THE ARCHAEOLOGY OF HAMPSHIRE

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From the Palaeolithic to the Industrial Revolution

Edited by
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List of Illustrations

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List of Abbreviations

Amer. Antiquity	American Antiquity
Antiq. J.	The Antiquaries Journal
Archaeol. J.	The Archaeological Journal
Arch. Newsletter	Archaeological Newsletter
Archaeol. Rev.	Council for British Archaeology Groups 12 and 13 Archaeological Review
Biological J. Linnean Soc.	Biological Journal of the Linnean Society
Bull Inst. of Archaeol.	Bulletin of the Institute of Archaeology of the University of London
B.S.P.F.	Bulletin de la Société Préhistorique Française
Curr. Arcaheol.	Current Archaeology
Essex Natur.	Essex Naturalist
J. Archaeol. Sci.	Journal of Archaeological Science
J. Biogeogr.	Journal of Biogeography
J. Brit. Archaeol. Ass.	Journal of the British Archaeological Association
J. Ecol.	Journal of Ecology
Journal Field Archaeol.	Journal of Field Archaeology
J. Roy. Anth. Inst.	Journal of the Royal Anthropological Institute
Medieval Archaeol.	Medieval Archaeology
New Phytol.	New Phytologist
Phil. Trans. R. Soc. B.	Philosophical Transactions of the Royal Society Series B
Proc. Dorset Natur. Hist. Archaeol. Soc.	Proceedings of the Dorset Natural History and Archaeological Society
Proc. Geol. Ass.	Proceedings of the Geological Association
Proc. Hampshire Fld. Club	Proceedings of the Hampshire Field Club and Archaeological Society
Proc. Isle of Wight Archaeol. Nat. Hist. Soc.	Proceedings of the Isle of Wight Archaeological and Natural History Society
Proc. Prehist. Soc.	Proceedings of the Prehistoric Society
Proc. R. Soc. B	Proceedings of the Royal Society Series B
Proc. Soc. Antiq.	Proceedings of the Society of Antiquaries
Proc. Somerset Archaeol. Nat. Hist. Soc. (after 1966 Somerset Archaeol. Nat. Hist.)	Proceedings of the Somerset Archaeological and Natural History Society; continued after 1966 as Somerset Archaeology and Natural History
Rescue Archaeol. Hampshire	Rescue Archaeology in Hampshire
R.G.S.	Royal Geographical Society
Surrey Archaeol. Collect.	Surrey Archaeological Collections
Sussex Archaeol. Collect.	Sussex Archaeological Collections
Trans. Inst. Brit. Geog.	Transactions of the Institute of British Geographers
Veroff. Geobot. Inst. Rubel, Zurich	Veröffentlichungen des Geobotanisches Instituts Rubel, Zurich
Wilts. Archaeol. Nat. Hist. Mag.	Wiltshire Archaeological and Natural History Magazine
World Archaeol.	World Archaeology

Editors' Preface

This volume results from a conference held at Southampton University in November 1978; it was organised by the editors under the auspices of the Hampshire Archaeological Committee, helped and supported by the Departments of Adult Education and Archaeology in the University, and also by the Hampshire Field Club. Hampshire has seen more archaeological activity than most of Britain in recent years and the conference arose from a desire to review these developments, making people aware of the results of this recent work and indicating those areas where further research is needed. The overall framework of the conference was chronological, with papers devoted to each of the main periods, but these were supplemented by reports on specific excavations and by reviews of the important work on early economies and environments being carried out within the county. Most of the period papers are presented in this volume together with the economic and environmental reviews and a multi-period account of one specific area.

The last book devoted to the archaeology of Hampshire appeared in 1915 when J. P. Williams-Freeman published *Field Archaeology as Illustrated by Hampshire*. His concern was with the archaeological landscape of Hampshire, to which his work remains the best guide although regrettably much has disappeared since his day. We hope that this publication, although not aspiring to his originality, will complement and develop Williams-Freeman's work by providing an interim report on the archaeologically based prehistory and early history of the county which was largely unknown when he wrote. The papers obviously differ in the emphasis they give to various aspects of the periods with which they deal but overall, we hope, they present a balanced picture and will serve both as a general introduction to the archaeology of Hampshire and as a starting point for future research. The book is aimed at all those interested in Hampshire's past, but perhaps particularly at the amateur archaeologists who have themselves done so much of the groundwork on which the syntheses presented here are based.

The number of debts we have incurred in the process of putting on the original conference and preparing this volume is very considerable. Without the assistance of David Johnston and the staff of the Dept. of Adult Education, University of Southampton, the conference would not have taken place; its smooth running owed a great deal to the efforts of students and staff of the Dept. of Archaeology, especially Martin Oake. Professor Colin Renfrew, chairman of the Hampshire Archaeological committee, provided invaluable support.

As far as the volume itself is concerned we are, of course, most grateful to the contributors for their patience and help in making it possible. We owe a special debt to Graham Huxley of A. E. Fenn Print Ltd., the printers, without whose efficient assistance beyond the call of duty we could never have seen it through the press, and we are also grateful to Virginia Smithson and Simon James for help with some of the final drawings.

It is with pleasure that we draw attention to the fact that this volume is being published by the Hampshire Field Club and Archaeological Society rather than any outside organisation. We feel that this is entirely appropriate in view of the central role it has had in the archaeology of the county over the years, and we are grateful to the Council of the Hampshire Field Club for their support and interest in these financially difficult times.

S. J. Shennan and R. T. Schadla-Hall

A Century of Hampshire Archaeology

Barry Cunliffe

Hampshire archaeology, as an organised pursuit, is a comparatively late developer. Indeed it was not until 1885 that a Field Club was established 'for the Study of the Natural History and Antiquities of the County'. In neighbouring counties enthusiasts were already well organised, the Sussex Archaeological Society was founded as early as 1847, Wiltshire followed in 1853 and Dorset in 1875, but the Hampshire Field Club, once in being, flourished and its membership grew from fifty-one, at its foundation, to over two hundred and fifty by 1890. Its activities, gentle and gentlemanly, were focussed around whole-day excursions to places like Selborne or to the Isle of Wight where members might enjoy the countryside, visit monuments, and take tea at the local vicarage or minor country house. Conservation was in the air: small grants were made for church repairs, and members were forbidden, under rule 20, from uprooting rare plants from characteristic localities (an interesting advance at a time when the countryside was being ravaged by those addicted to fern collecting).

From its early days the Club took an active interest in 'the preservation of objects of antiquity' (rule 21). In 1898, for example, a special committee was set up to survey the site of Clausentum and to carry out what we would now call a watching brief during building work which threatened the site, and in the same year the Club passed a strongly worded resolution criticising the plans of the Southampton Town Council which threatened to destroy a substantial length of the medieval city wall.

For the most part it was the meetings and excursions that continued to amuse the membership, though by 1909 attendance had begun to fall off and in the annual report for that year we find the Hon. Secretary suggesting a reduction in the number of meetings, adding 'it is difficult after many years of existence to provide the varieties and novelties which some of our members require, while others whose presence adds interest to our gatherings, find it impossible to attend so frequently' — a nicely worded critique reflecting the end of an era.

But Hampshire archaeology was blessed with three remarkable men whose very different contributions laid the firm foundation on which we now build: Heywood Sumner (1853-1940), friend and follower of William Morris; Dr. J. P. Williams-Freeman (1858-1943), a Weyhill doctor; and George Willis (1877-1970), founder of the Basingstoke Museum.

Heywood Sumner returned to his native Hampshire in 1897, settling first in Bournemouth but moving within a few years to Cuckoo Hill near Ibsley on the edge of the New Forest, where he was to spend the rest of his life producing a succession of thoroughly researched and brilliantly illustrated books on earthworks, local history and on his various excavations, the best known of which were at the sites of the Roman pottery kilns in the New Forest. Sumner was a loner. As Williams-Freeman wrote of him in 1940 'Sumner's excavations were not in the modern style. There was no elaborate preparation, collection of assistants, paid labour or digging in half a dozen places at once . . . He nearly always worked alone, riding over on his bicycle day after day, doing everything himself, so that a picture of the past rose slowly in his mind . . .' And yet throughout the first three decades of this century he, almost single handed, kept alive the tradition of excavation in the county.

Williams-Freeman was not an excavator but he shared Sumner's love of earthworks. From 1889, when he settled down to the life of a country doctor at Weyhill, until his death over half a century later he wandered the earthworks of his native county planning them with loving care and publishing his results in a remarkable book *An Introduction to Field Archaeology as Illustrated by Hampshire* in 1915 — a still unsurpassed masterpiece of field observation. He was a field archaeologist in every sense of the word and, as his friend O. G. S. Crawford was ready to admit, it was he who first realised the importance of aerial photography. Crawford's historic words of homage are worth quoting:

'Often between 1910 and 1914 when wandering over the county in a rather ancient car . . . we would both long for the use, even for an hour, of the almost equally primitive flying-machines that passed slowly over us . . . Those journeys were to me a source of endless pleasure and profit, and to them I owe the foundation of my own enduring interest . . . In or about 1922, when Williams-Freeman was practising at Weyhill, Air-Commodore Clark-Hall, who was stationed there, showed him some air-photographs taken around Winchester on which Clark-Hall had observed many curious and unexplained markings. Williams-Freeman invited me to meet him and we looked at the air-photographs together. The markings proved to be the remains of Celtic fields. It fell to me to carry on and develop this discovery, and that belongs to another story; but it was Williams-Freeman who pulled the trigger.' (O. G. S. Crawford, *Proc. Hants. Field Club* XVI (1947), 104).

Few counties can boast to be the birth place of a technique of such revolutionary value to archaeology. Crawford (another Hampshire man) did indeed develop the technique on an international scale but his early publications relied heavily on his Hampshire experiences.

The third of our great field archaeologists was George Willis of Basingstoke — an indefatigable flint gatherer whose magnificent collections provide a rich, and still largely untapped, basis for the study of Hampshire's early prehistory. These three local men — Sumner, Williams-Freeman and Willis, together with the towering figure of Crawford, provided a continuing thread of excellence linking the early days of Victorian exuberance to the 1930s when Hampshire archaeology finally came of age.

Until the 1930s Hampshire had no real tradition of excavation (with the exception of Sumner's lone activities). The Roman city of Silchester in the extreme north of the county had been subjected to an extensive campaign of clearance between 1890 and 1909 under the auspices of the Society of Antiquaries and an extensive rescue excavation had been undertaken at Hengistbury Head by the same society in 1911, but both projects were stimulated nationally and were not therefore strictly part of the Hampshire tradition. The breakthrough came in 1927 and 1928 when the excavation of St. Catharine's Chapel blossomed into a comparatively large scale

research excavation designed to explore the hillfort in which the chapel had been built. The subsequent publication *St. Catharine's Hill, Winchester (Proc. Hants. Field Club* XI (1930)), by Christopher Hawkes, Nowell Myres and Charles Stevens marked a turning point not only in archaeological publication but in Iron Age research. Then followed a series of hillfort excavations, directed by Christopher Hawkes on behalf of the Field Club: Buckland Rings in 1935, Quarley Hill in 1938, and Bury Hill and Balksbury in 1939. This work, together with the trial excavations, carried out by others, at the settlement sites at Worthy Down (1921), Meon Hill (1932-3), Twyford Down (1933-4) and Choseley Farm (1937), was the first concerted research programme of archaeological investigation for which the Field Club was responsible. It was to provide a data-base of incomparable value for all subsequent Iron Age studies.

The War put an end to projects of this kind. Archaeology in the immediate post war period was essentially dictated by rebuilding and redevelopment, but in this necessary and piecemeal response lay the origins of urban archaeology in Southampton and Winchester (though surprisingly hardly any significant work was undertaken in Portsmouth). It is not unfair to say that Hampshire archaeology in the period 1940-1960 was comparatively small scale and was carried out in a somewhat haphazard manner without significant direction or policy. It seemed that research in the county, like that in much of the rest of the country, was becoming trivialised. Archaeologists were being forced back to rake through and rework old data accumulated in a non-structured manner many decades before, and stagnation was in danger of settling in.

The 1960s and 1970s brought this unhappy episode to an end. The 1960s were to see the spectacular development of urban archaeology led by the Winchester Research Unit under the direction of Martin Biddle, building on a tradition of rescue excavation initiated by Frank Cottrill of the Winchester City Museum some years before. Meanwhile in the city of Southampton local efforts greatly intensified under Colin Platt's leadership and a little later Peter Addyman refocussed attention on Hamwih, the Saxon precursor of Southampton. As a result of these efforts Winchester and Southampton (including Hamwih) have continued to be studied, in accordance with well defined research programmes, by permanent professional teams. Another multi-period site to receive attention during this period was Portchester Castle where the present writer has carried out a long-term research programme involving excavation each year from 1961 until the field study was completed in 1979.

The significance of these two decades of activity will take many years to assimilate, even after the results have been fully published, but already it is fair to say that our knowledge of Roman, Saxon and medieval urban settlement has been revolutionised.

Alongside this essentially urban-based approach the tradition of field work in rural Hampshire has continued. In the early 1960s John Budden and the present writer began an intensive survey of the countryside around the village of Chalton near Petersfield. Even the early results showed that the landscape was far more densely settled than had previously been realised. So numerous were the Iron Age and Roman peasant settlements that we have been forced to revise drastically our ideas of population in these periods. But even more significant is the fact that intensive surveys of this kind enable us to begin to see all the elements of our historic landscape in their intimate relationship in time and space. Rural surveys like the Chalton example and of the type now in operation in East Hampshire (this vol. pp. 106) provide the essential framework against which to understand individual sites.

One unexpected offshoot of the Chalton survey was the discovery of a Saxon village, which was subsequently extensively excavated by Peter Addyman and Tim Champion. This village, together with the longer lived Saxon settlement established within the Roman fort walls at Portchester, provided interesting contrasts to the late Saxon mercantile settlement at Hamwih and the royal and ecclesiastical centre at Winchester. It is no exaggeration to say that the ten years or so from the mid 1960s to the mid 1970s saw work in Hampshire spearheading a major advance in the archaeology of the Saxon settlement.

Roman archaeology has also benefited from the activities of the last two decades. Excavations in Winchester have begun to answer some of the questions surrounding the origins and development of the Roman city of *Venta*, while a new programme of excavations has been initiated by Mike Fulford at Silchester in an attempt to provide a satisfactory historical context for the earlier results: already much that is unexpected has begun to emerge. Add to this the large scale excavation of the late Roman fort at Portchester, important new surveys of the pottery industries in the New Forest and Alice Holt regions, the excavation of a villa at Sparsholt and of a Romano-British village at Chalton and it will be readily apparent that most aspects of the Roman settlement pattern of the county have been sampled, though not, it must be admitted, as part of a unified research strategy.

The later prehistoric period has received a considerable amount of attention. In 1969, as one element in a broader research programme, the present writer began a major campaign of excavation at the Iron Age hillfort of Danebury — work still very much in progress. It seemed then (and still does) that if significant advances were to be made in our understanding of the Iron Age, hillforts would have to be excavated on a large scale and placed in their rural context. Hampshire with its long tradition of Iron Age studies was an obvious place to choose for this new initiative not least because extensive excavation had already been undertaken at the hillfort at Balksbury by Geoff Wainwright in 1967. Subsequent and even more extensive work at Balksbury in 1973 and large scale stripping at the fort of Winklebury, near Basingstoke in 1975-6 has ensured that our knowledge of Hampshire hillforts is now unrivalled. But to begin to understand the intricacies of Iron Age society and its economy it is necessary to put these major sites in their context. The small settlements recently excavated in the Andover region and along the line of the proposed M3 will help in this respect but to increase our understanding we need to study minutely both the immediate context of our individual sites and the more distant formative influences on the social and economic development of the region. With the first in mind, and armed by the experience of the Chalton survey, we have undertaken an extensive survey of the entire block of land between the rivers Bourne and Itchen encompassing the hillforts of Figsbury, Quarley, Bury Hill, Balksbury, Danebury, and Woolbury. The results now being prepared for publication show the complexity of the Iron Age

landscape in a detail never before comprehended — at last, one feels, we are on the brink of major advances in our understanding of the period. The study of the wider influences on the Iron Age communities of Hampshire takes us into fields of research, in for example, coinage, metallurgy and exchange patterns the details of which are not relevant to the present discussion. But integral with these studies has been the instigation of a new campaign of excavation on the site of the Iron Age port on Hengistbury Head (since local government reorganisation transferred to Dorset). Excavation here began in 1979 and, one hopes, will continue for some years.

This all too brief survey of archaeological activity in the last two decades has left much unsaid but the individual contributions to follow will provide many details of sites and projects omitted. The selection offered here has been deliberately made to emphasise the character of modern archaeological work. There are two recurring themes: long term excavation carried out on a large scale by teams of researchers; and broadly based research designs providing the context for excavation, field work and other more specific studies. All this is supported by a background service administered by the County Council in the form of a Museums Service to curate the collections and a Sites and Monuments record to maintain an up-to-date archaeological archive.

Much has changed since the days of the pioneers of the 1920s and 1930s not only in the scale of the work but also in the research aims of those involved. In the papers to follow individuals have been invited to present their personal impressions of each major period in Hampshire archaeology. The extent to which they have drawn upon the work of the last twenty years is a measure of the importance of that period and of the present vitality of the subject. But views change and much that has been discovered in recent excavations has yet to be published. The present volume should therefore be considered as an interim statement reflecting the aspirations of 1980 in the same way as its only predecessor, Williams-Freeman's *Field Archaeology as Illustrated by Hampshire* reflected the mood of 1915. That our view of the past is constantly evolving is one of the great fascinations of the subject.

On the Palaeolithic Archaeology of Hampshire

Myra Shackley

INTRODUCTION

Problems

The Palaeolithic period in Hampshire may be regarded as an overture where major themes present in later periods are distinguishable but not fully developed. The period is one of immense complexity, a situation compounded by the absence of any form of cultural evidence for man's presence except stone artefacts. The numerous climatic and palaeoenvironmental changes which acted as a backdrop for the sporadic visits of man are still being deciphered, and despite the recent efforts to establish a viable database for the British Quaternary (Bowen 1978, Mitchell et al. 1973, Shotton 1977) new discoveries constantly require changes in attitude or modifications of the existing chronological framework. Since the study of man is the least absolute discipline in the general field of Quaternary Studies frequent changes of opinion are evident. A particular problem is presented by the very nature of the evidence itself — large collections of artefacts accumulated by Victorian clergymen with a fondness for afternoon strolls in gravel pits, whose enthusiasm for the collection of objects was seldom matched by equal fervour in the recording of precise findspot locations or accurate stratigraphic sequences. With the advent of mechanical gravel extraction the likelihood of fresh information becoming available is remote, except in the case of sites such Red Barns (p. 6) where a working floor had been preserved by a fortuitous collection of natural circumstances.

Surface geology

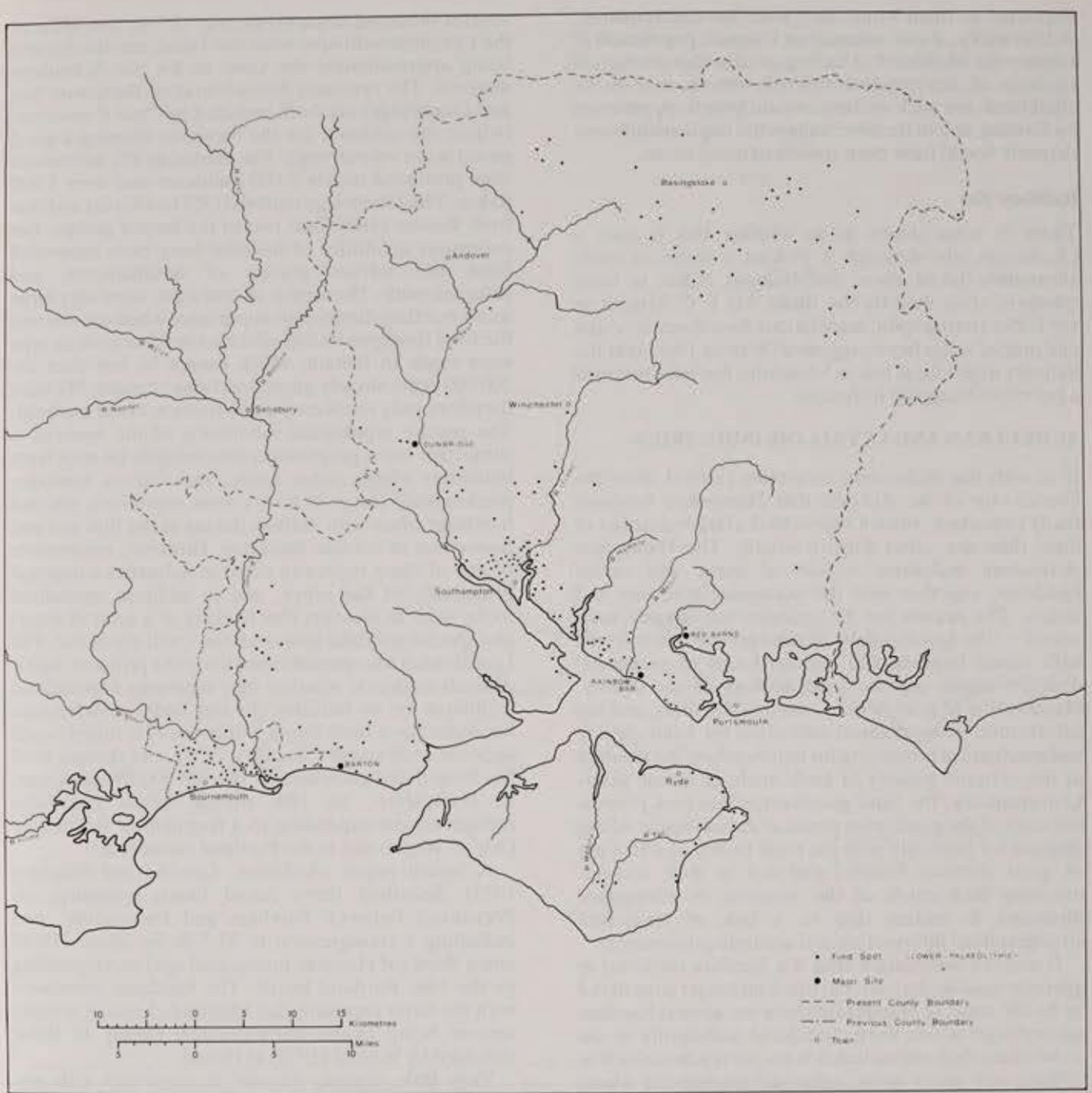
The large artefact collections from Hampshire are a reflection of the drift geology of the area, whose vast stretches of gravel and brickearth have been consistently quarried for many years. The geological maps make a somewhat artificial distinction between 'plateau' and 'valley' (or terrace) gravels on altimetric criteria, but this is false as many of the plateau gravels are the remains of former raised beaches and high sea levels, sometimes of Pliocene date (Swanson 1968). Many studies have been undertaken of the sequences of river terraces and raised beaches (Everard 1952, 1954, Hodgson 1964, Jarvis 1957) and some attempts have been made to correlate this sequence with the artefacts stratified within the deposits (Burkitt, Paterson and Mogridge 1939, Calkin and Green 1949). In some cases such an approach has been most fruitful (ApSimon, Gamble and Shackley 1977) and it seems likely that similar interdisciplinary studies will provide some firm chronological basis for the sequence of assemblages.

Arrival of man

During the immense length of the Hampshire Palaeolithic (probably beginning around 700 000 BP and ending with the theoretical termination of the Pleistocene at 8 000 BP) England was functioning very much as the extreme perimeter of the inhabited world. The richness of the Palaeolithic archaeology of Hampshire in comparison with that of so many other counties is a function of its position in close proximity to the continent. For long stretches of time southern England and the continent were connected, and at periods of low sea level the passage was easy, a trek across a few miles of steppe. Even during high sea levels the distance involved is not great, and the presence of identical artefact assemblages in Breton and Hampshire raised beaches (p. 6) is a matter for speculation. Certainly by Upper Palaeolithic times it would have been perfectly possible for man to have crossed the channel by boat, but difficult to establish his motive for doing so. During periods of intense periglacial climate it was uneconomic for early man to visit southern England, except when following herds of game, and at other times the attractions of the English climate seem slender. It has been suggested that the Palaeolithic population of England was always low and at certain periods non-existent; presuming that few hunters lived here permanently and that the immense artefact collections are the results of sporadic visitations. This is most unlikely to be the case and it seems certain that at at least one point in time (the extreme end of the Ipswichian interglacial) hunting bands associated with several different toolmaking traditions (Micoquian, Acheulean and Mousterian of Acheulean Tradition) were present in Hampshire at roughly the same time. This could, however, be a function of the 'telescoping' effect of real time in a geological context where archaeological events which are in effect separated by some years appear, geologically, to be contemporary. One thing is certain and that is that the population of Hampshire during this period was never dense. During glaciations or minor cold-temperature oscillations man was very likely to be absent from the region altogether and the length of time involved is so great that if one considers the possible duration of the Acheulean culture tradition here (nearly 700 000 years) and the number of artefacts found (about 91 000) this works out at a deposition rate of one artefact per eight years, which is unrealistic but graphic.

In order to obtain some perspective for a Hampshire Palaeolithic one must look briefly at the early evolution of tool-making in Africa, and examine its own spread into Europe and eventual percolation into England. It is in Africa that we may find the remains of man actually in association with tools identical in form to those which may be picked up on any Hampshire gravel working.

Somewhere around the 25 million BP mark the family tree of primates branched, producing a line resulting in modern man (Leakey 1978). The reasons for this ecological catastrophe are complex, but it is certain that the evolution of the hand (enabling a precision grip to be obtained for tool-making) and of the eyes (giving stereoscopic vision as an aid to hunting) were very important. Tool-making, an increase in size and brain capacity and upright posture proved a recipe for success, with the result that by 3 million years early forms of man had been succeeded and practically replaced by a form known as *Homo erectus*, directly ancestral to both Neanderthal man *(H. sapiens neanderthalensis)* and



Lower Palaeolithic find-spots in Hampshire and the Isle of Wight (based on Roe, 1968). Figure 1

Homo sapiens sapiens, and varieties of which were responsible for the handaxes and chopper-tools which spread over vast areas of the Old World by 500 000 BP.

CLACTONIAN INDUSTRIES

With the evolution of *Homo erectus* the pace of human advancement began to speed up, and bands of hunters (probably numbering up to 25 individuals and consisting of an extended family) spread out from Africa to colonise those parts of the world that were inhabitable. Warmly clad, one supposes, in furs and skins removed from their prey they reached Britain during a low sea level in the sequence of minor glacials and interglacials lumped together as the Cromerian (Mitchell et al. 1973) between 700 000 and 350 000 BP. The tools which they brought with them consisted of pebbles and biconical chopper-cores with crude stone-struck handaxes, and is called the Clactonian after the type site in Essex although it is also found at Barnham and Hoxne (Suffolk), Swanscombe (Kent), Kents Cavern (Devon) and Westbury-sub-Mendip (Somerset) (Wymer 1974). It has been suggested that it is represented in Hampshire by tools of similar type found at Rainbow Bar, near Selsey, and this seems far from improbable as Hampshire would have been a logical 'through route' to the Mendip caves. The Clactonian industries almost certainly extend through the succeeding Anglian glaciation and into the Hoxnian interglacial. It has been suggested that we grossly underestimate the numbers of visitors to Britain during this period since many of the deposits in which their tools were incorporated were removed by the effects of later glaciations. This is particularly true of more northerly parts of England but may also be true for Hampshire, where the high terrace gravels of the New Forest have been worked and re-worked so many times that any implements once

deposited in them would long since have disappeared. Additionally, if one assumes an itinerant population of hunters the likelihood of finding structural or artefactual evidence of their movements is very remote, since on the chalklands any such evidence would have been removed by farming and in the river valleys the implementiferous deposits would have been reworked many times.

Rainbow Bar

There is some doubt as to whether this is truly a Clactonian site although it yielded a series of crude alternately-flaked cores and bulbous flakes in large numbers, described by the finder Mr J. C. Draper in 1951. No stratigraphic associations have been revealed and indeed it has been suggested (Wymer 1968) that the industry might be as late as Mesolithic but have retained a primitive knapping technique.

ACHEULEAN AND LEVALLOIS INDUSTRIES

It is with the Acheulean industries (named after the French site of St. Acheul) that Hampshire becomes really important, since it has yielded a larger quantity of finds than any other English county. The Hampshire Acheulean industries consist of many and varied handaxes, together with the occasional core tool and flakes. The reason for the quantity has already been stated — the large spreads of river gravels interspersed with raised beaches and various forms of periglacial deposits which cap the solid geology of the county. Handsorting of gravels led to most of the finds, and the substitution of mechanical extraction for hand digging and mechanical processing for handwashing has resulted in the extreme paucity of finds made in recent years. Unfortunately, the hand gravel extraction took place in the days of the gentleman amateur archaeologist whose interest lay primarily with the tools (many of which are of great intrinsic beauty) and not in their context, meaning that much of the material in Hampshire museums is useless due to a lack of associated stratigraphical information and accurate provenance.

It used to be thought that if a handaxe occurred in gravel it must be derived, but this is no longer considered to be the case. In Hampshire there are several handaxe assemblages which were considered sufficiently *in situ* to be quantified and included in the survey made by Roe (1968), and many more individual implements whose mint condition leads one to suspect that they were found where they were originally dropped (Shackley 1975).

It is impossible to assign a firm date to most of these industries, but their chronological range is from the Hoxnian interglacial through the Wolstonian complex, being replaced by industries based on the prepared core (Levallois) technique during the succeeding Ipswichian interglacial complex, although there was much overlap between the two. Indeed it would seem likely that certain groups were still making handaxes in Hampshire as late as the early stages of the last (Devensian) glaciation and it is possible that several different physical types of man (including *Homo sapiens neanderthalensis)* made handaxes, although of a different form to the early shapes produced by varieties of *Homo erectus*.

The survey of British Acheulean and Levalloisian industries made by Derek Roe showed over 1500 accurately-located find spots in Hampshire, although some river valleys, notably the Test, Itchen and Avon were so productive that each find spot may represent several thousand implements (Fig 1). 150 find spots of the Levallois technique were also listed, the distribution being approximately the same as for the Acheulean material. The two main Acheulean sites (Barton-on-Sea and Dunbridge) are both included as Class C evidence (where the evidence for the handaxes forming a good group is not very strong). The remaining 471 Acheulean sites produced nearly 6 000 handaxes and over 1 000 flakes. The Dunbridge material (953 handaxes) and that from Barton (197) form two of the largest groups, but enormous quantities of material have been recovered from the terrace gravels of Southampton and Bournemouth. These may, at first sight, seem very large totals but they diminish in importance when considering the total timespan during which tools of Acheulean type were made in Britain, which cannot be less than the 700 000 years already quoted and may be more. We have therefore only recovered a tiny fraction of the material. The precise typological subdivision of the material is subjective but a progression can certainly be seen from industries where rather crude, stone-struck handaxes predominate (often in a very worn condition), pointed handaxes often with shallow flaking at the thin end and then ovate or cordate handaxes. However, implements of any of these types can occur in industries composed principally of the other, and in addition specialised tools, such as cleavers (for hacking at a joint of meat) and specialised flake tools and cores, will also occur. The Levalloisian sites present something of a problem, as it is difficult to decide whether they represent a specialised technique or an industry. *In situ* finds of Acheulean handaxes have been found within the 17m raised beach deposits at Warsash (Shackley 1970), and this sea level has been dated elsewhere to 140-120 000 BP. At Cams, in Hampshire, an 18m shingle beach has been recognised corresponding to a fragment at Bembridge (Isle of Wight) and to the Portland raised beach.

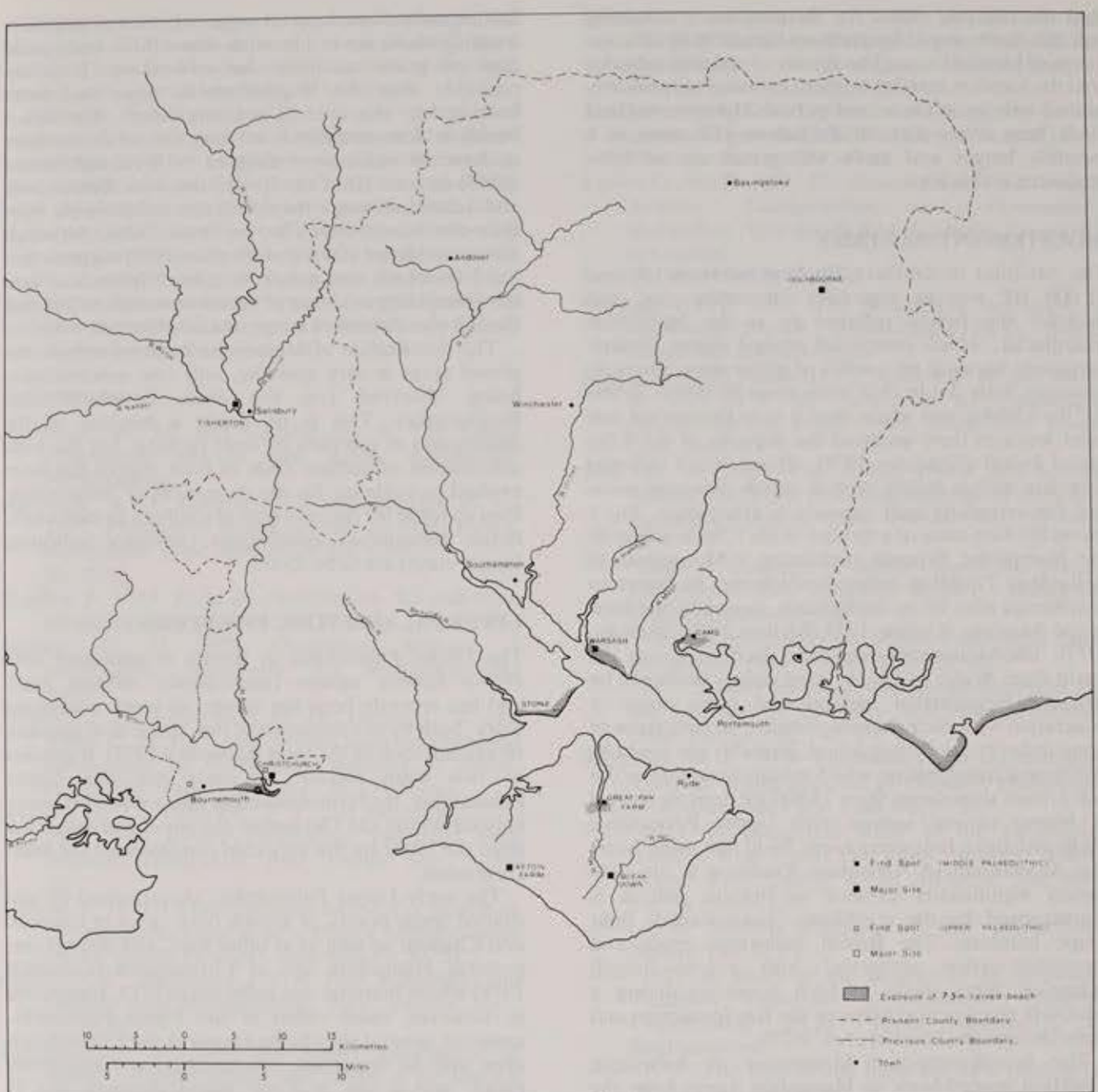
A recent paper (ApSimon, Gamble and Shackley 1977) described three raised beach exposures on Portsdown between Fareham and Portsmouth, two indicating a transgression to 37.5-38.5m above HWM and a third (of Hoxnian interglacial age) corresponding to the 16m Portland beach. The handaxes associated with the latter exposures are Middle Acheulean in type, several being ovates corresponding closely to those recorded by Wymer (1974) at Hoxne.

Very little organic material is associated with any Acheulean artefacts and none in Hampshire, but from other sites associated with Clactonian industries it would seem that their makers were hunting deer, ox, elephant and rhinoceros, and groups associated with Acheulean industries as at Swanscombe (Kent) hunted similar animals although with more emphasis on horse. It is probable that the situation was the same in Hampshire (Roe 1964. 66, 68).

Red Barns

(this section was kindly contributed by Clive Gamble)

The digging of pipe trenches for a housing estate on the southern slope of Portsdown Hill (SU 608063) revealed patinated but mint fresh artefacts of clearly Lower Palaeolithic type. The initial find by Mr J. C. Draper was followed by a small excavation in advance of building plans and the detailed results will be published elsewhere (ApSimon and Gamble, forthcoming). The site lies at a height of c. 30m above Ordnance Datum and



Middle and Upper Palaeolithic find-spots in Hampshire and the Isle of Wight (based on Campbell, 1978 and Shackley, 1978). Figure 2

the excavation revealed a dense scatter of artefacts in a grey soil capped by a hardened sludge deposit that has been described as a chalk breccia. At the top of the slope this breccia contained several artefacts indicating some possible transportation and re-deposition. Further down the slope, and within the main body of the excavation, the implements were found at the base of a grey soil, lying on the chalk bedrock, and untouched by the hard capping. The density of artefacts diminishes from the north of the excavation trench downslope to the south, thus providing a clear indication of the dimensions of the working area.

The material consists of a majority of waste flakes of all sizes, from large core preparation flakes to final trimming debris. A careful selection of natural nodules within the exposed chalk slope was made by the Palaeolithic knappers and the possibility exists that to the north of the site there was a collapsed chalk cliff which would also have provided an abundance of easily exploitable raw material. Derived beach pebbles were occasionally encountered within the artefact horizon and the elevation of the site suggests an age postdating the 35m Portsdown raised beach recently re-examined by ApSimon et al. (1977). Thus a Wolstonian age seems probable.

The excavation also produced a small number of partially finished bifacial implements and two bone fragments. The handaxes appear to have been discarded prior to use since they all exhibit flaws in some stage of their manufacturing process. They vary considerably in both size and shape. One finished broken tip and a complete, but flawed, handaxe can be closely paralleled with the plano-convex (slipper shaped) handaxes from the Wolvercote channel (Callow 1974, fig 4), a form which also occurs in association with Mousterian/ Micoquian industries at Warsash (Shackley 1975). The preparation of flakes for these handaxes does not involve platform facetting. Several other handaxes that have been recovered are flaked directly from nodules. In the light of this evidence it seems reasonable to suggest

that the site was visited for the purpose of obtaining suitable raw material for the manufacture of a particular range of bifacial forms. The density of material indicates that the location covered by the excavation was probably visited only once for a brief period. However isolated finds from other parts of Portsdown Hill point to a possible longer and more widespread use of lithic resources in this area.

MOUSTERIAN INDUSTRIES

The situation in southern England between 130 and 75 000 BP was an especially interesting one, and includes the period referred to as the Ipswichian interglacial, which comprised several minor climatic variations imposed on a series of major ones. There is, however, little doubt that from about 90 000 to 75 000 BP the climate was warm, and it is to this period that most workers have assigned the deposits of the 7.5m raised beach (Shackley 1973). These beach deposits correlate well in height even in widely divergent areas and are especially well exposed in Hampshire. Fig 2 shows the best areas of exposure of the 7.5m beach, with the Hampshire deposits containing a Mousterian of Acheulean Tradition industry which may be linked to continental sites by its implements, especially the bout coupé handaxe (Collins 1970, Mellars 1969, Shackley 1977). The Mousterian industries, distributed over the world from Wales to China, were mainly produced by different Neanderthal variants and often occur in association with their skeletal remains. Several types of stone industry are distinguished, probably the products of different tribal groups, which are interstratified on the rich French sites dating from 75 000 BP until the arrival of *Homo sapiens sapiens* with Upper Palaeolithic blade-and-flake industries some 30-40 000 years later. The Mousterian of Acheulean Tradition is the only variety significantly present in Britain, and it is characterised by the cordiform (heart-shaped) bout coupé handaxe. The British industries, crude and provincial when compared with *soigné* French examples, were made in both countries during a relatively short period between the late Ipswichian and early Devensian (Shotton et al. 1977).

The best-documented Mousterian of Acheulean Tradition assemblages in Hampshire come from the deposits of the 7.5m beach, especially at the site of Great Pan Farm, Isle of Wight (Shackley 1973) where a collection of 112 implements includes limaces, backed blades, knives, Levallois flakes, varied racloirs, denticulates and bout coupé axes (Bordes 1953). Similar assemblages came from Christchurch, Cams and Warsash (Fig 2) and a bout coupé handaxe associated with a terminal Ipswichian fauna from Fisherton near Salisbury (Delair and Shackley 1979). One of the earliest-found examples of artefacts from within the beach deposits was a retouched Levallois blade from Stone (Lepe) published by Evans (1893).

At this location the present exposed cliff section varies from 4-4.5m in height, with the base of the deposits lying at 0.5-1m OD. The section is a nearly horizontal segment of ground separated from higher inland gravels by a clear bluff which obscures the cliff at the base of the deposits. The back of the 7.5m beach may be seen at Black Rock (Brighton), described by Zeuner (1959). The beach gravels are much cryoturbated in their upper levels and capped with a decalcified brickearth, a common feature of all exposures of the beach. Various features of the beach gravel suggest that it was formed in a transgressive sea in a location where there was a great deal of gravel available for re-working. It seems probable that the Wight/Purbeck ridge had been breached by this date, if not long before. The raised beach is demonstrably later than the estuarine clays underneath which were assigned by West and Sparks (1960) to zone (f) of the Ipswichian, as at Bobbitshole and Selsey; although these deposits are probably later than the Selsey ones (Brown et al. 1975). Although Breton evidence (Giot and Monnier 1973) suggests that the 7.5m beach may not, in fact, be of Ipswichian date the Hampshire evidence at present contradicts this, but there is clearly room for a great deal of further work.

The distribution of Mousterian material outside the gravel areas is very sporadic, only one concentration being observed (on the chalk downland near Basingstoke). This is no doubt a function of the destruction of artefacts by later farming, but the wide distribution of surface finds of bout coupés has been evoked as evidence for the movement of 'Mousterian' man en route for the cave sites of southern Britain where better Mousterian assemblages (probably indicating longer stays) are to be found.

UPPER PALAEOLITHIC INDUSTRIES

The Upper Palaeolithic in Britain is associated with *Homo sapiens sapiens* (anatomically modern man) and has recently been the subject of much interesting work, both by re-excavation of the crucial cave sites and re-examination of the tools (Campbell 1978). It consists of two main phases, an early and late Upper Palaeolithic, the former equating with a relatively warm episode within the Devensian glaciation and separated from the latter by the very cold conditions of the main Devensian.

The early Upper Palaeolithic, characterised by leaf shaped spear points, is known from caves in Creswell and Cheddar as well as at other sites, and there is one possible Hampshire site at Christchurch (Campbell 1978) where material was collected in 1913. Hampshire is, however, much richer in late Upper Palaeolithic material, several sites being known in the Christchurch area with an important concentration at Hengistbury Head, and a site at Long Island (Havant, Fig 2) discovered by Mr J. C. Draper, which yielded one backed tool, a blade and a graver. The Hengistbury site was much richer.

The late Upper Palaeolithic probably spanned the period 12-8 000 BP, most of the late glacial, and has backed blades as its characteristic tool form. Bone tools and barbed points also occur, and it would seem that horse, reindeer and giant deer were the principal game hunted. It is, however, unlikely that the occupation of Hampshire was ever very intense but it would have been facilitated by a period of low sea level when communication with the rest of Europe was relatively easy. It is not coincidental that the two major open air sites of the period (Ipswich in Suffolk and Hengistbury Head) are both near the sea. Hengistbury Head might have served as a base camp to exploit migrating wild horses and reindeer in the spring and autumn, and it has a site exploitation territory (the area within two hours walking distance — about 10km) which includes the confluence of the Stour and Avon as well as an area of the Hampshire plains. It is also within range of the good quality flint which was used for the artefacts. The

stratigraphy of the site is now well documented (Campbell 1978) and it would seem to have been occupied later by Mesolithic people in the post-glacial period, with a certain similarity of tool forms.

With the final retreat of the ice and the gradual advance of forest cover the inhabitants of Hampshire were obliged to adapt to a different environment and tap new sources of food. Greater advances in technology were made in the next 10 000 years than had been made in the previous ten million but it is worth remembering that even if we have only a few flint artefacts to represent nearly a million years of occupation in Hampshire, during that time man himself was evolving and laying the basis for the cultural and social structures which have survived here until the present day.

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The Last Hunters in Hampshire

R. M. Jacobi

Within Hampshire, as within the remainder of Southern Britain, the bulk of evidence for the activity of the last hunters comes from the interpretation of surface collections or stray finds, these together making up a minimum total of perhaps 300 findspots. Such surface finds are supplemented by the results of research excavations at three major sites — Oakhanger site V/VII, Selborne (Rankine 1952, 1960 and 1961A), Longmoor Inclosure, Whitehill (site I, in progress), and Broom Hill, Braishfield (O'Malley and Jacobi 1978) — and rescue digs on two others — Wakeford's Copse, Havant (Bradley and Lewis 1974), and Fort Wallington, Fareham (Hughes and ApSimon 1978). Smaller excavations have been conducted at Oakhanger site III (Rankine 1961B) and in the far west of the county at Mother Siller's Channel on Christchurch Harbour (Palmer 1972). While four of these sites have yielded burnt wood and nutshells suitable for C14 dating, all are situated on deposits too acid for the preservation of other organic materials and there is nothing comparable to the rich finds of bone material made just to the north along the valley of the Kennet (Grigson 1978), from which derives the bulk of our evidence for patterns of mesolithic ungulate exploitation within southern England.

It must therefore remain a necessary assumption that hunting was aimed primarily at exploitation of red deer, cattle and pig together with roe deer. While evidence suggests that red deer was often the most numerous animal taken, closer analysis suggests, as in the case of both Star Carr, North Yorkshire, and Thatcham, Berkshire, that in fact cattle may frequently instead have made the greatest contribution in terms of meat actually consumed.

Some consumption of plant foods is indicated by the very large numbers of split hazel-nut shells observed at Oakhanger site VII (phase 2) while the vertical spread of such nutshells through over a metre of deposits at the later site of Broom Hill may hint at regular collection over at least a millennium.

Again no artefacts other than those of stone or flint have been recovered from any excavated context and neither of the stray finds of bone/antler objects which it has been suggested in the past may be of Mesolithic date is by any means necessarily convincingly so attributed. Of this pair of objects the better known is, of course, the broken tine of red deer antler recovered some 6m. below the surface on the outskirts of Romsey and engraved with rows of chevrons which 'ascend' the antler. Smith in his original description of the object sought parallels in Danish later Maglemosian contexts (Smith 1934, 44 and Pl. XLVI) but an alternative and more local point of comparison might however be with a decorated antler from the ditch of Henge II at Maxey (near Peterborough) with chevrons running along, rather than climbing, each side of the beam. (Simpson 1967, 138 and Pl. XIV a and b). Acceptance of this parallel casts considerable doubt upon simply assuming a Mesolithic date for the Romsey tine (as in Grinsell 1964, 191).

The second putatively Mesolithic artefact, this time of bone, is a simple awl worked on a split ungulate metapodial and only recorded as being 'found in the peat' during the 1887 excavation for the Ocean Dock at Southampton (see below). With a present length of 187mm, its butt is formed by part of the proximal surface of the bone, this carrying a series of oblique scratches (Rankine 1949B Pl. XXI). An equally simple artefact is recorded from a later Mesolithic context at Prestatyn, Flintshire (Clark 1938, fig. I No. 65), while from Star Carr we have 'bodkins' or 'fastening pins' made from the lateral metacarpal bones of elk (Clark 1954 160-61 and Fig. 70). A Mesolithic dating for this object might then be presumed but cannot now be demonstrated.

Rather than going on to consider Hampshire as a whole, the patterning of past literature for the county suggests its division, for the purposes of discussion, into three units: (1) The Hampshire Greensand (discussed in Rankine 1953); (2) The remainder of mainland Hampshire (Draper 1951A, 1953, 1968A); and (3) Sites below present tide level along the coasts of both Hampshire and the Isle of Wight (most recently discussed in Palmer 1977, 103-32).

The Cultural Sequence on the Hampshire Greensand

Restudy of the lithic artefact material for the Weald (Jacobi 1978A) suggested that, unlike the remainder of Britain where so far it has only proved possible to isolate with confidence a pair of chronologically successive technologies — still known simply as Early and Later Mesolithic — it was possible in this area of S.E. England to recognize three. Of these the earliest, corresponding to the Early Mesolithic recognized over England and Wales as far northwest as Anglesey and along the East Coast as far north as County Durham, is characterized by many obliquely blunted points with only rarer triangles, bitruncated microliths and convex-backed 'lanceolate' points. While the ratio of non-microlithic to microlithic equipment varies widely (see below), convex edged scrapers are always the most significant component.

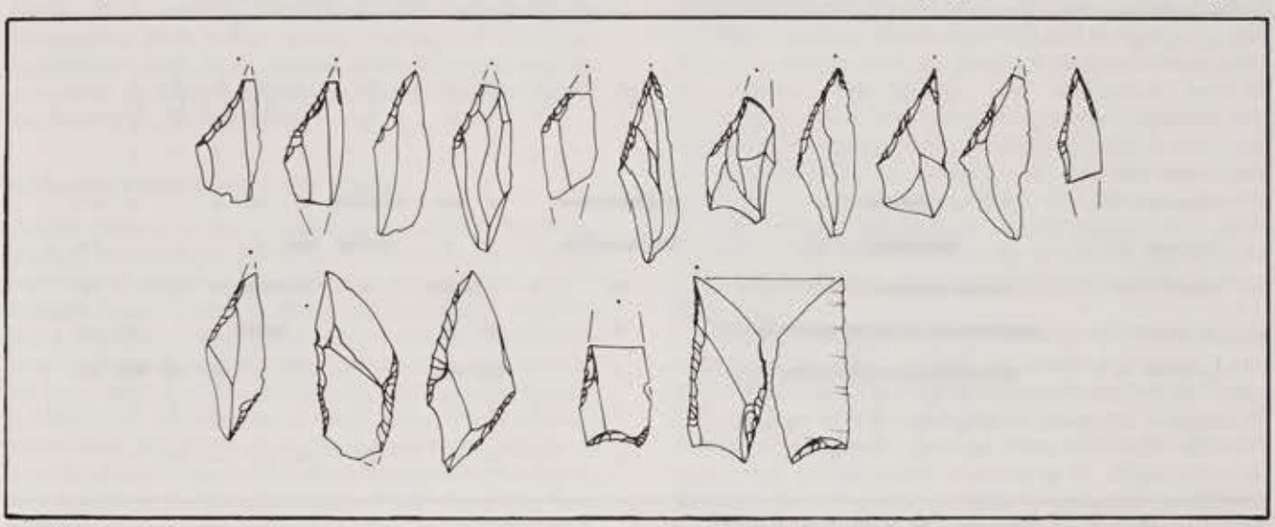
Belonging to this Early Mesolithic is of course the substantial flint assemblage from Oakhanger, Sites V and VII, where the distribution of struck flint formed an irregular ellipse divided into two by a military road. Its maximum length east to west was about 46m; its maximum width 27m, while its total area can be estimated at some 420 sq. m. (Rankine 1952; 1956, 26-7; 1958; 1960; 1961A; also Rankine et al. 1960); site V lay to the east of this road and site VII to the west, and only the most minute differences in microlith typology and raw materials used (a small proportion of coloured flint on site V) separate the two assemblages. The site plans, still being worked upon, show a series of hearth spots indicated by concentrations of fire-crackled flint, while abrupt cut-off lines around the edges of the scatter could suggest the previous positions of windbreaks which have prevented the horizontal spread of flint debris. Charcoal concentrations which would have helped towards the better definition of hearth spots were not consistently recorded.

Over a ton of struck flints was recovered, approximately 85 000 pieces from site V (Rankine 1952, 25) and 105 678 from site VII (Rankine MSS), giving these sites the richest industries of Early Mesolithic date anywhere in Northern Europe. The more important of these two sites is undoubtedly site VII. Here flint was apparently recovered from three distinct depth ranges within the A horizon of humus-iron podsol developed on

the Folkestone Beds (Rankine et al. 1960, 247, fig. 3). The great bulk of the worked flint derived from the middle one of these 'zones' (Phase 2 at 0.2-0.3m), and was associated with burnt woods and hazel nut shells. The lowest (Phase 1), at about 0.46 to 0.61m., consisted by contrast of only isolated and disconnected concentrations of worked flints (identical to those of Phase 2) or charcoal, and this fragmented plan may be explained by suggesting that these objects represent the contents of the lower parts of pits whose outlines had been lost to leaching, or objects washed down into hollows formed by such natural phenomena as tree falls (Kooi 1974). The interpretation of one of the apparently discrepant dates for the site, on charcoal deriving from one of these concentrations, could be that some at least of these hollows were formed rather later than the main use of the site. This date (F68) is 4,430 bc ± 115 (on pine charcoal).

seem to confirm that this assemblage belongs within the Early Mesolithic — that is it should date to between about 6 800 and 8 000 radiocarbon years bc (Jacobi 1976, 68-9). There is thus a strong suggestion that we should accept the rather older age suggested by Q1489 — 1494. Acceptance of the new dates would, of course, make Oakhanger VII the near contemporary of such continental sites as Duvensee (Wohnplatz I: Bokelmann 1971, 17), Draved 604 Syd (Tauber 1973, 86-7) 329, and 611 (Tauber 1966, 227), also Klosterlund (Tauber 1972, 107 and 1973, 88). The site would thus belong within the Pine, Elm and Hazel phase of the Southern British early pollen zone VI.

This is obviously not the place to discuss the finds from Oakhanger in detail (in preparation) but it is perhaps worth stressing the near identicality of the finds on both sites (for discussion of the microlithic composition see Jacobi 1978A), the only significant difference being the



Microliths from Oakhanger Site I. Figure 3

There are seven dates on nuts and pine charcoals from the main artefact concentration — Phase 2. The first of these (F67), 4,350 bc ± 110, appears too young compared to the series of dates more recently obtained through the kindness of Mrs. W. M. Rankine by Dr. Switsur of the Cambridge Radiocarbon Laboratory. One partial reason for the discrepancy may be that the original samples received no form of pre-treatment (Jacobi 1973, 238-9) compared to their more recently processed counterparts: these new dates are as follows:

Q1489	7 275 bc ± 200 (Hazel Nuts)
Q1491	7 150 bc ± 200 (Wood Charcoal)
Q1493	7 090 bc ± 160 (Wood Charcoal)
Q1490	7 045 bc ± 200 (Wood Charcoal)
Q1492	7 025 bc ± 200 (Wood Charcoal)
Q1494	6 935 bc ± 165 (Wood Charcoal and Hazel Nuts)

While it is obviously difficult to 'explain away' F67 and F68, they are markedly younger than the dates obtained by the Cambridge Laboratory; these latter dates fall impressively close together in time. Independent archaeological approaches to the problem based upon a comparison of absolute counts for the various microlith shapes with similar counts for assemblages recovered from other dated Mesolithic sites, combined with similar comparisons for the overall measurements of these microliths and a study of the waste material recovered (at least from site V: Pitts and Jacobi 1979) would all

higher proportion of scrapers on site VII. Also present are many truncated blades and finely serrated blades, together with markedly smaller numbers of burins, core-adzes, 'drills', punches, ground-edged pieces, blades with abraded ends and abraded cores.

Other smaller assemblages of apparently Early Mesolithic material have been recovered from a number of other sites on the Hampshire Greensand — from the surface at Oakhanger, sites II, X and XI, from Kingsley Common (site Y4: R. G. V. Venables pers. comm; Clark and Rankine 1939, 114, site 38; Rankine 1953, 169; Rankine 1960, 260), Petersfield Heath (Clark 1932, 75; finds made by Joseph Fowler in 1889 are in Dorchester Museum), Bentley (investigated by A. G. Wade; brief report in *The Times*), and Trottsford Farm (Rankine 1953, 166-9, fig. 3a-f, i, r, s and w; 1960, 260). With the exception of the assemblage from Kingsley these finds are too few to discuss in any detail. At Kingsley, however, the very high proportion of obliquely blunted points and a corresponding rarity of convex backed pieces resembles Thatcham and may suggest that the site is marginally earlier than Oakhanger and perhaps belongs within the the 8th millennium bc — that is within the Preboreal or earliest Boreal.

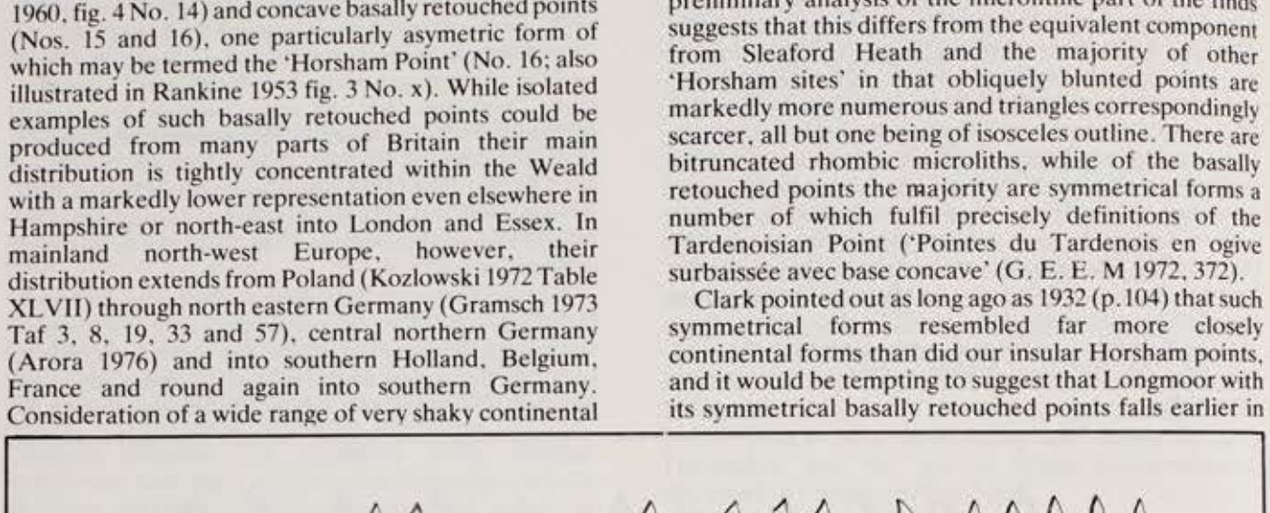
Within the western Weald it is possible to recognize a second microlithic technology made up by a combination of obliquely blunted points (Fig. 3 Nos. 1-10, made up of finds from Oakhanger site I, a surface site 320m SSE of site V/VII), predominantly isosceles

triangles (No. 11), bitruncated rhombic microliths (Nos. 12-14; of which No. 14 is illustrated in Rankine *et al.* 1960, fig. 4 No. 14) and concave basally retouched points (Nos. 15 and 16), one particularly asymetric form of which may be termed the 'Horsham Point' (No. 16; also illustrated in Rankine 1953 fig. 3 No. x). While isolated examples of such basally retouched points could be produced from many parts of Britain their main distribution is tightly concentrated within the Weald with a markedly lower representation even elsewhere in Hampshire or north-east into London and Essex. In mainland north-west Europe, however, their distribution extends from Poland (Kozlowski 1972 Table XLVII) through north eastern Germany (Gramsch 1973 Taf 3, 8, 19, 33 and 57), central northern Germany (Arora 1976) and into southern Holland, Belgium, France and round again into southern Germany. Consideration of a wide range of very shaky continental evidence might lead us to suggest a date for their probable innovation, perhaps not long after 7 000 bc, and there is clearly a need to obtain absolute age estimates from this side of the present Channel. The observation that at Oakhanger VII those basally retouched points for which stratigraphic data were recorded seemed to occur higher up the mineral profile (Phase 3) than the bulk of the worked flints and the associated C14 dates (see above) can only strictly be taken as suggesting that an occurrence of basally retouched points is later than one occurrence of an Early Mesolithic technology. In south eastern Britain their frequent association with predominantly isosceles triangles rather than scalene forms could be taken to suggest an innovation close to 7 000 bc, on analogy with the sequences established in western France and Southern Germany (Jacobi 1978A).

Two assemblages attributable to this technology are available from excavated contexts in Hampshire. Of the first, recovered from a now disused sand pit at Sleaford by R. G. V. and L. V. Venables just before the last war, only the microliths now survive, but these include many isosceles triangles and basally retouched points, eight out of every ten of which are of the markedly asymmetric form which we would term 'Horsham Points'. Computer cluster analysis (Jacobi 1978A fig. 7) confirms what visual examination suggests, namely that this assemblage is identical to a large number of other assemblages recovered in the western Weald from sites such as Kettlebury Common, The Devil's Jumps Moor in Surrey and Bishop's Wood in Sussex.

The second site, on the Longmoor Inclosure, discovered in 1977, is in course of excavation. However, preliminary analysis of the microlithic part of the finds suggests that this differs from the equivalent component from Sleaford Heath and the majority of other 'Horsham sites' in that obliquely blunted points are markedly more numerous and triangles correspondingly scarcer, all but one being of isosceles outline. There are bitruncated rhombic microliths, while of the basally retouched points the majority are symmetrical forms a number of which fulfil precisely definitions of the Tardenoisian Point ('Pointes du Tardenois en ogive surbaissée avec base concave' (G. E. E. M 1972, 372).

Clark pointed out as long ago as 1932 (p.104) that such symmetrical forms resembled far more closely continental forms than did our insular Horsham points, and it would be tempting to suggest that Longmoor with its symmetrical basally retouched points falls earlier in the local sequence than such sites as Sleaford Heath. This may be suggested also by the heavier representation of archaic obliquely blunted points at Longmoor and the rarity of triangles. If there is a pattern of evolution through time with obliquely blunted points becoming rarer, triangles more numerous and basally retouched points both more numerous and asymmetric in outline it might be possible to place such an assemblage as that from St. Catherine's Hill (Gabel 1976) a stage earlier than Longmoor. Equally the recently excavated sample of material from Kettlebury site 103 could fit between Longmoor and Sleaford Heath. The sequence thus built up can be simply represented by fig. 4. If we accept the results of the computer cluster analysis and Sleaford is taken to resemble such assemblages as those from Bishop's Wood and Fox Hill, it might be possible to attach our fig. 4 to the base of the crude seriation presented in Jacobi (1978A) fig. 8, which seemed to show a further development with the replacement of concave basally retouched points by symmetrical and asymmetrical surface-retouched points many of leaf shaped outline. While combination of the two diagrams would provide what appears at face value to be a moderately consistent pattern of change, absolute age estimates are clearly necessary to confirm both the ordering suggested and, more important, the direction of this evolution. Assemblages with these surface retouched microliths are notably absent from the Hampshire Greensand findspots clustering to the east of Horsham in Sussex.



Suggested seriation for 'Horsham type' sites in the Western Weald. Figure 4

A third group of microlithic industries is represented on the Hampshire Greensand by surface collections from Fir Hill, Kingsley (Rankine 1953, 169-70 fig. 3 Nos. g and h) and Oakhanger sites III and IX. The microliths from these sites are mainly narrow straight-backed bladelets ('rods') and scalene 'microtriangles' and would be described elsewhere in Britain as Later Mesolithic. A similar but very small assemblage was excavated at Oakhanger site VIII and plans published by the excavator (Rankine 1961B fig. 2) suggest a rectangular spread of artefacts some 4.26m. by 1.83m. perhaps indicative of a tent or hut base. Surviving documentary evidence is not, however, sufficient to check this conclusion.

No dates are available for these assemblages, but estimates from a site at Broom Hill just north of Romsey (see below) suggest its innovation at least in this area of the county as early as about 6 500 radiocarbon years bc. Again, as a working hypothesis, it is suggested by comparison with rather scanty continental data that assemblages with many scalene micro-triangles may be successive to those with predominantly isosceles forms and basally retouched points.

Settlement Patterns within the Weald

Construction of at least a relative chronology for these artefact assemblages allows us to estimate the relative intensity of human exploitation of the western Weald through time. Study of surviving collections suggests that a number of small areas of the western Weald have been sufficiently competently surveyed to give at least the beginning of an idea of both the number and the date of Mesolithic occurrences in these areas. These surveys incorporate the whole or parts of present-day blocks of heathland and in most cases these boundaries provide us with useful units for discussion. Finds from the best surveyed of these areas are plotted on fig. 5 with rough dates suggested when possible for the flint industries so tabulated — 'Early', 'Horsham' or 'Later Mesolithic' — while finds of Post-Mesolithic material are also indicated. Geographically the area incorporated extends from Iping in Sussex to Churt in Surrey, but even within this area recall has not been total.

Two points emerge. The first is how rarely findspots occur singly. Where this does happen, as in the case of Sleaford, it may be suspected that further survey would reveal other sites. By contrast it is worth noting the large number of findspots in individual areas — 14 findspots at the western end of the Longmoor Inclosure and 13 on Slab Common at Oakhanger. Precisely the same observation was of course made by Draper in his discussion of sites on Butser Hill (a total of 12) and on Salt Hill, East Meon (a total of 7 sites, Draper 1968A, 111 and 114-16). It is impressive also how the bulk of findspots in a cluster tend to be of closely similar age. Thus all the sites in the mile of heath formed by Iping and Minsted Commons appear to be Early Maglemosian. The major sites at Oakhanger are all Maglemosian and are in fact separated by the Oakhanger stream from occurrences of Later Mesolithic material (sites III, VIII and IX). At Kettlebury Common the bulk of the sites are Horsham sites and all have many isosceles triangles and Horsham Points. Again, while only three sites on the Longmoor Inclosure can be dated as early Horsham, in no case do the waste products collected from the remainder suggest that any of these is necessarily of any different age. The pattern which strongly emerges is one of re-use of favoured locations, normally adjacent to a spring, as at Longmoor and Kettlebury, a stream, as at Oakhanger, or a river, as at Kingsley Common, in all probability by the same or by technologically closely related social groups. It might in fact be possible, working from our more refined knowledge of microlithic development through time, to speculate on an exploitation sequence whose extractive bases centred first upon one point of the western Weald and then upon another, through at least the 8th and 7th millennia bc. Such an ordering of extractive bases might run something as follows: The Iping area → Kingsley → The Slab Area → Longmoor → Hankley Common/ Sleaford/Devil's Jumps Moor.

A point which also emerges from fig. 5 is the relatively small number of Later Mesolithic findspots identified, and the point could be further emphasized in a number of cases where such later material has been recovered from the same sites as earlier equipment (such as Iping II and III, Oakhanger XII and Longmoor I) that these are simply isolated finds of diagnostic microliths presumably representing the accidental loss of projectiles rather than any deliberate reoccupation. It is worth observing too how rare Post-Mesolithic artefacts, as opposed to burial mounds, are, and this must raise inevitable questions about land use strategies by the earliest farmers. In short, it almost appears as if there could be a fall-off in the intensity of hunting activity with time, a proposition which can be tested only by further fieldwork.

Unless for some reason which is not immediately apparent we are failing to discover these Later Mesolithic sites, the drop in site numbers after perhaps a little before 6 000 radiocarbon years bc suggests an exploitation pattern through time markedly different from that encountered elsewhere in those areas of Britain where it is also possible to compare numbers of Early and Later sites, for example, on the Pennines and Clevelands. In both these areas the total of Later sites greatly exceeds that of Maglemosian occurrences, and on the Pennines at least the scale of Later Mesolithic activity continued trends towards significant ecological changes (Jacobi *et al.* 1976). Where the Hampshire Greensand does, however, parallel at least the Pennine upland is in the sharp apparent decrease in Neolithic hunting activity.

Eastern Hampshire: Social Data and Intersite Variability

Social data are as yet at a minimum for these Wealden sites. The artefact spread at Oakhanger V/VII it was suggested covered some 420 sq. m., but could represent a palimpsest of occupations. Excavation suggests that the artefact spreads at Kettlebury 103, Longmoor Inclosure site I, and Iping II are at a minimum 9m. to 11m. across, suggesting that, if these sites turn out to possess roughly circular ground plans, that their original areas must have been in the order of 42 to 84 sq. m. The later Mesolithic site at Oakhanger III had an observed area of 9 by 11m. while a 'Horsham' site at Longmoor (site II) had a surface area of 11 by 13m. All these data strongly suggest that plans published for other sites in the western Weald (Rankine 1949A, fig 14; 1949D, fig 1) represent only partial explorations of once more extensive sites.

Conversion of areas of flint artefacts and charcoal into an estimate of size of the occupying group is, of course, peculiarly difficult, since we are ignorant of past limits of

Distribution of dated sites within specific areas of the Western Weald.

Figure 5

proximity tolerance within a group, and since the space occupied by stone artefacts can strictly only be taken as space allotted to the specific activities which require their use, and not necessarily as a measure of the total area used by the occupying group. Indeed, consideration of hunter gatherer camps suggests that domestic activities tend to be peripheral to a central activity area. Employment of perhaps the most useful of the various estimators of population from floor area, that proposed by Weissner (1974), suggests for a site whose flint tools occupied an area 9 to 11m. in diameter a population of about ten — perhaps two or three family groups. Grouping of several families within a single camp is a strategy to be expected among hunter gatherers, since the presence of several hunters will diminish the probability of meatlessness for any extended period, while the larger aggregate will ensure that the products of kills will not be wasted (Yellen and Harpending 1972).

Discussion of site function is reduced to those few cases where survival of the artefact material has been complete, and in the absence of organic debris must be of the most basic. While it has been suggested that Iping site II may be rather earlier than Oakhanger VII in date (Jacobi 1978A), there are differences between the tool kits which do not necessarily appear explicable in chronological terms alone. Thus, at Oakhanger processing tools can be seen to outnumber the total of microliths recovered — the former comprising scrapers, serrated blades and truncated pieces. By contrast, a preliminary count of the material from Iping suggests that serrated blades are absent, that there are only two burins and that scrapers make up less than 10% of the total tool kit. There is thus a far greater emphasis on processing activities at Oakhanger. Again, while at Oakhanger microburins are many times fewer than microliths (with on site V a ratio of almost 1:4), at Iping they appear to far outnumber the total of microliths recovered. Thus it could be suggested that preparation for hunting was a more significant activity. These differences are simply more extreme examples of the contrasts observed between a pair of East Anglian sites of broadly the same date — Hillwood (High Beech) and Kelling Heath (Jacobi, in press A). Oakhanger yielded very many carbonized hazel nut shells, an observation which could be taken as suggesting that some at least of the site's use fell in late autumn or in the winter months, and it has been suggested (Jacobi 1973, 239) that the heavy representation of scrapers reflects the preparation of skins taken at their autumn best. By contrast, nuts were exceptionally rate at Iping and the relative lack of processing equipment might be taken as suggesting occupation at a time when skins would be at the poorest — perhaps in spring or earliest summer. The impression gained from the more fragmentary flint assemblages is that the assemblage from Kingsley Common (Y4) may have resembled Iping in its make-up, while the tool kits from the two Maglemosian sites at Frensham bear a greater resemblance to those from Oakhanger.

Preliminary work suggests very much greater variability among the non-microlithic tool component on Horsham sites, as between scrapers, chamfered pieces (Newcomer 1970), and perhaps saws and burins. It remains to be seen how much of this variability will prove to be of entirely chronological significance. On every one of these sites, however, microburins outnumber microliths, indicating a heavy emphasis on hunting activities taking place from these locations.

Within the Later Mesolithic an interesting series of distinctions can be drawn between a pair of closely adjacent sites, Oakhanger sites III and VIII. While site VIII occupied only an area of 7.5 sq.m. and the artefacts were scattered around a single hearth spot, at Oakhanger III the total observed area was 100 sq.m. (see above), this area enclosing four hearths. Not only is there the implication of a greater number of social units on site III than on site VIII but the tool types recorded from this site include, as well as microliths, serrated blades, scrapers, burins and truncated pieces. From site VIII by contrast the only tool type represented beyond microliths were burins, hinting at a greatly restricted activity base.

Dryland Hampshire outside the Greensand

While in our discussion so far and in that which is about to follow nearly all the sites considered lie on sand deposits, recent carefully controlled experiments in field survey in eastern Hampshire, transecting the full range of the local geology (Shennan, this volume) confirm what was becoming apparent from consideration of rather older and considerably less methodically collected data (Jacobi 1978B), that Mesolithic exploitation extended across all the major soil types — the Chalk, Clay with Flints, London Clay and the Upper — as well as the Lower — Greensand. That our typo-chronological discussion is distorted towards sites on sand deposits is a reflection of the fact that it is the assemblages from these which seem least often to be mixed with stone artefacts of later prehistoric date, while again a number of such sites have produced samples of artefacts sufficiently large for statistical treatment. Furthermore, these sand deposits have encouraged excavations within which fine-sieving techniques could be successfully employed, ensuring optimum recovery not just of tools but also of the less obvious waste products. For a number of reasons, therefore, the quality of the lithic evidence to be expected from sites on these coarser sands is markedly higher than that recovered from sites on the other geological deposits. Hence there is a necessary bias within the whole of our discussion towards such sites, and the scale of the distortion cannot be overemphasized.

While a moderately coherent picture can be drawn together of the archaeological evidence from the Hampshire Greensand, for the remainder of the county the material with which we have to deal is ultimately more diffuse. In bulk it derives from surface collections supplemented only by a single major research excavation, at Broom Hill. Again, while the bulk of the evidence we shall be discussing derives from the eastern side of the county, surface collections from the New Forest (Trowbridge 1936, fig. 4 No. 1; Rankine 1939, figs. 11-15 and 23; Seaby 1950, and Rankine 1956, 35 and 37), and from areas to the west of the county around Christchurch and Bournemouth (Palmer 1972; 1977, 125-32; also Cunliffe 1978), hint at the potential richness of information to be expected from any more detailed local research. So far excavation has only been attempted on a pair of sites with Mesolithic material in this area of Hampshire — Mother Siller's Channel (see below) and Hengistbury Head C2, where a small number of microliths (Campbell 1977, figs. 163 Nos. 8 and 9 and 164 Nos. 1-3) were recovered mixed with a more substantial Late Glacial assemblage. The date of an apparently associated stake hole arrangement and a

Distribution of apparently mesolithic sunken features in England and Wales.

Figure 6

pair of shallow gullies must remain equivocal (Campbell 1977 figs. 53-55).

Collections of artefacts whose microlith component is made up entirely of early shapes and which it would therefore appear appropriate to regard as Early Mesolithic, come from a sand-pit at Sandy Lane near Shedfield (Draper 1953; 1968A, 114 and fig. 2 Nos. 1-3) and from a ploughed field at Wellock's Hill near Basingstoke. At Shedfield surface collecting was supplemented by limited excavation (Draper 1953) and this suggested that the flint scatter may have been in the order of 73m. across, presumably indicating the former existence of a number of sites which under the conditions of discovery could not be further defined or identified.

Basally retouched points were recovered from sites No. 2 and 7 on Salt Hill, East Meon (Draper 1968A, fig. 2 Nos. 4 and 5) and site No. 9 on Butser Hill, in loose association with both earlier and later (Salt Hill) microlith shapes. It is therefore uncertain if 'Horsham sites' in the sense this term can be used in the Weald exist in other areas of Hampshire or if basally retouched points as at Broom Hill (see below) apparently survive in use to become associated with later forms of microlith.

Later shapes of microlith have been recovered from a number of sites on the clay with flints at the edge of the Hampshire chalk (Butser site 10, Windmill Hill site 2 and Salt Hill site 7) but in only one case has this occurrence been followed up by excavation. This is at Broom Hill near Braishfield where a surface scatter 50m. by 40m. has been identified lying on a patch of Eocene sands on the southern slope of the hill, rather below the Neolithic site identified earlier in the century (Piggott 1934). Close to a strong permanent spring and with a view which on a clear day extends to the Isle of Wight, the site is protected by the chalk hills to the north from the winter winds, while abundant grey and black Cretaceous flint outcrops a few hundred yards away. The site is centred on a slight hollow which has gradually infilled, apparently during the Mesolithic, with over a metre of brown sand. Artefacts occur through the whole thickness of this sand and in pit features sealed beneath it.

Some 80% of the microliths are specifically later shapes and even in the lowest and oldest features on the site (Pit III) these, in the form of microlithic backed bladelets (rods) and scalene 'micro-triangles', are the dominant forms. The spread given by the series of radiocarbon dates shows use of this site to have extended over perhaps two millennia, something totally different from the short date range suggested by the results from Oakhanger (see above). These radiocarbon dates are as follows:

Q1192	6 590 bc ± 150	
Q1528	6 565 bc ± 150	base of Pit III
Q1383	6 365 bc ± 150	
Q1460	5 800 bc ± 120	Top infill of Pit III
Q1191	5 270 bc ± 120	Above Pit III
Q1128	4 585 bc ± 125	Pit II

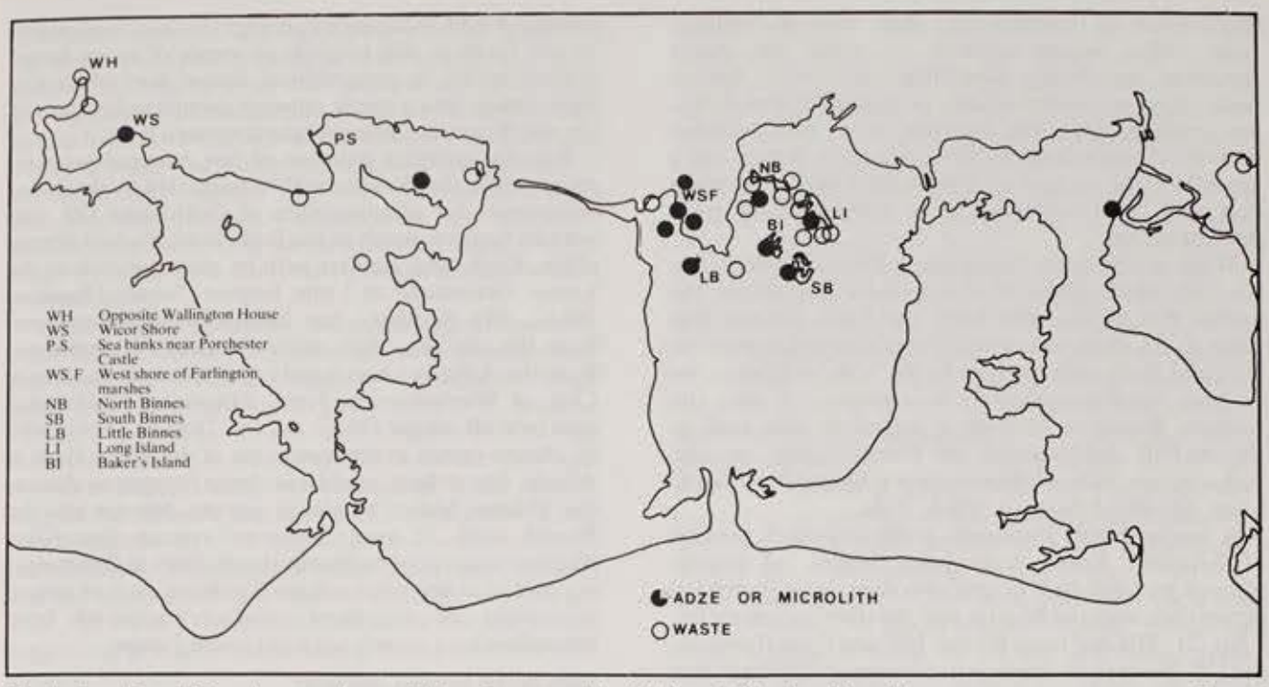
The point should perhaps be emphasized that the dates for the lower part of Pit III are the earliest dates obtained in Southern Britain for a later Mesolithic microlith component and match closely dates from such northern sites as Warcock Hill site III and Broomhead V (Jacobi 1976, fig. 7). While the stone industry, now some 89 000 pieces, still awaits intensive study, it seems that certain forms of microlith such as the 'microrhomboid' (O'Malley 1978, 120, Nos. 16-20) appear only high in the infill of the hollow. The second outstanding feature is the number of core adzes recovered — approximately 100. This total recalls the consistent representation of such adzes on sites identified on the Hampshire chalk (Rankine 1956, 36; and Draper 1968A, 112-17) and their presence at Broom Hill could be explained in two ways: firstly, they could be seen as essential to the construction of the wooden superstructure of pit-houses (see below). Secondly, however, it has been noticed that the sharpening flakes from these adzes are markedly wider than the blades of those adzes recovered from the site, while flakes from the intermediate stages of sharpening back appear to be absent. This may suggest that many adzes produced on the site are being taken away from it for use. Given the presence of substantial quantities of suitable flint it may be that adzes were being produced for subsequent dispersion; manufacture of adzes and picks was also suspected from a study of the flint debitage at another site, Wallington, also on the chalk and similarly with access to high grade flint (Hughes and ApSimon 1978, 34). The large number of cores, rejuvenation flakes and crested pieces recovered from sites on or near the chalk may also suggest that they provided the flint, both in the form of blades as well as prepared cores and finished artefacts, to allow exploitation of those areas of south-east England (such as the Weald) poor in natural flint, where at least in the Later Mesolithic knapping debris tends both to be very small and cores, rejuvenating flakes and crested pieces, distinctly rare.

The plan of that portion of the Broom Hill site excavated (O'Malley 1978, 119) shows four pits of which three appear too small to be interpreted as 'dwelling pits'. The fourth, however, is a shallow irregular hollow covering some 14 sq.m. and is surrounded by 14 post holes enclosing an area roughly 5m. by 4.5m. (O'Malley 1978, 118). On two sides particularly those posts are reinforced by a series of 34 rather smaller stake holes. The whole plan suggests a significant timber superstructure which appears for most of its perimeter to respect the outline of the hollow.

To set this feature of Broom Hill into its context, plotted on fig. 6 are all those pit features which could be, or have been, interpreted as 'dwelling pits'. Those marked with a solid dot are those which can be regarded as competently investigated, and where there would appear to be some reason for regarding the pits themselves firstly as artificially created and secondly as used, or at least infilled, during the Mesolithic. Omitted from this map are those smaller features which could more convincingly be interpreted as storage hollows, hearth pits, or 'flint-grubbing holes' (cf. Bishops Waltham). Included, however, are the features investigated at Abinger and Selmeston (sites 2 and 1) where the area of the feature reduces rapidly at the base to an area too small and too steeply sided to be realistically conceived of as the floors of dwelling hollows — to 0.75 sq.m. from an area of 8.2 sq.m. at the lip at Abinger, and to 1.9 sq.m. from 7.2 sq.m. within 60cm. at Selmeston. Of other claimed ocurrences of 'pit dwellings', marked by half infilled circles, some are felt to be unsatisfactory in terms of dating: for example, a Roman coarse ware sherd is recorded from low down the infill of a pit of Woodgrange Road, Ealing (site 11) along with ?Early Mesolithic flint-work (Haward mss and collection: British Museum), while at Millfield Keston (site 12) we are reliant upon a selection of artefacts

Distribution of traded chert and stone artefacts in southern England.

Figure 7



Distribution of mesolithic and apparently mesolithic artefacts around the 'Harbours' of Southern Hampshire. Figure 8

illustrated at the end of the last century for assuming a Mesolithic date (Norman 1899, 218). Other sites are unsatisfactory because the quality of the recording is insufficient to allow us to decide between a natural or an artificial origin for the pits in question, even though they may have contained mesolithic material. This reservation must apply, for example, to all the 'pit dwellings' claimed from Essex (Sites 8-10: Jacobi in press A). Marked by open circles are totally vague records of pits on sites which have produced Mesolithic material — Sudbrook (site 14) in south Lincolnshire, and Barnham near Ipswich. The date and context of these pits are unknown.

The second Hampshire dot represents Wakeford's Copse (site 5: Bradley and Lewis 1974), also a later Mesolithic site, where six shallow and one deep pit (pit 7) lay to the west and north of what could be interpreted as an 'activity area'. Around part of these depressions was found evidence for stake-holes and, while under the particularly difficult conditions of the excavation these could not be completely explored, there is a strong suggestion (Bradley & Lewis 1974 fig. 3 and suggested p.8) that they may have enclosed only the southern and western parts of the pit perimeters. If this suggestion is correct it may be possible to draw a distinction between these structures, left open to one side, and the hut structure at Broom Hill completely enclosed by posts and hence, arguably, completely walled. Better adapted to retain warmth the Broom Hill hut contained a contemporary hearth, a feature absent from within the structures at Wakeford's Copse, while again there is a striking difference in size between the Broom Hill Hut whose basal pit has a floor area of over 14 sq.m. and whose posts enclose an area of over 20 sq.m., and the features at Wakeford's Copse whose mean area can be calculated at only some 3.1 sq.m. It would be tempting to see these basic characteristics as combining to separate a 'winter house' from a group of 'summer huts'. If the arguments for such a dichotomy are accepted it may be possible to distinguish as houses of Broom Hill type features investigated at Weston Wood, Surrey (with a floor area of 10 sq.m. and a hearth) and Farnham Pits I, III and IV with floor areas of 12.7, 19.1 and 13.1 sq.m., pits I and III containing contemporary fire-spots. The absence of post surrounds at Farnham may indicate that these were set into the banked up soil — such banks being in the case of Farnham destroyed by cultivation.

Contacts Outside Hampshire

So far we have discussed the behaviour of social groups presumably within their own annual territories and on their own behalf. Evidence that social contacts may have extended to other 'outside' societies might be expected in most archaeological contexts to take the form of exotic objects which are suspected to have reached their eventual findspots as a result of either trade or gift exchange. At this distance back in time the two processes are difficult to distinguish apart, while the only objects passed within such networks which we may expect to have survived will be of stone, flint and chert.

Three categories of object can be picked out as perhaps indicative of contacts with areas outside the present county of Hampshire. The first is Portland-type chert. Records of this chert from Frensham Great Pond South in west Surrey (Rankine 1949A, 40; 1951A, 94; illus. Palmer 1970, fig. 5 No. 15) and Oakhanger site VII show this chert to have been passing eastwards as early as 7 000 bc. Microliths of this chert in the form of scalene 'micro-triangles' are recorded from later contexts of Farnham (Rankine 1951A, 94; Palmer 1970, fig. 5 Nos. 3-4), Chaldon Down, Dorset (Palmer in White 1974, fig. 7 No. 3) and Cherhill, Wilts (Palmer 1970, fig. 5 Nos. 1 and 2), their occurrence at the last site being dated to the end of the 6th millennium BC (B.M. 477 5 280 bc ± 140). A broken 'rod-like' microlith comes from Broom Hill, while a microburin of this chert was recovered from site 4 on Windmill Hill (Draper 1968A, 116, fig. 2 No. 7). Simple waste flakes from later Mesolithic occurrences at Mother Siller's Channel (Palmer 1972, 17) and Shorwell and Werrar on the Isle of Wight (Palmer 1977, 120 and Poole 1936) also help to make up fig. 00 No. 1, on which are mapped all those

occurrences of Portland-type chert, east of Portland, from either secure contexts or where the pieces represent specifically Mesolithic tool forms. Surface finds of un-retouched waste, or indefinite tool forms, are omitted since the presence of a 'petit tranchet derivative' arrowhead at New Faygate in Sussex and a Neolithic-type scraper at Ash in Kent suggest strongly that such chert continued to be shifted east by early farming groups.

While it is possible that pebbles of Portland chert may have travelled eastwards in long-shore drift during the earlier Post-glacial, and while again it is possible that some of this chert may derive from other outcrops of the Portland Beds such as those in the Vale of Pewsey, no obvious mechanism exists to introduce it into the western Weald or to bring it inland to sites such as Broom Hill. Additional to this Portland chert, an adze resharpening flake of Broom chert is known from Sandy Lane, Shedfield (Draper 1968A, 114).

A second highly distinctive group ot objects consists of bifacially flaked rectangular 'blades' of poorly-cleaved greenish-buff or greenish slate, heavily striated across their wider or blunter end (for distribution see fig. 7 No. 2). 'Blades' from Broom Hill and from Hammerpot (W. Sussex) are made in a slate closely similar to that from beds of Devonian age crossing the south-west peninsula from Start Point to Trevose Head, while a 'blade' from Wawcott Site III (Berks: Froom 1976, 158-60, and fig. 83 No. 13) resembles slate from the Hangman Grits of north Devon. This slate appears too soft to have survived any transport eastwards by long-shore drift, and, if this argument is correct, these artefacts could genuinely represent objects acquired from social groups within the south-western peninsula.

The period of such contact is roughly dated at two sites: Broom Hill, where one of these slate 'blades' occurred above a C14 date of 5 270 bc ± 120 (Q1191) and at Wawcott site III where a slate 'blade' occurred in horizon G, believed to be slightly earlier than a determination of 4 170 bc ± 134 (BM767). At Birdcombe, Somerset (Sykes and Whittle 1959) associated microliths include later Mesolithic shapes.

A third group of objects (for distribution see fig. 7 No. 3) recovered from archaeological sites in south-east England are unworked elongated pebbles of fine-grained rock which clearly originate in the Palaeozoic rocks of south-west England. The subject of much discussion (Rankine 1949C, 1954 and 1956, 55-8), these pebbles are harder than the slates we have just been discussing, and could have stood up to long distance natural transport; they have been recovered from both early (Oakhanger V and VII and Kingsley Common Y4) and later Mesolithic contexts (Broom Hill and Farnham). They are entirely distinct from the deliberately bevelled pebbles found along the west coast of Britain and their precise function is unknown.

It seems certain that the final agent in bringing these rocks and cherts onto the sites where they were found was human, even though in some cases individual specimens may have been brought closer than their original points of origin by such phenomena as long-shore drift. Rankine (1961C, 65), in discussing the mechanisms which led to the presence of these various objects as far east as Hampshire, suggested that they were " . . . acquired by roving hunters in the extreme west . . . " who later returned from Cornwall to the Weald (1956, 58). Rather than simply seeing the distribution of these exotic objects as evidence of extensive 'folk movements', it might be more reasonable to see them as still tangible elements of an exchange system which in geographical extent may ultimately have linked into a single network groups as far apart as the south-western peninsula and western Kent.

Equally complex patterns of raw material procurement within the Weald could be suggested by the use of sandstones for grinding slabs at Oakhanger VII, one with its nearest match in the Folkestone Beds at Shorncliffe, Kent, and another with its closest match in the Lower Greensand at Little Bognor, Sussex (Rankine 1961C, 64). Similarly, two isolated pebbles recovered from the site have their nearest matches in sandstones from the Ashdown Sands and in pebbles from the Weald Clay at Westerham in Kent. Fragments of Hartshill quartzite (Rankine 1961C, 64, fig. 2) and a pebble with its closest match in the sandstone of the Keele Beds at Alvely, Shropshire, could have been brought as close as the Thames Valley by glacial activity, but not into the Weald itself. It must, however, remain speculative whether rocks geographically much closer to Oakhanger in point of origin were collected within a cycle of annual movement or represent artefacts acquired from immediately or closely adjacent social groups.

Sites below present tide level

Along the Hampshire coast, as around the whole British coast from the Tees to Pembrokeshire, Mesolithic sites have been overtaken by eustatic rise of sea-level or, in south-east England, carried below present local high tide level by the downwards movement of the land. Such artefacts have been recovered from four distinct portions of the Hampshire coast: (1) Exposed by tidal action within and around the areas of the present day western Chichester Harbour together with Langstone (Draper 1958) and Portsmouth Harbours (Bradley and Hooper 1975); (2) uncovered at low tide on a spit of gravel at the mouth of the Meon known as Rainbow Bar; (3) rescued during commercial excavations on both sides of the Solent from organic deposits now well below present mean sea level and, (4) recovered from an occupation site at Mother Siller's Channel on Christchurch Harbour, now flooded by storm tides.

At no point along the Hampshire coast has any shellfish accumulation been identified nor are there any records of artefacts which could be linked to any form of coastal exploitation (Jacobi 1978C).

Mesolithic finds made around the West Chichester, Langstone and Portsmouth Harbours are the findspots marked by a solid dot on fig. 8 those considered as certainly Mesolithic are of microliths or transversely sharpened core adzes and resharpening flakes. Recent work suggests that the proportion of distinctly elegant blade-like flakes can be higher in many early Neolithic assemblages than in assemblages of Later Mesolithic date; considerable doubt must therefore be cast upon the recognition as necessarily Mesolithic of any site which contains simply a noticeable blade element, unless this observation is backed up by more refined statistical treatment, so far not applied to any of these coastal assemblages (Pitts and Jacobi 1979). Sites which are only doubtfully Mesolithic are indicated on fig. 8 by open circles. It will be noted particularly how findspots are concentrated at the backs of the present harbours or on the highest points of the drowned valleys, towards a series of freshwater springs.

With the exception of samples of flint-work actually recovered from below alluvial deposits near Portchester

Castle and opposite Wallington House (sites PS and WH fig. 8: Draper 1968B), the bulk of these finds have been recovered from between mid- and low-tide levels lying among spreads of natural flint and gravel eroded by tidal action from the shallow brickearth cliffs of the harbours. These spreads can contain artefacts of every period of the Stone Age together with later prehistoric, Roman and Medieval potsherds and modern tile, glass and bullets. Any horizontal localizations are vague and the majority of the finds from the Harbours are only loosely provenanced.

While strictly undatable, some subjective comments could be offered on parts of the archaeological material from these sites. The large size of the obliquely blunted point from Wicor Shore at Cams (site WS: Rankine 1951B, fig. 2 No. F; see also Draper 1951A, and Rankine 1956, 35), taken together with the very neat convex edged end-scrapers from this site, could perhaps suggest the former existence of an early Mesolithic site. On the later forms of microlith from the western shore of the Farlington Marshes (site WSF: Draper pers. comm.) and the small island just offshore (Bradley and Hooper 1975, fig. 2 No. 3) little comment can be offered beyond suggesting that both could belong to any moment after about 6 500 bc.

While estimates of past sea level along the Hampshire coast relate only to the closing stages of eustatic rise in sea level (Churchill 1965, 242), and the standard deviation of 830 years on the date of 6 360 bc (NPL86) for peat recovered off Teignmouth (Callow *et al* 1966, 341) is too great to make this date useful, consideration of other dates for peat beds around the isostatically relatively stable south western part of Britain suggests that at the time this later Mesolithic technology first appeared sea level lay close to the present 10 fathom line. If this is so, then even the later forms of microlith from these Harbour sites could have been deposited at a time when the home range of these sites (taken at a 6 mile/10 km radius) would have incorporated only dry land, and when the present Isle of Wight was still separated (from the mainland) only by the freshwater outlet of the Proto-Solent.

The precise geography of the Hampshire coast of the Earlier Boreal remains uncertain, and while the Test clearly passed out through the valley of Southampton Water it is unknown whether it proceeded on through the eastern (The 'Spithead River' of Boyd Dawkins (1900, 257 fig. 2) or western (Everard 1954, 278-80) branches of the Solent, or through both. (For discussion and/or various reconstructions see Reid 1905, Hooley 1922, Oakley 1943, Rankine 1956, 32-4 and fig. 7, Jacobi 1978D, fig 4). Consideration of radiocarbon evidence from both sides of the Channel suggests that the most likely moment for the Isle of Wight to have become surrounded by sea would be the 6th millenium bc (see most notably Ters 1971 and 1974).

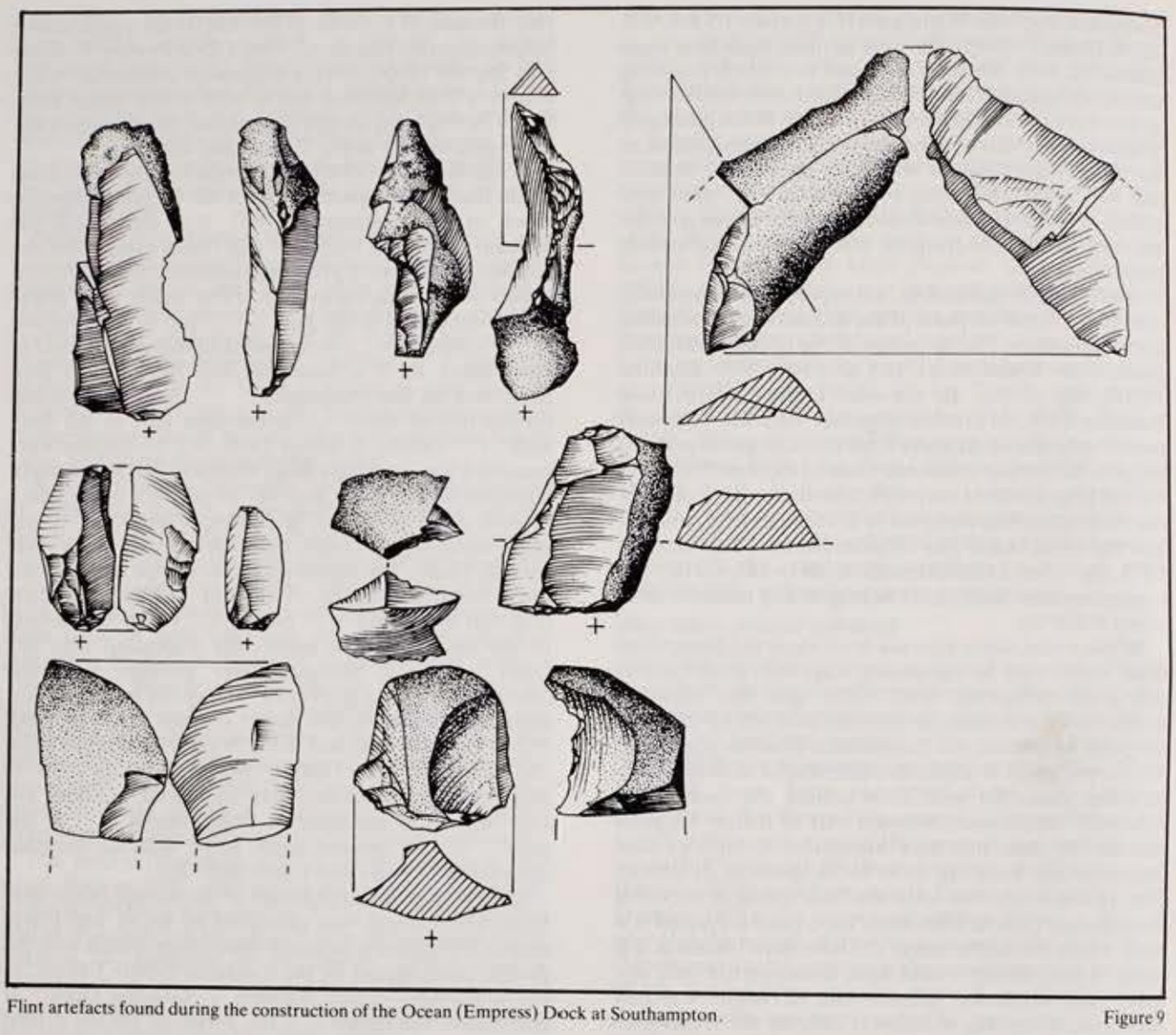
Several thousand worked flints have been recovered (Draper 1951B, Rankine 1956, 37) at low tide from the two acre spread of gravel known as Rainbow Bar at the mouth of the Meon. The bulk of the artefacts consist of stone-struck flakes and chopper-like cores, and these, it has been suggested, may be of Clactonian age (Warren 1951). Identical, however, in terms of physical condition is a small group of blades, blade cores, a backed knife and a core-adze (Jacobi 1978B, fig. 5), all of which appear to be Mesolithic. At a height of −1.07 to −3.06m. OD (Admiralty charts) the gravel spit may only have become submerged in later prehistoric times (see the date of 1 739 bc ± 120 (Q831) for a peat sealed below estuarine clay at −2.75m. OD at Fawley: Godwin and Switsur (1966, 394), a suggestion confirmed by the recovery from Rainbow Bar of both a scale-flaked knife and a barbed and tanged arrowhead, again stained the same pale orange as the 'Clactonian' material.

While Rankine (1949B, 70) lumped together the finds made during the construction of the Ocean (Empress) Dock at Southampton in 1887, it is clear from the account published by Shore and Elwes (1889) that the various objects were probably recovered from different points within this excavation. Flint flakes were found " . . . imbedded in the peat . . . " and in one instance " . . . a number . . . were found all within a few feet of each other as if a Neolithic flint worker had here fashioned his flint implement . . . ". These were found on the line of the " . . . South west part of the dock wall . . " (Shore & Elwes 1889, 54). No depths were recorded but seemingly more than one find is indicated. Thirteen struck flints survive, of which a blade and a broken piece conjoin (Fig. 9 Nos. 1 and 2). Five are small stone-struck flakes, six bladelets, and one a small crested blade. The pieces appear to derive from at least three original nodules. A pecked and drilled pebble (Fig. 10) was found ". . . twenty feet below the surface of the mud . . ", not apparently associated with any other recorded artefacts, and perhaps originally contained within a pocket of "tufaceous material" (for further reference to this object see also Dawkins 1900, 257-8; Reid 1902, 48 and 1913, 79 and 113; Warren 1911, 266; Smith 1919, 17; Oakley 1943, 57; Rankine 1956, 34 and 61). The last artefact to be recovered — a bone awl (see above) is recorded as being simply " . . in the peat . . " and appears again to be without recorded associations (Shore and Elwes 1889, 55).

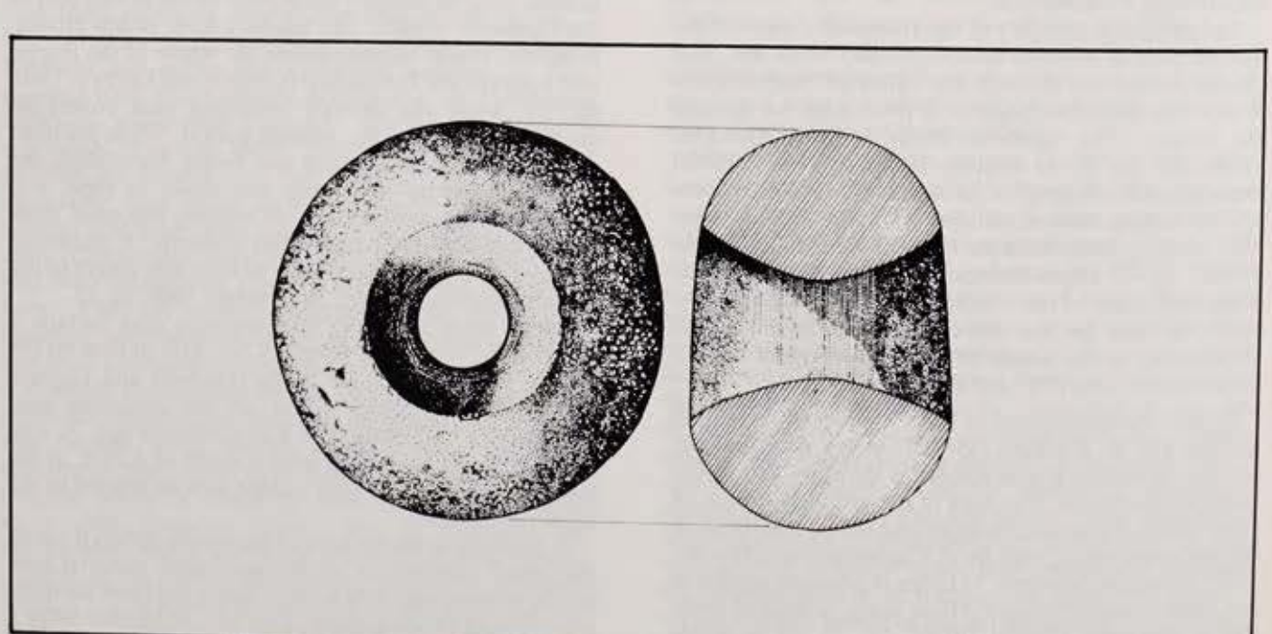
Uncertainty as to the height of the surface of the mud from which depth was estimated by Shore and Elwes makes it impossible to match their observations with the profile investigated by the Godwins (1940) 3.5kms. to the north-west in the "George V, Graving Dock". If correlated, the depth of 6.1m. recorded for the drilled pebble must be roughly equivalent to the lowest part of the Godwins' profile. The lowest 1.83m. of this profile, however, seems to encapsulate the whole of the Boreal and a part of the Pre-Boreal (Godwin and Godwin 1940, fig. 3), while the directly overlying peat covers an unknown portion of the Atlantic period. While it is most probably early Post-glacial and hence Mesolithic, the object cannot be tied down any closer in time, and similar drilled pebbles are, of course, recorded from both early and later Mesolithic contexts. It therefore appears unrealistic to continue to refer this object to the British Maglemosian (cf. Wainwright 1960, fig. I).

Other finds from the Southampton area include a single flake recovered from −5.5m. OD in peat on the site of the Corporation Baths (Godwin and Godwin 1940, 306). A pollen count on the enclosing peat suggested a Late Boreal or Early Atlantic age. A core adze recorded as coming from a depth of 4.27m. at the Southampton Town Quay cannot now be related to the local stratigraphy.

A final site in the far west of the county differs from all the other occurrences of archaeological material now below present high tide level in that it has been partially investigated by excavation. This site, at Mother Siller's Channel, is flooded by any exceptionally high tide and by storm tides (Palmer 1972 and 1977, 126-8) and the artefacts recovered (particularly 1972, fig. 11 Nos. 1-5)



Flint artefacts found during the construction of the Ocean (Empress) Dock at Southampton. Figure 9



Drilled and pecked pebbles found during the construction of the Ocean (Empress) Dock at Southampton. Figure 10

indicate that the site was occupied at some time after about 6 500 bc. It is impossible, however, to relate these finds to their contemporary sea level.

Not only is it impossible, then, to recognize from the Hampshire coast evidence for the exploitation of this resource zone, but there is an absence from both 'submerged' and cliff-edge locations of those distinctive later microlith shapes which allowed us to recognize settlement contemporary with the achievement of present sea level both on the Essex coast at Walton (Jacobi, in press A) and along parts of the North Pembrokeshire coast (Jacobi, in press B). At no point has the Mesolithic coastline of Hampshire escaped inundation or horizontal erosion, and all the material available to us from the county could thus be interpreted as debris left by groups exploiting dry-land resources within substantially dry land territories.

The Transition to the Neolithic

While it can be demonstrated that evidence for human activity may be relatively less abundant on some soil types than on others (as elegantly in Bradley 1978, figs. 3 and 5), the findspots actually identified, taken together with the overlaps on to the Chalk of territories belonging to sites based on adjacent or penetrating geological deposits, show the whole area of dry land Hampshire to have been exploited at some moment during the Mesolithic (Jacobi 1978B). Such a pattern leaves no obvious areas whose uptake by early farmers will not have impinged in some way upon pre-existing patterns of territoriality. The repeated observation, particularly among large collections of early Neolithic artefacts from surface sites on the chalk around Basingstoke, of 'Hunter' types of 'core-adze' suggests strongly the replacement of one extractive group by another, and no neat pattern of settlement complementarity — such as could be envisaged by Clark (1932, 90-1) — can now be recognized.

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The Neolithic and Bronze Ages

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THE NEOLITHIC

Introduction

The problem of the relationship between the later Mesolithic groups of southern England and the first farming communities has already been mentioned (Jacobi, this volume) and although its precise nature may continue to elude us, it is at least possible to indicate the presence of Neolithic groups in southern England by 4500 BC. (Throughout this paper the dates have been calibrated using Suess's curve (Suess 1970), and, where possible, taken from already published lists (Smith 1974).) In the last few years, as a result of both excavation and fieldwork, and the increasing availability of radiocarbon dates there has been considerable discussion devoted to refining chronology, developing typologies and re-assessing economic development, particularly in the earlier Neolithic (e.g. Smith 1974, Wainwright and Longworth 1971, and Whittle 1977). In spite of this recent work it should be noted that the authors will be gathering much of their data and hypotheses, as well as their dates, from the whole of Wessex rather than just Hampshire. The amount of excavation and examination of Neolithic sites in Hampshire is extremely limited, so that the pattern of agriculture will be derived from faunal and botanical material from outside the county (see Coy, this volume). Similarly, data derived from pollen analyses are, as yet, not forthcoming for the county (but see Barber, this volume). About 100 radiocarbon dates are available for the Neolithic in southern England but few come from Hampshire sites.

The Background

It seems, on the limited evidence available, that much of Hampshire in the later Mesolithic would have been covered by closed woodland, a mixed forest of oak, elm, lime, ash, birch, alder, hazel, although differences would no doubt exist depending on local soil and drainage characteristics. Recent work suggests that later Mesolithic communities may well have been making deliberate clearings in such woodland to encourage concentrations of grazing animals such as deer and wild cattle, and also to encourage the development of hazel woodland to provide food sources (Jacobi 1978, Mellars 1975). Some areas of southern Britain seem to have been more densely populated than others in the late Mesolithic. In Hampshire this seems to be the case on the western side of the county and in the southern coastal areas, whilst the broad chalkland expanse in the central part of the county has produced much less evidence in spite of considerable fieldwork (e.g. Draper 1966). It may be worth noting that a clear distribution of late Mesolithic sites is identifiable on the edges of the clay-with-flints caps on the Dorset chalklands, and this may yet be shown in north-eastern Hampshire (Care 1979, Fig. 2; M. Green pers. comm.).

We now recognise that the Neolithic soil cover was different from that of today and that loessic soils were present over much of the clay-with-flints caps of northern Hampshire and the chalklands as well as some of the coastal areas of the county (Catt 1978). Loess soils provide considerable fertility, and loess components in the soils are important in agricultural development. The chalkland soils, under woodland cover, would have been much thicker and on the ground would have provided a more fertile environment than they do today. The climate of the earlier part of the Neolithic was certainly favourable, with a long growing season, and there is little evidence to suggest over-dry conditions in the fifth or fourth millenia.

Settlement

Evidence for occupation sites of the Neolithic period in Hampshire is sparse, as it is for much of southern England (see for example Drewett 1978). The site of Broom Hill, Michelmersh (Percival and Piggott 1934), produced several fragments of pottery including a large piece of a Hembury style bowl which may be placed well within the fourth millenium BC. The association of the pottery with pits is by no means clear, and although some of the flintwork from this site is of Neolithic type its association is likewise blurred. Another site at Corhampton producing early Neolithic pottery is also recorded inadequately (Piggott 1954) but does include a possible association with red deer and *Bos primigenius*, which provide tentative evidence for a partially hunting economy in the early Neolithic. The late Neolithic is represented mainly by flintwork and pottery sherds; Mortlake/Fengate and Ebbsfleet styles have been recovered in small quantities from sites in the southern part of the county (Rudkin 1980). Mortlake style pottery has also been recovered from three different contexts and locations on the line of the M3 motorway; in the mound of a barrow (Fasham 1979), in pits which may relate to a stone alignment (Fasham 1980), and from features peripheral to a ring-ditch in which there was a "Wessex type" cremation burial (Fasham in prep). Normally this Neolithic material has been discovered accidentally during the excavation of a site of later date. It should be emphasised, especially in the light of the excavation of a small circular enclosure on Steepleton spur, next to Hambledon Hill, Dorset (Mercer 1980), that the potential for the recovery of Neolithic occupation sites on the Hampshire chalklands remains high, and they may well emerge from excavations with entirely different aims.

Evidence for the existence of occupation, or at least of activity, is also provided by flint concentrations, which in some ways may serve as a better guide for the distribution of Neolithic occupation. Recent work in East Hampshire suggests a far greater number of such sites than hitherto recognised (Shennan, this volume), and examination of existing collections of flintwork also points to considerable activity. The Willis collection of flint includes well over 100 flaked axes from the Basingstoke area; these were collected from surface walking in the 1930s and suggest considerable Neolithic activity in the north-eastern area of the county; no further investigation to follow up this material has yet taken place. Similarly, fieldwalking on the line of the M3 motorway and in the Winchester District has isolated a number of scatters of Neolithic flintwork. Limited examination of flint collections in the county shows that there was a widespread occupancy of the Hampshire chalklands, although it does not allow any indication of density of population, and no detailed work has been carried out to add flesh to this picture. On the basis

of accepted criteria for characterising Neolithic assemblages (Smith 1974) there do seem to be indications of an area of considerable interest for research and follow-up excavations.

Subsistence Economy

After an initial phase of limited land clearance in the early Neolithic the general pattern that was probably established by c. 3500 BC was of an agriculturally based economy with clearance of chalkland areas for cultivation and grazing. Pottery was being used and flint tool kits differed greatly from those of the Mesolithic. Cattle form over half of the bone assemblages, with sheep and goats and pigs making up the rest. Wild animals do not appear to have formed a major part of the diet. Wheat (mainly emmer) seems to have been a predominant crop but with small quantities of barley (Murphy 1970).

The unlikely possibility of recovering evidence for cultivation plots except under exceptional conditions makes the discovery of cross-ploughed furrows pre-dating 3500 BC at South Street, Wiltshire, particularly important (Evans 1971, Ashbee *et. al.* 1979) and gives an indication of the impact of Neolithic farming on chalkland in southern England. One should bear in mind also the increasing indications of Neolithic ditches which may have had a boundary function pre-dating the well documented linear ditches of the Bronze Age (Bowen 1978).

In the later Neolithic after c. 3500 BC a sharp increase in population and consequently in the complexity of its organisation seems likely, given the number of communal works erected and the manpower needed to build them. There is also a suggestion of increased pasture and only limited evidence for cereal cultivation (Wainwright and Longworth 1971), although the lack of evidence cannot be taken as a certain indication of low levels of cereal cultivation. The overall picture for late Neolithic southern England seems to be one of increased population, large communal works, and increased clearance for both cereal and animal husbandry to support that growing population.

Woodland clearance in the earlier Neolithic is normally characterised by a decline in elm detectable in pollen analysis in the fifth millenium BC. The distribution of groundstone and flint axes in Hampshire is predominantly away from the chalk, where it seems reasonable to suggest denser woodland cover (Schadla-Hall 1977). Away from the chalklands of central Hampshire it might be reasonable to suggest fairly extensive woodland cover until at least 3500 BC, with clearance occurring on the chalk. In the later Neolithic it would seem that the population foci were still in the cleared chalkland areas but that inroads were being made into the woodland growing in the other geological areas.

Communal Works

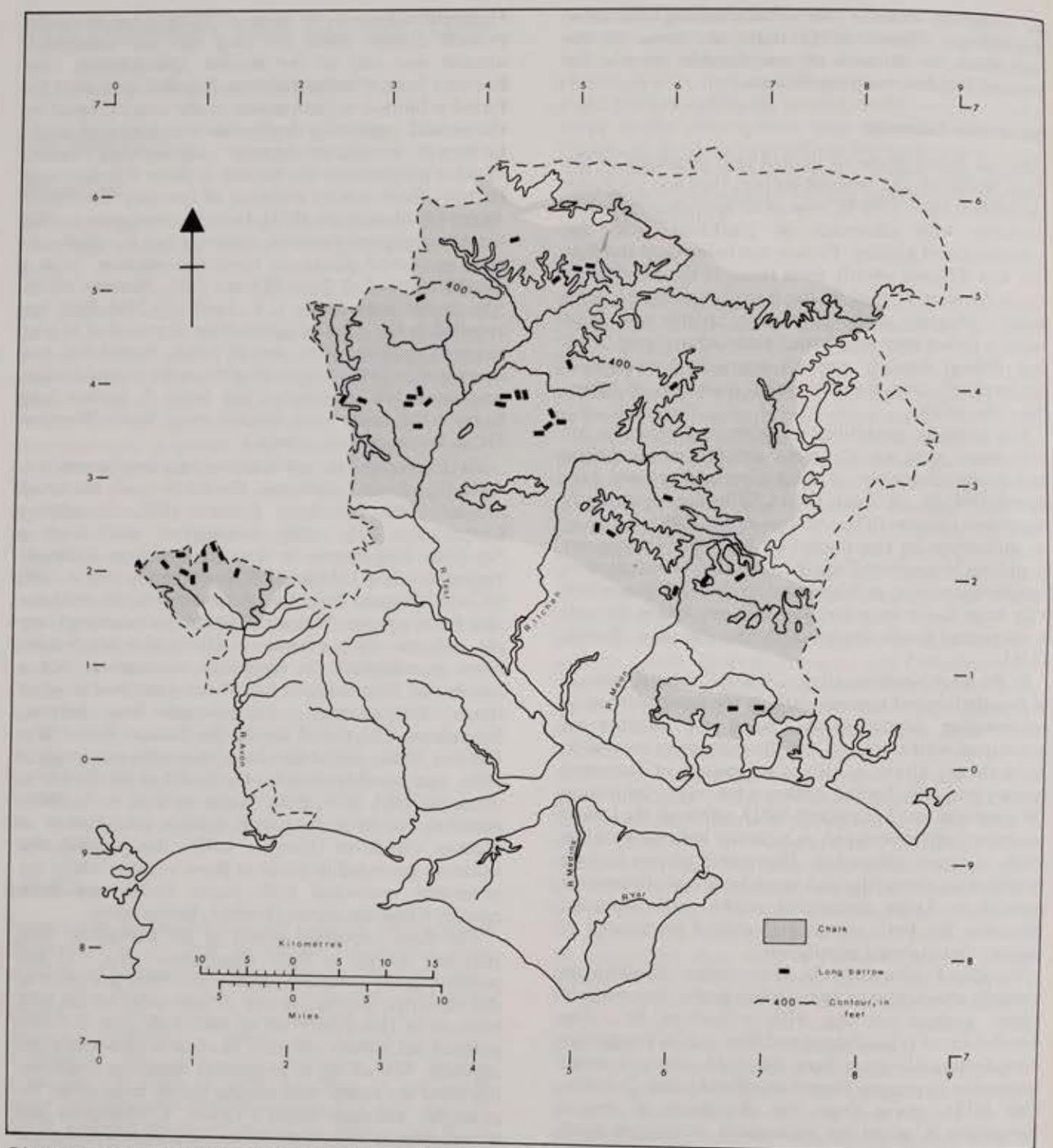
At the risk of over-simplification, excepting the small enclosures (see above), the earlier Neolithic in southern England is characterised by two categories of earthwork: earthern long barrows and causewayed enclosures (Ashbee 1970 and Smith 1971); in the later part of the Neolithic henge monuments appear widely over southern England (Wainwright 1969, Burl 1969).

Earthen long barrows, basically elongated mounds of ovoid, rectangular or trapezoidal shape vary in length in Hampshire from c. 30 m to c. 95 m. They normally possess ditches down the long side and sometimes around one end of the mound. Undoubtedly long barrows have a burial function, but the area used for burial is limited in comparison to the area occupied by the mound, suggesting that burials in such mounds might be seen as "foundation deposits", and allowing a variety of other purposes for the mound. In three Wiltshire long barrows there was no evidence of funerary function or intent (Ashbee *et. al.* 1979). Long barrows seem to fulfil a socio-regligious function, either as foci for communities, as central places, as territorial markers, or as a combination of all these (Kinnes 1975, Renfrew 1976). The recent work of Dr. I. F. Smith (RCHM 1979) has resulted in the detailed publication of a total of 39 long barrows in Hampshire, one of which, Portsdown, was destroyed in 1816. The detail of this work is considerable and need not be summarised here. A further long barrow has since been located near South Wonston (R. J. Whinney pers. comm.).

At the moment the earliest date for a long barrow is c. 4300 BC, from Lambourn, Berkshire, and the latest around 3000 BC from Giant's Hills, Skendleby, Lincolnshire. The only radiocarbon date from a Neolithic long barrow in Hampshire is from Nutbane, Penton Grafton (Morgan 1959), where a date of c. 3500 BC was obtained from one of the later phases. Nutbane and Bevis's grave, Havant (Rudkin, forthcoming), are the only two long barrows in Hampshire which have been investigated by systematic excavation, but a number of long barrows have been examined at other times; for example, Lamborough long barrow, Bramdean, was tested during the Second World War (Milner 1944); it had also been excavated previously in 1904, and possibly used for the burial of the Civil War dead (RCHM 1979, 8-9). Saxon as well as Neolithic material has been recovered from a long barrow at Preston Candover (Hawkes 1940); this parallels the situation recorded in detail at Bevis's grave, where the excavator recovered both pagan Saxon and 8-9th century Christian graves (Rudkin, forthcoming).

The most important aspect of the Hampshire long barrows relates to their distribution (Fig. 11) and position in the landscape, and in turn their relevance to the Neolithic population and its activities. All the long barrows in Hampshire are on the chalk and, as Smith pointed out, do not normally lie close to clay-with-flints deposits. Not all are in prominent landscape positions, but most are visible over comparatively large areas; for example, although Giant's Grave, Corhampton and Meonstoke, is dominated by the surrounding landscape it can be seen for well over a kilometre from the surrounding hills (RCHM 1979); although some long barrows are on prominent topographic features they are normally slight, possibly a reflection of the relative smoothness of the Hampshire Downs.

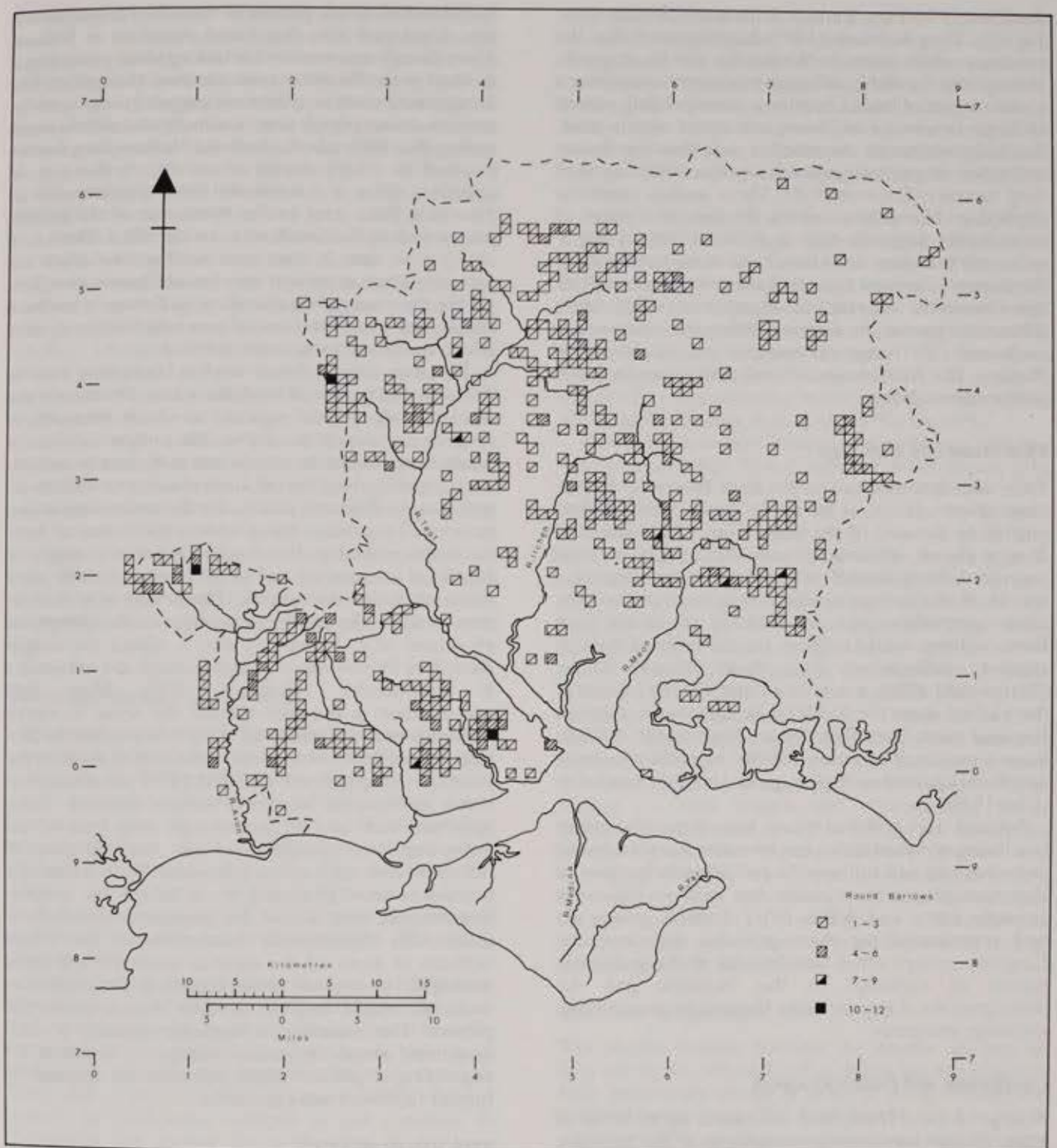
The long barrows of Hampshire were divided into groups by Ashbee (1970) and it is clear that the western group in Hampshire (Martin/Whitsbury/Rockbourne) is an "extension" of the so-called Cranbourne Chase group which concentrates on the Dorset *Cursus* alignment (see Bowen 1975, Figs. 3.1, 3.4). A second concentration of long barrows runs across the Test Valley and towards the Itchen Valley; this group includes three significant concentrations in the parishes of Nether Wallop, Barton Stacey/Chilbolton and Wonston. To the north there are other long barrows in the parishes of Overton and Penton Grafton, and to the



Distribution and location of known long barrows in Hampshire (orientations approximate). Figure 11

south in Owslebury, Corhampton, Droxford and East Meon. In the far south are two long barrows on Portsdown Hill, certainly the most dominating in terms of landscape position (see Fig. 11).

The other common earthen monument of the earlier Neolithic is the causewayed enclosure, which is normally roughly circular with one or more interrupted concentric ditches with banks, enclosing a central area which varies in size in Wessex from 1.5 to 9 ha. A number of functions, from domestic to ritual, including burial on a large scale in the case of Hambledon Hill (Mercer 1980), have been ascribed to causewayed enclosures (Drewett 1977); certainly a considerable effort was involved in their construction (Smith 1971). There are at least 17 such enclosures in Wessex, but none have been positively identified in Hampshire in spite of intensive field and aerial reconnaissance. Hampshire stands in some isolation from the counties to the east and west, where recent excavations in Sussex and Dorset are still developing our knowledge of such sites. Beacon Hill, Burghclere, has been put forward as a possible causewayed enclosure (Palmer 1976) but there is no real evidence for this. In the past some of the ditches on Butser Hill have been identified as possibly Neolithic and could be used to suggest a site, but again with a lack of conviction (Piggott 1930). The distribution of causewayed enclosures and long barrows, together with their close chronological relationship, has been critical to the interpretation of wider economic and territorial activity in Wessex (e.g. Barker and Webley 1978,



Distribution of presumed bronze age barrows, by number per square kilometre, in Hampshire. Figure 12

Renfrew 1973), in which it has been assumed that long barrows and causewayed enclosures can be used to define the areas of early Neolithic territories.

The only early Neolithic site in Hampshire which is not a long barrow is an interrupted ring-ditch on Winnall Down, near Winchester, excavated in 1976. Radiocarbon determinations on three antlers in the ditch produced a mean date of around 3550 BC (Fasham 1978 and in prep.).

In the later Neolithic henge monuments appear on the Wessex landscape; these monuments have produced dates between 3500 to 2500 BC, but so far none have been identified in Hampshire or Sussex. Henge monuments normally consist of an internal ditch with outer bank, enclosing a circular area with one or more causewayed entrances, and are normally ascribed a non-domestic function. Likewise *cursus* monuments, consisting of long "avenues" defined by parallel banks with external ditches, which are found in Dorset and Wiltshire, have not been identified in Hampshire; *cursus* monuments have been interpreted as ritual foci, also acting as territorial markers, and certainly act as foci for early Bronze Age as well as Neolithic activity.

Recent attempts to analyse territorial activity in the Neolithic of southern England have relied heavily on the relative distribution of the groups of communal earthworks listed above and it is noteworthy that Hampshire is normally excluded or ignored when considering the developments of territories and economies in the earlier and later Neolithic (e.g.

Renfrew 1973, Figs. 2 and 3, Barker and Webley 1978, Fig. 2). Thus Renfrew (1973) has suggested that the evidence which exists in Wessex for the development through the Neolithic of larger monuments requiring a greater input of labour implies a corresponding growth of larger territories and more centralised organisation. Similarly territories described in neighbouring Sussex are based on causewayed enclosures as well as earthen long barrows (Drewett 1978). These models cannot be applied to Hampshire, where the lack of a range of monuments suggests that a different set of socio-economic processes must have been at work; one could, for example, suggest that territories remained small, or that Neolithic societies in Hampshire relied on a different type of focal point from the causewayed enclosures or henge monuments of elsewhere in Wessex. The difference is certainly striking and requires further investigation.

Flint Mines and Exchange

Only one flint mining site has been located in Hampshire (Stone 1933), at Martin's Clump, Over Wallop, slightly to the east of the better known flint mines on Easton Down, Wiltshire (Stone 1933A). The material recovered from limited work at the time suggests a spread of shafts over at least three hectares, and the close comparison with the material recovered from Easton Down would suggest, on the basis of the one existing radiocarbon date from Easton Down (Wainwright 1975), a date of around 3100 BC. Some of the earliest dates for Neolithic occupation in southern England come from flint mines; Church Hill, Findon, Sussex, produced a date of 4300 BC. In addition an open cast working area has been suggested at Little Somborne (Clay 1925).

Around 120 polished stone axes from Hampshire (excluding polished flint axes) have now been examined petrologically and will soon be published fully; many of these axes come from places now in Dorset (see for example Stone and Wallis 1951). Cornish groups are well represented but there are also axes from the Langdale groups which demonstrate the long distance nature of exchange in the Neolithic and the participations of groups in the Hampshire area in these exchange processes.

Conclusions and Future Research

A large block of Hampshire downlands seems bereft of many of the characteristic monuments of the Neolithic period and even though there has been very minimal field investigation of the Neolithic within the county it seems unlikely that henge monuments and causewayed enclosures remain to be discovered. Accepted models for the growth of chiefdoms in the Neolithic of Wessex (see above) cannot be applied to the existing data from Hampshire although some of the denser parts of the distribution of long barrows, notably in the Wonston and in the Barton Stacey areas, suggest concentrations of barrow construction as great as anywhere in earlier Neolithic Wessex; there must be an explanation for this lack of the other field monuments so common in southern England. In Sussex the lack of henge monuments has been tentatively interpreted as a breakdown in the development of later Neolithic society when compared with Dorset and Wiltshire (Drewett 1978), and on this basis it might be suggested that the social and economic pattern of Neolithic Hampshire was less developed than that found elsewhere in Wessex. Even though monuments are lacking some patterning is evident in the Neolithic evidence from Hampshire. The concentrations of long barrows suggest greater activity, or even denser population, in some areas, and it is worth noting that the evidence from the Nutbane long barrow pointed to a long period of activity on that site. In contrast, there is a relatively dense concentration of Neolithic flake axes in the north-east of the county, where no long barrows have been identified. The lack of occupation sites in that area need not be taken too seriously since at present very few are known anywhere within the county, but elsewhere in Europe it has been noted that concentrations of axes often occur in areas which continued to be forest-covered.

The main aim for future work in Hampshire must be to clarify the picture of Neolithic activity, both early and late, in two specific regards: to obtain measures of relative population density so that comparisons can be made, both within the county and in Wessex as a whole; and to specify the different kinds of activities which were going on in different places, for the same comparative reasons. To achieve these aims a great deal of basic fieldwork is needed. It is required to locate examples of Neolithic settlements and to selectively excavate these when they are discovered. These sites may well be preserved on the gentle undulations of the Hampshire chalkland (e.g. Fasham in prep.), unlike the steeper Berkshire Downs where plough damage and soil erosion is considerable (Richards 1978). More field investigation is required around the areas of known Neolithic monuments as these seem to provide the best starting point. In view of the condition of many of the Neolithic long barrows (RCHM 1979) preservation of these monuments must be actively pursued. Some barrows, such as the Lamborough long barrow, are being regularly ploughed and only vestigial traces of others survive, such as South Wonston West, where only a cross-section protected by a hedge-row remains undamaged; here a case for excavation may well be made out. Additionally excavation of the buried surfaces of many of the mounds which are still being damaged, to recover palaeobotanical and molluscan material, would help to develop the environmental picture. The presence of Neolithic material in small quantities across the county indicates a potential for recovering a picture which can only be realised by further fieldwork and excavation.

THE BRONZE AGE

Introduction

Investigation of the Bronze Age in Hampshire has been limited in comparison with the rest of Wessex. In the nineteenth and early twentieth centuries, when excavation of burial mounds was proceeding apace in the counties of Dorset and Wiltshire, there was a distinct lack of activity in Hampshire. There are occasional sketchily recorded excavations (e.g. Crawford 1942) and some which were never recorded, but no individuals emerged to carry out and publish extensive investigations on the scale that Colt-Hoare did for Wiltshire (1810) or Warne did in Dorset (1866); indeed even Pitt-Rivers (1898) did very little work in Hampshire although his estates straddled the Dorset/Hampshire border. There has been an increase in

investigation and excavations since the 1940s but this has tended to be random in approach, normally rescue excavation, and has added little to our information on either burial or domestic occupation. However, the lack of excavation information is fortunately not matched in terms of fieldwork. Recording field monuments has been an important element in Hampshire archaeology since the beginning of this century (Williams-Freeman 1915) and the tradition has been continued (e.g. Grinsell 1938-40) between the Wars and up to the present day (e.g. Bowen 1975); to a large extent it has compensated for the lack of traditional excavation data.

The traditional framework for dating the Bronze Age has been based largely on bronze implement typology (Burgess 1980) and to a limited extent on the pottery typology (Burgess 1974); the source of much of the pottery and some of the bronzework has been the excavation of burial mounds — the round barrows. This traditional framework has been increasingly called into question, and radiocarbon dating is having a considerable impact on the accepted typological dating (I. A. Kinnes pers. comm.). As the rigid typologies have begun to fail there has been an increased interest in the interpretation of Bronze Age economy and society and recognition of the need for (a) a regional approach and (b) a further series of dates on the material from both sepulchral and domestic sites. It is worthwhile, therefore to examine the traditional chronology of the Bronze Age.

The Beaker period c.2600-1900 BC

This period is named after the distinctive beaker pottery type which appears in Britain at the end of the third millenium. In Wessex beakers are frequently found in single crouched inhumation burials under round barrows but they also occur at the late Neolithic henge monuments and some longbarrows in secondary contexts as well as in settlements. They are associated with the earliest copper objects in Britain and it seems likely that they represent a new fashion, as a result of continental influence rather than invasion (Burgess & Shennan 1976).

The bulk of the beakers from Hampshire (c.50) have already been listed (Clarke 1970) although those from the Christchurch area are now in Dorset. Apart from the single inhumation burials, beaker sherds have been found at the Neolithic longbarrows of Nutbane (Morgan 1959) and Danebury West (Grinsell 1939). Beaker pottery in settlement contexts is not common in Hampshire but neither are settlements of the later Neolithic (see above) or the early Bronze Age. Nevertheless beaker pottery recovered from Balksbury (Wainwright 1970), suggests the possibility of settlement, and beaker pottery recently recovered from excavations in Winchester may relate to a domestic context, as may the beaker from Easton Down (Fasham in prep.).

The lack of recently excavated beaker contexts and the failure to locate and investigate late Neolithic and early Bronze Age settlement sites in Hampshire continues to underline the need to carry out such investigations.

The Earlier Bronze Age c. 2100-1500 BC

The chronology of the earlier Bronze Age has been traditionally based on the excavation of round barrows, mainly in the 19th and early 20th centuries, particularly in Dorset and Wiltshire; much less though in adjoining Hampshire. It is difficult to be certain of the number of barrow openings in Hampshire, and in many cases, although it has been possible to identify barrows which have been excavated, and even the individuals concerned with such excavations, the resulting material has been lost or remains unidentified (e.g. Schadla-Hall 1978).

In the Wessex area, as a result of detailed analysis by Piggott (1938), a "Wessex culture" was identified on the basis of the richer and more exotic graves of the earlier Bronze Age in Wessex, although few are in Hampshire. Subsequently it was suggested that the "Wessex culture" represented a wealthy pastoral aristocracy dominating much of southern England (Fleming 1971), but others have suggested that the "Wessex culture" as originally defined has little meaning in our overall understanding of the earlier Bronze Age (Coles & Taylor 1971).

One of the common features of the "Wessex" Bronze Age is the so-called "fancy" barrows, which appear to be largely restricted to the Wessex area. Nineteen "disc" barrows have been listed in Hampshire by Grinsell (1974) as well as over thirty "bell" barrows which have been confidently assigned to the earlier Bronze Age. In addition there are over one thousand bowl barrows, extensively damaged by ploughing, but which are also assigned to the earlier Bronze Age. The long period during which "Wessex type" burials continue to be deposited is well illustrated by the excavation of such a burial at Ports Down, Portsmouth, which has produced a radiocarbon date of c.1500 BC (Corney et al 1969; Rudkin 1980). A number of other excavations have also produced evidence of earlier Bronze Age date in terms of bronze implements — daggers and knives, as well as pottery — food vessels and collared urn forms; radiocarbon dates are rare. Work in the last decade has clearly shown that Deverel-Rimbury pottery, and associated sites (see below) appear in the earlier Bronze Age, and continue right through the later Bronze Age; we have considered Deverel-Rimbury in the following section simply to conform to the traditional chronology (see Barrett & Bradley 1980).

The Later Bronze Age c. 1500-750 BC

The precise division between the Bronze age and the Iron age is not only difficult to define but has relatively little importance except in terms of metal working and implement typology. The later Bronze age is normally represented by a change in pottery styles and increasing availability of bronze and bronze tools, as well as new types of artefacts. A change to a cremation tradition of burial, including flat cemeteries, and a general poverty of grave goods, has also been assumed. This change has normally been associated with the Deverel-Rimbury culture, which was originally defined by Calkin (1962) as limited to the Hampshire/Dorset area and suggested as middle Bronze Age in date (c.1500-1200 BC). There are a number of radiocarbon dates available from burial contexts, the earliest of which is around 2000 BC (Worgret Barrow, Dorset) and the latest around 1200 BC (putting aside the dates from Simon's Ground, Dorset (vide Barrett 1976)). The inclusion of the Simon's Ground dates takes the range towards 700 BC. There are a number of cemeteries in Hampshire which may be assigned to this period, such as Kimpton, Andover (Dacre 1972, Dacre & Ellison forthcoming),

Latch Farm, now in Dorset (Piggott 1938), Dummer and Danes Hill, near Basingstoke, and Plaitford, Colebury, and Landford (Preston & Hawkes 1933), on the eastern edge of the New Forest. The term Deverel-Rimbury is no longer appropriate, at least in terms of describing a late Bronze Age burial tradition and culture; it is obvious that there is a considerable overlap with the "Wessex culture" (Barrett & Bradley, 1980). The stylistic variations of Deverel-Rimbury forms appear in Wessex to last longer than elsewhere in southern England and there are only a few examples of Barrett's (1980) late Bronze Age plainware tradition in Hampshire, the most recently excavated assemblage being Winnall Down, near Winchester (Fasham in prep. b).

Environment and Climate

Although Hampshire possesses little direct environmental information it would appear that the earlier Bronze Age was a period of dry climate (drier than the Neolithic) which was warmer than that of today. The later Bronze Age is marked by a period of deterioration accompanied by the increasing rainfall and wetter conditions which continued into the Iron Age. It is also generally accepted that clearance which continued from the later Neolithic resulted in large areas of open country on chalkland, and possibly areas of pasture, as well as movement onto what today are often largely non-agricultural areas. These areas consist of large parts of the New Forest and probably North-East Hampshire. The movement is represented by the presence of the barrow distribution in Fig. 11 suggesting an expansion away from the "core" areas of the Neolithic on the Chalklands (see Fig. 11).

Even today the soils of southern Hampshire display considerable variability in fertility often over relatively short distances. It seems certain that the present-day podsols of these heathland areas, which are heavily leached (iron, calcium and other basis have been washed down through the topsoil and re-deposited as hardpans), have replaced the richer soils which would have been available in the earlier Bronze Age. At the same time drier and more open chalk downs may well have been heavily eroded of topsoil during the earlier Bronze Age. The denudation of the chalklands may well have necessitated an expansion onto today's heathlands, which in turn seem to have begun to assume their present impoverished appearance towards the end of the earlier Bronze Age as a result of clearance, presumably for agricultural purposes.

Settlement and Subsistence economy

Recent work has shown a considerable overlap of the "Wessex culture" and the Deverel-Rimbury tradition (see above) and it has been suggested that there were "core" areas of upland pastoralist "aristocracy" with rich burials (for example, around Stonehenge and on the Dorset Ridgeway, as well as along the Dorset Cursus), and areas of lowland arable farming with lower status groups, represented by Deverel-Rimbury burial sites for example (Barrett 1976; Bradley 1979). There are no "core" areas of dense barrow concentration in Hampshire and apparently few rich burials which can match those of much of the rest of Wessex, but even so, given the evidence which points to the fact that many barrows on the Wessex Chalkland were built on areas of pasture it might seem worthwhile to consider the possibility of two different groups pursuing different patterns of agriculture in different areas of the county. However, this suggestion does not fit in with the evidence that during the early Bronze Age large areas of the county's chalkland were covered by "Celtic" field systems (see below) pointing to arable cultivation (Bowen, 1978), and the apparent lack of occupation sites on chalk uplands, which has often been represented as suggesting a mobile economy, may well, in that case, be explained simply by a failure of archaeologists to locate such sites. Much of the information used to suggest extensive pastoral activity has been recovered from beneath barrows; it would seem reasonable to suggest that it is unlikely that areas of burial mounds would be ploughed, so possibly the recording of pasture under round barrows is hardly surprising.

The problem of the settlement pattern is related in part to the distribution of fields. One of the earliest excavations in the county of a Bronze Age enclosure was at Martin Down, Martin (Pitt-Rivers 1898), where the 0.6 ha enclosure is surrounded by "Celtic" fields (Bowen 1961, Fig. 3a). This enclosure is likely to have been in use around 1400 BC, and although no traces of buildings were recovered, another enclosure excavated by Pitt-Rivers at South Lodge in Dorset, of a roughly similar date, has produced evidence of structures as a result of re-excavation. The difficulty of locating settlement sites is exacerbated by the fact that many sites do not seem to have possessed ditched enclosures. Aerial photography has assumed increasing importance in locating prehistoric occupation sites but unditched or even partially ditched enclosures are difficult to locate. Angle Ditch, Dorset, is one such partially enclosed site and the recent excavation at Down Farm, Dorset, has revealed another such enclosure (M. Green, pers. comm.), while work at Dean Bottom on the Marlborough Downs in Wiltshire, has revealed another unditched but banked enclosure (C. Gingell pers. comm.). Although, apart from the Martin Down enclosures, sites comparable with the Wiltshire and Dorset Bronze Age enclosures (Piggott 1942) have not yet been located in Hampshire, similar occupation sites in Sussex such as Itford Hill (Burstow & Holleyman 1957) and New Barn Down (Curwen 1934) indicate the likelihood of such sites in Hampshire. The discovery of the remains of two hut circles at Chalton without any sign of accompanying enclosure ditch (Cunliffe 1970), dating to around 1500 BC, and of four possible later Bronze Age houses on Winnall Down (Fasham in prep. b) illustrates the problem of locating settlements except by accident, as does the recently published series of pits from Westbury, West Meon (Lewis & Walker 1977). There are several sites which have produced pottery and other material in Hampshire, all of which indicate the widespread nature of Bronze Age occupation in the county (e.g. Hawkes 1970; Hawkes 1942; Stone & Gray Hill 1938).

The presence of enclosed and unenclosed settlements of Bronze Age date is reasonably well established, and the lack of sites must be largely ascribed to the difficulties of locating them. Such sites and hints of Bronze Age occupation will continue to appear but, as in the case of Neolithic occupation, more frequently by accident than design.

A number of sites of later Bronze Age date which are perhaps the precursors of hill forts, such as Rams Hill in Berkshire, (Bradley & Ellison 1975) may well represent emerging centres of political and economical control

(Bradley 1978). The site excavated in 1954 at Hook (Ashbee 1955) may well be one of these large enclosures (Bradley 1978, 120).

The pattern of development of chalkland settlements is extremely complex; the area around Windmill Hill and Brockley Warren displays a dynamic and complex landscape of fields, settlements, ditches and areas of pasture throughout the Bronze Age (Bowen & Cunliffe 1973) which can surely only be unravelled by detailed excavation and surface investigation. Evidence for agricultural activity is limited; in terms of livestock, cattle and sheep seem to have been the mainstay of the Bronze Age economy. Evidence for the presence of naked barley, emmer wheat, with some hulled barley and einkorn in the earlier part of the Bronze Age, and the possibility of an increasing importance for hulled barley and spelt towards the end of the Bronze Age (Burgess 1980), gives no indication of quantities and the relative importance of arable activity. The likelihood of recovering any information from heathland sites is limited because of the nature of the soil.

"Celtic Fields"

Bowen has pointed several times to the impressive nature of large blocks of "Celtic" fields ("cohesive systems", Bradley & Richards 1978) of Bronze Age date, apparently laid out on axes which bear no relationship to existing topography; the suggestion of considerable organisation and control within society is implied and yet, accepting a date of c.1500 BC and earlier for such fields, there is little evidence of settlement for this apparently highly organised society. The dating of the field systems is problematical, but a barrow at Barnet Copse, Chalton, containing a collared urn, which is likely to have a date of not later than 1500 BC, lying on top of a well-developed field lynchet (Rudkin, 1980), tends to underline the development of field systems early in the Bronze Age. "Celtic" fields were originally defined by Bowen as "Varying in size from 0.1 ha to 0.5 ha and in shape range from the approximately square to a rectangle about six times as long as broad (Bowen 1961). There are few survivals of "Celtic" fields in Hampshire although fine examples may still be found elsewhere in Wessex. Agricultural activity in the last century destroyed the larger systems in Hampshire, and most of them existed only as crop marks even at the beginning of this century (see for example Crawford 1923, 348). "Celtic" fields should by no means be dated solely to the Bronze Age, since their use in the Iron Age, Roman period and possibly later seems certain. Their size and shape is likely to reflect the level of arable technology, as well as the social organisation and nature of the agricultural economy.

Linear Ditches

One of the significant landscape features in Wessex is the linear ditch system (Bowen 1978), which emerges by 1500 BC and is largely concentrated on the chalklands of Hampshire. Linear ditches or "ranch boundaries" as they have sometimes been termed (Crawford 1953) are "V" shaped ditches up to 2m in depth and up to 3m wide at the surface, frequently 30 to 40cm wide at their bases, sometimes with a chalk bank on both sides but more often on one side only. (Bonney 1978). Over 800km of such ditches have been plotted in Hampshire and they seem to continue in use and to be constructed into the Iron Age (Bowen 1978). These ditches are often cut across pre-existing "Celtic" field systems (e.g. the Martin Down field system and the Windmill Hill/Brockley Warren field system (Bowen and Cunliffe 1973)). These ditches have been postulated as stock-controlling features for large areas of pasture; they certainly represent a boundary function from the middle of the Bronze Age; one impressive feature is the way in which the systems cease in the south-west of the county at Bokerly Dyke on the Dorset border. Recent work aimed at determining whether the banks of such ditches were surmounted by hedgerows suggest that they were not (Arnold 1972; Bowen, Evans & Race 1978); at the same time it was possible to indicate that these ditches were constructed very shortly after the fields through which they cut were abandoned. The questions which remain to be answered about these linear ditches are numerous; without barriers surmounting them it appears that they would have been an inadequate control for many forms of stock; in any case ditches involve a considerable labour input, especially when the so-called spinal ditches may run for up to 25 km. Is stock control therefore indicated? Long lengths of ditch do require organisation to construct and yet it is difficult to demonstrate occupation sites which clearly relate to them. The fact that "old land blocks as well as just arable fields were . . . slighted as if a new and careless power were being imposed" (Bowen 1978), must surely indicate a considerable degree of central organisation. If, as seems likely by the later Bronze Age, the climate was becoming both colder and wetter, the idea of a pastoral system connected with long boundary ditches makes little sense, because under such conditions one would expect an increased arable output from chalkland areas. The possibility of a need to reinforce boundaries in the declining environment where land may well have been in short supply does have considerable appeal, but if this was the reason for these constructions, why should they cease on the Dorset/Hampshire boundary? If the reason for their construction is an economic one, does the break on the Hampshire/Dorset border indicate differing economic and social systems? Further investigation within the ditch system is long overdue; the excavation at Quarley Hill (Hawkes 1939) took place at a junction point where at least two systems meet and this type of nodal area may well be one point where investigation should be focused: certainly the construction of an early Iron Age hill fort on Quarley Hill may indicate some importance for such junctions. At Whitsbury three ditches appear to meet at the later hill fort (Bowen 1975).

Industry and Communication

The presence of a developed bronze industry along the south coast has been indicated by Rowlands (1974) who suggests not only that there were metalworking sub-centres in the south-east and south-west of Hampshire — the former being clearly associated with coastal and riverine movements — but also that the boundary between the two centres may be of regional importance. A further sub-centre was probably based on the Isle of Wight and the Solent where there is a significant distribution of "Werrar" type palstaves, a type of probable Irish origin. The two pennanular arm rings found at Liss have parallels with the "Bignon" type of arm ring of northern France.

During the later Bronze Age the coarser pottery vessels were probably made locally and cremation

vessels drawn from the range of domestic vessels used (Barrett et al 1978). Ellison has indicated possible exchange systems relating mainly to fine wares across southern England (Ellison 1980).

Flint working is one of the most difficult industrial activites to quantify in the Bronze Age; it does appear that waste flakes tend to be broad and squat in shape. The industrial material from Micheldever Wood provides a basis for comparing material from surface collections (Fasham & Ross 1978).

Conclusions

A majority of the Bronze Age occupation sites seem to have been small, consisting only of a few buildings; such settlements are often unenclosed and difficult to locate. They are known almost exclusively on the chalklands, where they appear to be located close to field systems suggesting arable activity, as well as near areas of pasture. This suggests a mixed agricultural economy. The lack of occupation sites is best explained by a failure to locate such sites rather than by postulating a mobile economy. The lack of occupation sites on heathland areas may be compensated for by the presence of cremation cemeteries; it has recently been suggested (Bradley 1981) that on the downland cemeteries are located within a few hundred metres of occupation sites; the length and size of occupation might well reflect itself in cemetery size. This relationship if extended to the heathlands certainly adds some validity to the proposal that the distribution of Bronze Age barrows represents to some extent the density and distribution of Bronze Age settlements in Hampshire. The map (Fig. 12) therefore tends to represent a failure to locate occupation sites whilst still indicating the distribution of Bronze Age activity. The lack of settlements as opposed to field systems should not be used, without further investigation, to draw conclusions about settlement distribution; "there can be little doubt that they do exist on . . . heavily exploited downland . . . and need not be postulated to lie only in the very limited strips of ground in the river and valley systems of the area" (Bowen 1978).

On the chalklands, whilst the presence of pastoral activity should not be underplayed, it seems reasonable to argue for a mixed economy and also a directed and controlled layout for the landscape. The comparative absence of rich graves and dense barrow concentrations in Hampshire could be used to argue for a "poorer" society than that of neighbouring Wessex counties, but the case remains to be proven; it may be argued that the lack of many large scale Neolithic monuments might reflect a different social/economic and political basis for the society which is continued into the Bronze Age; the skewed distribution of the linear ditches might be used to support such a difference.

Existing evidence does suggest exploitation on heathland areas of the New Forest and north-east Hampshire from at least the early Bronze Age. Barrows containing earlier Bronze Age material have been excavated in these areas (e.g. Piggott 1942), and although the nature of such exploitation may have been of a limited and temporary nature, the presence of turf mounds indicates the use of spades and digging tools (Ashbee & Dimbleby 1976). The nature of settlement remains unknown except in terms of barrow distribution, but occupation seems to have continued, at least in terms of cemeteries, towards the beginning of the first millennium.

The large number of gaps in our knowledge of Bronze Age Hampshire provides a bewildering array of targets for further work; the added incentive to examine the changing pottery chronology and typology further complicates the picture. Little attention has been paid in this paper to the nature of the later Bronze Age occupation in Hampshire or indeed to trade and industry. It seems that the most important areas on which to concentrate are the location and excavation of occupation sites connected with both field systems and linear ditches, together with the accompanying further investigation of the role of linear ditches as a high priority. In addition, the present lack of information from burial mounds, not only in terms of dating but also in terms of environmental information makes this area a high priority. The lack of answers is more than compensated for by the wealth of potential information, but without a coherent research design covering both the downland and heathland areas, little overall progress will be made in recovering a complete picture.

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The Iron Age in Hampshire

Timothy and Sara Champion

Introduction

Fifty years ago the study of the Iron Age in England in general, and Hampshire in particular, entered a new phase with the completion of three years' excavation at St. Catharine's Hill, Winchester. The prompt publication of the results (Hawkes *et al* 1930) set a new standard in the presentation of evidence from detailed excavation, and also contained an exhaustive summary of the current knowledge of Early Iron Age Britain. The new interest in hillfort excavation blossomed in many counties, not least in Hampshire, where the Field Club sponsored a programme of work which included the excavation of several sites which are still some of the classic sites of the period. This programme was abruptly terminated by the war, and for the next thirty years little work was undertaken on Iron Age sites. When it did resume, the circumstances were very different, and the choice of sites was dictated by the threat of destruction rather than by any research plan. Much work has now been done in the region of the expanding towns such as Andover, Basingstoke and Winchester, and on the lines of new motorways, though occasionally other sites such as Danebury (Cunliffe 1971; 1976a) and Owslebury (Collis 1968; 1970) are also being examined. Fieldwork other than excavation has, until very recently, been minimal, but Richard Bradley's (1975) work around Portsmouth Harbour, and John Budden's at Chalton (Cunliffe 1973) should be mentioned as exceptions. The result of all this activity is that about 45 sites are known to have been excavated, though both the quality and extent of the work varies, and publication ranges from non-existent through partial to the rare cases of adequate modern reports. No real summary of the results has yet been attempted, and it is not the intention of this paper to do so.

Much of the previous work has been devoted to pottery typology and chronology, and these are topics which will be very much better understood when the results of several large recent excavations are available, for the great quantities of pottery now being recovered will make detailed relative sequences much easier to construct, and the increasing use of radiocarbon dating will eventually provide an adequate absolute chronology. For the moment it is perhaps sufficient to note that the effect of recent research on the later Bronze Age and the first C14 results now available suggest that much of what has been traditionally regarded as of Iron Age date must in fact start at a considerably earlier period. Our accepted chronology for 'Iron Age' sites and material must be extended by at least another 300 or 400 years, with consequent readjustments for later periods of the Iron Age also. When the chronology of the first millennium BC is eventually re-established, many of our traditional ceramic phases will appear both earlier and longer, and the whole process of social change in the Iron Age will have to be set against this new time-scale. The intention of this paper is to examine certain general themes, and to point out areas where future research might be profitable.

Subsistence

The available data for subsistence activities are depressingly scarce. The publication of quantitative data is almost non-existent, though qualitative records of presence of animal or grain species are slightly more common. This, however, does not represent the true picture of subsistence studies, since much work has been carried out in the last few years, and the results are only now beginning to come into print. The technical problems of recovery of seeds have to some extent been solved, and adequate recovery strategies have been implemented on most recent excavations. The collection of animal bones has also become much more systematic, and the establishment of the Faunal Remains Project at Southampton University has at last provided the necessary facilities for their study. Their forthcoming reports on some major Iron Age sites in the county will provide the basis of evidence which has hitherto been lacking. The study of cereal agriculture has been greatly advanced by the work of Peter Murphy (1977). The number of sites available to him as a pioneer in this field was still small, but his study has produced many important results and a number of questions for future research. In particular there is a lack of sites of the early part of the Iron Age in Hampshire, which will continue to make it difficult to assess the important changes which seem to have occurred in agriculture in the first half of the first millennium BC. The only early site so far analysed is Old Down Farm, Andover, where already in the deposits of the 8th and 7th centuries BC wheats, especially spelt but also emmer, are the dominant species. The same pattern is also seen in the first and second phases at Portway, Andover. Spelt, which had previously been noted at one Neolithic site, is unknown in the British Bronze Age, and its reintroduction is an event of some importance; the species is hardy enough to resist fungus and damp, cold weather, and needs only a short growing season. It would therefore have been a useful crop if the climate had been deteriorating, but since the evidence for such climatic change at this period is very much open to question, it is possible that spelt was preferred as a winter-sown crop. With winter-sown wheats and spring-sown barleys, it would have been possible to spread the labour of sowing, and perhaps to increase the acreage sown with the same number of people. It would be of the greatest interest to know when and why spelt was readopted. The dominance of the wheats continued throughout the Iron Age at Portway, though in the final phase barley becomes more common than before. But this is in sharp contast to the picture at Owslebury, where barley predominated, and oats also occurred. Murphy explains this variation by pointing to the different availability of pasture and meadow lands at the two sites. At Owslebury, with less meadow land than was available in the Andover region, a larger proportion of the sown acreage would have been needed to provide winter fodder for the animals. It would be interesting to see whether such a hypothesis can be borne out in future excavations, and to compare the reports on the animal bones from the relevant sites when these are available shortly. Another area for research concerns the species of wheat other than spelt, in particular bread wheat and club wheat. Since these were not threshed, they would not have been parched; they would therefore have stood a much lower chance of survival through carbonisation and may thus be seriously under-represented in deposits from settlement sites. Bread wheat appears to have been

introduced in the middle of the Iron Age, but as yet we know little about the extent to which both species were grown, or the reasons for their introduction.

It would be premature to anticipate the results of the faunal analyses, but so far most sites have produced evidence for all the major domesticated species. Particular interest will centre on the management and breeding of the individual herds, the functions to which they were put as indicated by the mortality pattern, and the relative importance of different species both at individual sites and in different regions. It will also be of particular interest to investigate any diachronic changes in animal husbandry; the development of complex exchange networks and large nucleated centres of population might be expected to produce changes in the production and distribution of meat, which should be archaeologically detectable. The provisioning of late Iron Age towns would be a question of considerable interest.

A further area for research is the exploitation of wild species. Bones of animals such as badger and hare have occasionally been found on Iron Age sites, but these are unlikely to have been a major component of the food supply, and could well have been hunted for their skins. Deer are more likely to have been exploited for food, and now that their recognition has been made easier by the establishment of sounder osteological criteria, it should be possible to gain a clearer view of their importance. Perhaps the most interesting theme will be the exploitation of fish resources, both freshwater and marine. The technical problems of recovery and identification can now, at least theoretically, be overcome, and what is needed is the implementation of a proper research programme. Though at first sight expensive in terms of man-hours, such a programme would yield important results and would certainly be more worthwhile than the recovery of yet more pottery.

There is also a need for the development of an overall synthesis of Iron Age agriculture incorporating not just the faunal and floral remains, but also the evidence of field systems, enclosures and settlements. In formulating such a model the results of experimental work at the Butser Hill Iron Age farm will be of great value, since they provide perhaps the nearest approach to the realities of Iron Age agriculture.

Population

Population is clearly one of the most important topics of prehistoric enquiry since so many other features are either related to or determined by the size and density of the population; yet nowhere is our ignorance greater. There is at present a growing willingness to admit that the prehistoric population of Britain must have been substantially larger than has hitherto been envisaged, but reliable figures are hard to come by. Guesses (one can hardly call them estimates) of the population of Britain in the Late Iron Age and Early Roman period can vary by a factor of as much as four, and figures even as high as six million have been suggested (Fowler 1978, 6). Calculation of population is, at least in theory, a straightforward process. The figure is given by multiplying the totals of all sites of different types occupied in the region at one time by a factor for the population for each type of site. In practice, however, none of these figures can be easily determined. Our knowledge of the range of types of site in use in the Iron Age is still very poor (see below), but even if it is eventually possible to define an adequate hierarchy of settlement types, there seems little hope of producing reliable estimates of the numbers of each type. Hampshire has one of the areas most intensively covered by aerial photography in England (Hampton and Palmer, 1977; Palmer 1978), and one of the few areas, the parish of Chalton, subjected to intensive field survey (Cunliffe 1973). The results from these surveys give an impression of the density of settlement in the Iron Age, and show how inadequate are any conclusions not based on intensive survey. Even in these areas, however, the proportion of the total that has actually been recovered cannot be estimated, so that any figure must necessarily be only a minimum. Nor is it any easier to estimate the number of sites of any type in contemporary use at any time. The error factor in radiocarbon dates is still too wide to allow certainty in such questions, and archaeological chronology based mainly on pottery is no better. Indeed, with the longer time span now envisaged for the whole of the Iron Age ceramic sequence, individual phases within it are now greatly extended: whereas, for example, saucepan pottery was thought only a few years ago to have lasted for perhaps a century, it can now be seen to have been in fashion for three or four hundred years. It becomes increasingly unlikely that sites dated only by the presence of such pottery could all be contemporary. It is also necessary to estimate the average population for sites of each type, but little research has been devoted to this end. It would, for instance, be possible to test the constants derived from ethnographic work for the relationship between the population and domestic floor area (Cook 1972), though their relevance is open to question. In any case, floor area can only be determined by excavation, and structures are notoriously difficult to find on the chalkland sites of Hampshire. Even where structures are found, their functions may be unclear, though with adequate recovery of associated artefacts, some progress is possible as Ellison (1978) has shown for Bronze Age sites in Sussex. What is ideally needed is an estimate that can be based on surface evidence, which would almost certainly mean relying on area. The size of an enclosure seen in an air photograph, or of a surface scatter of pottery, can be calculated with little problem, but the difficulties of deducing the relationship between such figures and population are enormous. Another line of argument has been proposed by Cunliffe (1978a, 15), who suggests that since the total maximum area of arable land farmed in the Chalton area in the late Iron Age was more extensive than that of the 17th century AD, population figures may also have been greater. Such a comparison is tempting, but it too involves many unknown factors: it assumes, for instance, comparable rates of sowing, input of labour, fallow periods, manuring, and resulting crop yields, as well as a similar degree of self-sufficiency in subsistence supplies. None of these assumptions can as yet be justified.

Reliable population estimates are obviously desirable, but in view of all these difficulties it may be more appropriate to focus attention not on absolute numbers but on rates of population change, for in such a calculation some of the unknown variables would cancel each other out. It would not be necessary, for instance, to have a figure for the population for each type of site, since it would be realistic to assume, at least as a working hypothesis, that the same type of site had the same average population in different periods. This principle clearly needs careful application, since it is already

known that morphologically similar sites such as hillforts, or banjo enclosures, changed their social type through time. The question of proportion of sites of any one type actually identified need not arise, since again it would be realistic to assume that the rate of recovery would remain constant for a single type of site. It might be, however, that certain periods were under-represented because their characteristic site types were less likely to be recovered by present survey methods. This, however, is a question that is amenable to positive research rather than the untestable speculation that would accompany the search for absolute numbers. The estimation of population change would be a realistic field of study, and indeed there seems little reason to doubt the general validity of the rapid increase of the Iron Age population that is now envisaged (Cunliffe 1978a, 15; Fowler 1978, 6).

Settlement

Despite a lot of work and a large number of excavations, it is doubtful that the full range of settlement types, and the full extent and density of the settlement pattern have been discovered. The areas that have been examined in any detail are geographically limited by the modern necessity to concentrate on threatened sites: thus Andover, Basingstoke and Winchester have received attention, as well as areas covered by the linear threats of the M3 motorway, other road projects and the gas pipeline. Other parts of Hampshire with less development have seen less work. There are, in addition, limitations to our knowledge caused by the visibility and recognition of sites only in particular geographical and geological environments. It is no coincidence that the intensive aerial survey, the East Hampshire survey and the Chalton survey have all concentrated on chalkland areas. Standing earthworks on the chalk are well-known features, and cropmarks seen from the air, revealing large ditches and pits, pinpoint other sites on similar geology. However, there may be settlements which are surrounded by only small ditches, or none at all, while pits are rare on sites dating to the very beginning and to the end of the Iron Age. Sites of this nature are only likely to be picked up by intensive field-walking or during their destruction by development. In the areas where chalk is absent — in the north-east of the county, the Hampshire basin and the Wealden region — excavation has been restricted almost entirely to sites with earthworks. It is less likely that settlements in these areas would be picked up by aerial photography or by field-walking, since the pattern of land-use is not sensitive to these techniques: it comprises forest, grassland and woodland. However, there is scope for extending fieldwork to these areas, since detailed examination of pasturelands and thorough searches of woodland may well reveal new evidence.

Another environment that could repay further work is the river valleys, especially the Avon and the Test, for although much is under grass, and gravel extraction is less intensive than in other parts of the country, the results recently achieved in the Upper Thames (Parrington 1978; Lambrick 1978), Nene (Pryor 1974; Pryor and Cranstone 1978), Ouse, Welland and Trent (Smith 1979) valleys have been of the greatest importance for our knowledge of Iron Age Britain.

These factors have undoubtedly restricted our recognition of Iron Age sites almost entirely to a limited range of those found on chalklands, and must have serious consequences for our understanding of the chronological development of the settlement pattern, for the establishment of functional differences between different types of site, and for the definition of site hierarchies. Fig. 13 shows that sites of all periods have been excavated, but that there is a serious shortage of settlements belonging to the period 1000-600 BC. Only

Periods of occupation of excavated Iron Age sites in Hampshire. Figure 13

Balksbury (Wainwright 1969), Old Down Farm (S. Davies, pers. comm.) and Winnall Down (Fasham 1978, 14) can be reliably assigned to this phase, although there are other groups of pottery which might be contemporary. This is particularly striking at a time when settlements of this period have been turning up in great numbers elsewhere in the country. It is not easy to see the reason for this lack. It is possible that we have been looking in the wrong places, for many of the sites elsewhere have appeared in the river valleys such as the Kennet and Thames, and these have been virtually ignored in Hampshire. It is possible also that the sites have not been recognised in field survey; one of their characteristic traits, especially in Berkshire, is a crude flint industry which has not yet been recognised in Hampshire. Either this material was not in use in the county, in which case one of the diagnostic features of the period is missing, or survey work has not yet been carried out in the right areas. It is, of course, also possible that the sites have been located and have not been recognised, but in view of the recent interest in the pottery and settlements of this period, it seems unlikely.

Site classification

From the 6th century onwards there is considerable evidence of settlements, but our understanding of it is still poor. There can be little doubt that we are only just beginning to appreciate the full density of settlement, and still have little idea of its true distribution or of the range of types that existed. In particular, sites without substantial pits and ditches such as that on the Wallington military road (Hughes 1974) may well be seriously under-represented. Classifications of settlement types have usually been based on simple

morphological criteria, by which settlements might be divided into hillforts, palisaded sites, enclosures and open sites, with perhaps banjo enclosures recognised as a specific sub-type of enclosures. Such a scheme is far from satisfactory, for it is not only simple and probably not exhaustive, but also includes categories which can vary greatly in function. The term hillfort in particular is a dangerous one, for even in a restricted area like Hampshire, it can include sites of very different function. Even one such site can vary greatly in function through time: Danebury, for instance, becomes a densely settled site with many industrial activities and an important social and economic role (Cunliffe 1971; 1976a), while Balksbury reverts from a settlement with many storage buildings to an ordinary agricultural one no different from a small enclosure. Site morphology coupled with surface collection and excavation may ultimately provide the functional classification of sites that is clearly needed, but such an ideal is a very long way off yet. For the moment it would certainly be possible to devise a more comprehensive classification of sites known to us, using a wider variety of features such as shape, size, chronology and location, as well as the traditional presence or absence of an enclosure. This line has already been followed by Perry (1966; 1969), and will undoubtedly form one of the aims of the current intensive aerial survey. At present, for example, it is possible to distinguish various different types of enclosure (fig. 14):

1. Banjos, as defined by Perry (1966). Their location in connection with trackway systems has always suggested a link with stock control, but excavated examples such as Bramdean (Perry 1972), Blagden Copse (Stead 1969), Micheldever Wood Site R27 (Fasham 1978, 3-11) and Owslebury (Collis 1968) suggest actual occupation beginning in the saucepan pottery phase (c. 3rd to 1st century BC) and continuing into the Roman period. These interpretations need not in fact be contradictory; the sites could have fulfilled both functions at once, or they might have been constructed as stock enclosures perhaps for seasonal use and become the centres of permanent occupation as the population and settlement pattern expanded.
2. Large circular ditched enclosures, typically 100m. in diameter. Examples such as Little Woodbury (Bersu 1940) and Gussage All Saints (Wainwright and Spratling 1973; Wainwright and Switsur 1976) have been excavated in neighbouring counties, but there are examples in Hampshire (Perry 1969) of which Meon Hill (Liddell 1933; 1935) and Chilbolton Down (Schadla-Hall, forthcoming) have been excavated. Again the dating evidence is reasonably consistent; the earliest pottery from all the sites is the same, perhaps dating to the 6th century, and they continue in occupation for several centuries, only Gussage extending to the final phase of the Iron Age and beyond.
3. Large D-shaped ditched enclosures. Two examples have been excavated recently, at Old Down Farm, Andover, and Winnall Down (Fasham 1978, 14-17). These should be distinguished from the more regularly rectangular enclosures such as Portsdown (Bradley 1967) or Bishopstone, Sussex (Bell 1977), which may be settlements located in one field of a pre-existing field system. The two Hampshire examples have similarly massive ditches. Related occupation at Winnall Down had a C14 date of 560 ± 100 bc, while at Old Down Farm the enclosure may be of similar date or perhaps earlier.
4. Large rectangular enclosures approximately 100m. by 50m. To this class can be assigned Cowdery's Down (Millett, pers. comm.), Ructstalls Hill (Oliver and Applin 1978) and Portway. These all appear to belong to the Late Iron Age and Early Roman phase.

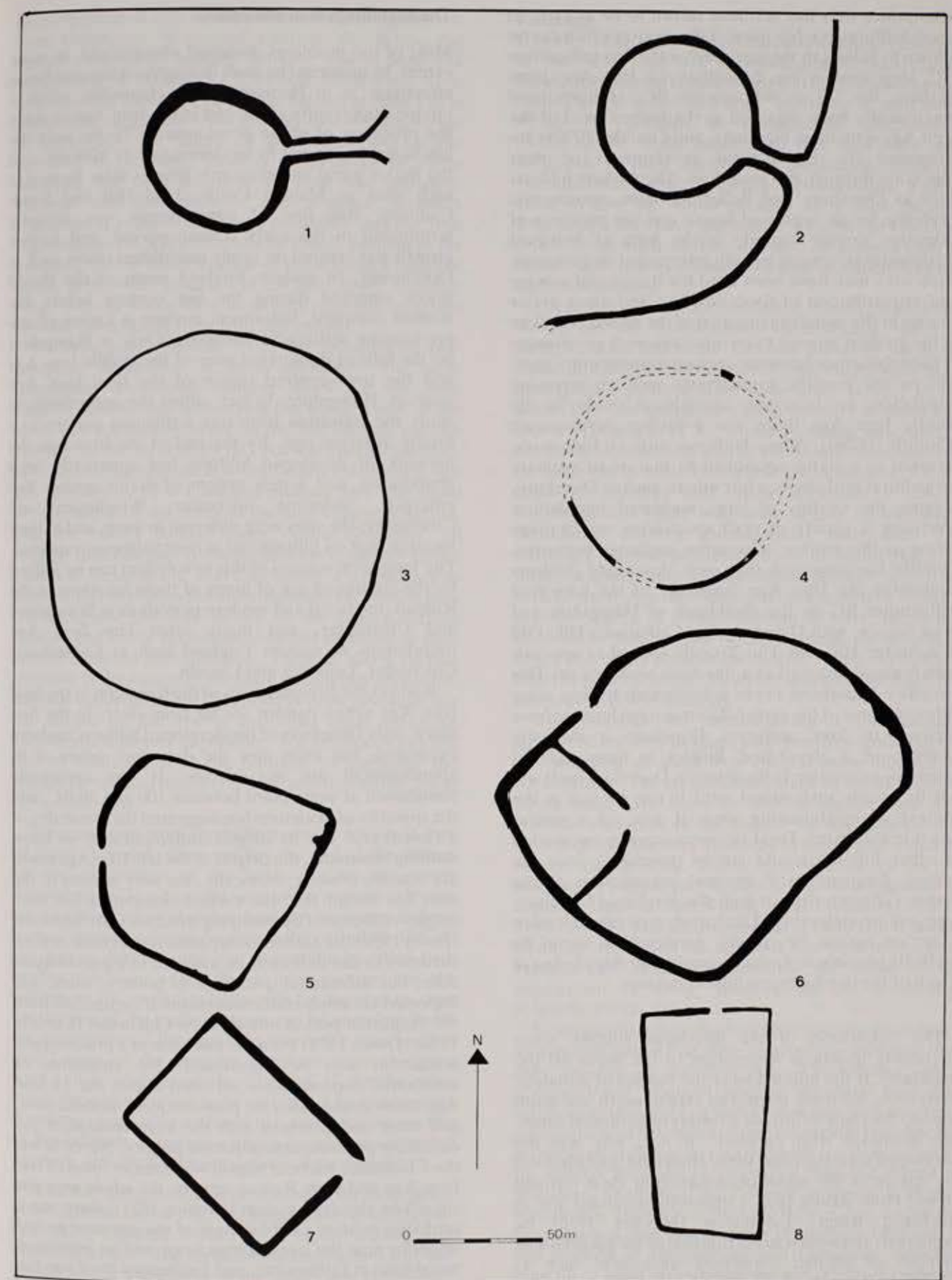
These four examples show a considerable degree of chronological and functional regularity between sites of similar size and shape, and offer a reasonable basis for assuming that a sensible pattern can be discerned. Like much of the Hampshire evidence the scheme concentrates on chalkland enclosures, but it by no means exhausts the possibilities. Further types could easily be suggested and tested. This testing need not involve excavation, but a programme of intensive surface collection, possibly based on probability sampling, could yield sufficient evidence to indicate the chronology and activities of a site.

Internal site organisation

One feature of Iron Age settlements that has received little attention, either in Hampshire or elsewhere, is their internal organisation. Where excavation has been extensive enough, it is clear that certain structures and features may be deliberately grouped. Such a physical organisation can be seen, for instance, in the successive plans of the interior of Danebury, where circular structures, rectangular structures and pits all show deliberate zoning within the site. On a smaller scale, the middle Iron Age phase at Winnall Down (Fasham 1978, fig. 6) shows a clear division between areas given over to houses and to pits. Such patterning has been noticed on a number of sites, but far less consideration has been given to the traces of other activities such as metalworking, textile production, crop processing and butchering. All these are activities which it is reasonable to assume were carried on in particular areas of the site; at Gussage All Saints, for instance, metalworking was restricted to a small area inside the entrance, and at Abingdon (Jones 1978) crop processing was carried out in the houses and the rubbish from it diminished as distance from the houses increased. By plotting the concentration of rubbish, or by-products from these activities, their location could be established. It has been suggested, for example, that weaving was practised in one very restricted area of the Winnall Down site (Fasham, pers. comm.). On sites where evidence of structures is lacking, they could perhaps be identified by patterns of domestic rubbish surrounding them. Already interesting variations in the deposition of seed and bone remains in different types of feature and across the site have been noticed, though as yet these patterns are not clearly understood.

Site hierarchy

The hillforts, being the largest and most noticeable surviving features of the Iron Age landscape, have received the greatest attention. The excavations of the 1930s concentrated on the nature and chronology of the defences, while those of the past decade at Danebury, Balksbury and Winklebury have stripped large areas of the interiors and, together with excavations elsewhere in the country, have transformed our knowledge of the function of these sites. As has been pointed out above, it can now be seen that the term hillfort includes sites with widely differing functions. Although none of the



1, Micheldever Wood; 2, Bramdean; 3, Meon Hill; 4, Chilbolton Down; 5, Winnall Down; 6, Old Down Farm, Andover; 7, Winnall Down; 8, Ruetstalls Hill.

Types of Iron Age enclosures in Hampshire. Figure 14

Hampshire sites has yet been shown to be as early as those hillforts in other parts of the country which can be shown to belong to the early part of the first millennium BC, they were in use throughout the Iron Age, from perhaps the 7th or 6th century BC. Hillforts have traditionally been regarded as the highest level of the Iron Age settlement hierarchy, and Cunliffe (1976b) has suggested the hypothetical development of their functions through the Iron Age. The earliest hillforts such as Danebury and Balksbury show considerable evidence for an organised layout and the provision of extensive storage capacity in the form of four-post rectangular structures usually interpreted as granaries. Such sites may have been used for the central storage and redistribution of food supplies, and are a major change in the social organisation of the region. It will be of the greatest interest to correlate this with any changes in the subsistence economy seen on contemporary sites, and to test possible explanations such as increasing population, or decreasing agricultural yields. In the middle Iron Age there was a further development (Cunliffe 1976b). Some hillforts, such as Balksbury, reverted to a status equivalent to that of an ordinary agricultural settlement, while others, such as Danebury, became the centres of large nucleated populations practising a variety of craft specialities and perhaps acting as the centres of complex exchange networks. Cunliffe has suggested that such 'developed' hillforts dominated the Iron Age landscape of the later first millennium BC on the chalklands of Hampshire and West Sussex, with Danebury, St. Catharine's Hill, Old Winchester Hill and The Trundle spaced at approximately equal intervals in a line from west to east. This attractive hypothesis needs considerable testing, since although some of the early hillforts can be shown to have declined in later centuries, Danebury is the only example of a 'developed' hillfort to have received extensive excavation in the interior. Danebury itself will not be totally understood until it can be put in the context of neighbouring sites, if any, of a similar function and status. Total, or even extensive, excavation of other hillforts would not be necessary; since the nature, frequency and internal organisation of the features characteristic of both the developed Danebury type and the undeveloped Balksbury type can, at least to a certain extent, be reliably predicted, it would be perfectly possible to devise a sampling strategy to test to which of the two types any hillfort belongs.

The hypothesis of the developed hillfort raises interesting questions in relation to the areas off the chalkland. If the hillforts were the centres of economic territories, did these territories extend north and south beyond the chalk to include a variety of ecological zones, like medieval strip parishes? If not, why was the developed system limited to the chalkland, and what was the nature of the social organisation in these lowland areas? How should such a massively defended site as Buckland Rings, Lymington (Hawkes 1936) be explained, and what was the function of the considerable number of smaller earthwork enclosures such as Chilworth Ring, if indeed they are right to be assigned to the Iron Age? In fact, our ignorance of the Iron Age off the chalk is remarkable. The amount of work devoted to the Iron Age in Hampshire is considerable, but the apparent ease and attraction of digging on the chalk have led to other areas being shamefully ignored.

The beginnings of urban society

Most of the problems discussed above could, to some extent, be answered by work in neighbouring counties as effectively as in Hampshire, but Hampshire offers a unique opportunity at the end of the Iron Age to study the processes of urban development. To the west the landscape continued to be dominated by hillforts, and the major social and economic centres were located in such sites as Maiden Castle, Hod Hill and South Cadbury; this line of development was abruptly terminated in the early Roman period, and further growth was centred on newly established towns such as Dorchester. In eastern England north of the Weald towns emerged during the last century before the Roman conquest, but almost nothing is known of any pre-existing settlement hierarchy. Only in Hampshire do the hillfort-dominated zone of the middle Iron Age and the town-centred region of the final Iron Age overlap. Hampshire, in fact, offers the opportunity to study the transition from one settlement pattern to a totally different one. By the end of the Iron Age the network of developed hillforts had apparently been abandoned, and a new system of major centres had emerged, including Silchester, Winchester and Chichester; the sites were different in form, and in their location, not on hilltops but in river valleys or estuaries. The long-term success of this new system can be judged by the continued use of many of these locations in the Roman, medieval and modern periods as at Winchester and Chichester, and many other late Iron Age foundations in eastern England such as Canterbury, Colchester, Leicester and Lincoln.

And yet the circumstances of the transition to the final Iron Age urban pattern are far from clear. In the first place, only Danebury of the developed hillforts has been excavated, but even now the date and nature of its abandonment are not certain. It was apparently abandoned at some point between 100 and 50 BC, and the quantity of skeletons has suggested the possibility of a violent end. For its alleged contemporaries we know nothing. Secondly, the origins of the late Iron Age towns are equally obscure; ironically, the very success of the sites has meant that the earliest occupation has been largely obliterated by overlying structures. At Silchester (Boon 1969) the earliest occupation is uncertain, and no earthworks can definitely be assigned to a pre-conquest date, but substantial quantities of pottery, coins, and imported ceramics confirm substantial occupation from the Augustan period onwards. At Chichester (Cunliffe 1978c, Down 1978) even the existence of a pre-conquest settlement can be questioned. No structures or substantial deposits have yet been found; the 14 Iron Age coins could easily be post-conquest introductions, and there are problems with the interpretation of the definitely pre-conquest imported pottery. Nevertheless the Chichester harbour region was a major focus of late Iron Age and early Roman activity; the whole area was cut off by the dyke system (Bradley 1971); there was a probable military establishment of the conquest period under or near the later Roman town, and an associated naval base at Fishbourne; and Fishbourne itself was the scene of unparalleled investment in architecture in the proto-palace and palace. The Chichester area was also the central point in the distribution of the coins of Tincommius and Verica. The recent discovery of the Iron Age temple with its Roman successor on Hayling Island (Downey *et al* 1978) adds a further element to this

concentration of activity. There is a striking comparison with Colchester in general location, the dykes, the temple, the early military activity, and at least the suggestion of substantial Iron Age occupation. It is unlikely that this occupation was located at Selsey as is sometimes suggested, since the only basis for this notion is apparently the hoard of gold coins sporadically revealed by erosion; there is no evidence at all to associate the gold hoard to an Iron Age *oppidum*. Despite the difficulties of the evidence currently available, it remains a distinct possibility that the Iron Age occupation will eventually be found, perhaps in the area of greatest concentration of pre-conquest material in the north-west quadrant of the later town; certainly other Roman towns have been very reluctant to reveal definite evidence of their Iron Age origins.

At Winchester (Biddle 1975) the immediately pre-conquest occupation is again uncertain. The large rectangular earthwork running down the hill from Oram's Arbour and underlying the western part of the town was apparently in use in the 2nd century and the first half of the 1st century BC, but was then abandoned. Subsequent occupation is not definitely established, but the probability of a Claudian military fort, the rapid development of the town in the post-conquest period, and the town's Roman name, *Venta Belgarum*, all suggest that this gap in the occupation is illusory rather than real. Once again, as at Chichester, it is necessary to face the fact that even the most intensive excavation may fail to reveal the true nature of the town's earliest phases, and every opportunity should be taken to shed further light on this problem. There is also a further problem in the nature of the early rectangular enclosure: internal occupation has occasionally been revealed, but the nature of the site is such that more extensive excavation is almost impossible. The origins of this site and its relationship to the hillforts, in particular the alleged developed hillfort on St. Catharine's Hill, are at present obscure.

The transition from the hillforts to the oppida is thus far from clear-cut, since neither the end of the former nor the beginnings of the latter can be adequately documented. On a minimal view of the present evidence not one of the sites of either type can be shown to have been occupied as a major centre in the period 50-0 BC. If this gap is illusory, and can eventually be filled with further evidence either for a later survival for the hillforts or for an earlier beginning for the oppida, then the decline of the earlier system can be correlated with the emergence of the latter, in which site location was based more on the need for communication along the river valleys and across the Channel. If, on the other hand, the gap turns out to be real, it will be necessary to develop a series of hypotheses to account for the decline of the hillforts, a period without developed centres of any sort, and finally the emergence of the oppida.

A further complication is presented by the emergence in the early 1st century BC of Hengistbury Head (Bushe-Fox 1915; Cunliffe 1978b) as a major trading and industrial centre. The forthcoming excavations will add greatly to our knowledge of the nature and chronology of the occupation, but it is clearly a site of a different type from those discussed above, and more reminiscent of post-Roman sites such as Hamwih. Its role in the development of urbanisation is unclear, but it demonstrates the importance of large-scale production and long-distance trade in the later Iron Age.

Exchange

It is inevitable that many of the commodities exchanged in the Iron Age are archaeologically indetectable. Strabo lists among British exports to the Continent corn, cattle, hides, slaves and dogs, but trade in such items would be difficult to demonstrate conclusively. Certainly the usual assumption that sites were self-sufficient in their agricultural production needs re-examination. Some foodstuffs were certainly traded, since oysters are found on sites away from the sea. Inland sites may have specialised in particular products, either crops such as flax or woad, or animals such as horses, but such specialisation would be difficult to show archaeologically.

Clearer evidence for exchange comes from items which can be characterised scientifically, such as pottery, stone and metal. Ceramic petrology has as yet made little impact in Hampshire since the region is more geologically uniform than some areas further to the west. The emergence of a local industry in south-east Dorset (Peacock 1973), whose products were distributed only occasionally east of the Avon, shows what can be achieved in more favourable circumstances. On the basis of typology and visual inspection it can be suggested that there was some degree of specialised production from a comparatively early date. The cordoned haematite-coated bowls of Meon Hill type have the appearance of a specialised product, and in the middle Iron Age the saucepan pot tradition shows a greater degree of standardisation in form, fabric and decoration than before, which suggests the growth of fewer but larger population centres. Work currently in hand at Southampton University will add greatly to our knowledge of this industry.

The evidence for metalworking is unfortunately sparse. Many sites produce slag from iron smithing, but the smelting of local iron ores is more difficult to substantiate. The Bracklesham Beds of the Hampshire basin must have been an obvious source, and it is possible that part of the reason for the location and wealth of Hengistbury Head lay in the rich ore deposits on the promontory. There is little evidence for the working of copper and its alloys, but the recognition of regional types of lynch-pins, as at Owslebury (Collis 1968 Pl. XII), and strap unions as at Bury Hill (Hawkes 1940, fig. 16) allows the assumption of local production. Hengistbury Head was certainly the scene of the cupellation of silver, possibly for use in coinage (Cunliffe 1978b, 41).

Geological products such as stone can also be assigned to a specific origin, but have received less attention than they deserve in the Iron Age. Quernstones are a comparatively frequent find; in the early Iron Age saddle querns occur in a variety of stones such as sarsen, greensand and limestone, but in the middle Iron Age the technological change to rotary querns is accompanied by the special selection of greensand from the Weald or Wiltshire. Shale from the Purbeck peninsula in Dorset was already exploited in the Late Bronze Age, and in the Iron Age was distributed widely in Southern England. It was worked at Hengistbury and Danebury. Another mineral of great importance was salt. There is evidence that its extraction from seawater had begun in Dorset at least by the beginning of the Iron Age, but the development of the industry around Portsmouth and Chichester harbours occurred somewhat later. The extent of the inland distribution can be traced in the appearance of briquetage, if indeed this is rightly

identified as the clay containers for salt (Bradley 1975).

Although many of these commodities remain to be studied in detail, some conclusions can be drawn. There is certainly some evidence for specialised production in the early Iron Age, but from the 4th or 3rd century onwards the picture is transformed. Specialist industries such as pottery, salt and querns develop greatly, and many of the goods show a greater degree of standardisation than heretofore. This is also the period which sees the appearance of so-called currency bars (Allen 1967) which may have served both as standard ingots of iron and as a primitive currency. It is also the time at which stone weights appear, as at Danebury, Portway, Winnall Down and Winklebury (Smith 1977, fig. 40, 7). The standardisation of goods and the interest in weighing are indicative of a new economic order in which the exchange of specialist products played a much greater role; the function of the developed hillforts in integrating this new system needs further research.

The importance of cross-Channel trade in the final Iron Age has already been mentioned, and the growth of Hengistbury Head must have been instrumental in changing the established patterns of exchange. The imports through Hengistbury can be more clearly demonstrated than the exports (Cunliffe 1978b, fig. 32), but the growth of cross-Channel trade may have led to greater specialisation in products for export, and to a less important role for the internal network of exchange. Collis (1968) has described the changing economic links of Owslebury, receiving its imports first through Hengistbury and then through more distant connections to the north-east. In the last century of the Iron Age Hampshire is situated on the borders of three different currency zones, the Durotriges to the west, the Atrebates to the east and the Trinovantes or Catuvellauni to the north, all using different systems of coinage. It remains to be seen to what extent this pattern is reflected in other economic ties.

The quantity of material from the Iron Age in Hampshire is large, but the amount which can be used as hard evidence for answering any of the questions posed above is a small percentage. Much of the work has been merely repetitious, and there can now be little excuse for emptying further pits just to recover the pottery. What is now needed is a research plan which will assign priorities to the various problems and devise appropriate and efficient strategies for answering them. Much of the work will be survey, either on the ground or from the air; much can also still be learnt from artefact studies in museums and laboratories. Excavation will undoubtedly be needed, but it is likely to be devoted to different sorts of sites, in different regions, and of a very different nature from what has gone before.

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Hampshire: The Roman Period

David E. Johnston

In this paper I propose to review our progress, particularly in recent years, in understanding the Roman period in Hampshire, and to discuss the directions that future research, fieldwork and excavation might take. However, this seems an excellent opportunity to pay tribute — even if in only general terms — to the prodigious effort by individuals that has been made in this field; for although Hampshire must have a higher density of professional archaeologists per square km than anywhere else in the United Kingdom, yet this is a relatively new phenomenon. The bulk of the work has been done by amateurs — both those who operate within the structure of our numerous societies, and those individuals who have since turned professional. I say this with feeling, as it was in this latter capacity that I made my first contribution to the archaeology of Roman Hampshire. A full catalogue of recent Roman excavations[1] would leave no space for comment, and I apologise to those who might feel that their work is inadequately treated in what must inevitably be a personal selection. I am greatly indebted to numerous individuals who have supplied me with information and discussed it with me; responsibility for the following interpretation of it is, of course, mine.

The Romanisation of Hampshire

"With the Roman occupation the student of Hampshire antiquities enters on the historic period" wrote Haverfield in the first full survey of the subject (1900). A history of Roman Hampshire must be written (if indeed it can be written at all) almost entirely from archaeological evidence; the documentary sources tell us, on the whole, about the rest of Britain, inviting us to follow Haverfield and see Hampshire in that context as "an ordinary and average bit of Roman Britain".

The occupying forces of AD43 — or more precisely the IInd Legion, commanded by the future Emperor Vespasian — presumably entered Hampshire from the direction of Chichester, where the temporary store-base at Fishbourne marks the meeting of land forces and supporting fleet. The next verified base is near Wimborne, at Lake Farm, close to a reasonably suspected temporary naval store-base at Hamworthy. What happened in between? The necessary road-link past Southampton and into the New Forest apparently never materialised, and one may guess that, in territory that was hostile compared to the friendly shelter of Cogidubnus' Sussex, the fleet may have been considered a safer life-line; we consider below the possibility of a lost naval base at Bitterne. At this point Suetonius tells us (*Vesp.* iv), "Vespasian . . . subjugated the Isle of Wight". We need not assume a military victory, as a diplomatic surrender is equally likely — to join the 11 'kings' whose surrender is recorded on Claudius' triumphal arch. Danebury was refortified apparently at this time, and there is now evidence (below, p. 53) to suggest that part of the army struck north-westwards in the direction of Cirencester. So far, however, the characteristic V-shaped ditches of intermediate temporary fortifications have eluded us, though from time to time our expectations have been aroused (e.g. at Fareham, (cf Hughes 1976, 59) and, on more than one occasion, at Winchester and Silchester).

Winchester, already a major tribal centre, was soon adopted as the capital of the new administrative region and named *Venta Belgarum*. The first defences followed soon, probably about AD60-70, a bank and ditch whose full extent is not yet known. The rectangular grid of streets is of about the same date, and the Forum and Basilica (just to the north of the Cathedral) were constructed between this time and the end of the century. By the end of the second century larger and more extensive defences were built, first an earthen bank (in part a remodelling of the older one) and finally a stone facing a decade or two later. The resulting town of 144 acres (58 ha) was to be the fifth largest in Roman Britain.

To the north lay the adjacent administrative region of the Atrebates, whose new capital at Silchester, *Calleva Atrebatum*, had a pre-Roman ancestry matching that of Winchester. This ancestry accounts for the un-Roman, polygonal plan that must have been deliberately preserved through four evolutionary phases. The second of these phases betrays an interesting miscalculation by those who had to predict the eventual size and population of their expanding community. For twenty years or so after the first earthen defences had been built a new, grandiose circuit was started; this nearly doubled the length of defences to construct and maintain, and dramatically increased the size of the town from 80 acres (32.5 ha) to 235 (95 ha). This Outer Earthwork looks, and was proved in 1978 to be, unfinished; the new street grid was extended towards these defences through building plots that were never built upon. The inevitable contraction had to wait a couple of generations, probably until the late second century, when the defences — first a bank and in the third century a wall — took the form that we can see today.

Silchester, in contrast with Winchester, has the benefit of a rural setting with no medieval occupation, excavations on a scale that we could not afford today and a fine, comprehensive account by G. C. Boon (1964). The finds, now exhibited with some enlightening models in Reading Museum, paint a picture of everyday life in a provincial Roman town that is unrivalled in western Europe. Jewellery, toilet articles and private scribbles in Latin about the day's work or an unnamed girl-friend provide the intimate details; the architecture of houses, shops, temples (even a tiny Christian church), forum and public baths illustrates the amenities of urban life that had never before been seen in Britain; and the whole is eloquent of the way that local and regional government was devolved from the provincial capital at London. For both Silchester and Winchester would have had a council, nominally of 100 *decurions*, magistrates whose ancestry was doubtless that of the pre-Roman aristocratic families. We must remember that the population, not only of the city but of the entire *civitas* or administrative region was almost exclusively British — 'Romans' only in a more general sense, and that everyone, down to the humblest peasant labourer, was registered in the lists kept by the new bureaucracy in the civitas capitals of Venta and Calleva. This is the inner meaning of 'Romanisation' and this bureaucratic control was the price to be paid for the security and prosperity of life in a Roman province. Although life in the countryside may have looked much the same as it had for centuries, everyone, whether in the villas or the peasant settlements, now felt the hand of centralised government.

A milestone (now lost) at Bitterne tells us that a road was either constructed or maintained by the CIVITAS BE(lgarum). For it was the road network that held the regions — and indeed the entire province — together. Silchester was the first major stop on the great trunk road (route 4) to the south-west, and a stretch of this, known as the Portway, can be walked today for 2¾ miles along Caesar's Belt from just south of Kingsclere to the A34 Winchester-Newbury road. Silchester marks the beginning of the carefully planned Wessex network of major roads whose surviving remains in Hampshire are well worth studying. Two examples should be noted: west of Winchester the road to Sarum (route 45a) stands proud near Farley Mount as it passes to the south of Crab Wood, and can be traced almost continuously through Bossington and beyond (below p. 53 and fig. 15), north of Andover and Tangley, beyond Conholt Park, route 43 takes a remarkable deviation of nearly 5 miles, known as Chute Causeway, to avoid a steep valley.

The road network may have been far more intricate than we suppose, comprising minor roads and tracks for particular purposes, such as moving flocks and produce to market, bricks and tiles to sites and pottery to market or to the nearest waterways. Inland waterways (including canals) are known to have been important in the rest of Britain, and at least the lower reaches of the Test and Itchen would have been navigable; moreover, New Forest pottery is supposed to have been distributed by sea. The roads, of course, connected towns and settlements, many of which had Latin names. In Wessex we have one or two names without places (such as *Brige*, which might be in the Broughton area) giving rise to the notion of planned settlements that 'failed'. Conversely, not all the road crossings gave birth to settlements; for instance, the major cross-roads at Andover has produced confused and rather inadequate evidence for the market centre that we would expect to have served the villas and settlements around it. In such places economic forces were at work that we do not yet understand. Half-way along the road from Chichester to Silchester was the small town at Neatham, now known from excavations. Here the major road crossed a minor east-west road; whether or not this last extended far in either direction is uncertain, or even whether it was part of a lost road connecting Winchester and London. Neatham is proving a useful example of the 'small towns' of Roman Britain. It had its own defences (a fence and shallow ditch) and a sprawling settlement of about 50 acres (20 ha), houses and workshops of timber and stone, and a cemetery. Like the main road, its history began in the first century AD and continued into the fifth. (Millett, 1975). It has, however, made archaeological history with the first recorded lavatory seat in Roman Britain (Redknap, 1976).

Economically, such small towns served a double purpose: they were both market centres for the surrounding countryside, and official collecting-points for the *annona*, or tax, which was collected in kind. These two functions reflect two new economic pressures on the countryside in the Roman period. First, the increasing population of the new towns comprised merchants, shop-keepers, artisans and consumers, all of whom consumed, processed and distributed the output of the farms without actually producing it. Second, the conversion of a rural surplus into tax combined with the need to supply the towns required greatly increased productivity. The appearance of the villa estates is understood to be the response to this, the 'landed gentry' in this case being either the pre-Roman aristocracy of the region (often the decurions mentioned above) or nouveau riche capitalists with an enhanced business sense and a taste for 'Roman' standards of comfort. These may seem brutally modern terms and ideas, but they represent powerful new elements in the economy and the structure of society. The key to understanding the villas is not so much the apparatus of baths, mosaics and wealthy houses, (in which Hampshire is particularly rich), but large estates, comprising arable fields, grazing land and forest, with out-buildings, corn-driers and mills. In this our understanding is sadly deficient, for only one estate, that of the Twyford villa, has been properly defined, though there is now plenty of evidence on the ground, in the museums and in the pages of the Hampshire Field Club *Proceedings* and other journals. Typical of the functional nature of the villas is the 'aisled building' that is ubiquitous in Hampshire and the Isle of Wight — a large barn-like building with two rows of internal posts and a cart-sized entrance. The recently excavated example at Sparsholt is one of many that show how these buildings were partly residential, partly used for storage and almost 'industrial' operations, and how the need for privacy impelled the occupants to erect temporary partitions that 'fossilised' into permanent walls eventually producing ground-plans that effectively conceal the original form. These were the primary farm-houses, and often remained so: in others, such as Sparsholt, they were the beginnings of a complex of buildings about a farmyard, evolving into large villas of the 'courtyard' variety.

It is reasonable to see the smaller villas in a 'satellite' relationship to the larger ones, which will have been the collecting-points for the *annona*. We have a classic case just over the border at Hambledon, Berks (Cocks 1921), and doubtless others in our area, such as Stroud, as interpreted by Appelbaum (in Finberg 1972, 174-7). Here the very large bath-house and the probable shrine look like the focus of an estate or group of farms, with ample accommodation for equipment and personnel in the aisled building. On the other hand, the very limited granary space implies that most of the cereal produce was moved and stored elsewhere. The complex included a possible shrine, while elsewhere its Christian counterpart, an estate-church, is implied by the Appleshaw Hoard of Christian pewter vessels, found near Weyhill (Engleheart 1898, 7-20). The 'estate' in question may well be the large 'Andover Group' of villas that possibly extended as far south as Sparsholt, and included the unusual site at Fullerton (D. Whitehouse, forthcoming). This was a winged corridor house with a mill-stream and mill, but apparently no farm buildings. The mill presumably served the estate, and the miller was either self-employed or a tenant of an unknown landowner, private or Imperial. There is no clear evidence for Imperial ownership in Hampshire, although Appelbaum has tried to identify it at Clanville; this is probably mistaken, as his structural links with the others in the group are tenuous and the supposed Imperial inscription (Engleheart 1898, 2) may well be a reused milestone, as at Rockbourne.

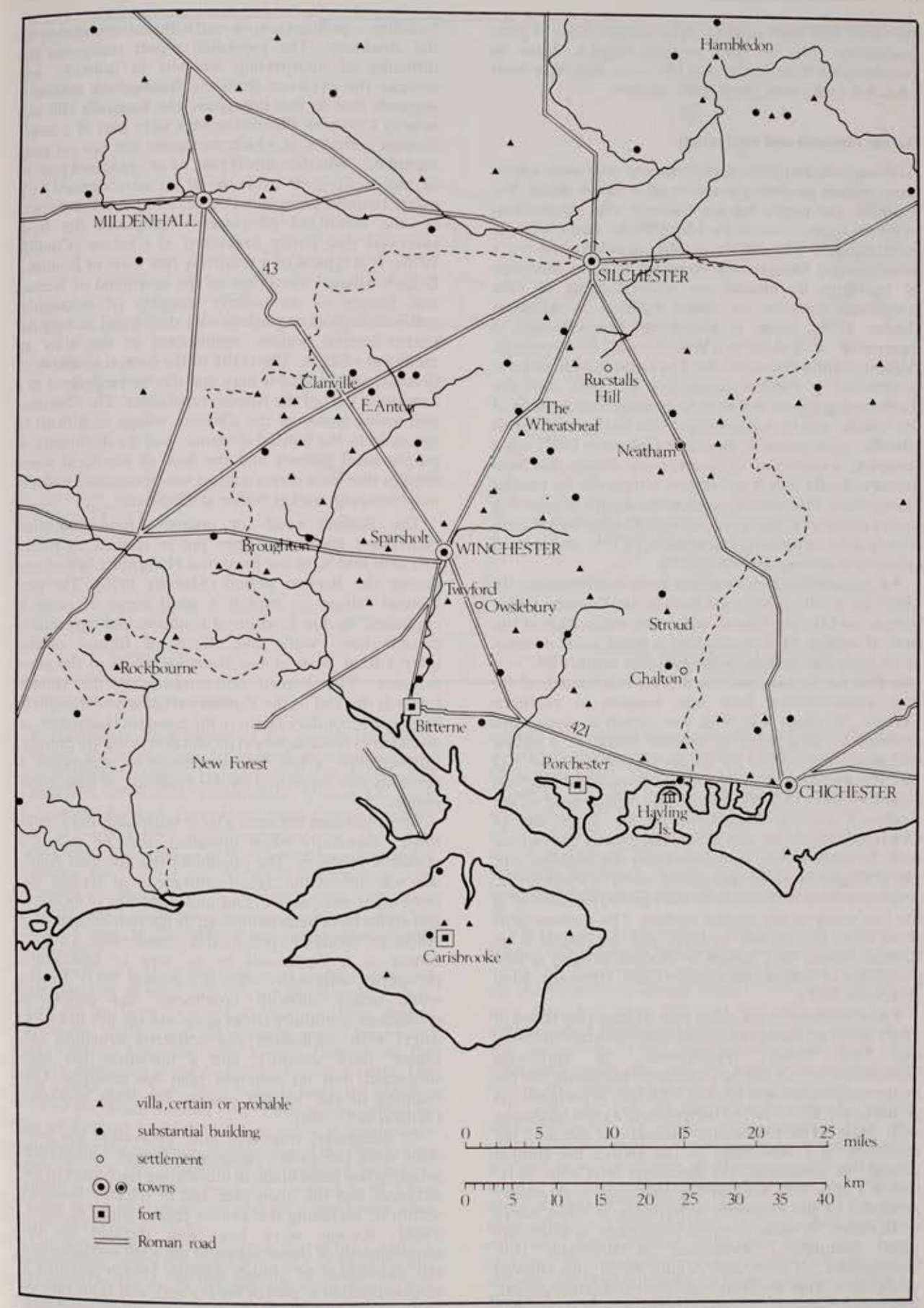
One aspect of the villas that we have not yet tackled successfully is their relationship with the purely 'native' settlements that must have supplied much of the non-resident labour at peak times. Here again current work

is amassing topographical evidence that is only just being assimilated. Roman fields are being field-walked, surveyed and excavated, and settlements studied in detail. The M3 (with its proposed extension) and the new gas pipeline have both compelled us to examine settlements near Basingstoke, Micheldever and Kings Somborne. But the most extensively excavated settlement is that at Owslebury, where the evolution of a complex of field boundaries, enclosures and trackways has been traced from the 3rd century BC to the 4th century AD. Physically, the Roman occupation made little visible impact on the settlement at first — only the increase in Samian pottery marking the passage of time. By the end of the first century, however, the enclosure ditches and trackways were no longer being maintained, and by the beginning of the second even the cemetery was abandoned. How typical this is of the whole of Hampshire we shall know only when the settlement evidence from other sites is fully reviewed, but it could imply some change of land management and perhaps the effect of the new villa estates. A revival at Owslebury in the 4th century is matched by evidence of this period from many other sites in Hampshire, showing that rural settlements were flourishing then, alongside the villas in their late flowering.

The countryside of Hampshire must have felt fairly secure in the third century, especially when news filtered through from the continent of economic crisis and barbarian raids. Even so, inflation was mounting and the economy, even in Britain, was far from healthy. Moreover, villas and undefended settlements within reach of the south coast were finding themselves increasingly at the mercy of pirates and organised raiding parties. The threat came principally from southern Scandinavia and the Low Countries and included the ancestors of the later Saxon settlers. So in AD 283 Rome appointed Carausius, himself of barbarian origins, to the command of the Channel fleet with the commission to clear the seas of pirates. Within three years Carausius was master of the Channel and both coasts, reputedly enriching himself by collusion with the pirates themselves. At this point Britain appears once more — briefly — in the mainstream of Roman history; for in AD 286 Carausius declared the independence of Britain and part of Gaul with himself as joint Emperor with Maximian (Western Empire) and Diocletian (in the East). Seven years later Carausius was murdered by his second-in-command, Allectus, and the regime was doomed. Carausius' brief rule is commemorated by a remarkable gold coin very recently found in mysterious circumstances in a Southampton garden; and the bronze coin of Allectus found in the Sparsholt villa reminds us of the panic that must have been felt throughout the region in 296 when messengers reported that the Imperial forces had eluded the rebel fleet off the Isle of Wight, had landed (at Lepe, or perhaps Bitterne?) and were marching inland towards Winchester. The critical battle took place somewhere near Basingstoke, and Allectus took horse towards London only to be hunted down and killed.

It is rare for a historical event to leave its identifiable mark in the archaeological record, and rural Hampshire is no exception. In fact, the visible remains of the Carausian episode comprise the first examples of the "Saxon Shore Forts" — a chain of coastal defences from Portsmouth Harbour to the Wash that was developed and strengthened for a century or more. Portchester certainly was a Carausian foundation, although — in common with others in the system — its precise function is still a mystery. Landward communications and lateral links between forts seem to have been weak or non-existent, and it is hard to see how the forts could have operated as bases for a patrolling fleet. The impregnable defences seem almost irrelevant, though the massive walls, bastions and gates of Portchester are the most impressive Roman remains in Hampshire. The excavations, now being published (Cunliffe 1975-7), have given us a detailed account of a specialised community in the closing years of Roman occupation. Immediately after the Carausian episode the military buildings were carefully dismantled — a sign both that the revolt was over and probably that the seas were, for a while, safer. The occupants, who now included women and children, must have formed a peasant militia and caretaker garrison. In about 340, however, the fort was recommissioned with a regular military garrison that survived for some 30 years before being withdrawn — or perhaps moved to a fortified site at Bitterne. This last is still a mystery, though it seems that in its final phases the promontory tip was fortified with a wall and towered gateway like a Saxon Shore Fort, a rudimentary 'town' of civilians sheltering outside it under the protection of the enigmatic 'Outer Earthwork'. Even the move from Portchester to Bitterne is merely a hypothesis based on the unproven suggestion that Portsmouth Harbour was already silting up fast. Before we leave the Saxon Shore Forts we should note that remains of another have been detected under Carisbrooke Castle (Rigold 1969) where the observant eye can still find them.

The succeeding phase at Portchester shows the establishment of a non-Roman garrison of mercenary troops, apparently of Germanic origin as evidenced by their sunken-floored huts (grubenhaüser), their grass-tempered pottery and other significant pieces of equipment. Here they are the link to the succeeding Saxon and early medieval phases, so we must turn briefly to consider the defensive precautions taken elsewhere. The 'Saxon conquest' was certainly not a blaze of pillage and bloodshed, but rather a complicated pattern of settlement and immigration. The late Roman cemetery at Lankhills, Winchester, (Clarke 1979) is the key not only to Winchester but to other towns in late Roman Britain. By now the urban communities were compelled to ensure their own defence, both by refortification and by contracting mercenary garrisons of Germanic troops — an alien element in an insecure community. At Winchester a large group of distinctive graves shows that they formed a discrete and doubtless privileged caste of soldier-settlers. In Silchester, too, there may have been such a force in the final years before the site was abandoned. The towns thus formed a series of fortified strong-points in a landscape increasingly vulnerable to mobile raiders and would-be settlers. Elsewhere in Britain (and indeed in Europe) a grant of land seems often to have been part of the contract, a thought that brings us to the vexed question of the end of the villas. Hampshire, unfortunately, has little to contribute to the debate. Certainly, none of the villas was burnt to the ground at this time, and it is more likely that (as Martin Biddle has attempted to demonstrate at Twyford) the estate continued to be cultivated even though the villa buildings were abandoned. The Sparsholt villa sheds a little light on this; the residential and farm buildings fell derelict and in one case were robbed for building stone, the walled courtyard was maintained as a stock-yard, and a large



Roman Hampshire.

Figure 15

timbered hall built nearby. Who occupied this is pure guesswork; but we can at least suggest, from its proximity to Winchester, that the estate may have been awarded to the new, immigrant, settlers.

Recent research and excavation

Although the historical skeleton above may seem a little bare, efforts are being made to fill it out in detail. For example, our region has seen several 'villa' excavations in recent years — two in the Isle of Wight, and at least six in Hampshire (the precise number depending on one's terminology). Most have been incomplete, but the range of buildings to extend our understanding of villa complexes includes an aisled building at Kimpton (Dacre 1976), baths at Braishfield (unpublished), a water-mill at Fullerton (Whitehouse, forthcoming). Although limited in scale, the Twyford excavations have established a Flavian origin for the villa, and the forthcoming report will include an important analysis of the 'estate' and its relationship to the Manor and Parish (Biddle, pers. comm.). Sparsholt (Johnston 1972) was a complete excavation of a relatively simple but well preserved villa that may become a type-site for central Hampshire. This activity reflects the wealth of sites — a recent count of 'villas' gave 108 with 49 other buildings in a study area comprising Hampshire, I.O.W. and parts of adjacent counties (Johnston 1976).

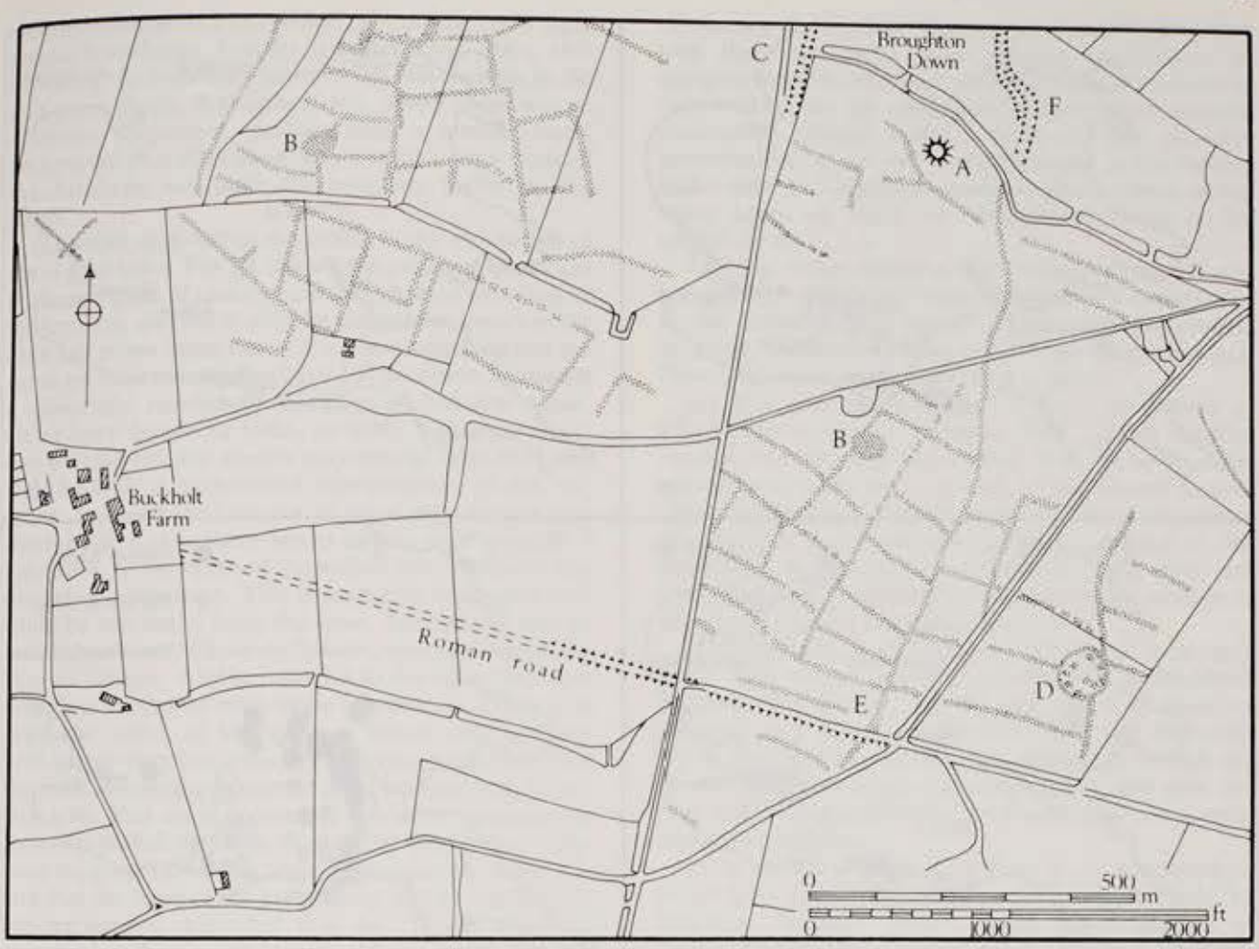
An outstanding site, mistaken by its first excavator (in 1903) for a villa of unusual form is the Romano-Celtic temple on Hayling Island, still under excavation at the time of writing. It is outstanding in many ways: it began as an Iron Age temple in the mid-first century BC — a rare find for Britain; indeed, it is considered one of the best authenticated Iron Age temples in northern Europe. In about AD 60 it was rebuilt in stone, and reached its final form (a circular shrine in a sacred enclosure surrounded by an ambulatory) around AD 100, but was derelict and probably demolished less than a century later. Significantly, it was within sight of the Roman Palace at Fishbourne on the other side of Chichester Harbour, and its building phases correspond well. In other words, it was probably the principal cult site of Cogidubnus, the presumed owner of Fishbourne, which was built in the early Roman period and altered at the beginning of the second century. The copious finds show close continental contacts, and the temple in its Roman phases (the largest in Roman Britain) is best paralleled in central and western Gaul. (Downey, King and Soffe 1978).

Rural settlement is a study that is occupying teams in many areas of Hampshire, especially around Andover, the Test Valley, Basingstoke, the north-east Hampshire/Surrey Border, southern Hampshire and the projected extension of the M3. This last, in particular, is giving us our first view in Hampshire of a rural landscape with villas. The Owslebury excavations pursued the evolution of a settlement to the end of the Roman period; its excavator has described it (Collis, pers. comm.) as 'a villa without the buildings' — a salutary reminder of the economic importance of these native settlements. A more compact settlement subsequently (and completely) excavated at Rucstalls Hill, Basingstoke, (Oliver and Applin 1978) also showed occupation from the Iron Age into the Roman period, but with a break of 150-200 years before reoccupation in the late 3rd century, occupation of a different character; this consisted of a recut enclosure ditch and a single building — perhaps a stockyard with accommodation for the stockman. The published report recognises the difficulty of interpreting one site in isolation, and reviews the evidence from the Basingstoke region; it suggests that at this late phase the Rucstalls Hill and nearby Common Plantation sites were part of a larger Roman complex of which the centre has not yet been identified. Whether this is part of an organised pattern of native sites, or evidence of an unrecognised villa estate remains uncertain. A contrasting rural settlement on the downland of eastern Hampshire has been surveyed and partly excavated at Chalton (Cunliffe 1976). It is typical of a relatively rare form of Romano-British 'village' identified on the downland of Wessex and Sussex — an orderly complex of rectangular cultivation-plots or gardens with streets and rectangular timber-framed houses, reminiscent of the 'tofts' of medieval villages. The rarity of the form is probably an illusion, and indeed it may one day be recognised as a consistent part of the Roman rural scene. The economic and social status of the Chalton village is difficult to assess from the limited evidence; but the dominance of purely local pottery and the lack of non-local wares implies that little direct contact was maintained with the neighbouring market centre at Chichester.

The Roman need for intensive food-production mentioned above has been put in context by recent research into land-use in central Hampshire before and during the Roman period (Murphy 1976). The pre-Roman failure to exploit a good range of crops is explained as due to cultural tradition and agricultural conservatism, while the effects of Roman official intervention have at last been identified in the plant remains. The known deterioration in the climate towards the end of the Roman period is now thought to be only a secondary factor in the trend (in Hampshire, as elsewhere) towards wheat production in the 4th century. Furthermore, a late Roman change to pastoralism is certainly not supported by the evidence, at least in our region.

The difference between a large settlement and a 'small town', especially when unwalled, may be merely a semantic problem. The possibility that the East Anton site was one of the 'failed settlements of Wessex' has been mentioned above. Our understanding of its nature and status have been hampered by the redevelopment of Andover, though its potential is considerable, a market centre at a crossroads in an area of agricultural prosperity with many villas (Champion 1973). Rescue work under difficult conditions has established settlement continuity (from grain storage-pits to a corn-drier) with enclosures and scattered structures (M. Dacre, pers. comm.), and a tile-works has been suspected; but no coherent plan has emerged. One building of the 3rd-4th century has been excavated (Wilson 1972, 348).

At Silchester, relatively little excavation has been done since the earlier campaigns, though considerable progress has been made in elucidating the phases of the defences and the town plan and of selected buildings within it, including the church (summarised in Boon, 1964). Recent work has been dictated by the requirements of conservation of the walls and gates and the assessment of plough damage (which included a re-examination of part of the Forum); and at the time of writing the amphitheatre is under excavation, again with a view to conservation (for summaries, see *Britannia* 7-9, 1976-8 and 10, 1979 forthcoming). The walled town



Intensive study area near Broughton.

Figure 16

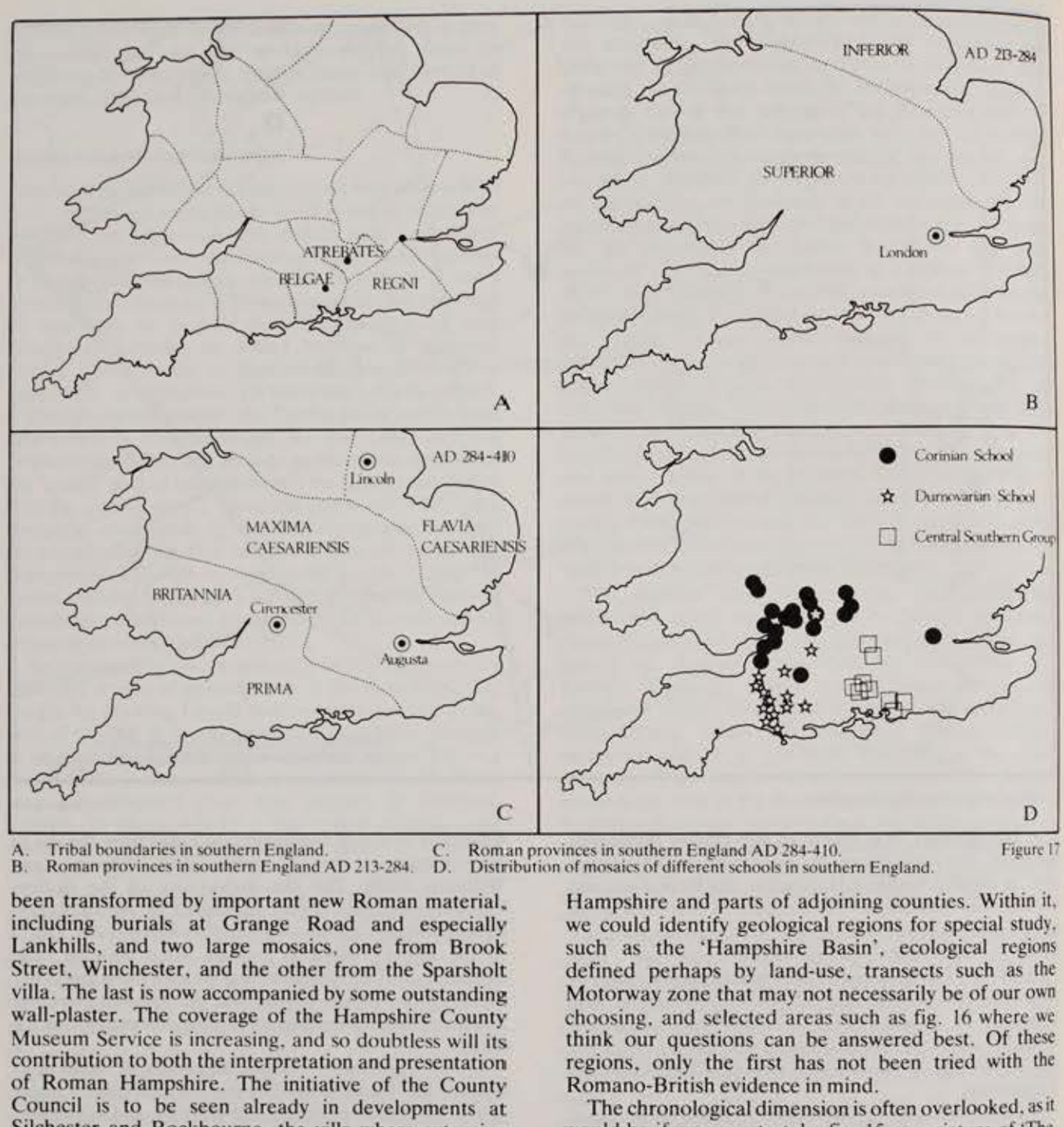
is in Hampshire, in a salient of the county boundary; however, the *territorium*, or immediate administrative area, is divided between Hampshire and Berkshire, and is relatively unstudied. Fortunately, a start has been made on this by the Calleva Field Study Group, a survey that is admirably complementary to the new excavations. Excavations at Winchester (summarised in *Britannia* 1-9, 1970-9 and 10, 1979 forthcoming, and discussed in Wacher 1975, 277-88) have continued annually under contrasting rescue conditions. And yet our knowledge of the interior remains disappointingly fragmentary.

A major advance in the history of Hampshire is our understanding of rural industries in the Roman period. Attention has been focussed on two industries, that of the 'coarse' pottery and the manufacture of bricks and tiles. Pottery kilns are now known throughout the County, especially in the eastern and western parts. The New Forest kilns have been famous since the pioneer work of Heywood Sumner (1927) that is now joined by that of Fulford (1975). This last study is particularly valuable for the economic significance of the New Forest kilns vis-a-vis the competitive Oxfordshire potteries. Equally significant in this respect is the work by M. Lyne on the Alice Holt potteries and their marketing area (Lyne and Jefferies 1979).

Our second important industry is that of brick and tile manufacture, again throughout the region. How far this was served by the use of clamps, rather than kilns, is still unknown, though the former are suspected at, for instance, Curdridge, Andover and in the Isle of Wight. The north and west at least of our area was apparently served by itinerant tilemakers, to judge from the use of relief-patterned tiles (Lowther 1948, Johnston and Williams 1980). But the importance of the Botley-Fareham area has been emphasised by the important excavations at Crookhorn Lane (Goodburn 1976, 366-7) of tile kiln(s), clay-pits and an aisled building. The essential study of the marketing area for these and other products has barely begun, but the combed markings and the ceramic petrology have great potential for such a study.

There is one more industry that deserves mention — that of salt. Richard Bradley has pursued this for many years; his recent paper on salt-working and settlement on the Hampshire-Sussex border (1975) was described in a review (Cleere 1977) as 'the only paper by an archaeologist which pays more than passing attention to the economics of the salt industry, and deals very effectively with the use of salt as a consumable commodity within a balanced dealing economy'.

Finally, the role of the Museums should not be underestimated. In recent years, unnoticed by the archaeological public, there has been a considerable amount of re-excavation of Museum vaults and store-rooms. An unexpected cache of Silchester material has come to light in Winchester, including one of the most interesting finds from the site — a curse tablet inscribed on lead. Southampton Museums have also been involved in two recent rediscoveries — the proposed recovery of a lost milestone and other inscribed stones at Bitterne, and re-examination of one of the two lead ingots from Bitterne, which disappeared after discovery in 1918. In Winchester City Museum, the displays have



A. Tribal boundaries in southern England.
B. Roman provinces in southern England AD 213-284.
C. Roman provinces in southern England AD 284-410.
D. Distribution of mosaics of different schools in southern England.

Figure 17

been transformed by important new Roman material, including burials at Grange Road and especially Lankhills, and two large mosaics, one from Brook Street, Winchester, and the other from the Sparsholt villa. The last is now accompanied by some outstanding wall-plaster. The coverage of the Hampshire County Museum Service is increasing, and so doubtless will its contribution to both the interpretation and presentation of Roman Hampshire. The initiative of the County Council is to be seen already in developments at Silchester and Rockbourne, the villa where extensive excavations are at last being backfilled, but where the museum and the newly conserved portions will continue to attract interest.

Future Directions

We must now pass briefly to a consideration of the future, and some suggestions for the direction of new work.

Clearly, we must set limits to our study, and those limits should be dictated not by the convenience of local government, but by the material itself. There are two dimensions to this, the horizontal and the vertical, the spatial and the chronological. In spatial terms, we should be looking for the geographical distribution of evidence, and for patterns in it. If a natural area does not immediately present itself, we can take an arbitrary area such as that of fig. 15 which contains the whole of Hampshire and parts of adjoining counties. Within it, we could identify geological regions for special study, such as the 'Hampshire Basin', ecological regions defined perhaps by land-use, transects such as the Motorway zone that may not necessarily be of our own choosing, and selected areas such as fig. 16 where we think our questions can be answered best. Of these regions, only the first has not been tried with the Romano-British evidence in mind.

The chronological dimension is often overlooked, as it would be if we were to take fig. 15 as a picture of 'The Roman Period'. Patterns, territories and regions will change, period by period, like the phase plans of any individual site. This demands sound and comprehensive dating evidence, and it has to be admitted that for the Roman period this evidence is inadequate, insufficient to produce the period maps that ought to accompany this particular summary. Nevertheless, this admission makes us face the real issue: the existence, throughout the Roman period, of three *ancient* regions, or 'units'.

The first of these is the *tribe*, both pre-Roman and Roman (fig. 17A). The larger pre-Roman tribes, the Atrebates and Belgae, are well known; if smaller units within these had names, we know nothing of it and have to award our own, as Cunliffe has done (1974) using the evidence of settlements and artefacts. The two tribal names quoted above were adopted for the new Roman *civitates*, whose boundaries will have been defined at the time quite precisely. We do not know how long their

identities lasted into the period, nor do we know their precise boundaries. I prefer to follow Rivet (1964, 140) in placing the boundary between the two civitates at the mid-point by the Wheatsheaf Inn, where there was an extensive settlement, perhaps even a temple, but I understand that Jill Greenaway's forthcoming study of the Atrebates will place the boundary further to the north.

A smaller unit within the civitas is the *territorium* of the capital town. For Silchester, the evidence must exist in the complex of undated earthworks and extra-mural settlements, and this is why the current field-work in the area is of prime importance. It is often remarked that the *curia*, or local senate, ideally of 100 decurions, demands a substantial number of dwellings of decurion status, either town-houses or villas, or both. Where are they? For Winchester, the answer may emerge from the work of MARC 3. A provisional interpretation of the evidence, to which the Director of the survey is in no way committed, is this: there seems to be a zone, roughly 3 km. deep, to the north of the walled town, more or less devoid of settlement. This presumably is an area that could be cultivated from the town. Beyond this lies an arc of almost continuous settlement, passing through the Worthy villages. And beyond this lie the fields that were doubtless cultivated from those settlements. There is at least one 'villa', in Micheldever Wood, and sensitive field survey here confirmed by excavation has identified the most interesting feature of all: a series of long fields, 70m wide, that are in contrast to the 'celtic' character of Romano-British fields in the rest of Hampshire. One must suppose that these were professionally surveyed, and that the hand of the bureaucrat, and by implication the territorium, extended thus far. To the south of Winchester, the pattern is not so clear, partly through lack of intensive survey and partly because the pattern is distorted by the exceptionally large villa estate of Twyford.

The third ancient administrative region, and the largest, is the *Province*. Simply to think of Britain as 'the Province' is to ignore the chronological dimension again. Initially, *Britannia* was the so-called 'Lowland Zone', roughly up to the Foss Way, with London superseding Colchester as the emerging capital. From AD 213 the island was divided into two provinces, (Fig. 17B) and our region was in *Britannia Superior*, with the capital still at London. From AD 284 Britain was divided into four, and later five, provinces, grouped as the Diocese of The Britains, itself part of the Gallic Prefecture. Our region fell now in *Britannia Prima* with a new capital, Cirencester. The relevance of this shift to the archaeology of Hampshire has never yet been considered. Bureaucratic control of the countryside must have remained strong, and so we might expect a new 'orientation' of the rural economy, reflected, for instance, in the evolution of the road system, or in the marketing patterns of identifiable products such as bricks and tiles. Here, unfortunately, we leave the realm of fact for that of speculation. What, for instance, became of the crops grown in the fields of Roman Hampshire? Did they no longer pass via London to the northern garrisons but via Cirencester to the west? Or overseas? How far were the economies of these smaller provinces self-contained? Is it significant that the activities of one mosaic 'school' (Johnston 1977, and Fig. 17C&D) seem to coincide with the provincial boundaries?

It will be clear by now that, although we have plenty of detailed information about Roman Hampshire, the job of piecing the jig-saw together has barely begun, and that there are large areas of pure speculation. In comparison with other periods surveyed in this volume it may well be that the acquisition of more information by excavation should have a relatively low priority; nevertheless, more will be forthcoming in the future, and it may be helpful to draw attention to three of the many areas on which we should concentrate in the search for it.

The first is the period of the Conquest of AD 43 and immediately thereafter; south Hampshire is a void so far in the archaeological record of legionary movements between Fishbourne (Sussex) and Lake Farm (Dorset). However, there are already three pointers:

(a) If a new interpretation of the road pattern at Cirencester is correct (Johnson 1979, 42, 52) the first road to the new fort there came from Silchester. This would have taken part, at least, of the Second Legion close to Danebury, which might be one of the twenty *oppida* that Suetonius tells us were captured in this campaign. It was certainly refortified at this time, and Cunliffe is now suggesting that certain human remains in pits could possibly be battle casualties.

(b) Route 421, from Silchester to Bitterne, is an early road that turned abruptly northwards at Wickham towards Winchester, leaving the last few miles to Bitterne as a minor service road (Soffe and Johnston, 1974). The lack of a known road westwards through the New Forest may imply that permanent roads were not laid at this stage, probably because the fleet was a more satisfactory lifeline.

(c) It seems possible that there is an unrecognised naval base still to be found at Bitterne. It would be mid-way between those found or suspected at Fishbourne and Hamworthy in Poole Harbour. An early imperial interest in the site is shown by the lead pigs of Vespasianic date and Cotton (1958, 14) suggests 'a port with riverside wharves', in Period II (Flavian). That there was ever a Period I, as early as the Conquest period, is pure speculation, though Cotton does review the material of that date and reject the possibility, in contradiction of earlier writers.

A second area where we should concentrate on the search for fresh evidence is in an attempt to assess the impact of Roman conquest on the rural communities and their way of life. It is fashionable to assume that nothing changed, and indeed this may be superficially true. But this is to misunderstand the nature of the occupation, which was essentially the bureaucratic control of the lives of individuals by means of universal registration and taxation. This may have affected the economy quite fundamentally, and this in turn would be recorded in the archaeological evidence. Here is a question that is unanswered; we must try to answer it from the archaeological evidence. The villas, of course, were a response to the new situation and the heavy demands on the productive capacity of the region. On some sites there seems to be continuity of occupation, whereas other favoured sites were reoccupied. The work at Owslebury and the Micheldever area, mentioned above, will shed some light on this continuity, as also will the current programme at Abbotstone Down which appears to be part of a rural farmstead of the very late Iron Age to the 2nd century AD. In addition an area of 'Celtic' fields near Broughton (Fig. 16) is currently being examined in detail in order to test the relationship between a ditched (and presumably pre-Roman) settlement at A and a known Roman building (B). The

sub-rectangular fields lie in distinct blocks implying either a systematic allocation of land-holding or the taking-in of new land. Those around the settlement are clearly related to it. The field boundary at C-D is more prominent than the rest and precedes the Roman road E-F that crosses it. At C it may have been remodelled to join the road, and a working hypothesis is that it formed an approach road, via a hollow way down the scarp at G, to the Roman farm or villa (?) on the lower ground at B. Fieldwalking has already found the debris of another Roman building at the edge of the enclosure, a situation possibly resembling that at Rucstalls Hill.

Finally, a third priority for research is the question of continuity from late Roman to early Saxon times. Some progress here has been made at Chalton, Portchester and Winchester. Nationally, this is a growth-point for research, especially into the fate of the rural communities in the late fourth and early fifth centuries. The most promising starting-point would probably be the villas and their estates. The latter are hard enough to identify even in the hey-day of the period, but clues can be picked up by working backwards in time from such material as charter evidence and parish boundaries. If a community continued to cultivate an estate through the fifth century and beyond, there would still be some recognisable unit in Saxon times. Continuity in the villa itself will often mean a shift from derelict Roman buildings to a sub-Roman structure nearby, of a different character. This could mean a break in the stratigraphical sequence, complicated by the paucity of sound dating evidence, coins and pottery. This was the case at Sparsholt where the dating is uncertain, but probably of the later fourth century; a ceramic link with Winchester is the occurrence of a distinctive two-handled cup paralleled at the Lankhills cemetery and by other examples at Portchester and Rockbourne. In a purely rural context such continuity will be even more elusive.

In conclusion, we must admit that we are not yet in a position to draw a coherent picture of Roman Hampshire. There is indeed plenty of information, inadequately studied, in our museums and journals. But it is not necessarily of the right kind, appropriate to the questions we ought to be asking. To admit this is not to belittle the efforts of those who are working on this, and in keeping with the spirit of this volume I have tried to pay tribute to their achievements. At this stage we must identify the problems and the questions to be asked. We must grasp opportunities as they arise. But it would be irresponsible not to have a clear idea of research priorities, should we be offered the choice of two Roman sites, for example, and the resources to excavate one of them. I hope that the suggestions made above will be of help to those individuals or groups who may one day have to make policy decisions of this kind.

[1]A comprehensive up-to-date list of excavations and sites is held by Hampshire County Museum Service's Environmental Record.

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Hampshire's Anglo-Saxon Origins

David A. Hinton

At first glance, it might seem that Hampshire is well provided with both archaeological and documentary evidence for the post-Roman period. Certainly there is more than for many other counties, most notably for next-door Dorset. Unfortunately, however, the *Anglo-Saxon Chronicle* and other records do not present a secure chronological framework for the settlement history of the county; the earlier part of the *Chronicle* has to be seen as a genealogical exercise, as a piece of dynastic history rather than as a precise narrative record of events. Antiquarian accounts which postulated that intrepid Germanic chieftains led their bands of folk either against the hostile British or (an alternative view) into deserted wildernesses in the exact years and to the specific places mentioned in the *Chronicle*, have had to be abandoned, or at least substantially modified, in the face of the archaeological evidence, some of which shows an Anglo-Saxon presence in an area long before its recorded conquest by a Cerdic or a Port or a Cynric.

Evidence for the post-Roman period continues to be increased by fieldwork and excavation, and Hampshire has been fortunate in the amount of archaeological activity that has taken place since 1960. Although many reports have yet to be written, there has been full publication of the Anglo-Saxon occupation sequence at Portchester Castle by Professor B. Cunliffe (1976), who has also produced a synthesis of the fieldwork at Chalton (1972) which led to the discovery of the important settlement on Church Down (Addyman and Leigh 1973; Champion 1977). The remains of structures similar to those at Church Down have been found in 1979 by Mr. M. Millett on a chalk ridge at Cowdery's Down, near Basingstoke. Near Andover, Anglo-Saxon features have been found at two sites, Old Down Farm (Davies 1979) and Charlton (Dacre and Warmington 1977). The work of Professor M. Biddle at Winchester is of international significance (e.g. Biddle 1973),as is that undertaken at the Saxon town site at Southampton (Addyman and Hill 1968, 1969; Holdsworth 1979).

Anglo-Saxon archaeology really began as a study of cemeteries, and they have not been neglected because of recent interest in settlements. The importance of the cluster of cemeteries around Winchester was brought out by Mrs. A. L. Meaney and Mrs. S. C. Hawkes in their study of the two sites at Winnall (1970), and Mrs. Hawkes has also excavated a cemetery at Kings Worthy (ibid. 1-2). Recently published is the large cemetery at Droxford in the Meon valley (Aldsworth 1978). The report by Dr. G. N. Clarke on the Roman cemetery at Lankhills outside Winchester, which has implications for the Anglo-Saxon period, is in proof (June, 1979) and that on the site at Portway, near Andover, is close to completion (Cook, Dacre and Warmington, forthcoming). Smaller groups of burials at Meonstoke (Devenish and Champion 1977) and at Buriton (Cunliffe 1975) have already been published. A large cemetery was found in 1976 outside Christchurch (now in Dorset, but in Hampshire until 1974), and has been excavated by Mr. K. Jarvis; a late sixth-seventh-century date is proposed (Jarvis 1979). Of comparable date is a cemetery at Bedhampton on the Portsdown ridge, excavated by Mr. D. J. Rudkin (Webster and Cherry 1975, 222; 1976, 161; 1977, 208). These very substantial additions to the corpus of data will sharpen our perspective of the period, especially when considered together with re-evaluation of the Isle of Wight cemeteries (Arnold 1979), and when more of the reports are available in full it will be possible to re-open such questions as racial affinities, links with other parts of England and the Continent, sex ratios, age expectancy, and many other matters.

Despite all the new evidence from Anglo-Saxon sites, great difficulties remain about the dating of objects, and thus of the contexts in which they were found. A current dispute concerns the applied disc brooch excavated at Portchester, which Mr. M. Welch considers to belong to the second half of the fifth century (in Cunliffe 1976, 206-11), but which Dr. V. I. Evison places in the first half (1978, 269-70). This relatively minor divergence in dating proves to be crucial in interpretation of the history of Portchester. Dr. Evison's date would support Cunliffe's belief that the site remained in continuous occupation (1976, 3, 301), Welch's allows an interlude of at least fifty years between the fort's abandonment as a Roman defence and its first Anglo-Saxon period use (Johnson 1977, 67). This problem at a particular site of course mirrors the much wider problem of continuity generally. At another walled Roman settlement, Winchester, reconsideration of the pottery has led Biddle to see uninterrupted occupation in some vestigial form through the fifth, sixth and seventh centuries, despite the proven abandonment of many areas within the circuit (Biddle 1975, 303). No site in the town has yet revealed later fifth- or sixth-century structures however, and since the pottery is even more difficult to date than the Portchester brooch, it remains very possible that there was an interlude during which Winchester was to all intents and purposes deserted. Recent work at Silchester has not altered the established view that there was effectively no occupation after *c.*A.D. 450 (Boon 1974, 74-82; M. Fulford, pers. comm.). By contrast, Welch has opened the possibility that one of the very few Anglo-Saxon objects at Hampshire's other walled Roman site, Bitterne, may be as early as the late fifth century in date (in Cunliffe 1976, 205). The object is a bronze disc brooch incised with ring-and-dot, a type of which there is another from Grave 36 at Droxford (Aldsworth 1978, fig. 29). Dating at this cemetery is also a matter of debate, for Dr. Evison ascribes a small number of the objects there to the first half of the fifth century (1978, 269), whereas Aldsworth prefers later dates, at least for their deposition (1978, 170-1).

Some of the Droxford objects dated by Dr. Evison to the early fifth century are considered by her to be 'military belt accessories' (1978, 269). This introduces another topic of current debate, for not only is dating a problem, but so also is the interpretation of the objects, and the social role of their owners. Who were the soldiers to whom military fittings might have belonged? Were they Teutons invited to the island as mercenaries to defend the British from the threats of Pictish, Irish and Frankish pirates, men like Hengist and Horsa in Kent, who overstayed their welcome and usurped their hosts' territory? Biddle has argued that there was

already a strong Germanic element in the population of the Winchester area in the fourth century (1976, 325-6), because of the nature and content of some of the graves at Lankhills, which he would have as those of fourth-century *laeti*, irregular soldiers recruited from outside Britain. They would have been augmented in the fifth century by the arrival of mercenaries and their families by invitation of British leaders, demonstrated by the fifth-century use of Portchester. By this argument, political control of the Hampshire basin passed out of British hands only in the sixth century. Biddle argues that there was much more cultural integration and assimilation than used to be thought possible (1976, 337). That there are many Anglo-Saxon cemeteries on Hampshire's central chalklands, which are totally lacking near Silchester, may simply show that there were immigrants living in the Winchester district who were subordinate to British control, not that a British king in the Silchester area was gazing impotently southwards at territory lost to an alien presence.

Biddle's view of Hampshire's history in the fifth and sixth centuries has not gone unchallenged. The evidence at Lankhills for Germanic *laeti* is very slight (Dickinson 1977, 407-8), and it is difficult to attribute a specifically military, and thus mercenary, role to such objects as the Portchester bronze brooch. The traditional story that the British and the Anglo-Saxons were hostile to each other may have been over-stated in the past, but an uneasy acquiescence in each other's presence may be a more acceptable view than that which sees large numbers of Anglo-Saxons as having been invited to provide protection to the British. Cunliffe has argued that the south coast round Portchester was settled by Anglo-Saxons early in the fifth century, and that it was a 'treaty-area' in which they were reluctantly tolerated by their British neighbours, who did not wish for any closer contact (1973, 132). This is an extension of a case made for a similar area of Sussex, the Ouse-Cuckmere region, which seems never to have had much usage in the Roman period, and was therefore left open to the immigrants by the fifth-century British (Welch 1978, 24-5). The parallel is not exact, because there is more evidence for Roman settlement in the Hampshire coastal district than there is in the Ouse-Cuckmere zone. It also of course requires early fifth-century dates for the Portchester discoveries, which as we have seen are not beyond debate. Nevertheless it shows that a different interpretation of the material is possible. A mercenary does not necessarily lurk behind every belt fitting.

The argument that the British retained their control much longer than used to be thought possible also depends on recent proposals that parish, county and other boundaries may perpetuate areas originally delimited in the pre-Saxon period, and that, for example, Roman Silchester survived long enough as a political entity for some of its administrative function to pass to the Anglo-Saxon state that eventually came to control the area (Biddle 1976, 334-5). The shire boundary deviates northwards as though deliberately to by-pass Silchester, and the parish boundaries describe an approximate circle of about 4.5 kilometre radius centering on the walled area, leading Biddle to suggest that they represent the survival of the area of Silchester's Roman *oppidum*. The kink in the county boundary is the result of alterations in 1894, however (Dickinson 1977, 408, citing Gelling 1976, 808-9), when a new parish, Mortimer West End, was detached from Stratfield Mortimer (VCH, IV, 31) so that the 'circle' round Silchester is a nineteenth-century development. Far from representing a fossilized Roman *oppidum*, 'the local administrative landscape evolved at a time when Silchester was no longer an important centre' (Gelling 1976, 809). Indeed the local boundaries could suggest that the parish of Silchester results only from the sub-division of a large Anglo-Saxon estate which otherwise comprised the various parts of Stratfield, a name suggesting land that for a long time remained unsettled (ibid., 808). This however is a problem that cannot be fully considered until the county has a place-name survey of the kind recently completed for Berkshire (Gelling 1974-6), and in course of completion of Dorset (Mills 1977). There is a typescript (Gover 1961), but it needs to be up-dated and given a critical commentary.

In looking for an *oppidum* round Silchester, Biddle was influenced by recent work on the Continent, where such territories can be demonstrated as having surrounded Paris, Cambrai etc. (Lombard-Jourdain 1972, 377-84). A similar *oppidum* might be seen surrounding Winchester, perpetuated by the great Chilcomb estate owned by the minster, traditionally since the seventh century (Biddle 1976, 333). The original extent of this territorial unit is unfortunately not certain. By the time that its boundaries are recorded, for the tenth century, it did not surround the city, a block of land on the northern side being owned by the bishop (Biddle (ed.) 1976, 257). This could result from a division of the original estate (Finberg 1964, 216), but the uncertainty illustrates the difficulties that arise from attempting to derive information from documentary sources about a period earlier than the date they were written. Even allowing that the estate did once surround the entire city, however, it remains far from the regular, symmetrical circuit that an *oppidum* might be expected to have had. The argument that this uneven perimeter is partly caused by the deliberate exclusion of the estate that must have surrounded the Roman villa at Twyford would be more convincing if the Chilcomb estate did not contain within it the sites of two other Roman villas, at Sparsholt and Crawley (Schadla-Hall, 1978, Map 13). More relevant are two episodes in the *Narratio Metrica de Sancto Swithuno* written at Winchester by Wulfstan the Cantor between 992 and 994, which relate to a miracle at, and a pilgrimage to, points three miles from the city (Biddle (ed.) 1976, 257), three miles being the radius of an *oppidum*. Campbell printed this text without discussion (1950), but it may well be that the two episodes were included merely to add verisimilitude; Wulfstan would have known from Continental saints' lives that the three-mile point was significant (Lombard-Jourdain 1972, 382-3). He knew and used the works of Continental writers, some of whom stayed at Winchester where their influence was particularly felt; one of them was Lantfridus, who was the author of a prose life of St. Swithun (Lapidge 1972, 93-4). Clearly the evidence that the Chilcomb estate perpetuates the late Roman authority of Winchester is far from conclusive, although it is not a modern illusion like that postulated for Silchester.

The possibility that Roman, and perhaps in some cases pre-Roman, administrative or other land divisions could have survived the disruption of the early Anglo-Saxon period and be recognizable in later documentary or physical evidence is an exciting one, but, as we have seen, has to rely on data for which other interpretations are often equally permissible. A further example of this is the case that has been made for Wiltshire and north-

east Dorset that the location of a very high proportion of the known pagan Anglo-Saxon cemeteries on or close to parish boundaries shows that those boundaries were already in existence, and that many parishes derive from Roman estate units, retained as legal divisions even though the sites of the farms from which they were worked had been abandoned (Bonney 1976). In Hampshire only half of the located cemeteries are on parish boundaries (Biddle 1976, 328), and there is good reason to think that their siting was dependent on topography rather than on established boundaries, since most are on ridge-top sites overlooking valleys (Aldsworth 1978, 179). This suggests a settlement pattern based on territories dictated by the valleys, with the parish boundaries showing later sub-division into permanent estate units (ibid.). The possibility of the survival from Roman or pre-Roman times of groups of estates, as argued by Professor G. R. J. Jones (1976), would of course be diminished by this explanation of the origin of Saxon estate patterns. The argument is that 'multiple estates' were taken over by the Saxons from the British and that the system of render described in Ine's laws and other sources was based on the Roman tax-paying administrative system; it survived in many parts of Wales and the north (Sawyer 1978, 188). But it may be that it was the concept of the *tributum* that was taken over and adapted, not necessarily the actual land units. In Sussex, for instance, Dr. P. Brandon has argued that Jones is wrong to see Celtic 'clachans' behind farms on the Archbishop of Canterbury's South Malling estate (1978, 158-9), but that they should be seen as having evolved from Saxon expansion into the Weald from the ninth century onwards.

In Hampshire, there may even be positive evidence that estate units were completely re-arranged, leaving no trace in the land-holding pattern of their previous existence. Jones has pointed out that Liss is a place-name derived from the Welsh *llys*, meaning court, or chief place of a district, implying a major estate centre there, which subsequently became a unit within the royal estate focussed on Odiham (Jones 1978, 63; Gover 1961, 59). The matter is slightly more complicated than Jones states, because there were two vills named Liss in the Middle Ages, Liss Turney, a detached part of Hefedele hundred which was merged with Odiham hundred in 1316 (VCH, IV, 66), and Liss Abbas, so named because it was held by the abbess of the Nunnaminster at Winchester (VCH, I, 473). Only the latter is entered in Domesday Book, and it was in Meonstoke hundred. There may well have been a British *llys*, the memory of which survived long enough for the name to be passed into written records. But the territory administered from it was subsequently divided between several different hundreds, and its ownership was fragmented. It is only the name which shows what its original role may have been, for there was no continuity of that role beyond some unknown date prior to 1086 when the Domesday Book was made. The British estate was carved up, and its size cannot be reconstructed from the Anglo-Saxon evidence, nor did it affect the Anglo-Saxon administrative arrangements in its area.

It may also be noted at this point that Wickham, a place-name derived from a combination of the Latin *vicus* and Old English *-hām*, is a parish established only in the twelfth century, and that the town is right on the edge of its hundred (Hare, 1975, 9-10). 'Wickham' names have been given prominence recently as being sites which may have been centres of Roman administrative units (Gelling 1978, 67, 73), although Professor P. H. Sawyer has shown that *-hām* in such cases may refer to an area, not to a specific place (1978, 159). In any case, Mrs. Gelling stresses that none of the 'Wickhams' seems to have been the centre of a Saxon multiple estate, and the Hampshire example certainly does not seem to have been a place of any particular significance in its area. As in the case of Liss, its former role may have been perpetuated long enough to be reflected in its name, but the reality of that role was completely lost in subsequent re-organisation of territorial units. Potentially of greater interest is the regeneration of three Roman settlements, perhaps markets on trade routes, at East Anton, near Andover, at Neatham, near Alton, and below present-day Havant (Hughes 1976, esp. 71). Alton, Andover and Havant were all royal vills in the Anglo-Saxon period, and Andover and Neatham gave their names to hundreds. There is a hint here of some form of continuity, but not necessarily based on Roman land units. Revival of a market role is notable.

The only other claim for a pre-Saxon origin of land administration in Hampshire is based on data in the eleventh-century Domesday Book, a source so full of interpretational quagmires that any theory based on it alone is easily muddied. Six entries in the Hampshire folios record estates which had territory both on the mainland and on the Isle of Wight. Another was Amesbury in Wiltshire, ancient royal demesne, to which Lyndhurst also belonged until it was taken into the New Forest. Jones saw in this (1961, 231) 'a faint echo of that far flung control of territorial resources which the construction of the metropolitan sanctuary at Stonehenge must have entailed', since Amesbury is near that remarkable monument. Could such control really have survived not only the entire first millennium B.C. and the Roman era, but also the impact of the Anglo-Saxons? Apart from the initial settlement disruptions and the ravagings of Stuf and Wihtgar recorded in the *Anglo-Saxon Chronicle*, any administrative links between estates on Wight and the mainland on the west side of the Solent were likely to have been broken in the seventh century when Wight was 'given' to Sussex by King Wulfhere of Mercia (EHD, I, 654). It is unlikely that they would have been re-forged subsequently by Caedwalla of the West Saxons, whose motive for conquest of the island seems to have been to acquire new lands to disperse among his men (Sawyer 1978, 52). An alternative explanation is that the holdings recorded in the eleventh century resulted from allocations, purchases and gifts made to provide a resource in which the head manor was itself deficient. The Hampshire mainland manors are all close to the New Forest heathlands, and although some would have had good meadowland by the Avon, all would probably have lacked ploughland, for which the southern part of Wight was excellent (Darby 1977, 127). Ringwood and Stanswood, which from their sizes seem likely to have been dependent on unnamed *caputs* on the island, had probably provided timber and hunting rights for the estate. The existence of small scattered parcels of land on Wight available for distribution in the late Saxon period is shown by such charters as Ethelred's confirming two hides at *Meolocdune*, *Heantune*, and *Beadingaburnan*, and one at *Stathe*, to Winchester New Minster (Finberg 1964, No. 132; Sawyer 1968, No. 842). These holdings are not separately mentioned in Domesday, so it is not known if they were assessed as

part of Winchester's mainland holdings, or as part of the bishop's large Cauborne manor on the island, or had been annexed by secular owners (VCH, I, 518). The case of Amesbury is discussed elsewhere (Hinton 1979), but it remains to stress again the difficulties of using later sources to interpret earlier patterns, particularly in an area where traditional links were upset by the creation of the New Forest. It should also perhaps be noted that it is hardly correct to say that all six of the relevant Hampshire manors are 'protected by nearby hillforts' (Jones 1961, 230); none of the modern centres of the named places is within three miles of a hillfort, and none has a hillfort within its parish. In an area as prolific in hillforts as southern England, this is certainly not a positive correlation.

The continuity problem is not of course one in which discussion is confined to estate units and mercenary soldiers. Names like Liss and Wickham which contain Latin or Welsh elements may have been formed in periods when British and Anglo-Saxon folk were in contact, so that British words passed into English place-names. Other examples of names which like Wickham combine Latin and Old English are Havant, Funtley, Boarhunt and Mottisfont (from *funta*, spring, fountain) and Portsmouth (from *portus*) (Gelling 1977, 67-86). When these hybrid names were formed is not of course known, so that they are not positive evidence of fifth-century Anglo-Saxon settlement; the cluster of five in south Hampshire looks significantly close to Portchester, but many of those outside the county do not coincide with areas where there are known fifth-century cemeteries (e.g. Portland in Dorset, Teffont and Fovant in Wiltshire). The names do not seem to be related in enough cases to known fifth-century settlement areas to be used as evidence of such settlement in their own right. It is difficult to see whether their scattered distribution is significant of anything other than haphazard occasional use of loan words. Mrs. Gelling has tried to see a pattern in the *port* names: Portsmouth denotes an important Roman harbour, guarded by *Portus Adurni*, anglicized as Portchester. Poole, 'the next natural harbour to the west', derives from the Old English *pōl*, there being no Roman harbour there worth a name (Gelling 1978, 78-9). Sailors however will testify to the intervening harbour at Christchurch/Hengistbury, and archaeologists will be reluctant to accept that Hamworthy in Poole harbour was not a major Roman site. Significant Roman use of Portland should be anticipated from Mrs. Gelling's thesis, but none has yet been located. Again a merely haphazard use of Latin loan words seems indicated.

As we have seen, Wickham names have been much discussed recently, as has the *-hām* element which they contain. Although *hām* can refer to a whole area, it is more usually used with the meaning 'homestead', referring to a particular place. *-hām* names are now seen as being among the earliest of Old English names, and are thought generally to pre-date *-inga* and *-ingaham* names which used to be given precedence. There are only nineteen *-hām* names in Hampshire, and they are widely scattered (Aldsworth 1973/4, 34-8); like the loan-word names, they cannot be shown to relate exclusively to the known areas of early Anglo-Saxon settlement. It seems unlikely that they can give useful evidence about the fifth and sixth centuries. Place-names will probably prove more helpful in elucidating settlement patterns for the mid and late Saxon periods. An example is that names in *-worth* may be evidence of secondary settlements (Cox 1975-6, 66), which fits well with Cunliffe's view of the Chalton area, where on archaeological evidence he sees the development of new sites in the mid Saxon period, as at Blendworth and Idsworth (1972, 5).

Two further examples of Hampshire *-hām* names deserve consideration because of recent archaeological work. In the first case, *-hām* is perhaps used in its wider sense. Christchurch was originally Twineham, a name derived from *(aet) Tweoxneam*, 'between the waters' (Gover 1961, 221). Here a topographical name appropriate to a district seems indicated, and this later became attached to a specific site, i.e. the modern Christchurch. The recently found cemetery just outside the bank and ditch of the *burh* suggests Anglo-Saxon activity in the area from the late sixth century; was this when the name was formed? More difficult is the case of Stoneham, a name attached now to two separate settlements between Southampton and Eastleigh. This name is *(aet) Stanham* in five probably authentic tenth- and eleventh-century charters (Sawyer 1968, Nos. 418, 942, 944, 1012, 1509). Here 'ham' could derive from *hamm* (river meadow etc.) rather than from *-hām*, though the latter is marginally to be preferred (Rumble 1979). The name certainly refers to the only place in the area where stone (stān) would be a feature, the Roman site at Bitterne. The charters refer to two separate estates both called Stanham, and this and the intermingling of some of their territory around Mansbridge (Burgess 1960) is fairly clear evidence that they were originally a single holding, bisected at some date prior to A.D. 932, the date of the first of the charters. Stanham was presumably the name of the entire estate, but later became specifically attached to settlements at North and South Stoneham, to neither of which is it topographically relevant. When Bitterne was later taken out of the South Stoneham estate, the Stonehams ceased to have any connection with the site from which they had derived their names. This is a good illustration of the pitfalls awaiting those who try to derive information from place-names about a site's immediate environment or its date of foundation.

Another aspect of the continuity question concerns the use of rural sites. So far, none of Hampshire's Roman villas has produced positive evidence that it was still used in the fifth century. Around Chalton, however, Cunliffe has found early Anglo-Saxon pottery at Roman settlement sites, which suggests their continued use (1972, 3-4). By contrast, the seventh-century site at Church Down, Chalton, has no Roman predecessor, though Roman objects were found in its occupants' refuse. Similarly at Old Down Farm, Andover, there is no evidence of structures between the first and sixth centuries (Davies 1979). A fluctuating and impermanent pattern of occupation sites seems to be indicated.

In the wider scale, the use of certain areas in the fifth, sixth and seventh centuries seems to be attested by the distribution of settlements and cemeteries. Those around Winchester and Andover, and at Droxford, imply that the chalk downs and the easily-farmed Itchen, Test and Meon river valleys cutting through them were in use. Discoveries near Alton suggest that the Wey valley was also farmed. The cemeteries on the Portsdown ridge, and the occupation at Portchester, imply extensive use of the fertile south coast belt, and Cunliffe's work suggests continued agriculture on the chalk downlands northwards to Petersfield. By contrast, work on the clay-with-flints north-east of Winchester

shows Roman fields being abandoned (P. Fasham, pers. comm.), and the almost total absence of evidence from the north of the county on the higher chalklands and the unwelcoming clays around Silchester suggests little use of those zones in the early Anglo-Saxon period, although both have yielded a scattered distribution of Roman material. It is heartening that this kind of information is no longer solely dependent on the distribution of cemeteries. Field-walking programmes such as are described elsewhere in this volume are helping to supply reliable evidence, both positive and negative. Particularly needed now is thorough survey of the gravel terraces which in the Thames Valley and elsewhere provided settlement zones highly favoured by the Anglo-Saxons. Unfortunately in Hampshire the gravels of the lower Test and round Netley have been so heavily built over, or so disturbed by quarrying and by the re-channeling of stream beds, that much of our evidence has already been destroyed.

The actual numbers of people involved in the settlement history is of course impossible to determine. The 150 burials at Kings Worthy, and the 45 at Winnall II, both near Winchester, are quite high totals for southern English cemetery sites of the Anglo-Saxon period, but are cumulatively fewer than the 500 Roman period graves at Lankhills. This may in part be due to the problem of incomplete excavation, but there are other Roman cemeteries around Winchester, so that it remains true that many more Romans than Anglo-Saxons have been identified in the area; despite this, if the cemeteries alone were considered, there would be no reason to suppose that the county as a whole was densely populated in, say, the third century, and thinly populated in the sixth. Indeed the cemetery evidence taken on its own would suggest that there was a concentration of activity around Winchester in the Roman period, and little in the rest of the county; the cemetery evidence for the early Anglo-Saxon period is much more widely scattered (Aldsworth 1973/4, fig. 4). The balance is of course redressed by Roman settlement evidence, especially of the towns, forts, villas and corn driers which are readily recognizable because of the solidarity of their remains. The lesser Roman settlements are also easily identifiable, because the pottery and coins used at them are sturdy and prolific. Evidence for the post-Roman centuries is more difficult to locate.

Because cemeteries are so much easier to find than settlements of the early Anglo-Saxon period, the location and excavation of Church Down, Chalton, has been of outstanding importance. The extent of its site, its apparently regular plan, and the scale of its structures, were all unexpected (Champion 1977). The buildings used substantial quantities of big timber, as the size and number of the post-holes and beam-slots show, and were therefore presumably solidly built; floor areas indicate large rectangular rooms. The length of occupation of the site is uncertain, but most of it took place in the seventh century, as the discovery of an enamel escutcheon helps to bear out (Addyman and Leigh 1973, Plate VI). Interestingly, Old Down Farm, Andover, has six 'grub-huts', simple small sheds with sunken floors, but none of the more substantial buildings like those at Chalton. It seems to have been occupied in the sixth century, by no more than a few people, perhaps only seasonally. It may typify the sort of site being abandoned during the sixth and seventh centuries in favour of the larger, nucleated settlements like Church Down, Chalton, or from which nucleated sites may have grown. The large fifth-century settlements which Cunliffe postulated (1972, 11, phase 1) have yet to be found, if they ever existed in Hampshire.

The sites in the valleys below Church Down, Chalton, seem to have come into use during the mid Saxon period when *-worth* names were in vogue, as we have seen, but the present Chalton is also in the valley and may have been in use earlier, as pottery of the same date as that from Church Down has recently been found there (Hughes 1977). The fluctuations in the settlement pattern even on the chalk downs are still far from being fully understood. Church Down does however show us one large, well-organized site, presumably a village. Even if only a proportion of the sixty-one structures found were houses in contemporaneous use, can a population of less than a hundred people be envisaged? Assuming that most of them were principally active in farming and its associated activities such as weaving, how large an area around Church Down was being cultivated from the settlement? The answer must be measured in hundreds of acres, but at the same time need not necessarily be as much as a thousand acres. The parameters have to remain extremely vague.

The extent of the land farmed from Church Down may be unknown, but the site's size implies the sort of well-organized agricultural settlement which would have been required by estate owners who had to render to their king the substantial tribute which King Ine's late seventh-century laws detail (EHD, I, 371, ch.70.1). The countryside was capable of supplying large surpluses of produce. The rubbish pits excavated at Saxon Southampton contain enormous quantities of cow, sheep and pig bones, almost certainly, except for some of the pigs, from well-nourished animals driven into the town for slaughter, not bred there or brought in as salted carcases (Coy and Bourdillon 1979). Grain and vegetable supplies are less easily demonstrated, but were certainly reaching the town (Monk 1978), although in quantities that can only be guessed. Southampton seems to have emerged in the late seventh century, and to have grown into a large town within a couple of generations. Its population size is unknown, but its spatial area was larger than that of the medieval walled town, although the buildings within it were less tightly packed. Nor do we know where the people who lived there came from; some were probably aliens, such as the two men buried with weaponry in Melbourne Street Site XX (Holdsworth 1979), but many, such as those making coarse pottery in the town (Hodges 1980, class 3), would have been natives of the area, and probably this was true of the bulk of the artisan population. The town's rapid growth implies a hinterland able to supply it both with people and provisions, a measure of the kingdom's organisation and prosperity by the end of the seventh century.

The rise of Saxon Southampton *c.*700 is associated with the stability that King Ine brought to the kingdom of Wessex, with its increased prospects for trade (Stenton 1971, 70-5). The rise of Ine and the dynasty of the *Gewisse* is to be analysed in a forthcoming paper by Dr. T. M. Dickinson and Dr. D. M. Dumville; for Hampshire's purposes, it is important to demonstrate how disparate were the elements of which the kingdom was composed, even in the seventh century. It becomes possible to discuss these various components because of the documentary sources, notably of course Bede's *Ecclesiastical History*, which reveal information that is

lacking, as we have seen, for the fifth and sixth centuries. These sources reveal the existence of distinct groups of folk, and in some cases the location of their territory.

A good example of such a group is the *Meonware*, the settlers around the river Meon, whom Bede knew to be Jutish in origin (EHD, I, 654, n.3). The extent of their territory is not recorded, however. It may be that it did not include the south coastal belt around Portchester, for the *Anglo-Saxon Chronicle* entry for 501, 'Port and his two sons . . . came to Portsmouth' (Whitelock 1961, 11) could be giving a genealogical justification for the occupation of the harbour territory by a separate folk in the sixth and seventh centuries. Typical of the difficulties of discussing such problems is the evidence presented by the dykes at Froxfield and elsewhere (Coffin 1975). There is no dating evidence for them, and their role is uncertain; it is far from clear that they are unitary. Whereas the ditch is on the west side of the Froxfield Long Entrenchment (Coffin's Group 1), it is on the north-east side of the East Tisted-Colemore group (Coffin's Group 2), while the Hayling Wood group (Group 3) has multiple banks usually without an outer ditch. Coffin sees Group 3 as perhaps being of a different phase from the other two groups (1975, 81) but it is really no more likely that Groups 1 and 2 belong together either, since they face in different directions. If they mark the *Meonware*'s boundary, Group 1 was erected against them, Group 2 by them, and Group 3 either against them or by them! If Group 3 does represent a political boundary of this period, it would suggest that there was an alien presence south-east of the *Meonware*, i.e. the Portsdown area settlers, with perhaps a stretch of woodland in between keeping them apart. A further boundary problem occurs in this zone, where the county boundary is now the River Ems; this is so close to Chichester *(Noviomagus Regnensium)* that it is probable that the territory of the *Regni* and their Roman successors included the coastal strip as far as the River Meon (Welch 1978, 14-16). If this boundary was maintained after the fourth century, the people around Portchester would presumably have owed allegiance to overlords to their east, the kings of Sussex, rather than to the West Saxons. Not surprisingly, the objects from the Portchester excavations have such wide affinities that they cannot be used to solve this problem, which is political rather than cultural.

That the Portchester area eventually came to be within Hampshire results from events in the second half of the seventh century. The interference of the king of Mercia, Wulfhere, in the affairs of the Isle of Wight has already been mentioned. At the same time that he gave the island to King Aethelwalh of Sussex, he also gave him the territory of the *Meonware* (Bede: EHD, I, 654). This is an important example of the way that an overlord's patronage worked, and emphasizes that the *Meonware*'s *regio* was an autonomous unit in a fluid client/patron power struggle. Wight was conquered by King Caedwalla of Wessex in 686 (Whitelock 1961, 24), and Bede records that Caedwalla also 'reduced' the Sussex kingdom, presumably therefore acquiring the territory of the *Meonware* and the south coast belt, eclipsing Sussex in the East Solent area.

When King Wulfhere of Mercia interfered in the affairs of southern England, he also affected its religious history. At his behest, King Aethelwalh was baptised, and soon afterwards, in 681, Bishop Wilfrid arrived in Sussex. Wilfrid's biographer, Eddius, and Bede both record that Sussex was then still pagan (EHD, I, 655), as was the Isle of Wight until 686, according to Bede. There are however some hints that Sussex was not so confirmed in its paganism as Eddius and Bede indicate (Kirby 1978, 169-70; to which might be added the evidence of the Christian motifs on the Pagham cemetery urn (Cunliffe 1974, 127-9)). This may be relevant to the conversion history of the *Meonware* who might in any case have been evangelised by the West Saxons before 681 (Hare 1975, 6). More directly significant is the implication of Wilfrid's arrival in Sussex for Portchester, at that time by Wulfhere's gift subject to Aethelwalh, and the interpretation of Cunliffe's discoveries there.

Mr. S. E. Rigold has recently re-affirmed his suggestion that Portchester was given to Bishop Wilfrid for use as a mission centre in the late seventh century, in the way that so many other Roman forts were granted to churchmen by their royal patrons (Rigold 1977, 73). Mr. M. J. Hare has plausibly argued that at nearby Titchfield there survives part of a church built by Wilfrid, the west porch being Northumbrian in style (1975, 34-8). The similarity between the doorway arch and the quoins at Titchfield and the Watergate arch at Portchester has long been recognised (Butler 1955); Cunliffe did not know the argument for an early date for Titchfield, and ascribed the Portchester arch to the late Saxon or very early Norman period (1976, 14). Hare accepted Cunliffe's date and suggested that the re-used Roman stones at Titchfield came from another site (1975, 32). More plausible, since Cunliffe's excavations produced no direct dating evidence, is that Wilfrid found Portchester's Roman gates in a state of collapse, demolished what remained, rebuilt them, and had the surplus stones removed to Titchfield and re-erected there. The similarity between the buildings is too striking to ignore, and it would have been in character for Wilfrid to have acted in this way. The 'pinkish, gritty mortar' described by Cunliffe in the Watergate tower (1976, 11) is not however paralleled by any yet seen at Titchfield (Hare 1975, 26 for a hard, white mortar). There seems to have been a time-lag at Portchester between the demolition of the Roman gate-houses and the building of the Saxon gate tower, for a turf-line built up (Cunliffe 1976, 11, layers 12 and 30). This does not affect the argument, however, for it merely shows that for a period the defences were left incomplete. As no finds are recorded from these layers, it might be thought that the early Saxon period, when there was least debris being scattered, is the most appropriate for this interlude. The archaeological evidence, both below the ground and what is visible as standing remains, therefore allows both the Watergate at Portchester and the church porch at Titchfield to belong to the pre-Viking period; but the archaeology cannot, almost inevitably, either prove the connection with a particular individual, in this case Bishop Wilfrid, or provide exact calendar dates. Nor are the excavated remains of any of the early and mid Saxon structures within the Portchester walls specifically ecclesiastical; unfortunately the characteristics of ancillary buildings at a minster are unknown, and they may have been no different from other domestic structures.

As Rigold points out, use by Wilfrid of Portchester would explain why the place was owned by the bishop of Winchester until the early tenth century, if it is assumed that it remained in church hands after Caedwalla had wrested the area from Sussex between 686 and 688. There is no suggestion, however, that the fort played any

role as a religious centre thereafter. It may have been a victim of the temporary suppression of the see of Sussex which Bede records (EHD, I, 656), ecclesiastical administration in the area being re-organised by Caedwalla or his successor, Ine. Elsewhere in Hampshire, important research by Dr. P. Hase (1975) has shown that seventh-century 'minsters' were centres of large territories over which they had rights that they maintained until the development of the smaller-scale parochial unit in the tenth/twelfth centuries, and that these ancient rights can often be recognised through later documentary sources. Furthermore, he argues that the minster churches were established at royal estate centres, the institutional successors to the Welsh *llys*. It can be inferred that nowhere in the shire was more than about six miles from a minster, and so by extension from a royal vill. Often the territories dependent on a royal vill would, at a later date, still form the 'hundred' administered from it, but later amalgamations, divisions, exclusions etc. had changed the hundred constituents so much that by the time that they are first named, in Domesday Book, most of them can no longer be fully reconstructed as they had been in the seventh and eighth centuries. It was to the royal vill, the *villa regalis*, that the tribute already discussed was generally rendered by his subjects to the king.

The history of the church and the spread of Christianity has many implications for archaeology. Mrs. Hawkes has argued that the Winnall II cemetery near Winchester was established in the middle of the seventh century because this was the period when King Cenwalh brought Christianity to that part of Hampshire. Church mandate decreed that old burial sites were abandoned; in their turn, the new sites were abandoned in favour of church-yard burials, again by Church decree, later in the seventh century or during the course of the eighth (Meaney and Hawkes 1970, 50-8).

One of the most interesting of the recently excavated cemeteries is that on the Portsdown ridge at Bedhampton (D. J. Rudkin, in Cherry and Webster 1975, 222; 1976, 161; 1977, 208). Its use seems to have begun well back in the seventh century, as the number of grave goods from it implies, but it had a long period of use. One of the objects found is an escutcheon very similar to that from Chalton, but it was drilled through for use as a pendant, so although it was made in the seventh century, it was far from new when buried. There is also a strap-end (Cherry and Webster 1975, Plate XVI. B) of a type of which only two were previously known from cemeteries (Evison 1976), but which rapidly became common. It is unfortunate that the Bedhampton example is so decayed that there seems little hope of identifying the design on it, so that its precise date remains unknown, but a date later than the seventh century seems likely. Like Winnall II, the cemetery seems to have lasted in use for a period running into the eighth century. Unlike Winnall II, however, its establishment may pre-date the arrival of Christianity in the area. As we have seen, the Portsdown ridge people may very well have owed allegiance to Sussex until 686; the date of King Aethelwalh's conversion is uncertain, but it was later than 661, as the *Chronicle* entry is generally agreed to be a conflation of two separate annals (Hawkes 1965, 32, f.n. 62; O'Donovan 1972, 8). If this is the case, it seems likely that the Bedhampton cemetery was in use well before the area became nominally Christian, and this is further supported by the alignment of two of the graves north-south, rather than east-west. The latter may not necessarily indicate Christianity, but the former is still usually reckoned to indicate paganism. The motive suggested for the setting-up of Winnall II would therefore not be appropriate; although a royal mandate cannot be disproved, a Christian dynamic would not have been the cause of the use of the site. By inference, the suggested motive for Winnall II may be suspect.

Paganism remained dominant on the Isle of Wight even longer than in Sussex. Wulfhere's conquest gave the island to Sussex, but it was taken by Caedwalla of Wessex in 686 (Whitelock 1961, 24). Thereafter its political history is obscure. Although part of Wessex, it is not clear whether it was administered as a separate province. The undated *Tribal Hidage* document records that a people called the *Wihtgara* was assessed for 600 hides, as an autonomous unit. Dr. C. R. Hart (1971) attributed the text to the eighth century, but a strong case has subsequently been made that it was compiled for Wulfhere of Mercia or his successor Ethelred in the second half of the seventh century (Davies and Vierck 1974). Sawyer has more recently stated that in the form in which we have it, it is a West Saxon ninth- or tenth-century text, based on a Mercian seventh-century original, but with later additions relating to non-Mercian areas (1978, 111). If Sawyer is right, then the *Wihtgara* either did not live on the Isle of Wight, or the island was still being administered in the ninth/tenth century as a unit quite separate from Wessex, which is entered for 100,000 hides. The latter would have serious implications for our understanding of Hampshire's composition in the Saxon period. Davies and Vierck unhesitatingly attributed the *Wihtgara* a geographical position on the Isle of Wight, but Sawyer does not give them a location. In this, he may have been following the reluctance of Maitland to place the *Wihtgara* on Wight, because of Wessex's separate rating (1907, 507), but Maitland did not discuss the possibility that the *Tribal Hidage* was drawn up while the island was not yet part of the West Saxon kingdom. Sawyer points out that many of the regions listed in the *Tribal Hidage* are arranged in sequence around the borders of Mercia; if the *Withgara* were on Wight, they would certainly not fit this pattern. Stenton considered that the name had been garbled (1971, 295). Another problem is that Bede states that the island was worth 1200 hides, not 600 (EHD, I, 656). This discrepancy was another reason for Maitland's doubts, but as he himself pointed out, there are many such discrepancies in hidage ratings. It is probably more significant that Bede's total was exactly double that of the *Tribal Hidage*, a precise mathematical proportion suggestive of a connection which a random difference would deny; perhaps a halved assessment allowed for recovery from raids and devastations, or is part of the general tendency towards hidage reduction which Maitland observed (1907, 507), with Bede using an earlier document. There is, however, independent evidence for the use of the *Wihtgara* name in association with the island, for Stuf and the eponymous Wiht conquered *Wihtgarabyrig* — usually taken as Carisbrook (Alcock 1977, 416-7) — in 530 (Whitelock 1961, 12: redating of the annals does not affect this discussion), and there is no doubt that this was on the Isle. The name in the *Tribal Hidage* is the same, suggesting that it is not mis-rendered. It seems on balance that the *Wihtgara* were on Wight, and that they were assessed separately from Wessex, and of course also from Sussex, because they were still regarded as

comprising a *regio* in their own right.

Other evidence that the Isle of Wight remained in any way an autonomous unit after Caedwalla's conquest is slight. Bede records that Caedwalla exterminated the island's dynasty (EHD, I, 656-7), with the implication that none of its members then survived to trouble him with their ambitions. It has been claimed that there were still princes on the island until the end of the ninth century (VCH, I, 391). This claim seems never to have been specifically denied, but it rests on very slim evidence, a passage in the chronicle attributed to John of Wallingford, written in the early thirteenth century at St. Alban's (Vaughan (ed.) 1958), in which it is said that the last member of the Wight dynasty, Albert, son of Aistulf, died in the reign of King Alfred. There is no record of the source of this story (ibid., 38), and it is probably to be treated as seriously as the same chronicle's account of King Alfred's courtship of St. Frideswide; the Isle had to wait for another thousand years for its Prince Albert! More seriously, no Anglo-Saxon charters are signed by claimants to a Wight dynasty. It might be noted that the early tenth-century *Burghal Hidage* (Hill 1969) fails to provide a refuge for the islanders against the Vikings, which could conceivably imply a measure of autonomy, but is more probably because the primary intention of the system was to control communication lines. Hart (1971, 146-7) cites two other texts which suggest autonomy; firstly, Bede says that 'the bishopric of the Isle of Wight belongs to Daniel, bishop of Winchester' (EHD, I, 682), and secondly, Symeon of Durham, a twelfth-century writer using a tenth-century source, has 'Scotland, Brectland et Wict' excluded from his list of shires (Arnold (ed.) 1885, ii, 393). The Bede reference seems to show only that what had been, for Wilfrid, a separate see of Wight was becoming merged with Winchester, and that Bede was not sure if the arrangement were permanent; the inference is that integration had taken place. Indeed, elsewhere Bede states that a see of Wight had never been created (EHD, I, 657). Symeon is an oddity: if he had listed Wight as a shire in its own right, it would be more meaningful than his total exclusion of it from the system. By Domesday, the island was being treated as appurtenant to Hampshire, so that by then it was certainly not regarded as a shire in its own right. In no clear-cut case is there direct evidence that the *Wihtgara* remained an autonomous *regio* after Caedwalla's reign, and this implies a seventh-century date for the *Tribal Hidage*.

Bede expected Wight to merit a see because it was the centre of a folk who were descended from Jutish settlers, as were the *Meonware*. In 686, two princes who tried to escape from the Isle of Wight did so, according to Bede, by landing at a place which is called *Ad Lapidem* where they thought that they could remain concealed, as this was 'in the land of the Jutes' (EHD, I, 656-7). Sawyer has recently translated *Ad Lapidem* as 'Stoneham' (1978, 47). As we have seen, Stoneham was the name of the estate which included the banks of the River Itchen, and Sawyer's interpretation could imply a recognised landing-place in the late seventh century — the first documentary reference to a harbour at Southampton. Unfortunately it is unlikely that Jutish territory would have included Southampton by 686, and the traditional ascription of *Ad Lapidem* to Stone, now in Fawley, on the west side of Southampton Water (VCH, I, 380) is probably correct. The princes were hoping to escape into what is now the New Forest, which is described by Florence of Worcester in 1099 as being in the province of the Jutes (Ibid., 381). Florence also uses the term *Ytene* in relation to the Forest, which is probably a corruption of an Old English word for *Jutae*. Clearly both sides of Southampton Water were Jutish territory in the seventh century.

The extent to which the three Jutish regions, Wight, the *Meonware* and the western shore of the Solent, were interconnected is uncertain. The far western boundary of this Jutish territory is, like the south-eastern boundary of the *Meonware*, not known, but the (pre 1974) shire boundary is well to the west of the Avon. This could result from the winning of this area by the Anglo-Saxon settlers who are represented in the newly-discovered cemetery outside Christchurch, who may have owed allegiance to overlords to their east. As far as we know, this area may formerly have looked west to the *Durotriges* for its administration.

Bede and the other sources leave no doubt that it was Caedwalla who overran the Jutes, so that their territory came to create the southern boundaries of Hampshire. In the north of the county, the process is less clear-cut. The land assigned to Hampshire in Domesday Book may not always be the same as an eighth-century inquest would have revealed. There is no charter to explain the curious projection of Hampshire into Wiltshire caused by Rockbourne parish, and this may be due to some quite late quirk of ownership. (Bokerley Dyke has only been a Hampshire frontier since 1895, when Martin was added to the county). Gelling considers that the northern boundary with Berkshire is a late division of an under-developed terrain (1976, 809), but precisely when the area previously dependent on the Atrebatic capital at Silchester was divided between Berkshire and Hampshire is not recorded. Dr. P. Hase has pointed out to me the interesting possibility that the cross-country tenurial, jurisdictional and ecclesiastical contacts of north-east Hampshire might suggest that in this area the shire boundary divides a pre-existing Anglo-Saxon territorial unit. Hampshire's boundaries were an artificial creation, owing little or nothing to pre-existing units. It was also racially mixed; as well as West and East Saxons (the latter demonstrated by the place name Exton) and the Jutes, there were unknown numbers of British descendants, and perhaps Franks (Evison 1965). The shire had no 'natural' internal cohesion.

One of the Saxon names used of Southampton was *Hamtun* and from that the shire took its name (Rumble 1979). Hampshire is first mentioned in 757 (Whitelock 1961, 30), when King Sigeberht was allowed to retain it although he was deprived of the rest of his kingdom. The origin of the shire system is obscure (Stenton 1971, 293), but the Sigeberht episode shows that it was in operation by the middle of the eighth century, and that by then Hampshire was a recognizable entity. It also shows that the system of dependent rulers of provinces within the overall area of Wessex could still be brought into operation; it was not one of the traditional territories that was given to Sigeberht, however, but the artificially created Hampshire, the novelty of which was emphasized by its name, taken from the port which was to all intents and purposes a new foundation. This indicates that even in matters of administration Southampton was not playing second fiddle to Winchester. It should be remembered that the evidence of royal concentration on Winchester in the mid Saxon period is very limited; only four of the kings before Alfred are thought to have been buried there, and other

information, e.g. on a royal palace, is slight and inferential (Biddle (ed.) 1976, 289-90). In particular, it should be noted that the balance of evidence is in favour of the coinage having been struck in Southampton, not Winchester, until Alfred's reign (Dolley 1970). The slight caveat that the Southampton excavations have yet to reveal a building as suitable for minting as that found at Winchester (Hinton 1977, 11) has not been substantiated by Dr. D. M. Metcalf's discussion of the sceatta designs, which he sees as being politically 'neutral' rather than an expression of royal authority (Metcalf 1977, 90), a further point against a Winchester mint under close royal supervision in the eighth century.

The 'neutrality' of the coinage designs is a useful reminder that the kings of Wessex were not politically dominant throughout the whole of southern England, the position won by Caedwalla not being fully sustained by Ine in his later years (Stenton 1971, 74-5). Nevertheless Ine's reign was important; his law code 'stands for a new conception of kingship' (ibid., 73), just as the need for a coinage stands for new economic developments. The creation of Hampshire from so many diverse elements can be seen as another facet of the authority and the powers of organisation of the kings of Wessex in the late seventh and early eighth centuries.

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Settlement and Landscape in Medieval Hampshire

Michael Hughes

It is impossible in this short paper to present a complete survey of the landscape of Hampshire, both urban and rural, between the 11th and 16th centuries. I have thus limited my remarks to general comments on the following aspects: market towns, for the urban scene; and moated sites, early earthwork castles and other settlements for the rural. I have also attempted, where possible, to suggest further lines of enquiry. The first part, on market towns, is derived mainly from my research for a post-graduate thesis, while the other aspects stem partly from survey work undertaken in the course of my work in the Planning Department and from limited research.

Although the paper relates to Hampshire its content can be applied to studies in medieval settlement elsewhere in the country.

URBAN HAMPSHIRE

After a temporary setback in the disturbed period following the Norman Conquest, the 12th and 13th centuries were a flourishing period for towns large and small, with the development of trade and commerce, both at home and abroad. In Hampshire many market towns were located by major roads — routes along which kings and bishops travelled frequently — a factor which must have influenced the creation of new markets and towns and the growth of existing centres. A number of towns are known to have been accorded borough status by the middle of the 13th century (Fig. 18).

Medieval Southampton originated on the western side of a neck of land between the rivers Test and Itchen, its predecessor being the Saxon town of Hamwih, which appears from archaeological evidence to have been abandoned some time towards the end of the 10th century. However, Cherry and Hodges (1979) have argued in favour of a decline or abandonment of Hamwih in the 9th century and recent excavations have revealed evidence for a late Saxon use of the site of the later medieval town, with corresponding defensive ditches (CBA 1979). Southampton had a major part in the extensive cross-channel trade which grew after the Conquest and rose to become one of the country's leading ports in the 12th and 13th centuries. This status is reflected in the grid town plan, based on the rectangular framework of its defences, and a north-south street, the present High Street; the building of a castle, partially demolished in the 13th century and rebuilt in the 14th; and the change from timber to stone buildings in the late 12th century (Hinton 1978), especially those belonging to the wealthy, often foreign, merchants who settled in the town.

Southampton was the first town to show renewed interest in urban defence in the 12th century, and in the 13th the earth bank was strengthened by stone walls due to the fear of invasion by the French caused by the loss of English territory in France. Of the gates, only the Bargate survives, built some time towards the end of the 12th century, whilst the surviving western defences, of late 14th century date, contained provisions for the use of artillery.

The loss of Normandy had a marked effect on the fortunes of the town, compensated by the port's participation in the growth of the Gascon wine trade and in the expanding wool trade with Flanders and Italy. The wars with France in the 13th and 14th centuries, however, reduced the importance of the town for a long time; the French raid of 1338, very marked in the archaeological record, did not help the already struggling fortunes of the townspeople. However, towards the end of the 14th century and into the 15th, an upsurge in trade with the Italian markets helped the town to regain some of its former prosperity.

The 16th century finally saw an end to Southampton as an important centre of European commerce, and although it continued to be of local importance as a coastal trading port, it never regained its former status until the late 19th and 20th centuries.

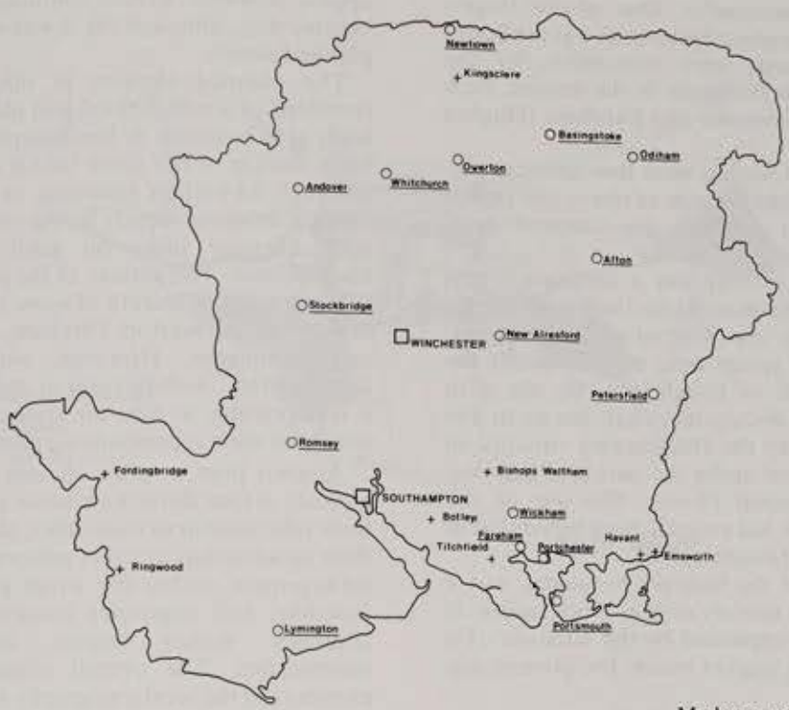
Winchester had by 1066 become a major commercial settlement, the ancient centre of the kingdom of Wessex, the site of a royal palace and important ecclesiastical precincts. In the 10th century it also acquired its present street plan, a legacy of Alfred and his successors.

During the 11th and 12th centuries further major changes took place in the town's topography: the building of the castle, which destroyed streets during its construction, the building of the present cathedral, the movement of the monastic establishment at the New Minster to Hyde outside the North Gate, and the rebuilding of Wolvesey as a magnificent palace. These and other undertakings boosted the city's economy and status as never before or since; the suburbs extended up to half a mile or so beyond the walls. Merchants flourished — parish churches in the city were enlarged and St. Giles' Fair, now international in status, reached its peak towards the end of the 12th century.

However, by 1200, Winchester had been overtaken by London as the centre of royal administration, and thus began a decline in importance especially in relation to other provincial centres. Towards the end of the 13th century St. Giles' Fair declined rapidly, and by 1400 the international trade of the city had almost disappeared. By this time the bishop's palace of Wolvesey was falling into disuse and the king seldom visited the city. The 14th century plagues had further serious effects on the city's importance, the population being reduced by nearly a third (Keene 1979).

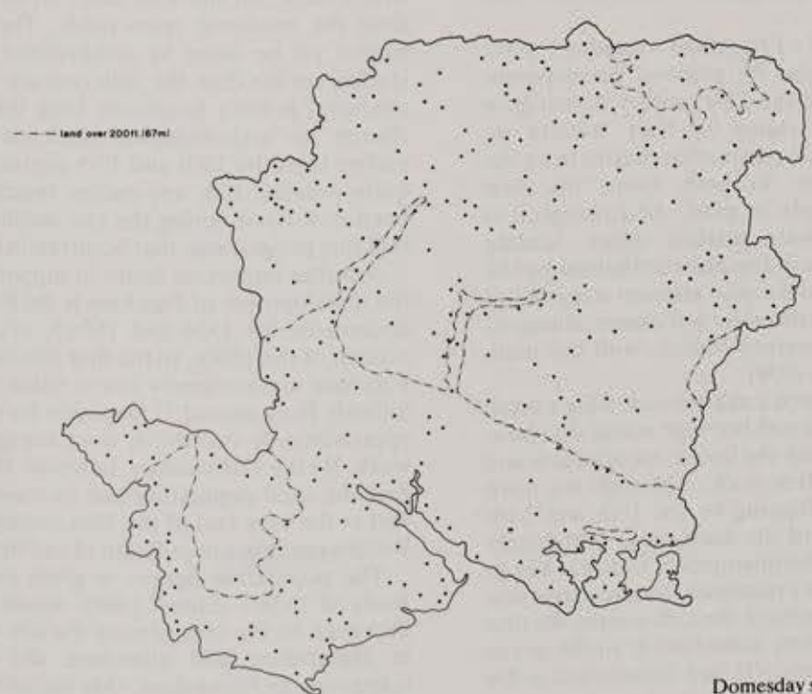
A revival in the city's fortunes occurred at the end of the 14th century, the result of its clothing industry. However, by the first quarter of the 15th century this too had suffered competition from the West Country. The continuing existence of the See, one of the wealthiest in the country, prevented the city from worse decline. Although the population was reduced in size, the suburbs shrunk in comparison with their extent in the Middle Ages and its importance simply that of a county town, new and splendid buildings were erected under the patronage of the bishops. The building of the new college by Bishop William of Wykeham, for example, gave Winchester a new status, that of an educational centre.

Apart from the existing urban centres of Winchester and Southampton and the growing local centres of Alton, Andover, Basingstoke and Romsey, several new



Market towns in medieval Hampshire.

Figure 18



Domesday settlement in Hampshire.

Figure 19

towns were founded by both lay and ecclesiastical land owners seeking to increase their revenue by rents and tolls. The majority of these speculative developments seem to have been successful. One of the largest entrepreneurs in 13th century Hampshire was the See of Winchester. The bishops were responsible for the foundation of four new boroughs in the county: New Alresford, Overton, Newtown and Fareham (Hughes 1976).

New Alresford and Overton were new urban settlements created on the opposite side of rivers (the Itchen and the Test), from existing pre-conquest rural settlements.

Newtown (founded c.1218) was a completely new borough, located on the Hampshire-Berkshire border close by the main route from Oxford to Southampton. The new town and its parish were created out of the larger episcopal parish of Burghclere. By the 17th century, however, all documentary references to the town had ceased, and by the 18th century virtually all vestiges had disappeared under the parkland that was laid out around Newtown House. The site of the deserted medieval town has recently been scheduled as an Ancient Monument (Hughes 1976).

Fareham, another of the bishop's boroughs, was a rural settlement of 10th century origins, if not earlier. It appears to have been expanded by the addition of a simple plan element, a market street, the present day High Street.

Other medieval "new towns" in Hampshire were Odiham, mentioned as a borough at the beginning of the 13th century; Stockbridge, founded c.1200 by William de Briwere, the owner of Ashley Castle (see below); Whitchurch, a rural settlement converted to borough status by charter from the Winchester Cathedral monks; Portchester, given borough status by 13th century Exchequer clerks; Lymington, Petersfield and Portsmouth.

At Lymington and Petersfield existing rural settlements were extended by planned development during the last quarter of the 12th century. Lymington was accorded borough status by Earl William de Redvers, whilst Petersfield received its charter from the Countess of Gloucester. In both towns the new developments were simple in plan. At Lymington it consisted of a new wide market street, leading northwards from the area of the older settlement by the river, whilst at Petersfield the plan element consisted of a new main street linking the older settlement, clustered around the early 12th century church, with the main road to London (Hughes 1976).

In 1194 Richard I granted a charter endowing a small settlement at Portsmouth with borough status. At about the same time he promoted the laying out of streets and the construction of the first dock. Although the town had connections with shipping in the 13th and 14th centuries, it was not until the harbour at Portchester ceased operations, and Southampton's fortunes began to wane, that Portsmouth's potential as a naval base was recognised. At the beginning of the 15th century the first stone defensive works were constructed, whilst at the end of that century Henry VII had constructed a dry dock.

New foundations or new additions required a town plan from their owners, and in settlements of pre-conquest origin an existing and often irregular street pattern would be modified, during the Middle Ages, by the addition of a planned element. The larger, proto-urban pre-conquest settlements of Hampshire, especially those in royal or monastic ownership, such as Alton, Andover, Basingstoke and Romsey, would appear, however, to have continued to expand in a more organic way, although the towns may well contain later planned streets.

The planned element in other towns may have consisted of a well defined grid plan, as within the town walls at Winchester or Southampton, the provision of a large market or fair place (as for example Wickham — although its earliest reference as a borough is of 16th century date), or merely laying out a wide market street with burgage plots on each side for the new townspeople. The pattern of the property boundaries is still a distinctive feature of some towns and can be seen in the plans of Overton, Fareham, Alresford, Petersfield and Lymington. However, without more detailed documentary, architectural or archaeological research, it is impossible to date the laying out of these planned streets or their accompanying plots.

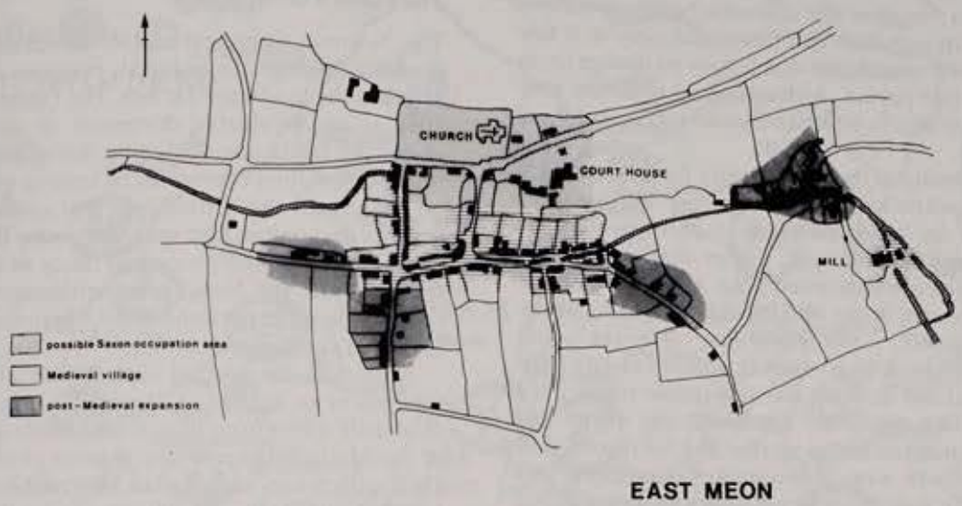
A town plan is, after all, not just a street plan. It consists of four distinct elements at least: the streets and their relationship to each other; the individual plots and their relationship to street patterns; buildings and their arrangement within the street plan, their status and function; and important historical precincts such as churches, manor houses, market places, and monasteries. The overall relationship of all these elements to the local topography and to the surrounding landscape is also of great importance in the understanding of their development.

For instance, research into the development of Fareham (Hughes, forthcoming), has shown that the High Street (North Street until the 19th century), the suggested planned element of the bishop's town, has clear distinctive property boundaries on either side, which back, on the west side, on to what were at one time the medieval open fields. The street, however, cannot yet be dated by architectural and documentary studies earlier than the 16th century. Apart from a few medieval pottery fragments from the area around the church no archaeological evidence has been found earlier than the 16th and 17th centuries. It is of course quite possible that any earlier structural evidence has been destroyed during the late medieval and Georgian building programme that occurred in the town.

Another important factor in support of a late date for the development of Fareham is the Exchequer taxation documents for 1334 and 1524/5, and the Hearth Tax returns of the 1660s. In the first two cases the returns for Fareham are extremely low in value, whilst the 1524/5 Subsidy Rolls record 71 taxpayers for the town, of which approximately two thirds were engaged in agricultural work. By the 17th century, however, the returns indicate that the total population had increased to around 500, and at the very end of the 18th century the first Census Return records a population of just over 3,000.

The population figures as given in the Lay Subsidy Rolls of 1524/5 (Sheail 1968), would seem to indicate that even by the 16th century the size of some boroughs in Hampshire and elsewhere did not exceed 100 taxpayers. In Hampshire, that includes all the bishop of Winchester's new towns, Fareham, New Alresford, Overton and Newtown as well as Stockbridge, Whitchurch, Portchester, Petersfield and Lymington. Even towns like Portsmouth had a recorded population of only 124 taxpayers.

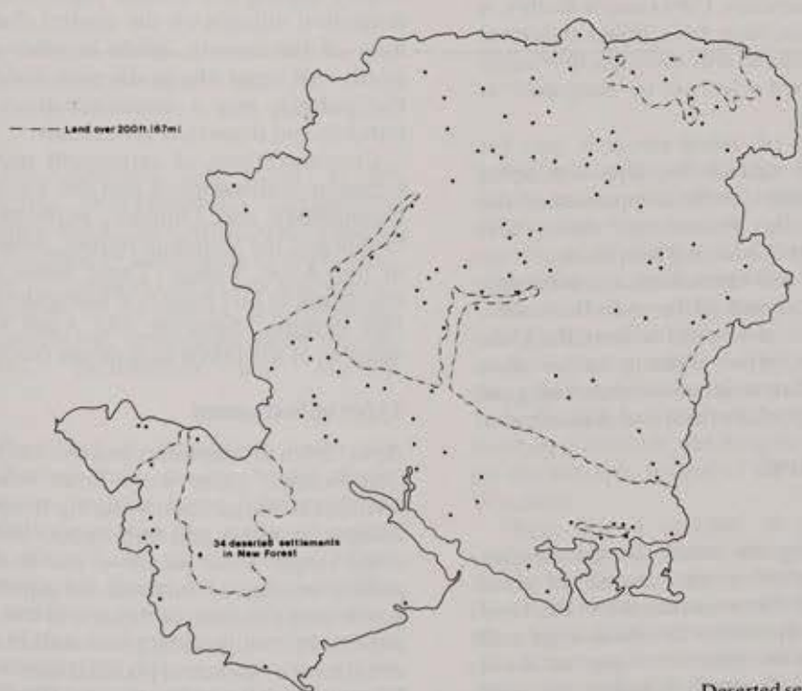
These figures, even if used with caution, do therefore



EAST MEON

Plan of East Meon.

Figure 20



Deserted settlements in Hampshire.

Figure 21

suggest that many medieval boroughs and market towns may have only been of village size. More archaeological, architectural and documentary research is therefore needed into the development of the smaller medieval market town in order to test this interesting statistical data. However, because few domestic buildings survive before the 15th and 16th centuries, and only in a few instances do documents survive in any profusion from much before that period, archaeological evidence may well be the only way in which to date streets and plots of earlier origins.

By the beginning of the 14th century fourteen market towns in Hampshire had received borough status, either by charter or by being included in parliamentary or taxation returns as boroughs. Other market centres, such as Kingsclere, Ringwood (one of the wealthiest places in the county in the Middle Ages according to the taxation returns), Fordingbridge, Havant and Emsworth remained large market villages rather than towns, and did not develop any real urban status until the 18th and 19th centuries. Titchfield, one of the few places in the county to have a market and toll recorded in Domesday (others were Basingstoke, Kingsclere and possibly Alton), was also referred to as a *villa mercatoria* during the 14th century. Due, however, to the Abbey's strong domination (founded 1232 by Peter des Roches, Bishop of Winchester), Titchfield never achieved urban status (Hughes 1976). Bishop's Waltham, another of the bishop's manors, and the location of an episcopal palace, contained a simple grid pattern of streets in its layout but, so far as is known, never achieved borough status, unlike its relatively near neighbour Fareham.

Although it is comparatively easy to study the development of settlements that exhibit the characteristics of urban status as given by archaeologists and historians (for example Heighway 1972), it is more difficult to study those that are failed urban sites, for which little or no record survives. For example Botley, a village near Southampton, may be a failed medieval urban settlement, for which the only evidence that exists at present is a documentary reference to 'burgesses' at Botley in the 14th century.

Other suggested areas of urban research are, for example, the study of the relationship of a developing town with its rural hinterland, or the comparison of the wealth, population trends, ownership, status and function of towns in a county such as Hampshire.

The plague epidemics, and the subsequent economic decline of the 14th century, marked the end of new town foundations in Hampshire, as elsewhere, until the 17th, 18th and 19th centuries, when military rather than economic needs dictated new urban centres and gave rise to such towns as Gosport, Portsea and Aldershot.

THE RURAL LANDSCAPE

Introduction

The problems concerning the study of the origins, development and, in some cases, demise of rural settlement in Hampshire between the eleventh (and earlier), and nineteenth centuries are both large and complex. There has been no synthesis of any real merit published, apart from a small number of well researched, but isolated, historical studies of deserted settlements. There has also been a small number of excavations in recent years in the county, but they too, apart from interim notes, still await definitive publication.

I have divided this particular section into three aspects of the medieval landscape, starting with rural settlement in general and going on to consider moated sites and early earthwork castles.

The Pattern of Settlement

The Norman Conquest of 1066 which resulted in such dramatic changes in political, religious and social life, affected the landscape far less. The Domesday Survey of 1086 is an invaluable document in describing much about the landscape, including that of Hampshire. This information, however, must be treated with caution. By no means all the settlements that existed in the 11th century and before, are recorded; some that it mentions were already in the process of decay or de-population, for example, the New Forest settlements, nor is much light shed on the patterns of the newly evolving parishes and their constituent churches.

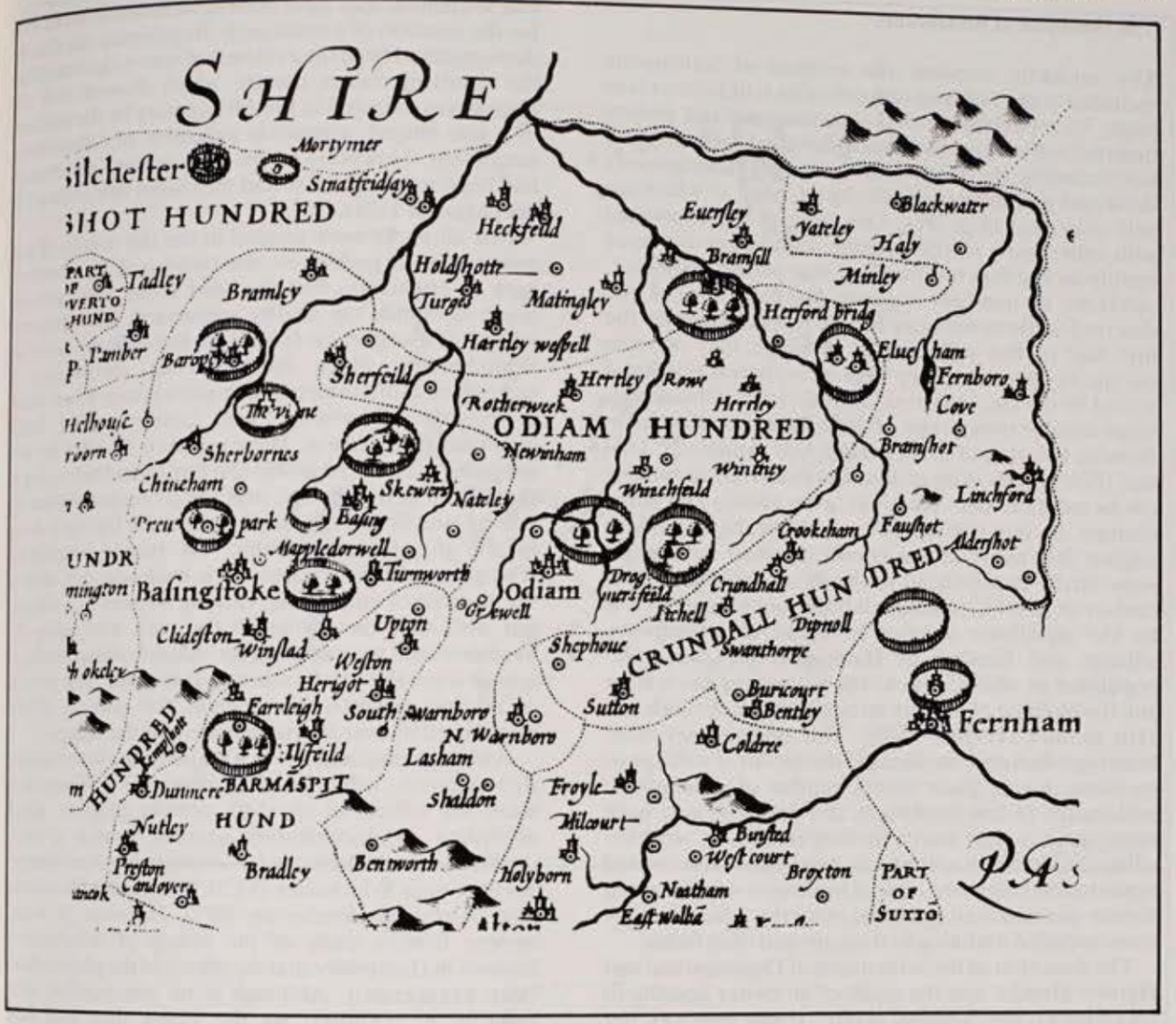
Although the overall distribution of 11th century settlement as shown by Domesday (Fig. 19) does not markedly differ from that of the Middle Ages or the end of the Medieval period, the number of settlements does (318 settlements recorded in 1086; 488 recorded in 1334 Lay Subsidy Rolls and 499 recorded in the lay subsidies of the 1520s (Glasscock 1975; Sheail 1968)). This is indicative to some extent of the pit-falls in using Domesday statistics but also of the growth of new settlements, both urban and rural, in England, the result of an increasing population and need for land in the 12th and 13th centuries. Because so much of the fertile soils were already being exploited, during this period new settlements were created upon marginal land, such as the higher downland areas, the heathlands and land gained from the forests of Bere, Alice Holt, Woolmer, Chute, Pamber and the New Forest.

The broad distribution of rural settlement in the county during the Middle Ages consisted generally of nucleated villages on the central chalklands and in the west of the county, while in other parts, such as the south-east coast, the south-west, and the north and east, the pattern was a combination of villages, satellite hamlets and dispersed farmsteads.

Concentrations of settlement occurred in the area between Southampton and the Sussex border, around Basingstoke and Odiham, between Andover, Stockbridge and the Wiltshire border, around Winchester and in the Avon Valley. These areas were amongst the wealthiest in late medieval Hampshire; by the end of the 18th century, however, the Avon Valley contained a number of shrunken and almost deserted settlements.

Types of Settlement

Apart from moated sites and the early earthwork castles (see below), there were three other forms of rural settlement in the county during the period in question, villages, hamlets and farmsteads. Nucleated villages — some large, some small — one to each ecclesiastical parish, normally contained the parish church, a manor house and a cluster of farms and dwellings. Some were important enough to be given market and fair rights, and some have evidence of planned streets (for example East Meon (Fig. 20) and Southwick (Hughes, forthcoming)). At Popham, a deserted village site, a planned extension has been suggested for the 12th and 13th centuries (Fasham 1976). Many villages, however, especially those clustered along the banks of the rivers Avon, Test and Itchen and their tributaries, are one street



Settlements and parks in north-east Hampshire c. 1600.
(Reproduction of part of a map of Hampshire by John Speed 1610.)

Figure 22

settlements with the occasional side street, as for example at Martin, Rockbourne, Longparish, Leckford, Itchen Stoke and Kingsworthy. Many villages today also exhibit evidence of settlement mobility over the past millennium — medieval churches and manor houses located away from village centres, as for example at Twyford, Monk Sherborne, Bramdean, Otterbourne, Sherfield-on-Loddon, Blendworth and Hartley Wintney.

Hamlets are ubiquitous in Hampshire, with the exception of the central chalk downs. Many almost certainly originated as isolated farms, and probably attracted further settlement from the medieval period onwards. They are often found as satellites to larger villages in the same parish. Some originally were also served by chapels under the jurisdiction of the mother church. Examples of deserted medieval hamlets which had chapels are Lainston (the ruined chapel can still be seen in the grounds of Lainston House), Quidhampton and Polhampton, near Overton, Chineham, near Basingstoke, and North Fareham. Some hamlets that originated close by an existing settlement, especially towns or larger villages that were expanding, were eventually incorporated into the boundaries of the latter. Examples of this are Bishops Waltham which incorported a small hamlet around Shore Lane (Hughes 1976), Fareham which eventually incorporated the hamlets of Wallington and Cams, Hurstbourne Tarrant with Ibthorpe and Longparish with East Aston.

Much of the present day pattern of farmsteads in the county derives from the 18th and 19th century enclosures, especially on the central chalk downs, the dispersal of monastic estates after the Dissolution in the 16th century and from medieval "assarts", especially in the forests of Bere, the New Forest, Chute, Pamber, and on the western fringes of the forests of Alice Holt and Woolmer.

There are a number of parishes that exhibit a settlement pattern that consists of a combination of all three forms. A very well researched study of two deserted settlements at Dogmersfield and Hartley Mauditt has shown for example that a pattern of village and dispersed farmsteads existed in the area to the east and south-east of Basingstoke in the 17th century, if not earlier (Meirion-Jones 1969). The pattern of mediaeval settlement in the Hundred of Chalton was of a large nucleated village, Chalton, smaller settlements at Idsworth, Blendworth and Catherington, and dispersed farmsteads or 'colonist settlements' (Cunliffe, 1973).

The Desertion of Settlements

The similarity between the number of settlements recorded in the 14th and 16th centuries is of interest (see page 70) especially as over one hundred and twenty deserted settlements have been identified in the county, not including the thirty-four New Forest settlements destroyed to make way for the forest, many of which are still unlocated (Fig. 21). Desertion, when compared with other parts of the country would have occurred mainly during that two hundred year period. However, similarity in numbers suggests that very few of the deserted settlements were in fact de-populated by the first half of the 16th century although they were in decline by that date; they were nevertheless worthy of record by the late medieval taxation clerks. Obviously a more detailed comparison of the settlements recorded in *Nomina Villarum* of 1316 (Feudal Aids Volume 2), 1334 and 1524/5 needs to be undertaken before my comments can be substantiated. However, even allowing for some changes in the statistics the evidence does tend to suggest that many of the known deserted settlements were finally depopulated in the latter half of the 16th century or later. My premise is borne out to some extent by the significant number of medieval settlements, villages and hamlets in Hampshire that were de-populated or shifted due to the emparking movement and the building of country houses between the 16th and 18th century (Hughes 1979). This process may have been a gradual one, the decay in the wealth of a village or its owner taking place over a number of generations; settlements of few inhabitants and dwellings may have been easier to shift than a thriving settlement, whether village or hamlet. Furthermore, the Dissolution created opportunities for a new class of landowner who obtained former monastic and episcopal property, which in many cases included declining settlements and their fields.

The desertion of the settlements of Dogmersfield and Hartley Mauditt was the result of an owner desiring to create parks, over a period of time. It was, however, not until the 18th century that the emparking reached its peak and so caused the final desertion of the settlement. Until recently the earthwork remains of the village of Hartley Mauditt were visible, but recent ploughing has caused them to be almost obliterated. The demise of Idsworth (a population of 19 tax payers was recorded for the village in 1525), on the Hampshire-Sussex border, was due to the 17th century owner wishing to create a park around his new manor house. Other examples of settlements de-populated for the same reason are Breamore (emparked 1579), Herriard near Basingstoke, Bramshill, Elvetham, Deane (emparked 16th century (Hughes 1979)) and Hinton Ampner, near Cheriton (Fig. 22). Ashe, near Overton, finally deserted by emparking in 1580, was recorded as having less than ten inhabitants in 1428, as were nearly 50 other settlements in the county (Feudal Aids).

Westbury, near West Meon, a small medieval settlement whose 13th century owners had one of the few licences to crenellate in Hampshire (*VCH* 1908), and which has produced evidence of late Saxon occupation, was emparked, probably in the late 17th century when a new manor house was built (nine tax payers in 1524/5). The chapel (now in ruins) was not in ecclesiastical use at the end of the 17th century (*VCH* 1908). Recent fieldwork and air photography at Little Somborne, in the Test Valley, have revealed evidence of a settlement in the grounds of Little Somborne House; this settlement may have been demolished to make way for the creation of a small park. Its presence can also be demonstrated from the evidence of recent excavations at the surviving Saxon church, which showed that the church was enlarged in the 14th century by the addition of a side chapel, a possible indication of a flourishing settlement. However, by the 16th century the chancel had been reduced in size and the chapel demolished (14 tax payers in 1524).

Not all parks were created in the late medieval and post-medieval periods — the bishops of Winchester's park of Highclere, first recorded in the 13th century, made demands on nearby settlement. The deserted village of Burghclere (now Old Burghclere, north of Whitchurch), which has surviving earthworks, a redundant 13th century church and a manor house (with a recently 'discovered' 14th century aisled hall), belonged to a bishop. However even in 1404 he was annexing most of the arable and fertile land belonging to the church at Burghclere, and was giving permission for a local landowner to pasture his and the bishop's sheep in all the pastures within the parish boundaries (Greatorex 1979). This surely is evidence, not only of the process of emparking, causing distress to a village, but also that the owner of the park was using the available land for pasturing his valuable sheep herds, at a time when the wool trade was at its peak. The process of decline was however gradual, for even in 1524 a population of over 40 was recorded for the village.

Although emparking was a major factor in settlement depopulation, other forms of desertion in Hampshire were the effects of the 14th century plagues, which according to documentary sources, caused a rapid decline in settlements at for example St. Anastius-by-Weeke, near Winchester (*VCH* 1903) and Abbotstone, near Alresford (Sanderson 1973). However, it would appear from a study of the bishop of Winchester's manors in Hampshire that the effects of the plagues have been exaggerated. Although some communities were reduced in numbers, by the 1350's they had fully recovered in economic terms (Levett 1916). Netherton, near Faccombe, a deserted settlement in the north-west of the county, declined due to competition from its near neighbour, probably from the 14th century onwards, when according to the results of excavations that have been taking place over the past ten years, the manor house was abandoned (Fairbrother 1972). Hordle, on the coast near Lymington, shrunk gradually due to a late medieval decline in the local medieval salt industry (*VCH* 1911). Other settlements were deserted, such as Lomer, near Corhampton, due to a change from an arable economy to one of pasture, as the profits to be made from the wool trade increased and attracted more landowners to convert their land (Collins et al 1971).

On the higher chalklands (above 60m) where approximately 50 per cent of the known deserted sites are located (see Fig. 21) one factor which may have caused a gradual disruption to village life is the lowering of the water-table, an occurrence which is manifest today in the form of the "lavants" or "winterbournes" which now only flow when the winter rains flood the downs, but which in medieval times would have been constantly flowing streams, a necessity to survival.

There are many other factors affecting settlement mobility in the county that need study. I have, for example, only commented briefly upon shrunken or shifted settlements, of which a number exist in the county, and I have not discussed village plans in any

Moated sites in Hampshire.

Figure 23

Early earthwork castles in Hampshire.

Figure 24

detail nor the historical relationship of settlements to their landscapes. Another subject worthy of research is the effects of enclosure on settlement in the medieval period. Enclosure was after all taking place on the bishop of Winchester's and the abbot of Titchfield Abbey's manors during the mid-fourteenth century, both of the arable fields and of the warrens and waste. Archaeological research has played little part in the study of rural settlement in the county to date. In my opinion much more fieldwork, combined with the study of the great wealth of documentary sources that exist, must be undertaken before any further excavation takes place so that a satisfactory strategy may be developed.

Moated Sites

A form of minor rural settlement in the Middle Ages that has received virtually no attention until recently in the county, (as distinct from studies in the Midlands, Yorkshire and East Anglia), is that of the moated manor or farmstead. A preliminary survey undertaken in 1975/76 (Hughes 1977), has revealed that there are at present approximately 120 provisional moated sites in the county (Fig. 23). In 1979 a start was made on a more detailed survey by the County Planning Department as part of an Historic Landscape programme. This latter survey has shown that some of the provisional sites were not moats, whilst others have been identified that were not included in the original list. Accepting the fact that there must have been other sites that have since disappeared or have not been recorded, then the final total is likely to be in the region of 80-100 medieval moated sites. This is a small number compared with Essex, Bedfordshire, Yorkshire and Worcestershire, for example, where in most cases the total number of moats exceeds 300 (Aberg 1978). Some of these medieval moats in Hampshire, as well as specially built examples, were also utilised in formal landscape gardens and parklands in later centuries, as occurred elsewhere in the country (Taylor 1972). Examples in the county are at Marwell Manor near Bishop's Waltham; Chiltlee Manor, Liphook; Beaurepaire House and Sherfield Hall, both near Basingstoke.

The distribution of moated sites in Hampshire as seen in Fig. 23 indicates a small but concentrated distribution of moated sites of particular interest. These sites are located on the clay lands and heavily wooded landscape of northern Hampshire in the valley of the river Loddon and its tributaries. These sites appear to exist side by side with other forms of medieval rural settlement in the region and it would therefore be reasonable to assume that the majority of them are moated manor houses, probably the result of the colonisation of this heavily wooded region of north Hampshire, and of the creation of sub-manors from larger estates. Although ten of those surveyed so far are located on isolated sites, only five of them appear to be in the area of a known medieval forest, Pamber Forest. In one parish alone, Sherfield-on-Loddon, there are three moated sites (Breach Farm, Lancelevy Farm and Sherfield Hall). One of the moated sites, Sherfield Hall, is probably that of the medieval manor house situated close by the parish church. The early village, however, has since migrated to a new site about one kilometre to the north. It is hoped that further work during the current survey programme will shed more light on the origins, functions and status of this particular group of moated sites.

Less concentrated groupings also exist along the upper regions of the Itchen, between Winchester and Alresford, and the Hampshire Avon, while other sites are located mainly in the other river valleys and on the clays, sands and gravels of the south, north and east of the county. Only a small percentage are located by an existing or deserted village site. The main reason for the small number of moated sites in Hampshire is probably due to the extent of the chalk downlands. There is, however, a marked absence of moated sites in such forested areas as the New Forest and the Forest of Bere, two extensive tracts of medieval woodland where it would be expected to find a higher incidence of sites; further survey may reveal new sites in these two forest areas.

The majority of sites in the county are simple, rectangular or square moats and enclose areas of one acre or less; there are none of the complex enclosures of the Midlands and elsewhere. Only a few of those so far examined enclose a larger area or have more than one moated enclosure. The site at Four Lanes Farm near Basingstoke had two moated enclosures originally, and that at Wyefords Farm two or more. A site at Longstock, on the River Test, sometimes referred to as a "Danish encampment", has one or two associated enclosures which may have been originally moated.

A number of moated sites have associated fish ponds: Lancelevy Farm has one, Hartley Wespall has two, one of which is well preserved; Wyefords Farm has at least two, whilst Marwell Manor has a whole series. This particular site is a 12th century college of canons, founded by the bishop of Winchester, which originally had associated buildings including a chapel and farm buildings, all located within one large moat. Moorcourt Farm, near Romsey, has two well preserved fish ponds immediately adjacent to the moated enclosure.

Some sites still retain internal buildings, as for example at Wyefords Farm, where a fine 16th century manor house survives; at Beaurepaire, where an earlier building has been succeeded by an ornate 19th century house; and Marwell Manor, where the present house and outbuildings have surviving 14th and 15th century architectural features. Of the other sites that have been surveyed, Four Lanes Farm, Stratfield Turgis, Otterbourne, Hartley Wespall, Breach Farm and Fordingbridge have 16th-18th century houses within the moated enclosures.

One of the most interesting and yet enigmatic sites is that at Sherborne Priory near Basingstoke, founded in the early 12th century. Here three arms of a squarish shaped moat lie immediately to the east of the surviving alien priory church. It would however appear to have been too small to have enclosed it, or any of the priory buildings. Does it enclose unrecorded monastic buildings that now lie under the present churchyard? The graveyard itself? Or did it enclose a pre-priory building? If the latter, then it would be one of the earliest moated sites in the country, apart from early castles. Only archaeological excavations will provide the answer, if the site has not already been destroyed by grave digging.

There is at present no correlation in the county between the form or size of moats, their relationship to other forms of settlement and their status or function. More details are required on the morphology of moats and associated structures, evidence which will only be forthcoming from excavations. Apart from the excavations at Old Milton (Hurst and Hurst 1967) and an on-going excavation programme on a moated manor

house site at Wickham, near Fareham (Whinney 1978), there has been only a perfunctory trench dug on one or two other sites in the county, which have added little to our knowledge.

Although more fieldwork, survey and excavation, together with further documentary and cartographic research is still needed, a general pattern is gradually beginning to emerge in the county from the current survey work. The results can then be compared with other regions in the not too distant future.

EARLY EARTHWORK CASTLES

Although documentary evidence from such sources as the Anglo-Saxon Chronicle and very tenuous archaeological data suggest the presence of castles in England in the years preceeding the Conquest, the vast majority of early castles date from the formative decades of the late 11th century, with a floruit in the 12th century.

In Hampshire quite a number of these early earthwork castles were built, most of them still surviving in some form or another (Fig. 24). They consist of both mottes and ringworks and appear to be mainly of 12th century date. A list of the sites in Hampshire is given at the end of this paper (Appendix I).

Although it has been advocated that ringworks were the earlier form of castle (Davison 1969), it would appear that "no progress has been made in this direction and no firm evidence exists to suggest that the castles without mottes are early". (Saunders 1977). There has certainly been no real supporting evidence for either theory from Hampshire sites, although the possibility exists that the large ringwork and bailey at Blendworth (Motley's Copse) partly overlies an earthwork whose shape and size is suggestive of a motte and bailey, possibly one of the "proto-castles" built in the immediate post-Conquest period (Platt 1978). Flint structural evidence has been recorded inside the ringwork, together with fragments of late 12th and 13th century pottery. In contrast, a small ringwork exists at Woodgarston Farm near Basingstoke, whose place name *(Wealagaerstune)* was first recorded in a 10th century charter(Sawyer No. 505) and was interpreted as meaning "grass enclosure of the welshmen (Grundy 1927). The site could also be that named in *Gesta Stephani* as *castellum quod dicebatur de Silva* — "Castle in the Wood" (Renn 1973). In 1332 ten tax payers were recorded for Woodgarston (by that time the name was *Wodegarston)* while there is a reference to the existence of a medieval chapel, suggesting that the castle was connected with a small medieval settlement. However, the earliest earthwork castle in the county whose construction date is reasonably clear is that at Winchester, where excavation in the late 1960s showed that the Conqueror's original castle (built c.1067) was a motte with an outer bailey which contained a castle chapel and possibly other buildings (Biddle 1970).

While the origins of the motte and the ringwork still remain obscure, the distribution of both forms in the county is of interest. There have been identified in Hampshire at present 11 ringworks (including two possible) and nine mottes. Most of the ringworks are small in size and even the larger sites, such as Basing House, Ashley, and Merdon, are not particularly large when compared with overall standards (Cathcart, King and Alcock 1969). Their smallness may suggest that their function was not necessarily that of a castle erected for some political reason, but that they possibly existed as hunting lodges or defended manors. Basing House ringwork, for example, was almost certainly the chief residence of Hugh de Port, Sheriff of Hampshire in the late 11th century, and remained in the ownership of his descendants until the 16th century.

The distribution of early castles in the county, in relation to settlements, may throw some light on their functions. Ten of them are located in isolated positions, six in deserted or existing settlements (including the castles in Winchester and Southampton), and three within 1-2 kilometres of a settlement. Of those situated in deserted or existing settlements three are close by churches or chapels, whilst four represent defended manor house sites.

Of particular interest is a group of isolated castles along the southern fringes of what was a very extensive tract of medieval forest, the Forest of Bere. At Rowlands Castle there is a motte, while less than 2 kilometres away lies a large complex ringwork, in Motley's Copse, one of the best preserved in the county. Within a few hundred metres of the ringwork a smaller motte is situated, together with a very recently discovered small ringwork type enclosure. Associated with the castles in Motley's Copse are a number of linear banks and ditches. Are they all forest hunting lodges or are the last two smaller earthworks siege castles, thrown up against the larger stronghold with its massive ramparts? Further to the west, on the northern slopes of Portsdown at Pinsley, there is a motte, whilst less than one kilometre to the north lies a well preserved ringwork at Southwick. Are they hunting lodges possibly connected with the royal patronage of Portchester Castle during the Middle Ages (that part of the Forest of Bere was called Portchester Forest in the 13th century, (Hughes 1976)), or are they connected with the nearby 12th century Augustinian priory at Southwick?

Another isolated group of castles which can be linked historically, is that located in the Crondall-Bentley-Farnham area. Farnham Castle (in Surrey), a large motte, was built by Henry de Blois, Bishop of Winchester, in the early 12th century and lies only three kilometres from a large ringwork at Barley Pound. This well-preserved ringwork has two baileys and overlies a complex of ditches and banks which may have been part of an earlier manorial settlement. Building foundations have been revealed with much re-used Roman material in the surviving remains. This particular castle has been tentatively identified as Lidelea Castle, which also belonged to the bishop and is mentioned in *Gesta Stephani* for 1147 (King and Renn 1971). Within a two hundred metre radius of Barley Pound lie two other earthwork castles; to the east Powderham Castle, a small flat topped motte and bailey; and to the south-west a ploughed out motte and bailey which lies just within the parish of Bentley. Two other possible partially ploughed-out ringworks also lie a short distance to the west, Penley Copse and a site at Long Sutton. The same text in *Gesta Stephani* also relates how two castles were built and garrisoned in order to besiege Lidelea Castle. King and Renn therefore suggest the possibility that the two mottes could be identified as 12th century siege castles, probably of the Anarchy. The much damaged motte in Bentley parish therefore represents an opportunity to examine such a structure, even though the motte has been denuded by ploughing.

An investigation of this kind, combined with documentary and landscape studies, could throw some

fresh lights on the origins and functions of this particular group of early earthwork castles. If we are to understand more widely the origins, the functions and the relationship of this particular class of earthwork with other forms of settlement, in Hampshire and elsewhere, the information can only be obtained through more comprehensive fieldwork combined with documentary research and, where necessary, archaeological excavation. It is hoped that such a contribution will be made by the survey programme that will be undertaken by the County Planning Department.

CONCLUSION

Although I have only touched briefly on a few aspects of the medieval settlement landscape of Hampshire, and attempted to underline problem areas connected with them, there are of course many other aspects which also need detailed study. Examples of such aspects are: population trends, place name studies, monastic houses and their estates, deer parks (of which there were thirty in Hampshire in the 16th century), woodland and forest clearance and associated settlement, industrial sites (especially mills and pottery and tile producing centres), including trade and distribution, and of course communications. Another important aspect of medieval Hampshire, as elsewhere in the country, is the study of standing buildings, including churches.

In my opinion archaeologists in Hampshire have been pre-occupied with the pre-historic and Roman periods and in recent years, especially in urban contexts, the Saxon period. Much of the medieval landscape of the county still survives and thus demands not just an archaeological analysis but an inter-disciplinary one. I hope therefore that this paper will help stimulate further interest in its study.

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APPENDIX I

Mottes and Ringworks in Hampshire

Parish	*Name of Site*	*Grid Ref.*	*Type*
Ashley	"Gains Castle"	SU 384208	Ringwork
Basing	Basing House	SU 663258	Ringwork
	"Olivers Battery"	SU 668535	Motte
Blendworth	Motley's Copse	SU 725122	Ringwork
	Motley's Copse	SU 723120	Motte
Bradley	"Hurst Castle"	SU 645413	?Ringwork
Crondall	"Barley Pound"	SU 796467	Ringwork
	"Powderham Castle"	SU 803469	Motte
(Bentley)	Ploughed out castle	SU 794463	Motte
Fordingbridge	Castle Hill	SU 166162	Ringwork
Froyle	Penley Copse	SU 776459	?Ringwork
Gosport	Apple Dumpling Bridge	SU 584001	Motte
Hursley	Merdon Castle	SU 421264	Ringwork
Long Sutton	"Court Garden"	SU 759462	?Ringwork
Rowlands Castle	Rowlands Castle	SU 733105	Motte
Southampton	Castle	SU 418115	Motte
Southwick	Pinsley	SU 639073	Motte
	Place Wood	SU 635092	Ringwork
Winchester	Castle	SU 479298	Motte
Wooton St. Lawrence	Woodgarston Farm	SU 584555	Ringwork

The Post-Medieval Archaeology of Hampshire

K. J. Barton

The role of Hampshire as a county in the Middle Ages, especially in the later part of the Middle Ages, is not very much different from the role of any other county in Southern England at that time. With the exception of the singular importance of both Winchester and Hamwih (later Southampton) its role did not differ either in earlier periods after the Roman occupation. However in the post-medieval period the county begins to divide between the north and south in a manner which becomes increasingly significant, more significant today than it was in the 16th century. The influence of London is marked both to the north and to the south of the county and only in central Hampshire do we see a slow tempo of change that has marked its history and prehistory from time immemorial.

If the post-medieval period is to be marked by some significant division, that mark is probably best represented by the decline of the power of Winchester in the Middle Ages and its subsequent, almost total, decline as a seat of temporal power in the 15th century. Equally significant is the loss of importance of Southampton, which is due not just to the devastating French raid of 1288, but primarily due to the continuing war between France and England which made the Channel untenable to traders. The brief sojourn of Viennese and Genoese merchants living in Southampton, which brought some respite to that beleaguered city, declined when the pressure of piracy and harassment became too great. It is mainly as a result of this decline that the cities of Bristol and London grew into favour with importers and exporters alike, as the route was safer and less demanding, and it was fortunate for Bristol that she took the trade from Southampton at the right moment, just before the discovery of the Americas which promoted trade and the greater industry in favour of Bristol and rather reduced Southampton's role. This is illustrated to some extent by a study of English post-medieval ceramics in the Channel Islands; the bulk of which originate from the Severn Valley, Bristol and North Devon, even though there were available adequate supplies of similar wares made at Poole, Verwood, Fareham and Chichester.

But it is the wars with France which have had the greatest influence on the development of one part of Hampshire, that of the Solent. Constant raids by the French on the South Coast, and in particular on the Isle of Wight, threatened and harassed merchant shipping. It also proved very difficult for English kings to carry armies into France from the southern coast without sufficient support. The harbours of the south-east coast are untenable for the maintenance of a fleet of any significance until one reaches Portsmouth Harbour; Chichester and Langstone Harbour are too shallow and only Portsmouth Harbour has sufficient depth of tide, although it too raised problems for the mariner both in the narrowness of the harbour entrance and in the severe tidal race on both the ebb and flow. Entry into that harbour is limited to fair winds and to ships guided by being warped, by the use of capstains or by row boats, in and out of the entrance. Thus for sailing vessels of types used in the early post-medieval period there were enormous difficulties which were also experienced even later, in the 18th and 19th and early 20th centuries, when the Admiralty thought it prudent to keep the bulk of the Fleet outside anchor on the shallow shoals of the Spithead.

The growth of Portsmouth is very significant; it received its foundation at the end of the 13th century as what was little more than a few streets with some permanent buildings to provide some sort of nucleus for camps, for soldiers on the move or to guard the nearby harbour. It was not until the reign of Henry V that a dry dock was first built there. This proved unsatisfactory and was soon filled in but a second more effective dry dock was built by Henry VII in 1495. This now lies underneath the cobbling next to HMS Victory. Portsmouth even then was not considered to be politically important and its growth at the end of the 16th century was a bitter pill for Southampton to swallow, as Southampton was in decline and fought continually for the right to control the customs until Portsmouth received its charter in 1600. The fortification of Portsmouth proper began at the end of the 15th century with the building firstly of the Round Tower and then of the Square Tower; they provided defence against any vessel attempting to enter the harbour which by then had become known as Portsmouth Harbour; they also defended the spit of land in the Solent and Camber, the small civil harbour of the town. The Square Tower was placed directly on the seaward end of the main street of the town. From those initial defences sprang a wall and ditches to enclose the whole of the town, which was slightly to the east of the Square Tower up to the present position of the City Museum and westwards to the Camber.

The enclosure was not only for the defence of the town but for the defence of the harbour. It had been realised from the very beginning that there was no point in keeping a fleet in a harbour without supplies, without workshops for repair and restoration, and without a military presence to defend those supplies, workshops and the entrance to that harbour. Although Portsmouth had been marked as a naval town, its true role was a military one defending the ephemeral appearances of ships coming and going from its harbour. The importance of Portsmouth Harbour cannot be stressed too greatly; the securing of the Fleet and the constant patrol of the Channel made a primary military base for the Defence of the Realm. Only one other town was defended as well and that was Berwick-Upon-Tweed, where the defences were for a different purpose, to defend the northern outposts of England against the Scots. Portsmouth's role was to protect the Fleet which was defending England against the French, a role of such importance that it almost removes Portsmouth from the post-medieval development of Hampshire. For in this capacity Portsmouth developed into an extension of the metropolis, an outpost of London; it had become, in effect, a Royal castle of enormous proportions and remained so up to the reign of Victoria.

It is significant that it was at Portsmouth that Henry VIII exercised his new, specially constructed warship, the Mary Rose, the ship that never fired a shot in anger, turned turtle and sank with all hands in the face of the enemy. An equal item of significance for both

Portsmouth and the nation was the decision of Henry VIII to make Southsea Castle the first castle to be constructed on what was then a new design for mounting guns on angled bastions. The latest designs for artillery defences originated in Italy and spread rapidly through Europe, although Southsea Castle is a pale shadow of the original Italian designs and obviously suffered to some extent from the influence of the English compromise. The principle laid down in that castle, of a Keep with special gun emplacements defended by a glacis, is one that can be traced to most of the defensive works of the 16th to 19th centuries; within 5 miles of Southsea Castle the Palmerston Forts of the 1860s show the last throes of this architectural style, complete with Keep, angled bastions and glacis.

Not only was Portsmouth fortified and supported by Southsea Castle but later on the far eastern end of the island was the site for a fort which was replaced by another "star" fort of some magnificence and great expense. The brainchild of the Duke of Cumberland and called Fort Cumberland after him, remains the only "star" fort in Britain and is now designated an Ancient Monument. Its construction was modified by a casting vote of the Speaker of the House of Commons as it was considered to be inordinately expensive. But fortifications did not cease there, for the town of Portsmouth was fortified and re-fortified as was the adjacent town of Portsea, which housed the sailors and artisans. The principal architect amongst several was Henry de Gomme who worked at the end of the 17th century when Gosport was included in the defences. Fortifications were again strengthened and modified in the 18th century, by which time the whole of the mouth of Portsmouth Harbour had become encircled by one vast bank and ditch and emplacement system.

After their defeat in 1815, at a time of technical development, the French were prompted to rebuild their Fleet of ironclad ships mounting heavy guns with a range of several miles. In the middle of the 19th century the defence at Portsmouth was too flimsy for these improved guns and the grooved shells of the French, and this led to the construction of the great series of defences, built by Palmerston, which range along the top of Portsdown Hill and across the flatlands, cutting off the peninsula on which Gosport stands.

The fortification of Portsmouth together with the running series of wars from the 1540s onwards had much wider ramifications in Hampshire, for in the hinterland of Portsmouth lies the Forest of Bere, an area noted for its wilderness, for its vagabonds and highwaymen, dense thickets and difficult throughways. The bulk of this forest was felled and removed during the 18th and 19th centuries for the construction of warships. A flourishing building industry grew up in the Hamble River but also, more importantly, in the Beaulieu River. The latter site, set in the New Forest, had resources close at hand for the production of wood for ship-building, for charcoal, for heating and for the manufacture of gun-powder and also for use as fuel for the smelting of ironsand, brought from Hengistbury Head near Christchurch. These activities were of such significance that over a 50 year period they produced a considerable number of ships, both at Bucklers Hard and Bailey's Hard where evidence of them still survives. Other resources of the New Forest were also exploited: sand and gravel were extracted for road building, marl was extracted for a fertiliser and the clays were dug and converted into brick.

In this period too the clays of southern Hampshire at Fareham, Portsmouth and Hayling were brought into use to embellish and change the architectural styles of the county. The use of brick began in the 16th century and can be seen in several important buildings in Hampshire, particularly at Basing House, but also in the wall around the Bishop's Palace at Bishops Waltham. From that time onwards major structures were built in brick; indeed the visually most significant aspect of the post-medieval period is the range of red brick buildings of 16th-20th century date.

The effect of the Napoleonic Wars, of the clearance of the forests and of the growth of the towns of southern Hampshire is also reflected in the agricultural architecture. There are many farms of southern Hampshire where the evidence indicates that the principal production was of cereals rather than meat. Large granaries on staddles, small barns, large barns, following one another in date and size, show the rate of increased production of cereals throughout this period. Obviously the grain was grown to provide for the enormous demand of the Navy and the Army in the south of the county and for exportation to the Colonies, also under threat from the French.

Such industrial activities as there were in central Hampshire were limited to the production of cloth made from wool, or, in some instances, of silk. In the north of the county the story is somewhat different from that of the rest. The geology of that area, particularly the north-east of the county, is markedly different from that of the chalklands and is similar to the geology of the New Forest and the Weald lying to the east of Petersfield. The land is principally gravel or clay, heavily wooded and drained mostly to the north. Already in the Middle Ages in the north-eastern area there was a pottery industry, which belongs loosely to that found in and around the conjoint borders of Berkshire, Surrey and Hampshire but mainly near Kingston-on-Thames. This industry produced a wide variety of highly decorated wares known as "Surrey Wares". In the same way as other southern English medieval pottery in the 14th century, the highly decorated wares declined into plainer wares. By the middle of the 15th century, in common with the rest of England, significant changes in ceramic styles were taking place and it is near to Farnham and Cove, the Blackwater Valley and other sites in that area that we discover the products of potters using established methods to provide new kinds of pottery involving the use of white clay with a green glaze; the foundation of the type known as "Tudor Green".

These varied types of wares are completely divorced from the medieval combination of cooking pot and jug which was the pattern of production for the previous 150 years; items produced included cups and mugs, platters, candlesticks, small jugs and costrels and a much wider range and quality than that made earlier. This is the mirror of a movement that was taking place in the North and Midlands in which the wares were made in similar form, perhaps not with such a wide variety but in a red fabric with a brown glaze, sometimes with a white decoration. "Tudor Green" wares were manufactured in north-east Hampshire in vast quantities from small kilns dotted about wherever there was suitable clay or fuel or a combination of both to suit the potter. The products of these kilns mostly went to London and the archaeological levels of the 16th and 17th century in London are heavily littered with north Hampshire "Tudor Green". The influence of London was not a new thing for this area, for, as Malcolm Lyne has shown, the

Roman potters exported their pottery to London by river in the same quantity and the medieval potters did likewise.

In the early 18th century the digging of canals became important and every effort was made to link Portsmouth by canal with its mother town of London, to ensure the swift movement of goods both backwards and forwards from the capital to its naval base. Canal links were dug and the Wey and Arun canalised in an attempt to reach Portsmouth through Chichester Harbour. A canal was also connected from the Wey through to Basingstoke and was intended to go beyond. Neither of these ventures succeeded and by the time they had finished road, and later rail improvements were already in hand.

The prosperity brought to the market towns, especially those inland, after the Civil War and because of the Napoleonic War allowed them to flourish; towns such as Andover, Basingstoke, Alton, Petersfield, Farnborough, Romsey and, to some extent Winchester, owe their modern prosperity to the growth of their importance in the 18th and early 19th centuries, which was rapidly stimulated by the coming of the railways. But in the meantime several towns in the north of the county had already established industries themselves; singular amongst these is the foundation of the Waterloo Iron Works at Andover begun, significantly, in 1815. After the end of the Napoleonic Wars there was considerable development along the south coast of the county: Waterlooville was founded, Portsmouth expanded into Kingston and Milton, around Southampton, Shirley and Above Bar were developed, while the coastal towns of Emsworth, Havant, Fareham and Lymington all expanded.

By the middle of the 19th century, as a result of the railways, the influence of London had become enormous and the need to escape from the filth of the capital to the sea helped to establish holiday resorts such as Southsea at the southern end of Portsea Island. At this time also the same military threat which raised Palmerston's follies caused the Government to produce defensive lines for London which included the barren lands around Aldershot; Pirbright, Caterham and Camberley became military camps and Aldershot the drill ground for them. As Aldershot developed the military influences which had been centred for so long in Portsmouth began to move away to that part of the county.

Throughout the period, and right on into the middle of the 20th century up to the present day, central Hampshire has changed much more slowly and remains agricultural, primarily concerned with cereal growing but also now using that cereal to fatten beef; the sheep, important in the medieval period have declined to little significance. To the north of the county Basingstoke, Andover, Alton and Farnborough are within the commuter belt of London and are more a part of London than of Hampshire; indeed up to 1978 Basingstoke and Andover were predominantly London overspill towns although that has changed to some extent since. It is really in the mid-70's that the features we have seen in the post-medieval period in Hampshire come to an end, with the decline of the Navy in Portsmouth, the reduction in the size of the Dockyard, the surrender of a great deal of land, in some cases held for more than 200 years, by the Army, which have reduced the military presence in the south to less importance than it has ever been for the last 500 years.

The effect on Portsmouth is significant for it attempted to change its character by housing its inhabitants elsewhere and developing a series of factories to make it less dependent on the Dockyard; with the development of a commercial port this strategy appears to have been successful. The fortunes of Southampton continue to wane; it recovered with the appearance of the steam ocean liners but was affected by the growth of air traffic, and is now attempting to recover itself with cargo traffic. The small towns of Hampshire: Christchurch, Havant, Romsey, Petersfield and Alton have changed little, developing slowly or in spurts, and following the common pattern of the 20th century are today surrounded by minor industries. Towns at Farnborough, Andover and Basingstoke have been left to their own devices and continue to survive. The capital city of Winchester has had a new lease of life and its fortunes, firstly as a Roman Civitas capital and, secondly, as seat of the Kings of England and as a great ecclesiastical centre have changed once again to become a seat of power in the hands of local government bureaucrats; they probably wield as much power and certainly spend far more money than has ever been seen before in the history of Hampshire.

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APPENDIX II

Post Medieval Archaeology in Hampshire: A Gazetteer

Field Systems and Earthworks

SU 188122 **Fordingbridge**
System of low earthworks — *Proc. Hampshire Fld. Club* (New Forest Section Repts. 3), 1964 (A. H. Pasmore).

SU 19780786 **Ellingham**
Small oval stock enclosure — *Local Papers* (1931), 182-5 (Heywood Sumner).

SU 21071390 **Fordingbridge**
Stock enclosure — *New Forest Pottery Kilns & Earthworks*, 1967 (A. H. Pasmore).

SU 203060 **Burley**
Ridley Copse — *Local Papers* (1931), 149, 156-7, 170-3 (Heywood Sumner).

SU 23750692 **Burley**
Hard Wood Plantation — *The New Forest* (1863), 215-6 (J. Wise).

SU 233010 **Burley**
Two enclosures — *Proc. Hampshire Fld. Club*, 23, 9 (C. C. Tubbs and E. Jones).

SU 27260154 **Rhinefield**
Length of Bank, *Proc. Hampshire Fld. Club*, New Forest Section Repts. 5 (1966), 7 (T. Knowles).

SU 27380663 **Rhinefield**
?Remains Post Medieval Field System, *Proc. Hampshire Fld. Club*, New Forest Section Repts. 5 (1966), 7 (A. Pasmore).

SU 228999 & SU 295994 & SU 296996 **Burley**
Probable late 18th century/early 19th century encroachment. *Proc. Hampshire Fld. Club*, 23 (1964), 1-10 (Tubbs & Jones).

SU 32940968 **Colbury**
Salpetre House, *Proc. Hampshire Fld. Club*, 18, 335-7 (Cmdr. E. C. Wrey).

SU 32770952 **Colbury**
Bank, part of Saltpetre House enclosure, *Historical England*, New Forest 1811 (Lewis).

SU 324091 & SU 33950862 **Colbury**
Coppice Bank, *Proc. Hampshire Fld. Club* (New Forest Repts. 5), 1966 (A. H. Pasmore).

SU 325050 & SU 334056 **Denny Lodge**
Enclosure, *Wm. Driver's Map of the New Forest*, 1789.

SU 367024 **Boldre**
4 Acre enclosure 18th century/19th century, *Proc. Hampshire Fld. Club*, New Forest Section Repts. 4 (1965), 8 (A. H. Pasmore).

SU 303996 **Boldre**
Banked and ditched enclosure, late 18th century, *Proc. Hampshire Fld. Club*, 23, 1-10.

SU 368938 **Boldre**
Banked and ditched enclosure, late 18th century, *Proc. Hampshire Fld. Club*, 23, 9.

SU 420030 **Denny Lodge**
Banked, possible enclosure, *Proc. Hampshire Fld. Club*, New Forest Section Rept., 3 (1964), 4 (A. H. Pasmore).

Recreational Sites

SU 0516 **Cranborne/Martin**
Blagdon Park — Existed pre-1324, *Proc. Dorset Natur. Hist. Archaeol. Soc.*, 86, 164-170 (L. M. Cantor and J. D. Wilson).

SU 22201601 **Fordingbridge**
Studley Castle, 14th century hunting lodge, *Proc. Hampshire Fld. Club*, New Forest Section Rept. 8 (1969), 6 (Pasmore), *Antiquity* 5, 482 (S. Piggott).

SU 25400903 **Minstead**
Stag Park, *Wm. Driver's Map of the New Forest*, 1789.

SU 3237 **Nether Wallop**
Racetrack, Danebury Hill until 1898, *VCH, Hampshire* 4 (1911), 528.

SU 38163518 **Little Somborne**
White Horse, 18th century, *White Horses and Other Hill Figures*, (1949), 135-6 (Marples), *Notes & Queries*, Vol. **8**, 2 (1859), 400.

SU 35841805 **Romsey Extra**
18th century walled garden, may be site of Nursling Manor House, *A short history of Nursling* (1948) (O. G. S. Crawford).

SU 304089 **Lyndhurst**
Race Course — *Wm. Driver's Map of the New Forest 1789* (Ed. of 1851).

SU 305065 **Lyndhurst**
Park, pre 1789 — W. Driver's Map.

SU 307991 **Boldre**
Cockpit — *Tithe Map*, Boldre, 1851.

SU 48482770 **Winchester**
Maze — St. Catharine's Hill 1710. St. Catharine's Hill, *Proc. Hampshire Fld. Club*, 11, 269-80 (C. F. C. Hawkes, Myres & Stevens).

Farms and Farmbuildings

SU 16420875 & SU 17360952 **Ellingham**
Late 18th century/Early 19th century bee garden. *Local Papers*, 1931, 108 (Heywood Sumner).

SU 1708 **Ellingham**
Several Pillow Mounds, *Proc. Hampshire Fld. Club*, New Forest Section Repts. 4 (1965), 9 (A. H. Pasmore), 5, 1966, 5 (A. H. Pasmore), *Preliminary Excavation Rept.* 30, 1, 1968 (H. C. Bowen).

SU 17001050 **Ellingham**
Bee Garden, *Proc. Bournemouth Natur. Sci. Soc.*, 14, 1921-2, 68 (Heywood Sumner), *Local* Papers, Archaeology & Topography, Hampshire, Dorset & Wiltshire (1931), 34 (Heywood Sumner).

SU 216008 **Burley**
Bee Garden, *Proc. Hampshire Fld. Club*, New Forest Section Report, 2 (1963), 6 (H. A. Collinson).

SU 30903297 **Broughton**
Pigeon House, *Hampshire Papers* (1908-11), 384-5 (T. W. Shore).

SU 479224 **Owslebury**
Hensting Farm House, 16th century, *Buildings of Archaeological Historical Interest*, Winchester Rural District Council, 1951, 189.

SU 14671414 **Fordingbridge**
Market House — demolished 1829, *A History of Fordingbridge 1909* (R. Harver).

SU 15301521 **Fordingbridge**
Bargate Manor House — Early 19th century, Pevsner & Lloyd (1967).

SU 17941856 **Hale**
Hale House probably 18th century, Pevsner & Lloyd (1967).

SU 17101950 **Hale**
North Charford Manor House, Early Georgian, Pevsner & Lloyd (1967).

SU 20289320 **Highcliffe**
Castle, built 1773 now derelict, Pevsner & Lloyd (1967).

SU 20859597 **Ringwood & Fordingbridge**
Hinton Park, built 1720, Pevsner & Lloyd (1967).

SU 14890548 **Ringwood**
Manor House, 18th century, *VCH, Hampshire*, 4 (1911), 607-8.

SU 16200851 **Ellingham**
Mid 17th century brick house, Pevsner & Lloyd (1967).

SU 14841246 **Fordingbridge**
Bickton Farm, 16th century (Early) Manor House, *VCH, Hampshire*, 4 (1911), 568-9.

SU 55975889 **Tadley/Pamber**
Wyeford Farm — Ancient seat of Tadley Manor 1601-1625, *VCH, Hampshire*, 4 (1911), 215 H.

SU 626133 **Soberton**
Hoe Manor Farm, 18th century and earlier building, Hampshire County Planning Dept. Field Archaeologist.

SU 60503200 **Bishops Sutton**
Sutton Manor House, c. 1700, Pevsner & Lloyd (1967).

SU 07051950 **Martin**
Bustard Manor Farm, *VCH, Hampshire*, 4 (1911), 592.

SU 13820302 **Ringwood**
Avon Castle, c 1875 Country House, *VCH, Hampshire*, 4 (1911), 607.

SU 51845043 **Overton**
Quidhampton Farm Post Medieval Manor House, *VCH, Hampshire*, 4 (1911), 210, 215-6 Hampshire Record Soc. Obedientiary Record of St. Swithun, 405.

SU 51255939 **Kingsclere**
Frodbury Farm Manor of Frodbury, *VCH, Hampshire*, 4 (1911), 249, 254-6. Eggerton MSS 2031 14 75. Hampshire Record Soc., Wykeham's Register, 198.

SU 537541 **Kingsclere**
Manor Farm, late 17th century/18th century, *VCH, Hampshire*, 4 (1911), 257-8, 265.

SU 54085866 **Kingsclere**
Sandford Farm, 16th century Manor House, *VCH, Hampshire*, 4 (1911), 256-7.

SU 28270986 **Minstead**
Manor House, enlarged end of 18th century, demolished 1950, *VCH, Hampshire*, 4 (1911), 635-7.

SU 27734875 **Kimpton**
Shoddesdon Manor, no remains earlier than 17th century. *Notes on the Parish of Fyfield Kimpton*, 1898, 82 (R. M. Clutterbuck).

SU 31401673 **Copythorne**
Paultons House, 18th century appearance (MSS in possession of tenants).

SU 32741412 **Netley Marsh**
Tatchbury Manor, late 18th century to early 19th century.

SU 33401480 **Netley Marsh**
Lapenwood Manor, c 1860, part of Tatchbury Mental Hospital, *VCH, Hampshire*, 4 (1911), 550.

SU 35581643 **Nursling House**
Formerly a rectory, built 1778, Pevsner & Lloyd (1967).

SU 36671675 **Nursling**
Grove Place, Mansion, built 1561, *Bulletin of the British Arch. Assoc.*, No. 31 (1950), 3.

SU 32712695 **Montisfont**
Abbey — Remains of Monastic building included into Country House built c 1538-40, *VCH, Hampshire*, 4 (1911), 503 and 2 (1903), 172.

SU 39882324 **Ampfield**
House, built 1760 (Pevsner & Lloyd, 1967).

SU 36493110 **King's Somborne**
The Cruck Cottage, *Proc. Hampshire Fld. Club*, 21, 56, *Hampshire Magazine*, May 1964, 23-4.

SU 35944537 **Andover**
Hospital/Almshouses, c 16th century, St. Mary Magdalene's Leper Hospital, *Medieval Religious Houses of England and Wales*, 1953, 251; *VCH, Hampshire*, 1 (1900), 356; *Medieval Hospitals of England*, 1909, 293 (R. M. Clay).

SU 36414586 **Andover**
Pollens Almshouses, built 1686. Extract from the *14th Rept. of the Charity Commissioners*, 1825, 27 (Anon).

SU 35615582 **Vernham Dean**
Upton Grange, *Proc. Hampshire Fld. Club*, 9 (1922), 267-9.

SU 35175661 **Vernham Dean**
Vernham Manor, late 16th century/early 17th century, *VCH, Hampshire*, 4 (1911), 329-30.

SU 43111130 **Southampton**
Ferry Shelter Cross House, *A Walk through Southampton* (1805), 77 (Sir Henry Englefield).

SU 44161194 **Southampton**
Peartree House Mansion, 1617, Pevsner & Lloyd (1967).

SU 43371337 **Southampton**
Bitterne Manor, 1207-8, *Proc. Hampshire Fld. Club*, 13, 295 (Williams-Freeman).

SU 42252542 **Hursley**
House, 1725, *Ministry of Housing & Local Government Prov. List of Scheduled Buildings*, 1951, 48 (Winchester Rural District Council).

SU 446232 **Hursley**
Cranbury House, built c 1780, *Illustrated guide to Cranbury Park*.

SU 46872229 **Twyford**
Brambridge House, 1908, *VCH, Hampshire*, 3 (1908), 334, 339.

SU 47842926 **Winchester**
Christ's Hospital, 1607 rebuilt, 19th century memorial obelisk, 1759, *VCH Hampshire* (5), 1912, 21, Pevsner & Lloyd (1967).

SU 48112942 **Winchester**
The Eclipse Inn, formerly St. Lawrence Rectory, 16th century, *The Story of Winchester*, 1955, 44 (N. Wymer).

SU 485293 **Winchester**
Hospital of St. John the Baptist — The Great Hall, c 1770, Almhouses dated 1817-1880, Pevsner & Lloyd (1967).

SU 48423072 **Winchester**
Abbots Barton Manor House, 16th century, *VCH, Hampshire*, 5 (1912), 20.

SU 483398 **Wonston**
Manor House, 18th century, *VCH, Hampshire*, 3 (1908), 409-11.

SU 44014669 **Hurstbourne Priors**
The Grange, *VCH, Hampshire*, 4 (1911), 287; *History of St. Mary Bourne*, 1888 (Stevens).

SU 53410611 **Fareham**
St. Margaret's Priory, 16th century House, *Ministry of Housing & Local Government, Hampshire*, 1097/11/A, Fareham Urban District Council, 1952, 42.

SU 51371244 **Botley**
Steeple Court, 16th-17th century Manor, *VCH, Hampshire*, 3 (1908), 286, 466.

SU 52771713 **Durley**
Manor Farm, 1575, Manor House — Frag. remains, *VCH, Hampshire*, 3 (1908), 288-9.

SU 54921921 **Bishop's Waltham**
Little Manor, 17th century and earlier, Pevsner & Lloyd (1967).

SU 55561474 **Shedfield**
Spencers Place, probably 15th century, Pevsner & Lloyd (1967).

SU 56581159 **Wickham**
Park Place, 18th century, now a convent, Pevsner & Lloyd (1967).

SU 58621172 **Wickham**
Rookesbury Park School, built 1835, Pevsner & Lloyd (1967).

SU 50862175 **Owslebury**
Marwell House, rebuilt 1816, *VCH, Hampshire,* 3 (1908), 332-4.

SU 5757327 **Upham**
Pres[illegible]w House, 17th, 18th and 19th century, *VCH, Hampshire,* 3 (1908), 261-2.

SU 58202840 **Cheriton**
Rectory, late 17th century, Pevsner & Lloyd (1967).

SU 5139 **Micheldever**
Site of Manor, 1537 — Rescue dig July 1973.

SU 53273233 **Avington**
House, built 1560/70, remodelled 1680, additions 19th century, *VCH, Hampshire,* 3 (1908), 306-8; *Min. Housing & Local Government List Scheduled Buildings,* 1951, 51-2.

SU 54994710 **Steventon**
Manor House, originally 16th century, *VCH, Hampshire,* 4 (1911), 171.

SU 59744744 **Dummer with Kempshott**
Kempshott House, late 18th century, *VCH, Hampshire,* 1 (1900), 480 + 4 (1911), 179-80.

SU 52845063 **Overton**
Polhampton Farm, 17th century, *VCH, Hampshire,* 4 (1911), 210, 213-5.

SU 56785262 **Oakley**
Malshanger Castle, 1806, *VCH, Hampshire,* 4 (1911), 224 ff.

SU 58285243 **Wootton St. Lawrence**
Marydown House, *VCH, Hampshire,* 4 (1911), 239.

SU 58175316 **Wootton St. Lawrence**
Tangier House, built 1662, *VCH, Hampshire,* 4 (1911), 240.

SU 627004 **Portsmouth**
393 Commercial Road, Dicken's birth-place, 18th century terrace, *Ministry of Housing & Local Government,* City of Portsmouth, 1951.

SU 64990559 **Portsmouth**
Wymering Manor, 16th/17th century house, remodelled 18th century, *Proc. Hampshire Fld. Club,* 7 (W. Dale).

SU 61021692 **Soberton**
The Towers, 1897-1904, Pevsner & Lloyd (1967).

SU 62161473 **Hambledon**
"Cams", 17th century origin with 18th century additions, Pevsner & Lloyd (1967).

SU 65551602 **Hambledon**
Park House, 17th century, Pevsner & Lloyd (1967).

SU 60902782 **Bramdean**
Manor, 1740, Pevsner & Lloyd (1967).

SU 61202807 **Bramdean**
House, early 18th century, Pevsner & Lloyd (1967).

SU 62332790 **Bramdean**
Woodcote Manor House, late 16th century/early 17th century, *VCH, Hampshire,* 3 (1908), 46.

SU 65002922 **West Tisted**
Moated Manor, c 1600, demolished 1955/6, *VCH, Hampshire,* 3 (1908), 59; *Field Archaeology as illustrated by Hampshire* (1915), 43, 296-7 (J. P. Williams Freeman); *The Lost Villages of England* (1954), 353 (M. Beresford).

SU 60653220 **Bishops Sutton**
Bishop's Palace — Site only.

SU 63603196 **Ropley**
House, built early 18th century, Pevsner & Lloyd (1967).

Fortifications

SU 27462027 **Plaitford**
Moated Site.

SU 46442238 **Otterbourne**
Moated Manor site, *Field Archaeology as Illustrated by Hampshire,* 1915, p. 259 (J. Williams-Freeman); *VCH, Hampshire,* 3 (1908), 440-42.

SU 61840026 **Gosport**
Fort; no visible remains, *Gommes Map of Portsmouth,* 1668.

SU 650043 **Portsmouth**
Hilsea Lines, 19th century, *Archaeol. J.,* 123 (1966), 136 ff (A. D. Saunders).

Castles

SU 31808974 **Hurst**
Castle, completed 1544.

SU 45120885 **Hound**
Netley Castle, built 1542, 19th century additions, Pevsner & Lloyd (1967).

Military Establishments

SU 48880249 **Fawley**
Calshot Castle, 16th century coastal fort, *VCH, Hampshire,* 3 (1908), 292, *Proc. Hampshire Fld. Club,* 12 (1932-4), 214 (J. P. Williams-Freeman).

SU 616005 **Gosport**
18th century frontier defence, OS 6 inch 1969.

SU 616012 **Gosport**
Priddy's Hard Armament Depot, *Department of the Environment letter 9-2-1971.*

SU 615012 **Gosport**

SU 651229 **West Tisted**
Semaphore Station used in Napoleonic times, *It happened in Hampshire,* 1966, p. 128.

Forts

SU 572048 **Fareham**
Fort Fareham, c 1860, *Archaeol. J.,* 123 (1966), 136 ff (A. D. Saunders).

SU 587067 **Fareham**
Fort Wallington, 1874, *Department of the Environment List of Ancient Monuments.*

SU 591002 **Gosport**
Fort Grange, c 1857-1862, *Archaeol. J.,* 123 (1966), 136 ff (A. D. Saunders).

SU 593011 **Gosport**
Fort Rowner, c 1857-1862, *Archaeol. J.,* 123 (1966), p. 136 ff.

SU 596020 **Gosport**
Fort Brockenhurst, 1862, *Department of the Environment List of Scheduled Ancient Monuments.*

SU 599029 **Gosport**
Fort Nelson, c 1852-57, *Archaeol. J.,* 123 (1966), 136 ff.

SU 62040080 **Portsmouth**
Fort James, Burrow Island, *Early Portsmouth Defences,* 1923, 39 (H. T. Lilley).

SU 656065 **Cosham**
Fort Widley, 1861-1868, Pevsner & Lloyd (1967).

Bridges

SU 35231965 **Romsey Extra**
Waldynbridge mentioned 1558, removed 1760, *Records of Romsey Abbey,* 1906, p. 205.

SU 36951370 **Southampton**
Redbridge arches built, 17th century + 1793, *Ancient Bridges of the South of England* (1930), 66 (E. Jervoise).

SU 35272117 **Romsey Infra**
Site of Hundred Bridge, *Proc. Hampshire Fld. Club,* 4, 166.

SU 35233516 **Stockbridge**
Built 1799, *Ancient Bridges of the South of England* (1930), 66 (E. Jervoise).

SU 47752466 **Twyford**
Medieval, but rebuilt 1750 + 1891, Pevsner & Lloyd, 1967.

SU 486293 **Winchester**
Bridge, 1813, *Department of the Environment List of Ancient Monuments.*

SU 491322 **Kingsworthy**
Railway Bridge, *Proc. Hampshire Fld. Club,* 26, 161.

SU 54370660 **Fareham**
Stoney Bridge. built c 1625, *Ancient Bridges of the South of England* (1930), 62-3 (E. Jervoise); *VCH, Hampshire,* 3 (1908), 22; *Ministry of Works List of Ancient Monuments* (1953), 52.

SU 516130 **Curdridge**
River bridge on A.334, *Proc. Hampshire Fld. Club,* 26, 164.

SU 589138
Road Bridge on A.32, *Proc. Hampshire Fld. Club,* 26, 61.

SU 583285 **Cheriton**
River Bridge on B.3046, cast iron, *Proc. Hampshire Fld. Club,* 26, 167.

SU 574322 **New Alresford**
Railway Bridge, *Proc. Hampshire Fld. Club,* 26, 160.

SU 596324 **Bishop's Sutton**
Railway Bridge, *Proc. Hampshire Fld. Club,* 26, 160.

SU 614187 **Soberton**
Road Bridge on B.2150, *Proc. Hampshire Fld. Club,* 26, 166.

SU 628107 **Southwick & Widley**
Hump-backed bridge over stream, *Hampshire Treasures.*

SU 654045 **Portsmouth**
Stone bridge connecting Portsea Island with the Mainland mentioned 1549 but now no trace, *Ancient Bridges of the South of England* (1930), 62 (E. Jervoise).

Canals and Railways

SU 13080000 to SU 14000480 **Ringwood**
Track of old Railway, Ringwood to Christchurch, Opened 1862, Closed 1935, *A Southern Region Record* (1964), 47 & 59 (R. H. Clark).

SU 1213 **Fordingbridge**
Area of line opened 1866 and closed 1964/68, *A Southern Region Record*, 67 (R. H. Clark).

SU 20000181 to SU 25000005 **Burley**
Disused railway line, now partially used as a road (OS 6 inch map).

SU 46002045 to SU 47952795 **Twyford**
The Itchen Navigation 1665-1869 — present day, *Proc. Hampshire Fld. Club*, 24, 113 (Edwin Course).

SU 480350 to SU 464450 **Kingsworthy**
Newbury-Winchester railway line, opened 1885, closed 1960, *A Southern Region Record* (1964), 55-60 (R. H. Clark).

SU 56130046 to SU 59570111 **Gosport**
Gosport — Lee-on-Solent, closed 1931, *A Southern Region Record* (R. H. Clark).

SU 570062 to SU 575050 **Fareham**
Fareham to Gosport branch line, opened 1841 to June 1957, *A Southern Region Record* (R. H. Clark).

SU 55631000 to SU 60001444 **Wickham**
1903-1955, embankment remains, *A Southern Region Record* (R. H. Clark).

SU 61662500 **Warnford**
Alton/Fareham railway, 1903-1955, *A Southern Region Record* (R. H. Clark).

SU 60501500 to SU 60001445 **Soberton**
The Meon Valley Railway 1930-1955, *A Southern Region Record* (R. H. Clark).

Airfields

SU 16810853 **Ellingham**
Disused airfield.

SU 16810853 **Headbourne Worthy**
Aerodrome, Royal Flying Corps training 1918-21, Winchester Research Unit Records, *Proc. Hampshire Fld. Club*, 29, 100.

Industrial Sites

SU 105160 **Damerham**
Tannery, *It Happened in Hampshire*, 78.

SU 173175 **Woodgreen**
Eel trap making, *It Happened in Hampshire*, 81.

SU 1704 **Ringwood**
Crow Hill, Weaving, *It Happened in Hampshire*, 4.

SU 1704 **Ringwood**
Crow Hill, Glove Knitting, 18th and 19th century, *It Happened in Hampshire*, 85.

SU 37799650 **Beaulieu**
Iron Works, Two Vast Mills, 1798, *It Happened in Hampshire*, 76.

SU 3002 **Brockenhurst**
Tannery, late 19th century, *It Happened in Hampshire*, 79.

SU 3802 **Beaulieu**
Sacking made from jute and flax connected with ship-building industry, *It Happened in Hampshire*, 84.

SU 38740229 **Beaulieu**
Beaulieu Mill — Corn Mill mentioned in 18th century conveyance, *Proc. Hampshire Fld. Club*, 21 (1960), 652.

SU 3635 **Stockbridge**
Tannery, flourishing up to late 19th century, *It Happened in Hampshire*, 79.

SU 44460048 **Exbury and Lepe**
Forge, *Isaac Taylor's Map 1759.*

SU 46610327 **Fawley**
Salt working, *Isaac Taylor's Map 1759.*

SU 48020947 **Burlesdon**
Iron Works, *Proc. Hampshire Fld. Club*, 16, 287-8.

SU 49120543 **Fareham**
Salt working, *Proc. Hampshire Fld. Club*, 5, 203, 17th century estate map.

SU 43451185 **Southampton**
Salt working, 3 acres leased for salt working in 1616; *Proc. Hampshire Fld. Club*, 17, 52, now part of storage yards for shipbuilding (O. G. S. Crawford).

SU 4245 **Hursley**
Smithy, *Proc. Hampshire Fld. Club*, 26, 160.

SU 4321 **Chandlers Ford**
19th century brick works, opened 1882, *It Happened in Hampshire*, 73.

SU 479226 **Colden Common**
Brewery, The Old Malt House, 1852-67 (in use), *Proc. Hampshire Fld. Club*, 27, 96.

SU 485218 to SU 482223 **Colden Common**
Brick Works and Tile Works, closed 1957, *Proc. Hampshire Fld. Club*, 28, 94.

SU 480243 **Twyford**
Brewery, Youngs Brewing 1859-1911, *Proc. Hampshire Fld. Club*, 27, 105.

SU 498324 **Kingsworthy**
Fulling Mill — Now private house, *Proc. Hampshire Fld. Club*, 25, 131.

SU 47834808 **Laverstoke**
Bere Mill, Paper House and Mill; Henry Portal took lease shortly after 1711. One mill built 1710; *Proc. Hampshire Fld. Club*, 18, 5 (A. H. Shorter).

SU 405614 **East Woodhay**
Saw Mill, 19th century saw pits, *It Happened in Hampshire*, 80.

SU 58520570 **Fareham**
18th century pottery kiln; 6 inch map (Portsmouth Museum, June 1962).

SU 553177 **Bishop's Waltham**
Brewery, *Proc. Hampshire Fld. Club*, 27, 95.

SU 575116 **Wickham**
Brewery, *Proc. Hampshire Fld. Club*, 27, 105.

SU 575168 **Swanmore**
Brick and Tile Works, now housing estate, *Proc. Hampshire Fld. Club*, 28, 93.

SU 57832179 **Exton**
Charcoal burning — burnt flints to a depth of 23 inches, *Proc. Hampshire Fld. Club*, 14, 399 (J. P. Williams-Freeman).

SU 588438 **New Alresford**
Workshop. 17th/18th century building, *Hampshire Treasures*, Town and Country Planning Act Conservation Area.

SU 588342 **Old Alresford**
Brewery, 1855-1903, *Proc. Hampshire Fld. Club*, 27, 94.

SU 627085 **Southwick**
Golden Lion Brewery. Late 19th century brick building, *Proc. Hampshire Fld. Club*, 27, 104.

SU 672016 **Portsmouth**
Salt Working — Great Salterns, pre-1086; 18th and 19th century marked end of Portsmouth salt industry; *VCH, Hampshire*, 3 (1908), 194; 1 (1900), 448; 5 (1912), 470-1.

SU 642148 **Hambledon**
Brewery, main building destroyed by bombing, 1940, *Proc. Hampshire Fld. Club*, 27, 96.

Wind and Watermills

SU 106154 **Damerham**
Watermill, Much 18th century machinery still in position.

SU 16521591 **Fordingbridge**
Watermill, Site of overshoot Mill, *It Happened in Hampshire*, 169.

SU 36920142 **East Boldre**
Hatchet Mill, probable 19th century date, overshoot watermill.

SU 46501251 **Eling Tide Mill**
Proc. Hampshire Fld. Club, 219, 126 (A. K. Shaw).

SU 35201574 **Nursling & Rownhams**
Nursling Mill, 18th century, may be site of mill mentioned in Doomsday, *A short History of Nursling* (O. G. S. Crawford).

SU 34722087 **Romsey Extra**
Sadellers Mill, built 1748, *Proc. Hampshire Fld. Club*, 4, 165-70 (F. Buckell).

SU 34772138 **Romsey Infra**
Burnt or Mead mills, rebuilt 1755, *Proc. Hampshire Fld. Club*, 4, 165-70 (F. Buckell).

SU 34832112 **Romsey Infra**
Abbey Mills (2), probably erected 1683, *Proc. Hampshire Fld. Club*, 4, 165-70 (F. Buckell).

SU 34882152 **Romsey Infra**
Test, Drayton Mill, paper mill, earliest reference 1708, *Proc. Hampshire Fld. Club*, 4, 165-70.

SU 3521 **Romsey Infra**

Dukes Mill, built c 1750, now demolished; Excavations by Lower Test Valley Archaeological Society revealed 17th and 18th century pottery; *Local papers*, August 1973.

SU 35092115 **Romsey Infra**
Abbey Mill. Water mill, erected 1683. Used at different times as a Tannery, saw mill, paper mill, parchment manufactory. Now a leather board mill; *Proc. Hampshire Fld. Club*, 4, 165-70.

SU 35022269 **Romsey Extra**
Great Bridge Mill. Water mill, first mentioned 1785. *Proc. Hampshire Fld. Club*, 4, 165-70.

SU 33933130 **Houghton**
Mill. Water Mill in use in 1960, now tenements; *Proc. Hampshire Fld. Club*, 21, 130 (A. K. Shaw).

SU 35303544 **Stockbridge**
Longstock Mill. Water mill fitted with modern machinery in use 1961, *Proc. Hampshire Fld. Club*, 21, 130.

SU 37373939 **Wherwell**
Fullerton Mill. Water mill, now dwelling, *Proc. Hampshire Fld. Club*, 21, 129.

SU 46610327 **Fawley**
Ashlett Mill. Water Mill, built c 1618, *Proc. Hampshire Fld. Club*, 21, 126.

SU 42971155 **Southampton**
Tide Mill, mentioned 1230, expanded 1740, *Proc. Hampshire Fld. Club*, 17, 45-53 (O. G. S. Crawford).

SU 435250 **Hursley**
Wooden tread mill used up to 1914, *Hampshire Treasures*.

SU 49204865 **Laverstoke**
Mill. Paper mill, bank note paper made since 1719. *VCH, Hampshire*, 5 (1912); *Proc. Hampshire Fld. Club*, 18, 7 (A. H. Shorter).

SU 54980820 **Wickham**
Funtley Iron Mill. Existed in early 18th century, taken over by Henry Cort in 1775 and new mill erected 1800, fell into disuse, *Transactions Newcomen Society*, 21, (1940-41), p. 31-47 (H. W. Dickenson); *Proc. Hampshire Fld. Club*, 5, 203, 208; *VCH, Hampshire*, 3 (1908), 221; 5 (1912), 464-5.

SU 58730623 **Fareham**
Tide Mill, mentioned 17th century, *VCH, Hampshire*, 3 (1908), 210.

SU 51551300 **Botley**
Mill used as a paper mill up to 1948, still in use as a flour mill, *Proc. Hampshire Fld. Club*, 21, 128 (A. K. Shaw).

SU 25261494 **Curdridge**
Frog Mill. Paper mill, mentioned 1663, ceased work 1841, *Proc. Hampshire Fld. Club*, 18, 1-2 (A. H. Shorter).

SU 52551520 **Curdridge**
Durley Mill. Now private residence, *Proc. Hampshire Fld. Club*, 21, 129 (A. K. Shaw).

SU 55901681 **Bishop's Waltham**
Mill, Georgian, 18th/19th century.

SU 57401152 **Wickham**
Chesapeake Mill, built 1820, Pevsner & Lloyd, 1967, *Proc. Hampshire Fld. Club*, 21, 133 (A. K. Shaw).

SU 598145 **Soberton**
Water mill, 18th century, *Proc. Hampshire Fld. Club*, 25, 135.

SU 563328 **Itchen Abbas**
Water mill, *Proc. Hampshire Fld. Club*, 25, 131.

SU 585332 **Old Alresford**
Fulling mill, *Proc. Hampshire Fld. Club*, 25, 124.

SU 588331 **New Alresford**
Water mill, *Proc. Hampshire Fld. Club*, 25, 124.

SU 588332 **Old Alresford**
Water mill, *Proc. Hampshire Fld. Club*, 25, 124.

SU 599325 **Bishop's Sutton**
Water mill, *Proc. Hampshire Fld. Club*, Vol. 25, 126 (for watercress beds, c 1899).

SU 605091 **Boarhunt**
Water mill, used until 1928 — *Winchester Research Unit Records*.

SU 608184 **Droxford**
Mill pond, *Proc. Hampshire Fld. Club*, 21, 129 (A. K. Shaw).

SU 626127 **Soberton**
Rudley Mill. 17th century water mill, *Proc. Hampshire Fld. Club*, 25, 135.

SU 649149 **Hambledon**
Tower Mill, *Proc. Hampshire Fld. Club*, 21, 108.

SU 649161 **Hambledon**
Site of mill, *Proc. Hampshire Fld. Club*, 21, 108.

SU 67161601 **Horndean**

Broadhalfpenny Mill. Windmill shown on OS 1 inch 1828-6 and *Taylor's Map of Hampshire*, 1759. Demolished.

Villages

SU 283065 **Lyndhurst**
Village of Greatham (*Doomsday Book* — Gritham 6/7 houses), *English Historical Review*, 16 (1901), p. 427, *The Making of the New Forest* (F. H. Baring).

SU 356180 **Nursling and Rownhams**
Skidmore DMV. *DMV List* 1966.

SU 49674897 **Laverstoke**
DMV Laverstoke House demolished, 1798, *VCH, Hampshire*, 4 (1911), 208-9; *Lost Villages of England* (1954), 353, (M. Beresford).

SU 46195361 **Litchfield**
Hollow ways visible on APs, *VCH, Hampshire*, 4 (1911), 267.

SU 609444 **Nutley**
Traces of enclosures and foundations. St. Mary's Church rebuilt 1845, demolished 1955. Depopulation probably occurred before 1817 and continued, *VCH, Hampshire*, 3 (1908), 371.

Pollen-analytical Palaeoecology in Hampshire: Problems and Potential

by K. E. Barber

Introduction

Hampshire is in an unfortunate position for the palaeoecologist. Although parts of the county are extremely rich in archaeological remains of many kinds it is those same parts of the county, on chalky or loessic soils which were so attractive to prehistoric man, which are virtually useless to the pollen analyst. Conversely the New Forest area, with its heathlands and bogs, is poor in artefacts but relatively rich in polleniferous sediments. Indeed, the county as a whole can be seen as the antithesis of parts of northern and western Britain where artefacts and settlements are few but where pollen-bearing lakes and bogs abound, and where regional vegetational histories have been worked out — e.g. the Cumbrian Lowland (Walker 1966), the Lake District (Pennington 1970, 1975), Northern Ireland (Smith 1975), mid-Wales (Moore and Chater 1969) and the North York Moors (Simmons 1969, Jones 1978 and Atherden 1976).

Pollen analysis has given a new dimension to our environmental reconstructions and great insight into the agricultural pursuits of man in the post-glacial, with a roll of honour stretching from Shippea Hill and Star Carr to the Somerset Levels and Ballynagilly. Hampshire, never having been glaciated, has none of the characteristic lakes and disrupted drainage networks which have given the abundance of palaeoecological sites further north, nor has it the heights and high rainfall values which give us Dartmoor's peat deposits. Instead we have only fragmentary records from archaeological sites — e.g. buried soils — or longer potential records from valley bogs which may be some miles from any prehistoric settlement. Of course molluscan evidence is very valuable in reconstructing past landscapes in southern Britain, (e.g. Evans *et al* 1978 and earlier publications by Evans and others) but it does not really make up for the lack of pollen diagrams.

The sub-title of this paper is indicative of the state of pollen-analytical research in Hampshire, but rapid progress is being made now that the author has finished work elsewhere and has been joined by two research students, one investigating the palaeoecology of the chalklands; the other the vegetational history of the New Forest. The latter study will add to the results obtained by another former research student supervised by the author, Dr Lesley Haskins, whose 1978 thesis includes pollen diagrams from eight sites in the Poole-Wareham basin. From these and earlier studies (e.g. Seagrief 1959, 1960) we are now aware of most of the problems we shall have to deal with, or simply live with, but also aware of the exciting potential of sites in the area.

No pollen diagrams are included in this account. To do so would be premature since all pollen analyses so far have been performed by students under the author's supervision. Pollen identification is not an especially difficult skill (see Barber 1976a and Moore and Webb 1978), at least for the common tree and herb species, so the main trends of such diagrams can be relied upon, but detailed counting and radiocarbon dating are necessary before publication of anything but preliminary diagrams of especial interest (Barber 1975).

The Problems

Climate and geological history in Hampshire conspire to exclude any widespread occurrence of acid raised bogs and lakes but the essential conditions for the preservation of plant remains — acidity and/or waterlogging — may be found in the peats of the main river valleys of the chalkland area, the Test, Itchen and Avon, and in the smaller valleys in the Tertiary deposits of the New Forest. In both types of site, however, one is faced with a problem which is apparent simply on looking at a peaty area such as that in the Itchen Valley north of Winchester. Unlike raised peat bogs with their very restricted plant assemblages (bog moss, heathers, cotton-grasses and a few more), a rich variety of species can grow in valley mires, especially if the water feeding the bog is nutrient-rich. The pollen from these local plants should ideally be separated from that which rains down on the peat from outside the mire — this 'extra-local' pollen assemblage will include species affected by agriculture and other human activities. Unfortunately this is not always possible. Families of plants such as the Umbelliferae (which includes wild parsley, fennel, parsnip and carrot), the Ranunculaceae (buttercups) and Urticaceae (nettles) have a number of species indicative of agriculture whose pollen cannot be distinguished from species common in fen communities. In such cases only painstaking macrofossil analyses can give one clues as to which local fen species may have contributed to the pollen rain and must therefore be set against the 'agricultural indicators'.

Two further problems linked to climate and geology are those of pollen grain destruction and peat accumulation rates. Recent studies in the Department of Geography have involved the analysis of numerous cores of peat from the Test and Itchen valleys, as well as smaller valleys. Without, unfortunately, any exceptions, the pollen grains in the peat have been either totally or partially destroyed, even though macrofossil remains of reeds and wood are easily discernible. The reason for this odd state of affairs is postulated to lie with the water level fluctuations in such chalkland valleys. Most pollen is shed in spring and early summer and will then be liable to microbial attack and oxidation on a relatively dry substrate throughout the summer. With the rise in water levels in autumn and winter the dead leaves and seeds of various fen plants can then be incorporated into the peat, giving rise to this paradoxical sedimentary situation.

Accumulation rates in such valley peats also vary markedly from bog to bog and even within the same bog. A pilot study in the New Forest has revealed this especially well. Church Moor is a small bog within the old woodland core of the Forest (Barber 1975) and is composed of three distinct zones: an alder carr with a *Sphagnum* ground carpet; an open zone of rushes,

Sphagnum bog-moss and *Molinia* grass to the north and east of the alder carr, and a zone of very wet *Sphagnum-Molinia* to the south-east. Four short cores from the first two of the zones were pollen-analysed, primarily to show up any differences in pollen representation at each site, which were only a few tens of metres apart. What these cores also showed however, was that some of the distinctive changes in the pollen record, such as the great increase in pine pollen due to the plantings beginning in 1776 A.D., occurred at different depths in the different cores. There is no really widespread and reliable datum to compare with this pine rise earlier in the pollen record (with the exception perhaps of the early Neolithic Elm Decline and that is not well-shown in the New Forest so far) and so it is even more dangerous to speculate on the cause and date of events in pollen diagrams from valley bogs than from raised bogs, without radiocarbon dates. Unlike the ombrotrophic bogs of the north and west of Britain accumulation rates are dependent not only on climate but on local topography, on geomorphological factors such as the rejuvenation of the streams issuing from the bog and erosion of the valley sides, and on hydrological changes, such as that induced by the felling of the forest within the bog catchment.

Problems due to peat-cutting in former times are an ever-present possibility in the valley bogs of southern England. Whereas cutting of large raised bogs such as those near Tregaron in Wales is still easily recognisable because of the drying out of the bog, in valley bogs the cuttings flood and rapidly infill with *Sphagna* and *Phragmites* reeds, and so may not be at all obvious. A proper consideration of peat-cutting, its timing and extent, and its ecological consequences, are outside the scope of this paper but must be kept very much in mind by the palaeoecologist.

Cutting has badly affected some of the prime sites of palaeoecological interest in Hampshire. Cranes Moor, a large *Sphagnum*-rich bog to the west of Burley in the New Forest, has already been studied by an ecologist (Newbould 1960) and a pollen-analyst (Seagrief 1960). Neither realised that the reason for its remarkable pool system (many of them deep rectilinear pits) and ecological variation, and for the cessation of the pollen record at about 4000 B.C., was to be found in the massive cutting of peat for fuel and other uses.

Confirmatory evidence comes from the recent discovery by the author of sand in the peat underneath two drier 'arms' which extend out onto the wet bog. These are thought to be the causeways by which peat was extracted, the sand being deliberately spread, and these 'arms' now lie distinctly above the surrounding area. Such causeways also give us hope that a pollen-analytical record extending beyond 4000 B.C. might be preserved in them and this line is presently being investigated. Many other bogs are known or suspected of having been cut from the evidence of air photographs and field surveys. Even Church Moor, once thought by the author to have escaped peat-cutting (Barber 1975) is now known to have had 0.85m of peat cut away from part of its area. Considering the evidence for former peat extraction in the Broadland area (Lambert *et al* 1960), and the records of turbary rights in the Forest (Tubbs 1968, Pasmore 1976), it is not really surprising to find signs of disturbance in almost every Hampshire peat deposit and the palaeoecologist can only try to avoid cut areas and extract what evidence he can from deposits under the level of cutting.

The final problem is concerned with the size and morphology of sites in Hampshire. With a large lake or raised bog, pollen samples from the centre of the site will yield a record of regional vegetation change (Tauber 1965), but in the generally small valley sites of Hampshire local vegetation changes can be expected to register much more strongly. The question of the representivity of pollen diagrams is a very complex one (Faegri 1966, Oldfield 1970, Janssen 1973), involving the differential production and dispersion of pollen and effects such as the possible filtering of pollen grains by dense willow and alder stands. Preliminary studies in the New Forest support the results from elsewhere in showing pine and birch pollen to be well dispersed — pine percentages of surface samples throughout the Forest indicate a 'regional component' of some 30% total tree pollen, rising to over 60% near pine stands — whereas pollen grains of beech, willow and holly are much more locally distributed. At Church Moor, for example, beech pollen percentages in surface moss polsters varies from 2-20% of the total tree pollen over a few tens of metres. This would appear to be related to wind eddying and funnelling effects (and possibly surface water flows) over this small bog which is surrounded and overhung by high forest dominated by beech. One can, of course, turn this situation to advantage and use such sites to provide a detailed local picture of long-term forest ecology and man's impact on the area.

Preliminary Results and Potential

There are no pollen diagrams from the chalkland areas of Hampshire comparable with those of Godwin (1962) from Kent, or Thorley (1971) from Sussex. Attempts to extract countable amounts of pollen from local deposits have proved abortive — P. V. Waton, research student in the Geography Department, has prepared over 250 samples from dozens of cores of peat from chalkland valleys without success, though sites just off the chalk are proving more promising. The author has also attempted pollen extractions from sites such as excavations of the Danebury hillfort ramparts, also without success. Occasionally one does find pollen in unpromising deposits, as Dimbleby and Evans (1974) have demonstrated and as the author found in analysing samples from the bottom of a Saxon well in Portchester Castle (Barber 1976b). Such analyses are of strictly local significance, though the samples did show that there was not a forest within the castle walls and that the interior was probably rather weedy!

The pollen-analytical potential of the New Forest is much greater but archaeologically it is much less interesting than the surrounding chalklands, though as Jacobi (1978) has shown older published distributions such as those of Grinsell (1964) can be changed remarkably by careful field survey. These distributions show the shunning of the whole New Forest area by Neolithic cultures and the impact of Bronze Age man in creating the heathlands on the sand and gravel areas marginal to the woodland core of the Forest; the equation of soil and vegetation types with geology on Grinsell's (1964) maps is, of course, ecologically untenable.

Of the published pollen diagrams from Hampshire those of Godwin and Godwin (1940), and Seagrief (1959, 1960) show no overt human influence, partially because in diagrams of this vintage (Seagrief's were

counted in 1951-53) many of the pollen indicators of human interference were not recognised. The soil pollen diagrams of Dimbleby (1962, 1965) cannot be interpreted in the same way as those from peat and mainly refer to localized events over a short time-scale; interesting though they are, they do not give us the long conformable sequences available from peat deposits.

The potential of the research now underway by the author is great. We may reasonably hope that a detailed examination of the Boreal peats of Cranes Moor will show Mesolithic man's impact on the vegetation of that sandy area west of Burley Ridge. The central area of Cranes Moor contains 5 metres of *Sphagnum* peats and muds but because of the design of peat sampler (Hiller pattern) then in use Seagrief was unable to obtain samples below 3.70m since the deposit was a soft white mud whose resistance was so slight that the sampler chamber would not open (Seagrief 1960). Using a 'Russian pattern' sampler, which works on a different principle (Barber 1976a), the author has been able to sample this mud to the full depth of 5 metres and it may therefore be possible to extend the vegetational record back into full-glacial times. A continuous record from before 10,000 B.C. to about 4,000 B.C., closely-counted and radiocarbon-dated, would be of the greatest importance and not least because of the Mesolithic interest. Following Smith's (1970) discussion of the possibility that Mesolithic man deliberately encouraged hazel as a 'crop' and used fire extensively to create open areas and to drive game, there has been a readiness to accept that pre-Neolithic manipulation of the ecosystem may be reflected in pollen diagrams, a recent example being the paper by Sims (1978). The topographic setting and geology (Barton Sand mainly) of Cranes Moor make it a prime candidate in the search for such evidence in Hampshire.

Two further sites known to extend back to the Boreal period lie in the central area of the New Forest, apparently shunned by both Neolithic and Bronze Age cultures. These are Church Moor (Barber 1975) and Warwick Slade Bog (SU 276067). Undergraduate project work, supervised by the author, is insufficiently detailed to show any Mesolithic influence and the low amounts of elm and lime pollen from the Atlantic period do not so far allow us to discern a classical Elm Decline, the first impact of Neolithic farming. There are indications that this central part of the Forest was largely undisturbed through to historic times — herb and grass pollen is sparse until post-Medieval times and the biggest disturbance to the tree pollen percentages is associated with a grass pollen peak immediately prior to the rise of pine pollen which we can date fairly precisely to 1800 A.D. — its re-introduction to the Forest is recorded at 1776 A.D. (Tubbs, 1968). This interpretation would accord well with Rose's 'Revised Index of Ecological Continuity', based on the lichen flora, of 100% for the Mark Ash Wood area which includes Church Moor (Rose 1976). If it can be shown that woodland has persisted in this area throughout the post-glacial it will be a remarkable discovery and very much at variance with the picture built up by pollen analytical research so far, which has given the impression that no part of Britain was spared the Neolithic woodman's axe.

In contrast to these central sites The Noads Bog (SU 395062) on the eastern margin of the Forest, surrounded today by heathland but with some old woodland to the south, gives us a rather different pollen record. Bog growth here started later than at Church Moor and Warwick Slade; the alder rise denoting the Boreal/Atlantic transition is at the base of the diagram. Elm and lime are present in meaningful amounts, with lime pollen percentages rising after an elm decline and not being extinguished until after the pine rise c.1800 A.D. There is evidence of man's impact on the local vegetation in the bog stratigraphy as well as in the pollen records of plantains and other weeds, and cereals. Between 0.7 and 0.8m depth in the core chosen for pollen analysis two charcoal bands were found associated with a little weed and heather pollen, and at 0.42m a wedge of bleached sand was present, associated with the beginning of a continuous heather curve. This charcoal and sand must be related to man's presence in the immediate vicinity — there is a steep slope north of the bog — but precise dating is not possible on present evidence, though these events are probably prehistoric. Future work will aim to date and characterise these episodes in detail and in the context of a record of change over possibly 7,000 years.

The last site known to be of interest in the Forest is a most unusual one. Barrow Moor (SU 250076) lies near Church Moor in Mark Ash Wood. The maximum depth is approximately the same (2.5m) but the time represented by that depth is quite different. Whereas Church Moor clearly began growth in Boreal times (around 6 000 B.C.), Barrow Moor is much younger. This was first suspected from the stratigraphy when beech nuts were found within 0.1m of the base of the bog and confirmed by the pollen record and by a radiocarbon date. The sample for this, the first to be dated from a Forest bog and associated with a pollen diagram, was composed of wood remains washed out of the 1.4 - 1.6m level in several adjacent cores and gave a date of 495 ± 70 A.D. (UB — 2214). Extrapolation of the average accumulation rate gives a rough date for the beginning of bog growth of 500 B.C., the beginning of the cooler, wetter Sub-Atlantic climatic period as well as the Iron Age. The initiation of bog growth could be due to greater run-off caused by deforestation in a worsening climate. The pollen diagram is particularly interesting in showing no elm or lime, but having a continuous beech curve which rises to 60% of total tree pollen within the top 0.4m. Hazel and ash are also present until recent times — they are now, like elm and lime, virtually absent from the Forest — and, apart from a short zone from 0.30-0.35m, tree and shrub pollen averages 70% of total pollen. Here then we have a site which will enable us to resolve fine details (accumulation rate roughly 1mm per year) of the natural history of the New Forest and man's part in that history over the last 2,500 years. Comparisons with Church Moor, less than 1 km to the south, should allow us to pick up small spatial variations over this time period, while comparisons of these sites with Warwick Slade, The Noads and other sites will allow us to construct a history of the Forest detailing differences in tree species abundance and in human impact which is simply unobtainable by other means.

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Animal Husbandry and Faunal Exploitation in Hampshire

Jennie Coy

Introduction

One feature of Hampshire archaeology is the scarcity of published bone samples compared with the large number of excavated sites. The quantity of animal bone studied during 1976-9 probably exceeds that studied by all workers up to that date. Nevertheless it is still not possible to produce a worthwhile period-by-period account of animal husbandry and related economies, a situation not unique to Hampshire, although such a detailed picture will soon begin to emerge for some periods where the available material is least inadequate and to this extent Hampshire is in advance of other regions.

What follows is a short account of the availability of published and unpublished data. The next section on husbandry, economies, and bone usage gives examples of interpretations which can be made from Hampshire bone collections and explains why the production of a rational period-by-period account must depend upon further analysis of a type which avoids many current presumptions and sampling pitfalls. Following this is a species-based account of animal husbandry and faunal exploitation in Hampshire. The final sections describe methods currently in use by Ancient Monuments Laboratory and ourselves and make suggestions for future progress.

Hampshire Bones — the Available Material

One must depend upon surrounding counties for a picture of animal husbandry and faunal exploitation in the Neolithic and Bronze Age (Fasham & Schadla-Hall this volume). I shall therefore concentrate mainly on the information available from the Iron Age onwards. For the Iron Age the wealth of studied Hampshire bone includes large samples from Balksbury, Danebury, and the Andover sites of Old Down Farm and Portway. Winklebury (Jones 1977a) was the first site dug by the Central Excavations Unit and the first to have its bones computer recorded using the Department of the Environment's coding schemes (Jefferies 1977; Jones 1977b). The work of Harcourt on Wessex Iron Age bones forms a basis for much of this account and I am grateful to him for permission to use his unpublished material.

Romano-British bone is gradually producing data, partly from the late phases of the sites already mentioned, partly, as in all periods, from the accumulated results of many small excavations, and also from urban centres, especially Winchester. The analysis of Owlesbury bones will shortly take place and provide a useful overlapping sample of Iron Age and Romano-British material. Roman Portchester (Grant 1975) represents a large and important collection.

Saxon bones from Portchester (Grant 1976) together with the considerable work at Hamwih, Saxon Southampton, provide a picture of these two distinctive settlements in at least Mid-Saxon times. Melbourne Street (Bourdillon & Coy 1980) produced a core of data, including measurements, against which not only other Saxon bones but other Hampshire bones since analysed can be assessed. Further excavation at Hamwih is now clarifying the general picture obtained from Melbourne Street by introducing more evidence of horizontal and vertical variability.

Published later medieval material includes that from Portchester (Grant 1977) and a small amount from Southampton (Noddle 1975; Clutton-Brock 1975; Bourdillon 1979). Medieval material being published now is largely from urban deposits and includes multi-period samples from Winchester Research Unit and Winchester City Rescue (large in bulk but often inadequate when subdivided into phases, species, and material to answer specific questions); the increasing samples from Southampton with fewer problems of residuality; and interesting glimpses into the past of smaller places like Alton, Christchurch, and Romsey. The level to which animal bones can be used for interpretation of the historic periods is well illustrated by the analysis of animal bone from Exeter (Maltby 1979).

Post-medieval material from well-dated contexts is essential for the investigation of far-reaching but poorly documented alterations in conformation and maturation rate of domestic stock which occurred in these centuries. Today's breeders are resorting to 'rare breeds' in an attempt to recover some of the genes that were lost from the main breeding stocks (Alderson 1978). A way in which archaeology can aid this is to pinpoint post-medieval anatomical changes and demonstrate trends that may then tie up with documentary sources.

Bone studies in Hampshire have recently 'boomed' but much work remains to be done. The next few years should see the publication of a large corpus of important work. Computerisation can aid not only recording but is now at the stage when it can make possible detailed comparisons between sites. It is already used to some extent by ourselves at the Faunal Remains Project, by Winchester Research Unit, by Southampton Archaeological Research Committee, and for Danebury. We now need to think most carefully what further samples are needed. My own opinion is that well-stratified bones from rescue excavations must be kept in the largest possible numbers and computer-recorded. At present we do not know enough to decide whether we can afford to discard anything.

The Interpretation of Hampshire's Animal Bone Evidence

Study of animal bone fragments can provide information of many different types for the archaeologist. For a simple account of the potential of animal bone analysis see Coy (1978c, 3). I shall attempt to discuss the types of interpretation which can be made from bone data giving examples from Hampshire. The most obvious information provided is which species are present and this is of basic interest to the archaeologist. The discovery that the 'banjo' site R27 on M3 motorway excavations showed an economy based on the major common species and not just cattle is obviously of direct relevance to any discussion of the function of such enclosures. Similarly, some species are already class and culture indicators as the following sections demonstrate.

Following on from species lists are specific ratios and domestic/wild ratios. In spite of the problems in their derivation (see following section on ovicaprids and Coy (in press)), the relative rôles of different species are of great interest to archaeologists and historians. Even in

documented times the extent of documentary evidence is never sufficient to answer all the questions and bones are often the only clues for the investigation of diets, stock usage, and meat distribution. Bone results and documentary evidence often support one another and the discrepancies between the two are sometimes of great significance. They may reveal more about the nature of differential preservation, a subject which has been dealt with in detail for Winchester botanical remains by Green (1979). Computerisation of large quantities of documentary clues as described by Biddick (in press) for the Peterborough manors may be one way of accumulating relevant information for the study of animal husbandry in historic periods.

As well as species, bone fragments can show which parts of the animals were involved, their size, and sometimes their age, sex, and state of health. By detailed examination of the individual bones and their exact context one obtains evidence of human behaviour in relation to the live animals and their carcases through all the stages from slaughter to rubbish disposal. The interpretation of all these bone results is complex but together with the species ratios, they can be used to arrive at theories relating to economies, distribution of carcases, and human activity.

In relation to economies, tooth wear analysis is one way of attempting to reconstruct age structures, and thus kill patterns, and seems superior to epiphysis fusion analysis, or at least to give quite different results (Bourdillon in press). Grant (1975, 437) and Payne (1973) have devised methods for tabulating detailed tooth wear. Both methods are easy subjects for adaptation to tooth by tooth computer recording and such details are included in our own and Winchester Research Unit's computer codings. Such detailed analysis by itself will eventually help to pinpoint differences in animal populations in time and area and finally help to relate town with countryside given enough rural medieval samples.

Large samples are essential for working out kill patterns; for example, a glut of immature sheep may only indicate wet years and consequent high losses from parasitism. Theoretical models, for example, those for milk, meat, or wool economies used by Payne (1973, 282) for sheep, were related by Griffith (1978) to results from R27 mentioned above, but samples were too small to give valid results and recent collation of a wider series of results for the Iron Age in Hampshire and elsewhere by Maltby suggests that sheep kill patterns may more closely mirror feral populations such as those on St. Kilda (Jewell *et al* 1974). How one distinguishes between death from natural causes and cull of those animals unlikely to survive is more difficult, although man may presumably select an animal for culling some time before it succumbs to winter or want, and very detailed tooth wear analysis may eventually lead to more accurate interpretation. The analysis of incremental growth of tooth cementum has now begun for Hampshire with a study on a sample of cattle teeth from Hamwih.

It is not yet possible to make a period-by-period assessment of animal husbandry and economies for Hampshire. An attempt would be too repetitious and speculative to be of value and I have deliberately produced a species-based account which shows up the gaps in our knowledge more clearly. There are strong reasons for not producing a period-by-period assessment at this stage and it might be valuable for the sake of future study on Hampshire material to list them.

Obviously we ultimately want to know how the information from bones relates to archaeological periods but it should not be assumed that differences will always be there. The data could (in some cases) eventually show that soil type and aspect are as relevant as period. In the current state of knowledge there are as many different 'economies' as there are sites and these are probably often a reflection of methodology rather than of reality. If one assumes that there are differences between, for example, Iron Age and Saxon sheep one may miss important differences within these periods. Periods of major change in animal economies do not necessarily reflect changes that the archaeologist, ceramicist, or historian regards as significant although they probably often do. Accumulation of a computerised data bank is an essential step in sorting out the changes that have occurred during the passage of time, and in our own work bone information is now being recorded in sufficient detail, linked to contextual information, in such a way that we can collate and recollate the results as an increase in understanding of ceramics and other finds brings about the inevitable re-phasings. It is essential to use the smallest recognizable archaeological units. So often in the past re-phasings or reinterpretations by the archaeologist could not be related to the bones because insufficient detail had been recorded from them or because the bones of different layers had already been aggregated.

Many aspects of sampling impinge upon the relevance of the results we have so far, and until these are to some extent rationalised, results from period-to-period do not mean much, indeed they may be highly misleading. The types of site studied have contributed to the picture, which might be different if a different range of sites had been studied, for example, evidence for the Iron Age is mainly from hill-forts on the chalk. Some phases within a period have produced adequate samples while only now are important transitional ones producing a picture by the collation of results from many sites. To some extent this may be a reflection of the settlement types chosen, or an aspect of intra-site sampling policy within a particular multi-period complex. The type of sampling within the site provides further constraints on the bone sample. Diet and bone usage can only be reconstructed from appropriate samples, but in spite of this total bone results are still used by some archaeologists to compare economies in situations where the bone samples are not remotely comparable.

Deposit type, degree of preservation, and techniques of recovery can influence the constitution of bone samples to a high degree. The use of fine (1mm and 0.5mm) sieves has revealed that fish, in particular, have been underestimated as a dietary resource on many sites, not only coastal ones. Flotation and sieving machines are not an answer to this unless the process is carefully monitored and the residues are also searched; sieving machines of the type used in Hampshire up to the present were designed primarily for the retrieval of carbonised seeds.

A later section outlines the depth to which information is currently recorded for bones in Hampshire but the considerations above make it essential that this goes hand-in-hand with an intelligent approach to sampling by the archaeologist at all levels discussed above.

Analysis of butchery marks on bones is an integral part of the investigation of economies although, again,

interpretation is not easy. Whole skeletons and partial skeletons of sheep found in Iron Age pits and ditches are sometimes butchered; one such animal was found in the boundary ditch at Old Down Farm. This site benefited from very careful collection of the bones by those involved in the excavation, which enabled articulating bones in the pits to be recognised and butchery marks, often present as very fine cuts, to be examined in detail (Foot 1978). Such a detailed analysis may give quite a different picture of the treatment and distribution of carcases than a more superficial analysis.

Marks on bones occur as a result of a succession of processes: killing, carcase preparation, jointing, preparation for the table, carving, and individual treatment during eating. No methods in use in Britain for computer recording of these marks seem entirely satisfactory and techniques will need further evolution if we are to make detailed comparisons between sites and periods, perhaps using some of the ideas of Biddick and Tomenchuk (1975).

Bird bones sometimes bear fine scratches and cuts visible only under a lens, and searching for these is a lengthy and tedious process. The position of such marks on the Melbourne Street Mid-Saxon fowl bones suggested that meat may have been removed from the long bones with a sharp knife in a deliberate manner, scraping or cutting muscle chunks at their insertion or origin. Such theories as these, and theories relating to the maufacture of bone objects, are often best tested by experiment.

The Domestic Animals

Bone evidence suggests that cattle have provided the major meat source in all periods of Hampshire's history since the Iron Age, but not necessarily for all classes of people.

Evidence of wild cattle, *Bos primigenius*, from archaeological sites in Wessex is mostly from Wiltshire and Dorset. The survival of the wild species alongside the smaller domestic forms is detailed for the Neolithic sites Fussell's Lodge and Windmill Hill by Grigson (1966, 63; 1965, 145); and Jewell shows that, at Snail Down, Wiltshire, at least, this was still so until the late Bronze Age (Jewell 1962, 164). After this the occasional large cattle bone is probably from extra large domestic beasts, perhaps castrates (e.g., Bourdillon and Coy 1979, 40).

Iron Age cattle are well represented in the samples but changes and variation within the Iron Age cannot yet be detailed, nor size increases, or perhaps increases in variation, which occurred at the end of it (Grant 1975, 402). Harcourt's picture of the Gussage cattle as small and lightly-built with withers heights of 100-113cm (Harcourt 1979) is also true for Hampshire; withers heights are a useful concept especially alongside estimations of meat weight (Driesch & Boessneck 1974). Dorset and Wiltshire Iron Age cattle are mostly small- or short-horned using the criteria of Armitage and Clutton-Brock (1976, 331) but occasionally hornless. Hampshire Iron Age cattle are similar in conformation and anatomy on sites studied so far, although these are mostly chalkland sites. It will be interesting to undertake detailed cattle studies once current sites are worked. Size changes can be the result of so many factors that a very large sample is necessary to separate, for example, local trends from regional and national trends. Kolb (1978) has shown the complexity of the interpretation of size in foxes. This complexity in studying a modern wild species with an accessible population suggests how difficult it will be to interpret size variations for archaeological domestic species where one has only the biased samples left by time. But general ecological principles must not be ignored. Fox size appears to be linked with night length (longer nights mean more mice and thus larger foxes) and not with climate, success of prey, or productivity of the area. There may be consistent factors acting on Iron Age cattle which are not necessarily anthropogenic. The theory that in the Iron Age numbers of cattle were more significant than size may concern the result rather than the reason. Their overall uniformity suggests a cattle type closely adapted to its way of life. To any future investigation of overall size changes should be added a study of changes in proportions, something which might better indicate selection trends, especially those brought about by man. This is far easier to undertake with a computerised data bank.

Although the genetic potential for all the variation in Hampshire's cattle was probably available in the native wild aurochs, it is a difficult matter to prove local domestication and there is no practical reason why successive waves of immigrants to Hampshire could not have introduced their own cattle. How influential such introduced genes would be is a matter for speculation. Post-Iron Age higher maxima in measurement ranges may be a result of more human intervention in stock affairs and really large samples will be needed to show up multiple origins for any of these populations. It may only be by careful comparison with other British and with continental material that we shall be able to form opinions about this.

The maximum size of cattle is greater in the mid-Saxon period than in the Iron Age and they are well-built; Hamwih withers heights range from 102 to 138 cm (Bourdillon & Coy 1979, Statistical Appendix). Grant's work shows Roman and Saxon cattle at Portchester (Grant 1976, 281) to be similar in size with a smaller variation in size in the latter. Cattle build later diminishes but there are fluctuations within the medieval period which current work at Southampton and Winchester is now illuminating.

Well-dated post-medieval material is rare and we have as yet insufficient data to examine in detail the breed improvements suggested by documentary sources although some interesting material from Winchester Rescue Excavations still awaits analysis.

Metapodial measurements on cattle over the whole area should help to pinpoint cattle usage for draught: it is difficult to interpret this for individual specimens.

Pre-Iron Age horse material is rare and regarded as wild in bone reports (Harcourt 1971, 350). Horse was commonly eaten in the Iron Age and at Gussage was the second major meat source (Harcourt 1979). It was butchered in the same way as cattle. Iron Age horses probably individually provided more meat than cattle. Withers heights range from 102 to 145 cm (10-14 hands) at Gussage. Our own results from Hampshire have so far fitted within these limits. Harcourt's theory of feral horses with annual round-up for selection of mature animals for use (Harcourt in press) is an interesting one. Bones of immature horses have recently been found both at Old Down Farm and Chilbolton Down (Maltby 1978) but this does not necessarily invalidate the theory.

Roman and medieval horses are little studied as yet.

Hamwih produces scarcely any horse bone (Bourdillon & Coy 1979, 39); what there is represents nothing more than a large pony — a sturdy one and quite adequate for most functions. The rural site of Ramsbury in Wiltshire (Coy 1980b) produced a greater proportion of horse bone than Saxon Southampton, but as this was an iron working site it may not be typical of rural Wessex. In later medieval times donkey is occasionally found both on urban and rural sites, but distinction of the two species except by teeth is difficult.

Ovicaprids (goat and sheep) and pig were the other main meat sources. In amounts of meat provided, sheep were often second to cattle but the relative roles of pig and ovicaprids fluctuate. Archaeological context is basic to any consideration of these relative roles. An extreme example is the supposedly ritual context at Durrington Walls, Wiltshire (Harcourt 1971, 349), with its high proportion of pig. Grant (1977, 214) makes interesting comments on relative roles of sheep and pig at medieval Portchester. In some other Hampshire medieval contexts the expected fluctuations in the importance of sheep relative to other species are distinguishable, although on urban sites especially it is essential to ask only questions that relate to the type of context under examination. Food deposits and industrial deposits are obviously at either end of a spectrum of different deposit types which may give conflicting results for specific ratios. There is little future in drawing up tables of specific ratios for different sites and different periods as detailed analysis of individual context types will be far more rewarding. One major limitation in the use of past bone reports is their lack of information on exact archaeological context. Obviously the methods used for producing specific ratios are themselves varied, under constant review, and unless clearly described condemn the results to stand alone.

Sheep and goat can be distinguished providing bones are sufficiently whole, although criteria vary from site to site and it is conceivable that the ease of separation itself may be an inporiant indicator linked to plane of nutrition and intensity of selection. 16th century sheep present problems highlighted by the Christchurch bones (Coy 1980a), which suggest that late medieval and post-medieval 'goat' in bone reports could sometimes be sheep.

Sheep sizes show fluctuations which are difficult, as yet, to interpret; there are very small stock in the Iron Age (50-65 cm withers heights) and some medieval deposits. Mid-Saxon results for Southampton give heights ranging from 50.1 to 70.9 cm. Again, as with cattle, there is an increase in variation after the Iron Age and it is the changes in proportion which may ultimately tell us most.

Goats have now been found in Hampshire Iron Age contexts at Balksbury and Old Down Farm, Andover, but they were probably not used in Iron Age Wessex to the degree suggested by a recent BBC series. Goat played a minor role in the Mid-Saxon Southampton economy, but unmistakeable are the large male goat horn cores which are common on Hampshire urban sites and were probably imported for hornworking.

Pigs had an important role in some Hampshire settlements. By the Iron Age it is domestic pigs which make up the bone assemblages. The wild boar, *Sus scrofa*, occurs at many earlier Wessex sites and can be distinguished by its greater size especially in the third molars. Southampton Saxon pigs have an upper size limit somewhat higher than Wessex Iron Age pigs, with withers heights of 50-70 cm compared with 50-60 cm. At Melbourne Street, Hamwih, there was one large pig femur which could have been from a wild individual but otherwise pigs were obviously domestic, with ranges for third lower molar length of 25-34 mm compared with figures of 45-50 mm for continental *Sus scrofa* (Luhmann 1965, 21).

Such pigs were eaten young. At Hamwih 39% of pig jaws had not yet acquired third molars. This probably represented an age of less than three years (Silver 1963, 265). Grant suggests that in all periods at Portchester Castle pigs were eaten in their second or third year (Grant 1977, 231). At Christchurch the only pig bones found in any quantity were in the medieval priory (Coy 1980a).

There is a reappearance of pig more like *Sus scrofa* in some better class medieval deposits with occasional heavy and well-sculptured bones, such as a humerus in a late 13th to early 14th century pit in Romsey, found along with such delicacies as calf head, fallow deer, fowl, oysters, and the remains of a 3 kg cod (Coy 1975). In medieval archaeology bones from food remains can be important indicators of social class and as such are used by Platt (1972, 33) for Southampton.

Pig bones show a completely different fragmentation pattern from those of cattle and sheep and seem to be deposited more on the periphery of settlements. At the R27 site, M3 Motorway, this appeared in a detailed computer-based analysis which attempted to sort out the underlying patterns of bone depositions and survival, as a preliminary to investigating real differences between different sites in their patterns of stock utilisation, or between different parts of the same site (Griffith 1978; Coy 1978a). This factor must affect the calculation of reliable specific ratios from some features on a site. The great attraction of pork bones for many carnivores has been appreciated since medieval times and may partly explain the peripheral effect.

Another domestic food source in Hampshire is the dog, eaten in the Iron Age as butchery marks demonstrate. Like most domestic animals, dogs were often skinned, at least in the Iron Age. The dog varieties found in Hampshire generally fit the picture drawn by Harcourt (1974), with considerable variability by Roman times (Harcourt 1975, 406).

Fowl, geese, and ducks have been found on Hampshire sites from the Iron Age onwards, although geese seem to make their first real impact in the Saxon period. One can assume that the fowl were domestic, provided their bones are carefully distinguished from those of the native blackcock, *Lyrurus tetrix*, which, according to Gilbert White, was seen on a beagling trip in the 18th-century and according to Nicholson survived in the New Forest into the 20th-century (Nicholson 1929, 57 & 93). By mid-Saxon times fowl are of great variety and include bantams and capons (Bourdillon & Coy 1979, 44).

Bones of early domestic geese cannot readily be distinguished from those of their supposed ancestor the grey lag goose, *Anser anser*. The Hamwih birds have a wider distal tibiotarsus (the higher of the goose's two ankles) than the wide range of wild specimens measured by Bacher (1967, 71), presumably because of greater weight in domestic birds. Southampton is not a greylag

area and this, and the vehemence with which wildfowlers like Colonel Peter Hawker (1830, 200) stress the superiority in taste of almost any other goose to the wild greylag, suggest that the Hamwih geese were domestic to some extent. Goose bones are common finds on all the Hampshire medieval sites studied so far. Eggs of fowl, duck and goose would have been important, and down a valuable product of goose culture; their watchdog qualities must not be overlooked.

The distinction of domestic duck from its presumed ancestor the mallard, *Anas platyrhynchos*, is also difficult, and obvious domestic ducks are not found until the late medieval period. Similarly, bones of domestic pigeon bear a resemblance not only to those of the ancestral rock dove, *Columba livia*, but also to those of the related stock dove, *Columba oenas*. Pigeon and squab bones are sometimes found in medieval collections.

Wild Fauna

Red deer, *Cervus elaphus*, was the most consistently exploited wild mammal on most Wessex Neolithic, Bronze Age, and Iron Age sites. Harcourt argues for Gussage All Saints, Dorset, that the contribution of hunting could have been greater than the bones indicate if on-the-spot butchery of deer had been practised (Harcourt 1979). Unless such a practice took place the bone evidence suggests that red deer played only a minor role in the Hampshire Iron Age diet, although tender cuts of red deer calf may not have left any recognizable bone, and small pieces of bone from the meat-bearing parts like ribs, pelvis, vertebrae and scapula may not always be distinguishable from those of cattle. Antler from carcases and shed antler were both exploited. Hampshire, like the rest of Wessex, including the Isle of Wight, shows red deer exploitation in the Roman period (e.g., Grant 1975, 406).

Mid-Saxon Melbourne Street's 80,000 bone fragments produced only 12 postcranial bones of red deer. Distinction of red deer and fallow deer, *Cervus dama*, is possible for some bones (Bosold 1966) given supporting modern collections. Absence of fallow in the large Saxon collections from Southampton fits currently accepted theories (Corbet 1974) that fallow was introduced, or reintroduced, to Britain after the Norman invasion. The red/fallow distinctions are complicated by the remarkable similarity of antler coronets in the two species and the enormous variation in both species, which causes an overlap in size and large discrepancies between modern and archaeological material. This problem area highlights a major difficulty in archaeozoological work: for detailed anatomical studies it is necessary to have just the right modern comparative material not merely any specimen of the species involved (Coy 1978b). Fallow plays a significant part in the diet of some classes of later medieval society all over Hampshire.

Roe deer, *Capreolus capreolus*, is present in Neolithic, Bronze Age, and Iron Age sites in Wessex in small amounts. Only seven roe deer fragments were found at Melbourne Street but contemporary Saxon material in Wiltshire at Ramsbury (Coy 1980b), in a more rural setting, demonstrates some exploitation of young roe.

Wild horses, cattle, and pigs have been discussed above. Other wild species exploited in all periods were those important for furs, with changes in emphasis from period to period that there is as yet insufficient evidence to explore. The fate of the brown bear, *Ursus arctos*, in Hampshire is unknown; there is a Neolithic record for Ratfyn in Wiltshire (Stone 1935, 61). Beaver is recorded for the Neolithic at Durrington Walls, Wiltshire (Harcourt 1971, 345), and beaver remains were found in a mid-Saxon context at Ramsbury, Wiltshire (Coy 1980b). The species may even have survived into medieval times in particular areas like the Somerset levels (Darvill & Coy in press), but this is less likely for Hampshire. Remains of badger *(Meles meles)*, fox *(Vulpes vulpes)*, pine marten *(Martes martes)*, stoat *(Mustela erminea)*, and weasel *(Mustela nivalis)* are occasional finds. Evidence from bones of skinning is sometimes recognizable but not always sought, nor do we know how often such species were eaten, for example, as badger hams. Some of them may have been killed because of their predatory activities rather than primarily for skins. Most of them are easy to catch and are usually hard hit if man has a reason for catching them.

The evidence for wolf *(Canis lupus)*, wildcat *(Felis silvestris)*, and polecat *(Mustela putorius)* is complicated by the possibility of bones of related domestic species; respectively the dog, cat, and ferret. Wolf bones were found in early excavations at Balksbury (Harcourt 1969, 54) and suspected by Grant (1977, 232) at medieval Portchester. A possible wildcat bone came from pre-barrow levels of R4 on the M3 excavations (Fasham 1979, 11). Kitten remains from the middle period of the Iron Age settlement at Gussage, Dorset (Harcourt 1979), are assumed to be domestic, as are the cat carcases found in Roman Portchester (Grant 1975, 384).

The few remains of Saxon cats at Hamwih have some anatomical features in common with the wildcat, *Felis silvestris*, and differences from later medieval cats which would repay further study. Noddle suggests that cat remains in medieval Southampton may be evidence for the use of cat skins (Noddle 1975, 333).

Hares and rabbits, as well as having excellent fur, are important meat sources and significant factors in the lives of certain people at certain periods. Early bone reports do not distinguish between the different species of hare: the varying hare, *Lepus timidus*, and the brown hare *Lepus capensis*. Prehistoric material probably represents the smaller timidus, for example, that at Windmill Hill, Wiltshire (Jope 1965, 143).

The lack of evidence for rabbit, *Oryctolagus cuniculus*, from Melbourne Street (Bourdillon & Coy 1979, 44) seemed to confirm the currently accepted zoological theory that rabbits were introduced, or reintroduced, to Britain after the Norman invasion, but the find of a partial scapula, in a reliably-dated Saxon layer, which resembles rabbit in both dimensions and anatomy seems to disprove this theory. However, given Hamwih's extensive trade this is insufficient evidence to postulate breeding populations of rabbits in the surrounding Hampshire countryside. Southampton provides evidence of post-1250 fallow deer, rabbit, and ferret, all three species important to the Norman way of life both in terms of food and sport (Noddle 1975; Bourdillon 1979).

Small mammal records for sites are suspect unless it is clearly stated exactly how they were retrieved. There are authentic records of well-stratified small mammals and

amphibians, some of them from the bottom of deep storage pits. Apart from an absence of records for squirrels, dormice, and harvest mice, the species found are those common today and the only ones worthy of mention are the house mouse, *Mus musculus*, and woodmice, *Apodemus* sp., species which could eat or contaminate large quantities of stored food. The former is known from a number of Hampshire Iron Age sites since Harcourt drew attention to it at Gussage (Harcourt 1979) from at least the middle Iron Age. There is a lack of evidence for the theory that the water vole, *Arvicola terrestris*, has changed its habits and was more common near human habitation in the past (Jewell 1958, 278). Water vole bones are found on chalk sites excavated in Hampshire but the animals are still found there today.

Rats themselves are difficult species to distinguish and the introduction dates of the black or ship's rat, *Rattus rattus*, and the brown or sewer rat, *Rattus norvegicus*, are still unknown, although the current theories are that the former appeared in Britain after the Crusades and the latter early in the 18th century. As with work on the rabbit, the commonest problem is the possibility that the animal has burrowed into the level in which it is found. Evidence so far in Hampshire fits the current theories (Corbet 1974) although some of the rat material from Southampton is very early (Bourdillon 1979, 209).

Wild birds, fish and shellfish have been given much attention by the Faunal Remains Project, as these important remains are usually neglected in favour of the more easily identified common mammals. A study of shellfish remains from Melbourne Street, Southampton (Winder 1979), showed the potential of oyster studies; however, only by accumulating data on, for example, oyster infestation and encrustation, shall we be able to answer the ultimate questions such as the source of oysters.

Fish remains are rarely retrieved on prehistoric sites in Hampshire. There is more evidence from Roman, Saxon, and later medieval urban deposits. Saxon fishing at *Hamwih* largely exploited eel, *Anguilla anguilla*, and flatfish (Bourdillon and Coy 1979, 47), although more intensive sieving since, by Sheila Hamilton-Dyer, suggests a greater variety than previously supposed within each context, and has given a better picture of the importance of eels. Later medieval deposits at Southampton, Christchurch, Alton, and Winchester show considerable exploitation of large fish such as cod *(Gadus morhua)*, ling *(Molva molva)*, and conger eel *(Conger conger)*; these were thus transported some distance inland.

There is surprisingly little evidence for wildfowl exploitation except in some Roman and medieval collections. Most other bird samples from the Iron Age onwards consist of fowl, goose, and the occasional duck. There are occasional predatory and scavenging birds, some of them now extinct in the area, and birds that occur in surrounding habitats today. The bird reports for Portchester (Eastham 1975, 1976, 1977) and bird and fish reports for medieval Southampton (Bramwell 1975; Wheeler 1975) have opened a period of serious study of such material in Hampshire.

Computerised Recording of Bone Data at the Faunal Remains Project

Nobody can foresee all the archaeological problems which will arise for a particular site, but, in using a single pass data recording system for all bone fragments studied at the Faunal Remains Project, we now hope in one operation to record all the information needed for detailed studies arising during the analysis of that site and complementary inter-site studies, and to record all these details before further post-excavational fragmentation and erosion occurs (Jones 1977b and Table 1).

Future studies may require information that we have not recorded or someone may wish to check our work, and for these reasons the bones must be kept. One possible field for the future is the study of epigenetic characters on bones such as the position of foramina and the plotting of the frequency of different morphs in different populations. Although this work might ultimately throw light on, for example, breed introduction, we cannot yet justify it in terms of expense as a very large sample of material would need to be recorded even for a feasibility study.

Information is recorded from each bone fragment, as in Table 1, using a teletype linked to a calliper with a digital display. Punched tape is produced containing a continuous record of all metrical and non-metrical data. Measurement entry is automatic, avoiding likely sources of error in manual measurement. Each fragment is linked to an archaeological context number (usually a layer number) and no prejudgement is made as to the date of a particular deposit. This allows easy rearrangement if archaeologists alter phasings at a later date, and material can be recorded before phasings are known and in any order. Recording could even take place on site.

In practice site material is recorded when final phasings are available, as it is then possible to work through material according to phases, as well as individual features and site areas. This shows up bone joins, articulated remains, interesting associations, and other information more easily seen by examination than by computer analysis. General trends may also be suspected at this stage and can then be investigated when results have been printed out.

After recording, the final phasings with their latest corrections are used for producing catalogues, measurement statistics, and more complex tabulations of information for the whole site or for any temporal or spatial subdivisions required. Once data have been recorded there is no limit to the investigations which could be programmed in the future on the information shown in Table 1. Print-out for bones from Hampshire sites processed in this way is sent to the excavator, the Ancient Monuments Laboratory, London, and the University of Southampton library, together with a summary report. Hampshire results can be compared with material similarly recorded from other parts of Britain — this already includes several hundred thousand fragments from some key sites, including those excavated by the Central Excavations Unit.

It is essential to maintain standardisation between the various users of the system — a very difficult task: the versatility of faunal analysts in finding new ways of using code combinations to express different things is remarkable. As data banks are developed considerable problems will arise in ensuring the accuracy of the identifications made, which returns us to the points made earlier about the importance of good modern comparative skeletal collections.

The Future of Animal Bone Studies in Hampshire

Experienced sorters of sieved samples are now working in both Winchester and Southampton Rescue units and this type of post is essential in such large-scale excavations. But decentralisation of bone identification to the units carries dangers as well as advantages. The advantages are a greater awareness of the wealth of material which might be extracted and greater care in its retrieval, but there must be an awareness of the dangers of incorrect identification and interpretation by the units themselves and sufficient supportive help and modern comparative material to take the work to publication. Some functions can be regionalised. In bone studies a centralised literature and information base and modern comparative collection with associated specialist/s, perhaps even a centralised computer recording base, makes good economic sense, but each large archaeological undertaking must have its bone specialist, even if only a visiting one, and it is essential that bone analysts work with the site as their canvas if results of archaeological significance are to be achieved. Supportive help from specialist organisations like the British Museum (Natural History) will always remain occasionally necessary.

Regionalisation in administration is one issue but investigation of regional variations in animal husbandry is another, much neglected, one, as is the full integration of bone studies with all other aspects of archaeological investigation. We still need much larger samples to approach any acceptable estimation of the populations we are attempting to reconstruct in bone studies, whether they are the sheep populations of 13th century Hampshire or the populations of typical 15th century artisan meal residues. Every sample or sub-sample is still producing new information and there seems no way yet of predicting the find of a feature with especially rich preservation of bone.

The comments in an earlier section, however, clearly point to a lack of material in some periods and contexts. In Hampshire, apart from early prehistoric material, more bone samples of Roman, early Saxon, and early post-Saxon date are needed and more rural material in all periods, as well as a deliberate strategy for post-medieval samples. We now also need a breathing space while available data is assimilated; a long-standing backlog cannot be diminished overnight. It may then be possible to identify specific context types within periods which are still needed in order to complete a particular interpretation.

Only by maintaining the current good relationship between specialists and both amateur and professional archaeologists that is a part of Hampshire archaeology can we ensure that we will fill these gaps in the future.

Table 1

Scope of Computer Codes used at Faunal Remains Project
(the number of variables currently in each field is given in brackets)

SPECIES	There are over 1,000 possible vertebrate species for Britain. Only about 23 are common but an average medieval site may yield 60	
ANATOMY	The different anatomical elements	(350)
MEASUREMENTS	Up to 20 measurements routinely recorded	
SIDE OF BODY	Left, right, axial	(4)
FRAGMENTATION	Fraction and exact part of the whole bone represented by the fragment	(21)
GNAWING	Position, type, severity	(21)
BUTCHERY	Position, type, direction	(27)
BONE PATHOLOGY	Position, appearance	(28)
DENTAL PATHOLOGY	Position relating to individual teeth, type	(42)
HORN CORES	Coding relates to Armitage & Clutton-Brock 1977	(20)
SEX	Male, female, castrate by subjective assessment on basis of antlers, spurs, etc.	(3)
AGE	State of epiphysis fusion. Eruption stage of each tooth	(36)
AGE (Grant 1975)	Alternative codes giving eruption and detailed wear stage for each tooth	(30)
SPECIMEN NUMBER	Used for associating fragments, eg individual bones from a whole skeleton	
WORKING	Position and type of working. Can be used for finished bone and antler objects if there is any biological information still visible	(25)
CONDITION	Position and description of different degrees of, eg erosion, friability, charring, etc.	(30)

Information for each fragment can be recorded using any of the above variables. The variables can be used in almost unlimited combinations, in particular the position variables — distal, proximal, midshaft, lateral, medial, dorsal, ventral, cranial and caudal, joint surface, and internal — can in combination define an area on a bone with some precision.

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Palaeoethnobotany and the Early Agriculture of Central Southern England

J. M. Renfrew

During the past few years the remains of crop plants and seeds found in excavations in Hampshire and neighbouring counties have been the subject of three related research projects carried out in the Department of Archaeology, University of Southampton under the author's supervision. The plant remains from Iron Age and Roman sites were studied by Peter Murphy, the Saxon finds by M. A. Monk and the Medieval seeds by Francis J. Green; it is a summary of their work which follows.

The Iron Age palaeoethnobotanical finds came mainly from small farmsteads on the central chalk plateau area in the northern half of the region. The farmsteads consist of enclosed ditches of circular or rectilinear plan containing within them storage pits, postholes, ditches and gullies which yielded carbonised seeds and other plant remains. The following sites revealed plant material: Portway, Andover; Old Down Farm, Andover; Sites R1 and R27 in Micheldever Wood; Owslebury and Winchester. No plant remains were examined from hillfort contexts.

The Iron Age sites have produced a fairly consistent range of staple crops including spelt wheat *(Triticum spelta L.)*, emmer wheat *(Triticum dicoccum Schübl.)*, bread wheat *(Triticum aestivum* s.l.), six-row hulled barley *(Hordeum vulgare* L.), small amounts of naked six-row barley *(Hordeum vulgare* var. *nudum)*, oats *(Avena* sp.), tick beans *(Vicia faba* var *minor)* and vetches *(Vicia* sp.), and one site produced a single grain of rye *(Secale cereale* L.) which is probably no more than an accidental contaminant of the other crops. Wild fruits and nuts are represented by seeds of elder *(Sambucus nigra* L.), wild cherry *(Prunus avium* L.), rosehip *(Rosa* sp.) and hazelnuts *(Corylus avellana* L.). The Iron Age site, R27, in Micheldever Wood has also produced a few seeds which are tentatively identified as opium poppy *(Papaver somniferum* L.), and the base of a pot from Old Down Farm was covered with a carbonised mass of *Brassica* seeds (possibly mustard seeds).

The relative importance of these crops varies from site to site. Old Down Farm, Portway and R27 all show a preponderance of spelt wheat, with smaller amounts of barley and no beans: Owslebury however appears to have cultivated more barley and also beans as well as spelt.

The Roman sites, Winchester, *Venta Belgarum*, Crookhorn villa, Neatham and Owslebury, have produced a similar range of crops but oats and rye are present more frequently. Spelt is by far the most important cereal cultivated in the later Roman deposits and this may reflect the need to meet the Imperial Corn Tax or *annona*. New crops are found in Roman deposits for the first time, these include peas *(Pisum sativum)*, apples *(Malus silvestris Mill.)*, plums *(Prunus domestica)*, cultivated cherries *(Prunus avium* L.), figs *(Ficus carica* L.), grapes *(Vitis vinifera* L.), walnuts *(Juglans regia* L.), pinenuts *(Pinus pinea* L.) and coriander *(Coriandum sativum* L.). These introduced crops survive principally in the waterlogged deposits at Winchester and Neatham. The Roman town of Silchester (Reich 1901) has produced still further new crops including mulberries *(Morus nigra* L.) and medlars *(Mespilus germanica* L.). At several Roman sites wild fruits and nuts, notably blackberry *(Rubus fruticosus* agg.), raspberry *(Rubusidaeus* L.) and elderberry *(Sambucus nigra)* continue to be represented.

Thus the Roman period saw two developments in the agriculture of the region: the intensive cultivation of cereals, especially spelt wheat, to meet the more than local needs; and the introduction of new exotic crops.

Besides these exploited plants large numbers of seeds from wild plants were identified. From these it is possible to reconstruct the nature of the vegetation surrounding the sites. A variety of plant communities are represented but most of them are either weeds of arable land or synanthropic species, but fruits and seeds from plants of calcareous grassland, wet grassland, riparian and marsh habitats and scrub and woodland vegetations are also represented.

The bulk of the Saxon plant remains came from the two important town sites, Winchester and Hamwih (Southampton), both in the Itchen valley. Other sites have also yielded samples of seeds: in particular Chalton and Bishop's Waltham, Hampshire, Wareham and Poundbury in Dorset, Walton in Buckinghamshire and Fladbury in Worcestershire. Unlike the preceding periods, most of the seeds were recovered from waterlogged, anaerobic deposits in pits and wells, and only rarely were the seeds carbonized. Also this type of preservation was particularly favourable to seeds and fruits of the so-called 'wild' flora, the largest numbers, as one might expect in areas of human habitation, being typical of ruderal and weed habitats.

The cultivated plants recovered included cereal grains of six-row hulled barley *(Hordeum vulgare* L.), which was particularly frequent, also oats *(Avena* sp.), hulled wheats *(Triticum dicoccum* (emmer)/*Triticum spelta* (spelt)), and naked wheats of *Triticum aestivo-compactum* and *T. duro-compactum* types. The presence analysis of cereal species (Hubbard 1975) from all the Saxon sites shows that after the middle Saxon period there is a gradual decline in the presence of hulled wheats and a comparable increase in the naked wheats. This is the final end of the cultivation of hulled wheats, which were the staple crops of prehistoric Europe, and the rise in the cultivation of bread wheats, which had also a respectable prehistoric ancestry but which appear to have been grown less frequently in earlier times. This change would have had a number of agricultural and economic consequences, for example in crop processing activities. Perhaps the most important consequence would have been associated with the preference of naked wheats, particularly *Triticum aestivum*, for deep loam and clay soils. The spread of settlement into these clay lands is also probably related to the gradual evolution of the 'heavy' mouldboard plough to assist in the cultivation of such soils.

Besides the cereals the anaerobic deposits also yielded a range of fruit stones and pips including those of sloe

(Prunus spinosa) and bullace *(Prunus domestica* subsp. *insititia)*, at least two varieties of domestic plum (*Prunus domestica)*, and cultivated cherry *(Prunus avium)*. There are also pips of apples *(Malus silvestris)*, and grapes *(Vitis vinifera)*: on the New Minster site in Winchester grape pips are associated with hemp and strawberry seeds, whilst the Saxon streets in the Castle Yard site were strewn with hazelnut shells. These finds help to substantiate the rather scanty evidence for the beginnings of orchard husbandry and the development of monastic gardens in pre-Norman Britain.

The nature of some of the anaerobic deposits in Hamwih, and the seeds and insect remains they contained, suggests that animal dung and litter material was being deliberately collected and stored in a form of composting, in order to be used as a fertiliser on cultivated ground.

Thus the Saxon evidence has given us an indication as to the period of major transition from the cultivation of hulled to naked wheats, it has given us evidence of the development of orchard husbandry and monastic gardens, and has hinted at the developments of agricultural techniques, with the introduction of the mould-board plough and the conservation of manure to fertilise the fields.

The medieval deposits from Winchester — from the period 1 000-1 500 A.D. — form the richest collection of plant material of this date in Britain. They come from a number of different types of site within the ancient city and its suburbs and show preservation of palaeoethnobotanical material in a number of different forms. The range of contexts, from Royal palaces, monasteries, more lowly town houses, rubbish pits and water channels; and the types of preservation, by carbonisation, waterlogging, mineral replacement and desiccation, makes it particularly difficult to make overall generalisations about the uses of plants in this rather exceptional town. Most of the cereals were preserved by carbonisation. All the wheat found was of naked bread wheat type *(Triticum aestivum L)*, but it was not recovered in large quantities, probably because it did not require to be parched before threshing, and because most of it would have been ground to flour at the mill before being sold, rather than taken to the houses as grain. Barley was also found, of the hulled six-row type *Hordeum vulgare* L. Most of the barley grains had sprouted suggesting that they were being used to make malt for brewing. The oats *(Avena satira* L.), were invariably associated with animal dung suggesting that they were a major source of fodder for stalled animals. Rye was only occasionally found in the city.

Orchard husbandry is represented by the evidence of stone fruits as well as soft fruits on all sites, especially from the 13th century. These include *Prunus* species, both cherries and plums, elderberries, raspberries and blackberries, and apples. Some exotic fruits are represented such as peaches, figs, grapes and walnuts. There is documentary evidence for a wide range of exotic imported fruits such as lemon, orange and date, as well as an assortment of exotic herbs and spices (Foster 1963). However, few of these have been found in archaeological contexts and this is possibly because of the way they were used by the medieval population. Cash crops associated with local industries are known from the documentary records and consist of woad, madder and flax, of which only flax has been found in the archaeological deposits.

The problems of assessing the plant remains from a major medieval city have proved to be quite difficult. Much of the seed material, especially the waterlogged material, consisted of wild species with little significance in reconstructing the palaeoeconomy of the city, but useful for reconstructing the local flora. However, even some of these may have reached the archaeological deposits through being grazed on at a distance from the town, or through being carted as hay over considerable distances (Hay was being brought to Winchester from Nursling in 1287 — see Goodman 1935), and occasionally the resulting dung has later been incorporated in clay bell and cauldron moulds, being thus at several removes from its original habitat.

Winchester is particularly fortunate in having very full documentary coverage — both for the yields of its manors (Titow 1972) and for actual cultivation in the orchards and gardens of the city and its suburbs. We also have fairly full port records for Southampton indicating the types of fruits, herbs and spices which were regularly imported at this time. It is a salutary reflection for palaeoethnobotanists that much of the range of plants appearing in these records does not occur in the archaeological deposits whereas the palaeoethnobotanical record contains a number of species of economic significance not referred to in the documents.

This is offered as an interim summary of the research projects as they stand at the moment: there are many gaps to be filled and much more evidence to be examined before the full picture of the evolution of crop husbandry and the detailed study of the utilisation of crop plants in medieval towns can be given.

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Settlement History in East Hampshire

S. J. Shennan

Introduction

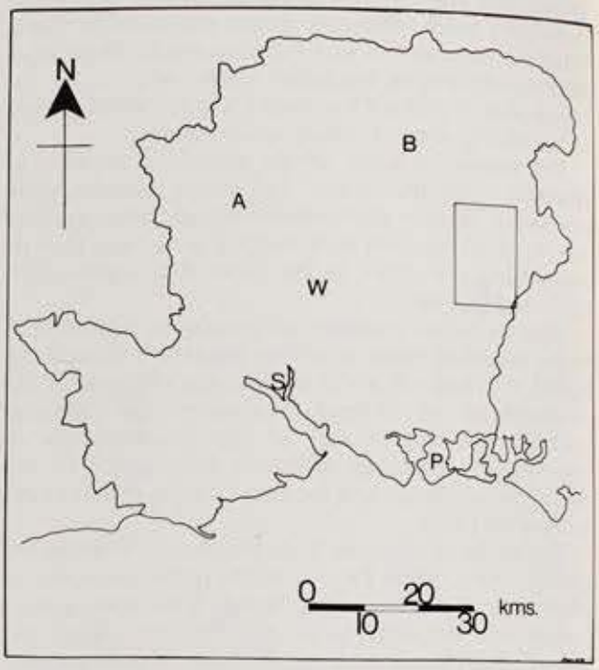
Many of the most basic interests of archaeology today concern the way in which societies change and develop over long periods of time and the factors that lie behind these developments. It has become increasingly accepted that the motive forces for change do not stem from invasions and migrations of known or unknown peoples, and that even when they do the migrations themselves are subjects for explanation. The factors which are now regarded as being important in understanding change include population size and density, the nature of the subsistence economy, the structure of society, and the way it adapts to its physical and social environment. This change in orientation in archaeology has had a number of important effects on archaeological practice. It has meant much more rigorous demands on archaeological data and has also resulted in a shift from the 'site' to the 'region' as a focus of study; in order to obtain a valid picture of the factors just mentioned it is necessary to investigate not just the single settlement but the settlement pattern.

Evidence for socio-economic change is provided by a great variety of archaeological data but settlement history is particularly important. The location of settlements in relation both to their physical environment and to other settlements is the result of decisions made by people in the past, decisions constrained in a variety of ways. Changes in settlement strategy therefore at the same time both document developments and provide us with a means of inferring the reasons for them.

Obtaining the necessary evidence is not easy as it requires initially reliable and representative information on where sites are and where they are not. With one or two notable exceptions, for example Chalton in Hampshire (Cunliffe 1972, 1973), most distributional evidence in Britain is not of an adequate standard: it can answer the first question but not the second. Despite the problems involved (see, for example, the papers in Part I of Cherry et al. 1978), the study to be described below was undertaken with the aim of obtaining the necessary representative information. In terms of answering the questions about culture change mentioned above it is simply a first step, but it is a step whose potential has tended to be neglected. Even in those cases where the fieldwork has been carried out maximum use has not always been made of the results. Clearly, the full potential of such studies can only be realised when they have been carried out over a wide area so that patterning in the data recovered can emerge (cf. Schadla-Hall and Shennan 1978): one of the current problems of regional archaeological work is that areas large enough to be interesting may be too big to be tackled except on a very long time-scale or with the input of large amounts of money.

The Survey Area

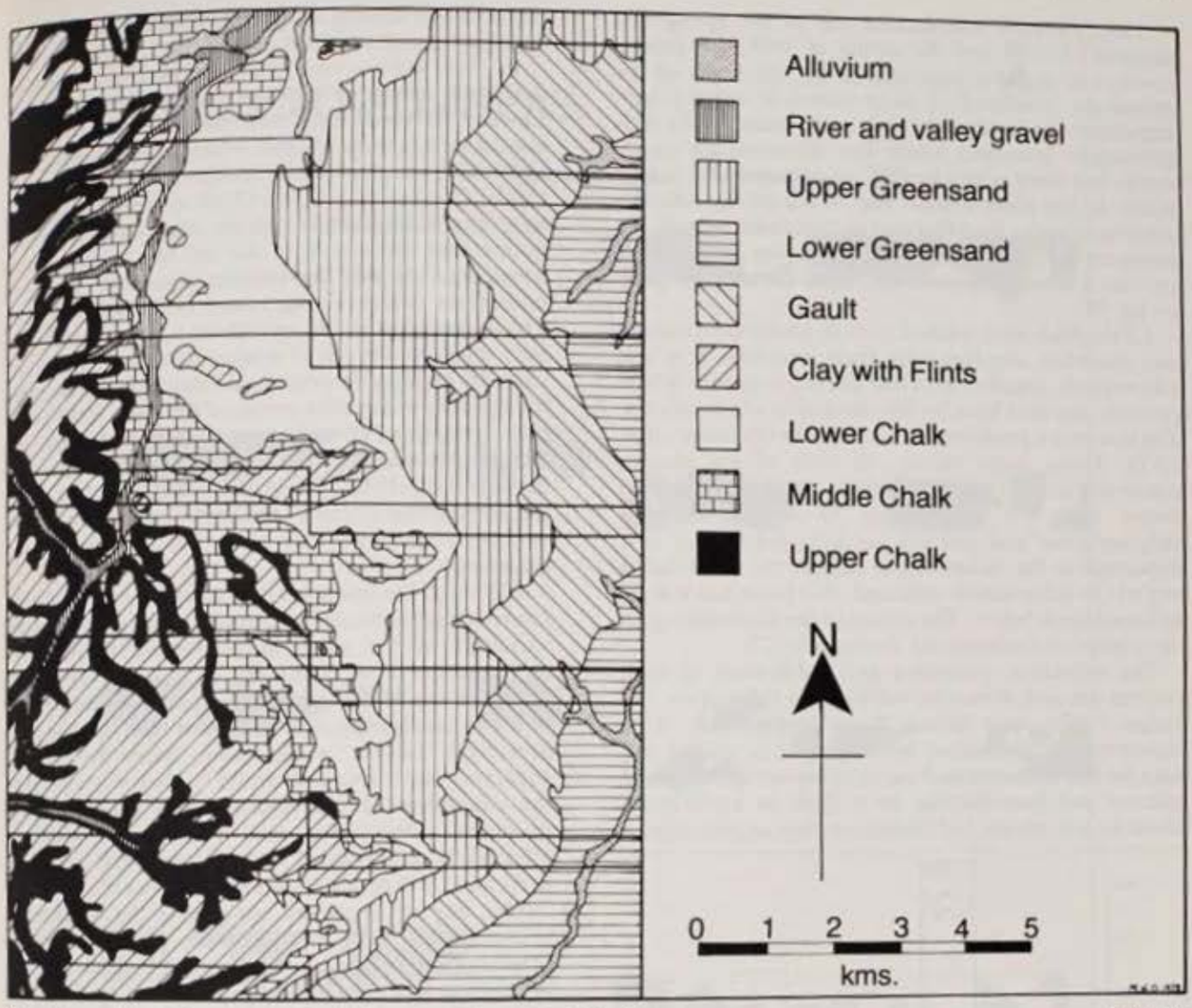
The decision as to what part of Hampshire to select for such a study was guided by a number of considerations. These included the desire to redress the balance of work towards those parts of the county outside the central chalklands, as well as the need to coordinate the programme so that it did not overlap with the work of other archaeologists in the area. These factors and the overall aim of defining and trying to explain the changes through time in density and distribution of occupation still left a large part of the county available for consideration, and the location of the area was finally determined by the aim of investigating the relationship between settlement and the physical environment.



Outline map of Hampshire; the rectangle marks the boundaries of the survey area. A = Andover, B = Basingstoke, P = Portsmouth, S = Southampton, W = Winchester. Figure 25

It may be argued *a priori*, on the basis of the numerous geographical studies of such questions, that a number of environmental variables are likely to be relevant to settlement decisions; for example, topography, soil, rainfall, vegetation, presence of surface water and height above sea-level. The main variable underlying all those which show major variation on a Hampshire or Wessex scale is undoubtedly the surface geology. This fact led to the selection of an area encompassing a range of geological variation, the boundary of the chalk and the Weald (see figs. 25 and 26). As can be seen from fig. 26 it included Upper Chalk, extensively covered with Clay-with-Flints, Middle and Lower Chalk, Upper Greensand, Gault Clay and Lower Greensand, all in a series of parallel belts running approximately north-south and spanning about 10km. from just inside the western edge of the Lower Greensand to the eastern edge of the Upper Chalk with its Clay-with-Flints capping. As already suggested, these geological differences correspond very closely to variations in topography, soil, and presence of surface water, as well as height above sea-level.

The size of the area to be examined was determined in its east-west direction by the need to encompass the geological variation present and was set at 10km. The north-south distance was more arbitrary but was fixed at



The surface geology of the survey area. Superimposed are the sample fieldwalking transects. Figure 26

15km. in order to be able to examine the east-west geological distinction over a reasonably wide north-south span.

The Survey

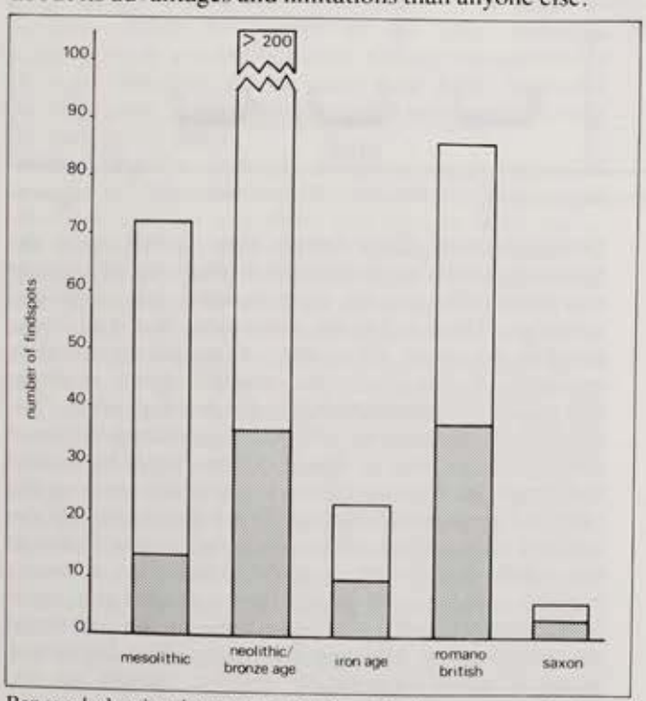
It will be clear already that the information available prior to the current survey was inadequate and could not be relied upon for a representative picture of past settlement. Examination of the available sources, particularly the Ordnance Survey archaeological records, showed the information in them to consist largely of obvious earthworks on the one hand and chance finds on the other. Their inadequacy is best documented by an examination of figures 27 and 29-33. Further information was retrieved from available sources of air photographs, although the one new sortie made did not prove particularly successful. Unfortunately, the area is not particularly satisfactory from an aerial survey point of view because of its surface geology and present land use, and this unsuitability has in turn meant that it has not received a great deal of attention from archaeological air photographers; more information could undoubtedly be obtained by this means.

The main method adopted for acquiring new information was ground survey: fieldwalking. Various levels of intensity are possible here (see Fasham et al. 1980), but even the lowest acceptable level is extremely time-consuming. Experiments were carried out at the beginning of the work to establish what level of intensity was acceptable and the corresponding rate of ground coverage. These led to the assessment that it would be possible to cover 30 sq.km. of ground in the time available. As the survey area was 150 sq.km. in extent this meant the selection of 20% for detailed survey. The method of selecting this 20% was dictated by a variety of considerations: that it should not be simply haphazard but should be representative, in particular covering the range of geological variation; that it should include the borders between the different geologies; that it should be evenly distributed spatially rather than a simple random sample; and finally that it should give some regard to the possibility of periodicities in the underlying site distributions affecting the results. This last would occur if there was some regular pattern in the distribution of past occupation which coincided with the placement of the sampling units so that they either always included the sites or never did; this would obviously have the effect of biasing inferences made on the basis of the sample. This point resulted in the sampling design shown in fig. 26, in which the sampling units are 12 transects 0.5 km. wide, 5k m. long, and evenly spaced 2.5 km. apart. For each of the two halves into which the survey area was divided the position of the first transect was selected by means of random numbers.

The fieldwork was carried out in the spring and autumn of 1977 and the spring of 1978; the ground covered in detail is indicated on fig. 28. Some of the remainder consisted of steep slopes at scarp edges, impossible to settle; the rest was mainly relatively permanent grassland which was examined for earthworks but from which surface collections could not be made. In the south-eastern part of the survey area this presented such a problem that certain fields outside the transects had to be selected for survey in order to provide a reasonable coverage; these are also indicated on fig. 28.

All the finds were washed, sorted, identified, counted and recorded, together with their locations. It is this information, together with that already available, which provides the data base for the discussion which follows. The results are presented in a series of period maps, figs. 29-33. These maps include all finds of the periods concerned and do not differentiate between major and minor finds. It is possible to suggest such a differentiation and this will be done below, but it is important at the outset not to neglect the potential of any of the information collected; this point too will be enlarged upon below. The effects of the fieldwalking on the number of findspots are shown in fig. 27.

The collection, recording and publication of such records are not, however, sufficient in themselves. As Judge (1973) and others have emphasised, it is incumbent on the survey archaeologist to analyse the data he has collected and use it to answer questions of interest, not least because he is likely to know more about its advantages and limitations than anyone else.



Bar graph showing the number of findspots in the survey area for the Mesolithic to the Saxon periods. The shaded area of each bar indicates the number of finds known before the survey fieldwork, the white area the number of finds made during fieldwalking. Figure 27

The Environment

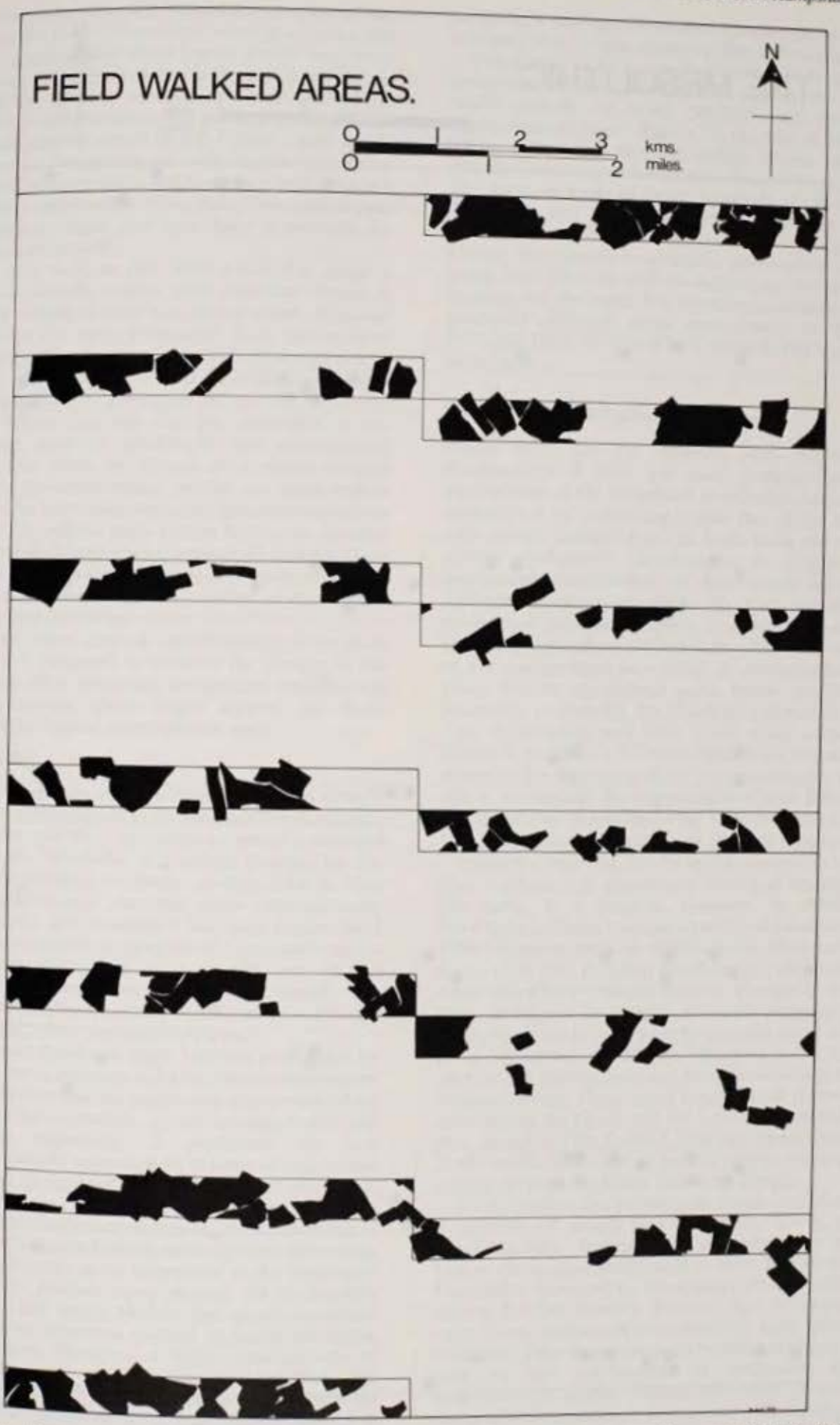
As already indicated, one of the main emphases of this study is on the relationship between the cultural system and the environment, particularly what Judge (1973:3) has called 'the technology of settlement': 'the selection by a cultural system of certain key components of the physical and natural environment for the enactment of specific cultural activities.'

In the survey area the environmental variation described above still affects the landuse today. The Lower Greensand areas with their poor light sandy soils consist largely of heathland, while the heavy soils of the Gault Clay are mainly under pasture. By contrast, on the Upper Greensand and the Chalk cereal-growing is the most important landuse. On the other hand, it is worth noting that the nature of the soil can in no sense be considered the sole determinant of landuse, which has undergone drastic changes even in the last 150 years. The widespread arable agriculture which dominates the area today as a result of modern economic pressures is virtually identical in extent and location to that recorded for the area in the tithe survey of the 1840s at the end of the agricultural boom period associated with the Napoleonic wars. At the time of the Land Utilisation Survey in the 1930s, however, carried out at the end of the agricultural slump of the later nineteenth and early twentieth centuries, the main use of the area was grassland.

Although the intention is to establish empirically the relationship between settlement and environmental variables in the past, in accounting for observed relationships it is necessary to consider how such variables would have operated. Apart from the question of water availability, it is suggested here that the main perceived factors would have been the existing vegetation and, once agriculture had become important, the suitability of the land for different agricultural purposes. Obviously, such perceptions would be affected by a variety of non-environmental considerations and I will return to this question below.

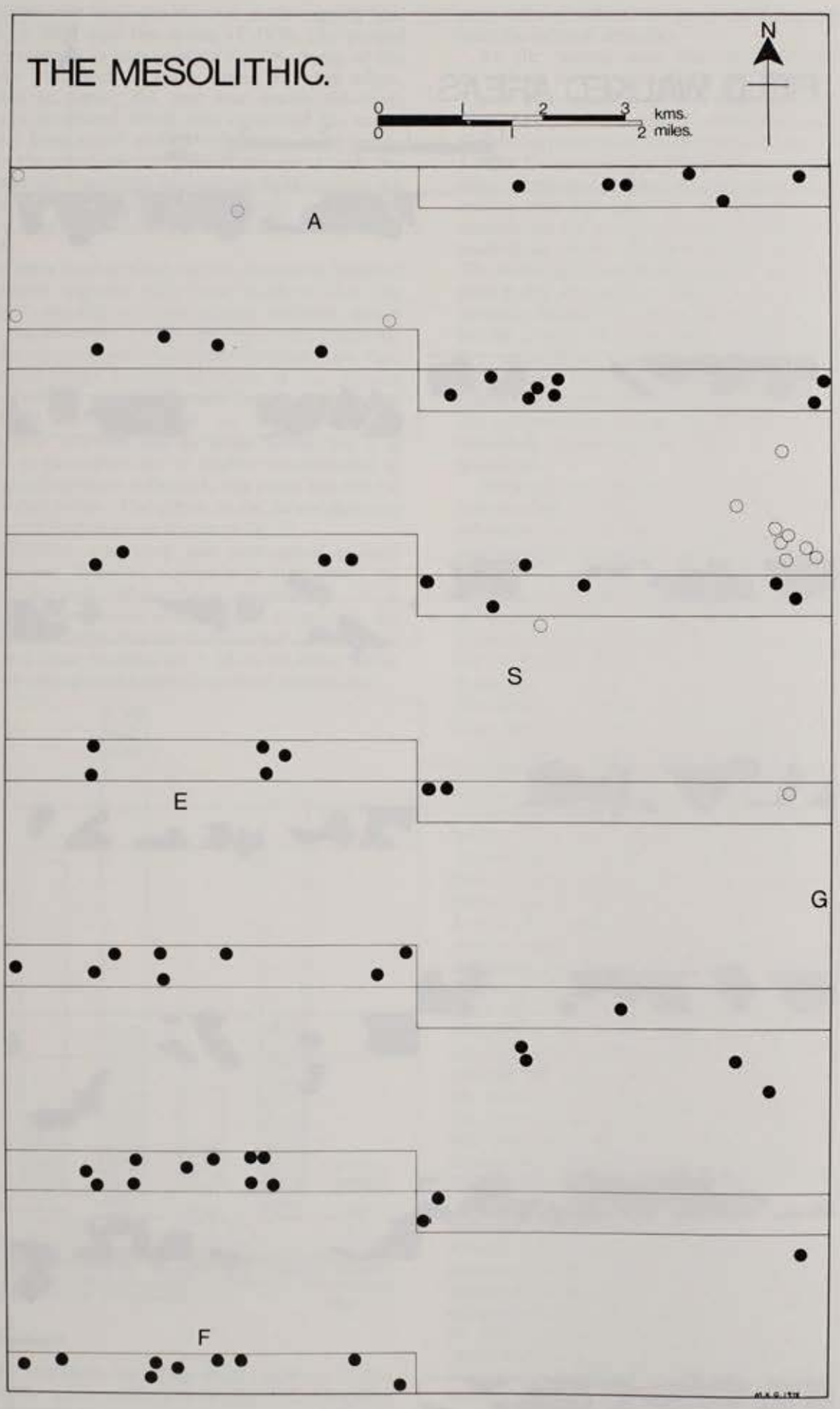
This line of argument concerning the relationship between settlement and environment has been most extensively developed by Mellars and Reinhardt (1978) in relation to the Mesolithic of southern England as a whole. They have argued in particular that the Lower Greensand was characterised by dry woodland with a lack of understorey shrub vegetation, and that the impoverished soil conditions which now obtain on the Lower Greensand may be traced back through the greater part of the postglacial period. The inherent tendency to impoverishment was amplified by the effects of fire, themselves longer lasting than they would have been on other soils. The net effect was a progressive opening up of the local forest canopy. The vegetation on the Chalk areas, on the other hand, was initially different, with heavier understorey growth in the damper woodland. The initial difference between the two areas was intensified by Mesolithic activities in the preferred dry woodland zone and it was this distinction between dry and wet woodland which was overriding in terms of environmental perception.

By the time of the introduction of strategies involving farming the vegetation had been changed by human activity in some areas much more than others, but it is maintained here that this would have been no more important in the making of locational decisions than the appearance of a new basis for environmental perception in terms of the favourability of land for different agricultural needs; it is suggested here that this would have led to a greater perceived differentiation of the landscape. The impoverished Lower Greensand soils would have been out of the question already for arable farming, although usable for grazing. The extremely heavy and wet Gault Clay soils would likewise be ruled



The distribution of those fields actually walked during the survey. Blank areas within the transects were inaccessible, generally because they were grass-covered; they were examined for traces of extant earthworks but not fieldwalked.

Figure 28



The distribution of Mesolithic findspots in the survey area. Open circles are previously known findspots; filled circles are finds made during fieldwalking. A = Alton; S = Selborne; E = East Tisted; G = Greatham; F = Froxfield.

Figure 29

out, although the zone of mixing at the boundary of the Gault and the Lower Greensand, which produces a belt of good quality well-drained loams, would have been highly favourable. West of the Gault, the Upper Greensand and the different varieties of Chalk would have been fairly undifferentiated, but the large areas of Clay-with-Flints capping much of the Upper Chalk would have been unfavourable to early arable agriculture because of the heavy acidic soil developed on it. The lack of surface water on the Clay-with-Flints and Upper Chalk plateau might also have been a problem for agricultural settlement.

In an area such as that with which this study is concerned naturally caused environmental change is extremely unlikely to have had a major effect on human activity after the early postglacial. Such factors have their greatest effect in situations which are marginal with respect to some variable critical for human settlement and this is unlikely to have been the case for the survey area. It follows that any changes observable in the relationship between settlement and environment through time must be related to humanly-induced changes in the environment on the one hand and to changes in the human perception of that environment on the other. One of the main factors leading to changed perception has already been discussed. Others are likely to be changing population density and, once settlement hierarchies had appeared, the position of the land in relation to that hierarchy.

Now that these general considerations have been outlined, it is proposed to consider the changes in the area through time, describing the patterns obtained and discussing models which might account for those patterns in the light of points already made.

The Mesolithic

The work of Mellars and Reinhardt (1978) has already been discussed in relation to the nature of the postglacial environment, but they have also proposed a detailed model for the Mesolithic of southern England on the basis of the available evidence. As they state in their paper, this evidence contains many imponderables because of the way in which it has been accumulated over the years and the carrying out of a systematic survey in an appropriate area is a crucial test of the distributional assumptions behind their model. The survey described here, because of its location at the edge of the Weald, offers precisely such a test.

Mellars and Reinhardt argue from the preference for light sandy areas apparent in the Mesolithic distributions to the suggestion that this preference was a result of the character of the vegetation; dry oak woodland with little understorey vegetation. A preference for such woodland could be accounted for in terms of its potential for hunting as opposed to other types of woodland. Heavy scrub cover results in a lower density of animals and a decreased efficiency in hunting them. The areas of open dry woodland which are naturally more favourable to hunting are also more susceptible to the burning of vegetation to produce open ground, which certainly took place and which Mellars has shown elsewhere (1976) was an important method of locally increasing stock densities. However, a further characteristic of some of the major southern English Mesolithic sites noted by Mellars and Reinhardt is their location near the borders of a number of different geological zones with very different characteristics. On this basis they suggest that while location in relation to hunting was the critical variable, a high premium also attached to access to a diversity of resources, including flint and various plants.

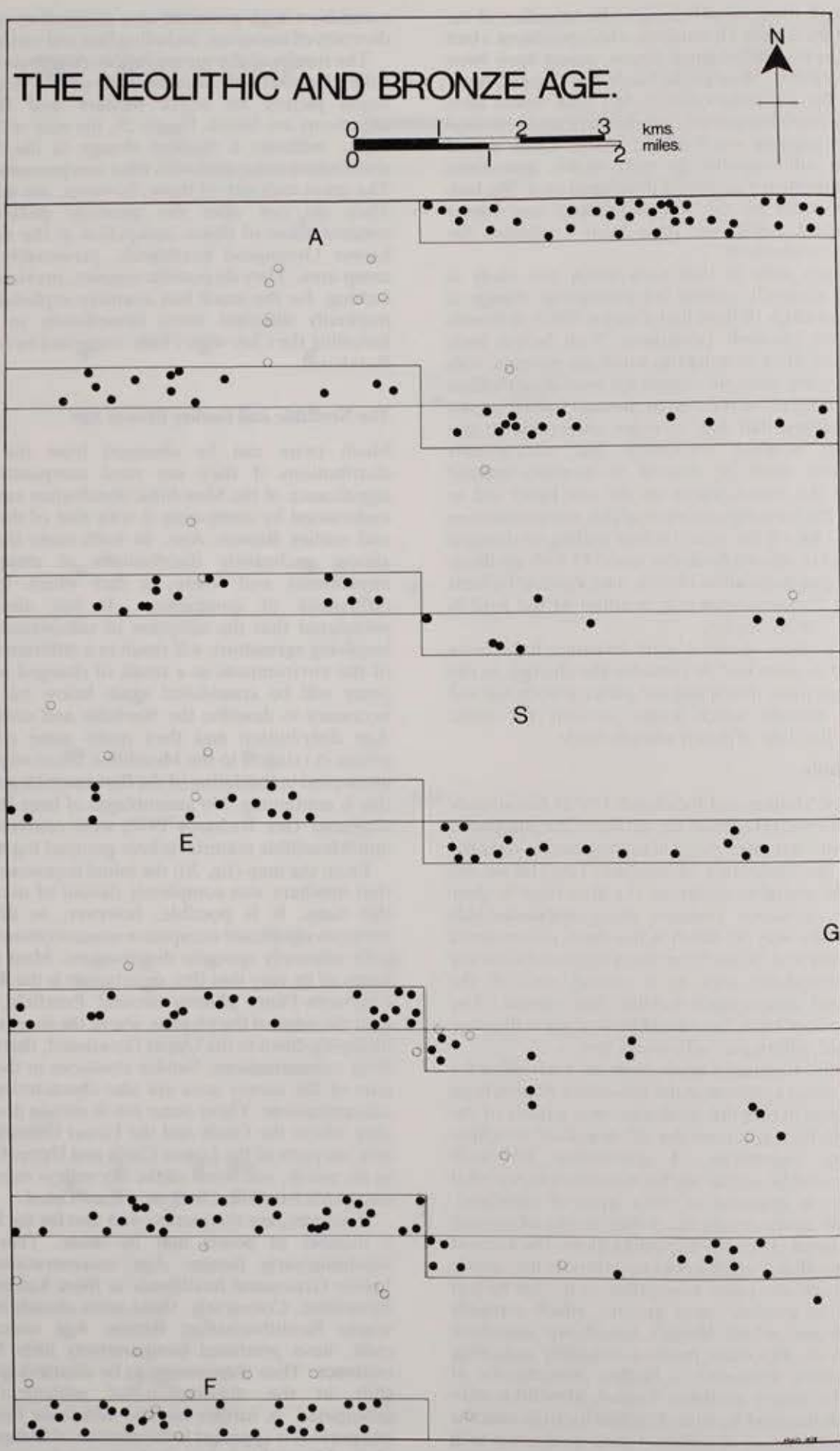
The results of the survey fieldwork with its systematic collection methods confirm and amplify the distributional picture on which Mellars' and Reinhardt's arguments are based. Figure 29, the map of Mesolithic finds, indicates a marked change in the Mesolithic distribution compared with what was previously known. The great majority of these, however, are minor finds. They do not alter the previous picture of the concentration of dense occupation at the edge of the Lower Greensand heathlands, presumably the base camp area. They do provide support, previously largely lacking, for the much less intensive exploitation of the markedly different areas immediately to the west, including the Clay-with-Flints, suggested by Mellars and Reinhardt.

The Neolithic and Earlier Bronze Age

Much more can be obtained from the study of distributions if they are used comparatively. The significance of the Mesolithic distribution can be better understood by comparing it with that of the Neolithic and earlier Bronze Age. In both cases the data are almost exclusively distributions of chipped stone implements and waste, a fact which lessens the difficulties of comparison. It has already been postulated that the adoption of subsistence strategies involving agriculture will result in a different evaluation of the environment as a result of changed needs. This point will be considered again below but first it is necessary to describe the Neolithic and earlier Bronze Age distribution and then make some comparative points in relation to the Mesolithic. Here no precision is attempted in the dating of the flint assemblages; work on this is continuing. No assemblages of later Bronze Age character (see Richards 1978) were recovered and all non-Mesolithic material is here grouped together.

From the map (fig. 30) the initial impression is clearly that nowhere was completely devoid of occupation at this time. It is possible, however, to differentiate between significant occupation concentrations and areas with relatively sporadic distributions. Most striking in terms of its very thin flint distribution is the heart of the Clay-with-Flints plateau around Froxfield, although near the edge of the plateau, above the steep scarp slope dropping down to the Upper Greensand, there are some clear concentrations. Similar situations in the northern part of the survey area are also characterised by flint concentrations. These occur too in certain places on the strip where the Gault and the Lower Greensand intermix, on parts of the Lower Chalk and Upper Greensand in the north, and some of the dry valleys running down eastwards from the Chalk near East Tisted.

If we compare this picture with that for the Mesolithic a number of points may be made. There are no Neolithic/early Bronze Age concentrations on the Lower Greensand heathlands as there had been in the Mesolithic. Conversely, those areas already mentioned where Neolithic/earlier Bronze Age concentrations exist, have produced comparatively little Mesolithic evidence. Thus there seems to be clear evidence of the shift in the distribution of settlement already anticipated. A further marked difference between the two periods is apparent in the number of findspots, those of the Mesolithic being much more infrequent. This is likely to be the result of a variety of different factors. It is



The distribution of Neolithic/earlier Bronze Age findspots in the survey area. Open circles are previously known findspots; filled circles are finds made during fieldwalking. A = Alton; S = Selborne; E = East Tisted; G = Greatham; F = Froxfield.

Figure 30

now increasingly clear that with the exception of certain specialised artefacts chipped stone technology became more expedient through time (e.g. Pitts 1978). Careful core preparation and the 'curation' of tools, their keeping for repeated use, were gradually replaced by a system in which the minimum amount of work was done to produce an artefact necessary to carry out a task, which was then discarded after that task. This means that while certain early sites where tool manufacture took place will be extensively littered with debris, in other places where tasks were carried out there will be no archaeological evidence because the artefacts will have been retained for re-use, unless, of course, they broke in the process. In a later period of more expedient throw-away tool use archaeological evidence might well be present. This is almost certainly one factor which must be borne in mind. On the other hand, it is not likely to be the only one, not least because the number of Neolithic/earlier Bronze Age concentrations as opposed to individual findspots is also greater than for the Mesolithic. This may be related to increased exploitation of the area in the later period. To talk in such a generalised way about the area as a whole when we have already seen that there are major changes in the distribution of occupation is clearly not altogether satisfactory, nevertheless it does seem to be broadly valid. The number of concentrations of the later period within the area perhaps suggests a greater stability of use in contrast to an earlier wide-ranging more mobile exploitation based on the sites of the Lower Greensand area.

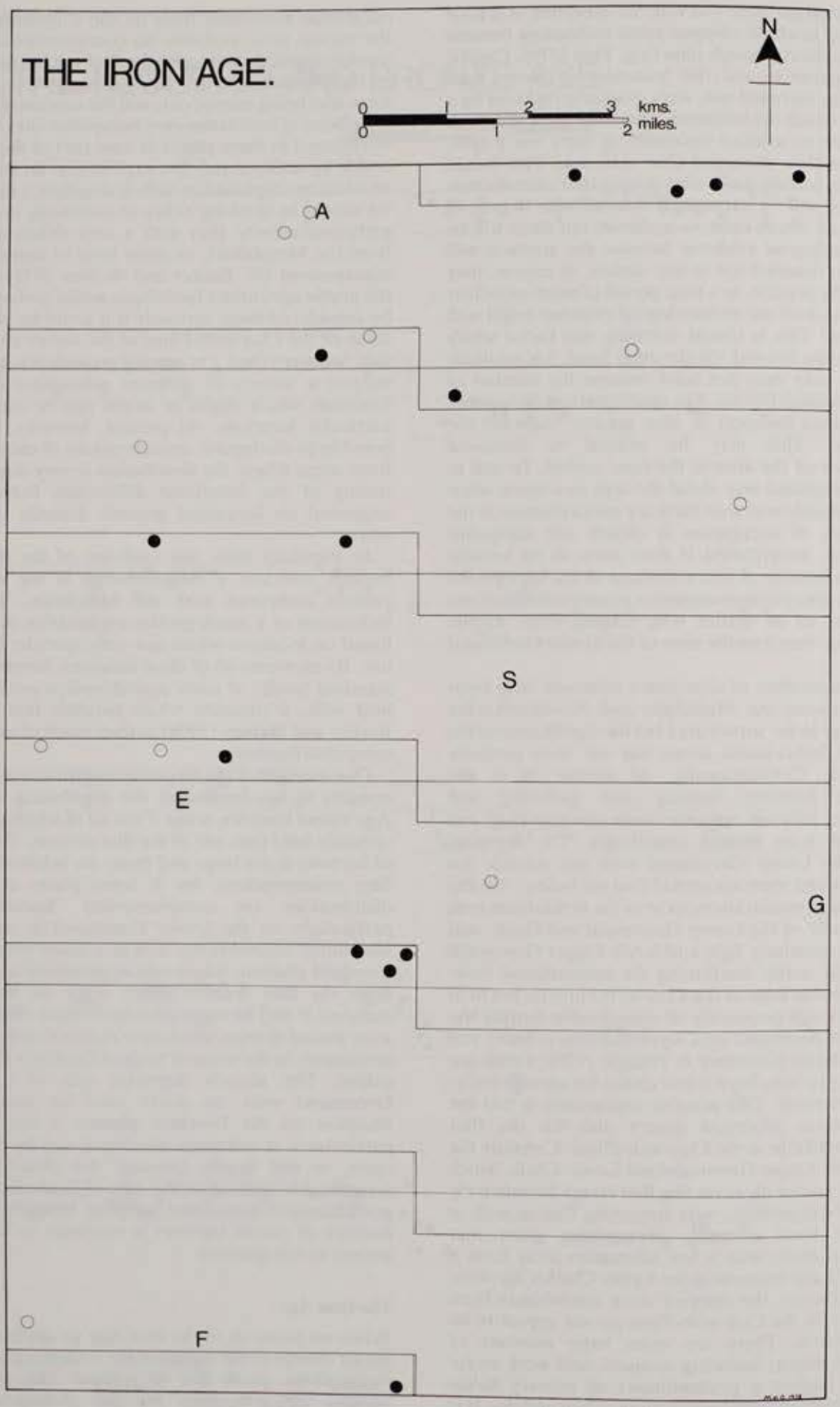
So far a number of descriptive contrasts have been drawn between the Mesolithic and Neolithic/earlier Bronze Age in the survey area but the significance of the change in behavioural terms has not been properly considered. Conventionally, of course, it is the difference between hunting and gathering and agriculture; different resources were now important and settlements were located accordingly. The degraded soils of the Lower Greensand were not suitable for agriculture and were not settled (but see below). On the other hand, concentrations exist in the fertile loam area at the border of the Lower Greensand and Gault, and also in the relatively light and fertile Upper Greensand zone in the north, confirming the conventional view. The sites on the edge of the Clay-with-Flints do not fit in here. Although potentially of considerable fertility the soil usually developed on Clay-with-Flints is heavy and naturally acidic (Courtney & Trudgill 1976); it does not seem likely to have been a first choice for agriculturally-based settlement. One possible explanation is that the concentrations represent quarry sites for the flint deposits available in the Clay-with-Flints. Certainly the areas on the Upper Greensand and Lower Chalk, which are without naturally occurring flint except for relatively small derived pebbles, were importing flint as well as using the local material, unsurprising given that nowhere is more than a few kilometres away from a source of better material in the Upper Chalk/Clay-with-Flints. However, the chipped stone assemblages from these sites on the Clay-with-Flints do not appear to be quarry debris. There are quite large numbers of retouched pieces, including scrapers, and work so far does not suggest a predominance of primary flakes deriving from the initial preparation of flint nodules. It is worth remembering too that flint from the Clay-with-Flints was being used at the Mesolithic sites on the Lower Greensand, but as we have seen there are only occasional Mesolithic finds on the Clay-with-Flints of the survey area, certainly no concentrations. All this would suggest that although the flint was being exploited in the Neolithic/earlier Bronze Age, other activities were also being carried out, and the concentrations may have been at least temporary occupation sites. If groups were based in these places at least part of the time and arable agriculture and flint exploitation do not provide an adequate explanation of their situation, it may be that we should be thinking either of continuing hunting and gathering activity (but with a very different strategy from the Mesolithic), or some form of domestic stock management (cf. Barker and Webley 1978), although the arable agriculture hypothesis would perhaps have to be considered more seriously if it could be shown that some of the Clay-with-Flints of the survey area was, in fact, loess-covered. On *a priori* grounds it is possible to suggest a variety of different subsistence-settlement functions which might or might not be combined at particular locations. At present, however, it is only possible to distinguish concentrations of chipped stone from areas where the distribution is very dispersed, so testing of the functional differences between sites suggested on locational grounds depends on further work.

In summary then, the evidence of the flint distributions indicates a major change in the settlement pattern compared with the Mesolithic. There are indications of a much greater exploitation of the area, based on locations which saw only sporadic Mesolithic use. By no means all of these locations, however, fit the standard model of early agriculturalists preferring the best soils, a situation which parallels that found by Barker and Webley (1978) in their study of causewayed camp distributions.

One element of the Neolithic and Bronze Age picture remains to be considered, the distribution of Bronze Age round barrows, some if not all of which are almost certainly later than any of the flint scatters. The number of barrows is not large and many are relatively close to flint concentrations, but in some places at least the distributions are complementary. Barrows occur particularly on the Lower Greensand in the area of Mesolithic concentration and to a lesser extent on the Froxfield plateau, where one in particular is well away from the flint scatters which occur on the plateau margins. It may be suggested that in these cases barrows were placed in areas which were marginal to Bronze Age settlement, in the sense of being utilised only to a limited extent. The already degraded soils of the Lower Greensand were no doubt used for pasture. The situation on the Froxfield plateau is less clear, in particular it is unknown whether it was by now fairly open, or still largely forested: this obviously has a considerable bearing on the type of landuse one would postulate. Environmental sampling beneath the small number of extant barrows is necessary to obtain the answer to this question.

The Iron Age

When we move on to the Iron Age we are faced with a major change in the nature of the evidence produced by fieldwalking, from flint to pottery. This presents a number of difficulties for the reconstruction of settlement history. Iron Age pottery is far less durable than flint, so that one can predict that there will be a major decrease in the simple quantity of evidence



The distribution of Iron Age findspots in the survey area. Open circles are previously known findspots; filled circles are finds made during fieldwalking. A = Alton; S = Selborne; E = East Tisted; G = Greatham; F = Froxfield.

Figure 31

recovered. Secondly, the manufacture, use and discard of pottery represent a very different range of activities from the manufacture, use and discard of stone tools. It is argued here that pottery is always indicative of settlement occupation sites, or material derived therefrom, while stone tools and their debris can represent a great variety of different types of activity, including settlement occupation, and it is often very difficult to distinguish between them, as we have seen. Similar activities, for example hunting, no doubt occurred in the Iron Age, but the demise of the chipped stone technology meant that they no longer left an archaeological trace.

These factors mean that comparison between the Neolithic/earlier Bronze Age and the Iron Age must be undertaken with great care. The predicted decrease in the number of findspots is clearly apparent (compare figs. 30 and 31). Some of these findspots consist of only one or two sherds, but in accordance with the principle stated above these will be taken as indicative of settlement, either on the spot or within the short distance over which household rubbish would have been dumped on fields. In fact, the Iron Age pottery recovered on the survey, as opposed to the Romano-British which will be discussed below, was so friable that its survival in plough soil for more than 2000 years must be considered extremely dubious; it is far more likely that it derives from archaeological features disturbed in the relatively recent past.

It seems appropriate to compare these Iron Age findspots not with the Neolithic and Bronze Age flint findspots as a whole, but only with those denser concentrations, including discarded tools, which at least indicate long or repeated occupation of some kind. While it still remains dubious to use the evidence to compare overall intensity of exploitation of the area between these periods, it is at least possible to see if there is any change in the pattern of occupation, and therefore presumably of landuse.

How is this to be done? The method adopted here recognises the fact that the fieldwalking data were obtained by means of sampling, not total coverage, and is at the same time an objective procedure; it also enables comparison to be carried out between all periods. Each sample fieldwalking transect was divided into 1 km. wide sections on the basis of the National Grid lines. For each of these 0.5 sq.km. sections the periods for which occupation evidence exists were recorded (see table 2). Although for any individual section this may not provide a very reliable picture, aggregated over the survey area as a whole the results do enable broad patterns to be picked out whose validity is considerably enhanced by the systematic nature of the fieldwalking procedure. It should be noted that this type of analysis can only be carried out when data collection has been carefully controlled, so that it is reasonable to attach some significance to the absence of material of certain periods from the areas concerned.

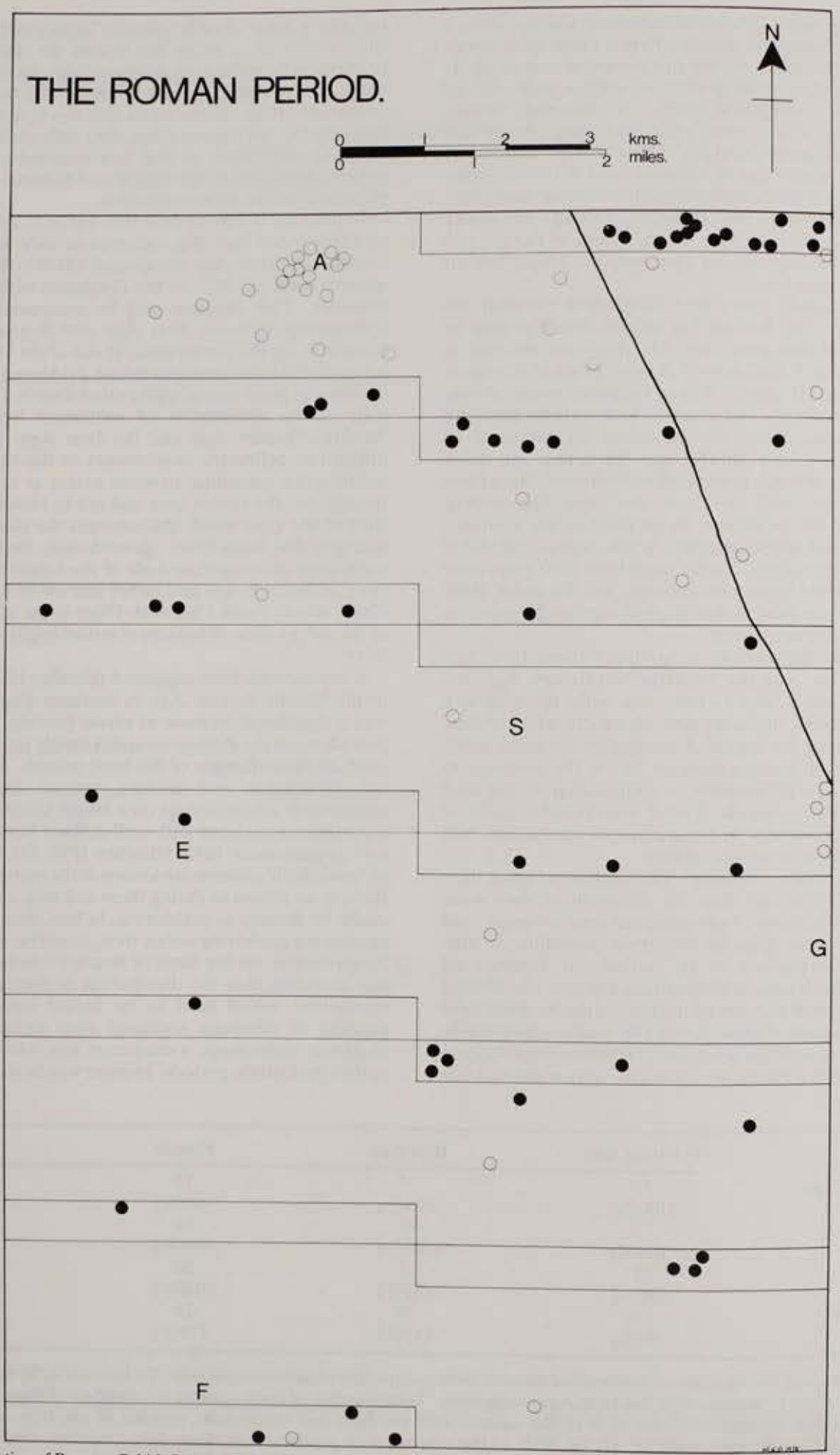
In this case it may be seen that out of 17 squares with significant pre-Iron Age occupation only seven have evidence of Iron Age occupation (41%); these seven squares make up 54% of the 13 squares with Iron Age evidence. This situation may be contrasted with the relationship between Iron Age and Romano-British occupation in the survey area: 11 out of the 13 Iron Age squares also have Romano-British evidence (84%). On the basis of these data it appears that there is a significant shift in the distribution of settlement between the Neolithic/Bronze Age and the Iron Age. It is more difficult to define the exact nature of this shift since it seems to be operating to some extent at a local level throughout the survey area and not to involve a major shift of the type which characterises the change which followed the Mesolithic. Nevertheless, there is some suggestion of an increased use of the Upper Greensand zone in the Iron Age and rather less use of the areas of Chalk covered with Clay-with-Flints in the western part of the survey area. What sort of model might account for this?

It has recently been suggested (Bradley 1978, 45) that in the Middle Bronze Age in southern England there was a significant increase in cereal farming, with later periods up to the Roman conquest simply representing a gradual intensification of this basic pattern. At this time too occupation and landuse become more static; settlements are conceived on a longer lasting basis and sometimes associated with well-defined boundaries, as well as permanent fields (Bradley 1978, 27). Fragments of 'celtic field' systems are known in the survey area, but there is no means of dating them and they could just as easily be Roman as prehistoric; in fact, there are some reasons for preferring such a view, as will be seen below. Nevertheless, on the basis of Bradley's hypothesis one can postulate that the distribution of later prehistoric agriculture would tend to be biased towards areas capable of relatively sustained crop yields with the available technology, a constraint less relevant in the earlier prehistoric periods. In other words, in the survey

TABLE 2

	Pre-Iron Age	Iron Age	Roman	Medieval
Pre-Iron Age	17	7 (41%)	11 (65%)	8 (47%)
Iron Age	7 (54%)	13	11 (84%)	9 (70%)
Roman	11 (42%)	11 (42%)	26	14 (54%)
Medieval	8 (40%)	9 (45%)	14 (70%)	20

Matrix showing the number of fieldwalked squares with occupation of different periods. To be read as in the following example: Row 1: squares with pre-Iron Age occupation. Total number of such squares 17; number of these which also have Iron Age occupation 7, i.e. 41% of the squares with pre-Iron Age occupation; number of pre-Iron Age squares which also have Roman evidence 11, i.e. 65% of the squares with pre-Iron Age occupation; number which also have medieval evidence 8, i.e. 47% of the squares with pre-Iron Age evidence. The Saxon period has been omitted owing to lack of data.



The distribution of Romano-British findspots in the survey area. Open circles are previously known findspots; filled circles are finds made during fieldwalking. The black line indicates the Roman road. A = Alton; S = Selborne; E = East Tisted; G = Greatham; F = Froxfield. Figure 32

area there should be a bias away from the areas of extensive Clay-with-Flints and from the Gault Clay, for reasons of workability, and from the Lower Greensand because of the quality of the soil. This leaves relatively small exposures of Upper and Middle Chalk, but a fairly wide area of Lower Chalk and Upper Greensand, at its most extensive in the north; it is this latter area which, as we have seen, appears to show evidence of preferred use in the Iron Age. It is notable that this is the only part of the area where the soil is currently graded Class Two on the land use potential classification map; all the remaining arable land is graded three or four. It is suggested here then that the pattern of agricultural change through time in this part of eastern Hampshire fits the model suggested by Bradley for southern England as a whole.

The Roman Period

When we turn to the Roman period we find that the trend begun in the Iron Age is continued and intensified (see fig. 32). It has already been remarked that 84% of the sample squares with Iron Age evidence also have Romano-British occupation, but these must be seen as the core from which settlement expanded in the latter period. This expansion may be seen in a number of different ways. First, 26 of the squares sampled by fieldwalking produced Romano-British evidence, a larger number than any other period, including the medieval which comes second with 20 squares. Secondly, there was extensive Romano-British occupation of the Clay-with-Flints area, apparent in the distribution both of the fieldwalking evidence and of some previously known sites, for example that at Ridgehanger, Froxfield. Finally, the greatly increased density of occupation in the northern part of the survey area should be noted. The Roman town of Neatham (Millett and Graham, forthcoming) is just outside the survey area to the north, while Alton itself has produced a large quantity of Romano-British finds, as have the areas adjacent to it.

Again the situation in eastern Hampshire seems to parallel that in other parts of southern England. The different lines of evidence for expansion seem incontrovertible even when account is taken of the fact that the greater durability of Roman pottery means that it is more likely to be recovered by archaeologists, with a consequent automatic increase in the number of Romano-British findspots. It is the evidence just described for the very widespread use of the landscape which suggests that the fragments of 'celtic fields' still surviving in the survey area may be of Romano-British date. These have survived because they were marginal to later agriculture. If, as is most probable, they represent an agricultural 'high tide mark', the expanded landuse of the Romano-British period provides the most likely context for their use.

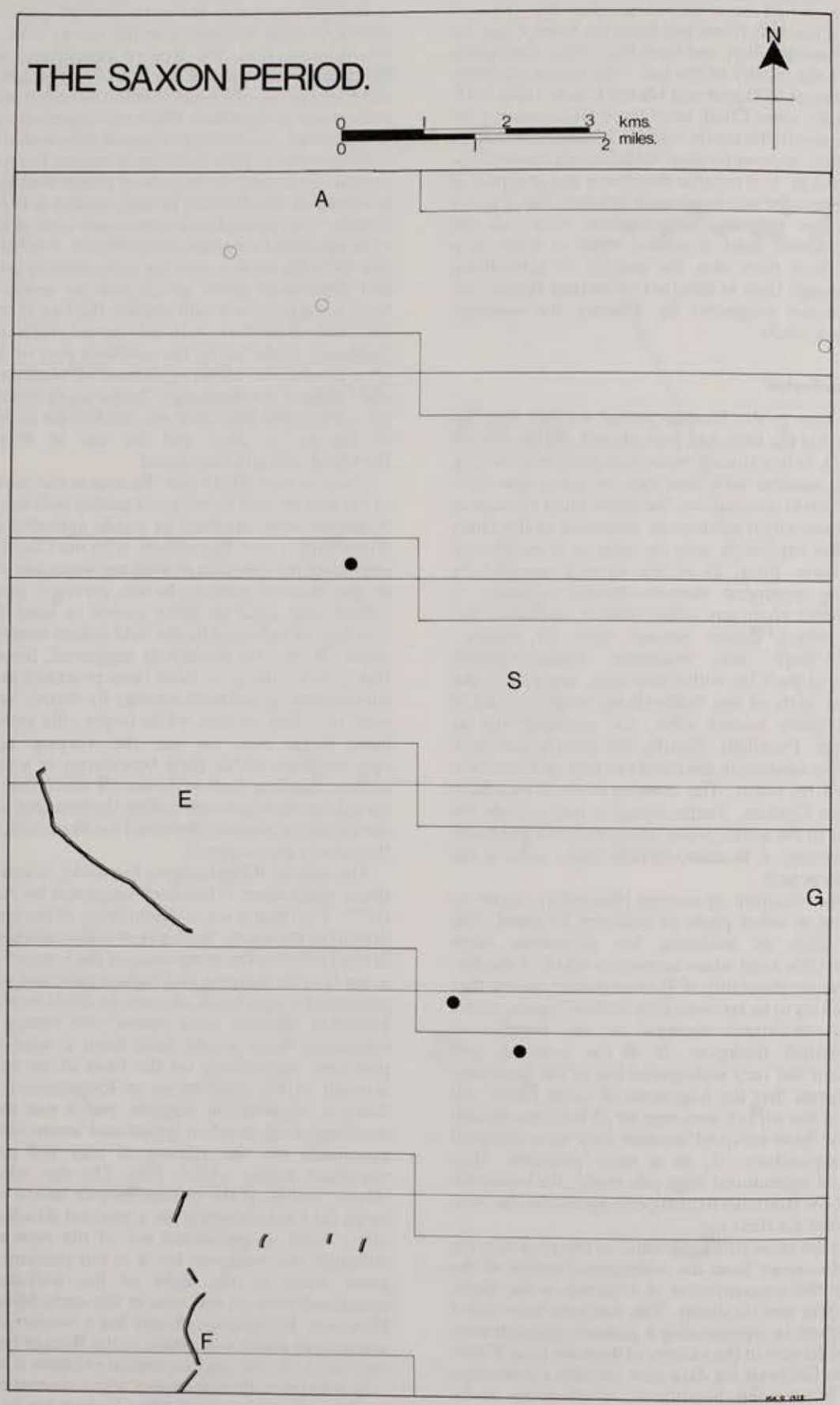
Perhaps the most striking feature of this period in the survey area, apart from the widespread nature of the landuse, is the concentration of evidence in the north, around Alton and Neatham. This has long been noted and suggested as representing a genuine concentration of rural settlement in the vicinity of the town (e.g. Timby 1977). The fieldwalking data now provide a systematic basis for testing this hypothesis, which seems to be broadly valid: the number of squares with fieldwalking evidence of Roman pottery declines gradually from north to south.

This pattern raises the more general question of the nature of rural settlement in the survey area. This has two aspects; first, the type of agriculture which was being practised; second, the extent to which the pattern was made up of villa estates on the one hand and 'native' settlement on the other. These two aspects are obviously related since the different types of units would have had different aims in their farming strategies. Even relatively remote areas seem to have been penetrated by a money economy in the Roman period, so that it is likely that almost every agricultural community took at least some of its produce to market; nevertheless, it is fairly certain that the villa estates were far more actively involved in, and dependent upon, production for urban markets. Such a suggestion would explain the fact that evidence for rural settlements with substantial buildings is quite markedly restricted to the northern part of the survey area around the urban settlement of Neatham (Millett and Graham, forthcoming). To the south there are as yet no comparable sites until one reaches the southern edge of the survey area and the site at Ridgehanger, Froxfield, already mentioned.

It seems very likely that the sites in the northern part of the survey area on the good quality soils fairly close to Neatham were involved in arable agriculture, but the Ridgehanger site, like others, is on the Clay-with-Flints and raises the question of what use was made of this zone in the Roman period. It was certainly permanently settled and used to some extent at least for arable farming, as indicated by the field system remnants which occur. It may be tentatively suggested, however, that this is more likely to have been practised as part of a subsistence agricultural strategy by 'native' settlements with no other choice, while larger villa estates would have been able to use the varying agricultural opportunities within their boundaries in a maximising fashion, putting them to the use for which they were best suited and no doubt controlling the best land anyway, as the evidence already discussed for the northern part of the survey area suggests.

The site at Ridgehanger, Froxfield, is interesting in this respect since it has been suggested by Appelbaum (1972, 176) that it was a dependency of the large villa at Stroud to the south. Such a view makes eminent sense as Stroud is below the steep scarp of the Upper Chalk. The scarp is at its steepest and highest here and would have presented a significant obstacle to direct working of the Froxfield plateau from below; the setting up of a subsidiary farm would have been a solution to the problem. Apparently on the basis of an unpublished account of his excavations at Ridgehanger by C. E. Stevens, Appelbaum suggests that it was the peasant steading of a dependent tenant and 'seems to have been essentially for the rearing of pigs and cattle in a woodland milieu' (1972, 176). The site, which is still clearly visible on the ground despite recent ploughing, looks far too substantial for a 'peasant steading'; on the other hand, a specialised use of the type suggested, although the evidence for it is not presented, makes good sense in the light of the well-documented woodland state of the area in the early Middle Ages. However, Hampshire already has a number of cases in which land which was arable in the Roman period later reverted to forest; archaeological evidence is needed.

In relation to the question of where such an estate with its dependencies would have looked for its external connections, Appelbaum (1972, 176) notes that Liss, about 6 km. north-east of Stroud and on the eastern edge



The distribution of Saxon findspots in the survey area. Open circles are previously known findspots; filled circles are finds made during fieldwalking. The linear features in the south-western quarter of the map are those parts of the Froxfield entrenchments which lie within the survey area. A = Alton; S = Selborne; E = East Tisted; G = Greatham; F = Froxfield.

Figure 33

of the survey area may be a possibility; it is one of the very few Celtic place-names in Hampshire and comes from a word meaning 'palace'.

In summary then, the Roman period saw a major expansion of settlement from a more restricted Iron Age basis. The tendency seen in the Iron Age towards an increased use of the fertile Upper Greensand and Lower Chalk zone in the northern part of the survey area was, however, continued. It may indeed have been the greater density of occupation in this area with its high agricultural potential, together with the presence of a pre-existing focus just to the north of the survey area on Holybourne Down, which was one factor in the development of Roman urban settlement here, although the crossing of the two Roman roads was obviously important. Once this settlement appeared the already existing tendency for the area to be attractive to settlement would have been still further intensified.

The Saxon and Medieval Periods

Although it is possible to distinguish early from late Roman occupation on the basis of surface evidence, it is certainly not possible to define the gradual decay of the settlement system at the end of the Roman period; the Saxon period in the survey area must be considered as a separate entity. Its most obvious characteristic is the sheer lack of evidence, which the survey did little to alter (see fig. 33). This cannot be taken at its face value since early Saxon pottery in particular seems to decay very quickly in the plough soil and even when present is difficult to detect; fieldwalking produced only a single grass-tempered sherd and two other sherds probably of late Saxon date. How much more would be recovered by very intensive work within a small area, and whether the returns would justify the effort expended, must remain an open question.

There are, nevertheless, a number of hints of what was going on in the survey area during the Saxon period. A pagan Saxon cemetery is known from Mount Pleasant, Alton, early Saxon grass-tempered ware is known from near St. Nicholas Chapel, Kingsley (Millett, pers. comm.), as well as the find made by the fieldwalking survey near Farringdon, while an early Saxon sunken-floored building was found at Neatham. All this evidence indicates quite early Saxon occupation in the northern part of the survey area and shows that settlement continued here after the Roman period. In the south-east, however, the fact that Liss survived as a Celtic place-name suggests that the situation here may have been very different. Whatever this may signify, the relatively close juxtaposition within the survey area of evidence for early Saxon occupation on the one hand and the suggestion of late British survival on the other is at all events extremely interesting.

Up on the Clay-with-Flints the situation seems to have been different again. Here there is as yet no evidence for early Saxon settlement, only the enigmatic Froxfield Entrenchments, always presumed to be of Saxon date but whose purpose remains unknown (see Hinton, this volume). The late Saxon Meon charters refer to a *haga* or enclosure in the Froxfield area. The nature of the enclosure is not specified by the word but it is likely in this case that it refers to a woodland enclosure, probably for hunting, and the point to make here is the implication that the area must have been very thinly occupied, if at all; as we will see below, this suggestion is supported by the evidence for early medieval settlement. In relation to the Froxfield dykes this lack of occupation might fit in with a status for the area as a boundary zone at some point in the Saxon period.

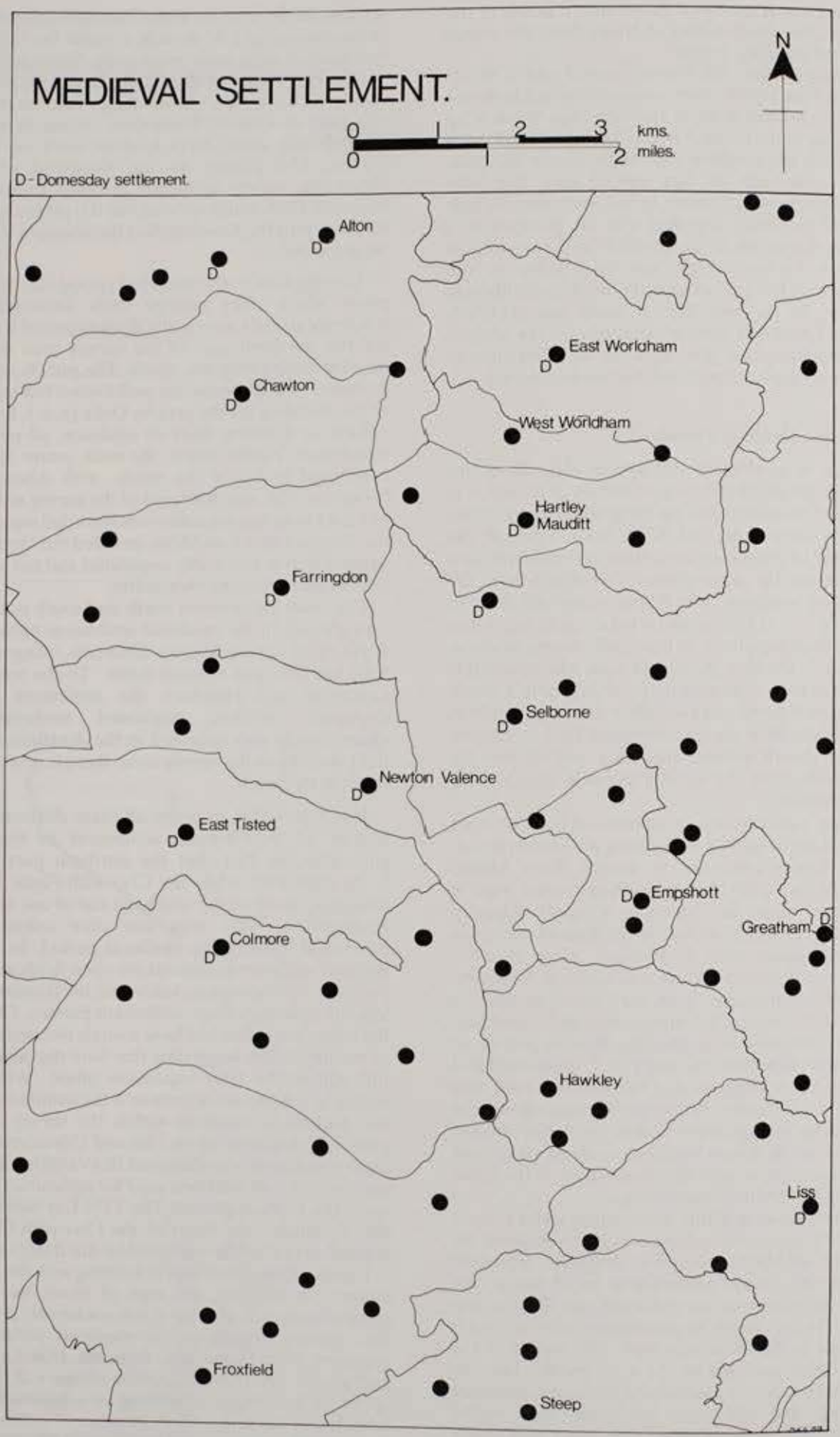
It is clear from this discussion that much remains to be done to achieve an understanding of the Saxon period in this part of eastern Hampshire. Some benefit would undoubtedly come from modern work on the place-names. The picture we are presented with in the Domesday survey obviously provides something of a base-line from which to work but it is problematical how far back into the Saxon period the situation it shows can be projected.

Turning now to the medieval period (see fig. 34), one point which does emerge from Domesday is the tendency already seen in the Roman period if not before for the northern part of the survey area to be more heavily settled than the south. The pitfalls of using the evidence of Domesday are well-known but examination of the statistics for the area by Oake (n.d.), employing a variety of different lines of evidence, all point to this conclusion. Furthermore, the main centre for the area continued to be in the north, with Alton replacing Neatham. The southern part of the survey area was part of East Meon and therefore not recorded separately, but the very fact that East Meon included this large area may suggest that it was thinly populated and not sufficiently important to have its own centre.

The contrast between north and south is also clearly brought out in the medieval settlement pattern. In the north there are nucleated settlements, villages, together with hamlets and isolated farms. To the south, below Colemore and Hawkley, the settlement pattern is dispersed, without nucleated settlement. This distinction is also reflected in the distribution of open field systems in the survey area: there is no evidence for these in the south.

It is reasonable to relate all these distinctions to the history of post-Roman settlement in the area, in particular the fact that the northern part continued to be exploited, while the Clay-with-Flints area which makes up most of the south fell out of use and became reafforested. This area was then colonised on a piecemeal basis in the medieval period. In the north, isolated settlements beyond the open fields also provide evidence for expansion, but within the framework of the already existing village settlement pattern. Chawton on the other hand does not have a single isolated settlement of medieval date suggesting that here the landscape was full before the later expansion phase. What we are seeing in this medieval pattern is the continuing effect of the ecological variation within the survey area. The growing population of the 12th and 13th centuries forced local communities to disregard this variation and take in areas which had not been used for agricultural purposes since the Roman period. The 1334 Lay Subsidy shows that Froxfield, the heart of the Clay-with-Flints area, was being fairly fully exploited by this date (Oake, n.d.)

Eastern Hampshire was in keeping with the rest of the country in showing this type of trend, nevertheless, comparisons indicate that it was a relatively poor part of the country thoughout the medieval period; this is apparent from Domesday, from the 1334 Lay Subsidy and also in the 1524-25 taxation (Oake n.d.). It would apper to have been something of a backwater, a fact reflected in the rather sorry fortunes of Selborne Priory but certainly not mirrored by the rural prosperity of the area today.



Medieval settlement in the survey area. The letter D beside a place indicates that it is mentioned in Domesday. Parish boundaries indicated are those of the late 19th century.

Figure 34

Conclusion

In this paper the attempt has been made to describe the changing settlement history of the part of eastern Hampshire covered by the survey area and to suggest reasons why the observed changes took place. Much work needs to be done before many of the suggestions made here can be confirmed, but the continuing and changing effect of the area's ecological variation should have emerged very clearly. However, it is not simply at this local level that the results are relevant. They will have a greater value when they can be used in a comparative framework with the results of other surveys to provide a picture of regional variation in settlement through time in Wessex as a whole.

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I would also like to take this opportunity to record my deep gratitude to the many landowners, managers and tenants within the survey area who allowed us access to their land and thus made the basic fieldwork possible.

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The Hampshire Field Club and Archaeological Society was founded in 1885. Its objects are to promote the study and publication of archaeology, local history, geology and natural history within the county and to encourage the preservation of buildings, sites, records and other material relating to these subjects.

The Society is divided into four sections:

THE ARCHAEOLOGICAL SECTION promotes the proper study of archaeology in Hampshire. It aims to stimulate the public awareness of the wealth of archaeology in the county from the Old Stone Age to the present, and to demonstrate how the landscape has been continuously moulded by the activities of man. The section has a full programme of lectures and field trips which together cover all parts of the county and all periods. In the recent winter season over a dozen lectures were presented on topics of archaeological interest, ranging from the archaeology of the Hampshire gravels, through Iron Age and Roman Hampshire, to timber-framed buildings and the siege of Basing House; venues ranged from Havant to Lyndhurst, and from Southampton to Basingstoke.

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THE LOCAL HISTORY SECTION exists to promote the study of local history within the county as a whole, and to act as a link both between individual historians and between the several local history societies based in the towns and villages. It sponsors an annual conference in the autumn, and other occasional courses and events. In particular, a twice-yearly newsletter is published which includes news from local societies, a bibliography of new publications, a register of research, useful addresses, and notes and queries. The section has close ties with the Hampshire Record Office, and with the local history section of the County Library.

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