5			1	4

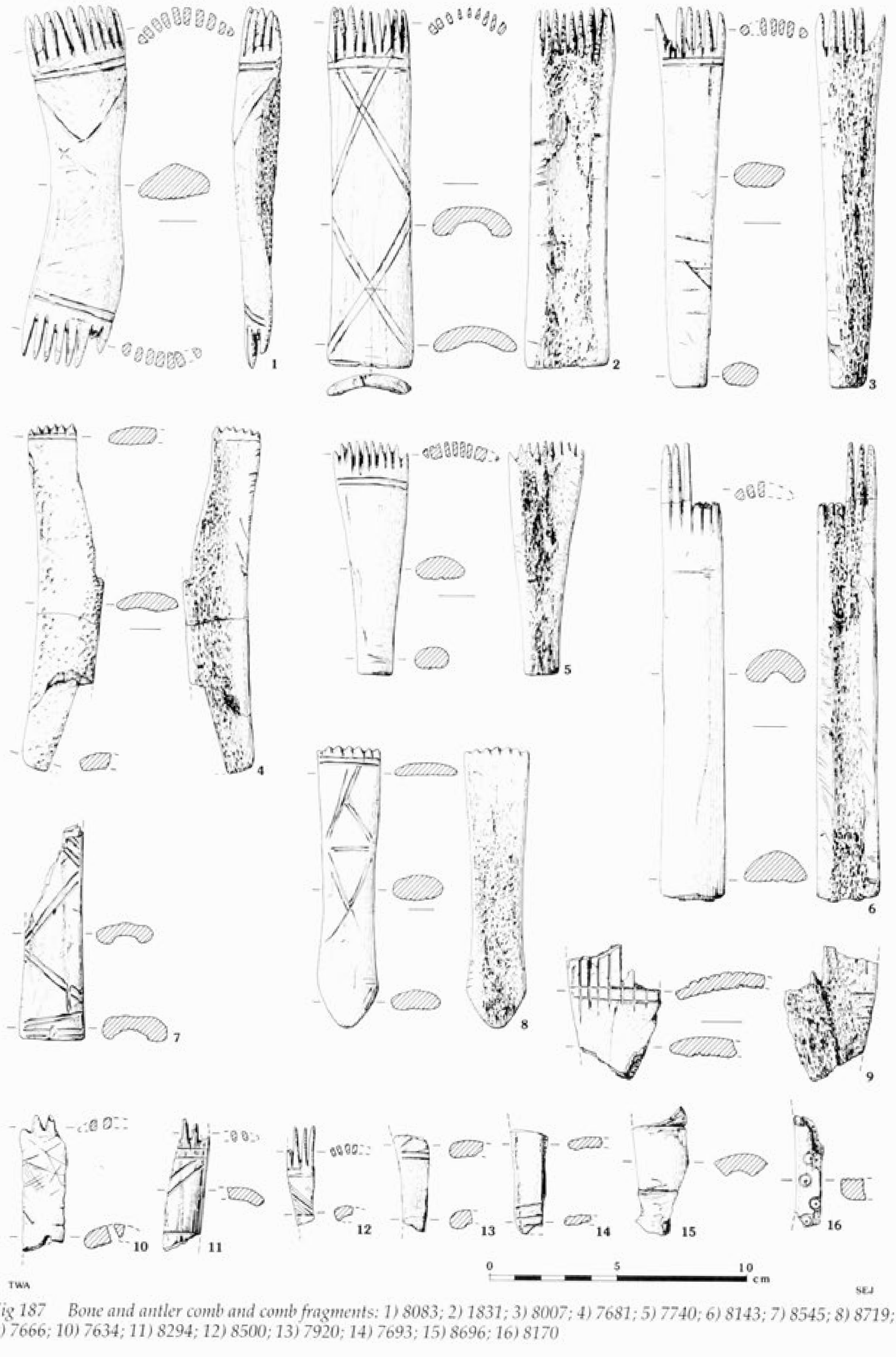


Fig 187 Bone and antler comb and comb fragments: 1) 8083; 2) 1831; 3) 8007; 4) 7681; 5) 7740; 6) 8143; 7) 8545; 8) 8719; 9) 7666; 10) 7634; 11) 8294; 12) 8500; 13) 7920; 14) 7693; 15) 8696; 16) 8170

further southwards the distribution of double-headed combs discussed by Hodder (Hodder and Hedges 1977, fig 7).

The remainder of the combs display the typical range of decoration seen on Iron Age weaving combs, the comb shapes on the other hand seem particularly plain. Mostly they fit into the Meare type 4, 'squared or roughly rounded at the butt-end without any enlargement'. Apart from one from phase 7 and two unstratified pieces, all examples belong to phase 6.

Plaques

There were seven, small, square or rectangular plaques made from pieces cut from large ungulate bones. In all but one example, the external, slightly convex face and the cut edges only show any modification or decoration. They are generally slightly polished: decoration takes the form of scored lines, pinpoint indentations, or a combination of the two. The exception, (7824; Fig 188: 7) is smoothed and polished on both faces, the edges are also rounded and polished. Decoration on this plaque also differs in that it consists of ring and dot.

One example (8321; Fig 188: 3) displays along one of the edges a distinct step in the surface, possibly a result of a 'groove and snap' manufacturing technique. While the edge of another example (8657; Fig 188: 5) displays a series of faint striations: possible saw marks produced during its manufacture.

All examples in this group belong to phase 6. Similar plaques were found during the previous excavations (Wheeler 1943, 310, fig 106) and are a diagnostic feature of the Iron Age in Dorset.

Rings

Two rings were found in the recent excavations. One (8440; Fig 189: 1) was cut from across an antler tine, polished on the upper and lower flat surfaces, and smoothed into a convex shape around the edge. The other (8250; Fig 189: 3) was cut from a horse longbone and has undergone very little working. Both have a maximum diameter of 30mm and exhibit saw/cut marks on the flat surfaces. The example cut from a horse bone is thicker and heavier. No such objects are included in Wheeler's report (1943).

Needles

Fifteen bone needles have been recovered, all belonging to phase 6. Nine examples are complete or near complete. From these, three basic types can be recognised.

1 Single-pointed (Fig 188: 12, 13, 14): these have the eye close to one end of the needle with the point at the opposing end. Sometimes, the length of shaft above the eye is also tapered to a point, but this is not necessarily functional.
   Two examples in this group (8165 and 8660) seem particularly robust and could be bodkins.

2 Double-pointed (Fig 188: 8, 9): with the eye in a central position and each end tapering to a point. Of the two complete examples, one has a circular central eye, while the other has an elongated, oval-shaped eye; 8589 is more circular in cross-section and has more rounded points. In general, it has a much more worn appearance.

3 Double-eyed needle: two examples only exist of this type. One example (8034; Fig 188: 11) has two sub-rectangular eyes fairly close together. It could also be described as being double-pointed, although the length of bone above the eyes is much less than that below. The other example (8262; Fig 188: 10) has two circular eyes, one of which is broken across.

The majority of the incomplete needles would appear to belong to type 1. A variety of surface finishes are noted perhaps reflecting different amounts of wear and damage during use, or differing degrees of craftsmanship in manufacture.

Points

There were eleven complete or incomplete bone points: most commonly fashioned from a slice of longbone tapering to a point at one end. In three examples, the opposite end of the tool to the point displays possible thread tying off areas in the form of deliberately cut notches (8047; Fig 188: 25) or faint transverse wear marks/striations (7990; Fig 188: 24). Eighteen similar objects are reported by Wheeler (1943).

Utilised longbones

This is a fairly generalised term for those objects made, almost without exception, of sheep longbones, having undergone a variety of modifications. The various forms are: gouge, gouge/point, bored head, centrally pierced, bobbin, and miscellaneous.

One of the larger definable subdivisions is the gouge with 15 examples. Sheep tibia are nearly always used for this type. The proximal and distal epiphyses, used as the head of the object, seem to occur in approximately equal numbers where present.

The diagnostic feature of all these objects is that the shaft is sliced longitudinally to form the gouge shape. Although 'gouge' is a term commonly used for such objects, their precise function is uncertain. Some examples are pierced longitudinally down through the head and are often also perforated transversely through the head (Fig 188: 21 and 22). In other examples, the epiphysis is now missing.

Wheeler (1943, 303) described 70 implements with gouge-like points; he seemed to agree with an earlier theory that they were used as shuttles. He claimed that tools with distal heads belonged normally to Iron Age A, and that proximal heads belonged normally to Iron Age B. Of those gouges found during recent excavations, the greatest proportion belong to phase 6H. However, of those with recognisable epiphysis remaining, those with distals belong to 6E, 6F, and 6H, while those with proximals belong to 6H, 6I, and 6J. Thus, an early preference for the distal epiphysis and a later preference for the proximal epiphysis can be seen, but with a great deal of overlap in phase 6H.

Five examples also taper to a point at the tip of the gouge, perhaps through an accident of manufacture or for a more precise usage. No particular bone type seems to have been used.

Fifteen longbones with bored heads were recovered. Thirteen are sheep metatarsals with the proximal epiphysis surviving, one is a sheep tibia with the distal epiphysis surviving. In all examples, the surviving head has a roughly circular or oval perforation running longitudinally through the epiphysis into the pulp cavity. In all examples, the shaft is broken across, arbitrarily along the length of the shaft. In some examples, the shaft appears slightly polished. The function is uncertain though they may possibly have served as some type of handle, the perforation down through the head serving for the insertion of a small tang of a knife, for instance.

Four longbones were recovered perforated through the shaft (two are illustrated in Fig 188: 27, 28). All are sheep/goat metacarpal bones displaying slight polish. The circular perforation is cut transversely through the bone in an approximately central position along the shaft. In three examples, the perforation pierces both sides of the shaft, in the fourth only one side is perforated. One might surmise that the object is incomplete, but, the edges of the perforation are very well worn/rounded, and there are a series of fine transverse striations, possibly saw marks, along the unperforated face. In two examples, the bone has been broken across the perforation, indicating a point of stress or weakness.

The function of this type of object is uncertain, though some type of bobbin is a possible explanation. Examples have been found at Danebury (Sellwood 1984, 389) and Glastonbury (Bulleid and Gray 1917, fig 150). They are, however, one of the less frequently occurring object types. In all examples, sheep metacarpals are used for this type of object.

Two complete radii and one metacarpal of sheep had no alteration, but evidence of wear in the form of a series of short, parallel, transverse striations. There was a small amount of polish on opposing edges, apparently more concentrated towards the proximal epiphysis. In one example (7827), a distinct notch occurs just below the proximal epiphysis. Striations on opposing edges, in both examples, do not line up. 'Bobbin' is a generally used and accepted term for

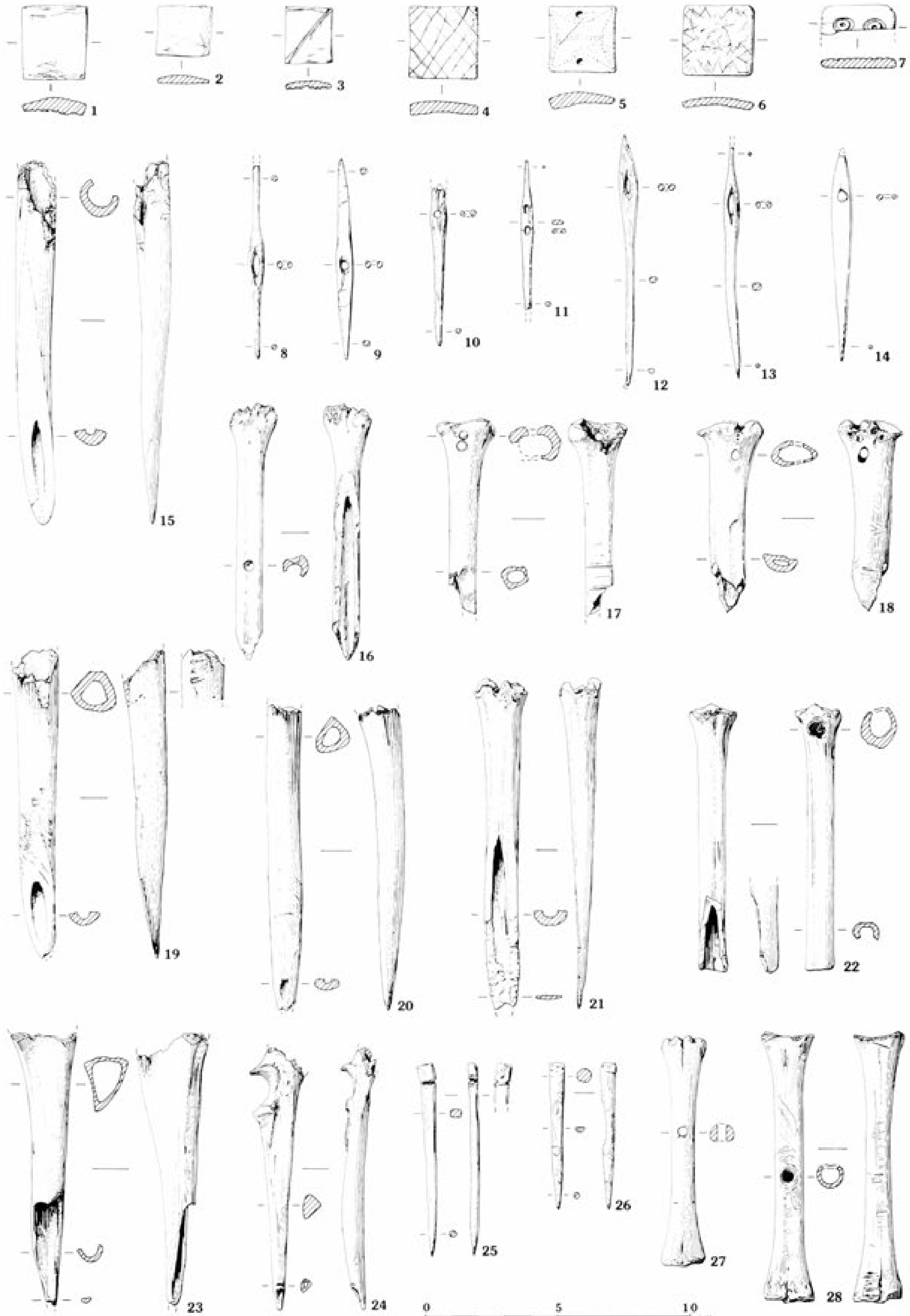


Fig 188 Miscellaneous bone artefacts – plaque: 1) 8046; 2) 8646; 3) 8321; 4) 8656; 5) 8657; 6) 7931; 7) 7824; needle: 8) 8589; 9) 7670; 10) 8262; 11) 8034; 12) 8165; 13) 8660; 14) 8347; gouge: 15) 8167; 16) 7892; 19) 7865; 20) 7722; 21) 8668; 22) 7840; 23) 8092; utilised longbones: 17) 1109; 18) 8040; point: 24) 7990; 25) 8047; 26) 7997; centrally pierced longbone: 27) 8279; 28) 8094

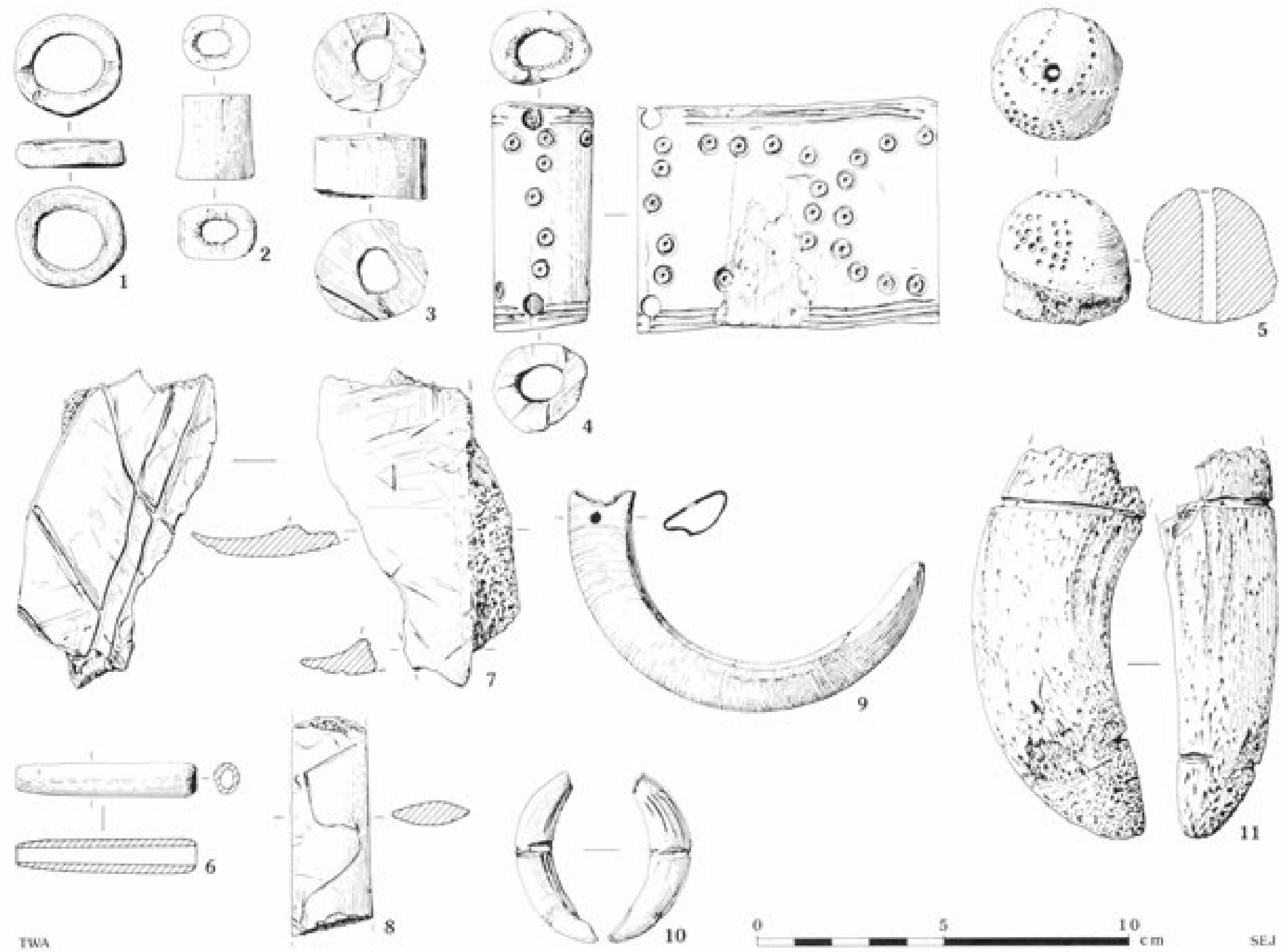


Fig 189 Miscellaneous bone artefacts – ring: 1) 8440; 2) 8105; 3) 8250; handle: 4) 8065; object: 5) 7735; bead: 6) 7937; scored bone: 7) 8508; 8) 8139; pierced tusk: 9) 1104; toggle: 10) 8002; cut horncore: 11) 8009

such an object, but, like 'gouges' their precise function is uncertain.

A number of objects (Fig 188: 17, 18) cannot be assigned any of the aforementioned forms. These are objects with longitudinally pierced and/or transversely perforated heads which may be gouges, but subsequent breakage makes the original form of the tool indistinguishable. One tool with a particularly large perforation through the two opposing sides of the head may have been used as a shuttle.

Of particular note and weighing almost double the total weight of the other longbones is a complete, slightly polished, horse metapodial (1120) with a series of roughly parallel, transverse score marks just below each epiphysis. The scores mostly encircle the bone and, towards the distal epiphysis, a hollowing has occurred in the vicinity of the scoring.

The function of this object is unknown, although it should be noted that the distance between the scored areas is approximately equivalent to the width of a hand and that this area appears slightly more polished, perhaps due to handling. This is the only utilised longbone which is not a sheep bone.

Miscellaneous artefacts

Another nine artefacts were found: a pig's tooth, notched in the centre (Fig 189: 10), a tusk, pierced close to the root on one side only (Fig 189: 9), a highly polished bead made from a small ungulate longbone (Fig 189: 6), a decorated femur head (Fig 189: 5), two scored bone fragments (Fig 189: 7, 8), a handle (Fig 189: 4), a segment of cut antler (Fig 189: 2), and a worked dog radius (not illustrated). Further details of these objects can be found in the fiche for Chapter 6.

Worked fragments

Eighteen miscellaneous fragments of bone all show signs of working, but their form is indeterminate.

Cut horncores

Five complete or near complete horncores, probably of cow, bearing precise cutmarks close to the base and, in one case, close to the tip of the horncore (ie Fig 189: 11). This may represent the removal of slices of horncore for subsequent working.

Discussion

Deposition

Any analysis of the post-depositional processes depends on comparisons between context types, which highlight significant differences or trends in the material present. This type of analysis is difficult at Maiden Castle, because of the restricted nature of the excavations. In the first five phases, material was normally restricted to single, mutually exclusive context types, for example, the inner ditch of the causewayed camp in phase 2 and the Bronze Age turfline in phase 4. The major source for the analysis of spatial variation in these periods is the Wheeler archive and it is only possible to make certain vague conclusions using this material (see p184). Only in phase 6 was there sufficient variety of contexts to indicate the different depositional processes undertaken. Not only is there no great difference in the contexts examined, but the recent excavations were restricted to a very limited area of the hillfort and spatial variation within each phase cannot be analysed.

Neolithic deposition

As has already been noted, the contexts available for analysis in the early prehistoric period are limited. The most prolific context was the inner ditch of the causewayed camp in trench I (phase 2A and 2B). This contained 58% of the ceramic assemblage, 56.7% of the stratified, unretouched flint flakes, and 39.3% of the animal bone. The only other substantial assemblage was from the causewayed camp ditch in trench II which contained 9% of the ceramics, 5.3% of the stratified unretouched flint flakes, and 6.3% of the animal bone. Similar quantities of material from the Bank Barrow ditch in trench I were due to the erosion of the causewayed camp ditch fills. The other subdivisions never contained more than 5% of the material in any assemblage. The difference between phase 2 and phases 3 and 4 is due to the intensity of activity on the hilltop. The difference between the fills of the inner and outer causewayed camp ditch must, however, represent more specific depositional choice.

Examination of the quality of preservation of the material in these contexts gives some indication of the post-depositional activity. An examination of the average weight of the sherds from each phase subdivision (Table 88) revealed that the enclosure ditch had the best-preserved sherds and that these were roughly comparable in size to the sherds found in the Iron Age contexts (Table 90). Most of the other contexts had too few finds for reliable comparison, but it was noticeable that the only context with an average significantly above that of the others was the outer ditch in trench V. This would indicate the deliberate deposition of large fragments of ceramics adjacent to a terminal of the outer ditch of the causewayed camp. A more detailed analysis of the sherd sizes from the different layers in trench I showed that the midden layers had better preserved material, than either the loams or the chalk layers (Table 89).

An analysis of the condition of the animal bone, based on work by M Armour-Chelu, from these phases had to be restricted to the assemblage from the causewayed camp ditch, as the other contexts produced too few bones for significant comparisons to be made. Compared to the Iron Age contexts (Table 91), there are relatively low numbers of burnt bones (1.2%) and gnawed bones (2.1%), but there is a relatively large assemblage of bones which have been root-etched (53%). The figures for gnawing are partially explained by the absence of dog bones from the assemblage. The low frequency of burnt bones is probably due to the process of cooking. Meat appears to have been filleted off the bone, so the bones would not have been taken near a fire. The high percentage of root-etching would suggest that the middens were not covered, but left exposed, and this is supported by the pattern of erosion on the bones. Compared to the Iron Age, a large proportion of the bones had moderate (17.5%) or severe (0.7%) erosion.

Iron Age deposition

The largest and most varied assemblage is from phase 6. There were three trenches examined which contain features dating to this phase: II, III, and IV. The overwhelming bulk of the material, however, came from trench IV: over 90% of the Iron Age ceramics come from this trench. Within this trench, 36 different context types were

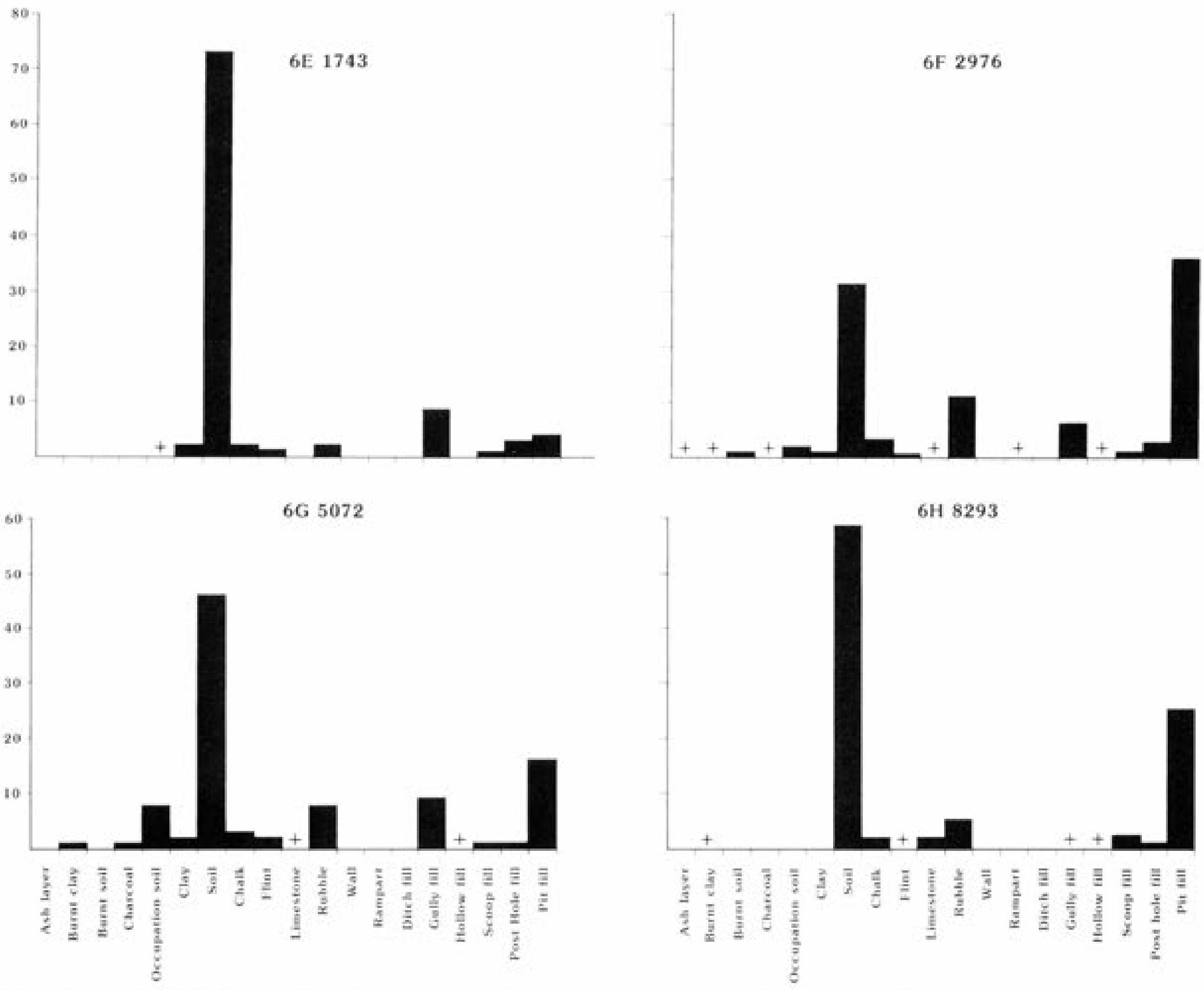


Fig 190 The distribution of the ceramic assemblage by context type from the four phases of trench IV

Table 88 The size and distribution of Neolithic ceramics

	2A	2B	2C	2D	2E	2G	3A	3B	3C	3D	3E–G	4A–C
Weight (g)	5095	1108	528	39	169	231	1284	368	49	294	41	195
Number	538	132	51	8	28	15	184	32	7	51	10	36
Average size	9.4	8.3	10.3	4.8	6.0	15.4	6.9	11.5	7	5.7	4.1	5.4

Table 89 The size of the ceramics in the causewayed camp ditch fills

	chalk	*loam*	*midden*
% < 10 cm sq	77	79	71
% > 20 cm sq	7	8	9
max sherd cm sq	54	?	88

Table 90 The size and distribution of Iron Age ceramics for feature types with over 100 sherds

	Clay	*Wall*	*Scoop fill*	*Pit fill*	*Gully fill*	*Rubble*	*Post hole*	*Soil*	*Chalk*	*Occupation*	*Flint*	*Limestone*
Weight	3296	1221	4273	64785	9861	13184	5255	104667	8539	7075	1749	2218
Numbers	196	112	389	6110	930	1266	514	10330	863	708	191	254
Average size	16.3	10.9	10.9	10.6	10.6	10.4	10.2	10.1	9.9	9.9	9.1	8.7

Table 91 Weathered bone from various context types

	Pit fill		*Posthole fill*		*Chalk*		*Clay*		*Gully fill*		*Rubble*		*Scoop fill*		*Soil*	
	no	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*
Slight	3405	91.2	198	89.5	456	93.0	117	96.6	178	89.4	104	92.0	209	93.3	3677	90.1
Medium	207	5.3	19	8.5	31	6.3	4	3.3	19	9.5	8	7.0	10	4.4	313	7.6
Severe	2	0.05							1	0.5					5	0.1
Assemblage Total	3730		217		487		121		199		113		224		4078	

Table 92 The numbers of root-etched, gnawed, and burnt bone from various context types (the percentage calculated is of the total quantity of bone from the feature type)

	Pit fill		*Posthole fill*		*Chalk*		*Clay*		*Gully fill*		*Rubble*		*Scoop fill*		*Soil*	
	no	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*
Root-etched	736	19.7	125	56.5	217	44.2	32	26.4	40	20.1	24	21.2	107	47.7	1570	38.4
Gnawed	201	5.3			14	2.8			18	9.0	5	4.4	13	5.8	180	4.4
Burnt	164	4.3	5	2.2	9	1.8	1		1	0.5	3	2.6	9	4.0	87	2.1
Assemblage total	3730		217		487		121		199		113		224		4078	

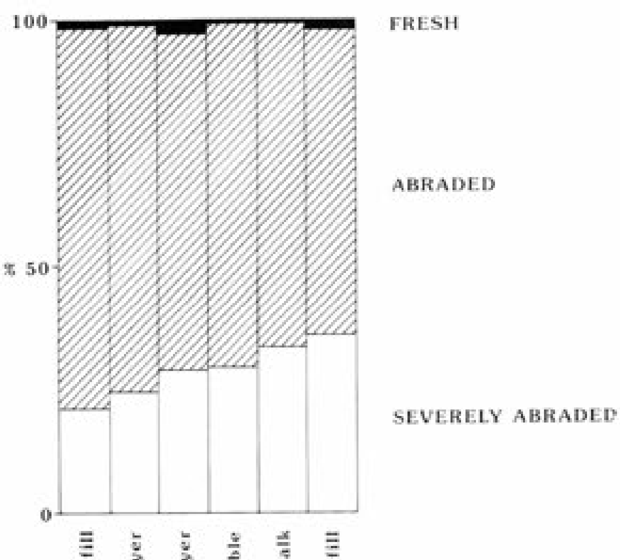


Fig 191 The degree of wear on ceramic assemblages from the principal feature types

identified, but very few contained sizeable artefactual assemblages. The largest, totally recorded assemblage of finds was the ceramics (the animal bone assemblage was larger, but only a sample has been examined), and the distribution of this assemblage by major context type is shown in Figure 190. The bulk of the assemblage was concentrated in a few context types: soil layers produced 44% of the assemblage, pit fills 27%, rubble layers 5%, gully fills 4%, and occupation and chalk layers 3%. None of the other features produced more than 2% of the assemblage and most contained less than 1%. This is largely due to the volume of soil from the feature types present in the trench and it makes it difficult to compare the composition of ceramics in each context, as the assemblages are normally not large enough.

An examination of the size of the ceramics in the larger assemblages suggests that there is very little difference in the survival of material in each context type (Table 90; clay layers are an exception which is difficult to explain). The little variation indicates that best-preserved sherds (heaviest) occur in the negative features which would be subject to little post-depositional disturbance. The smallest occur in the occupation and rubble layers subject to trampling. An analysis of the abrasion categories of this assemblages (Fig 191) confirms these banal observations, but indicates that gully fills, which have a fairly high average sherd size, have very heavily abraded sherds. This could be because these sherds, though not disturbed or trampled, are not buried and hence are open to natural weathering.

Very similar patterns are indicated by analysis of the animal bone assemblage. The distribution of weathered bone categories (Table 91) shows little variation between context type, although gully fills again contain the most abraded assemblage. The distribution of root-etched bone (Table 92) shows a much more variable pattern, but again this confirms what would be expected: pit fills have the smallest percentage of root-etched bone and shallow features have the largest. Unfortunately, the number of gnawed and burnt bones

Table 93 The distribution of the major domestic species by context type

	Pit fill		*Soil layer*		*Chalk layer*		*Gully fill*		*Occupation soil*	
	no	*%*	*no*	*%*	*no*	*%*	*no*	*%*	*no*	*%*
Cattle	365	19.8	423	23.9	28	11.5	42	36.5	15	28.3
Sheep and goat	1283	69.6	1203	68.0	197	81.0	60	52.1	32	60.3
Pig	194	10.5	143	8.0	18	7.4	13	11.3	6	11.3
Total	1842		1769		243		115		53	

recovered was not large enough to produce any interpretable patterns for most contexts. It is, however, significant that pit fills have a higher percentage of both categories than soil layers. This might indicate that pits contained a higher quantity of rubbish discarded from food preparation and consumption areas than other feature types.

An analysis of the distribution of the bones from the principal food species in each context type does tentatively suggest that species were differentially deposited (Table 93). It was only possible to compare five different context types, but these suggested that gullies and occupation layers, which are features principally associated with the houses in trench IV, had higher proportions of cattle. Chalk layers had the lowest proportions of cattle, but this might be because these layers were kept clean (the average sherd size from these contexts was quite small). There was very little difference between the soil layers and pit fills: the latter had slightly less pig and more cattle.

Iron Age chronology

New evidence for dating the Iron Age sequence is limited and depends upon three archaeomagnetic dates, a scatter of datable small finds, and a generalised chronological sequence of ceramic change.

There was no new examination of the Early Iron Age hillfort (phase 5) and, as there was little datable material from Wheeler's excavations, there seems no reason not to accept the general fifth to fourth century date suggested by the ceramic assemblage published by Wheeler (see p198). Similarly, there was no new material available to accurately define the beginning of phase 6, when the extended hillfort was constructed. Most of the finds in the earliest phase (6E), in trench IV, were deposited a long time after the primary rampart has been constructed. The assemblage came from the upper fill of the quarry hollow which was dug to construct the fourth refurbishment of the rampart. The dating of this material was not precise, as the ceramics were not dramatically different from those used in the Early Iron Age hillfort, except for the presence of a small number of bead rim jars and bowls in Poole Harbour fabrics (see p194). The assemblage may date as late as the third century cal BC. The only other, potentially datable find was a penannular brooch (8517) which has parallels with an example from Wheeler's excavation and was dated to the end of the third century BC (Mackreth, archive report). This brooch came from the final fill of the quarry hollow (6326; Fig 64), immediately to the south-east of the central house.

There were similar shortages of datable material from phase 6F. A hearth from the central house was sampled for archaeomagnetic dating and was last used between 150 and 200 BC (see p105). This would fit with the date for the end of phase 6E and is perhaps more accurate than the late second century BC date suggested for the ceramic assemblage (see p196). The only chronologically distinctive find from this phase was an elaborately decorated glass bead (8782; Fig 140: 1), from pit 6653, which was thought to have been made between the fifth century and third century BC at the Meare Lake Village (see p171). These dates are clearly incompatible with the early first century date for the potin coin (8610; Fig 131) and would indicate that the coin was deposited in one of the later phases (see p156).

There was a significant change in the vessel type and fabric between phase 6F and 6G. The build-up of a substantial layer of soil between these phases suggests that there was a long period, where there was no *in situ* occupation in this area at least. The phase 6G assemblage was dominated by fabric A and Maiden Castle-Marnhull forms. The presence of a few sherds of rouletted shell-tempered wares suggested occupation into the first half of the first century BC and the other forms would not be out of place during this period (see p196).

There were fragments of a La Tène II brooch of Hull and Hawkes class 2CA (7887), which would be an early second century form (Mackreth, archive report) and was probably residual. A bridle-bit (8413; Fig 137: 14) produced in the period 100 BC–50 AD (see p165) must have been discarded early in its life. A couple of objects discovered in this phase could only be paralleled in Roman assemblages: a finger-ring (8028; Fig 129: 15), a pin (8133; Fig 137: 1), and a shale platter (7983; Fig 186: 9). None of these objects were, however, specifically Roman types and their stratigraphic position seems secure.

Phase 6H in contrast to the previous phases had a large number of finds which define the chronological limits of this period. There was also an archaeomagnetic date of 20–70 BC from hearth 6843 (see p105). The ceramic assemblage is dominated by Durotrigian forms and practically all the vessels used were imported from the Poole Harbour area. Unfortunately, there is at present no great chronological precision in dating these Durotrigian styles and the assemblage cannot be dated more precisely than the first century BC (see p196). The presence of a few sherds of Armorican imports suggests a date in the first half of the first century (see p196), but the presence of Dressel 2–4 and Dressel 1-Pascual 1 indicates that the phase extends up to and possibly into the first century AD (see p205).

There were three brooches from this phase. In pit 6192, there was a La Tène I fibula (8632; Fig 130: 12), which could have been produced as late as 200 BC, and a La Tène II fibula of Hull and Hawkes type 3B (8506; Fig 130: 8), which could be produced as late as the end of the second century BC (Mackreth, archive report). Both of these brooches are either residual finds or have remained in use long after they were originally produced. The other brooch was a La Tène II fibula of Hawkes and Hull class 6 (7674). It was produced in the period before the middle of the first century BC (Mackreth, archive report) and could be a more or less contemporary form during the phase.

A scatter of Roman objects was found in the final soil layers sealing the phase 6H occupation. They included a horseshoe (7627; Fig 137: 12), a stylus (7654; Fig 129: 11), a knife (7637; Fig 137: 28), and a handful of sherds (Brown, Chap 6 fiche). They were not associated with any features and could not be said to represent a significant occupation of this area.

Iron Age occupation in the other trenches was subject to very limited examination and can only be tentatively dated. The ceramic assemblage in trench III was similar to that found in phase 6E, suggesting that most of the occupation in this trench (phase 6D) occurred at the beginning of the use of the extended fort. The presence of a La Tène II brooch of Hull and Hawkes type 2CA (1051; Fig 130: 3) in Wheeler's backfill, however, indicates some activity in the second century BC.

The ceramic assemblage from a pit (330) in trench II was comparable to that from phase 6H (see p194). This pit also contained two La Tène II fibulae, a type 3B (1071; Fig 130: 11) and a type 6 (1073; Fig 130: 2), and an unusual La Tène III fibula (1061; Fig 130: 10). These all came from the upper fills of the pit and suggest that the type 3B (date 200–100 BC) and the type 6 (date 100–50 BC) were in roughly contemporary use. The La Tène III fibula came from the gradual accumulation of soil, as the pit fills subsided, and so contains later material than the other fills.

The Late Iron Age occupation in trench VI is dated by a single archaeomagnetic date of 50–110 AD from a hearth underlying the Iron Age smelting layers (see p105). The ceramics from these layers, however, would suggest that this date is slightly late (see p196). Apart from three BB1 sherds of doubtful stratigraphic significance, there would be no reason to assume that this was not a pre-conquest assemblage. This is partially supported by the presence of copies of Armorican imports and Dressel 1-Pascual 1 amphora. There is no Dressel 2–4 which might suggest the chronological span is more limited than that of phase 6H in trench IV (see p205).

The mound and ditch of phase 9A contained some Late Iron Age and early Roman material, including a La Tène III 'Aucissa' brooch (8057; Fig 130: 1), an Augustan sestertius (8050), and a terret (8061; Fig 129: 6), but the presence of large quantities of BB1 (Brown, Chap 6 fiche) and a ring (8082; Fig 129: 16) dating to the third century AD (see p156) would support Wheeler's late Roman date for this feature.

The assemblage from the top of trench I would indicate a first or second century date for most of the activity. There were five sherds of New Forest colour-coated wares (Brown, Chap 6 fiche), the fragmentary bases of two glass vessels (see p171), the pin from a La Tène III brooch (1002; Fig 130: 4, possibly an 'Aucissa', Mackreth, archive report) and a pair of tweezers (1006; Fig 137: 4). There were also substantial amounts of Durotrigian wares which could date to the first century AD.

Table 94 An analysis of the finds distribution by chronological phase

Cat 1	*6E*	*6F*	*6G*	*6H*	*7A*
Brooches	1		1	5	
Rings			2	3	
Strap end			1		
Pin			1		
Bead		2		3	
Bracelet		1	1		
Total	1	3	6	11	0

Cat 3	*6E*	*6F*	*6G*	*6H*	*7A*
Weights	1	2	9	8	
Spindle whorls		5	4	7	1
Combs	2	2	2	5	1
Needle	1	1	4	7	
Point			1	6	
Bobbin			1	2	
Total	4	10	21	35	2

Cat 4	*6E*	*6F*	*6G*	*6H*	*7A*
Ring			1		
Quern		1	1	3	
Platter			1		
Briquetage		3	14	18	
Oven plates	2	3	10	18	
Total	2	7	7	39	

Cat 5	*6E*	*6F*	*6G*	*6H*	*7A*
Bone plaque	1	1	1	2	
Cat 8					
Ring			3	2	
Bridle bit			1		

Cat 10	*6E*	*6F*	*6G*	*6H*	*7A*
Blades		1	5	6	2
Chisels				2	
Wedges				1	
Chalk disc		2			
Whetstones			4	4	
Hammerstones			4	5	
Gouge/point	1	3	1	8	
Bone handle	1	1		8	
Total	2	7	14	34	2

Cat 11	*6E*	*6F*	*6G*	*6H*	*7A*
Studs etc		1	13	8	8
Hook etc			3	4	
Cat 13					
Spearhead				3	
Hilt guard				1	
Slingstone	120	334	2066	2098	204

Cat 15	*6E*	*6F*	*6G*	*6H*	*7A*
Sheet (Cu)	1	3	169	20	1
Sheet (Fe)	1	4	56	19	49
Rod/wire (Cu)	2	2	1	4	
Bar/rod (Fe)		5	18	36	14
Waste (Cu)	1	2	10	2	
Waste (Fe)	1	3	9	5	423
Daub acces.			1	2	7
Total	6	19	263	87	495

Notes:
Cat 1 Objects of personal adornment or dress
Cat 3 Objects used in the manufacturing or working of textiles
Cat 4 Household utensils
Cat 5 Objects used for recreation
Cat 8 objects associated with transport
Cat 10 Tools
Cat 11 Fasteners and fittings
Cat 13 Military equipment
Cat 15 Objects and waste associated with metalworking

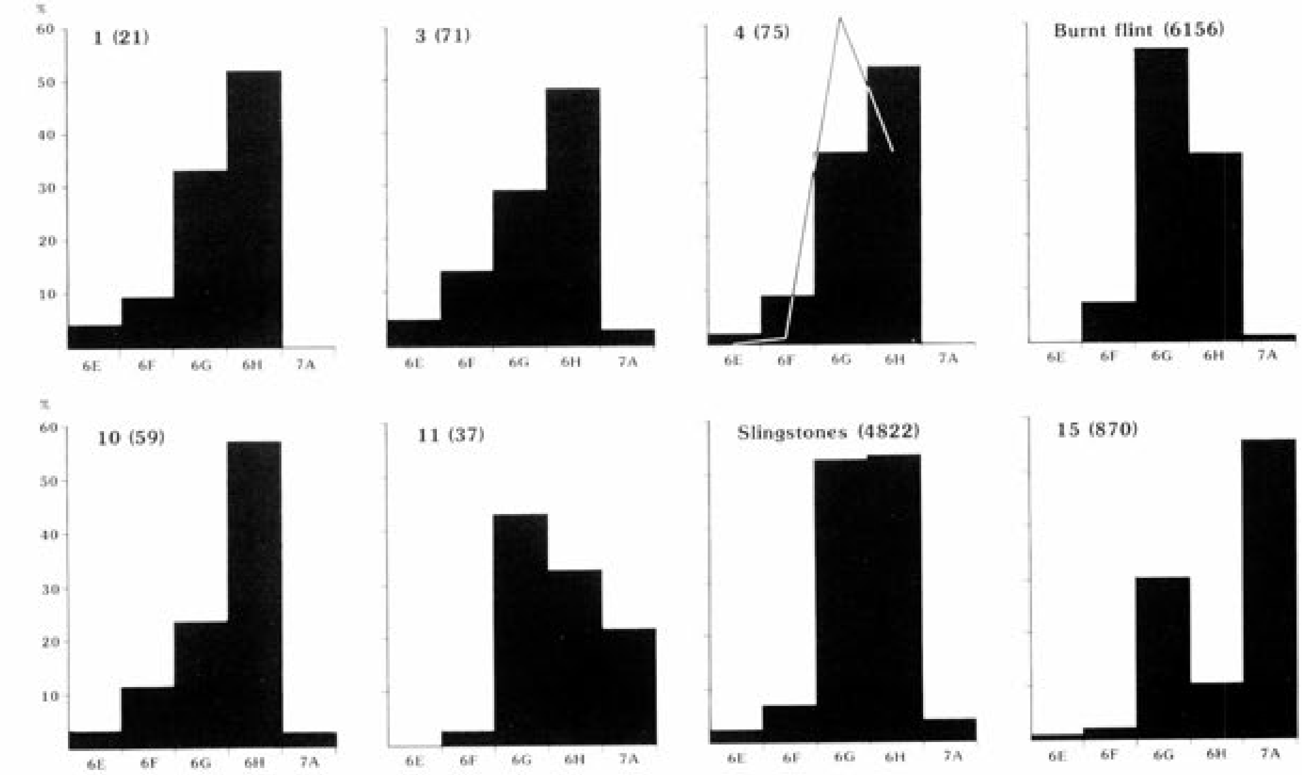


Fig 192 The distribution of the more prolific finds categories by chronological phase: 1) objects of personal adornment or dress; 3) objects used in the manufacture or working of textiles; 4) household utensils or furniture (the line indicates the distribution of oven plates by weight); 10) tools; 11) fasteners and fittings; 15) metalworking waste

Use and deposition

An attempt has been made to examine the use of the site by splitting the finds into functional categories. The categories used were those defined by Crummy in her analysis of the small finds from the excavations at Colchester (Crummy 1983) and have been used by Ellison for the analysis of the small finds from the excavations at Poundbury, Dorset (Ellison 1987). These categories were designed for the analysis of Roman material and thus are not completely compatible with a prehistoric assemblage; of the 18 categories, 2, 6, 7, 14, 16, and 17 are not present and several other categories are represented by only a few items. Nevertheless, the system does provide a technique for analysing finds which is useful for discussing the different activities on site.

The analysis presented here (Table 94; Fig 192) incorporates all the finds. The large assemblages of fragmented material, ie pot and daub, are analysed by weight, as this is a more accurate indication of the relevant importance of the material. This makes direct comparison between functional categories impossible. Consequently, any suggestion of the relative importance of an activity in any period or area is impossible. Analysis is restricted to the later prehistoric period, as it is difficult to ascribe these functional attributes to the flint tools which dominate the assemblage in the early prehistoric period.

The majority of finds are concentrated in the final phase of activity in trench IV, with a steady increase in each of the preceding phases. This is the dominant trend in most of the functional categories: between 50 and 60% of the finds associated with personal adornment, textile manufacture, household activity, and tools were in phase 6H and almost 90% of the building materials (though the latter appear to derive from a house in phase 6G). The ceramic assemblage was not so prominently skewed: only 40% of the assemblage was recovered from phase 6H. This might suggest that the distribution of the small finds indicates a real change, as the large quantities of ceramics would be more likely to create a residual assemblage. The quantity of finds in phase 7A was small because of the restricted area examined and the specialised nature of the occupation.

There are four significant categories of material, which do not show the typical distribution: objects and waste associated with metalworking activity, fasteners and fittings (in trench IV, these are the result of metalworking and reflect the distribution of copper waste and scrap), oven plates (which are classified as household utensils), and slingstones (which are classified with military equipment). The distribution of burnt flint also reveals a peak in phase 6G.

The metalworking evidence can be split into two distinct assemblages. In phase 6G, there is a large amount of bronze waste and scrap which suggests some form of sheet bronze-working in the area immediately to the west of the site. In phase 7 (trench VI), an important iron smithy was operating in the eastern entrance. Most of the metalworking can be associated with those two periods of activity, although there were indications of small-scale iron-smithing throughout the four phases of activity in trench IV, and bronze-working may have continued into phase 6H.

Numerically, the oven plates conform to the normal distribution and concentrate in phase 6H, but, when plotted by weight (Fig 192), over 60% occur in phase 6G. The function of the oven plates is not exactly clear, but it seems unlikely that they are associated with the metalworking activity and they are most probably associated with food preparation. The almost complete absence of these plates in phase 6F is interesting. Both phases have similar numbers of houses, but there were ten hearths in phase 6F and none in phase 6G. This suggests that there was a major transformation in the manner in which food was prepared between these two phases. This change would also explain the large quantity of burnt flint in phase 6G. In phase 6F, cooking took place on carefully constructed hearths and ovens, but in phase 6G hearths were more temporary affairs which involved portable hearth furniture, such as oven plates. The drop in burnt flint and oven plates in phase 6H coincides with the construction of three hearths.

There is only a slight rise in the number of slingstones between phase 6G and phase 6H, but an analysis of the slingstone hoards shows a much greater bias towards phase 6G. Roughly 87% of the slingstones from hoards belong to this phase, with roughly 6% in phase 6F and 6H and none in 6E. The location of the hoards is shown on Figure 193, and it is noticeable that there is an even distribution, both spatially and contextually (a pit 5915, inside house 6853, soil layers filling the central hollow, and lying on the surface). The large hoard from an unstratified pit, 5061, in the northern half of the trench can be fairly accurately dated to phase 6G. This hoard came from the very bottom of this pit and probably represented deliberate disposal. The other hoards (including 8295 which came from the top of the pit) were readily retrievable, and their position could reflect temporary storage for later use.

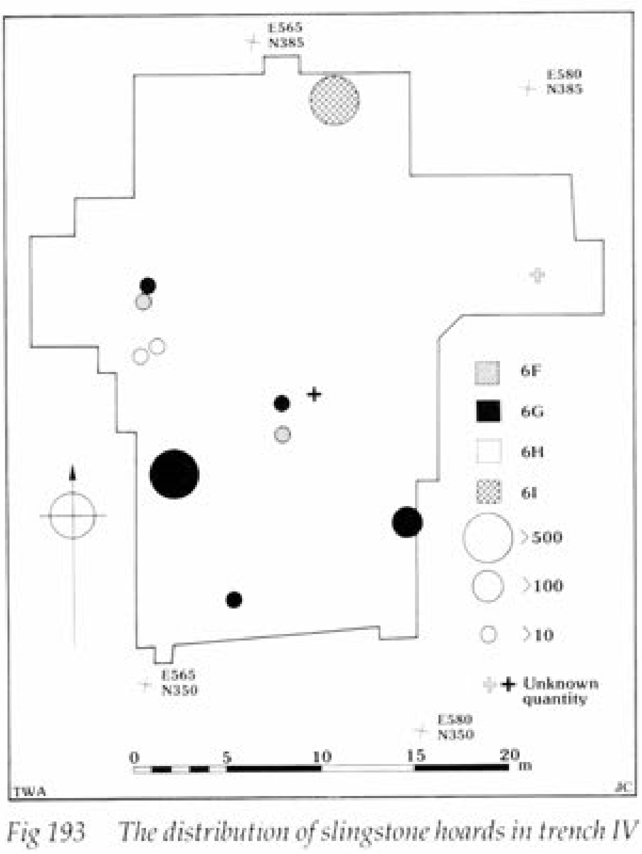


Fig 193 The distribution of slingstone hoards in trench IV

Analysis of the distribution of the objects in each phase is limited by the quantities of material available. There was very little from phase 6E and phase 6F and, as examination revealed no significant patterning of these finds, the distributions have not been plotted. In phase 6G and phase 6H, only the four major categories of finds have been plotted (the slingstone distribution has been discussed separately).

The main features of the phase 6G distribution (Fig 194) were:

1 the small influence that the houses have on the distribution (in either a positive or a negative sense); there is, however, a concentration of loomweights in the eastern house which contrasts with the western house

2 the concentration of bronze metalworking on the west side and the dispersed distribution of iron metalworking debris on the east side

3 the lack of any small finds, other than metalworking debris, from the area immediately behind the rampart.

There are certain similarities between this distribution and the phase 6H distribution (Fig 195). In particular, there is a noticeable lack of certain objects in the area immediately behind the rampart. This is very pronounced in phase 6H and there appears to be a concentration of small finds marking the boundary of the exclusion zone about 5m from the southern edge of the trench.

The distribution of objects associated with textile production is interesting. The spindle whorls are almost exclusively concentrated in the pits in the abandoned eastern house and are associated with three needles and three weights. It is noticeable that there are no combs, centrally pierced longbones, bobbins, or points with this group. It may be that the latter group of objects are either associated with a separate aspect of textile production, or that they are not associated with textile production at all. Considerable doubt has been associated with the functional interpretation of combs (Hodder and Hedges 1977), and this distribution would lend support to this argument. The distribution of the weights, their occurrence in pairs, and the absence of any association with houses, however, suggest that the conventional interpretation of loomweights is more likely than thatch weights.

Regional comparisons

It should be possible to compare the assemblage of finds from the recent excavations at Maiden Castle with other sites in Wessex and to assess the relative importance of different types of activities on these

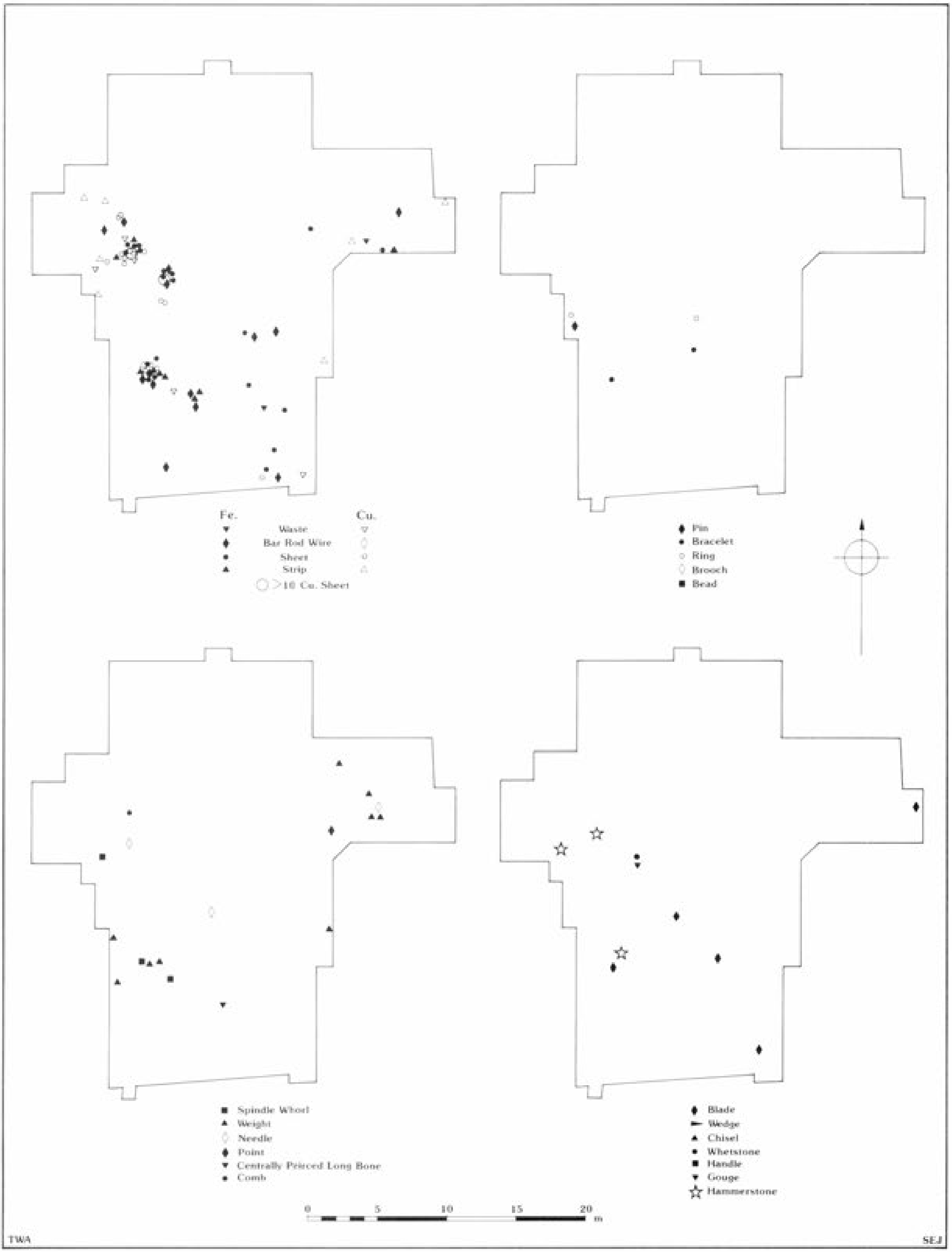


Fig 194 The distribution of metalworking waste, objects associated with personal adornment, objects associated with textile manufacturing, and tools in trench IV, phase 6G

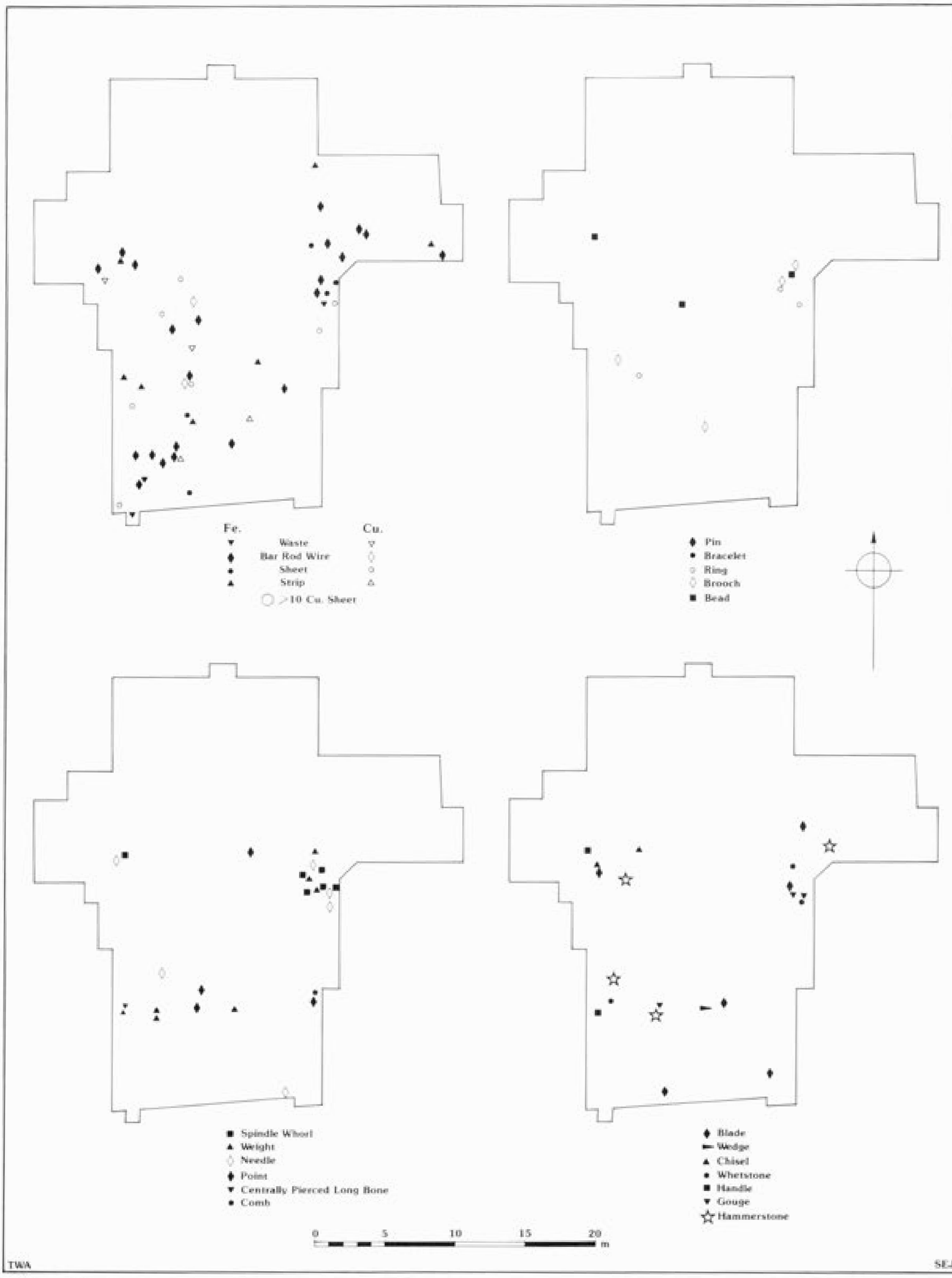


Fig 195 The distribution of metalworking waste, objects associated with personal adornment, objects associated with textile manufacturing, and tools in trench IV, phase 6H

Table 95 A comparison of the finds from Maiden Castle with several other recently excavated sites in Wessex

	Dan	*MC*	*GAS*	*WD*	*ODF*	*MW*	*WC*
Category 1	*Personal adornment*						
Brooch and pin	7	15	35	3	4	1	
Finger ring	3	5	3	2		2	1
Bracelet (shale)	3	7	6	1		1	
Bracelet (metal)	1		2		1	2	
Bead (glass)	8	4	3				
Bead (stone)	5	1		3			
Bead (bone)		1					
Bead (clay)	2	1	5				
Belt slider			2				
Pendant (bone)		2	3	1		?	1
Strap junction	1				1		
Torc	1						
Category 10	*Tools*						
Whetstone	38	10	13	1	2	3	
Gouge/knive	38	14	38	1		?	
Handle	4	2	3		3		1
Knife blades	18	17	8+	3	5	3	1
Saw blades	2	2	1	1			
Chisels	9	4	2		1	2	
Socketed axes	3						
Files	2						
Awls	4		2				
Wedges	3	3				1	
Hammerstone		14			1		
Category 8	*Transport*						
Ring	11	5	2				
Terret	1	1					
Bridle bit		1					
Linch pin	3				2		
Category 12	*Agricultural implements*						
Reaping hook	24				3	4	3
Ard tip/bar	3		3				
Goads			1	2			
Category 3	*Textile production*						
Weight	206	23+	26	77	8	26	5
Spindle whorl	76	22	27	11	6	2	
Comb	39	16	9	2	3+	?	1
Pin		1	1	1	5	?	
Point	37	10	12	1	5+	?	
Needle	38	17	2	3	6	1	
Bobbin	8+	6	3			?	
Category 5	*Recreation*						
Plaque		7	3				
Category 6	*Weights and measures*						
Balance			1	1			
Weight	36		1	1	1		3
Currency bar	24				3		1
Category 4	*Household utensils*						
Querns	184	5	144	24	2	50	3+
Oven plates	64	33	34	?	?	?	?
Pottery	103k	22k	76k	8k	?	6k	6k
Category 13	*Military equipment*						
Spearhead	3	3					
Spear butt			1				
Ferrule tip	2	1					
Arrowhead	1		1				
Chape/scabbard	1		3				
Hilt guard	1	1					

Note: Dan = Danebury, MC = Maiden Castle, GAS = Gussage All Saints, WD = Winnal Down, ODF = Old Down Farm, MW = Micheldever Wood, WC = Winklebury Camp

sites. Direct quantitative comparisons (Table 95) are restricted to recently excavated sites, as these have been excavated to a consistent standard. Furthermore, only sites which have been subject to large-scale excavation are really comparable: sites such as Poundbury (C Green 1987b), Rope Lake Hole (Woodward 1986b), and Eldons Seat (Cunliffe and Phillipson 1968), although close to Maiden Castle, do not have large enough assemblages to make detailed comparisons worthwhile.

The following sites were considered suitable (see Fig 196 for their location): Danebury (Cunliffe 1984a), Gussage All Saints (Wainwright 1979a), Winnal Down (Fasham 1985), Old Down Farm (S Davies 1981), Micheldever Wood (Fasham 1987), and Winklebury (K Smith 1977).

The significance of these finds densities is open to debate, as they are likely to be influenced by a number of different factors. The most important factors which should be assessed are:

- the extent of the area excavated
- the density and period of the occupation
- the significance of the disposal practices
- the nature of the activities on the site
- the character of the material culture of the area.

The size of the area excavated appears to have little significance. The largest of the sites was Winklebury (19,000sq m), but this produced the smallest number of finds in all categories; the Danebury, Winnal Down, Gussage All Saints, and Old Down Farm excavations are all roughly the same size (12,100, 12,600, 13,800, 11,800sq m respectively), but produce very different quantities of material. Maiden Castle and Micheldever Wood were the smallest sites (900, 1300sq m respectively) and, though Micheldever Wood has a very small assemblage, Maiden Castle has one of the largest assemblages.

The density of occupation is difficult to quantify, as on many of these sites it is clear that not all the features which might identify occupation survive. The only criterion that can be accurately quantified is the number of pits excavated. This seems to correspond to the

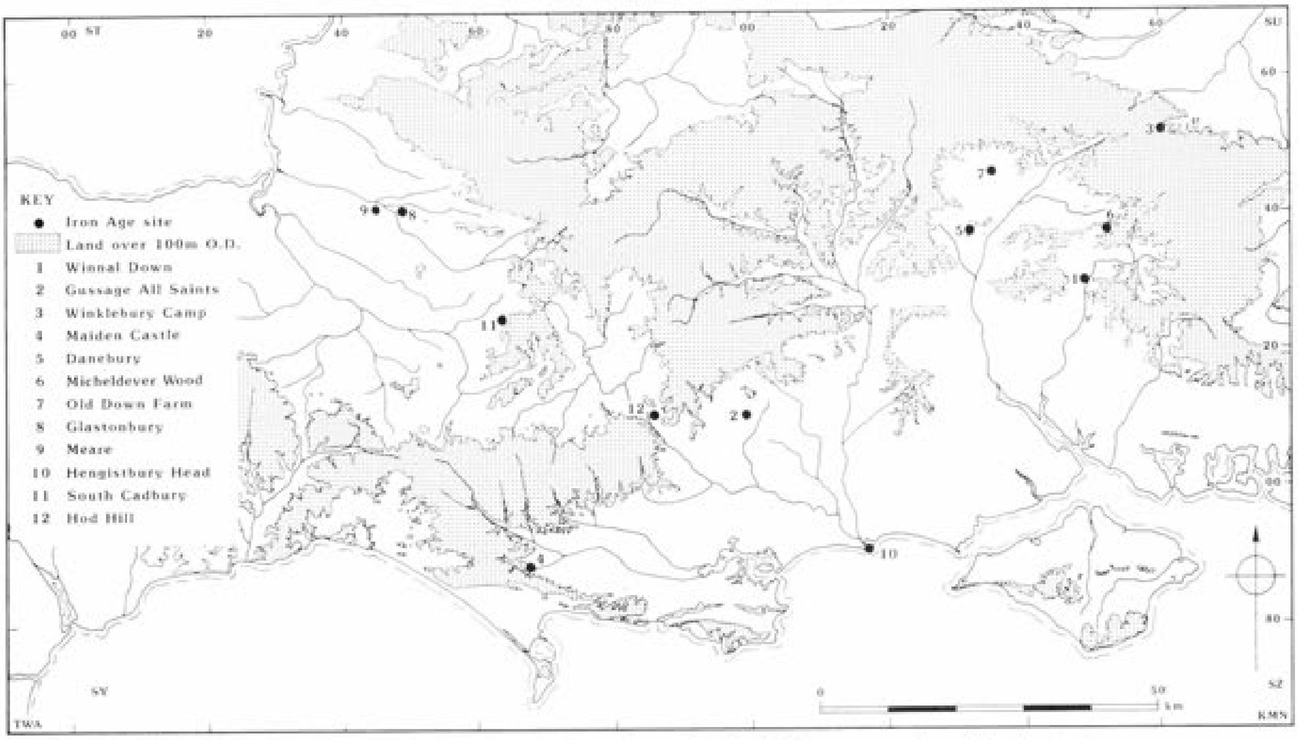


Fig 196 The location of the principal Iron Age sites in southern England that are mentioned in the text

quantities of material recovered (with one exception). More pits have been excavated at Danebury (933) than any of the other sites. Gussage All Saints has the next largest quantity (381), followed by Old Down Farm and Winnal Down which are closely similar (118 and 107 respectively), and then Winklebury and Micheldever Wood (82 and 19). This would suggest that the overall quantities of finds recovered from a site are a direct result of the number of pits present and excavated on that site.

The exception is Maiden Castle, which has many more finds than would be expected from the number of pits excavated (60). This is probably due to the presence of thick, artefact-rich soil layers which were not extensively present on the other sites (though a small area was included in the area excavated at Danebury), but it may also indicate that there was a greater density of finds at Maiden Castle.

This correlation between pits and finds cannot, however, be used to argue directly that the quantity of finds is a result of the density of occupation. Pits have a specific function, to store grain, and are only used as containers for rubbish after this primary function has been superseded. It has been shown (Fig 190) that the soil layers and pit fills contain the bulk of the assemblage at Maiden Castle. Consequently, it can be argued that rubbish is preferentially disposed of in pit fills or middens. As the soil layers are normally destroyed on archaeological sites, it is those sites which have more pits that will preferentially preserve the rubbish for archaeological recovery. It has been argued by Cunliffe (1984a, 557) that Danebury stored the grain for many of the surrounding communities and that it has many more pits than a normal settlement. This would imply that the quantities of material at Danebury are inflated by the large numbers of pits and that the site may be no more densely occupied than the other sites.

It would appear that the nature of activities on the sites does not have a significant effect on the overall quantities of material on these sites. It does, however, have a significant effect on the specific type of find present on the site. The one feature which distinguishes the Hampshire hillforts is the presence of standardised weights, with even Winklebury, which produced very few finds, having three. This might suggest that hillforts had an important role to play in the control of the movement of raw materials. It is, however, worth noting that the earliest secure context for a Danebury weight was in the phase cp7 and thus that redistribution was only important in the later phases of the hillfort's use.

There is very little evidence to suggest that hillforts were high-status centres. Weapons and chariot fittings are present in quantities comparable to the general high levels of finds on these sites. Similarly, there is no evidence for specialised production or distinctions between the different site-types. It is possible that some sites concentrated on one particular part of the production of textiles, such as weaving at Winnal Down, but it is noticeable that there is no support for the frequent claim (Cunliffe 1984a, 32) that weaving was more common on hillforts and spinning more common on farmsteads (see Marchant 1989 for a fuller discussion of this point).

The overall variations are not totally explained by these depositional factors. There appears to be a significant difference between the quantity of material recovered from Old Down Farm and Winnal Down: the former has fewer finds, though more pits were excavated. Furthermore, Winklebury had a particularly low number of finds given the size of the ceramic assemblages and the number of pits excavated. Similarly, the Dorset sites of Gussage All Saints and Maiden Castle have richer assemblages than could be expected. It would appear, therefore, that there is a distinction between sites in north Hampshire, south Hampshire, and Dorset. The former have fewer objects and the latter have more. The distribution of objects of personal adornment emphasises the distinction between the Dorset and Hampshire sites. The Dorset sites had assemblages which contain large numbers of objects which could be used to distinguish an individual's position and status. There does not, however, appear to be a significant difference in the status of individuals in defended or undefended sites in either region.

This comparison has been very limited and it is not clear exactly how other types of sites (ie small settlements, such as Poundbury, C Green 1987b) or regions (ie Wiltshire) can be accommodated. It has to be noted, however, that there are certain sites which appear to be noticeably different: the settlements of Glastonbury (Bulleid and Gray 1911) and Meare (Coles 1987) are the most obvious, but Hengistbury Head (Cunliffe 1987) and Cleavel Point (Woodward 1986a) are also distinctive. The amounts of material recovered from these sites are enormous compared to the sites discussed above, and the quality and variety are also much more extensive. It has been suggested that this is due to the wetland location of the sites and the quality of preservation that is available in these damp accumulating environments. Whilst this obviously affects the survival of the organic material, it cannot explain the relatively large quantities of material compared to sites, such as Maiden Castle, which have areas of well protected deposits. Similarly, it cannot explain the occurrence of important industrial activities, such as glass-making, smelting, and alloying. These can only be explained by a more detailed understanding of the social and economic framework of the Late Iron Age in southern England, which forms the focus for the final discussion.

7 Discussion

The environment

by J G Evans

Samples, which can be used to determine the nature of the past environment, come from two sources: surface survey and excavation (Fig 197). Material collected by the former means, after analysis, can distinguish differences between the historic environment in different places, although it cannot necessarily be related to its chronological context: samples from excavation, however, can often be well dated, but apply only to the spot from which they came. Similarly, the nature of the environmental evidence itself is of two kinds: some (eg snails or soils) relates only to the place where it is found, whilst other forms (eg animal bones and pollen) may give an indication of environmental conditions nearby, but not necessarily precisely where it was recovered. The results of much human activity need examination with this in mind: remains of nuts, seeds, charcoal, etc may be deposited by humans where they were used, but they may have come from elsewhere, and thereby show a more general picture of the surrounding environmental conditions.

The environment in the mid-Holocene

Prior to the Neolithic, the soil in the area was a uniform brown forest soil of circumneutral pH. Some trends that were later to become important and general, such as lessivation and acidification, were probably underway, although the former, at least, was not in evidence on the Maiden Castle hilltop (see p118). The extreme diversity of present-day soil types was minimal or absent, as were erosion, colluviation, and alluviation. Processes leading to soil impoverishment or degradation were minimal, because of the favourable nutrient- and water-cycling regime under mixed deciduous woodland. Even on the bottom of the Frome valley there was probably a stable, brown earth soil, if the evidence from other valleys, such as the Kennet (Evans *et al* 1988) and upper Thames (Robinson and Lambrick 1984; Limbrey and Robinson 1988), is comparable.

The vegetation was mixed deciduous woodland with oak, ash, and hazel as the main species. Wild pig, roe deer, red deer, and aurochs were the main large animals. The diversity of the vegetation and fauna in terms of species was uniformly high, but, in terms of communities of a few hectares in size, it was low. There were a few patches of open land here and there from tree-throw, river-bank collapse, over-browsing, and even human clearance, but there was not the patchwork of communities of later times. Landscape diversity was close to zero.

Increasing landscape diversity

The introduction by Neolithic communities of domesticated animals and cultivated crops entailed woodland destruction, soil tillage, and the establishment of grassland. The main general change was an increase in the diversity of soil and vegetation, leading ultimately to soils, such as rendzinas, podsols, and gleys, that are more extreme in their pH and hydrology and less

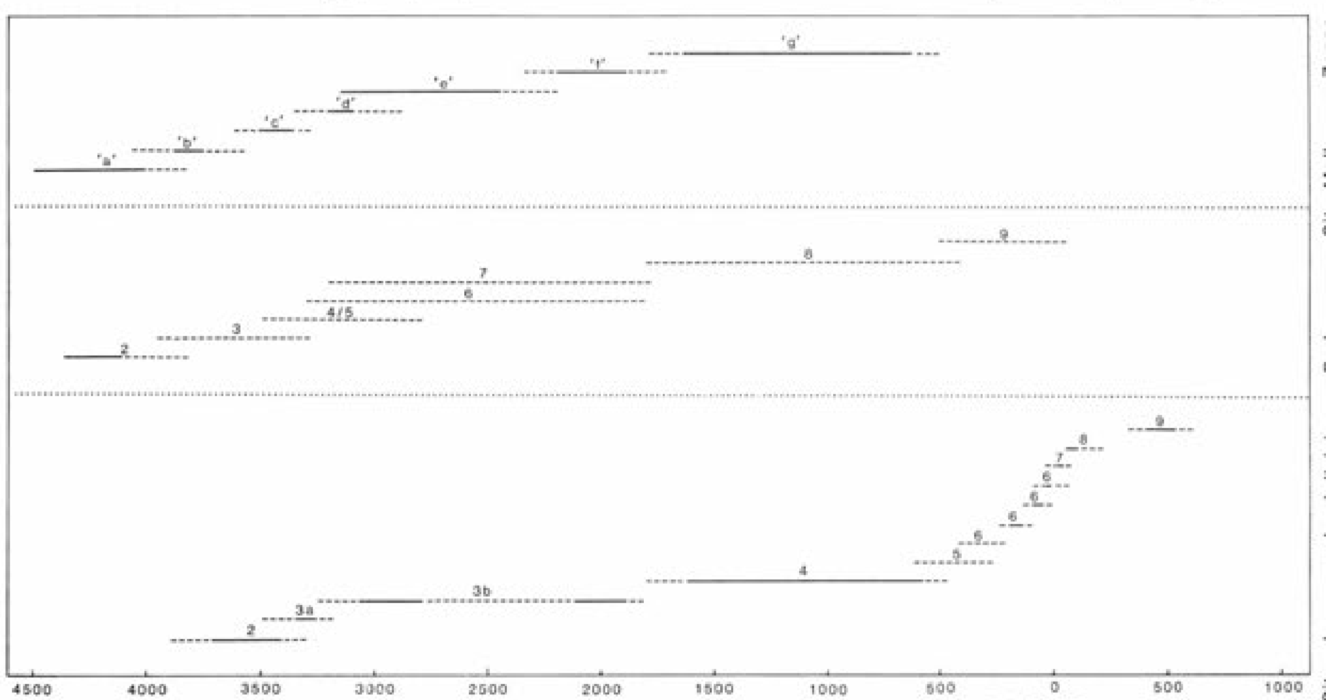


Fig 197 Correlation of site molluscan zones, pedozones, and phasing

resistant to change than the brownearth and to a landscape with fewer trees. Population increase and static settlement patterns aggravated these effects.

The main soil changes were mechanical disturbance and the breaking of the smooth and rapid flow of nutrients and water through the soil-woodland system. Run-off and erosion followed, with hillwash building up as thick deposits at the bottoms of slopes, often as pronounced lynchets, and in the bottoms of coombes. When this material got into rivers, it was transported further and then deposited as alluvium. On the slopes themselves, the soils that survived took on much more the nature of the underlying geology and, since this is mostly chalk, the soils became calcareous. In a few places, however, and especially on plateaux, the geological substratum is a variety of base-poor non-calcareous sands, gravels, and clays, and here acidity increased, accelerating under agriculture, particularly so in the absence of artificial liming. In the Frome, the soil changed from brownearth to gley, again as a result of woodland clearance, although there is no direct evidence for this.

Colluviation during the Neolithic was sparse or absent. If it occurred at all, it involved the upper non-calcareous parts of the soil profiles, and remnants of an early non-calcareous colluvium are present in a few places (see pp14–15). In the Bronze Age, colluviation was more general and the deposits more chalky, as the lower parts of the original profiles became disrupted. It is identified in a small coombe at Middle Farm, where colluvium overlies Early Bronze Age features associated with All-Over-Cord Beaker (Woodward and Smith 1988).

Wind erosion was another important process that took place in the Bronze Age. Thick deposits of windlain silt loam are present in the ditch of Mount Pleasant and other sites in the Alington Avenue complex (S Davies *et al* 1986; Wainwright 1979b), which imply intensive tillage, dry frosty spring weather, extensive open stretches of landscape, and wind. The absence of similar deposits on Maiden Castle may be because arable agriculture in the vicinity was limited in the Bronze Age.

Consideration of the various types of evidence demonstrates that, by the Bronze Age, the landscape was becoming diversified, woodland cleared, and the soils degraded. The wild fauna was also suffering. The latest aurochs dates for England and Wales are around 1300 years BC uncal (Grigson 1981).

The landscape survey

The changing pattern and quality of human activity are detailed in the landscape survey. There was Neolithic settlement in the South Winterborne, on the Maiden Castle ridge, and on the Mount Pleasant/Maumbury ridge. Molluscan evidence (see p16) suggests that the South Winterborne was permanently flowing in the past, but that the valley was dry enough to allow habitation. The situation in the Frome valley bottom is unknown, but various types of grassland management were possible; there were no large peat bogs and swamps.

In the Bronze Age, habitation and cultivation shifted away from the thinner soils of the hilltop ridges and slopes which were used for burial grounds and pasture. There was soil decalcification on Maiden Castle and, if this was a general trend at this time, it would have later posed problems in the reintroduction of plough agriculture, on account both of the thick, grass-matted turf making plough penetration difficult and the subsequent erosion that would have ensued when the decalcified, weakly structured, or totally unstructured soils were cultivated.

In the first half of the first millennium BC, there was evidence for alluviation in the channels of the Frome, timbers of alder and oak were incorporated into gravels, and a terrestrial environment of rich pasture or fen was present. By the Roman period at the latest, and probably during the Iron Age, peat formed. The valley bottom was intermittently flooded and the heavy clay and peat soils did not allow cultivation.

The upper alluvium in the Frome valley is widespread and formed in post-Roman times. It is attractive to equate this with medieval cultivation of the valley sides (as at Ashton Farm) giving an increase in sediment. The alluvium probably formed incrementally in herbaceous environments not unlike those of the underlying peat and soil, so that, although there is a strong sedimentary contrast, there was less of an environmental one. Indeed, the alluvium probably upgraded the soil-plant system.

Maiden Castle

The causewayed camp at Maiden Castle was set on a hill on weakly- to non-calcareous soil between an area of sandy soil to the west and an area of chalky soil to the east. It lay above a change in the character of the South Winterborne valley defined by the post-medieval land management. The molluscan evidence on the hilltop also hints at a boundary zone, with woodland in the west and more open country in the east.

Charcoal recovered from the site shows that the main trees of the primary woodland were oak and ash, with an understorey of hazel. Even at this stage, there were probably less dense areas of woodland in which hazel and the light-demanding ash and yew flourished. After the creation of the enclosure, woodland destruction was indicated in the molluscan faunas and perhaps in the decline of oak charcoal between the primary and secondary fills of the enclosure ditch.

There was an increase in the diversity of vegetation in the area as a whole consequent upon Neolithic and Bronze Age farming. This was not necessarily an increase in species numbers, but of ecological zones and communities. Thus, the plant remains from Maiden Castle allow the recognition in the Neolithic period of chalk downland, acidic sandy patches of drift, and damp, low-lying ground (see p135).

The Neolithic economy was based on mixtures of grains, nuts, fruits, and edible wild plants in small quantities, specifically emmer, breadwheats, naked and hulled barley, and a range of 'weeds' dominated by the largely edible Chenopodiaceae and Polygonaceae (see p135). Animals were almost entirely domestic, with large cattle predominant (52% by bone numbers), then sheep (25%), and pig (18%). Wild animals included red deer (3%, but the numbers were inflated by antlers), roe deer, and aurochs.

Regeneration of woodland after the construction of the Bank Barrow is clear from the molluscan faunas (see p124). During the Middle and Late Neolithic, ash declined and there was a range of new species: *Taxus*, *Berberis*, *Cornus*, *Sambucus*, and Rosaceae, all of which could be of very local origin, growing on the surrounding chalky soils. Their presence can be seen as a further reflection of the increasing diversity of the community, which was brought about by human activity.

Renewed activity in the Late Neolithic led to a change in the molluscan faunas and an increase in the amount of coarse rubble in the Bank Barrow ditches (see p56). The nature of this activity is uncertain, but it could relate to cultivation around the Bank Barrow, but not across it. The woodland molluscan fauna contradicts this interpretation, however, and may indicate that the activity was a ritual levelling of these earlier features sometime prior to more general clearance and agriculture. Two other long barrows, South Street in north Wiltshire (Ashbee *et al* 1979) and Giants' Hills 2 in south Lincolnshire (J Evans and Simpson 1986) had evidence for Late Neolithic activity in woodland at precisely the same horizon in the barrow ditches. Woodland clearance and cultivation had definitely occurred over the ditches in Beaker times and, again, this is the pattern at South Street and Giants' Hills 2. At Maiden Castle, in the absence of any evidence for further woodland regeneration on the hilltop, we may see the open landscape of the area as being of Beaker origin.

Cultivation is present not only in the ditch deposits, but also in the soil under a low bank adjacent to the causewayed camp ditch. In this, there is a juxtaposition of micro-fabrics of cultivation- and occupation-type, Macphail's pedozone 6, suggesting the cultivation edge. The area was ultimately formalised as a bank, and this may be a part of a system of boundaries identified broadly in the landscape survey and more specifically by Sharples (p57), as converging on the hilltop prior to the building of the first Iron Age rampart.

The Bronze Age on the hilltop was a period of abandonment. There was neither cultivation, nor intensive grazing; species-poor, acidic, or circumneutral grassland probably prevailed throughout (see p124). Likewise, evidence from the landscape survey (see p35) shows a shift away from areas of earlier intensive exploitation, especially those of the thinner soils, as on Maiden Castle, to areas of deeper and more acidic soils as on the plain to the north.

Plant communities of the Iron Age suggest cultivation of cereals and legumes (Centauretalia Cyani), nutrient-rich disturbed ground (Polygono Chenopodietalia), and neutral pasture and/or disturbed grassland, as at field and road edges (Molinio Arrhenatheretea) (see p135). There is very little evidence of nutrient depletion. The great majority of plant taxa could have flourished on a wide range of free-draining, loamy soils. An exception is *Sieglingia decumbens*, perhaps an arable weed, which could have grown on sandy, cultivated soil. There was shallow cultivation of spelt and six-row barley throughout the Iron Age around Maiden Castle and more intensive hoe-plot cultivation of *Brassicas*, legumes, and emmer.

Sheep had become a much more important animal (66% by bone numbers) than cattle (21%), and pig (9%) was even less significant than it had been in the Neolithic. Horse (2%) and dog (1%) were also present, but these seem to have a specialised function and were only eaten on special occasions (see p145). The assemblage of cattle and sheep bones largely derived from old animals, which suggests that their economic importance was as traction animals and to supply milk and wool. Only pig was kept specifically as a food source. A high incidence of oral pathology in the sheep suggests that they were malnourished, either because of a lack of fodder during winter months or overgrazing of restricted pasture in the summer.

Wood charcoal from the Iron Age include a number of species that were probably growing slightly further away than those from the Neolithic – *Alnus* and Salicaceae along river valleys, *Ulex* on Tertiary beds (eg Hog Hill) – and this picture broadly fits with the molluscan evidence for total woodland clearance on the site.

Comparison with Danebury

The catchment of Maiden Castle has a greater physical diversity than that of Danebury and this is reflected in the range of locations where crops were grown in the Iron Age, as indicated by the weed species (Jones 1984a). On the other hand, Maiden Castle is more restricted than Danebury in its weed ecological range in relation to the surrounding environment, when the diversity of land from which they could have come is considered. There was extensive spread of core grain crops to the margins of cultivation at Danebury, in contrast to the mixed extensive and intensive farming at Maiden Castle, so it is proposed (see p139) that Danebury was experiencing more stress in relation to soil fertility than Maiden Castle. This is in spite of the Neolithic activity and the Bronze Age soil acidification at Maiden Castle, neither of which is a feature of Danebury.

During the Bronze Age, the soil at Danebury and its immediate surrounds remained highly calcareous, as indicated by profiles beneath the first hillfort rampart and the main linear earthwork which runs east from it. Snails were abundant, including *Pomatias elegans*, *Pupilla muscorum*, and *Helicella itala*, indicating grassland, scrub, and a possible background of woodland (J Evans 1984; unpubl).

There are diverse molluscan assemblages, some reflecting woodland, from contexts within Danebury which cover much of the Iron Age. Although these reflect the immediate contexts, woodland refugia are indicated in the vicinity. By comparison, none of the Iron Age contexts at Maiden Castle (including several not analysed, but examined in the field) contained molluscan assemblages that were other than of open-country type, except that from MC XXXI which is a rock-rubble assemblage. Total clearance of the hilltop and at least the immediate surrounds was achieved in the Beaker period.

The soil and vegetation differences between the two sites may be related, with disturbance in the Bronze Age and the maintenance of some woodland, allowing the survival of chalky conditions at Danebury, while at Maiden Castle the abandonment of the site and the development of ungrazed, rank, species-poor grassland led to decalcification. Alternatively, the differences are due to the greater amount of non-calcareous material in the substratum at Maiden Castle in contrast to the chalky substratum at Danebury.

One would expect the chalk soils of Danebury to have been more fertile than the less generally calcareous and often acidic soil of Maiden Castle. However, pH and calcium carbonate are only a part of soil fertility; a range of nutrients has to be considered as well. Furthermore, a degree of acidity or a slightly sandier texture may result in soils that supported more intensive cereal cultivation without loss of fertility, than those of pure chalk.

The early prehistoric activity

by N Sharples

Any discussion of the Neolithic occupation on Maiden Castle is strictly limited by the very small-scale nature of the excavations. Nevertheless, because of the precise research design, an environmental sequence and chronology comparable in quality to any available from the more extensive excavations of recent years were recovered. Furthermore, the size of the finds assemblage (pot, flint, and animal bone) was surprisingly large and does allow comparison with other, more extensively excavated enclosures.

The main problem surrounding the discussion of the enclosure is the very biased nature of the archaeological record for the Neolithic period. A recent campaign of excavations has recovered a very detailed picture of the activities taking place at causewayed camps throughout southern England. It is, however, very difficult to compare these with contemporary sites of a different form which must have covered the landscape. Unenclosed settlements are very rare discoveries in rescue excavations and, when they do occur in Wessex, they are likely to consist of isolated and badly truncated pits, such as those exposed on the Dorchester by-pass (Woodward and Smith 1988) or Rowden on the South Dorset Ridgeway (Woodward 1991). Burial sites are more prominent, but rarely contain the substantial assemblages of finds which would justify detailed comparison. This creates a very one-sided view of activity in the Early Neolithic of Wessex. The identification of settlements can be partially resolved by a detailed landscape survey, such as that carried out as part of this project (see p9). Without the necessary excavations, however, such surveys can only provide a very general picture of Neolithic activity.

The first phase of the Maiden Castle enclosure was created about 3800 cal BC. This may have been a double-ditched enclosure, but it is also possible that the outer ditch was a later addition. Initial activity in the enclosure appears to be minimal: charcoal was the only find present in any quantity in the primary fills, but there was the burial of a child. The enclosure was constructed on the edge of a settlement area along the sides of the South Winterborne valley. This is one of a number of primary agricultural settlements in the area which were defined by clusters of long barrows and dense flint scatters. The others occur around the dry coombes leading into the Frome and at the eastern and western edge of the South Dorset Ridgeway. The enclosure was probably on the edge of the cleared land around the settlement and may have required the clearance of an extensive area of forest.

About 200 years after the enclosure was created, there appears to have been a major change in its use. The most distinctive feature of this change is the presence of charcoal-rich midden layers in the inner ditch of the causewayed camp. These layers and the intermingled silt layers contained large quantities of finds which make Maiden Castle one of the richest Early Neolithic sites excavated in southern Britain. For example, at least 105 vessels were represented in the areas excavated in 1985 and 1986 (1143 sherds). This is greater than assemblages from the much more extensive excavations at Offham (Drewett 1977) and Orsett (J Hedges and Buckley 1978) and comes close to the sherd total from the very extensive excavations at Briar Hill (Bamford 1985). Sites such as Windmill Hill (I Smith 1965) and Staines (Robertson-Mackay 1987) are comparable, but only if one assumes that the density of sherds in trench I was exceptional (the distributions at Staines showed marked concentrations of material). The flint assemblage was similarly large with over 21,000 pieces recovered.

The presence of these artefacts allows us to analyse the activities that were taking place at Maiden Castle in much greater detail. Before we do this, however, it is necessary to make some comment on the significance of the midden layers. The presence of these artefact-rich layers distinguishes the inner ditch from the outer ditch of the causewayed camp. The outer ditch appears to have been deliberately infilled with chalk (ie trench V), after a layer of material was laid at the base of the ditch. It has been argued elsewhere that the radiocarbon dates are consistent with this basal layer being laid down and the outer ditch backfilled, at the same time as the midden layers were being placed in the inner ditch. This may indicate that, though superficially the two ditch fills were different, they at least partially served the same function. It is likely that, when the midden was originally deposited, it completely filled the inner ditch. It was only later, as the organic content of the ditch decayed, that the fill consolidated and the ditch became a negative feature. The outer ditch was completely filled, but the inner ditch was infilled in such a way that it clearly remained a visible and presumably foul-smelling boundary to the activity in the enclosure.

One of the main stumbling blocks in the interpretation of the material in the ditch is that it does not represent *in situ* activity and clearly must have been dumped from elsewhere. How far away this activity was, it is difficult to say. It has been suggested (I Smith 1971, 100) that this could be specially collected settlement debris from domestic sites which were some distance from the enclosure and that it is misleading to use this material as an indication of activity at the enclosures. This seems, however, an over-elaborate suggestion and the well-preserved ceramics from the midden layers support the assumption that the rubbish is derived from activity close to the ditches. The only argument against it deriving from inside the enclosure is the relative absence of features indicating activity in the area excavated by Wheeler. The relatively large quantities of Early Neolithic ceramics from the Bank Barrow ditch inside the enclosure (see p184) does, however, indicate that there was activity inside the enclosure. It seems reasonable to suggest, therefore, that at Maiden Castle the material in the inner ditch fill derives from activities going on inside the enclosure.

The proportions of species in the assemblage of animal bones is very similar to that from other causewayed enclosures in southern England. Cattle predominate, comprising 52% of the assemblage, while sheep form 26% and pig 17%. Wild animals are not very important, with only a small proportion of aurochs, roe deer, and red deer present. The limited amount of age data available suggests that 50% of the cattle and sheep survived to at least 3–4 years old, but the pigs were slaughtered before they reached maturity. This might indicate that cattle and sheep were being kept for secondary products, but the quality of the evidence did not allow for the sexual discrimination which would confirm the presence of dairy herds as suggested by Legge (1981).

The bone was heavily fragmented and this is likely to represent breakage for the extraction of marrow. Cutmarks were present and suggest that cattle and sheep were butchered in the same way. They were first skinned and then the axial and appendicular skeleton was disarticulated and the major meat-bearing bones filleted. All of this activity took place on the site.

The plant remains consisted of 631 identifiable fragments which could be split into roughly equal quantities of cereal grains, edible weeds, and hazelnuts. The cereals included emmer and bread wheats and naked and hulled barley, although emmer was the dominant species. The most noticeable feature of the assemblage was the absence of chaff fragments which are found in such large quantities in the Iron Age. This type of assemblage is similar to assemblages from other Neolithic sites which have undergone extensive flotation programmes (Hambledon Hill, Mercer pers comm). However, there was no large cache of cleaned and sorted grain similar to that found at Hambledon Hill (Mercer pers comm) and Hembury (Hillman 1981b, 186–7), but this is probably due to the very small area examined at Maiden Castle.

The flint assemblage from the enclosure was dominated by waste from core production, but there is also debris from the production of core tools, probably axes, and a high proportion of tertiary flakes and blades, which are likely to be tools produced and used on the site. The assemblage has been compared with another assemblage from a Neolithic pit in the southwest corner of the Iron Age hillfort (well away from the enclosure) and the site of Rowden on the South Dorset Ridgeway. The assemblage from the pit was dominated by the secondary working of prepared cores and the production and use of blades and flakes. The assemblage from Rowden is dominated by core preparation flakes. This would indicate that the enclosure has the most complex industry which includes domestic activity, primary production, and core tool production. Only the latter activity appears to be restricted to the site. The retouched assemblage indicated that a range of domestic activities occurred on the site, but the presence of several unfinished axes emphasises the importance of core tool production.

The ceramic industry from the enclosure ditch was highly standardised and relatively unspecialised. Analysis of the vessel form, rim shape, and rim finish indicates that the bulk of the vessels were undecorated, closed, uncarinated bowls with simple, rounded rims. This assemblage belongs to the Hembury style which is found in south-western England and is characterised by the assemblages from Hembury (Liddel 1936) and Carn Brea (Mercer 1981). Differentiation within these assemblages is minimal, but it is noticeable that the quantity of carinated bowls at Maiden Castle is significantly lower than it is at Carn Brea (12% compared to 38%). It is also significant that at the nearby site of Rowden the total assemblage of 7–8 vessels is carinated.

Most of the vessels were made locally, though not on the hilltop, but there was a significant number of imported gabbroic ware vessels from Cornwall (5.4–9.1% of the assemblage). There were no gabbroic ware vessels at Rowden. These imports form a disproportionately high percentage of the small quantity of fine wares at Maiden Castle.

The only other imported find from the recent excavations were two stone axes from the group IVa source, presumed to be near Callington in east Cornwall. There are other imported Cornish axes from the site and it has been suggested (Mercer 1986) that these indicate an overland route from Cornwall, separate from the route used by traders in gabbroic wares.

It has been suggested (Care 1982) that the site had an important role in the control of exchange in Portland Chert. The recent excavations, however, indicated that this was not the case and analysis of the survey data suggests that much of the chert in the landscape has a local source in the Carstens series soils. The large assemblage of imported chert found outside the east entrance to Maiden Castle may be connected with the enclosure, but it could also be deposited after the enclosure has gone out of use.

This evidence suggests that most of the material deposited within the enclosure ditch was the result of domestic activity. Killing cattle and sheep, butchering, cooking, and eating the carcass, and preparing the skins would account for a large part of the animal bone, flint, and ceramic assemblages. The plant assemblage is similarly derived from cooking and consumption, but, unlike the animals, the initial preparation must have taken place elsewhere (this would not, however, distinguish the site from other domestic settlements, as there is little evidence for crop processing on any Neolithic site). This suggests that, after an initial period of sporadic and possibly ritual activity, the enclosure became much more integrated in the domestic life of the community. There is not enough evidence to establish whether Maiden Castle was permanently occupied, but the quantities of material found on the site suggest lengthy periods of occupation at least.

Certain features of these assemblages suggest that some activities were restricted to the enclosure. The most obvious of these is the control and distribution of prestige items, such as stone axes and gabbroic pottery. These were distributed across large areas of southern England from Cornwall and are found in greater quantities on enclosures than other sites. It is also likely that the site had control over the production and distribution of the more valuable products of the local flint industries, for example axes.

Similar characteristics have been noted by the excavators of a number of recently examined enclosures, ie Carn Brea (Mercer 1981), Hambledon Hill (Mercer 1980), Crickley Hill (Dixon 1981), and Orsett (J Hedges and Buckley 1978), and several of these sites have the remains of substantial permanent structures. The sites form a notable contrast with a number of enclosures which show little sign of intensive activity of any sort. Offham (Drewett 1977) is the best example, but there are several other sites in Sussex, including the continuously ditched enclosure at Bury Hill (Bedwin 1981). The large numbers of enclosures present in Sussex and their division into intensively occupied and sparsely occupied examples (Drewett 1978) is very different to the situation in Dorset. Here, only two enclosures are known, Hambledon Hill and Maiden Castle, and both are intensively occupied monuments. The evidence from Sussex might suggest that more Neolithic enclosures are present in Dorset and other areas of Wessex, but that these have not been correctly identified.

It has been recently argued (Kinnes 1989; J Thomas 1988) that the development of Neolithic society and economy in the British Isles was a relatively sudden imposition in the latter half of the fifth millennium. It would appear, therefore, that the enclosure at Maiden Castle was constructed almost immediately after the agricultural colonisation of this part of the British Isles. Its primary function in this period was to act as a focus for religious ceremonies which establish and moderate the relationships of dependency and autonomy between the members of the community that lived in the South Winterborne valley. It has been argued (J Evans, Rouse, and Sharples 1989) that, because of the socially dangerous nature of the ritual activities that would have taken place in this enclosure, such enclosures would be situated away from the settlement area. Such a location would partly explain the position of many enclosures on hills and other exposed positions, but this is presumably also related to visibility.

One of the main features of the following 300 years of the Neolithic is the continuous expansion of settlement. At Maiden Castle, it is clear (see p123) that the area around the enclosure was cleared of forest and one must presume that this land was incorporated into the agricultural landscape. Such changes must have had a dramatic effect on the nature of the activities in the enclosure, as these were no longer set apart from the community, but incorporated within it. One of the clearest responses appears to be an increased emphasis on the boundaries that define the enclosure. Most enclosures have evidence for later recutting of the ditches which remove many, if not all, of the causeways (the inner ditch of the enclosure at Maiden Castle is a good example). Other sites have evidence for the addition of later ditches which are larger and more formidable boundaries. The third ditch at Whitehawk Camp (Curwen 1936) and the outer ditch at Windmill Hill (Whittle pers comm) are the only ditches in each enclosure with Peterborough Ware, and both are substantially larger than the original ditches. The most extreme attempt to isolate an enclosure occurs at Hambledon Hill, where the enclosures are surrounded by an extensive series of earthworks which restrict access to the hilltop. Earthworks similar to these may occur on many other sites, including Maiden Castle (see p50).

It is likely, however, that during this period the actual function of the enclosure changed. As the landscape became increasingly cleared, the initially sparsely distributed communities would come increasingly into contact with each other. Relationships between communities and disputes over land would naturally be best resolved within the enclosures, as this would separate any disputes from the everyday life of the community and minimise the inherent dangers. Control over these relationships would, however, be crucial in competition within the community and would provide a mechanism for the establishment of a hierarchy within the community and ultimately between communities. Bradley has convincingly argued (1984a, 25–33) that the enclosures with large quantities of imported items and control over important raw materials indicate the instigation of a hierarchy within the Neolithic in southern Britain and that this hierarchy is clearly manifest in the appearance of individual burials in short long barrows.

The end of the Early Neolithic system at Maiden Castle is indicated by the abandonment of the enclosure and then, several decades later, the construction of the Bank Barrow. On many similar sites, this period of abandonment appears to follow from the violent destruction of the settlement. This is particularly clear at Carn Brea (Mercer 1981), Crickley Hill (Dixon 1981), and Hambledon Hill (Mercer 1980), where the destruction is characterised by the recovery of large quantities of arrowheads, many of which have distinctive impact fractures. The presence of several, similarly broken arrowheads at Maiden Castle may suggest that this enclosure also suffered a violent destruction. The limited size of the areas excavated, however, makes it impossible to demonstrate this pattern.

The construction of the Bank Barrow appears to mark the decisive break between the Early Neolithic and Late Neolithic in the area. After the monument was constructed, the occupation of the hilltop appears to have been abandoned and secondary woodland regenerates. The abandonment of the area may give some clue to function of the monument. Although it is obviously a continuation of the long barrow tradition (Bradley 1984b), burial would appear to have had little or no influence in its creation. The most plausible interpretation of its primary role is that it acted as a symbolic barrier. It is very noticeable that the three bank barrows of south Dorset are laid out to define an area of uplands known as the South Dorset Ridgeway (Woodward 1991). This area is later characterised by one of the densest concentrations of round barrows in southern England. It may be that the landscape had to be physically divided into defined territories during the Middle Neolithic, because the expansion of the original territories was bringing them into direct contact with the neighbouring territories. The regeneration of the woodland would help to emphasise the liminal position of land between the territories.

The use of an exaggerated long barrow as a barrier may be explained by the territorial position of the original long barrows. It seems likely that these burial monuments would have been placed outside the settlement area with the other ritual monuments – the enclosures. If these monuments retained a metaphorical link with the wilderness, then this could be used to emphasise the importance of the barrier. A similar function can be ascribed to the Dorset cursus in north Dorset, which separates the uplands of Cranborne Chase with the low-lying land around the River Allen (Bradley *et al* 1984).

The abandonment of the hilltop coincided with the clearance and intensive cultivation of the land to the north of Maiden Castle around the River Frome (M Allen forthcoming). It is, however, difficult to identify the settlements of this period from the landscape survey, as the material culture of the Middle Neolithic cannot be distinguished from the Early or Late Neolithic period. The area to the south of Maiden Castle has not been subject to the same intensity of archaeological investigation, and we cannot fully understand the nature of the Late Neolithic occupation of the area. It is clear, however, that some of the barrows of the Ridgeway cemetery were constructed during this period (J Thomas 1984, 164).

Activity on the hilltop in the Late Neolithic appears to have been insubstantial, while the hilltop was still heavily wooded. Sherds of AOC Beaker and Peterborough Ware were deposited, representing one of the earliest occurrences of Beaker assemblages in Dorset (J Thomas 1984). The radiocarbon dates for this occupation suggest that it started at the end of the fourth millennium cal BC. This would be too early for the AOC Beaker, which Whittle (1981, 307) suggests would be introduced no earlier than 2200 uncal BC (*c* 2700 cal BC). This occupation had little impact on the natural infilling of the Bank Barrow ditch. Not until much later was there a sustained period of clearance on the hilltop associated with sherds of late Beaker. This clearance is marked by a cultivation horizon which completes the infilling of the Bank Barrow ditch and which could be dated to as late as the end of the third millennium cal BC.

Several features might be the result of *in situ* occupation of the hilltop: notably the hollow in the top of the ditch in trench II and the bank between the enclosure ditches. It is impossible to date these two features precisely, but the snail evidence indicates that the hollow in trench II was related to the Late Neolithic activity and the bank would best be interpreted as part of the Early Bronze Age cultivation of the hilltop.

It would appear therefore that, for some time after the occupation of the hilltop had ceased, the enclosure retained a symbolic importance and was subjected to sporadic visits. The nature of the activity during this period is difficult to establish, given the restricted area examined and the destruction caused by the Early Bronze Age cultivation. The contents of the pits at the eastern end of the hilltop would, however, suggest that this was not simply domestic activity (see p185). One of these pits contained the only Grooved Ware assemblage from the site. The deposition of this Grooved Ware may be the latest activity on the site until the Late Beaker activity, as it stratigraphically sealed a layer with sherds of Peterborough Ware and Beaker (Wheeler 1943, 83, 153).

It is likely, therefore, that because of its peripheral location and its association with these ancient monuments, the hilltop retained some symbolic importance during the later Neolithic. The main focus of activity in this period was, however, along the southern edge of the River Frome. The earliest monuments in this complex were the enclosure at Flagstones (Woodward and Smith 1988) and the long barrow at Alington Avenue (S Davies *et al* 1986). These were succeeded by the henges at Maumbury Rings (Bradley 1976) and Mount Pleasant (Wainwright 1979b) and the post alignment under Dorchester (Woodward *et al* 1985). The former monuments were probably contemporary with the Late Neolithic activity on Maiden Castle (radiocarbon dates suggest that they were constructed in the last quarter of the fourth millennium cal BC). By the time of the construction of the later and larger monuments (in the middle of the third millennium cal BC), however, the occupation on Maiden Castle appears to be coming to an end.

The interpretation of these monuments is not relevant to a discussion of the excavations at Maiden Castle. Some comment is, however, necessary, as the sequence at Maiden Castle has been emphasised in recent publications (Care 1982; J Thomas 1984). The recent excavations have tended to reduce the importance of the site in the Late Neolithic. In particular, it could not have played a pivotal role in the redistribution networks of the period, as there is now no evidence for concentrations of Late Neolithic flint or chert on the site, and the significance and date of the one substantial collection near Maiden Castle are open to doubt (see p34). The quantity of later Neolithic ceramics from the site is also too small to justify any elaborate role in the period.

The apparent spatial separation between Peterborough Wares and Grooved Wares is also no longer clear. Grooved Ware was deposited at Maiden Castle (see p182) and Peterborough Ware may be associated with the enclosure at Flagstones (Woodward pers comm). These qualifications do not, however, fundamentally undermine the suggestion by J Thomas (1984, 174) that the construction of the Late Neolithic monuments and the appearance of Beakers resulted from competition between different social groups within the Late Neolithic society of south Dorset. They only emphasise that these groups were not territorially defined, but were the result of complex internal divisions.

The final clearance of the hilltop, at the end of the

Early Bronze Age, occurred when Beaker pottery had been fully integrated into domestic assemblages. This clearance was part of a widespread colonisation of peripheral land, marking the transition from the Early Bronze Age to the Middle or later Bronze Age period (Barrett and Bradley 1980b). This period of cultivation was short lived and the hilltop reverted to grass. Excavations have so far failed to identify any later Bronze Age settlement, although it is likely to exist in areas as yet unexamined.

The Iron Age

The excavations at Maiden Castle have re-established the site as one of the most extensively studied hillforts in southern England. In terms of the area excavated, the density of settlement, and the amount of information recovered, the site is comparable to the hillfort of Danebury (Cunliffe 1984a). It is therefore appropriate to discuss in detail the current hypotheses concerning the role of hillforts in central southern England. This discussion cannot, however, restrict itself to problems of hillforts, as it is impossible to understand their growth and significance without a fuller understanding of Iron Age society and the nature of change within that society.

Hillforts had a specific role in society, and it is only by identifying that role that we will be able to understand their significance. The features which define Wessex hillforts can be summarised:

1 the defences

2 the enhanced grain storage capacity

3 the density of settlement

4 the organisation of occupation into functionally specific areas.

It is important to emphasise that these features do not have a constant role or relative significance throughout the Iron Age. In any period, some features may be stressed, whilst others were relatively undeveloped. A century later, the emphasis could be reversed. It can be clearly demonstrated that the importance of these features changed dramatically at Maiden Castle and this discussion will progress through the occupation in chronological order.

The origin of hillforts

One of the main problems in understanding the reasons for the creation of the first hillforts is the lack of evidence for the immediately preceding Late Bronze Age in Wessex. In south Dorset, the Late Bronze Age is represented by a small number of sites, which have pottery characterised by the type site as a Kimmeridge II assemblage (Cunliffe and Phillipson 1968). These include several sites in Purbeck: Rope Lake Hole (Woodward 1986b), Kimmeridge (H Davies 1936), Langton Martravers (Calkin and Piggot 1939), probably Bindon Hill (Wheeler 1953), the site of Hog Cliff Hill (Ellison and Rahtz 1987) in west Dorset, and probably the site of Quarry Lodden (Bailey and Flatters 1972) above Weymouth (see Fig 198 for the location of

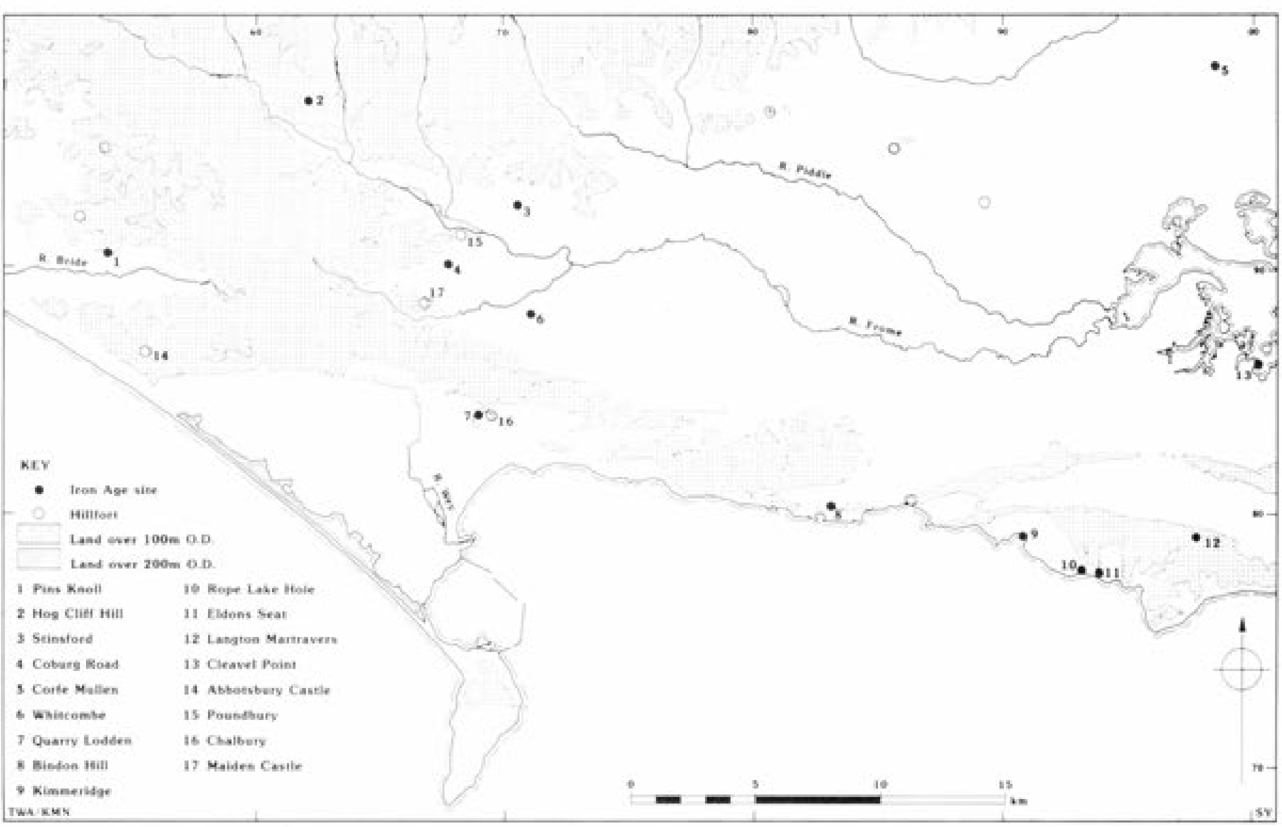


Fig 198 The distribution of the principal Iron Age sites in south Dorset mentioned in the text

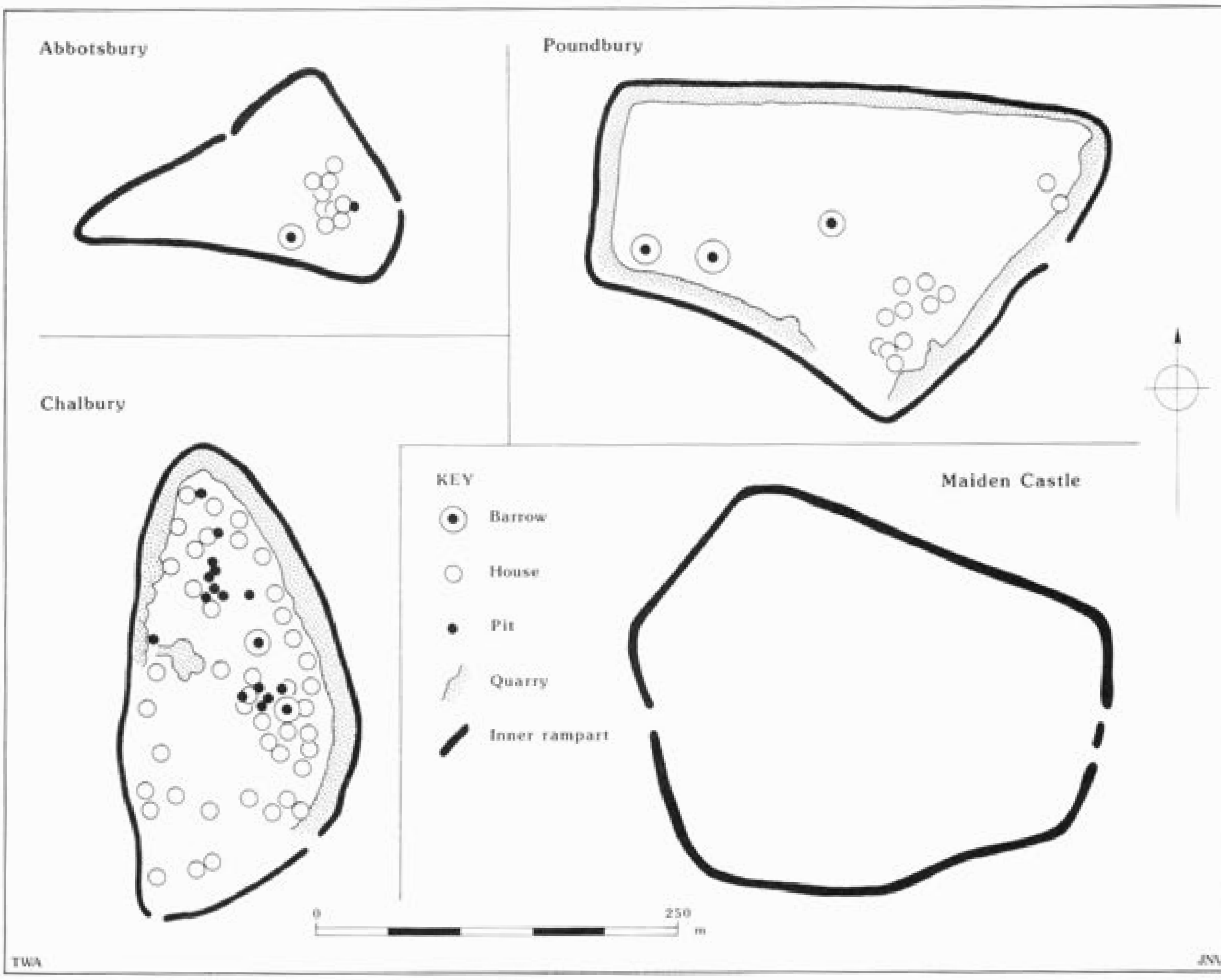


Fig 199 Schematic plans of the Early Iron Age hillforts of Abbotsbury, Maiden Castle, Poundbury, and Chalbury

these sites). Excavation at most of these sites has been very restricted.

In the immediate vicinity of Maiden Castle, this period is distinguished by the construction of the linear earthworks which divide the landscape and cut across the earlier field boundaries. One of these linear ditches cut across the Middle Bronze Age enclosure at Middle Farm (Woodward and Smith 1988). It is possible that some of the small enclosures, identified by fieldwork, continued in use. Examples might be the enclosures to the west of the Early Iron Age hillforts at Maiden Castle and Poundbury, and it has been suggested that the latter would provide the continuity of settlement which completes the sequence exposed by the Poundbury excavations (C Green 1987b). The alternative is that the enclosures were abandoned for undefended settlements which are not easily identified in this badly eroded landscape. A potentially Late Bronze Age settlement was recently exposed by salvage excavation at Coburg Road on the south-western outskirts of Dorchester (R Smith 1988).

The Early Iron Age occupation in south Dorset is represented by the hillforts at Maiden Castle, Chalbury, and Poundbury and by apparently open settlements, which include Eldons Seat (Cunliffe and Phillipson 1968), Rope Lake Hole (Woodward 1986b), and Langton Martravers (Calkin and Piggot 1939) in Purbeck, Pins Knoll (Bailey 1967) in the Bride valley, Quarry Lodden (Bailey and Flatters 1972) above Weymouth, Stinsford (Speller 1986) in the Dorchester area, and Hog Cliff Hill in west Dorset (Ellison and Rahtz 1987). The most noticeable feature of this pattern is the contrast between the continuity of sites like Rope Lake Hole, Langton Martravers, and Hog Cliff Hill and the appearance of the radically new hillfort settlements. The hillforts cannot be compared with the small enclosures, such as Middle Farm, as these were clearly not defended, or the large enclosures, such as Bindon Hill, as this was not a settlement.

The hillforts are distinct because of the magnitude of the enclosing defences, the area they enclose, and the presence of permanent occupation. Maiden Castle is not a good illustration, as the later occupation has obscured most of the evidence for the earlier occupation. The nearby hillforts of Chalbury (Whitley 1943), Poundbury (C Green 1987b), and Abbotsbury (RCHME 1952) are, however, well preserved and all but the last have been shown to be of Early Iron Age date. Chalbury is often regarded as the type site for hillforts of this period and has a dense, but dispersed occupation of houses and pits. It is, however, very different to the hillforts at Abbotsbury and Poundbury. The occupation of these forts is limited and appears to be restricted to clusters of houses in restricted and often sheltered areas of the interior (Fig 199). Excavations at Danebury suggest that this had a fairly dense settlement (Cunliffe 1984a, fig 2.10), akin to that at Chalbury, but excavations at Winklebury (K Smith 1977) suggest a more sparsely occupied site, akin to Abbotsbury and Poundbury.

The most obvious feature of these settlements is the relative uniformity of the material recovered by excavation. There seems to be little sign of a hierarchy between sites, and all the excavated sites of this period have evidence for a mixed economy with a restricted material culture which could be obtained locally. This pattern is repeated across a large area of southern England with little sign of regional diversity. The ceramic industries of this area highlight the homogeneity of the Wessex region. Assemblages are characterised by large, undistinguished, shouldered jars and fine carinated bowls in a range of locally available fabrics. The latter are sometimes elaborately decorated by incised lines, but the decoration on the jars is rare and restricted to fingertip impression (see Cunliffe 1984b, fig 6.17 and Fasham 1985, fig 52.23 for comparable assemblages from Hampshire). The main regional distinction is the slightly different form of the fine carinated bowls found in Dorset. The distinction between fine bowls and crude jars may indicate status differentiation within each community, but there is no evidence for status differentiation between communities (Cunliffe 1984a, 18).

The only difference between communities, that could indicate a hierarchy during this period, is that some communities are surrounded by large defences and some are not. The significance of these defences is, however, a matter of some debate. Their appearance has been interpreted as a result of conflict caused by the fragmentation of society due to the introduction of iron (Bradley 1984a, 132), or as elite centres for redistributing goods, both agricultural and industrial (Cunliffe 1984a, 30–1). Others have dismissed their defensive nature and argue that they are religious centres (Bowden and McOmish 1987). None of these explanations are totally satisfactory and the argument, that the ramparts and ditches of this period are not defensive (Bowden and McOmish 1987), is particularly unconvincing. Bradley fails to explain why conflict should occur from a breakdown in trading relations and why some sites remain undefended. Cunliffe ignores the fact that there seems to be very little redistribution during the Early Iron Age; his argument is circular, as there is no method for defining an elite, other than through the construction of hillforts.

Nevertheless, all of these hypotheses have elements of interest and isolate significant attributes of the hillfort problem. The widespread acceptance of iron technologies in southern England did seriously disrupt the existing trading relationship, both between regions, such as the Thames Valley, Wessex, and Brittany (Rowlands 1980), and within these different territories. This disruption would deprive these societies of a major method of competing for status: the control of trade routes and the production of prestige objects. Within the relatively isolated communities of Early Iron Age Wessex, the principal avenue for competition would be to acquire control over the reproduction of agricultural resources.

It can be argued that the distribution of Early Iron Age hillforts is evidence for aggressive competition over diverse agricultural resources. It has been pointed out that hillforts are preferentially located on the boundaries between different agricultural resources. Maiden Castle and Chalbury are good examples, as they have equal access to the large areas of upland of the South Dorset Ridgeway and the low-lying land of the Frome valley and the coastal plain respectively. A similar situation is noted in central Wessex (Cunliffe 1976, 188), where hillforts frequently sit on major linear earthworks which can be shown to partition the landscape into pastoral and arable areas (Palmer 1984). This position would allow the community to become agriculturally self-sufficient and would also optimise their resource base, such that the community could sustain a large population. The size of the population is the critical factor which would allow the community to construct elaborate defences.

Status is projected through the construction of defences, because control of this privileged agricultural position would lead to attacks on the community. The absence of prestigious armour or weapons might indicate that aggressive competition was focused on the community and its agricultural resources, rather than specific individuals. The objective of any attack was to remove the community and take control of the land, not to kill the upper echelons of that society.

If we examine the four hillforts around Dorchester already mentioned – Poundbury, Maiden Castle, Chalbury, and Abbotsbury (Fig 199) – then it is noticeable that the two hillforts, Abbotsbury and Poundbury, which do not have access to large areas of contrasting upland and lowland resources, are those which are least densely occupied. Chalbury and Maiden Castle are in roughly equivalent topographic positions and were comparable, until Maiden Castle was expanded in the Middle Iron Age. That Maiden Castle should become pre-eminent is partly predicted by the density of early prehistoric monuments which cluster in the fertile Frome valley with its potentially high agricultural capacity.

It should be emphasised that this is not a deterministic model. There was no ecological reason why communities should fight for control over these agricultural resources. Communities could and did thrive throughout south Dorset on much poorer land. Control of these resources was desirable and worth fighting for, only because it allowed the communities to expand and thereby gave them the basis to control larger areas and other communities.

The rise to dominance

Communities which eventually achieved control over the most advantageous resources increased in size and power, such that they dominated large areas of land, the production and distribution of primary agricultural resources, and a large labour force. Their status is displayed by the construction of elaborate and massive defences which, as Bowden and McComish (1987) have pointed out, became increasingly difficult to defend. The defences could only be constructed by large numbers of people – many more than would have been able to occupy the settlement permanently.

It has been argued (see p67) that the construction of the ramparts at Maiden Castle was an almost continual process for over 300 years with perhaps annual assemblies of labour during periods of agricultural slack. Feeding these labourers would be an enormous task, even though they were on the hilltop for perhaps a very short time. This would partially explain the enormous grain storage capacity of the early hillforts (Gent 1983). The grain was not for redistribution, but would be a levy on client settlements which would also be required to send labour to the hillfort to construct the defences (where they would ultimately consume the food which they produced). It may well be that, after the initial coercion, it would be impossible for a community to withdraw from this cycle, because the proportion of grain or animals removed from them was such that they could not support themselves, unless a large proportion of the occupants went to the hillfort. Thus, not only does the construction of the ramparts emphasise the status of the community, but it provides the mechanism for actively controlling the lives of individuals in communities dependent on the pre-eminent settlement.

The evidence from the Early to Middle Iron Age sites around Maiden Castle exhibits a pattern which is compatible with this scenario. Initially, there were three hillforts – Chalbury, Maiden Castle, and Poundbury – and two unenclosed settlements at Quarry Lodden and Coburg Road, Dorchester. Poundbury (C Green 1987b) and the Coburg Road settlement (R Smith 1988) appear to have been abandoned in the Early Iron Age and it is possible that the occupants were absorbed into the settlement at Maiden Castle. Chalbury (Whitley 1943) appears to be occupied for a reasonable length of time, but the absence of any Maiden Castle/Marnhull style vessels indicates that it was abandoned in the Early to Middle Iron Age. In contrast, Quarry Lodden (Bailey and Flatters 1972) has a rich assemblage of Maiden Castle/Marnhull style vessels which indicate continuity of occupation throughout the Iron Age. This might suggest that, as Maiden Castle increased in importance, it forced the abandonment of the competing settlement at Chalbury. This area was obviously too far away, however, to farm directly from Maiden Castle and so had to be controlled indirectly through undefended settlements such as Quarry Lodden.

In other areas of Wessex, there appears to be a very different type of settlement structure. Hillforts only occur on the edge of some densely settled areas, such as Cranborne Chase and Purbeck, and many of the excavated settlements show long unbroken periods of continuous development. It is also noticeable that the enclosures which are such a significant feature of the Gussage complex in Cranborne Chase do not appear to occur in the hillfort dominated area around Maiden Castle. One could argue that in both these areas there was not the topographic or agricultural dichotomy between pastoral and arable land to support a large population and thus enable the development of hillforts.

During the period when the hillfort of Maiden Castle was becoming increasingly more powerful, there were some subtle, but important changes in the material culture of the occupants. The most obvious change was in the nature of the ceramic assemblages. The fine wares and, in particular, the small, highly finished, haematite-coated bowls disappear and any form of decoration stops. The early assemblages found in the extended hillfort at Maiden Castle were characterised by an almost undifferentiated assemblage of situlate jars (Fig 200; this change occurs all over Wessex, note the difference between Cunliffe 1984b, fig 6.17 and 6.18). Contemporary with the changes was the general drop in finds, which was such a feature of the Middle Iron Age at Maiden Castle (see p243).

The range of decoration and the variation in size and shape of a ceramic assemblage may be used to identify status distinctions within a community (Barrett forthcoming). Consequently, the growing homogeneity of this assemblage suggests that the visible demarcation of status is disappearing. This is likely to be a deliberate attempt to manipulate perceptions of the social processes that are taking place. By deliberately suppressing status distinctions, it could be suggested that development of the defences of sites, such as Maiden Castle, was a product of, and of benefit to, the wider community and was not simply the result of the actions of an ambitious and powerful elite.

The development of regional territories

The process of competition and expansion appears to continue until about the second century cal BC at Maiden Castle, and its end is marked by several changes: the end of major rebuilding of the ramparts, the increasingly dense and organised nature of the occupation, and a major change in the material culture of the inhabitants. The latter is probably the most interesting change, as it was at this time that the ceramic assemblage was transformed. There was an increase in the range and form of the vessels, the quality of production, and the degree of decoration (Fig 200). The sequence was part of a general change which occurred throughout Wessex, whereby a number of features present in the earlier assemblage become emphasised to create regional styles (Cunliffe 1984a, fig 2.13), of which the Maiden Castle/Marnhull is particularly distinctive.

The development of regional styles of pottery must indicate a major change in the nature of competition within the different societies of southern England. The territory defined by the Maiden Castle/Marnhull style appears to amalgamate the areas of influence of three important hillfort centres (Fig 201): Maiden Castle, South Cadbury, and Hambledon/Hod Hill (it is possible that Hambledon Hill was the focus for Early to Middle Iron Age development, but the community then returned to the Late Bronze Age enclosure of Hod Hill in the Middle to Late Iron Age). It is not necessary to assume that one centre achieved dominance over another, simply that they reached an agreement over their relative spheres of influence and the common goals of the regional unit. Similar agreements could have been reached with other smaller centres, such as the occupants of Badbury Rings and Eggardon Hill, but

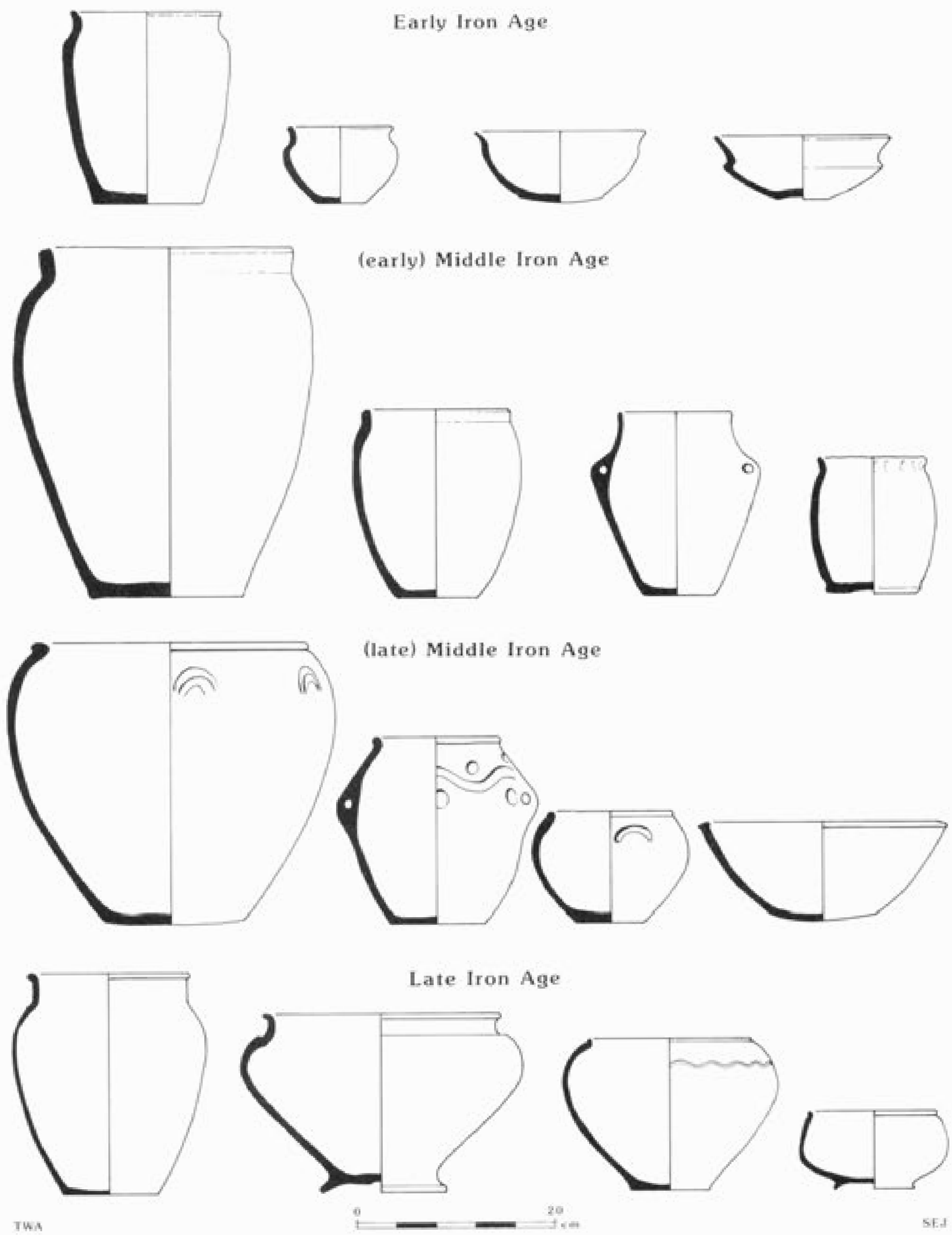


Fig 200 The ceramic sequence from Maiden Castle

these were likely to be less important and to have retained less control over their own destiny.

The main result of these political developments appears to have been the cessation of the massive programme of rampart construction on the developed hillforts. Warfare may have decreased within these territorial units and shifted to an inter-regional level of conflict and competition. It is noticeable that Hod Hill (which was suggested to be one of the last major hillforts to be occupied) had comparatively feeble defences, compared to South Cadbury or Maiden Castle. However, the quantity of slingstones at Maiden Castle increases dramatically in this period.

The effects of the abandonment of defensive construction would be very important, as it liberated large amounts of grain, and presumably other foodstuffs, which were consumed at hillforts during the periods of rampart construction. It would also have brought an end to the primary means of integrating the different communities scattered throughout the region. It is possible that the grain appropriated by the hillfort communities was used as a commodity to stimulate the development of specialised industries and thus to create trading relationships which would integrate the communities in the region.

The ceramic industries of the Poole harbour area, which came to dominate the supply of pots throughout Dorset in the Late Iron Age, already dominated the

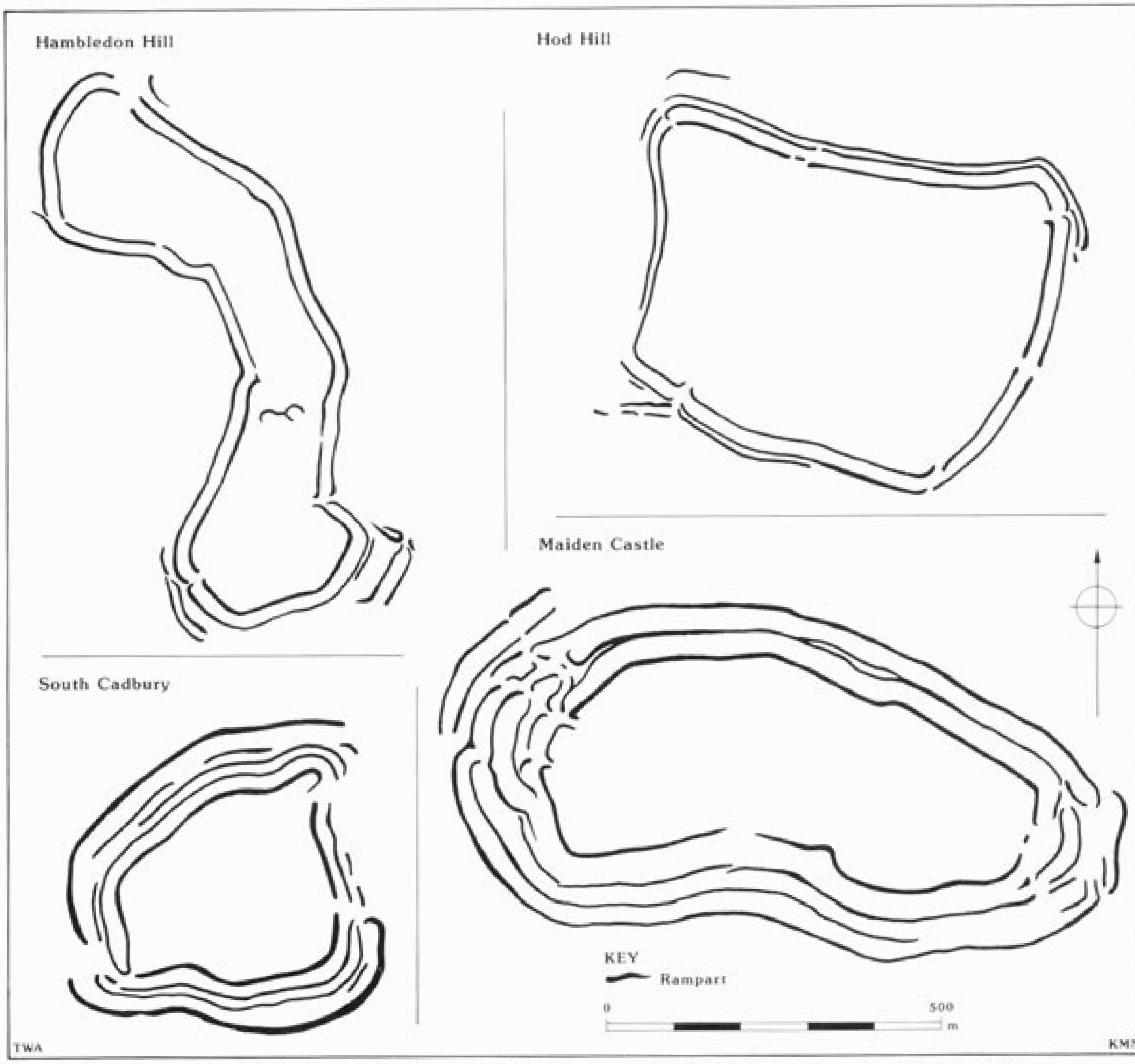


Fig 201 Schematic plans of the developed hillforts of Maiden Castle, Hod Hill, Hambledon Hill, and South Cadbury

assemblages present in the second century assemblages at Maiden Castle. Many of the other industries, which are such a feature of the Late Iron Age, may also have begun at this time. Specialist metalworking sites have been identified at Hengistbury Head and Glastonbury and the occupation of both sites began sometime in the second and third century cal BC (see Sharples 1990 for a more detailed discussion of the role of these sites). Glass beads were being produced from the third century at Meare (Henderson 1987). Salt production has been identified at Wyke Regis in the Fleet (Farrar 1975). Shale armlet production may also have increased, but there is no sign of a move to lathe production, until very late in the Iron Age (Calkin 1953; Woodward 1986b).

It is noticeable that the analysis of the finds from the settlements of this period (see p248) does not indicate a pivotal role for hillforts in these exchange networks. The primary stimulus for this increasingly specialised production may have been to provide a range of material culture which emphasised the distinctive regional territories.

Within the hillforts, the major transformation which occurred as a result of these changes was an increase in the population and a reorganisation of the occupation. The former hypothesis is difficult to substantiate and certainly could not be established with any certainty at Maiden Castle. Nevertheless, the number of houses identified in the Middle Iron Age phase at Danebury is more than double that recognised in the Early Iron Age phase (compare Cunliffe 1984a, fig 2.10 and fig 2.17). The reorganisation of the layout of these hillforts is much more obvious, as rows of houses and grain silos appear adjacent to streets which partition the interior into functional zones. Such division has also been tentatively identified at Maiden Castle. This reorganisation may be connected with the increase of specialisation in this period.

The small kin-based communities which formed the building blocks of Early Iron Age society may have been relatively self-sufficient and would have been able to farm sufficient land and produce sufficient tools and equipment to remain relatively independent within the larger structure of the hillfort community. The reorganisation of the settlements into rows of houses could have undermined these kinship ties and increased dependence on institutionally controlled relations for their basic agricultural survival. Such a situation would actively encourage the development of specialists.

Contemporary with the developments inside the hillfort were changes in the settlement of the surrounding landscape. By the first century cal BC (contemporary with phase 6G), settlements reappeared in the area immediately adjacent to the hillfort. The settlement in front of the hillfort at Poundbury is one of the earliest (C Green 1987b), but the enclosures at Mount Pleasant and Flagstones were also reoccupied during this century (Wainwright 1979b; Woodward and Smith 1988). These settlements are initially very small and relatively insignificant, but they are the precursors of substantial Late Iron Age and Romano-British farmsteads.

The move away from hillforts

It would appear, therefore, that many of the developments that distinguish the Late Iron Age of Dorset derive from changes which were underway in the Middle Iron Age. The specialist ceramic industries are the clearest example, as the Durotrigian styles were a direct continuation in both style and production of the Maiden Castle/Marnhull assemblages. Nevertheless, there are significant changes which clearly distinguish the Late Iron Age. These include:

1 the development of coinage

2 the appearance of a new and culturally distinctive burial tradition

3 the reorganisation or abandonment of hillforts

4 the development of distinctive, unenclosed settlements with associated field systems

5 trade with the continent

6 an increasing dependence on specialised industries for the production of a range of goods used to distinguish status.

It is important to note that these changes were not necessarily adopted across the territory in a uniform fashion. Durotrigian cemeteries were a south Dorset phenomenon, whereas coinage was concentrated in north and east Dorset.

The principal feature of these changes was the reappearance of a material culture and settlement form which enabled the identification of individuals with status and wealth. High-quality ceramics were an important feature of the new industries, and it has been noted above (p249) that objects of personal adornment were relatively common in Dorset. Both the burial rites, where grave goods play an important part, and the development of coinage emphasised that individuals, rather than communities, were in control of the distribution of wealth. Elsewhere, it has been argued (Sharples 1990) that these changes occurred, because the specialised industries developed in the later Middle Iron Age (particularly the ceramic industry) allowed individuals to control important exchange routes and production centres which were essential to the definition and reproduction of society. With this power, individuals could undermine or bypass the communal power structure which was based on the control of agricultural resources.

It is possible to identify high-status settlements by the quantity of coins or the size and richness of the associated cemeteries. On the former criteria, Maiden Castle stands out as an exceptional site. Although this indicates some continuity, as it undoubtedly was an important settlement in the Middle Iron Age, the evidence for the occupation within the hillfort is dramatically different. There is no indication of continuous occupation across the interior and the layout of streets and communal storage areas had been abandoned. The occupation was patchy and probably largely concentrated in the area of the original Early Iron Age fort.

Activity also extended outside the interior of the fort. The area within the earthworks of the eastern entrance was an industrial area, with extensive metalworking. Further out, there was the cemetery of the settlement. In the Middle Iron Age, both of these activities were dispersed within the settlement and appeared to be integrated with other aspects of the domestic life of the occupants. Their isolation is another sign of the increasing segregation of role and function in Late Iron Age society.

The adjacent settlements of Poundbury (C Green 1987b) and Alington Avenue (S Davies *et al* 1986) had smaller cemeteries and what little evidence there is suggests that this reflects the size of the settlement. Cemeteries which presumably have adjacent settlements are also known at Whitcombe (Aitken 1967), Pins Knoll (Bailey 1967), and Jordan Hill (RCHME 1970, 616), and the settlement at Quarry Lodden (Bailey and Flatters 1972) continued to be occupied during this period.

The continued occupation of Middle Iron Age settlements is a noticeable feature of these Late Iron Age sites. A new development was the construction of associated field systems. These have been identified in the excavations at Alington Avenue (S Davies *et al* 1986) and Whitcombe (Aitken 1967), and it has been suggested that the Roman settlement and field system at Maiden Castle Road (Woodward and Smith 1988) also started in the Late Iron Age. The best example of this type of enclosure system was, however, at the site of Cleavel Point (Woodward 1986a), where a Late Iron Age settlement defined by an interlinked series of rectangular enclosures extends over 10ha.

The function of these enclosures is not clear. It is possible that they had some sort of agricultural role and they must indicate the personal appropriation of previously communal land. It is also possible that they symbolise the increasing internal divisions of the Late Iron Age society. Houses, with their associated yards, were separately defined and segregated from each other. This was a major social change from the undifferentiated settlements of the hillforts and enclosures of the Early and Middle Iron Age, where field systems were absent.

Conclusion

Throughout the Iron Age, the hillfort of Maiden Castle was constantly modified to suit the ever-changing needs of the inhabitants. In the beginning, the defences probably enclosed a self-sufficient community competing directly with its immediate neighbours to control a particularly rich tract of agricultural land. In the following 3–400 years, Maiden Castle became the pre-eminent settlement controlling a large area of southern Dorset. Its more immediate neighbours were absorbed into the expanding hillfort and the more distant communities were forced to leave their hillforts for undefended settlements. During this expansion, the defences probably became more and more a symbol of the importance of the community and less and less a defensive barrier. Their construction would also have served to integrate the previously independent communities by acting as a focus for communal and probably seasonal gatherings.

In the last three centuries of the occupation, the cultural identity of the inhabitants of Dorset (and west Somerset) became increasingly well defined. The hillforts of Maiden Castle, Hod Hill, and South Cadbury developed as the political centres of an emerging tribal unit: the Durotriges. A rich material culture developed, due to the creation of a variety of specialised industries in the peripheral areas of the tribal territory. During this period, less and less effort was put into the construction of the hillfort defences, though initially the hillfort became an increasingly important agricultural settlement. The population expanded and the interior was divided into storage and residential areas, with the latter defined by lines of houses ranged along streets running between the entrances. Only in the last century of the period did this situation change, as communal power over agricultural production was undermined by individual control of the specialist industries. The street plan of the hillfort was abandoned and population shifted to settlements outside the hillfort. What little occupation there was in the hillfort was concentrated in its eastern half. This occupation did, however, retain some prestige, as the settlement was also the site of an important iron smithy.

The Roman and medieval activity

Wheeler's excavations at Maiden Castle revealed an important sequence of activity on the hilltop, carrying the history of the site into the Roman and medieval periods. In essence, his evidence began with the invasion, for which he claimed corroboration amongst the activity in the eastern entrance. The site continued to be occupied during the early years of the Roman occupation of Britain, but was abandoned with the creation of the nearby town of *Durnovaria* at the end of the first century AD. This period of abandonment lasted several centuries and ended with the building of a Romano-Celtic temple in the fourth century AD. The temple continued to be an important centre for religious activity into the Saxon period.

This sequence is very important and crucial to our understanding of the Roman occupation and abandonment of southern England. The evidence has recently been the subject of reassessment by several authors (notably Todd 1984b and Rahtz and Watts 1979), who have suggested that the story is more complicated than Wheeler originally assumed. Unfortunately, the recent excavations had very specific objectives and these did not include further investigation of the 'war cemetery' or the Roman and medieval activity. The evidence from these periods exposed by the recent excavations was limited (see pp99–101) and does not substantially affect their interpretation. Consequently, an extended discussion in this volume is felt to be inappropriate (however, for the author's opinions, see Sharples 1991).

Concluding remarks

The Maiden Castle project is one of the few archaeological projects in the British Isles which has had a detailed research design published well in advance of any results. The research design specified the problems that were to be examined by the project, and it is essential to conclude this report by examining how successful the project was in solving these problems.

One of the key objectives was to relate the site of Maiden Castle to the surrounding landscape and to try to achieve a clear picture of what was happening around Maiden Castle at the time that it was occupied and when it was abandoned. To a large extent, this has been achieved and it was possible to provide at the end of Chapter 2 a chronological account of settlement in the area between Dorchester and the South Dorset Ridgeway throughout the prehistoric period. This had a fundamental impact on the interpretation of activity on Maiden Castle, discussed in this chapter. It is now clear, for instance, that in the Early to Middle Iron Age the site absorbed most of the population of the area. In contrast, the Neolithic enclosure has a much more complex relationship with contemporary settlements in the adjacent and more distant river valleys.

Of considerable importance in this process was the detailed survey of the hillfort. This not only confirmed the great density of occupation in the interior of the hillfort, but revealed a hitherto unsuspected central enclosure and allowed the site to be linked to a series of linear boundaries which partition the landscape at the beginning of the first millennium.

The success of the landscape survey was enhanced by the opportunity to link it to a number of rescue excavations which took place in and around Dorchester. These excavations have provided an important test for hypotheses generated by the survey, which would have otherwise been unavailable.

The excavations had three specific goals: to examine the environment of the hilltop, to examine the sequence of occupation in the hillfort, and to recover evidence for the eastern gate to the hillfort. Unfortunately, the latter objective had to be abandoned, as external financial restrictions were placed on the project, after these research objectives were published.

Work on the cultural sequence was concentrated in the south-west corner of the hillfort (trench IV, Wheeler trench D and E) and was primarily designed to explore the sequence from the Middle Iron Age up to the Roman conquest. Four periods of occupation were isolated and it was possible to chart important changes in the structure of the hillfort occupation which corresponded to changes in the material culture. The most notable was the increasing dependence on the ceramic production centres around Poole Harbour and an increase in the quantity and variety of artefacts available to the community.

The most important objective of the excavation was to recover a detailed environmental and economic history of the occupation. This was the major deficiency of the original excavations, as techniques had not then been developed to provide an objective and accurate picture of the species present on the site.

Large assemblages of carbonised plants and animal bones have been recovered by an intensive programme of wet-sieving and flotation. These have provided a detailed picture of the agricultural economy of the inhabitants of the Iron Age hillfort and the users of the Neolithic enclosure. In the later period, the database is comparable with that recovered from Danebury. It has confirmed the general patterns available from this site, but it has also isolated a number of significant differences which derive from geographic distinctions and the distinctive cultural background of each site.

The main tool for the environmental research proved to be molluscan analysis, although soil micromorphology and the carbonised plant assemblage also contributed valuable information. This has given a clear picture of the effect that clearance and agricultural expansion and contraction had in the early prehistoric period. Unfortunately, important soil changes at the end of the second millennium BC affected the survival of molluscs and restrict our understanding of the environment during this period.

Other, more specific goals of the excavations included the definition of the chronology for the early prehistoric activity of the hillfort and examining the constructional sequence of the Bank Barrow. The recovery of 26 radiocarbon dates from early prehistoric contexts has provided an accurate chronological framework for the creation and use of the enclosure and the Bank Barrow. The nature of the material available from the later Neolithic and Bronze Age occupation, however, has restricted the precise definition of the different phases of activity at this time. Similarly, although the various features that make up the structure of the Bank Barrow were more accurately defined, there was no proof of the suggested chronological sequence.

It can therefore be claimed that the objectives set out in the research design have been successfully achieved and that this document successfully integrated a desire to explore the unlimited potential of Maiden Castle with the resources that were available to the project. The success of this research programme must, however, be treated with caution and should not be regarded as a precedent to judge other archaeological projects without consideration of the historical circumstances. The objectives were very specifically designed to augment our knowledge of a site that had already been the subject of a very extensive programme of archaeological investigation of the highest quality.

As a final conclusion, a number of objectives can be suggested, not in any order of significance, that archaeologists might care to address when examining the site in the future.

1 The most obvious problem is the date and function of the enclosure identified in the centre of the extended fort. Is this a precursor to the Iron Age occupation, a focus for the Iron Age occupation, or part of the Early Neolithic complex?

2 There are a number of questions which need to be asked of the Roman occupation. The most important concerns the nature (military or civilian) of the early Roman activity. However, the extent of the activity around the late Roman temple and its continuity into the post-Roman period are also unclear.

3 The database recovered in the recent excavations would be considerably enhanced by the recovery of a similar quantified and stratigraphically ordered database from another location or locations within the hillfort interior. Only then will it be clear, how representative the area in the south-west corner of the hilltop is.

4 Our understanding of the environmental history of the hilltop would be extended by excavations on the eastern edge, as limited excavation has shown that in this area molluscan remains are well preserved.

5 The evidence from the landscape survey could be considerably enhanced by a programme of small excavations which could explore the chronology of the distributions, which have been identified, and extend the environmental sequence into the landscape around the hilltop.

6 The landscape survey needs to be extended up to the two major topographic boundaries of the area examined: the South Dorset Ridgeway and the River Frome both lie beyond the artificial boundaries of the present survey.

These objectives are personal observations and, as was the case with Wheeler's excavations, it is only to be expected that new discoveries and changes in the approach to the subject will make much of the work discussed here seem irrelevant to future generations. Archaeologists will no doubt generate new areas for research and new techniques of analysis without any prompts from the past.

Summary

This report discusses the results of a programme of research into the history of the hillfort of Maiden Castle. This research took place in 1985 and 1986 and is part of a wider, continuing programme of work concerned with the improved management of the monument. The programme involved three studies: a survey of the setting of the monument, detailed geophysical and ground survey of the earthworks and interior, and selective excavation. It was concerned with understanding the detailed history of activity (human and biological) on the hilltop and with relating this history to the occupation of the surrounding landscape.

Activity on the hilltop in the Neolithic involved the construction of a double ditched enclosure, a Bank Barrow which overlies the ditch of the enclosure, and Late Neolithic/Early Bronze Age occupation.

The enclosure was constructed at the beginning of the third millennium uncal BC in woodland on the edge of an area of Early Neolithic settlement and around the valley of the South Winterborne. Most of the area to the north of the hilltop was probably densely forested at this time, while settlement was restricted to the valleys. Large quantities of artefacts were recovered from the ditch of the enclosure. The animal bones indicate that cattle were the most important species, but sheep and pig also had importance. Wheat and barley remains were recovered, with the former being the dominant species. The flint assemblage resulted from both domestic activity and the production of large quantities of core tools. Pottery, in the Hembury style, was largely locally made, but did include vessels made from the distinctive gabbroic clays of Cornwall. The occupation of the enclosure lasted for 200 to 300 years and may have intensified just before abandonment of the site.

The Bank Barrow was constructed at the beginning of the second quarter of the third millennium uncal BC and appears to be an extension of an existing long barrow which lay just outside the enclosure. There is no evidence for any burial or other activity specifically associated with this monument. At the time of the construction of the Bank Barrow, the hilltop had been cleared, but the woodland regenerated soon after, probably as a result of the abandonment of the area.

Sometime around the end of the third quarter of the third millennium uncal BC, the secondary woodland was cleared and the hilltop was cultivated. Artefacts from this period of occupation include Peterborough Wares and Beaker, but, because they survived in a cultivation soil in the top of the earlier ditches, they were badly preserved. By the time of this occupation, large areas of the landscape around Maiden Castle had been cleared and occupied. The area under and to the east of the town of Dorchester was the focus for a complex of ritual monuments constructed around 2000 uncal BC. There were, however, a number of small monuments and settlements in the area immediately adjacent to Maiden Castle.

There followed a period of a thousand years, for which the excavations produced very little evidence of human activity. The hilltop was covered in a thick turf, probably similar to that present today. Geophysical survey does suggest, however, that in unexcavated areas in the centre of the hillfort there was a later Bronze Age enclosure and that the site was a focus for a system of linear boundaries which partitioned the landscape.

The major reoccupation of the hilltop came with the construction of the first hillfort, sometime around the middle of the first millennium uncal BC. In the succeeding four to five centuries, the hillfort went through a period of sustained development. Rampart construction and refurbishment must have been a more or less continuous process, although the period was punctuated by several dramatic changes, such as the expansion of the hillfort and the redesign of the entrances. By about the second century uncal BC, however, the impetus for this rampart construction appears to have died out, and the area behind the rampart became densely occupied. This occupation went through a sequence from loosely structured agglomerations of houses to regularly laid out 'streets'. In the last century of the occupation, the layout was abandoned for an irregular dispersed settlement.

Associated with this sequence was a large assemblage of animal bones, and intensive sampling during excavation resulted in the recovery of one of the largest collections of carbonised plant remains from a British prehistoric site. Analysis revealed a pattern which showed little chronological change in the agricultural economy and which broadly conformed to that known from other sites of this period in southern England. Sheep and spelt wheat were the most important animal and crop respectively. Large numbers of artefacts were also recovered during the excavations, but, in contrast with the agricultural economy, these show marked changes during the period. The most noticeable development is the increase in the quantities of artefacts discarded in the later periods. For most categories of material, over 50% of the assemblage came from the final phase of the occupation.

The increase in the quantity and diversity of the material appears to be inversely proportional to the effort expended on the construction of the hillfort. In the period *c* 500–200 uncal BC, when the defences were being constructed and reconstructed, the ceramic assemblage was dominated by large undecorated storage jars, while objects of status were almost completely absent. In the period *c* 200–50 uncal BC, when the settlement was becoming increasingly more organised, the quality and range of ceramics increased and personal items became common.

In the final period of the Iron Age, occupation was concentrated in the eastern half of the hillfort, and a cemetery and industrial quarter developed in the earthworks outside the entrance.

During the Middle Iron Age, the settlement apparently absorbed the population from the surrounding landscape and there are practically no contemporary settlements in the immediate vicinity of Maiden Castle. By contrast, in the Late Iron Age, settlements outside the hillfort reappeared, and immediately before the Roman Conquest several extensive and important settlements were established.

The occupation of the hilltop continued after the Roman Conquest. It is not clear, however, whether this represents continuity of the native settlement or the presence of a Roman garrison similar to that at Hembury in Devon. In the fourth century AD, a temple was constructed within the former hillfort, so that the site became an important religious focus for the townspeople of *Durnovaria*. This temple may have continued in use in the unstable period after the formal end of Roman Britain, but from this period until the present day the principal function of the hilltop was as pasture for the low-lying settlements in the valleys of the Frome and South Winterborne.

Résumé

Ce compte-rendu examine les résultats d'une campagne d'études consacrée à l'histoire de l'enceinte fortifiée de Maiden Castle. Ces recherches se sont déroulées en 1985 et 1986 et font partie d'un programme plus ambitieux qui est encore en cours et qui s'intéresse à l'amélioration de la gestion du monument. Le projet comprenait trois études: un examen de la situation du monument, une étude géophysique détaillée ainsi qu'une étude de surface des travaux de terrassement et de l'intérieur de l'enceinte, et enfin des fouilles sélectives. Le but était de comprendre, dans ses détails, l'histoire des activités (humaines et biologiques) du sommet de la colline et de mettre en évidence les liens entre cette histoire et l'occupation de la compagne environnante.

Les activités au sommet de la colline à l'époque néolithique consistèrent en la construction d'une enceinte à double fossé, d'un tumulus à remblai qui recouvre le fossé de l'enceinte, et en une occupation au Néolithique tardif et au début de l'Age du Bronze.

L'enceinte fut construite au début du troisième millénaire (en années radio-carbone av. J.-C.) dans une forêt à la lisière d'un territoire occupé au début du Néolithique et autour de la vallée de South Winterborne. La plus grande partie des terres au nord du sommet de la colline était probablement couverte d'épaisses forêts à cette époque-là, tandis que le peuplement se concentrait dans les vallées. Un grande nombre d'objets façonnés ont été retrouvés dans le fossé de l'enceinte. Les os d'animaux montrent que les bovins constituaient l'espèce la plus répandue, mais les moutons et les cochons jouaient aussi un rôle important. On a retrouvé des traces

de blé et d'orge, le premier était la céréale la plus commune. La collection de silex provient à la fois d'activités domestiques et de la production d'une grande quantité d'outils taillés dans le noyau. La poterie, de style Hembury, était en grande partie fabriquée sur place, mais elle comprenait aussi des récipients en argile gabbra qui provient des Cornouailles et est facile à identifier. L'occupation de l'enceinte dura de 200 à 300 ans et il se peut qu'elle se soit intensifiée juste avant l'abandon du site.

Le tumulus à remblai fut construit au début du second quart du troisième millénaire av. J.-C. et semble être une prolongation du tumulus en longueur qui existait déjà et se trouvait juste à l'extérieur de l'enceinte. On n'a pas retrouvé de traces de sépultures, ni d'autre forme d'activité associée à ce monument en particulier. Au moment de la contruction du tumulus à remblai on avait déboisé le sommet de la colline, mais le terrain avait été reconquis par la forêt peu après, probablement à la suite de l'abandon de la région.

A un moment quelconque vers la fin du troisième quart du troisième millénaire av. J.-C., cette forêt secondaire fut défrichée et le sommet de la colline fut mis en cultures. Les objets façonnés de cette période d'occupation comprennent des céramiques de Peterborough et des vases campaniformes, mais, parce qu'ils ont subsisté dans des terres cultivées au-dessus des anciens fossés, ils ont été mal préservés. Au moment de cette occupation, de vastes étendues de campagne autour de Maiden Castle avaient déjà été défrichées et occupées. La région en-dessous et à l'est de la ville de Dorchester était le point focal d'un ensemble de monuments rituels construits vers 2000 av. J.-C. Il y avait, cependant, un certain nombre de petits monuments et de petites communautés dans la région immédiatement adjacente à Maiden Castle.

Il s'en est suivi d'une période d'un millier d'années pour laquelle on n'a retrouvé au cours des fouilles que très peu de témoignages d'activité humaine. Le sommet de la colline était couvert d'une herbe touffue probablement semblable à celle qu'on y trouve de nos jours. Toutefois, l'examen géophysique révèle que dans les parties qui n'ont pas encore été fouillées, au centre du fort, il y avait une enceinte de l'Age du Bronze tardif et que le site était le point de convergence d'un système de séparations rectilignes qui divisaient la campagne.

La principale réoccupation du sommet de la colline fut celle qui accompagna la construction de la première forteresse, aux environs du milieu du premier millénaire av. J.-C. Durant les cinq ou six siècles qui suivirent le fort traversa une période d'incessantes modifications. La construction du rempart et son entretien durent constituer un processus quasi continu, bien que l'époque fût ponctuée d'un nombre de changements extrêmement importants tels l'extension du fort et le déplacement des entrées. Vers le second siècle av. J.-C. environ, cet enthousiasme pour la construction du rempart semble s'être éteint, et le territoire derrière le rempart bénéficia d'un fort taux d'occupation. Cette occupation subit une évolution qui la conduisit d'agglomérations de maisons à structures très lâches à des "rues" alignées de manière régulière. Au cours du dernier siècle d'occupation, cet arrangement fut abandonné en faveur d'un habitat dispersé sans ordre particulier.

On a retrouvé une importante collection d'os d'animaux associés à cette évolution, et le prélèvement intensif d'échantillons au cours des fouilles a eu pour résultat le sauvetage d'une des plus importantes collections de restes de plantes carbonisés provenant d'un site préhistorique britannique. L'analyse a révélé une évolution qui ne mettait en évidence que peu de changements chronologiques dans l'économie agricole et qui, dans son ensemble, était conforme à ce qu'on avait rencontré sur les autres sites de la même période dans le sud de l'Angleterre. L'animal le plus répandu était le mouton et la céréale la plus importante était l'épeautre. On a également retrouvé au cours des fouilles un nombre considérable d'objets façonnés mais, contrairement à ce qui s'est passé pour l'agriculture, ils témoignent de nets changements au cours de cette période. Le développement le plus remarquable réside certainement dans l'augmentation de la quantité d'objets rejetés dans les périodes tardives. Pour la plupart des catégories de matériaux, plus de 50% des trouvailles proviennent de la phase finale de l'occupation.

L'augmentation, en quantitié et en diversité, des matériaux semble être inversement proportionnelle à l'effort consacré à la construction du fort. Aux alentours de la période allant de 500 à 200 av. J.-C., moment où on construisait et reconstruisait les ouvrages de défense, la collection de céramiques comprend surtout de gros pots sans décors destinés à recevoir des provisions, tandis que les objets liés au rang sont pratiquement absents. Pendant la période allant d'environ 200 à 50 av. J.-C., alors que l'occupation devenait de plus en plus organisée, la qualité et la variété des céramiques augmentaient et les objets personnels devenaient courants.

Pendant la période finale de l'Age du Fer, l'occupation se concentra dans la moitié est du fort et un cimetière ainsi qu'un quartier industriel se développèrent à l'emplacement des travaux de terrassement, à l'extérieur de l'entrée.

Au cours de l'Age du Fer moyen, l'occupation semble avoir absorbé la population de la campagne environnante et il n'existe pratiquement pas de peuplements contemporains dans le voisinage immédiat de Maiden Castle. Au contraire, à l'Age du Fer tardif, des peuplements réapparurent à l'extérieur du fort et juste avant la conquête romaine plusieurs peuplements étendus et importants s'installèrent.

L'occupation du sommet de la colline se poursuivit après la conquête romaine. On ne peut dire, toutefois, s'il s'agissait de la continuation de l'occupation originelle ou s'il s'agissait de la présence d'une garnison romaine semblable à celle de Hembury, dans le Devon. Au quatrième siècle ap. J.-C. on construisit un temple dans l'enceinte de l'ancien fort, si bien que le site devint un important centre religieux pour les habitants de la ville de *Durnovaria*. Il se peut que ce temple ait continué à être utilisé pendant la période troublée qui suivit la véritable fin de la Grande-Bretagne romaine, mais, à partir de cette époque, et jusqu'à nos jours, le rôle principal du sommet de la colline a été de servir de pâture pour les populations installées en bas, dans les vallées de la Frome et de South Winterborne.

Zusammenfassung

Dieser Bericht befaßt sich mit den Ergebnissen des Forschungsprogrammes in die Geschichte des Ringwalles Maiden Castle. Diese Untersuchungen fanden 1985 und 1986 statt, als Teil eines weitgreifenden und fortlaufenden Arbeitsprogrammes, das eine verbesserte Verwaltung des Denkmals anstrebt. Dieses Programm umfaßt drei Untersuchungsbereiche: eine Aufnahme der Lage des Denkmals innerhalb der umgebenden Landschaft, eingehende geophysikalische Messungen und Geländeaufnahmen der Erdwerke und des Innenraumes, sowie gezielte Ausgrabungen. Es war die Absicht dieses Forschungsprogrammes den geschichtlichen Ablauf in der Besiedlung (biologisch und menschlich) der Hügelkuppe in allen Enzelheiten zu verstehen und ihn mit der Besiedlung in der angrenzenden Landschaft in Verbindung zu bringen.

Zu der Besiedlung der Hügelkuppe während des Neolithikums gehören eine Einfriedung mit Doppelgraben, ein gestrecktes Hünengrab, das den Graben der Einfriedung überschneidet und Siedlungsspuren aus dem Spätneolithikum und der frühen Bronzezeit.

Die Einfriedung war zu Beginn des dritten Jahrtausends (Radiokarbonjahre v. Chr.) in einem bewaldeten Gelände angelegt worden, das sich am Rande eines frühjungsteinzeitlichen Siedlungsgebietes und um das Tal des South Winterborne erstreckte. Der größte Teil des Geländes nördlich der Hügelkuppe war zu dieser Zeit aller Wahrscheinlichkeit nach mit dichtem Wald bedeckt, während die Besiedlung auf die Täler beschränkt war. Große Mengen an Artefakten wurden aus dem Graben der Einfriedung geborgen. Die Tierknochenfunde ließen erkennen, daß das Rind die Haupttiergattung darstellte, obwohl Schaf und Schwein ebenfalls von Bedeutung waren. Reste von Weizen und Gerste wurden sichergestellt, wobei die erstere sich als die dominierende Getreideart erwies. Die gesammelten Feuersteinfunde stammten sowohl aus häuslichem Gebrauch, als auch aus der Herstellung großer Mengen von Kernwerkzeugen. Unter der Keramik, zumeist aus örtlicher Herstellung und im Hembury Stil, befanden sich auch Gefäße, die aus den leicht erkennbaren, aus Cornwall stammenden Gabbrotonen hergestellt waren. Die Nutzungsdauer der Einfriedung betrug 200 bis 300 Jahre und kann sich kurz vor deren Aufgabe intensiviert haben.

Das gestreckte Hünengrab war zu Beginn des zweiten Viertels des dritten Jahrtausends v. Chr. angelegt worden und scheint die Verlängerung eines schon bestehenden Hünenbettes, des knapp außerhalb der Einfriedung lag, gewesen zu sein. Befunde für eine

Grablegung oder sonstige Nutzung, die speziell mit diesem Denkmal verbunden sind, konnten nicht festgestellt werden. Zu der Zeit als das gestreckte Hünengrab errichtet wurde, war die Hügelkuppe unbewaldet; doch kehrte der Wald bald danach wieder zurück, wahrscheinlich, als man dieses Gebiet aufgab.

Irgendwann gegen Ende des dritten Viertels des dritten Jahrtausends v. Chr. wurde diese Neubewaldung wieder gerodet und die Hügelkuppe wurde beackert. Unter den Artefakten dieser Nutzungsphase befindet sich Keramik der Peterborough Waren und der Becherkultur. Da diese Keramik aber im Kulturboden in den oberen Schichten der älteren Gräben überkommen ist, ist ihr Erhaltungszustand schlecht. Zur Zeit dieser Nutzungsphase waren große Strecken der Landschaft um Maiden Castle gerodet und besiedelt. Das Gelände unter und östlich der Stadt Dorchester war das Zentrum für einen Komplex ritueller Denkmäler, die um 2000 v. Chr. angelegt wurden. Jedoch lag auch eine Gruppe kleinerer Denkmäler und Siedlungen auf dem Gebiet, das unmittelbar an Maiden Castle angrenzt.

Darauf folgte ein Zeitraum von tausend Jahren, für den die Ausgrabungen nur sehr wenige Beweise für eine menschliche Ansiedlung erbringen konnten. Die Hügelkuppe war mit dicker Rasensode bedeckt, die wahrscheinlich dem heutigen Zustand sehr ähnlich war. Geophysikalische Untersuchungen auf nicht ausgegrabenen Arealen lassen jedoch vermuten, daß im Zentrum des Ringwalles eine spätere bronzezeitliche Einfriedung bestanden hat, und daß diese Lokalität der Brennpunkt für ein gradliniges System von Begrenzungen gewesen ist, die die Landschaft unterteilten.

Die großangelegte Neubesiedlung der Hügelkuppe setzte dann mit dem Bau des ersten Ringwalles irgendwann um die Mitte des ersten Jarhtausends v. Chr. ein. In den folgenden vier oder fünf Jahrhunderten erlebte der Ringwall eine Zeit des fortdauernden Ausbaues. Wallkonstruktion und Renovierung müssen mehr oder weniger ununterbrochen durchgeführt worden sein. Diese Zeit sah jedoch auch großangelegte Änderungen, wie etwa die Erweiterung des Ringwalles und die Neuplanung der Eingänge. Im zweiten Jahrhundert v. Chr. scheinen die Antriebe für die Wallkonstruktion eingeschlafen zu sein und das Gelände hinter dem Wall wurde dicht besiedelt. Diese Besiedlung durchlief mehrere Phasen, von locker ausgerichteten Häuserballungen bis zu regelmäßig ausgerichteten "Straßen". Im abschließenden Jahrhundert dieser Besiedlung wurde dann die Planung zu Gunsten einer unregelmäßig verteilten Ansiedlung aufgegeben.

Mit dieser Siedlungsabfolge war eine große Ansammlung von Tierknochen verbunden. Intensive Probensammlung während der Ausgrabungen stellte eine der umfangreichsten Kollektionen karbonisierter Pflanzenreste aus einer vorgeschichtlichen Fundstelle in Britannien sicher. Die Analyse zeigte ein Modell, das wenig chronologischen Wandel in der Landwirtschaft aufweist und weitgehend mit dem von anderen Fundstellen dieser Zeit in Südengland gewonnenen Bild übereinstimmt. Schafe und Speltweizen dominieren. Große Mengen von Artefakten wurden ebenfalls sichergestellt und diese zeigen jedoch im Gegensatz zu den landwirtschaftlichen Praktiken in diesem Zeitraum augenfällige Wandlungen. Die auffallenste Änderung zeigt sich in dem mengenmäßigen Anstieg der Artefakte, die während der späteren Phasen fortgeworfen wurden. In den meisten Materialkategorien stammten über 50% des gesammelten Befundes aus der letzten Siedlungsphase.

Der mengenmäßige Anstieg und die Mannigfaltigkeit des Materials scheint im proportionell umgekehrten Verhältnis zu den Anstrengungen zu stehen, die auf den Bau des Ringwalles gerichtet waren. Für die Zeit von circa 500–200 v. Chr. als die Verteidigungsanlagen angelegt und neuangelegt wurden, bestanden die Keramiksammlungen hauptsächlich aus großen unverzierten Vorratsgefäßen, während Gegenstände, die sozialen Rang anzeigen, fast völlig fehlten. In der Zeit von circa 200–50 v. Chr. mit ansteigender Organisation in der Siedlung steigen dann auch die Qualität und Variationsbreite der Keramik und Gegenstände des persönlichen Besitzes erscheinen häufiger.

Während der ausgehenden Eisenzeit war die Besiedlung in der östlichen Hälfte des Ringwalles konzentriert. Ein Gräberfeld und eine gewerbliche Ansiedlung entstanden in den Erdwerken außerhalb des Einganges.

Während der mittleren Eisenzeit scheint die Ansiedlung die Bevölkerung aus dem umliegenden Gebiet angezogen zu haben, denn es sind fast keine zeitgleichen Siedlungen in der unmittelbaren Umgebung von Maiden Castle bekannt. Im Gegensatz dazu, erscheinen in der späten Eisenzeit wieder Siedlungen außerhalb des Ringwalles und unmittelbar vor der Eroberung durch die Römer hatten sich mehrere ausgedehnte und wichtige Siedlungen etabliert.

Die Besiedlung der Hügelkuppe dauerte nach der Eroberung durch die Römer an. Es ist jedoch nicht klar ersichtlich, ob dies eine Fortdauer einheimischer Besiedlung darstellt, oder ob es sich dabei um eine römische Garnison gehandelt hat, vergleichbar mit Hembury in Devon. Im vierten Jahrhundert n. Chr. wurde dann innerhalb des ehemaligen Ringwalles ein Tempel errichtet. Die Örtlichkeit wurde so zu einem wichtigen religiösen Zentrum für die Bevölkerung von *Durnovaria*. Dieser Tempel mag während der unruhigen Zeit, die dem Ende der römischen Herrschaft in Britannien folgte, weiterbenutzt worden sein. Von dieser Zeit an bis heute diente die Hügelkuppe als Weide für die tieferliegenden Ansiedlungen in den Tälern der Frome und des South Winterborne.

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Index

by Cherry Lavell

Where possible, entries relating to Maiden Castle itself have been dispersed to headings reflecting its principal components, eg Bank Barrow, causewayed enclosure, and hillfort. In several entries, it was found appropriate to arrange subheadings in chronological order (Neo, BA, Iron Age, etc), with the more general subheads like 'archaeomagnetic dates' or 'lithics' following on. The abbreviation MC is used for Maiden Castle in general entries (eg 'berms of MC'). Period names are appropriately abbreviated as follows: Neo – Neolithic, (E)BA – (Early) Bronze Age, EIA – Early Iron Age, RB – Romano-British, and med – medieval. Species of the plant and animal kingdoms are indexed in general terms only, eg cereals, mollusca, charcoal, weeds, etc; pits are only indexed where their contents are specially discussed, and artefacts have not been exhaustively indexed. The fiche material is not indexed here, having its own separate index, but the authors and main subjects listed on pp4–8 of this work have been entered here to allow some access to the fiche.

References to figures are entered in bold and tables in italic. The index has been compiled with the aid of MACREX-5, the indexing program approved by the Society of Indexers.

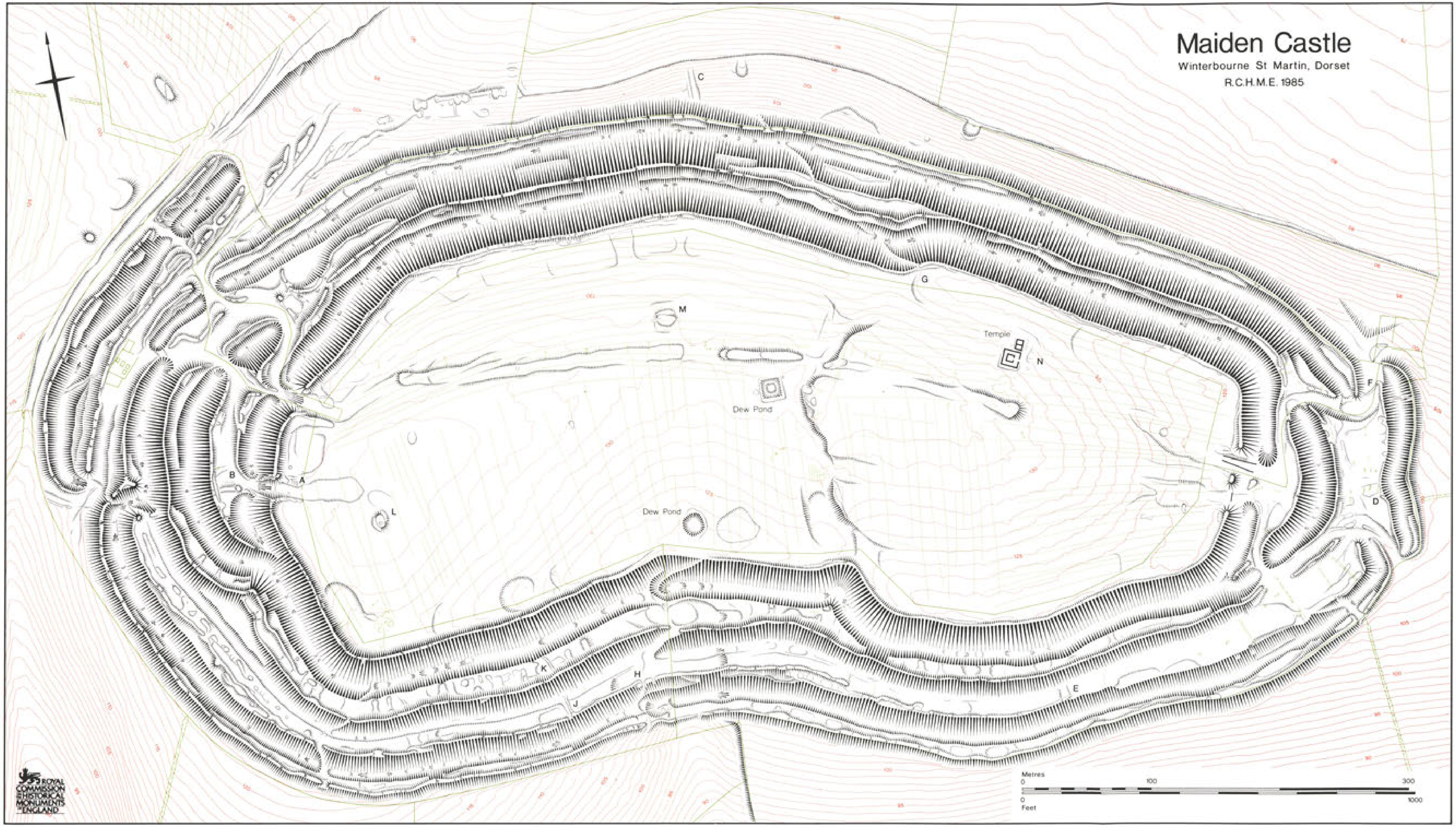

Fig 29 A survey of the earthworks by the Royal Commission on the Historical Monuments of England

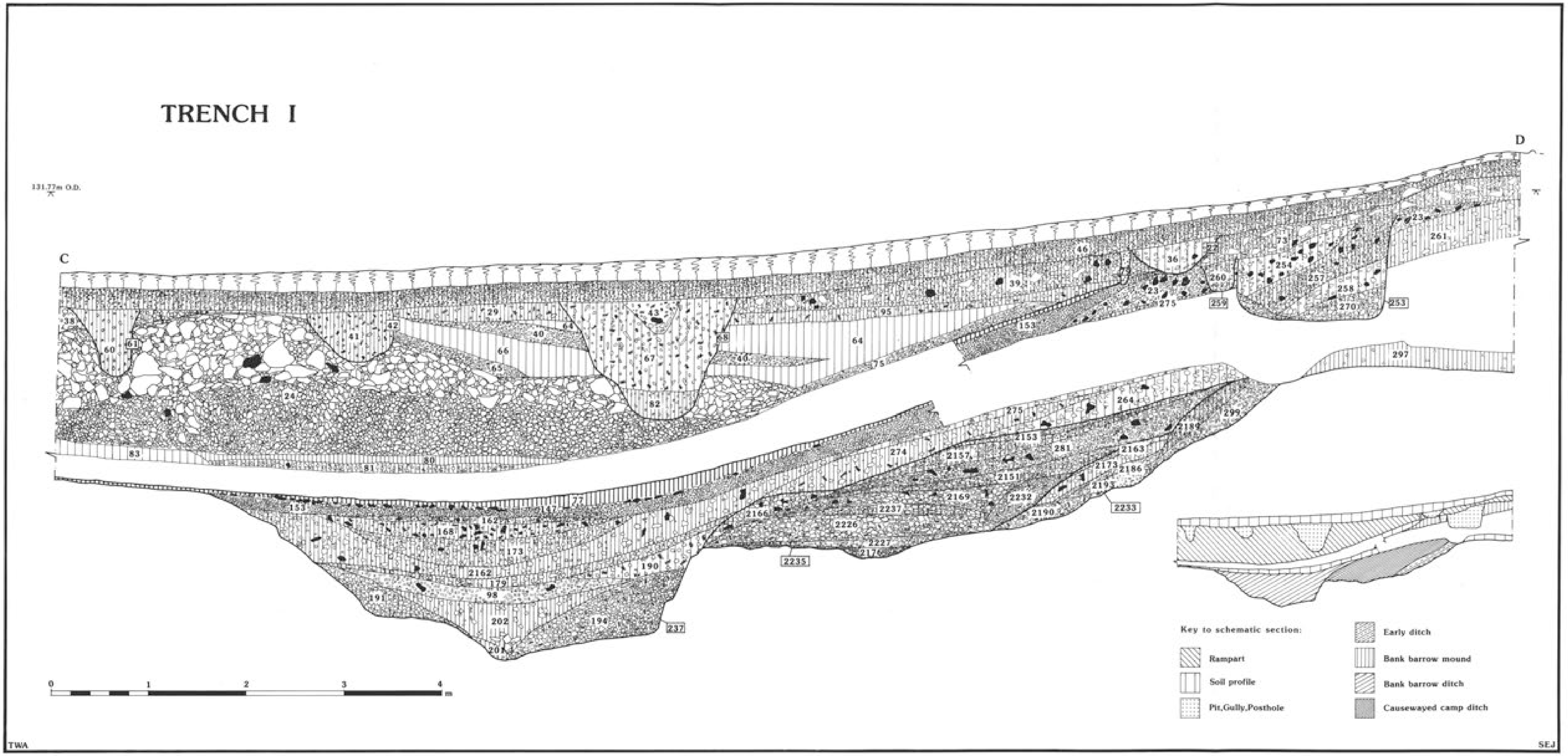

Fig 49 Trench I: the eastern section; the gap in the middle of the section is where the trench was stepped out

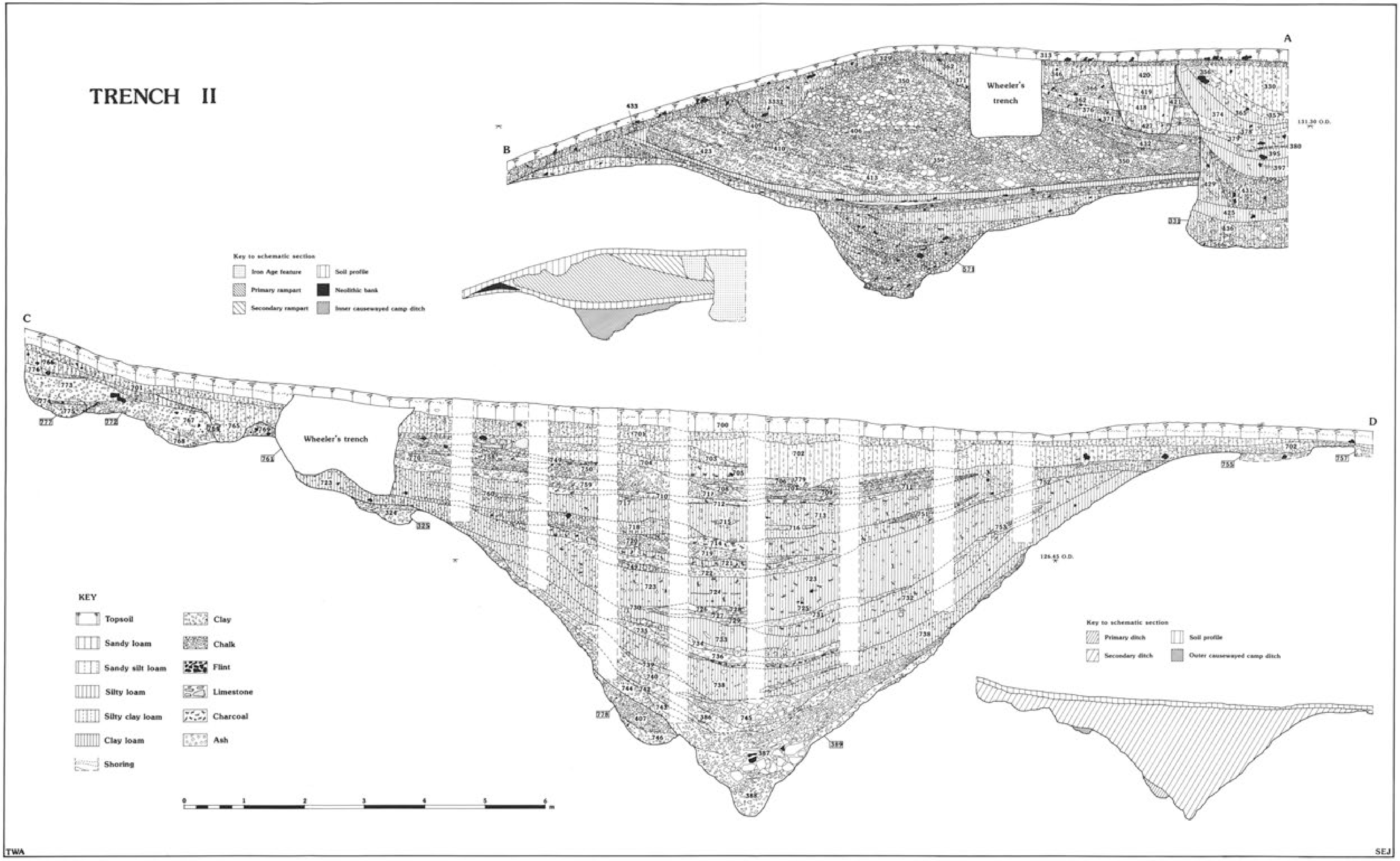

Fig 50 Trench II: a) the northern section through the Early Iron Age rampart and the inner ditch of the causewayed camp; b) the southern section through the Early Iron Age ditch

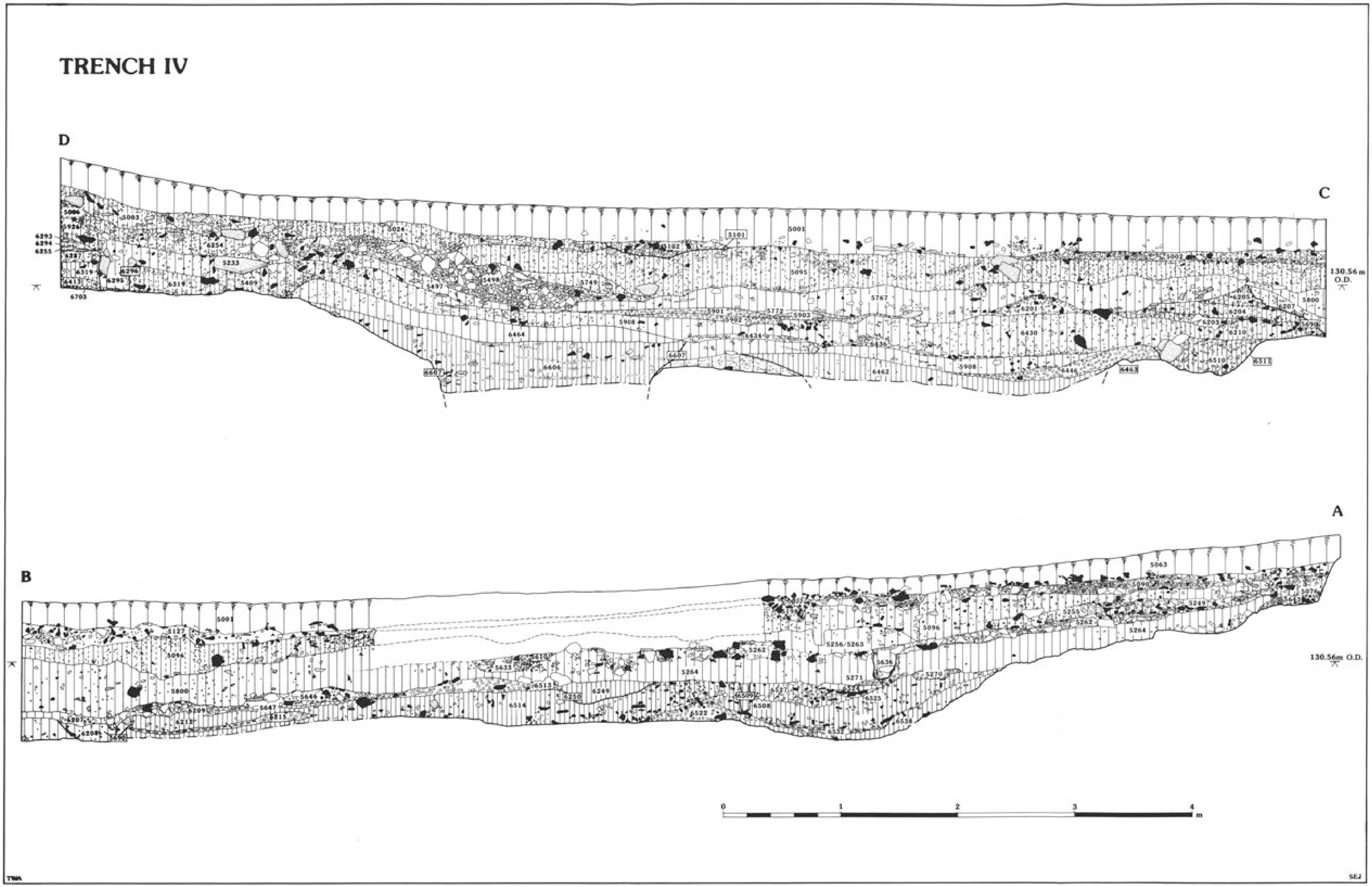

Fig 63 Trench IV: the west section

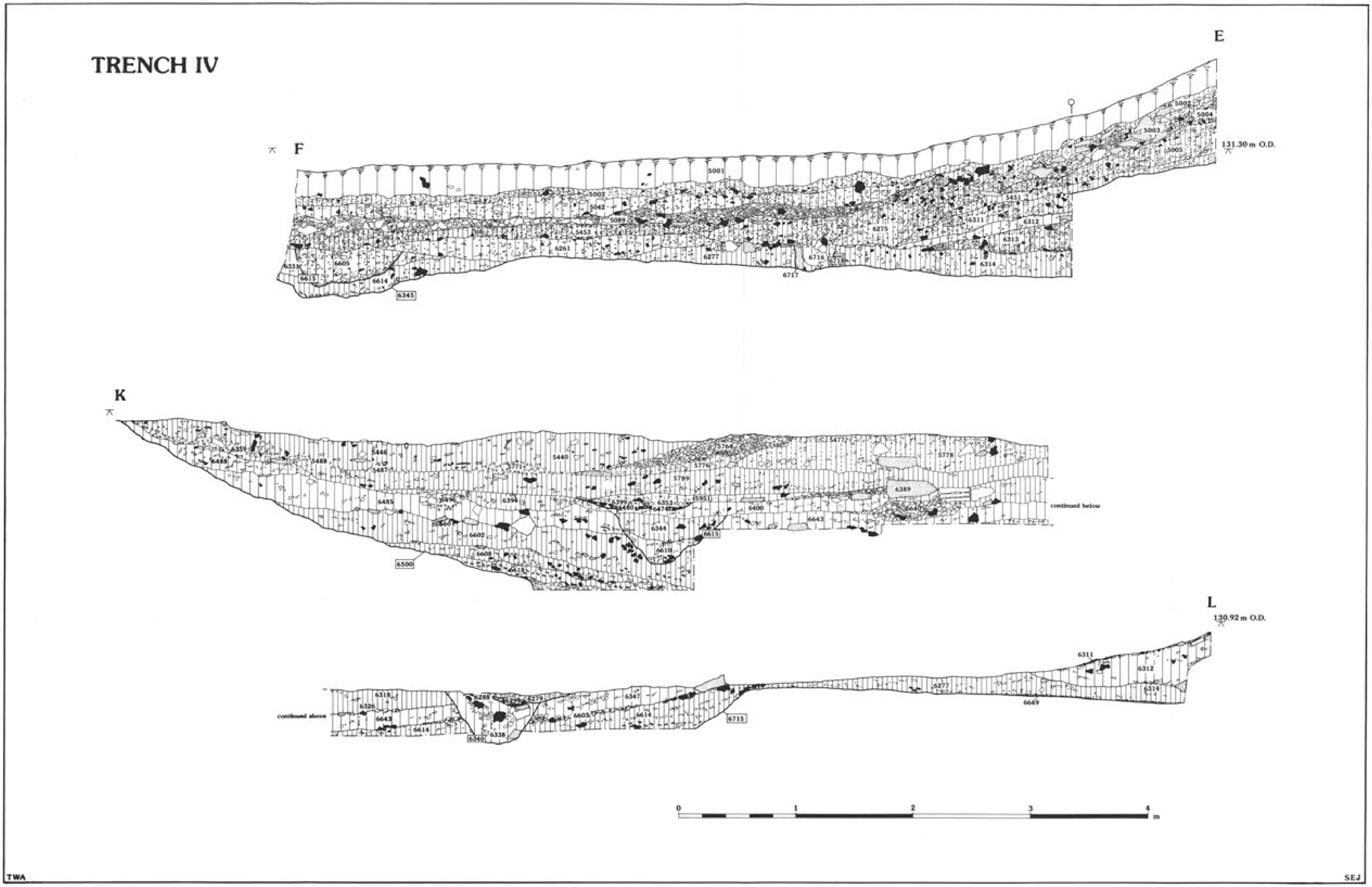

Fig 64 Trench IV: a) the eastern section; b) the section across the quarry hollow

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Front cover
An aerial view of the western entrance.