SUSSEX ARCHAEOLOGICAL COLLECTIONS

RELATING TO THE HISTORY AND ANTIQUITIES OF THE COUNTIES OF EAST AND WEST SUSSEX

VOLUME 118

Published by the Sussex Archaeological Society, Barbican House, Lewes, East Sussex BN7 1YE.

The Editor will be pleased to hear from prospective contributors, and copies of 'Notes for Contributors' are available from the Secretary of the Sussex Archaeological Society at the above address.

CONTENTS

THE ARCHAEOLOGY
OF SUSSEX POTTERY

Symposium proceedings
edited by D. J. Freke

List of contributors to the Symposium

*Sheridan Bowman	Research Laboratory, British Museum
John Manwaring Baines	Former curator of Hastings Museum
Tim Champion	Lecturer in Archaeology at Southampton University
Anthony Clark	Ancient Monuments Laboratory, Department of the Environment
P. L. Drewett	Director of the Sussex Archaeological Field Unit
Caroline Dudley	Keeper of Archaeology, Brighton Museum
Ann Ellison	Director of the Wessex Archaeological Committee
David J. Freke	Director of the Rescue Archaeology Unit, Liverpool University
Chris Green	Museum of London, Department of Urban Archaeology
Richard Hodges	Lecturer in Archaeology, Sheffield University
John G. Hurst	Assistant Chief Inspector of Ancient Monuments, Department of the Environment
Martin Millett	Institute of Archaeology, Oxford
John Nuttgens	Practising Potter
*Clive Orton	Museum of London, Department of Urban Archaeology
Anthony D. F. Streeten	Southampton University
Christopher J. Young	Principal Inspector of Ancient Monuments, Department of the Environment

*Contributors to the Symposium, but not to this publication.

CONTENTS

INTRODUCTION

This volume contains papers read at the symposium on 'The Archaeology of Sussex Pottery' organised by the Sussex Archaeological Field Unit and held at Stafford House, Hassocks, from 12th-14th December, 1978.

The symposium was first suggested in 1977 after the successful conference on 'The Archaeology of Sussex to A.D. 1500' (C.B.A. Research Report 29) when it was felt that bringing together specialists concerned with many aspects of prehistoric, Roman, and post-Roman archaeology had been very fruitful. It was hoped that a symposium on the pottery of all periods would have a similar effect. Especially it was thought valuable to examine the uses to which archaeologists put ceramic evidence from excavations, and to learn of the many new methods of analysis being employed by ceramic specialists.

The symposium proceedings reflected the increasing emphasis being put on the social and economic implications of pottery. The problems of date and style are still with us, but they are discussed by most contributors to this volume as preliminaries to further interpretive work. The role of thermoluminescence in dating pottery was discussed by Dr. Sheridan Bowman (not included in this volume) who described the technique and examined its applicability in archaeological contexts (Thermoluminescence is discussed in detail in Aitkin and Mejdahl 1978 and 1979). Archaeomagnetic dating of kiln structures, hearths, burnt walls and ditch silts is explained by Anthony Clark, and it clearly offers a valuable tool to the excavator, the more so in view of the readiness of the Ancient Monuments Laboratory of the D.o.E. to take samples from promising contexts.

Stylistic arguments are rarely used as the primary evidence for dating by any contributors, and many are concerned to re-examine the conclusions reached by their predecessors using a body of material which has not been substantially added to in the last few decades. Tim Champion's re-evaluation of Iron Age pottery re-casts the chronology and functional understanding of the period, and Peter Drewett draws together and describes in detail for the first time the scattered references to Neolithic pottery in Sussex. Caroline Dudley's paper on the pagan Saxon material evaluates Myres' scheme in the context of Sussex. Fabric analysis is used constructively by all these researchers to establish pottery sources where possible, and in Anthony Streeten's important paper on the medieval pottery, the results of his new technique of fabric analysis are used to reach wide ranging conclusions about markets and economics.

Most contributors consider the pottery along with the other classes of artifacts which survive in the archaeological record. Ann Ellison's paper discusses the evidence from structures and metalwork, and Chris Green uses currency and urbanisation to corroborate the economic and social implications of the pottery. The work of John Hurst on imported medieval pottery may be a useful corrective to overspeculation about the role of 'traded' objects. He emphasises that the trading mechanisms which brought this material to Sussex are still inadequately understood, and may only be elucidated by more historical studies. Richard Hodges makes a similar point in his study of late-Saxon pottery, a period in which documentary studies and archaeology can be combined to produce a more fully rounded model of market systems than either could alone.

Another strand which links many of the papers is the recognition that standards of analysis, description and publication urgently need to be established. Clive Orton described the meticulous cataloguing and storage used at the Department of Urban Archaeology of the Museum of London, and some such system seems more and more necessary for efficient comparative studies. This paper is not included in this volume because a description of the D.U.A. system is fully published elsewhere (M. Rhodes, 'A pottery fabric type-series for London' *Museum Journal* 76, no. 4, 1977; and the *D.U.A. Pottery Archive Users Handbook,* 1978). It is interesting that although nearly all contributors mention the problems of analysis and publication, it constitutes the main argument of two Roman specialists—Chris Young and Martin Millet—and the medievalists. Workers in these periods have also formed their own pottery research groups and have produced, or are about to produce, guidelines for analysis and publication. The problem is obviously acute for excavators of Roman and medieval sites in a way which is not shared by prehistorians and Saxon specialists. The reasons must be firstly the masses of pottery usually recovered on Roman and medieval sites, and secondly the number of comparable sites and the complexity of the inter-site comparisons.

The post-medieval period is probably so complex ceramically that a single research group could not cope, so it was refreshing to hear John Manwaring Baines describing the wares and mores of the Sussex earthenware potters of the eighteenth and nineteenth centuries, the last representatives of a local ceramic tradition struggling against the competition of the industrial fine-wares of Staffordshire and elsewhere. John Nuttgens' paper is even more of an antidote to too much abstract theorising; he describes his own working methods and comments on archaeologists' interpretations of styles and techniques from the point of view of a practising potter.

The contributors to the symposium all stressed the need for continuing research into Sussex pottery, and it is clear that many of the conclusions presented here are provisional. But that must be the nature of a healthy discipline, and the success of this symposium will be measured by how quickly the cross-fertilisation of ideas makes this volume out of date. Nonetheless, these proceedings include the most recent thinking about Sussex pottery and many contributions provide summaries of the material in the county, and it is hoped that they will constitute a guide to current ideas and a spur to future research in and around Sussex.

D. J. Freke, 1978

MAGNETIC DATING

by Anthony J. Clark

Both the direction and the intensity of the Earth's magnetic field are always changing. These are preserved in fired clay, so that the potential for dating is contained in this ubiquitous archaeological material providing the variations of the Earth's field with time are known. Following pioneer work by Folgheraiter at the end of the last century, the main foundations of archaeomagnetic dating with this type of material were laid from 1933 onwards by Thellier and Thellier in France. Most work has so far been concentrated on the directional aspect which requires orientated samples from fixed structures such as kilns and hearths. In Britain this was initiated by Belshé and Cook at Cambridge in the early 1950's, followed by Aitken and his colleagues at the Oxford Research Laboratory for Archaeology and the History of Art (Tite 1972; Aitken 1974). Since 1974, most directional work has been done cooperatively by the Department of Geophysics and Planetary Physics, University of Newcastle upon Tyne, and the Ancient Monuments Laboratory.

The long process of laying the foundations of magnetic dating still continues. The spur to its development, apart from the obvious fact that it extends the possibilities for scientific dating, is that it can, at its best, give better discrimination and precision than either radiocarbon or thermoluminescence—though it may need the assistance of one of these techniques to achieve its precision.

DATABLE MATERIAL

Archaeomagnetism depends upon the presence in the sampled material of iron oxides whose magnetism is orientated by the Earth's field. In clay and other materials, the process of firing both destroys the magnetism of the oxides and converts other iron compounds present into oxides. On cooling, the magnetic domains within the oxides acquire a *thermoremanent magnetism* aligned with the Earth's field and effectively permanent, the maximum conversion occurring when the *Curie temperature* (about 650°C) has been reached. Thus the best results are obtained with well fired structures, especially when they have fired red, which means that the oxide is predominantly haematite which is more stable than the magnetite that produces the dark colours.

One must be watchful for two sources of inaccuracy: tilting of the structure (or the part of it sampled) since firing, so that the vital original magnetic orientation is lost; and refraction or distortion of the magnetic field by the developing magnetism of the structure itself as it cooled. The tilting problem should always be suspected if the feature is not securely based on firm bedrock, and tends to be at its worst on urban sites with underlying archaeology, especially if this includes pits. Three examples, two from Sussex, illustrate this problem and possible solutions. At Chapel Street, Chichester, subsidence had clearly occurred all over the site, but Saxon pottery firing clamps seemed worth sampling because they overlay massive Roman walls likely to have formed a stable base. This was so where right-angled walls crossed, but a single wall proved on inspection to have tilted because of underlying pits which had also distorted the floor of the building. The clamp overlying this wall gave a correspondingly deflected magnetic direction, although this could readily

be allowed for because the wall, running north-south and rigid in this direction, had tilted the structure exactly east-west. The second example was the sixteenth-century kiln at Lower Parrock, Hartfield, which had floors of two periods. The lower floor, on the natural clay, gave a sensible result, but the upper floor, cracked and separated from the lower by a soft clay filling, gave a wildly improbable direction and must have tilted. Thirdly, at Stamford Castle, Lincs., a pre-existing bread oven was overlain by the castle wall, the great weight of which, as the readings indicated, had tilted it slightly; but again the original direction could be fairly confidently reconstructed because the orientation of the wall was known. Thus all is not necessarily lost if the direction of tilt can be ascertained; and conversely, if the date is known by some other means, the original position of a tilted structure may be discoverable magnetically, or the shape of a distorted or broken structure (even a pot) reconstructed by comparing the magnetic directions of its parts.

The most stable—and sometimes the only remaining—part of most structures is the floor, from which archaeomagnetic samples are therefore most frequently taken. However, magnetic refraction can cause a shallowing of the inclination of 2-3° in the clay floor of a typical pottery kiln. Samples from the walls, however, are subject to declination errors so that, although these cancel out if the samples are taken systematically around the circumference, the values are more scattered and thus have wider error limits than floor samples, especially as the walls are also likely to be less physically stable.

Finally, it must be remembered that thermoremanence records the last firing of the structure, which may be far removed in time from its construction.

With the development of improved and more sensitive magnetometers (e.g. the Digico), the possibilities of less magnetic materials have been pursued, and good results have been obtained at Stamford from burnt soil beneath the central fire of the castle hall and from the mortar of a more sophisticated fireplace; and, at Hascombe hillfort, Surrey, from a sandstone pit wall scorched by burning grain (Thompson, forthcoming)—in fact any *in situ* burnt material exhibiting the characteristic redness that betrays the presence of iron oxide is worth considering. To a limited extent, silts can also be used: if the material forming a silt contains magnetic particles, these tend to align with the Earth's field, like little compass needles, as they fall freely through water, or even air, so that on settlement the silt is left with a *depositional remanent magnetism*, which will accurately record the Earth's field direction providing the process takes place in still conditions and that the shape of the particles does not bear a systematic relationship to their magnetisation; for instance, long particles magnetised along their axes will tend to lie flat, giving a falsely shallow value for the inclination. Silts are more susceptible to disturbance than solid structures, and to a variety of possible post-depositional chemical changes collectively called diagenesis, and tend to be weakly magnetic and therefore difficult to measure accurately—but with the compensation of negligible magnetic refraction. Diagenesis is minimal, and silts most reliable, if they have remained saturated with water since deposition, as in ponds—or are as dry and inert as possible: dry, sandy silts have proved successful in a variety of situations because, once compacted, the sterile sand forms a protective matrix for haematite grains. Weathering is a cause of both disturbance and diagenesis, so that the deeper, best protected features tend to give the best results. In a ditch one should, if possible, sample the very lowest, fine layer of primary silt, washed or blown from the freshly cut sides in the first few days or weeks of the ditch's existence: not only is this contemporary with the cutting, but it is rapidly sealed and protected by progressively coarser silts (Thompson, forthcoming).

SAMPLING METHODS

Magnetic dating of fired clay structures originally required large samples involving extensive destruction. With the new magnetometers, measurements can be made on samples so small that damage can be almost invisible, so that samples may be taken even from structures that are to be preserved.

The angle of dip (inclination, I) and the declination (D) of the magnetic field preserved in the structure must be measured in the laboratory. This requires each sample to have a horizontal reference surface upon which is marked a line with a direction related to true north. The first can be done very accurately with a spirit level costing less than £1; the second is more difficult, and the ideal equipment for achieving this measurement with similar accuracy in any conditions is a theodolite fitted with a north-seeking gyro-compass, costing over £10,000. Much cheaper compromises are described below. The sampling procedure is to attach specially designed 1-inch diameter PVC discs to the structure by means of 5-minute epoxy resin, which will adhere even to a damp surface. Each disc is pushed down on to a small blob of Plasticine upon which it is levelled by means of a bullseye spirit level and which holds it thus while the adhesive sets. The north reference line is marked on the disc in one of several ways: directly by magnetic compass of the type with a straight edge that can be lined up with the needle, or by sighting back from a remote theodolite, using as reference either a built-in compass or a timed sun observation, the sun direction at that time being obtained from the Air Almanac; or a simple slab of accurately machined Perspex, half an inch thick and about 5 cm x 15 cm, stood upright on the discs, can serve as an accurate sun compass, as well as being an important adjunct to the other methods: it is used as a stand-off device to prevent the compass from being affected by the magnetism of the structure itself, or a small alidade is attached to its side for sighting back to the theodolite. As a sun compass, it is turned until neither shadow nor reflection is visible on the disc or the alidade, when it is precisely aligned on the sun. To complete the sampling process, a small piece of the structure is chipped or gouged away with the disc, about 1 cm³ or even less being sufficient. After drying, the samples are consolidated by dipping in PVA/methylated spirit solution or PVA-water emulsion.

Because of their softness and weak magnetism, samples of silts and similar materials are larger and fully encapsulated. PVC tubes 5 cm long x 5 cm diameter, cut from standard drainpipe, are placed over rather shorter pillars carved from the material, and carefully levelled. Plaster of Paris is poured into the space between pillar and tube and scraped off level. After the north reference is marked, these are detached and sealed on the underside also. The direct use of the magnetic compass is common because these materials are too weakly magnetic to affect it.

Whatever the type of material, several samples—normally eight to sixteen—are taken to reduce the effect of random errors and those due to magnetic refraction in fired structures and post-depositional disturbance in softer materials.

In the laboratory, a computerised spinner magnetometer is used to determine the field direction in each sample after removal of minor 'soft' magnetic components, acquired since firing or deposition, by applying to each sample a level of alternating field, or heating in zero field, determined by tests on pilot samples from the group. Finally, the mean direction and its level of precision are computed and normalised (see below).

CALIBRATION

The Earth's magnetic field is probably generated by a dynamo effect in the liquid metal core—it is significant that the fast-rotating planets tend to have the stronger fields. The main,

dipole, field of the Earth behaves as though there were a bar magnet almost in line with the axis of rotation. There is also a weaker, non-dipole component which, probably because of irregularities at the interface between the core and the solid mantle, is subject to changes in direction and intensity called the *secular variation*. It is upon these that magnetic dating depends: archaeology, in return, is contributing to the geophysicists' understanding of these majestic internal processes of the Earth.

The secular variations are apparently erratic; therefore every part of the curve requires calibration, and, because the causes of the variations are quite localised, a particular calibration curve will only apply to an area up to about 1,000 km across, and even then a normalising correction must be applied to the readings. The British Isles are a suitable size to form a single unit, and readings are normalised to Meriden as a central position.

Such was the interest of this maritime nation in the compass that the Earth's magnetic field was one of the first phenomena to be investigated scientifically, and we have direct measurements made in London as early as 1576. Back beyond this, the curve has been built up from measurements on structures dated archaeologically or, more rarely, by radiocarbon. This is a painstaking process: radiocarbon dates are imprecise, as are many archaeological dates, some of which are even wrong; but with the accumulation of results, the shape of the curve inevitably emerges and its absolute calibration is then greatly advanced by a few well-dated sites. A fruitful two-way process can develop, where the magnetic curve indicates which of two or more possible historical events the construction can be associated with, and then the date of the event is used to place a precise point on the curve.

The present state of calibration is shown by Fig. 1, which also illustrates the strengths and weaknesses of directional dating. Most noticeable is that, as the curve crosses and recrosses itself, the magnetic direction for a particular time is not necessarily unique, so that the method can never be totally independent of the archaeological context. The curve is quite well known back to about A.D. 1000, and for the Roman period. Between these, the former Dark Age is still dark magnetically, and only two measurements have so far been obtained for this period—one from the Saxon village at Chalton, Hants., and the other from an early Stamford Ware kiln. At some times the magnetic direction is changing rapidly and good discrimination is possible; for instance, inclination is changing by about 1° per decade for much of the sixteenth century, and from then to the present day it is possible to achieve results with a 68% confidence level of ± 10 years for good structures. There is a steady movement of both inclination and declination from about 1000 to 1300, over which period ± 25 years is attainable, especially around 1200, for which much good data has been obtained. Near the turning points, precision and discrimination are reduced by slow change and, unless results are very precise, by uncertainty about which arm of the curve they lie upon. This is particularly serious around 1400 and for the Roman period, which is represented by a hairpin fall and rise of inclination with hardly any change in declination. Fortunately, the rate of inclination change was quite rapid in Roman times, and ± 25 years is again obtainable, but the help of archaeology, radiocarbon or thermoluminescence is normally needed to find the correct side of the hairpin before the discrimination of a magnetic measurement can be translated into absolute precision. An exception is the type of site where samples from successive kiln floors will reveal the direction in which the curve is moving, and such a sequence in Alice Holt Forest, combined with close study of the pottery dating, is helping greatly with the detailed calibration of the Roman curve. This curve has been pushed back into the first century B.C. by measurements on samples obtained during recent excavations at the hillforts of Holmbury and Hascombe in Surrey; and a probably seventh-century B.C. salt-drying hearth at Mucking, Essex, has confirmed a strong easterly
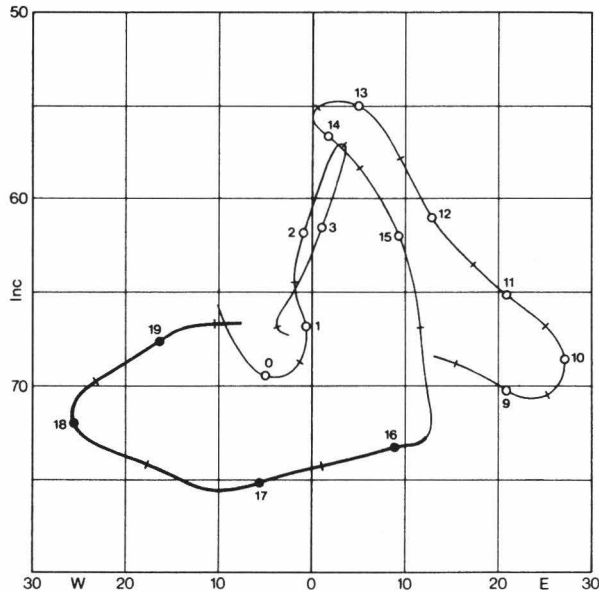
Fig. 1. The archaeomagnetic curve for Britain, normalised to Meriden. Inclination is plotted in degrees against degrees of declination east and west of true north which is at the centre. The numbered circles indicate hundreds of years AD, and the ticks mid-century points. The heavy line is the curve as known from direct observations. The thin line represents the tentative curve built up from measurements on archaeological features dated by other means. There is not yet sufficient information to fill in the curve between A.D. 350 and 850.

movement of 30° or more, first recorded by Aitken and Hawley for a hearth dated to this period by radiocarbon at Weston Wood, Surrey.

A flood of light has been thrown on the magnetic curve by recent research in Scotland (Turner and Thompson 1979). Cores taken from the sediment on the bed of Loch Lomond have been shown to quite faithfully record declination and inclination over several thousand years. Previous measurements on lake sediments, e.g. Windermere, have been only partially successful, mainly because of poor preservation of the inclination, and because calibration was based upon radiocarbon measurements on the organic fraction of the silt, which has proved to antedate its deposition considerably. Using the archaeomagnetic curve for comparison, the rate of sedimentation of Loch Lomond has been calibrated and reveals acceleration—from about half a metre to one metre per thousand years—in recent times, and briefly during the Roman period, that can be associated with increased erosion caused by land clearance, or, in the Roman case, conceivably even punitive burning. Calibration of the earlier parts of the curve is aided by more reliable radiocarbon than at Windermere. The easterly movement culminating about 750 B.C. is clear, but from about 300 to 1300 B.C. the curve, like the Roman one, forms a tight loop that will need help from radiocarbon and archaeology for its disentanglement. Between 1300 and 2500 B.C., the curve opens out to a wide loop thrusting 20° to the west which may help in establishing the detailed chronology of that time between the Neolithic and Bronze Ages when the greatest achievements of Wessex occurred. Between the Roman and medieval periods there seems to be a double loop which promises good discrimination for the migration period but will depend heavily on precision of measurement and supplementary data.

MAGNETIC INTENSITY

There is a possibility that intensity measurement, which requires no orientation and can be made on loose fired clay fragments such as sherds, will provide a further source of archaeomagnetic data for Britain. The short-term fluctuations of use to archaeology are cyclic and again require supplementary data, but intensity and direction in combination could give results more nearly unique than either method on its own. Measurements on Etruscan, Arretine and samian pottery seem to have shown that the strength of the Earth's field in Europe almost halved from 500 to 1 B.C., and then rose again to approximately the first value from A.D. 1 to 200. Such substantial and rapid changes could give very useful discrimination. Work on British material is under way at the Research Laboratory for Archaeology, Oxford.

ACKNOWLEDGEMENTS

Author: A. J. Clark, Ancient Monuments Laboratory, Fortress House, 23 Savile Row, London W1X 2HE.

TOWARDS A STRATEGY FOR EXCAVATING POTTERY KILNS AND ANALYSING KILN ASSEMBLAGES

by D. J. Freke and J. Craddock

This paper is concerned with on-site and post-excavation procedures appropriate to the excavation of pottery kilns. The authors' experience of excavating a sixteenth-century kiln provided the motivation to tackle some of the problems which the increasing volume of kiln studies is bringing into focus, and many of the examples quoted are derived from that excavation (Freke 1979). It is becoming generally accepted that mere data collection is a fundamentally unsatisfactory approach to many archaeological problems (Wainwright 1978). An hypothesis and a research design, even in rescue contexts, must be specified before techniques can be discussed. It may be necessary to re-examine current practices for their relevance.

The history of kiln studies has been one of individuals whose work has necessarily reflected their personal interests, mediated by the prevailing archaeological concerns of their time. Implicit research aims have ranged from object-oriented antiquarianism (Vidler 1933) to the systematic classification of kiln types (Musty 1974). There will never be total agreement about the aims of such studies, nor about the techniques used to implement them, but this only makes it more imperative that excavators should examine the limitations and strengths of their methods.

Much recent work has been concerned with the relationship between the individual kiln site and its social and economic environment (for instance Streeten, this volume). For this sort of wide-ranging interpretation comparative sets of data are required, and inter-site comparisons of kiln structures are now well established, indeed many excavations are primarily directed at providing data for such comparisons. But the kiln-type is obviously only one of the variables exhibited by kiln sites and the examination of the socio-economic environment of kilns and potters requires inter-site comparison of other variables. Many excavation reports describe some of the variables of kiln sites and assemblages but not always in terms which allow their comparison with other sites. There has been no general discussion of what evidence pottery kiln excavations should produce, nor how to excavate kilns to ensure that such evidence is recovered, nor how this evidence should be analysed and published.

The current concerns of kiln excavators, as revealed implicitly by recent reports, seem to be twofold: firstly, a study of the spatial organization of pottery sites, most directly expressed in a specific appeal for the search for ancillary buildings (Musty 1974, 58); and secondly, a comparison of the fabrics and forms (Peacock 1977; Brears 1971, 18-20; Freke 1979). These divergent interests have always been present in the spectrum of kiln excavations, but they have now become specialised to the point where the excavation report and the pottery report of the same excavation can be published in different issues of a national journal (Tait & Cherry 1978 and forthcoming). These research orientations need both a more extensive and a more intensive approach to pottery kiln excavations than is usual at present. The elucidation of the layout of any site entails area excavation of suitably preserved sites, while the study of the variability of the product demands a vigorous approach to on-site collection and post-excavation analysis.

There is an apparent conflict between these aims. The excavation of large areas to expose the relationships between features is normally only economically feasible if earth moving machinery is

employed, a course which is incompatible with the meticulous recording of the surface distribution of pottery in the same area (Asch 1975, 173). Total excavation by hand usually necessitates digging a much smaller area than could be tackled using machinery. The special problems of multi-period urban or complex industrial sites will be considered below, but a solution on rural sites is a programme of sampling in advance of machining in order to allow the reconstruction of the spatial distribution pattern of the pottery. The samples should be collected in a controlled manner to enable valid inferences to be drawn about the product. If inferences about spatial distribution and product variability are to be reliable then the sampling procedures must be appropriate, that is, designed to answer carefully formulated questions. Reports of kiln excavations rarely state how the decisions about where and how to excavate were reached, nor how the fraction of pottery published was collected on site and selected for post-excavation analysis. A conscious multiphase approach is required (Redman 1975), first to establish the research design, then to survey the sites and assess which should be excavated, then to determine how, and how extensively, the selected sites should be dug, and finally how to select groups for analysis from the total excavated assemblage. This procedure is already carried out implicitly, but in an *ad hoc* fashion. At each stage attention needs to be focussed on the priorities and potentials of the sites and the proposed methods of excavation (Wainwright 1978; Groube 1978).

Survey and site selection

In Sussex the survey aspect is now well covered (Streeten, this volume), but site selection and excavation has, to date, necessarily been haphazard, depending on chance discoveries and opportunism. Imminent destruction has proved a potent spur to excavation and seven out of the thirteen medieval pottery kiln site excavations in Sussex have been the result of rescue programmes of the last ten years. It is probably imperative to continue excavating all threatened pottery kilns in view of their rarity as compared with, say, bronze age barrows (there are about a score of medieval pottery kilns known in Sussex, but there are over 215 barrows or barrow groups [Drewett 1976]).

Excavation strategy

It is at the stage of planning the excavation strategy that the research design becomes a critical factor in Sussex. Rescue archaeology should not imply rushed, unstructured or underfunded work. If excavations are to contribute towards the general aims suggested above then where possible controlled sampling and extensive area excavations should be carried out. On urban or complex industrial sites and rural sites the aims are the same, but the complicated stratigraphy on restricted urban and industrial sites make a simple distribution pattern difficult to achieve and interpret. The identification of different phases of the layout needs total excavation but sampling in advance of excavation will probably be less useful on urban sites than on rural ones. Instead, contexts which yield stratified groups must be the source of the material which will be used to assess the products. Sealed and stratified contexts may be very difficult to find, but as an excavator of *any* site must identify different phases and the products of those phases, the problem of what contexts to sample is a general archaeological concern (Brown 1975).

On rural sites, too, the excavator's prior knowledge about his site usually precludes a simple probabilistic sample design. In situations where the kiln can be located using a proton magnetometer and where the waster heaps may be visible on the surface and clay pits still extant and where even the limit of potter's holding may be known, then the use of a stratified, systematic, unaligned sampling procedure will be more useful (Redman 1975, 151). The theories and

procedures of sampling appropriate to archaeology are discussed in detail elsewhere (Mueller [ed] 1975; Cherry *et al* [eds] 1978). Here it is only necessary to establish that the purpose of the sampling strategies proposed for pottery kiln sites is to provide data for two types of assessment: firstly the pottery densities and variations at different parts of the site, and secondly the range and variability of the product itself.

The sample units therefore need not be very large. Enough of each zone of the site should be sampled to allow the distribution pattern to be discerned, and the pottery recovered from the units must provide enough material for the analysis of its variability to be statistically valid. It is usually thought that one problem *not* encountered in kiln sites is lack of material, but the appropriate size of a sample depends upon the frequency of the objects in which one is interested in the population being sampled. If the research aim necessitates the recovery of very rare items, like a particular decorative motif, then 'it might be necessary to recover virtually all the sherds from the site' (Asch 1975, 171). The truth of this was demonstrated at the Lower Parrock sixteenth-century pottery kiln where one particular moulded design was represented by one sherd out of 177,400 (Freke 1979, Fig. 14, no. 73). The choice of sample size clearly depends on the excavator's prior assessment of the likely frequencies of the objects in which he is interested, and the questions he intends to ask of his material (Cowgill 1975, 263 and 274). At Lower Parrock the general proportions of all the forms except the 'exotics' were established by analysing less than 1,000 rims.

Whether or not it is intended to attempt to recover virtually all the sherds on the site, the pottery collection from the sample units must be total. This may result in a large amount of material but as suggested above, only relatively small amounts need to be analysed in detail. Nonetheless the total collection of pottery from sample units will usually produce much less than the quantity excavators are tempted to accumulate.

Total collection from the sample units avoids the inevitably haphazard and non-probabilistic methods of gleaning otherwise forced upon excavators when faced with the quantities of material potentially available on kiln sites. *Ad hoc* methods are rarely detailed in reports and most on-site selections inevitably result in unquantifiable errors or bias, and the estimates of total output or variability based upon such selected material, even if attempted, must remain unsubstantiated guesses which depend for their authority on the intuition and experience of the excavator. Total recovery of pottery from sample units is, however, a slow process. At Lower Parrock the excavation of only 156 square meters of ploughsoil, which included a very small waster heap, took approximately 1,000 person/hours (6 excavators 4 weeks).

Analysis of the assemblage

The essential preliminary to the detailed assessment of the formal variation of the pottery is the analysis of the fabric. It is necessary to isolate 'alien' sherds and establish the range of fabrics produced at the kiln. It may be possible to distinguish 'domestic' and work areas using 'alien' sherd distributions, and different fabrics used by the same potter(s) may have been used to make different types of pots. Fabric analysis is discussed generally by Peacock (1977), and specifically in relation to kilns by Streeten (this volume).

The formal analysis of the pottery should be designed to yield information on the two research aims outlined above—the layout of the site and the variability of the product. The methods of analysis will be different for each. There has been no general discussion on how the material from kiln sites could be analysed except Clive Orton's work on the mathematical reconstruction of forms (1974) although there has been some examination of pottery quantification generally (Solheim

1960; Hinton 1977; Shepard 1956; Orton 1975; Young 1979b). The methods of pottery quantification used in archaeology are: sherd counts, sherd weights, volume displacement, rim counts, minimum vessel counts, and vessel equivalent counts. Some of these methods are not relevant to the sort of analyses contemplated here. Sherd weighing and sherd counting are simple methods which can demonstrate distribution patterns, and the ratio of number to weight can be used to identify pits or trampled areas. Volume displacement is rapid, but it is messy (Hinton 1977) and lacks the comparative element of counting and weighing. Simple rim sherd counts can be used to estimate total numbers of sherds; in the very large groups at Lower Parrock the number of rim fragments as a percentage of the total number of sherds in each of 34 groups was 5.9 per cent ± 1.2 per cent to one standard deviation. Weights of rims were not such a reliable guide (9.8 % ± 8.6%).

If weighing and counting are carried out in terms of simple vessel categories and broken down into vessel parts, like rims, bases, etc., it will give adequate information for the purposes of elucidating the site layout. Any more detailed information needs some method of calculating whole vessel numbers. The two widely used techniques are minimum vessel counts and vessel equivalent counts. Minimum vessel counts depend upon comparing various aspects of the sherds such as rim profile and fabric and assessing whether the fragments may have belonged to the same vessel. This is a very effective way of analysing relatively small numbers of sherds in restricted contexts, such as medieval pits (Freke 1978). The method depends upon being able to compare directly all the sherds in a group with one another, and also with those from all other groups on the site. This is necessary because fragments from one pot may have become scattered into, say, a score of contexts, and so will be counted 20 times if each context is considered separately.

On kiln sites the sheer numbers of sherds in each context, let alone the whole site, precludes the efficient comparison of every sherd with every other. The alternative method of whole vessel assessment—the vessel equivalent count—avoids this problem. It is calculated by adding up the percentage of the circumference of the rim which each rim sherd represents and dividing by 100. This gives a notional total number of complete pots. It can be checked by comparing the vessel equivalent number of jugs with the number of jug rim fragments still attached to a handle stub or with a scar of one (which therefore represents one vessel). In large enough groups (over 10 vessels) this comparison gave a very close correspondence at Lower Parrock (Freke 1979, Table 3). The vessel equivalent method avoids the problem of the single pot spread into many contexts. It also avoids the subjective decisions about similarities of form or fabric on which minimum vessel counts ultimately depend. The rim types can be divided into any desired sub-groups to whatever level of detail, down to actual single vessels. Comparisons of different rim profiles are very easily carried out using reference drawings, whose range can be extended as significant new profiles are identified.

When compared with the results of simple rim sherd counts it can be demonstrated that vessel equivalent counts give an automatic adjustment to compensate for different sized forms (Freke 1979, Figs. 5, 6). So, narrow-necked costrels (form 6), whose rims are often found whole or in only a few fragments, represent a much higher percentage of the whole assemblage by vessel equivalent than they do by simple rim sherd count. The converse is true of the wide mouthed forms like plates and bowls (forms 3 and 4), whose rims commonly shatter into many fragments.

Of course, some forms cannot be identified by their rims alone, or their rims may be too fragile to survive well. But other features, like bung holes, handles, decorative motifs or even bases can be used to refine the information given by the vessel equivalents. For instance, at Lower Parrock, rim form 2 included bung hole pitchers, small handled jars, and storage jars without handles. These forms could not be distinguished by rim profile alone, but in conjunction with other features like

handle stubs and bung holes they were easily quantified (Freke 1979, table 3). Forms which do not have rims at all, or where rims may not have survived could be quantified as whole vessel equivalents using other criteria unique to those vessels. The important thing is to establish some method of counting whole vessels.

At this point the aim of calculating the proportions of different forms represented in the wasters should be explained. It has been argued and generally accepted that the wasters on pottery kiln sites cannot be used as evidence of the proportions of forms actually produced (Musty 1974; Mayes 1968). It is suggested that the potters would have protected their finer wares from damage more carefully than their household wares, and that therefore fine wares are likely to be under-represented in the wasters. (There is a counter argument that the fine, more fragile vessels may have suffered more and have been less saleable as seconds than the more robust coarse wares, resulting in a disproportionately high representation of such vessels in the wasters.) Musty does point out, however, that rare items on kiln sites are also rare on 'consumer' sites, (1974, 59-60), and John Nuttgens (this volume), who uses a wood fired kiln to fire stonewares, considers that his own wasters are a fair representation of his actual production, except that mugs are under-represented and large plates and dishes are over-represented. Hugh Tait has pointed out that some potters' catalogues do not tally with the wares found in the excavation of their kilns (pers. comm.), but there is no reason to accept that potters' catalogues are necessarily a more accurate reflection of their output than their wasters. Even if we accept that wasters may be a skewed sample, then differences in the proportions of forms found at different kilns will still reveal differences in production, although they may not be so simply related to actual output. The outright dismissal of the usefulness of comparing the proportions of forms represented in the wasters at different sites has meant that the data has not been collected which would enable us to answer questions about the specialities, if any, of different potteries, or about the standardization of forms, or how potteries varied in the quantity and quality of their products, or how the fashions in coarse wares altered through time and from place to place.

It is likely that many devices and techniques used by potters which are assumed to be technically necessary may actually be individual, local, or national habits. This gives them a cultural as well as technical significance. At Lower Parrock, counting, measuring and classifying handles showed conclusively that the styles of attaching the handles to the body varied simply as a function of the handle width but the treatment of the handle itself (stabbing or ridging) was clearly related to the form of the pot and had little to do with technical 'necessity'. More comparative data from pottery kiln sites will enable pottery studies to make serious contributions not just to the dating of other sites, but to the wider problems of cultural development.

The more prosaic, but equally pressing, problems of adequate publication may also benefit from these suggestions. It has been shown at Lower Parrock that a rational sampling procedure results in a manageable amount of pottery, of which a relatively small proportion need be analysed in detail to produce the answers to specific questions. It is to be hoped that this will encourage those who are daunted by the prospect of coping with mountains of material to make a molehill out of it from the very beginning.

Authors: D. J. Freke, Rescue Archaeology Unit, University of Liverpool.

J. Craddock, Department of Urban Archaeology, Museum of London.

PRACTICAL POTTING TECHNIQUES

by John Nuttgens

The topic of potting techniques is enormous, so in this short paper I will concentrate on aspects which are particularly relevant to the archaeologist. Many modern practices bear only a tenuous relation to the traditional methods which produced the remains which archaeologists study. But some of my methods are not too different from those of the traditional country potter, particularly as I make domestic wares, mainly from the clay on which the workshop is built, and I fire them in a wood fuelled kiln. Against this it must be admitted that many materials such as kiln furniture, temperature cones, glaze materials and ball clay are imported. Also my market of craft shops catering for a middle class clientele is obviously different from that of earlier periods. However, much ceramic technique is universal, so my experience may be of use to those studying earlier pottery.

There are some differences in the terminology used by potters and archaeologists; potters say 'body' when archaeologists use 'fabric', and the archaeologists' 'body' is the potters 'pot' (shape), and 'kneading' is called 'blungeing' by some archaeologists. 'Blungeing' for the potter is the mixing of clays or glaze materials into a liquid slip. These terminological confusions are symptomatic unfortunately of an occasional lack of understanding of practical potting, and many flights of fancy which purport to be descriptions of fact can be found in the archaeological literature. One example will suffice: "The speed of rotation which the wheel builds up creates centrifugal forces which throw up the lump of clay, while the potter has to control it and force it to maintain the shape he wants. A wheel has to spin at at least 100 revolutions per minute to create centrifugal forces" (Goven 1973). This is nonsense. Closer co-operation between archaeologists studying pottery and those who still make it would help to avoid much mis-understanding, and enhance the interpretation of pottery in archaeological contexts.

I will describe the processes involved in making my pottery, attempting to quantify time, materials and so on where possible.

Preparing the clay

The clay is dug from a glacial deposit of clay mixed with sand, flints and pebbles. It is dug from pits 2 m by 3 m in horizontal spits the depth of a spade blade (25 cm). The pits are 1 to 2 m deep, and in four years of work comprising 45 kiln loads, four pits have been dug (10 m^3 of raw clay extracted). The pits are backfilled with sweepings from around the kiln, wood scraps, clay waste, slops and rubble. The clay is dried under covers to facilitate its subsequent slaking and then it is mixed with water in a large tub (blungeing). The resulting slip is passed through a large fine sieve ($\frac{1}{30}$th inch mesh) into a settling trough, where it is left for two to three days before the surface water is poured off. Powdered white ball clay is then added to make a 50/50 mixture of more or less workable consistency, although a little more drying may be necessary. The clay is then kneaded before use.

Throwing, glazing and drying

The wheel is electric and revolves at 0-200 revolutions per minute. The lump of clay is always opened out from the centre, which may leave a clockwise spiral groove inside the base (the result of

an anticlockwise spinning wheel). Some interior surfaces—especially in the necks of bottles and pitchers—may show a rippling stretch marking in the form of diagonal lines rising from left to right. These occur when the pot has been 'collared in', that is, its diameter reduced, and they are most noticeable in pots made of clay which has not been rendered into slip in preparation. Marks rising from left to right indicate an anticlockwise spinning wheel, usual in the west (N.B. in the Far East, wheels revolve clockwise). Two or three weeks' work is needed to producethe approximately 250 pots which make up a kiln load.

When mixing the glaze for application to leather hard pots, it is necessary to add 20 to 40 per cent of clay or 5% bentonite so that it will shrink at the same rate as the pot as they both dry out. A liquid glaze may be applied to some simple shapes of bone dry pot before firing without the risk of it flaking off. However, if it is applied to the inside only the pot is liable to crack as the inside clay surface expands with the intake of moisture.

Large pots require several weeks to dry but small items, up to approximately 10 cm high, can go into the kiln still damp. Obviously the weather and seasons affect this process, and in winter the drying pots must be protected from frosts. This may make potting impracticable during the winter without a heated workshop.

Firing

The pots are stacked in the kiln without saggers which would take up at least half the available space and are only necessary for fine wares on which flashing is considered a blemish. On my wares volatilised fly-ash can produce pleasing surface effects. The unglazed pots are stacked rim to rim or base to base on modern refractory clay batts. The load is approximately 250 pots of various shapes and sizes, in a kiln with a floor area of $1\frac{1}{4}$ m², and a total capacity of 2 m³ with a load capacity of 1.3 m³. The kiln is brick and is loaded through the doorway which is bricked up and clammed over with a mixture of clay and the ash from previous firings. The kiln has been repaired once in four years. Firing takes fourteen hours and consumes ten cwts of wood in the form of pine bark off-cuts weighing up to twenty pounds and pine and beech furniture off-cuts. It is fired to a temperature of 1260°C to produce stoneware. The firing produces only about half a bucket of ash, the rest being blown through, particularly the ash from soft woods like pine. Some of the ash in the firebox fuses into a glassy clinker. Firing at a lower temperature to produce earthenware would result in more ash. The kiln takes 48 hours to cool sufficiently to draw.

Rejects

Probably the most prominent characteristic of pottery kiln sites are the wasters. A great deal can be deduced about the operation of the pottery by the faults it produces. Quality control depends upon the standards that a potter sets for himself. This varies, even for a single potter: for instance what I might regard as saleable one day I may reject out of hand another day if it's drizzling. Some potters may not mind selling (and their customers do not mind buying) a fire-cracked pot, while others (on both sides of the transaction) may be more concerned about their reputations.

A waster dump may be considered to represent the output of the pottery, insofar as there should be examples of all the lines produced. However, some lines are more prone to faults than others (table 1). These differences reflect the inherent vulnerability of the different shapes to the stresses induced during firing, but there are many other causes of failure which can operate independently of these built-in weaknesses. In fact, firing cracks and explosions, faults which are closely related to shape, account for only about a quarter of the pots in my waste heap. The rest being the result of accidental breakages, overfiring, glaze stickers and so on (table 3). The relationship between my actual production and the waster tip is shown in table 2. It must be

remembered that these are the result of only four years' work, in a new area, making high-fired stonewares. A long established kiln making earthenwares would have a different characteristic pattern of faults; probably a larger proportion would be overfired. Some sorts of faults are not represented in the tip at all because they do not survive even as fragments; for instance, a faulty clay mix once caused the loss of a complete kiln load which was then used as hard core. The fragments have subsequently disintegrated. Seriously underfired vessels would suffer similar destruction.

As suggested above, some faults are characteristic of the methods of firing. At the sixteenth-century pottery kiln site at Lower Parrock (Freke 1979) some of the bases were very underfired, but a few centimetres higher up they were well fired, sometimes overfired. This indicates that they were positioned on a relatively cool surface in the kiln, possibly a shelf or more likely the ground. This fault would occur in the bottom layer of pots in a kiln without firebars (as at Lower Parrock) or with an internal pedestal (Musty 1974, 45; types 1b, 2c, 4a [ii]).

Comments on some potting techniques

All my handles are applied in the English country tradition. A stub of clay luted onto the pot near the rim is pulled, using water as a lubricant. It is bent over and luted at its lower end. This results, naturally, in a thumb print at the top and possibly ridges and grooves down the length of the handle. These are not necessarily a conscious design feature but merely an impression of the individual hand which pulled the handle, especially if it is made at speed. It is possible to pull a handle from a stub in three strokes. The forms of the handles found at Lower Parrock are the result of the stub being initially squeezed between forefinger and thumb to give a wedge shaped section, and then the sharper edge being turned under with a few strokes.

A close examination of many medieval pots will reveal that fast and uneven firing dictated the potting techniques to a large degree. This includes the pricking and slashing of handles which being relatively thick are prone to explosions. Similarly the achievement of a uniformly thin section from top to bottom of a pot is clearly an advantage in fluctuating firing conditions. To attain this some finer medieval jugs were first thrown upside down to produce a thin section in what would ultimately be the lower part, then a thin sheet of clay was fitted into the open end and the pot turned the right way up on the wheel. the base was quickly smoothed in and the rim zone thinned and finished. The 'sagging' bases of coarser medieval cooking pots were another response to uneven firing. They cannot have been caused by lifting the pot from the wheel without cutting it off, as is sometimes suggested (for instance, Solon 1885). It is quite impossible to prise off a pot, even with a sanded wheelhead. The sagging bottoms were undoubtedly made by pressing out the leather-hard bases, possibly into a mould of wood or clay. One of the reasons for doing this was probably that a curved base is better able to withstand the stresses of a fast and vigorous firing and of subsequent cooking than is a flat base. Another advantage is that in stacking the kiln a curved base to curved base arrangement allows more freedom for the circulation of the gases, so there is less likelihood of bloats and explosions.

To conclude; the possible shapes and treatments of pots made by traditional methods are very various, but underlying all the variations are the inescapable limitations and strengths of the processes employed. To isolate the individual or cultural achievement embodied in pottery from archaeological contexts it is necessary to appreciate these physical parameters.

Author: John Nuttgens, Eynons Ford, Reynoldston, Swansea.

Table 1.   Percentages of rejects in particular lines.

Shape	Per Cent
Egg cups or similar	1
Mugs and Cups	2
Jugs	2
Storage jars (small)	2
Small bowls	5
Teapots	4
Storage jars (large)	5
Plates	10
Large flat dishes	12
Very large vessels (over two gallons)	15
Experimental shapes and glazes, and others	25

Table 2. Each line as percentage of total output, compared with waster heap.

	% of total output	% of waster dump
Egg cups or similar	6.5	4
Mugs and cups	31	13
Jugs	7.5	4
Storage jars (small)	5	2.5
Small bowls	18.5	20
Teapots	3.5	2.5
Storage jars (large)	3.5	5
Plates	4.5	6.5
Large flat dishes	1	10.5
Very large vessels	2	2.5
Experimental shapes and glazes ..	1	4
Vases	1.5	0
Large bowls	3.5	15
Plant pots	10	9
Salt kits	1	1.5

Table 3. Causes of common faults, with percentage occurrence in waster heap.

Fault	Comments	No. of vessels	%
Firing cracks	Uneven firing, vessels damp before firing, kiln damp, bad joints (especially handles), clay too thick, stacks too heavy.	18	24
Accidental breakages	Pots dropped when unloading kiln, damage caused when prising apart pots fired in contact.	17	22
Overfiring	Symptoms: bloats (large bulges with spongelike interior structure, caused by carbonaceous inclusion), blisters (small regular spaced bulges caused by small bubbles of air in clay), warping.	12	16
Glaze stickers	Glazed pots fired in contact with other pots.	10	13
Experimental shapes	Mostly cracked.	6	7
Faults in commissioned pots	Pots with names etc. must be perfect.	3	4
Non adherence of slip	Usually on sharp angles such as rims.	3	4
Glaze tests	I have made 200-300 glaze tests on small bowls or cylinders. Many of these will end on waste dump.	2	$2\frac{1}{2}$
Explosions	Pots too damp, clay in excess of 3 cm thick, usually very large vessels.	2	$2\frac{1}{2}$
	Total	76	100

There were 13 alien pots represented in this dump in addition to the wasters.

NEOLITHIC POTTERY IN SUSSEX

by Peter Drewett

The study of Neolithic pottery in Britain is currently in a state of flux. Established types have been discarded and new broad styles have been isolated. Major problems do, however, remain and the time is clearly ripe for a total re-appraisal of Neolithic pottery along the lines of Clarke's Beaker pottery analysis (Clarke 1970). It seems widely agreed, however, that three broad groupings can be defined in England during the early Neolithic. Wainwright's Western and Eastern Components and Decorated Group (Wainwright 1972, 71-75), Smith's Hembury, Grimston/Lyles Hill and Abingdon Groups (Smith 1974, 106-111), and Whittle's South-western, Eastern and Decorated Groups (Whittle 1977, 77-98) all underline this three-fold division (Fig. 2). There do, however, appear to be fundamental differences about what belongs to which groups. These problems are nowhere more acute than in Sussex where Smith states that 'At Whitehawk the Hembury Style reaches the eastern limit of its known distribution, and there is associated with two groups of decorated bowls which owe their forms respectively to Hembury and to Grimston/Lyles Hill, and with a number of Ebbsfleet bowls' (Smith 1974, 110). Whittle however clearly takes 'issue with Smith's view of the Whitehawk assemblage as a mixture of Hembury and Grimston/Lyles Hill Styles' . . . 'forms, decoration, and the use of lugs and handles all taken together, the assemblage may be best considered as a variant of the Decorated Style' (Whittle 1977, 94).

Fig. 2.   Neolithic pottery types in England: (a) Distribution of Grimston/Lyles Hill Series and Hembury Style (after Smith 1974); (b) Distribution of Eastern, South-western and Decorated Styles (after Whittle 1977).

The basic problem when studying earlier Neolithic pottery in England is the broad uniformity of the tradition over much of the country. Simple round based bowls, either open with S-profiles or carinated, together with deep bag shaped vessels, predominate. Rim sections are generally simple and decoration is often absent or very simple in type. Locally there are differences but the basic elements remain the same throughout the earlier Neolithic.

With many of the forms common to the three regional groups, an essential difference appears to be in the quantity of decorated forms favoured in the region. The South-western (Western or Hembury) region has virtually no decoration, while the Eastern (Grimston/Lyles Hill) region has very sparse decoration largely restricted to fluting inside the rim, although incised oblique lines are not unknown. The South-eastern region (Decorated Style) is characterised by its extensive use of decoration including incised and fluted lines, horizontal bands of short jabs, bands of shallow depressions and even incised zones of criss-cross lines.

The presence of lugs in the South-western region and their absence in the Eastern region remains a significant difference between the two groups. Several types of lug are known in the South-west, including perforated and unperforated types which include the 'trumpet' lugs with their characteristically expanded ends. The South-eastern region (Decorated Style) has some lugs with the perforated type being most usual.

Although these three styles do appear distinct in the centres of each region, Devon and Cornwall (South-western Style), Yorkshire (Eastern Style), and Lower Thames and Kent (Decorated Style), zones of distribution clearly confuse the situation over most of the remaining areas of Britain. Work by Hodges (in Smith 1965) and Peacock (1969a) has shown the existence of extensive pottery production centres and distribution patterns in the Neolithic. Our three zones could therefore indicate generalised distribution zones (Fig. 3). Such distribution zones are, however, blurred by the existence of a substantial underlying domestic pottery industry.

Following the work of Hodges and Peacock, an attempt is being made in Sussex to use petrological analysis of pottery thin sections to identify local and traded pottery. To date, 14 sections have been examined, two from Whitehawk (unpublished), one from Barkhale (unpublished), two from Alfriston (Drewett 1975), one from Selmeston (Drewett 1975a), two from Offham (Drewett 1977), and six from Bishopstone (Bell 1978). The actual sectioning and identification of twelve of the sections was undertaken by Caroline Cartwright, Research Assistant in the Sussex Archaeological Field Unit, while the remaining two from Whitehawk were sectioned by Henry Hodges.

Using the results of these thin sections, together with simple surface examination of material from other sites, it is possible to define five distinct fabrics current in Sussex during the third and fourth millennia B.C. (Fig. 4).

Fabric I

A grey ware with reddish brown to grey surfaces, which although smoothed are irregular where large pieces of calcined flint cut through the surface. In general a roughly made and poorly fired fabric. Thin sectioning of this type shows large quantities of large, angular, calcined flint inclusions with some smaller, more rounded flint fragments as well. Also scattered throughout the clay matrix are small, sub-rounded quartz grains and small, angular and splinter-like flint chips, iron mineral inclusions and iron staining.
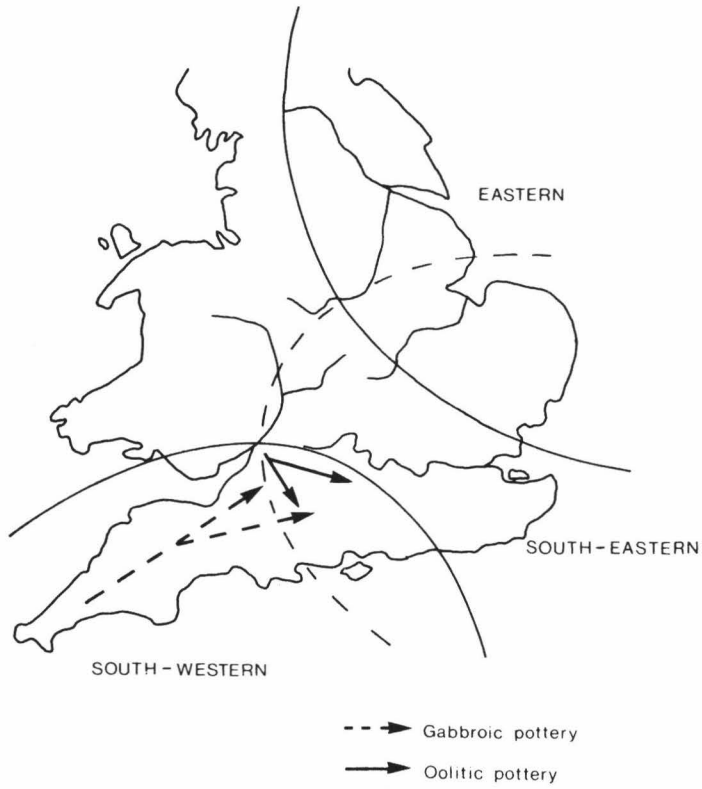
Fig. 3. Possible long distance distribution zones of Early Neolithic pottery in England and known distribution of Gabbroic and Oolitic wares.
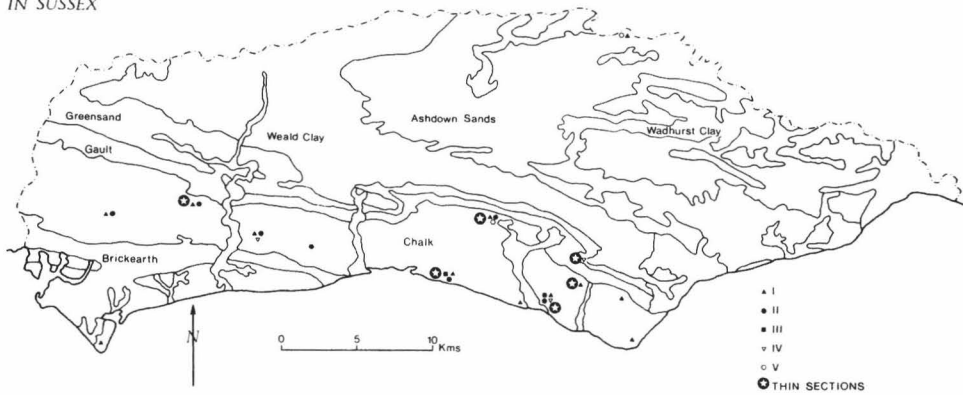

Fig. 4. Neolithic pottery fabric types in Sussex. On geological base map (after Sheldon, in Drewett 1978).

Fabric II

A light brown to grey ware with medium to fine calcined flint tempering. Compared with Fabric I, the calcined flint inclusions in the thin section of Fabric II were smaller and more numerous, although still mainly angular. Also more numerous were the small to middle sized flint inclusions which were evenly scattered throughout the denser clay matrix. Numerous sub-rounded to angular small quartz grains, some iron mineral inclusions and patches of iron staining were scattered throughout the sherd body.

Fabric III

A red-black ware with coarse to medium shell inclusions. A thin section of an example from Bishopstone indicated the probable use of mussel shells which appeared in thin section as long, lath-like fragments. Small mineral fragments, predominantly quartz but with some magnetite, were noted. The Bishopstone examples also all contained limestone fragments.

Fabric IV

A sandy fabric with large pieces of calcined flint which project through the surface of the vessel. Thin sections show large, angular flint fragments with small, rounded quartz and feldspar grains and a little very fine grained quartzite.

Fabric V

A thin, soft greyish ware tempered with grog, a little quartz and flint together with iron mineral inclusions and patches of iron staining.

The most striking conclusion that can be drawn from the study of early Neolithic fabrics in Sussex is that they indicate localised manufacture and distribution probably resulting from a domestic potting industry. Due to the linear nature of the geological deposits in Sussex, virtually all sites, at least in the south of the county, have local access to clay (either Gault, Wealden or Downland Clay-with-Flints) together with local sources of flint for tempering. It is therefore not surprising that the bulk of all Neolithic pottery in Sussex is flint tempered of Fabric I and II. Little can be concluded from these fabrics except that as the constituents were locally available at all sites, they are most likely to have been used locally.

The use of shell, sand and grog underlines the very localised nature of Sussex pottery. Marine shell tempering (Fabric III) is only found on the south side of the Downs at, for example, Whitehawk and Bishopstone. Both these sites are near a sea-shore source. Sand tempering (Fabric IV), although uncommon, is found on both sides of the Downs, although a sea-shore source is likely for sites like Bishopstone while the Greensand to the north of the Downs could supply sites like Bury Hill. Heavy mineral analysis may help solve this problem.

The single pottery group from the High Weald (High Rocks), being a great distance from sea and Downland sources, used Wealden resources with grog tempering dominating. The very slight use of grog at Offham, on the north side of the Downs may indicate some Wealden connections.

The only hint of anything other than very localised manufacture and distribution we have from fabric analysis are a few rounded pieces of slightly metamorphosed limestone in one sherd of Fabric III from Bishopstone (Bell 1977, 18). No Sussex source can be found for metamorphosed limestone, although limestone is known in the Newhaven outlier of the Woolwich and Reading Beds. It is
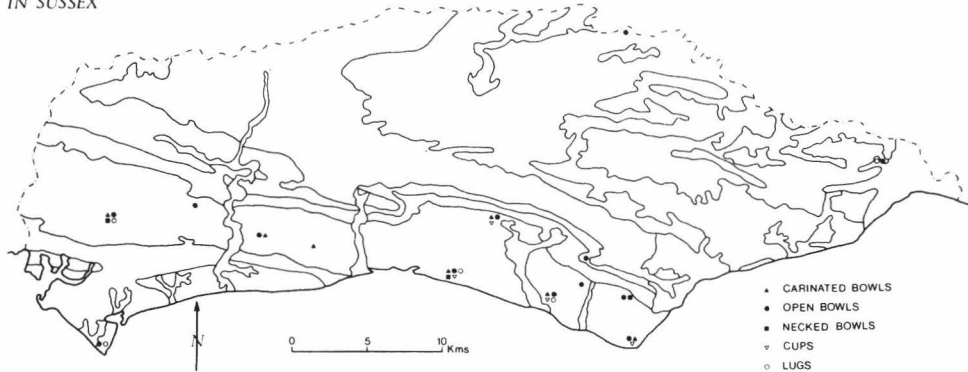
Fig. 5. Distribution of Neolithic pottery forms in Sussex.

conceivable, however, that metamorphosed limestone could have arrived on a Sussex beach by long-shore drift or even glacial action (Briggs 1976).

Fabric analysis, slight though it has so far been, would suggest a very localised pottery industry in Sussex with possibly even each site producing only pottery for its own needs. Trade between sites is impossible to demonstrate in Sussex using fabric analysis. We shall now therefore turn to pot forms (Fig. 5) and decoration (Figs. 6 and 7) to see whether any groupings could indicate pottery production on anything more than a site by site basis.

There are many problems which arise when considering forms and decoration. Firstly the scarcity of material; three larger assemblages, six smaller ones (ranging from 351 sherds at Bishopstone to 171 at Offham) and a few individual chance finds. This material comes from causewayed enclosures, settlement sites and a barrow, so variations in form and decoration could reflect usage at sites serving different functions. Finally we have no evidence that all the groups are contemporary. Bearing in mind these problems, certain features of both decoration and form tend to underline the distinction between sites on the south side of the Downs and those on the north side and in the Weald. Lugs are more common on the southern side (Trundle, Whitehawk, Bishopstone) with only one known from the north (Offham). Likewise stabbed, incised and fluted decoration is found on the south side and is only represented by two sherds (from Bury Hill) on the north side of the Downs (Fig. 7).

A consideration of decoration and form, therefore, possibly underlines the absence of any fabric evidence for north-south movement of pottery across the Downs. This may suggest either east-west trade along the coast or, more likely, that we are dealing with an entirely domestic pottery industry.

If we now turn to the chronology of Neolithic pottery in Sussex, we still have the problem of very few Carbon-14 dates to give absolute dates to the sequence (Fig. 8). The elements we have considered so far may largely be thought of as Earlier Neolithic, a period beginning perhaps *c.* 4300 B.C. and lasting *c.* 1000 years down to *c.* 3300 B.C. A Carbon-14 date from Findon (3390±150 b.c.) marks the beginning of the sequence, while another from Bishopstone (2510 ± 70 b.c.) perhaps marks the end. During this period flint mines, causewayed enclosures and long barrows
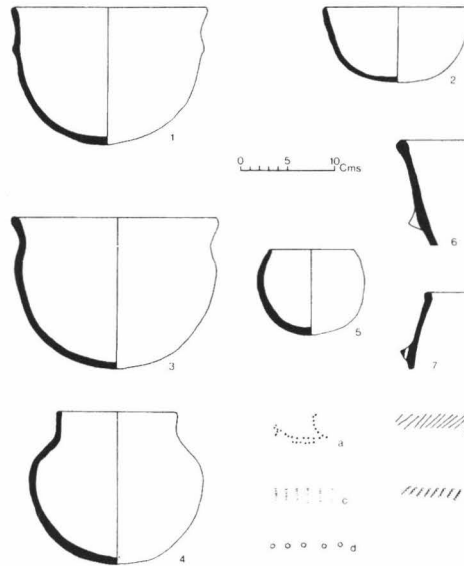
Fig. 6.   Main Neolithic pottery forms in Sussex ($\frac{1}{4}$): 1 Carinated bowl (e.g. Bishopstone); 2 Open bowl (e.g. New Barn Down); 3 Open bowl (e.g. Trundle); 4 Necked bowl (e.g. Combe Hill); 5 Cup (e.g. Offham); 6 Solid lug (e.g. Whitehawk); 7 Perforated lug (e.g. Whitehawk); (a) Stabbed decoration (e.g. Trundle); (b) Incised (e.g. Trundle); (c) Fluted (e.g. Bishopstone); (d) Perforations (e.g. Offham); (e) Impressions (e.g. Selmeston).

dominate the landscape. A domestic potting industry with largely similar forms, fabrics and decorations spans the whole period. It is likely that although the elements remain constant throughout the period, comparative percentages of these elements may vary with time. This cannot, however, be determined until large groups have been found, analysed and independently dated in Sussex.

Around 3300 B.C. (or 2500 b.c. in Radiocarbon years), we see a radical change in the Neolithic in Sussex (Drewett 1978). Causewayed enclosures, Long barrows and possibly flint mines go out of use to be replaced by few communal monuments other than the odd scruffy oval barrow, e.g. Alfriston, 2360±110 b.c. (Drewett 1975). With the absence of henges in Sussex we unfortunately have no big assemblages of pottery which can be assigned to the late Neolithic (c. 3300 B.C.—2500 B.C.). The odd sherds of Peterborough Style from Selsey, Oving, Castle Hill and Friston could well be late Neolithic, but the best group of late material comes from the recent small scale excavations of an open settlement on Bullock Down, Eastbourne. At least five sherds of Mortlake Style bowls and three collar sherds, with bold grooved ornament, more in the Fengate Style, were found associated with plain, heavily flint gritted wares. Although Grooved Ware is sometimes associated with these late Peterborough Styles (e.g. at West Kennet), none was found at Bullock Down, although the Beaker settlement of Belle Tout some 1 km to the west did possibly produce some Grooved Ware (Bradley, pers. comm.). Elsewhere in the county Grooved Ware is most uncommon with sherds from Findon and a possible example from High Rocks being the only known decorated examples. The single example of a small, round based pot with lugs associated with early Beaker or plain Grooved Ware material at Playden in the far east of the county may
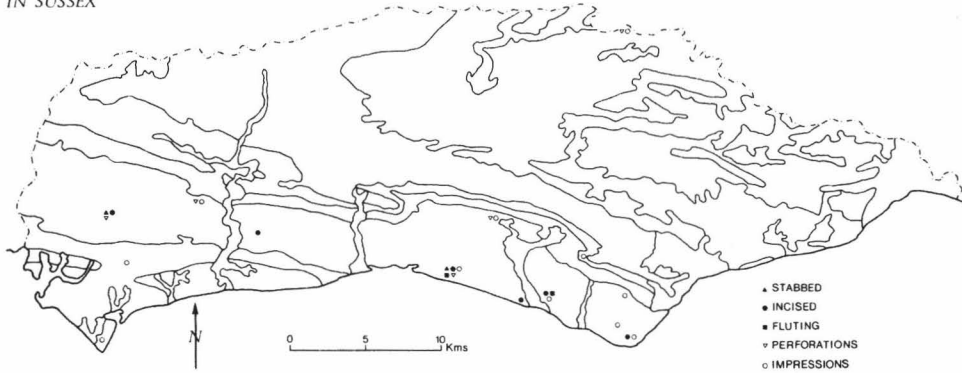
NEOLITHIC POTTERY DECORATION
IN SUSSEX

Fig. 7.   Distribution of Neolithic pottery decoration elements in Sussex.

suggest the continuation of the early Neolithic tradition of simple, plain round based bowls throughout the late Neolithic and even into the early Bronze Age. Playden has a C-14 date of 1740 ± 115 b.c. (BM 450) to confirm this late date. The essentially domestic nature of the Neolithic pottery industry in Sussex could have resulted in early traditions persisting and help to explain the very low density of late forms derived from elsewhere.

ACKNOWLEDGEMENT

Author: P. L. Drewett, Sussex Archaeological Field Unit, Institute of Archaeology, London.
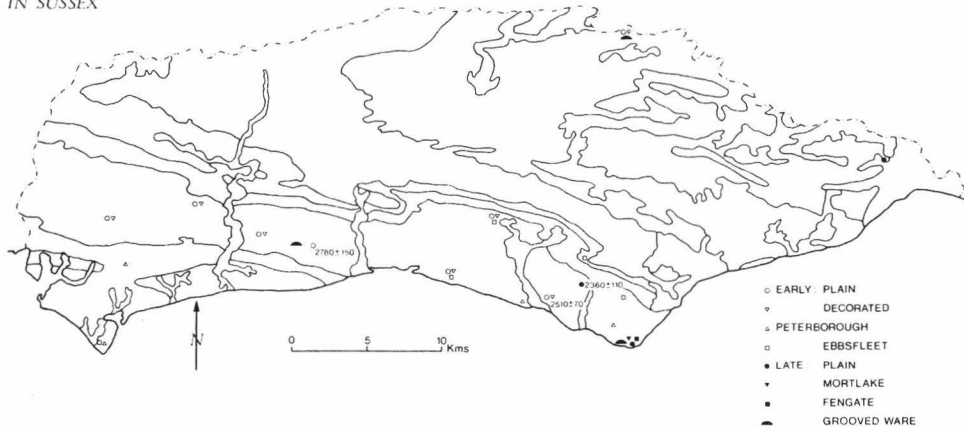
NEOLITHIC POTTERY STYLES
IN SUSSEX

Fig. 8.   Distribution of Neolithic pottery styles in Sussex with dated examples in Radiocarbon years b.c.

THE BRONZE AGE

by Ann Ellison

INTRODUCTION

The study of Bronze Age pottery in Sussex has benefited greatly from the publication by Musson of an illustrated catalogue of most of the vessels known before 1954 in the *Sussex Archaeological Collections*. Although the main principles of the typology of Bronze Age pottery had been established by Abercromby in 1912, Musson did not attempt a rigorous classification of the Sussex material. However the vessel types were grouped numerically in rough chronological order. Since 1954 many general studies of Bronze Age pottery styles have been prepared and these may now be related to the Sussex material. As the typology of the Middle and Late Bronze Age assemblages has been published in detail elsewhere (Ellison 1978), the opportunity will also be taken to present a tentative analysis of the functional and spatial characteristics of the later Bronze Age assemblages and their distributions.

Consideration of the associations and stratigraphic relationships pertaining to certain assemblages throughout England indicates that the main ceramic traditions represented in Sussex occurred in the following chronological order: Beakers, Accessory Cups, Enlarged Food Vessel Urns and Collared Urns, Biconical Urns and, finally, globular jars and bucket urns. Although there are Early Bronze Age radiocarbon dates available from barrows at Hove and West Heath Common, the only date which can directly be related to Bronze Age pottery in Sussex is that of 1000 ± 35 b.c. (GrN 6167; 1330-1220 B.C. according to the Suess calibration curve) from the Itford Hill Middle Bronze Age settlement. Burgess (1969) and Barrett (1976) have emphasised the apparent overlap of many of the traditions listed above during the Early Bronze Age period. However the chronological situation is complicated by the effects of calibration, and the quantity of available radiocarbon dates for the country as a whole is not yet sufficient to test their hypotheses in detail. Meanwhile the chronological spans adopted for the various traditions discussed in this paper must be regarded as tentative.

BEAKERS (*c.* 3000-1500 B.C.)

Piggott's original classification of Beakers into Cord-Zoned, Bell, Short-Necked and Long-Necked types (Piggott 1963) was superseded in 1970 by the results of Clarke's numerical analysis of the characteristics of all known Beaker vessels from the British Isles (Clarke 1970). According to Clarke's scheme, the earliest imports were All Over Cord and European Bell Beakers followed by a series of types with distinct Dutch or German prototypes: Wessex/Middle Rhine, Northern/Middle Rhine, Northern/North Rhine and Barbed Wire Beakers. Developing from these there were two main series of indigenous Beaker styles which are represented substantially in northern and southern Britain respectively (N1 to N4 and S1 to S4), and a third series in East Anglia which developed primarily from the Northern/North Rhine and Barbed Wire Beakers. The results of Clarke's objective analysis were extensively criticised by Lanting and Van der Waals (1972) who felt that Clarke's classification masked the regional groupings which were apparent in the material. They proposed an alternative classification which involved the definition of seven chronological

'steps' in a series of geographical regions. A compromise solution has recently been provided by Case (1977) who prefers a simple division into three main chronological styles (Early, Middle and Late), and he has published a useful concordance between his scheme and the systems of Piggott, Clarke and Lanting and Van der Waals (Case 1977, 71).

Complete Beaker vessels from Sussex are illustrated in Musson (1954: Nos. 000-081) and the only major assemblage recovered since then is that from the Beaker settlement at Belle Tout (Bradley 1970). The Early Style was best represented in Sussex by the earlier group of Beaker pottery recovered from Belle Tout but the excavator has now reidentified the sherds concerned as deriving from Food Vessels and the ceramic series as previously established should be inverted (Bradley pers. comm.). This means that the Beaker pottery from Belle Tout belongs wholly to the East Anglian style which dates from Case's middle period. Other Middle Style Beakers derive from Whitehawk Camp (European), Beggar's Haven, Hassocks Sand Pit, Rodmell and Selsey (Wessex/Middle Rhine) and from Falmer and Findon (Barbed Wire). Case's Late Style is represented by nine finds of indigenous Southern or East Anglian type and one vessel which relates to the Northern series. Beakers mainly derive from the South Downs and the coastal plain (Fig. 10, upper) but contemporary flintwork has also been found in the Weald.

EARLY BRONZE AGE (*c.* 1800-1200 B.C.)

Collared Urns

In his study of Collared Urns from England and Wales, Longworth defined a Primary Series of urns which carry stylistically early traits which could be linked to a derivation from late Neolithic Peterborough Ware (Longworth 1961). The Primary Series is current from before the initial phase of the Wessex Culture and lasts into the later phase, while the Secondary Series develops from about 1400 B.C. Traits defining vessels of the Primary Series include internal moulding, a simple rim form, convex or straight collar profiles, internal decoration other than on the rim bevel, decoration extending below the shoulder and decoration executed in the whipped cord technique. Urns of this type have been found at Hassocks, Cliff Hill (Lewes), Lewes Golf Course and Westbourne (Musson nos. 270, 290, 280 and 361 respectively). Of the remaining 49 Collared Urns found in Sussex, 36 can definitely be attributed to the Secondary Series (figures compiled from Dr. Longworth's unpublished catalogue). The Secondary Series urns are characterised by the decline in the use of whipped cord and chain plaited motifs and internal decoration, associated with the development of more complex decorative motifs and a growing diversity of forms (Longworth, forthcoming). By the later stage certain form types and decorative motifs exhibit marked regional distributions and two major geographical styles have been isolated, one in northern and western and the other in southern and eastern England. Eighteen urns in Sussex can firmly be attributed to the south-east style which possesses the following main features: bipartite forms of Longworth's types BI, BII and BIII, the absence of decoration on the neck in tripartite forms, comb-impressed and horizontal lines and the presence of decorative motif M (miniature horseshoes in cord technique) located on the shoulder. The form BII urn from Oxsettle Bottom (Curwen 1954, Fig. 42) was associated with a complex necklace of jet, amber and faience beads and a bronze finger ring which probably date from a late stage in the Wessex Culture. Recent finds of Secondary Series urns have been made at Chanctonbury Ring, Hangleton and Bullock Down (P. Drewett pers. comm.).

Burgess has recently stated that the division of Collared Urns into two typological series which have chronological significance is not supported by some recent radiocarbon dates and excavations 'which show pots of both series, exhibiting wide trait variation, in use contemporaneously' (Burgess

1974, 180). While admitting that the development of Early Bronze Age ceramics must be more complex than has previously been suspected, Longworth's typology provides a sound basis for future study and cannot be refuted until a larger body of well-associated and contradictory radiocarbon dates become available.

Food Vessels and Accessory Vessels

Food Vessels of classic type are rare in southern Britain but Enlarged Food Vessel Urns have a very wide, if sparse, distribution. Cowie (1978) has provided a discussion of the type and a corpus of the known Food Vessel Urns in northern Britain while many of the southern examples have been published in recent years (Annable and Simpson 1964, 62; Forde-Johnston 1965 and Smith 1967). The vessel type is derived from Food Vessels with some influence from Peterborough Ware, Beakers and Collared Urns. Food Vessel Urns in Sussex include the finds from Peppering, Arundel (Musson 200) and Belle Tout (Musson 210) and sherds in the Belle Tout settlement assemblage. The plain ridge urns from Beltout (Musson 240), Cliff Hill, Lewes (Musson 250) and Winterbourne (Musson 260) may also belong to this class. The internal rim decoration in cord technique on urns 200 and 210 can be paralleled in Dorset and Wiltshire (Forde-Johnston 1965, Fig. 16; Smith 1967, Fig. 6, 4) and the rows of circular impressions on the shoulder of the Belle Tout vessel can be matched at Frampton, Friar Mayne, Melcombe Bingham and Amesbury G.71 (Forde-Johnston 1965, Figs. 6, 7 and 13; Smith 1967, Fig. 6, 3).

Miniature vessels bearing incised decoration and complex perforations (e.g. Musson nos. 140, 141 and 160) are similar to those found in Early Bronze Age Wessex. In Sussex such vessels have been found in association with bronze pins, a bronze dagger and beads of amber, shale, jet and faience.

Biconical Urns

In 1956 Butler and Smith examined the grave goods associated with certain biconical urns in England and concluded that the ceramic group probably dated from the period during or immediately following the Wessex Culture. These Wessex Biconical Urns are divisible into clear regional groups and can be derived mainly from late Neolithic Grooved Ware (Ellison 1975, Ch.4). Biconical urns are rare in Sussex, the two best-known examples being those from South Heighton (Musson 380) and Charmandean (Musson 390). However the urn from Telscombe Tye (Musson 351) also belongs to this class and two more examples have recently been rediscovered in Hastings Museum and identified as coming from an urn cemetery at Alfriston (Holden 1972, 117, note 2; illustrated here, Fig. 9). The Telscombe Tye urn may belong to Ellison Type A with cord or pricked decoration, while the Charmandean and smaller Alfriston urn are of Type C2 (relief horseshoes, Wiltshire variant). The large biconical urn from Alfriston belongs to Type D1 which occurs mainly in Dorset but is also represented in the middle Thames Valley.

Fabric and Distribution

Most Early Bronze Age ceramics are characterised by soft soapy fabrics fired at low temperatures. Most fabrics contain sand which was probably present in the clays selected and the most common filling agent was grog, although calcined flint does occur occasionally in Collared Urn and Biconical Urn fabrics. It is unlikely that these fragile and cumbersome vessels were carried any distance and they were probably manufactured on or near to the sites where they were to be used, either by domestic potters or by itinerant seasonal specialists. The regional styles which can be detected in some ceramic classes of this period can best be explained as reflecting the networks of exchange and kinship interaction within and between regional social groupings.
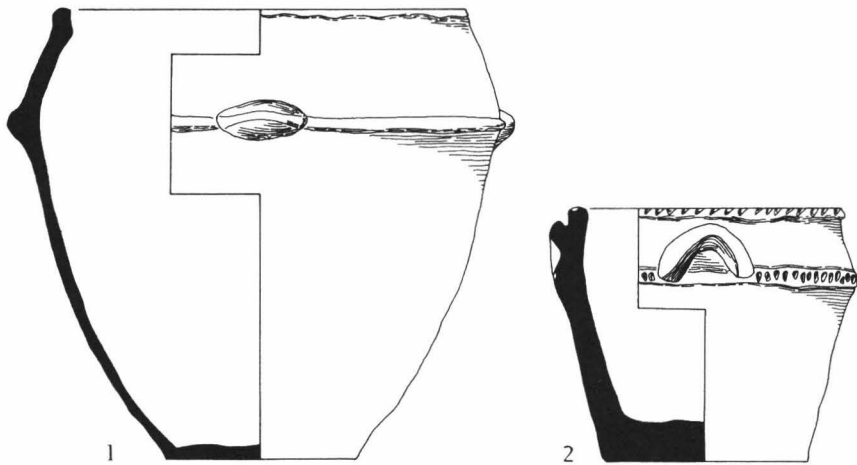
Fig. 9.   Biconical urns from Burnt House Farm, Alfriston. Scales: 1 ($\frac{1}{6}$), 2 ($\frac{1}{3}$).

Early Bronze Age pottery in Sussex is distributed only on the South Downs where the vessels mainly derive from barrow excavations during the last century (Fig. 10, upper). However distributions of bronzes and flintwork demonstrate that the Wealden clays and sands were also being exploited in this period (Curwen 1954, Fig. 39 and Tebbutt 1974).

MIDDLE AND LATE BRONZE AGE (c. 1300-700 B.C.)

Pottery Assemblages

The typology and chronology of Middle and Late Bronze Age pottery assemblages from Sussex have been published in Ellison 1978. Since the preparation of that paper, further finds have been made at Cross Lane, Findon (MBA, information from SAFU), Itford Bottom (MBA, information from Martin Bell) and Bishopstone (LBA: Bell 1978, 46-48, Fig. 22), while current excavations at the Black Patch, Alciston settlement site have produced a substantial and well-recorded Middle Bronze Age assemblage. The distribution of the pottery types amongst the larger assemblages in Sussex is summarized in Fig. 11 where types 1-10 are of Middle Bronze Age date and types 10-19 are Late Bronze Age (post-Deverel-Rimbury phase). The type 7 globular jars with bar handles represent a Middle Bronze Age fine ware which occurs exclusively in Sussex. The main decorative motifs employed on vessels of this type are shown in Fig. 11 and several more variations have recently been identified in the Black Patch assemblage.

Detailed macro-examination of the fabrics of Middle and Late Bronze Age pottery in museum collections and in the Black Patch assemblage indicates that there is no clear relationship between form and fabric, vessels of all types being tempered with varying amounts of calcined flint filler. However some of the Middle Bronze Age type 7 jars are characterised by a fine micaceous sandy fabric. It is hoped that petrological or chemical analysis may clarify the significance of this difference. As in the earlier Bronze Age, most of the pottery derives from the South Downs or the coastal plain (Fig. 10, middle and lower), but the distribution maps indicate a substantial shift of settlement from the chalk to the fertile coastal plain in the Late Bronze Age.
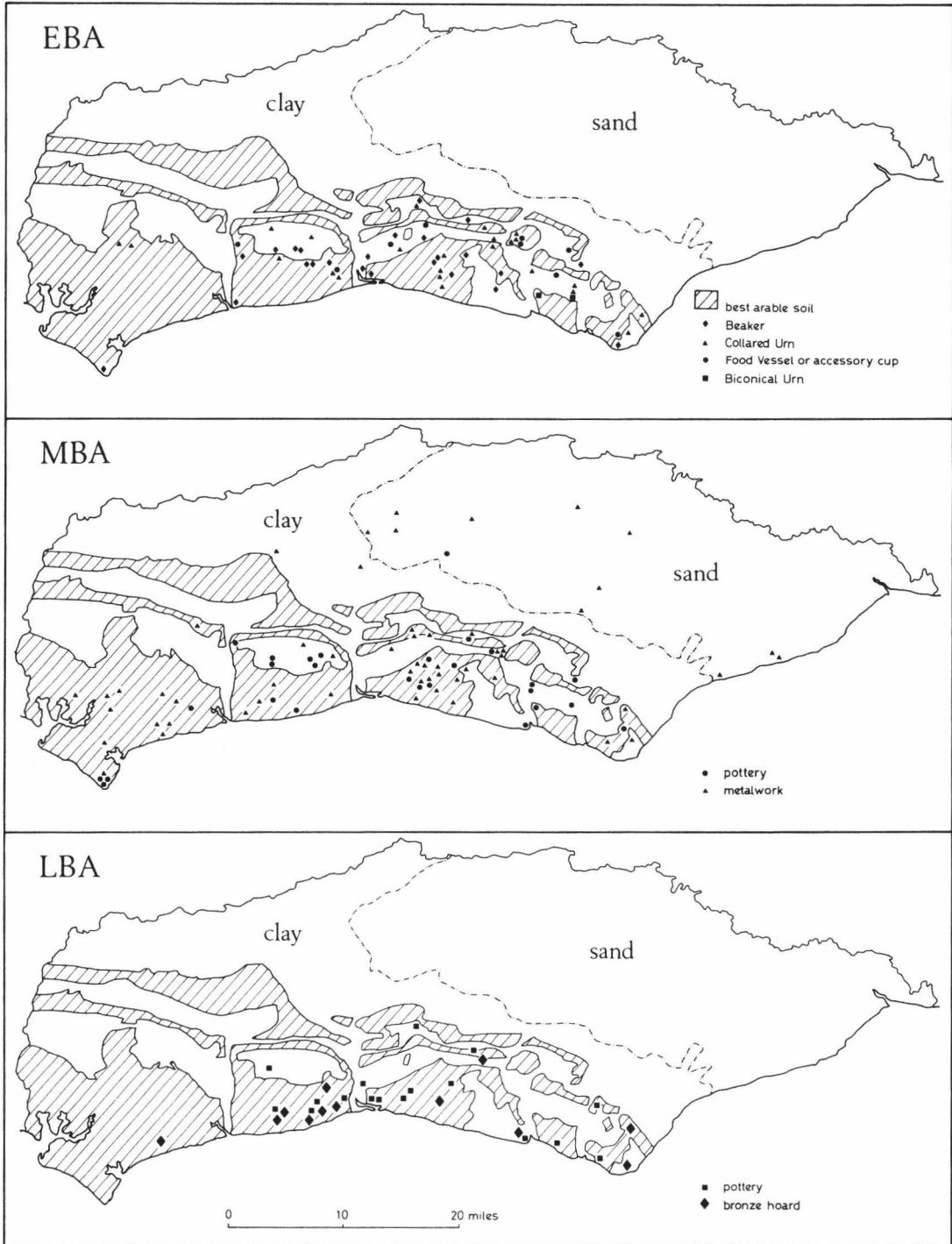
Fig. 10. The distribution of Bronze Age pottery in Sussex.

FUNCTIONAL VARIABILITY AND THE SPATIAL ANALYSIS OF SETTLEMENTS

As long as there has been little disturbance of a site since it was abandoned in prehistory, the patterning of structures and artefacts within a settlement may reflect the economic activity areas and social organisation of that site. Middle Bronze Age settlement sites are characterised by a fairly limited repertoire of archaeological data: banks and ditches, pits, post-holes, relatively large pottery assemblages, flint and stone artefacts, weaving equipment, faunal and floral remains and a few items of bronze. The quantity of pottery from each structure and the relative proportions of fine table wares, cooking vessels and heavy-duty storage jars can be compared with the relative occurrence of other artefact types. A study of the features and artefact types found within each recorded hut in all the known Middle Bronze Age settlement sites in southern England has allowed the definition of four main classes of structure (Ellison forthcoming). These are here defined briefly in relation to examples from settlement sites in Sussex.

A. *Major residential structure*
These huts are characterised by high concentrations of potsherds including a relatively high proportion of fine ware vessels which were most probably used for eating and drinking. The stone assemblages are dominated by items connected with the production and maintenance of tools (e.g. flint flakes, hammerstones and whetstones) and many such huts contain evidence for textile production in the form of loom weights, spindle whorls and loom post-holes. Residential structures are usually circular in shape, larger in size than the other categories and more often possess porches. Where items of bronze and other status indicators have been recovered they repeatedly occur in category A huts.
Examples: *New Barn Down* VIII, *Plumpton Plain A* III:II, *Cock Hill* I, *Itford Hill* B, D, K, L, N.

B. *Ancillary structure*
These huts are characterised by a high proportion of features and artefacts associated with food storage and preparation. The sherd assemblages are relatively smaller than those from category A huts and display a higher percentage of coarse vessels relative to fine wares. They often possess internal pits for storage, querns and scrapers for food preparation and, in some cases, concentrations of animal bones. Category B huts tend to be smaller and more oval in shape than those of category A.
Examples: *Plumpton Plain A* II:I, *Cock Hill* II, III, AIII, *Itford Hill* A, C, E, F, J, M.

C. *Animal shelters*
The absence of domestic finds and observations of extensive floor wear have indicated the use of some huts for the sheltering of stock. They are of medium size.
Examples: lean-to annexes to category A and B huts at *Cock Hill* and *Itford Hill*.

D. *Weaving huts*
Some small-sized huts seem to have been specifically designated for textile production. They contain weaving equipment but no evidence for food storage, preparation or consumption.
Examples: *Itford Hill* G and H.
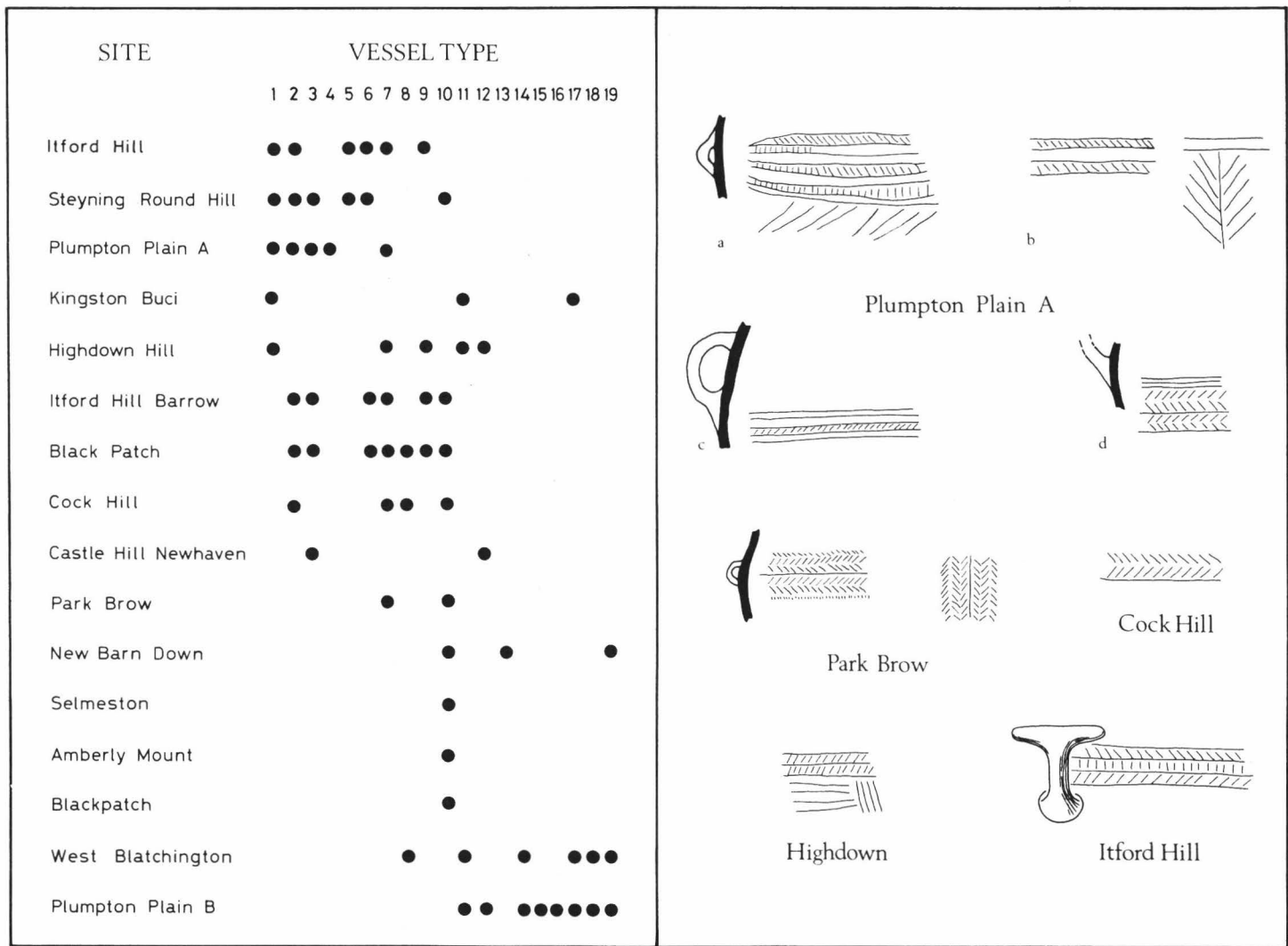
SITE   VESSEL TYPE

Fig. 11.   Left: The occurrence of vessel types in major pottery assemblages of the later Bronze Age; Right: Decorative motifs employed on type 7 Sussex jars (not to scale).

Category A huts seem to have been the major residential units where food consumption and productive activities were practised. These activities included predominantly male tasks (manufacture and maintenance of tools in stone, bone and metal; leatherworking) alongside those more often associated with females (notably weaving). In contrast the smaller category B huts seem to have been primarily designed for the storage and preparation of foodstuffs which were probably female tasks. Study of the spatial relationships between these various categories of structure within individual settlement sites has led to the isolation of significant modular groupings (Ellison forthcoming). The recurring settlement module or unit includes a major residential hut, an ancillary structure, storage facilities and areas for open air activities. A detailed illustrated analysis of the Itford Hill units has been presented elsewhere (Ellison 1978) and may be summarised as follows:

Unit (i) major residential structure: B; ancillary structure: A

Unit (ii) major residential structure: D; ancillary structures: C, E, F; weaving hut: G

Unit (iii) major residential structures: K, L; ancillary structure: J; weaving hut: H

Unit (iv) major residential structure: N; ancillary structure: M

The weaving huts in units (ii) and (iii) were located near to major residential structures and may have been related functionally to them, especially as elsewhere weaving is known to have been carried out within the major structure. A preliminary analysis of the pottery assemblage from Black Patch, Alciston has aided a similar study of the patterning of economic and social arrangements within a single settlement unit (Drewett 1980). The Middle Bronze Age settlement modules discussed above can usefully be compared with the Glastonbury modular unit isolated by Clarke (1972, Fig. 21.1). The main features of this Iron Age module are replicated in the Bronze Age examples, including the important division between major familial, multi-role and male activity areas and the minor largely female and domestic areas.

REGIONAL EXCHANGE

Careful assessment of closed pottery groups and site assemblages should precede the definition of regional assemblages, while further analysis should lead to the recognition of industrial groupings either within or cutting across the regional assemblages (Collis 1977). The later Bronze Age pottery assemblage in Sussex is one of six major regional assemblages which have been defined in southern England (Ellison 1975 and forthcoming). Following Clarke's Model I for Beaker assemblages (Clarke 1976, 464, Fig. 2), the vessel types represented in each regional assemblage can be divided into three functional groups, namely fine wares (for food consumption), everyday wares (for food preparation) and heavyduty wares (for storage purposes). The pottery types belonging to each of these functional groups are characterised by distribution areas of different sizes and this indicates the operation of production on three distinct levels.

Heavyduty wares (Sussex types 8, 9, 10, 12, 13, 14). These comprise large, thick-walled storage vessels which were tempered with large quantities of calcined flint and strengthened with cordons, often bearing finger-impressed decoration. Bearing in mind their great size, weight and fragility it might seem likely that such vessels were made on or very near to the sites where they were used. However evidence for the repairing of such vessels might suggest that some small-scale local, or more probably, seasonal mode of production was involved. In the Middle Bronze Age, types 9 and 10 show marked local distributions within Sussex (Fig. 12).

Everyday wares (Sussex types 1-6, 11, 17, 18). These are medium-sized vessels comprising small versions of bucket urns displaying a tendency towards a biconical or ovoid profile and decorated with a variety of cordons and perforated and plain lugs of varying shape. In Sussex the most common Middle Bronze Age everyday types (2, 3, 6) show a marked localised distribution on the South Downs (Fig. 12).
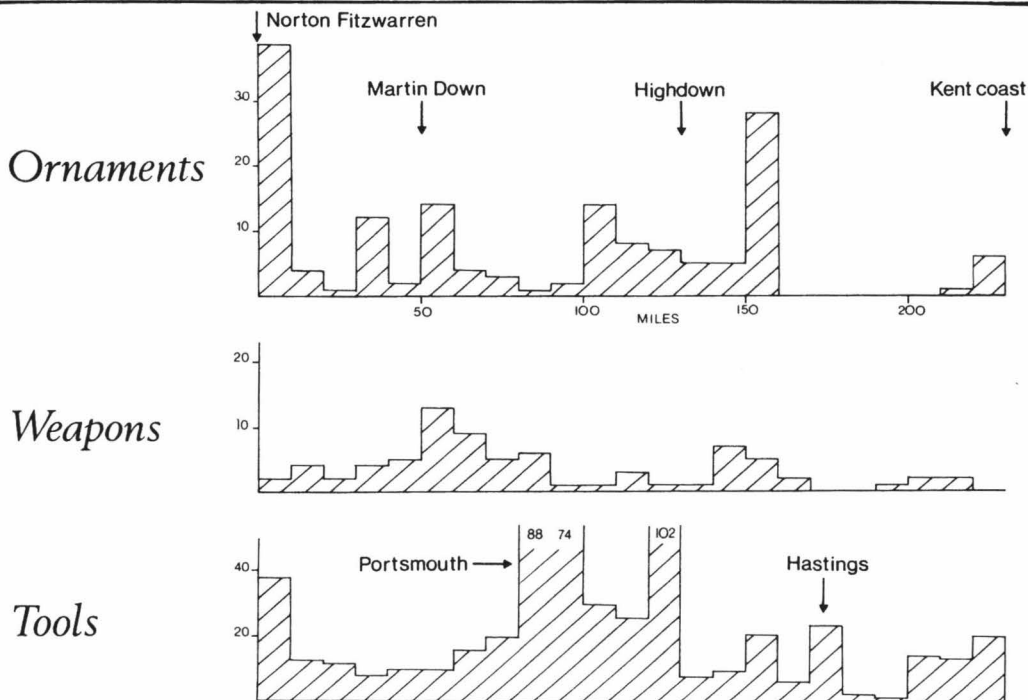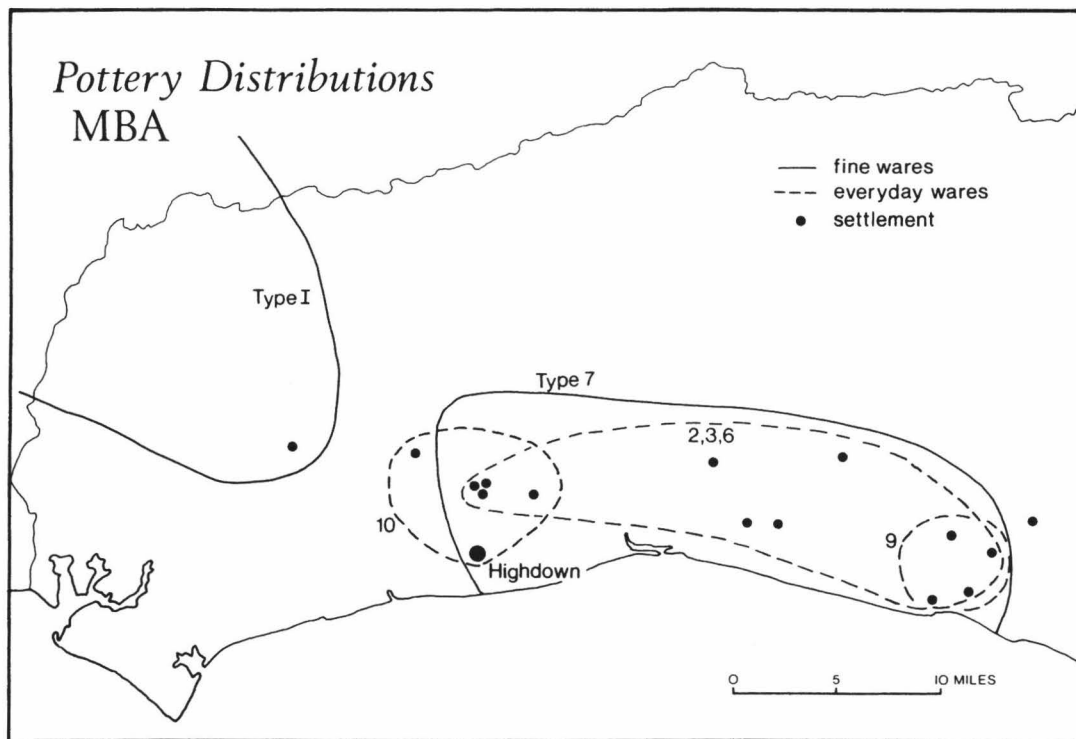
Fig. 12. The distribution of pottery and metalwork types in relation to major enclosures.

Fine wares (Sussex types 7, 15, 16, 19). These 'table wares' include handled jars, globular vessels and the occasional open bowl form. The type 7 globular decorated jars display a tight distribution in south Sussex which is complementary to the other fine ware distributions in southern England. The adjacent fine ware distribution is that of Type I globular urns in central Wessex which reaches as far as Glatting Down in West Sussex (Fig. 12). The fine wares, which are often characterised by diagnostic fabric types, may have been the result of a possibly seasonal industry implemented by part-time specialists working over carefully defined territories. It has previously been noted that the larger Group B enclosures tend to be located at or near the junction of one or more localised pottery distributions (Ellison forthcoming) and these enclosures may have been closely related to the pottery exchange networks, not as foci for production but as centres involved in the control of movement of goods between adjacent production areas. In Sussex the Group B enclosure on Highdown Hill is situated near to the junction between the Type 7 jar and Type I globular urn fine ware distributions (Fig. 12).

Consideration of the distribution of Middle Bronze Age metalwork suggests that bronzes were also produced or distributed on three distinct levels. Tool and ornament types have discrete local distributions while the weapon types are distributed more evenly over southern England (Rowlands 1976; Ellison forthcoming). However the local metalwork distributions seldom coincide with the local and regional pottery distributions, and must reflect a completely different set of spheres of production. In Fig. 12 the graphs demonstrate the variation in the occurrence of ornaments, weapons and tools in a corridor 30 miles wide along lines joining three group B enclosures (Norton Fitzwarren, Martin Down and Highdown Hill) and the Kent coast. The peaks for ornaments and, to a lesser extent, weapons are centred on the locations of the large enclosures and this indicates that these items were distributed from (but not necessarily produced at) these major sites. In contrast the distribution of bronze tools does not relate to the siting of Group B enclosures and must reflect a different set of regional industries with their own local concentrations. The major concentration is in the Portsmouth/Chichester region with lesser centres around Hastings and in east Kent.

The Middle Bronze Age pottery and metalwork distributions represent a complex system of small-scale interlocking exchange networks. Some of the smaller distributions involve artefacts of very specific type which may have served as symbols and thus aided the social cohesion of local population groups while the frequent overlapping and interlocking of artefact distributions may represent a complex of exchange networks which served to minimise friction between adjacent competing groups. The analysis of pottery distributions can lead to the detection of regional industrial groupings but the importance of these industries within the socio-economic system can only be assessed by comparing them with the distributions of other contemporary artefact types and classes of settlement site. However it must be stressed that such studies can only be based on data which has already been subjected to rigorous chronological and typological analysis.

ACKNOWLEDGEMENTS

SITES MENTIONED IN THE TEXT

Cock Hill. Ratcliffe-Densham, H. B. A. and M. M. 1961 'An anomalous earthwork of the Late Bronze Age, on Cock Hill', *Sussex Archaeological Collections* (hereafter *S.A.C.*) **99**, 78-101.

Itford Hill.   Burstow, G. P. and Holleyman, G. A. 1957 'Late Bronze Age Settlement on Itford Hill, Sussex', *Proceedings of the Prehistoric Society* (hereafter *P.P.S.)* **23,** 167-212.

New Barn Down.   Curwen, E. C. 1934 'A Late Bronze Age farm and a Neolithic pit dwelling on New Barn Down, near Worthing', *S.A.C.* **75,** 137-70.

Plumpton Plain A.   Holleyman, G. A. and Curwen, E. C. 1935 'Late Bronze Age Lynchet-settlements on Plumpton Plain, Sussex', *P.P.S.* **1,** 16-38.

Author: Ann Ellison, Wessex Archaeological Committee, 40 St. Ann Street, Salisbury, Wiltshire.

POTTERY IN THE FIRST MILLENNIUM B.C.

by Timothy Champion

In the period between the two World Wars Sussex formed a major focus of Iron Age investigations in England; settlement sites such as Park Brow and Findon Park, and hillforts such as the Trundle, Cissbury and the Caburn were being excavated, and these were the pegs on which much of our understanding of the period has been hung. The pottery in particular (Hawkes 1939a) was used as the basis for the reconstruction of the later prehistory of the area, and the same ceramic assemblages from the same sites continued to be of great significance in later reassessments (Kenyon 1951; Hodson 1962, 1964). So important was the role of the pottery that a whole chapter was devoted to it in the first edition of Curwen's *Archaeology of Sussex* (1937), though this was removed from the later edition on the grounds of the technical complexity of the subject; the pottery studies of the inter-war years had by then reached their culmination in the synthesis of Wilson and Burstow (1948).

Since the appearance of that article it is astonishing how little work has been done on the Iron Age pottery of Sussex, and how little new material has been published. Not that Iron Age research was totally neglected; some sites certainly await publication, but the main interest has been in hillforts and their defences, and in that sort of excavation pottery is rare. Only two reasonably large assemblages have been published, and one, that from Stoke Clump (Cunliffe 1966), is a surface collection; otherwise there is only the material from the Bishopstone excavations (Bell 1977). With little new material being published, the quantity of evidence available for any summary of Iron Age pottery is severely restricted; so too is the quality, since there has been little occasion for the application of new methods or the re-interpretation of older finds. Much of the material from older excavations is indeed of limited value; publications are frequently only partial and couched in an outdated terminology, for instance in the ascription of such labels as 'late Bronze Age', and even the value of the original collections is restricted by the reliance that can be placed on the quality of the excavations, the observation of stratigraphy and the care taken with recovery and preservation. In some cases at least it is impossible to be greatly confident in the use of older material.

This stagnation of Iron Age pottery studies in Sussex makes a modern discussion difficult, especially since it has occurred at a time when our understanding of the Iron Age as a whole has been radically transformed, and the aims and methods of ceramic studies in particular have been significantly advanced. The Iron Age has changed almost beyond recognition; in chronology, the beginning of the Iron Age, in strict terms of the Three Age system, has moved back to the seventh century, and the origin of many 'Iron Age' features, such as hillforts and round houses, and now pottery, can be seen to predate the technological change from bronze to iron. There have also been changes in the modes of explanation used in the Iron Age, with less emphasis placed on invasion or migration from the continent and more on the internal development of social and economic processes, and a consequent change in the main interests of Iron Age research. This has been reflected in the particular case of pottery studies, where questions of cultural affinity and interpretation in politico-military terms are now of less interest than research into the organisation of production and distribution and the processes of acquisition, use and loss of pottery. To these ends, a range of new methods has been developed, such as ceramic petrology, to investigate

production areas, quantitative analysis to look at distribution, and spatial studies of patterning within sites to examine usage and disposal.

In all these ways, work on the pottery of Sussex has lagged behind that elsewhere; with the notable exception of the Bishopstone report and the work of Susan Hamilton (Bell 1977, 83-118), petrological examination has scarcely begun, and quantitative assessments have never been made, and would probably not be worth making on evidence of the quality presently available. It is not yet possible, therefore, to give any such detailed account of pottery production for the Iron Age as for the Roman and Medieval periods, or of distribution as for the Bronze Age; nor is there data from an Iron Age site adequate to show the patterns of usage as can be done for the Middle Bronze Age at Itford Hill. The most that can be attempted is to show how the picture presented by Curwen (1937) and Wilson and Burstow (1948) has been revised, and to present a chronological account of the pottery sequence, and to offer interpretation of this data where possible; even these limited aims require the Sussex evidence to be extensively supplemented by work from neighbouring areas.

The most dramatic alteration in our view of the first millennium B.C. is the greatly extended time scale now given to what has been traditionally regarded as 'Iron Age' pottery, though it has taken a very long time to come to terms with the evidence that has accumulated during the last twenty years. Margaret Smith's demonstration (1959) that the ceramics of the Deverel-Rimbury culture belonged to the Middle Bronze Age, not the Late Bronze Age, has been amply substantiated by further evidence of associations and radiocarbon dates (Barrett 1976); Deverel-Rimbury can now be seen to end by about 1000 b.c. in radiocarbon years, or about 1200 B.C. in absolute calendar years. It has, however, not been easy to fill the consequent gap in the non-metal archaeology of the Bronze Age. Harding's critical examination (1974, 129-133) failed to identify much material, while Cunliffe (1978, 11-30) preferred to envisage a much later survival of Deverel-Rimbury pottery to the seventh or even sixth century B.C. It is now clear, however, mainly through the work of John Barrett, that there is plenty of pottery already excavated but unrecognised in the mass of allegedly early Iron Age material, which should be assigned to this period. Only two recent excavations have shown stratigraphic sequences through this period, South Cadbury, Somerset (Alcock 1972, 114-130) and Ram's Hill, Berkshire (Barrett 1975), but these form an essential framework for the sequence. Ironically, the problem could have been greatly enlightened by Sussex sites, if the pottery evidence had been of better quality and more critically assessed, since there are a higher number of excavated sites with pottery in potential association with Late Bronze Age metalwork than anywhere else. Plumpton Plain B produced a median winged axe now dated to the seventh century B.C., and a tanged knife (Holleyman and Curwen 1940, Figs. 15-16), West Blatchington two palstaves and a winged axe (Norris and Burstow 1950, Fig. 2), Castle Hill, Newhaven a hoard of carpenter's tools (Curwen 1954, Fig. 61), New Barn Down fragments of a knife and a spearhead (Curwen 1934, Figs. 39-40), and at Charleston Brow, a site usually regarded as of Roman date, a fragment of a Late Bronze Age sword and a bronze three-ringed object (Dreipassanhänger) possibly of the same date were found (Parsons and Curwen 1933, Figs. 3 and 7). Probably the most important site is Highdown Hill, where sporadic excavation since the mid-nineteenth century has produced a range of Late Bronze Age metalwork, including tanged and socketed knives, a socketed gouge, a tanged chisel, and a socketed axe and a palstave, as well as a gold penannular ring (Curwen 1954, 186-7; Wilson 1940; 1950). Despite considerable disturbance, it is clear that the site originally had stratified deposits from the Middle Bronze Age to Early Iron Age, and could thus have provided a sequence of pottery comparable with South Cadbury or Ram's Hill, but with better metal associations; unfortunately it is not now possible to reconstruct
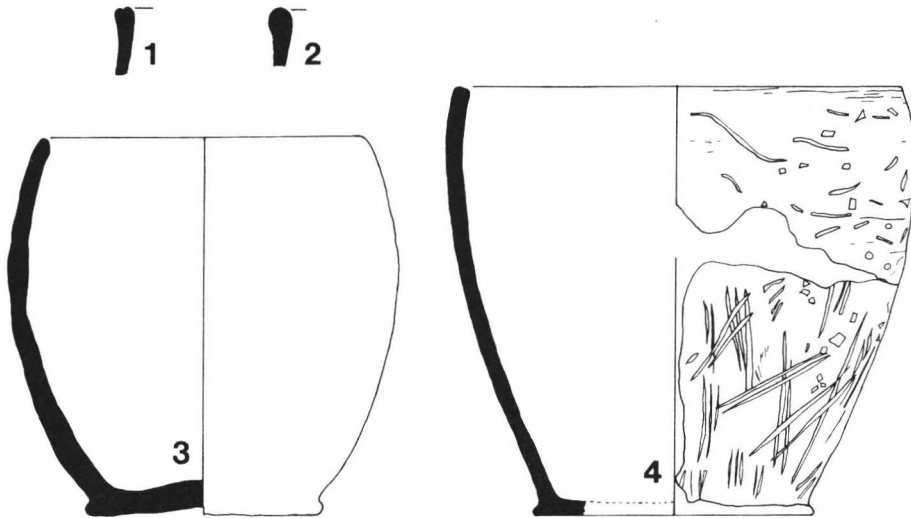
Fig. 13. 1, 2 Plumpton Plain (after Hawkes 1940); 3 Kingston Buci (after Wilson and Burstow 1948); 4 Bishopstone (after Bell 1977). ($\frac{1}{4}$).

this stratigraphic sequence with sufficient accuracy, but Highdown and the other sites of the early first millennium still offer a good quantity of post-Deverel-Rimbury pottery. Several of these sites, however, contain a mixture of Deverel-Rimbury and post-Deverel-Rimbury ceramics, and it is impossible yet to decide whether this is because of poor excavation, extensive survival of older Deverel-Rimbury rubbish into post-Deverel-Rimbury levels, or a genuine contemporaneity of the two traditions. Nevertheless, with additional evidence from outside Sussex, a picture can be built up.

The most distinctive feature of the immediately post-Deverel-Rimbury phase is the restricted range of vessel types, consisting almost entirely of jar forms which perhaps perpetuate the Middle Bronze Age barrel jar tradition, but with rather different techniques. The forms are either straight-sided or hook-rimmed jars, frequently with marked splaying of the base (Fig. 13). These post-Deverel-Rimbury vessels are distinguished from earlier ones by the techniques of slab-building and surface-smearing. Other forms are also found, though it is not yet clear whether they were made from the start or were later introductions; they include rather round-bodied jars with a similar smeared finish and an applied decorated band at the widest part (Fig. 14, 1), and tall, straight-sided jars with constricted necks and short, out-turned rims, decorated with finger-tip impressions either on an applied band in the neck or on the shoulder immediately below (Fig. 14, 2-3). Detailed study of the fabric of these vessels has scarcely begun, but many have the tempering of crushed, calcined flint typical of the Middle Bronze Age pottery, while at least at Bishopstone a shell-tempered fabric was also used for the production of similar forms (Bell 1977, Figs. 40 and 46). Sherds of this shell-tempered ware have yielded thermoluminescent dates of 1030 B.C. and 850 B.C. (Bell 1977, 290).

Perhaps in the tenth and ninth centuries the range of vessel forms began to grow, possibly as pottery itself began to assume a more important role in society. Shouldered jars occur, such as those at Bishopstone (Bell 1977, Fig. 48, no. 53) or the one from Worthing found containing a bronze hoard (Powell-Cotton and Crawford 1924, Pl. 30) (Fig. 15, 1). New departures are bowls (Fig. 15, 2-3), including angular bipartite forms, as at West Blatchington (Norris and Burstow 1950,
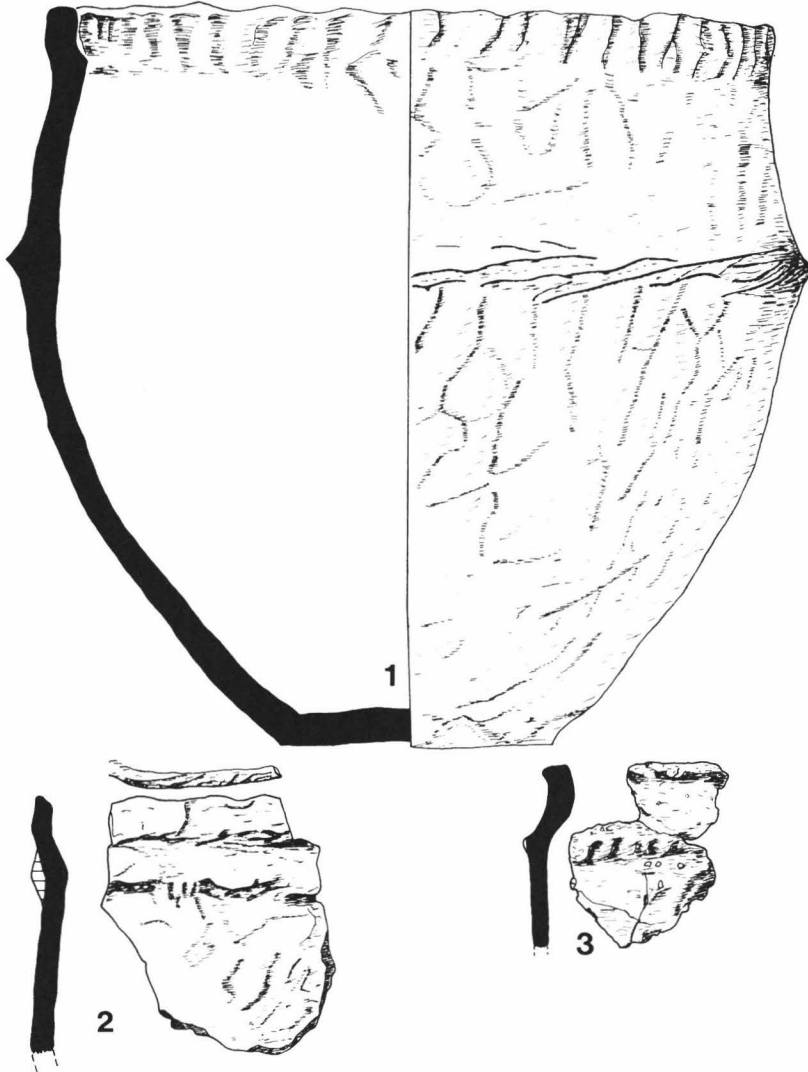
Fig. 14.   1, 2 Plumpton Plain (after Hawkes 1940); 3 New Barn Down (after Curwen 1934). ($\frac{1}{4}$).

Pl. 1, no. 7) and hemispherical ones, as at Bishopstone (Bell 1977, Fig. 47, No. 44). Shallower dishes are occasionally found, and also lids, as at Plumpton Plain B (Hawkes 1940, Fig. 13).

At a later date, but still within what is technologically the Late Bronze Age, a new range of fine wares was introduced, comprising some of the forms usually thought of as our earliest Iron Age pottery. In Sussex these are best seen at the Caburn, where they were called Caburn I ware (Hawkes 1939a, 217-30), though similar vessels occur at other sites such as Stoke Clump and Hollingbury (Cunliffe 1966). Sharply angular bipartite bowls (Fig. 16, 1-2) and tripartite jars (Fig. 16, 3) are found, but there is also a new interest in high quality products, with the use of denser fabrics, elaborate finishes such as haematite coating and carefully executed ornament consisting of
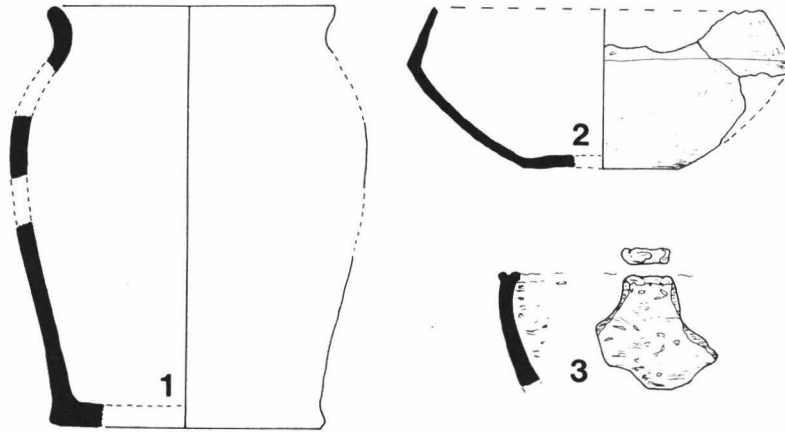
Fig. 15. 1 Worthing (after Powell Cotton and Crawford 1924); 2 West Blatchington (after Norris and Burstow 1950); 3 Bishopstone (after Bell 1977). ($\frac{1}{4}$).
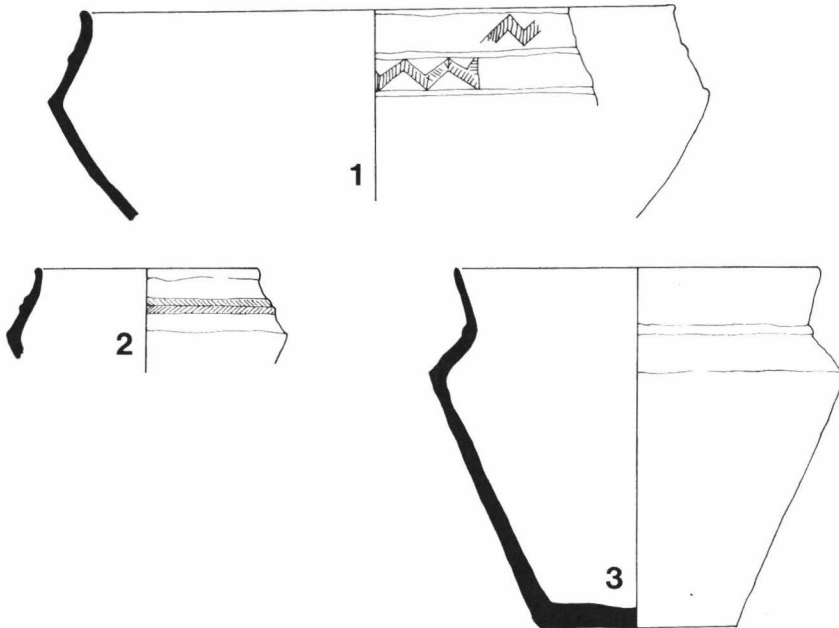
Fig. 16. 1-3 The Caburn (after Hawkes 1939). ($\frac{1}{4}$).

fine geometric designs and decorated cordons. Because of a lack of good associations with datable material, it is difficult to date this phase on the evidence from Sussex alone, but by comparison with other areas it may belong to the eighth and seventh centuries B.C., for the fine angular bowls are one regional expression of a very wide-spread fashion for bowls, both in pottery and in bronze, common in later Bronze Age Britain and Europe. The Sussex examples can be seen as the counterpart of the furrowed bowls of Wessex. It is these very fine wares of high technical skill that characterise this phase, and it is less clear what coarse wares were also being produced, though many of the jar forms seem to persist.

The following period in the middle of the first millennium B.C., from the sixth to the fourth century, is one of the most problematic, for there are few sites which provide stratified sequences, associations with datable metalwork are rare, and radiocarbon dating has been applied less in Sussex than, for example, further west in Wessex. The most useful collections are from the classic sites of Park Brow (Smith 1927) and Findon Park (Fox and Wolseley 1928), for although they are old finds and the pottery is neither extensive nor securely stratified, they do both have datable objects in some sort of association. At Findon Park a La Tène I brooch was discovered, dating from 400-300 B.C., while at Park Brow a bent silver ring was found, which was an import from
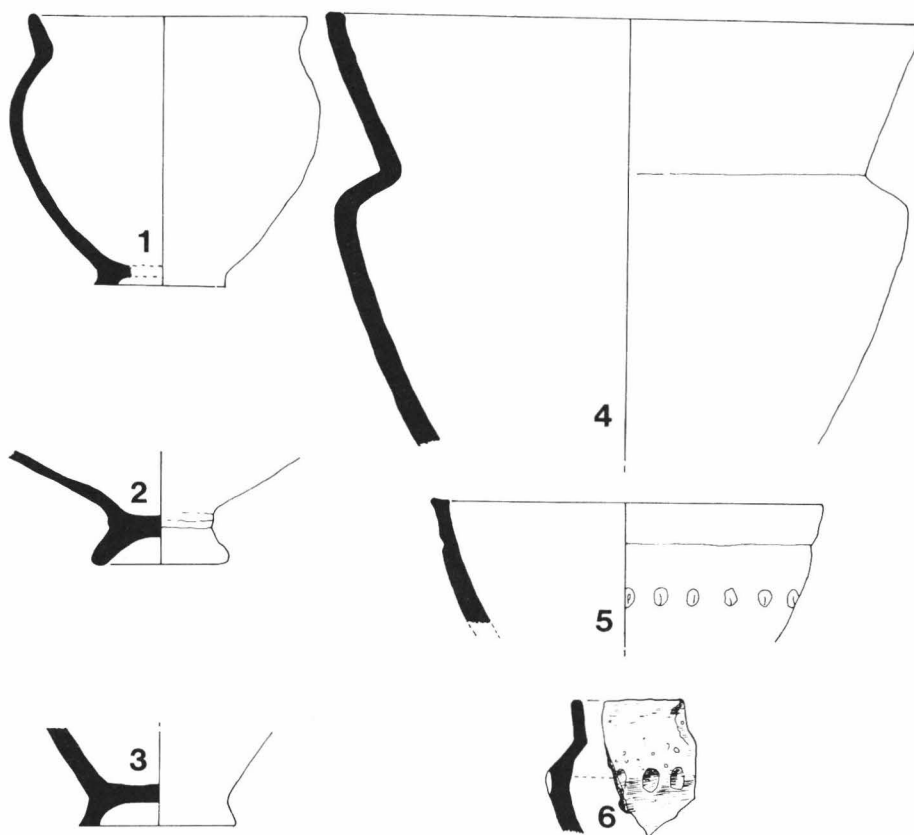
Fig. 17.   1 The Caburn (after Hawkes 1939); 2, 4 Park Brow (after Smith 1927); 3, 5 Findon Park (after Fox and Wolseley 1928); 6 Highdown (after Wilson 1940). ($\frac{1}{4}$).

Switzerland of the La Tène Ic period, or about 300 B.C. To these sites can now be added Bishopstone, for although occupation at this period was not intense, one pit has provided a radiocarbon date of 270 ± 80 b.c. (Bell 1977, 63, 291).

The angular bowls of the previous phase have disappeared, and the dominant fine ware forms are small bowls with S-shaped profiles (Fig. 17, 1) and a variety of bowl and jar forms with pedestal bases (Fig. 17, 2-3). The coarser wares have almost inevitably attracted much less attention, but there are large jar forms, some with tall flaring rims (Fig. 17, 4), and also smaller bowls (Fig. 17, 5-6). Decoration is not common, but finger-tip impressions are found. There is a wide range of fabrics, especially flint-gritted and sand-tempered, which may well prove to have significant regional variations.

In the next phase the pottery of southern England is marked by a much greater degree of uniformity than at any previous time. Sussex's affinities are now to the west in southern central England, and links across the Weald to the ceramics of Kent are almost non-existent. The characteristic form is now the saucepan pot, a straight-sided fine-ware bowl, frequently decorated in a series of regional styles (Cunliffe 1978, 45-8). Until recently this material was thought to begin in the first century B.C., but with the gradual lengthening of the Iron Age chronology it has been moved back, though with few certain indications of absolute chronology; radiocarbon dates, mainly from Wessex, such as those from Gussage All Saints, Dorset (Wainwright and Switsur 1976), are now beginning to support the suggestion that this pottery may span a period as long as three hundred years or more from the fourth to the first century.

In Sussex the saucepan pots belong to the group termed the 'Caburn-Cissbury style' in Cunliffe's terminology (1978, 45). The vessels (Fig. 18, 1-5) are mainly straight-sided with occasional more convex profiles, and frequently have somewhat squat proportions, bead-rims and splayed bases. Decoration is rather varied, employing predominantly simple curvilinear patterns with rarer geometric designs. On the western fringe of the county a few sites have produced saucepan vessels with decoration more akin to Cunliffe's 'St. Catharine's Hill-Worthy Down style' centred in Hampshire, which used a different range of motifs, in particular bands of diagonal lines and impressed dots (Cunliffe 1978, 46; Fig. 18, 6 here). As in other periods, it is the easily recognisable fine wares that have been given most attention, and few large assemblages are known from anywhere in Sussex, but by comparison with other areas there ought to be large plain jars with barrel-like profiles and wide mouths. Fabrics, which are frequently not as dense as those of earlier periods, appear to vary regionally, with flint-tempering commonest, but sand-tempered wares known in East Sussex.

This is a most significant phase in the development of Iron Age pottery. There were changes in the techniques of manufacture, including general use of burnishing and of linear tooling for decoration, and a new standardisation of shape and fabric quality. A larger proportion of the total pottery was decorated than ever before, and the application of burnishing all over the body and of complex ornamental designs, occasionally on the base as well as on the sides, suggests the greater social importance of pottery and its production. The broad homogeneity of form and the regional styles of decoration may mean that there was a new organisation of production, but more evidence is needed. Current research in Hampshire is showing that a number of different fabrics can be discerned in the broad fabric groups, and a thorough analysis of form, fabric and design is necessary before the organisation of production and distribution will be understood. Nevertheless, the impression remains that the scale of pottery production has changed, and it is interesting that this development is taking place at the same time as changes in other industries, such as salt and iron, and also when actual weights are first found, demonstrating the increasing importance of
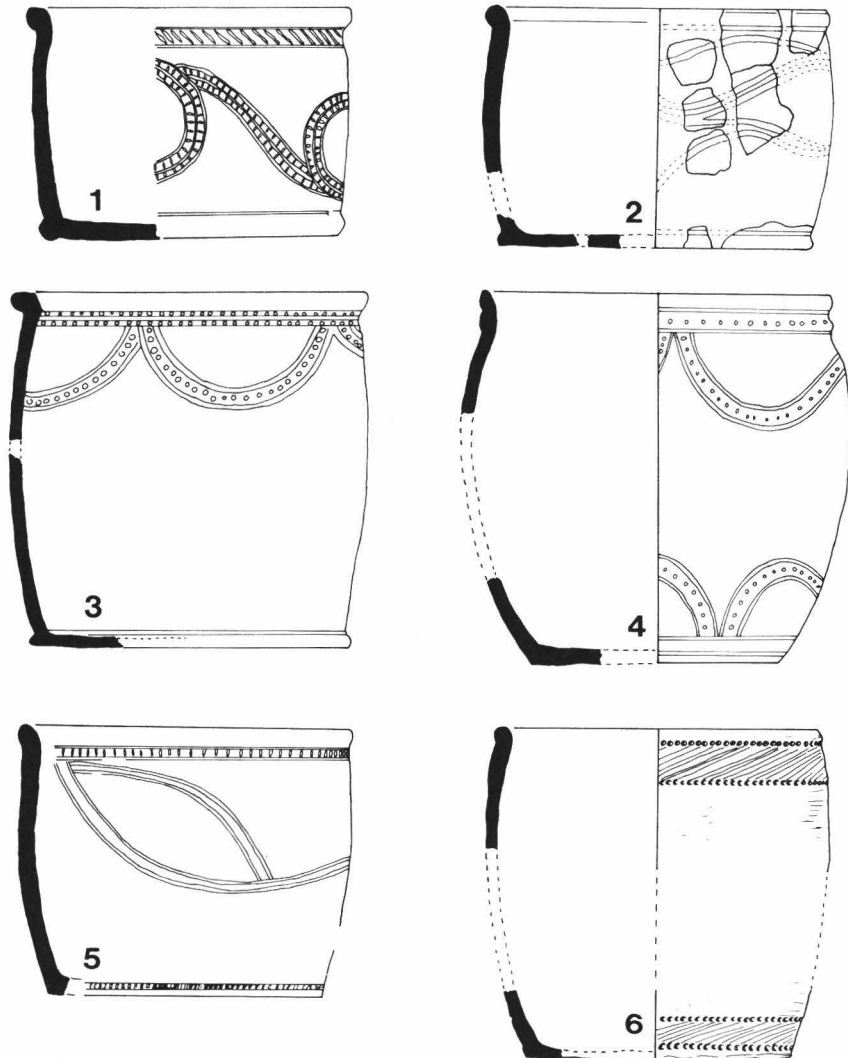
Fig. 18.   1 The Caburn (after Hawkes 1939); 2 Bishopstone (after Bell 1977); 3 The Trundle (after Wilson and Burstow 1948); 4 Park Brow (after Smith 1927); 5 Elm Grove, Brighton (after Cunliffe 1978); 6 Torberry (after Cunliffe 1976). ($\frac{1}{4}$).

exchange and the need to regulate it. Perhaps the pottery evidence also reflects this growing complexity of Iron Age society and economy.

One of the biggest gaps in our knowledge concerns the development of the pottery industry in the late Iron Age. In much of central and western Sussex there is a total dearth of deposits of the last century before the Roman conquest. Early Roman pottery can be well seen in Chichester and at Fishbourne, and indeed the recent excavation of kilns at Chichester (Down 1978, 204-10) shows the transformation of the industry with new forms, new fabrics and new techniques for throwing
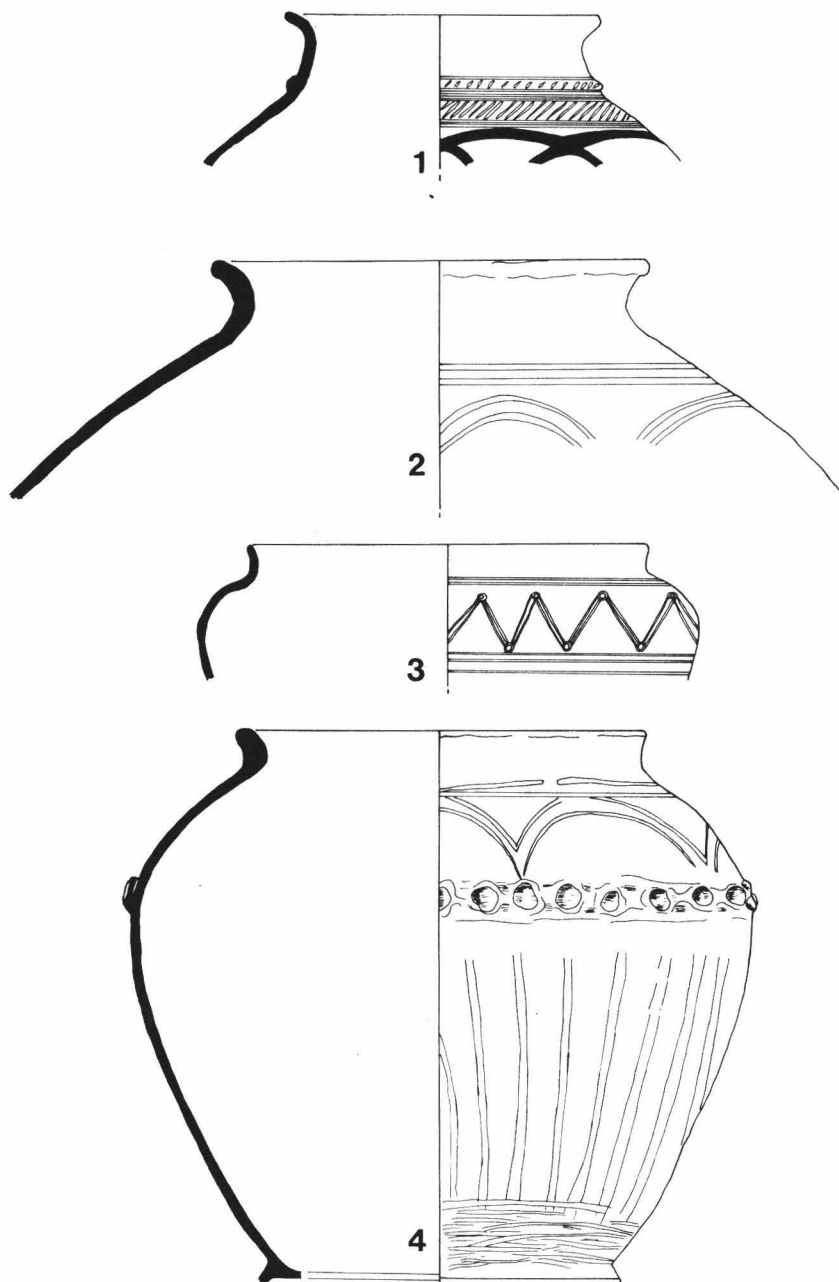
Fig. 19.   1 Horsted Keynes (after Hardy 1937); 2, 4 Bishopstone (after Bell 1977); 3 Charleston Brow (after Parsons and Curwen 1933). ($\frac{1}{4}$).

and firing. Even if these are atypical products for a brief military presence, the mass of mid-first-century A.D. pottery could hardly form a greater contrast to the saucepan phase. Unfortunately it is not yet possible to describe even when, let alone how, these new forms and new technology were introduced. Much light would no doubt be shed on ceramic advances in this period if an Iron Age predecessor to Roman Chichester were eventually recognised.

The picture is a little clearer in East Sussex, where a late Iron Age pottery industry has been recognised for some time. It is characterised by a distinctive fabric, with predominant grog tempering, by hand-made production, by a range of decoration using mainly applied cordons and incised standing arc designs, sometimes enhanced by painting, and a set of forms including jars and in particular large globular-bodied jars with narrow necks (Fig. 19). The decorated wares were first recognised by Ward Perkins (1938), who included them in his 'South-Eastern B' group, together with some allegedly similar vessels from Kent and Essex. This group was later renamed 'Eastern Atrebatic' by Cunliffe (1974a, 89). Later still, Cunliffe somewhat arbitrarily separated off some of the decorated Sussex vessels into a 'Late Caburn-Saltdean style', contrasted with the rather different decoration used in the 'Mucking-Crayford style' of Kent and Essex; the term 'Eastern Atrebatic' was, however, retained for the pottery of the late Iron Age in Sussex, Kent and Essex, and the 'Late Caburn-Saltdean style' was given a suggested start in the second century B.C., though without any firm evidence (Cunliffe 1978, 52-3, 97-100, Fig. 7:2 and A:32).

This pottery can now in fact be seen as the product of a well defined and surprisingly long lasting regional industry. The grog-tempered fabric, termed 'East Sussex ware' (C. M. Green, in Bell 1977, 154-6) lasts from the late Iron Age to the fourth century A.D.; the handmade technology, the vessel forms and the use of applied cordons all show similar longevity. The distribution of the products is also very restricted, examples being rare west of the Adur; they are rightly distinguished from those of Kent and Essex with which they had been combined in Ward Perkins' 'South-Eastern B' and Cunliffe's 'Eastern Atrebatic', for the decorated pedestal urns and bowls and interlocking arc designs and stamps of the Lower Thames region are very different from the globular jars and standing arcs of East Sussex (Champion 1976, 230-6).

The beginning of this industry is difficult to date; there are no stratigraphical sequences to show the relationship with saucepan wares, and there are very few useful associations. At West Blatchington (Norris and Burstow 1951-2, 221), these wares were found with Gallo-Belgic pottery and an imitation samian form 27, at Horsted Keynes (Hardy 1937) with Gallo-Belgic pottery and a real samian form 27, and at Bishopstone with two brooches, one a Nauheim-related type and the other possibly an iron Colchester brooch (Bell 1977, 131 and Fig. 63, nos. 29 and 30). Though the associations at both the former sites could scarcely be pre-Claudian, the Bishopstone brooches should belong to the first half of the first century A.D. The evidence thus suggests that this industry began shortly before the conquest, and there is nothing to support a date as early as the second century B.C. Perhaps this very conservative and restricted potting tradition reflects the isolation of East Sussex, and began in the late Iron Age as this area became remote from the industrial and urban developments taking place further west.

Author: T. C. Champion, University of Southampton.

APPROACHES TO THE STUDY OF ROMAN POTTERY

by C. J. Young

Most pottery is studied by most archæologists for the information it can shed on the society in which it was made and used, rather than for its intrinsic value as an art object. Any archaeologist will approach his material with one or more questions in mind, even if they are formulated subconsciously, and this approach will inevitably influence and direct the design of recording system used. To that extent any recording system will be subjective.

The most recent discussion of the uses of pottery for the archaeologist is that by Peacock (1977a) to which the reader is referred. The principal uses may be summarised as chronological—the dating of the site or feature by the pottery found therein; functional—the use of the site or feature as indicated by pottery; and economic—the use of the pottery by identification of its source as an indicator of the development and organisation of trading contacts. In itself this last use tells only of trade in ceramics, and pottery does not seem to have been among the more important traded commodities in the eyes of the ancient world. It is however the only major artefact to survive in sufficient quantities to be of use, which can also be identified to source, and its evidence can be interpreted to shed light on wider aspects of trade (Fulford 1978a).

The importance of pottery to the archaeologist has long been recognised. It was stated in general terms as long ago as 1846 by C. Roach Smith. He said that it was of the first importance

'to be able to classify and appropriate these various kinds of pottery; because, apart from the interest they afford as illustrations of an early art, they often serve to direct research, encourage the investigation of ancient remains, and contribute towards forming correct opinions upon objects less known which may be discovered in conjunction with them. A simple urn, or even a fragment of an urn, insignificant as in itself it may be, and even useless when dissociated, gains an importance when placed in juxtaposition with authenticated facts, and may supply a link in a chain of evidence. (Roach Smith 1846, 2).

As early as 1851, Llewellyn Jewitt had recognised most of the possibilities of pottery as a tool for the archaeologist. In 1850 he had excavated the Roman villa and kiln site at Headington Wick, near Oxford, and in his report he discussed both the Roman pottery industry of that area and also the products of the pottery itself. This report still merits consideration. He noted the large quantities of pottery found, particularly the mortaria, which are illustrated in a surprisingly modern style. He showed himself aware of the significance of both fabric and form:-

'The most remarkable feature is the immense assemblage of at least 200 [mortaria], varying in diameter from $7\frac{1}{2}$ inches to nearly 2 feet. Their form and the material of which they are composed differ considerably from any which are found in London . . . They are principally formed of a fine clear clay, extremely hard and close in texture . . . and are of a light buff colour . . .

'Comparison of specimens from various localities may assist us in appropriating the varieties to the potteries where they were manufactured . . . If a collection of the rims themselves, from all parts of the country, could be made, and arranged together, we should then be enabled to localise them at a glance'. (Jewitt 1851, 57-9).

There can be no doubt that he was fully aware of the importance of the pottery as an indicator of trading patterns, and his report was ended by a clarion call to excavators to study pottery properly:

> 'There is little doubt that, with proper attention on the part of excavators, many other facts tending to prove the existence of certain patterns and forms in particular manufactories, might be brought to light; and we might ultimately be able to arrive at a correct conclusion regarding the state of the fictile arts in our own country, and to fix definitely on the localities where many of these beautiful productions . . . have been produced' (1851, 59).

If his approach had been widely adopted there is little doubt that the present position of Romano-British pottery studies would have been much advanced. Regrettably in the remainder of the nineteenth century little attention was paid to pottery from excavations. Interest was only re-aroused by the work of Thomas May and J. P. Bushe-Fox in the early years of this century. Their interest in pottery was primarily chronological, as may be seen from the latter's comments in the first Richborough report:

> 'The specimens chosen for illustration are those which either can be dated with some certainty by their association with other objects, throw some light on the history of the site, or are in themselves interesting examples. Types already well known . . . have not been dealt with' (Bushe-Fox 1926, 88).

However he was aware of the importance of fabric and decoration as a determinant of origin, and used this type of evidence to demonstrate that the late red-slip ware from Richborough was not from the New Forest, but probably from the Upper Thames Valley. (Bushe-Fox 1926, 89-92).

Nevertheless subsequent work on pottery was primarily directed towards the dating of sites and the establishment of ceramic chronological frameworks, for example at Jewry Wall, Leicester (Kenyon 1948), and in many reports the pottery was not treated adequately in any terms at all. The chronological approach reaches its apogee in Marion Wilson's publication of the pottery from the post-war excavations at Verulamium, in which nearly 1300 pots are illustrated in a series of phased, stratified groups, to present very clearly the dating evidence for the site (Wilson 1972).

However, in recent years interest in the wider aspects of pottery studies has risen once again, and considerable attention is now being directed towards pottery as evidence for trade, manufacturing industry and site function, though chronological aspects of ceramic studies have not been forgotten (e.g. Fulford 1975a, Green 1978, Peacock 1977, Young 1977). All this work is based upon the characterisation of the pottery by fabric and form, and on careful analysis of the available evidence.

The results of this kind of work are important and exciting but it is still severely limited by the lack of evidence. Much has not been published at all. Much that has been published has been done inadequately. Frequently there has been little attempt to characterise fabrics and attribute them to source. Much has been omitted from published reports without any indication that it exists at all, and there have been few attempts to quantify pottery.

The necessity for adequate fabric and form identification, for quantification, and for appropriate methods of publication, is obvious if the present trends of ceramic studies are to be pursued fruitfully. Identification of fabric is needed to indicate source and often date also, that of form is needed for dating, site function and evidence of industrial specialisation, and quantification is needed for objective assessment of results.

Two examples will indicate this clearly. Oxfordshire wares have been found at a number of places on the continent and at first sight a distribution map might give an impressive indication of littoral trade. If, however, occurrences are quantified it is clear that only along the Straits of Dover

is actual trade a possibility. Elsewhere single vessels only have been found. (Fulford 1977, 77-82).

In Sussex it is already clear that the pattern of supply of late Roman fine wares was changing and complex throughout the fourth century. At least four sources of supply existed—the New Forest, Oxfordshire, Pevensey and at least one small-scale producer in the Chichester area. Quantification of the pottery has demonstrated that in the west of the county New Forest wares were largely supplanted by Oxfordshire products (Young 1979), while in the east the New Forest was always less important than Oxfordshire, which itself was increasingly supplanted in the later fourth century by Pevensey products (Green 1977, 177-8). Further work is needed to confirm and fill out this picture.

If pottery is to be of full value to the archaeologist and to answer the questions now being posed, it must be published and processed in a manner designed to answer those questions. Such adequate publications must be based on a full quantified catalogue of the pottery, classified according to fabric and form and tied securely to the contexts in which it is found. The increasing expense of publication and the vast volume of pottery from excavations may mean that full publication of such catalogues is not normally possible. It is essential, however, that the published report of any site should summarise fully the information of the full catalogue and should act as a signpost to the main archive, so that the interested student can know that he should pursue matters further. It is also essential that the main catalogue should be readily available on request (DOE 1975). It is desirable that similar methods of quantification and classification should be widely used so that like information can be compared with like, in studies of pottery and its wider implications.

Regrettably such reports are still most uncommon and many published reports are quite inadequate, and appear to have little or no supporting archive. It is not the purpose of this paper to present a detailed blueprint of how this situation might be remedied. Increasing concern over the problems and needs discussed above has been felt both among those working on Roman pottery and within the Department of the Environment. This has resulted in the establishment of the Steering Committee on Roman Pottery which has produced guidelines on the processing and publication of Roman pottery (Young 1980).

Finally it must be said that no set of guidelines can be a substitute for thought and hard work. Pottery can and should produce much information on wider aspects of archaeology, but this will only be forthcoming as the result of considerable effort and experience, which can only be gained by working with pottery. Neither are the guidelines a final solution to pottery studies—they are designed to meet the academic needs of the present generation. In the future different problems may need study, and different approaches will then be needed. It is therefore essential not only that the pottery should be properly studied in terms of today's questions, but that all of it should be kept so that it can be used to answer those asked by our successors.

Author: C. J. Young, Inspectorate of Ancient Monuments, Fortress House, 23 Savile Row, London W1X 2HE.

ASPECTS OF ROMANO-BRITISH POTTERY IN WEST SUSSEX

by Martin Millett

In contrast to other periods Romano-British pottery is well known: it has a well established, although by no means perfect chronology, and most of the more common fabrics have been identified. This makes some Roman pottery specialists complacent about the development of their subject as their aim is the reconstruction of history and thus chronology their main interest. As one who sees archaeology as broader than this, such a view is inadequate. In this review my aim is to point to the potential in the material for answering more wide ranging questions which may be of interest to those working in other periods and areas.

It is a commonplace in archaeology that any two groups of pottery, either on the level of individual layers, or total site assemblages, will be different in various ways, and that the definition and explanation of these differences is the proper subject for archaeological research. The usual problem is that variation is so vast, and the pottery and its chronology so crudely known that explanation remains no more than a pious aim. The advantage the Romanist has over other periods, at least until the post-medieval, is that the variability is more controlled as the pottery was largely mass-produced by separate and distinct industries which distributed it over wide areas. This, together with its occurrence in datable contexts makes it possible to look at short time spans and examine not only aggregate patterns of variability, but changes in those patterns through time. In the study of Romano-British pottery, chronology should not be our main *aim*: it should be our main *tool,* a necessary precondition for the examination of variability and the reconstruction of the mechanisms which led to it.

We must not assume that the solution of these problems is easy, indeed the complexity in sorting-out the mesh of interrelationships may prove too difficult for us. Nevertheless without a conceptual model within which to work we will certainly be lost. The framework that I offer is illustrated in Fig. 20. Three basic groups of variable can be isolated:

A.   TIME. Including both simple chronological changes in trade, fabric and form as a result of fashion and historical events and, the previous history of the site involved represented for us by residuality which increases with time and to use the geologists' phrase is 'diachronic' (i.e. it cuts across the usual time dimension).

B.   INHERENT FACTORS within one period. These on the left hand-side of our figure are, I trust, self-explanatory, and vary in effect with the social and economic complexity of the society as well as with time.

C.   ARCHAEOLOGICAL FACTORS. These effect not only the potential of our evidence, but also the degree to which it is realised or lost.

What, you may ask, is the relevance of this to our Sussex material? The answer lies in the problem we experienced in trying to relate the material from one particular site, Elsted (Redknap and Millett 1980) to that from other sites in the area, so that background factors common to all the sites in the area could be interpreted on that level, leaving the information relevant to Elsted alone
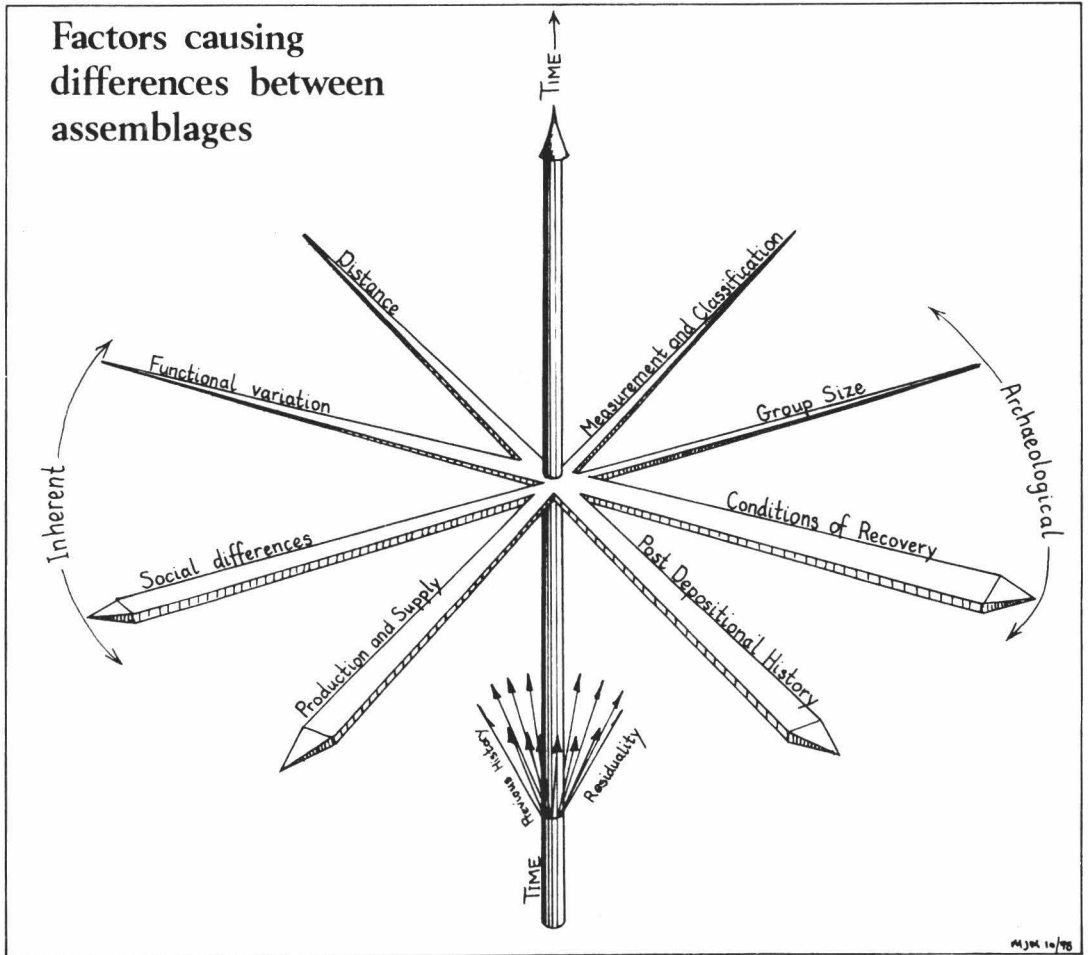
Fig. 20.   A conceptual model explaining the factors which cause differences between pottery assemblages.

for interpretation in that context. This approach was frustrated, in terms of the excavation report, by the fact that most of the other sites in West Sussex (of which there are many that have been partially excavated) have not been published to a standard which permits comparison. The result was that it proved impossible to interpret the Elsted pottery against its regional background in the report. It has however been possible since then to collect information which relates to various aspects of the pottery of the area so that hypotheses about the area may now be put forward tentatively on the understanding that they are to represent 'Aunt Sallys': targets to be smashed by the collection of new data and the asking of relevant questions of it.

The coarse pottery industries in West Sussex are poorly known although the general pattern of supply has been summarised on several sites, especially Fishbourne (Cunliffe 1971, II 250-5). This pattern is much as we have come to expect from Lowland British sites with a variety of imports and localised manufacturers flourishing just after the conquest but gradually being superseded by larger

local industries around the *Civitas* Capitals and other centres of population. These are themselves slowly overtaken in importance by the regional industries in the later third and fourth centuries. In the case of West Sussex the main emergent industry of the second and third centuries is at Rowlands Castle, although other kilns at Pulborough (Evans 1974, 105-6), and Chichester (Down 1978, 41ff.) appear earlier and are little known in terms of distribution. In the later period the regional giants, the New Forest and Farnham (Alice Holt) industries become predominant although the rural, decentralised industries (Hodder 1974) producing such things as the 'East Hampshire Grog Tempered ware' (Fulford 1975, Fabric A; Cunliffe 1970) seem to maintain a significant market share.

The only detailed study of a particular distribution is that of Rowlands Castle ware by Dr. Hodder (1974b). This shows that the supply of pottery involved two major mechanisms (Fig. 21):

i   The kilns seem to have been supplying the local needs, surrounding rural sites, by direct contact, either through visits to the manufacturing centre, or perhaps pedlars.

ii   The *Civitas* Capital at Chichester was acting as a marketing centre for consumers further afield. Those consumers on the easiest lines of communication to Chichester (in this case on the roads) were more likely to receive the pottery than those away from them.

These conclusions seem sound on the basis of the evidence he presented, although the apparent 'fit' of the total distribution to the predicted service area of Chichester on the basis of Reilly's breaking point (Hodder and Orton 1976, 192) seems difficult to accept as his calculation was on the basis of the *walled* area of only the *cantonal capitals*. This ignores both the small towns (which on other evidence can be presumed to have served as market centres) and the fact that the walled area of a centre need have no necessary relationship to the economic power of a centre. The alternative service area calculated using the same formula with the inclusion of all the towns, including the 'small towns', and using an estimate of their total occupied area on the basis of our current knowledge. This service area (Fig. 21) shows no clear relationship between the predicted service area of Chichester and the distribution of Rowlands Castle ware. This presents us with a problem of whether we should accept the criterion of walled area as being related to economic strength because the results correlate most closely with that service area (Hodder 1974b, Fig. 6). The inclusion of the 'small towns' makes little difference to the goodness of fit except perhaps towards Pulborough. The most reasonable suggestion would seem to be that the distribution which results from direct access to the kilns is that cause of the poor fit, and this of course should not be affected by the service area of Chichester.

The main question which arises from Dr. Hodder's research is whether the conclusions drawn are applicable to other artifacts and especially different types of pottery. His first conclusion is at present beyond testing as there has been no data collected which is directly relevant, although it appears from the published distribution that the 'East Hampshire Grog Tempered ware' was distributed directly from the kilns over much of its market area (Fulford 1975, Fig. 156) since it seems not to be centred on any known market.

It is commonly presumed that Romano-British towns acted as market centres, and this has been demonstrated in several papers by Dr. Hodder, including that on Rowlands Castle ware. There is however little evidence about how this role may have developed through time, and how it was affected by other of the factors illustrated in Fig. 20. In order to examine the problem of centralised market distribution and how it changed through time it seems valuable to look at the pattern of distribution of pottery with a non-local origin. The most obvious subject for such a study are the fine wares, initially samian ware, and in the later period New Forest and Oxfordshire ware.

Rowlands Castle Ware
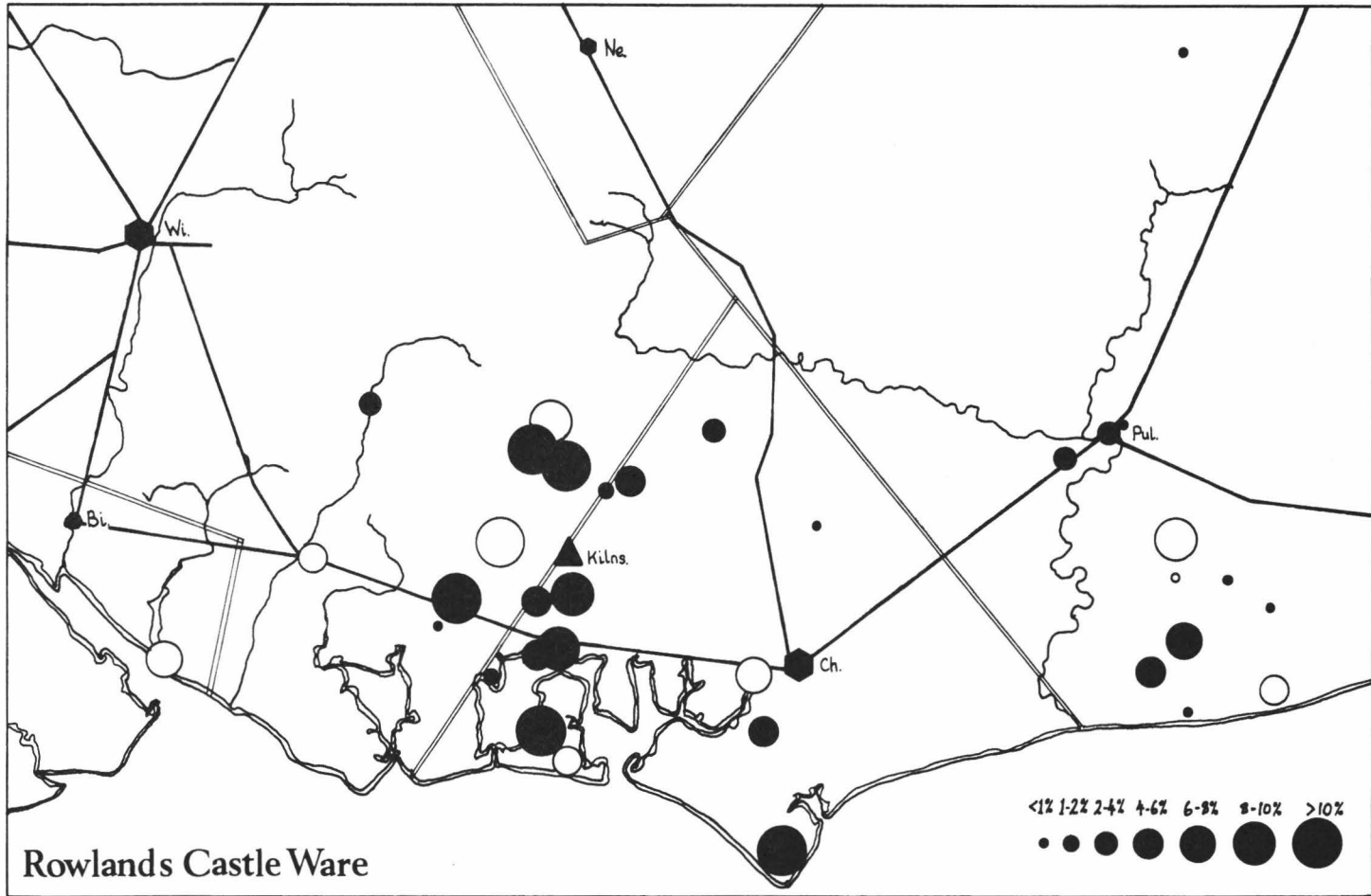
Fig. 21. The distribution of Rowlands Castle ware in relation to weighed theissen polygons drawn using all adjacent towns. Open circles represent assemblages of lens than thirty sherds. (Source: Hodder 1974).

The particular advantages are that they are:

(a)   Common enough to show a wide distribution on a variety of different types of site.
(b)   Generally reported upon as they are useful in dating.
(c)   Specific enough for their origin and dating to be reliable.

The information on these wares in Sussex was therefore collected using the published corpora (Fulford 1975a; Young 1977) and samian lists kindly made available by excavators (for a list see acknowledgements). As it proved impossible to find out what percentage of the assemblage was represented by these wares in the majority of cases it is only the wares themselves that are considered here. This information is relatively crude with the samian divided by origin into 'Arretine' (including Provincial Arretine), South Gaulish, Central Gaulish and East Gaulish wares. These may be taken to have a broad chronological significance with ranges of pre *c*. A.D. 45, *c*. A.D. 43-100, *c*. A.D. 100-200 and *c*. A.D. 150-260 respectively on British sites, with only a tiny proportion of the sherds from these origins falling outside these ranges. The percentages of these fabrics was calculated for the eleven sites with available data (Table 1) and the results represented both graphically (Fig. 22) and on maps (Fig. 23). As the Central and East Gaulish figures are depressed by the massive quantities of early pottery for some sites (e.g. Fishbourne) these figures were also calculated for all the sites on the assumption that Arretine and South Gaulish percentages were as the mean.
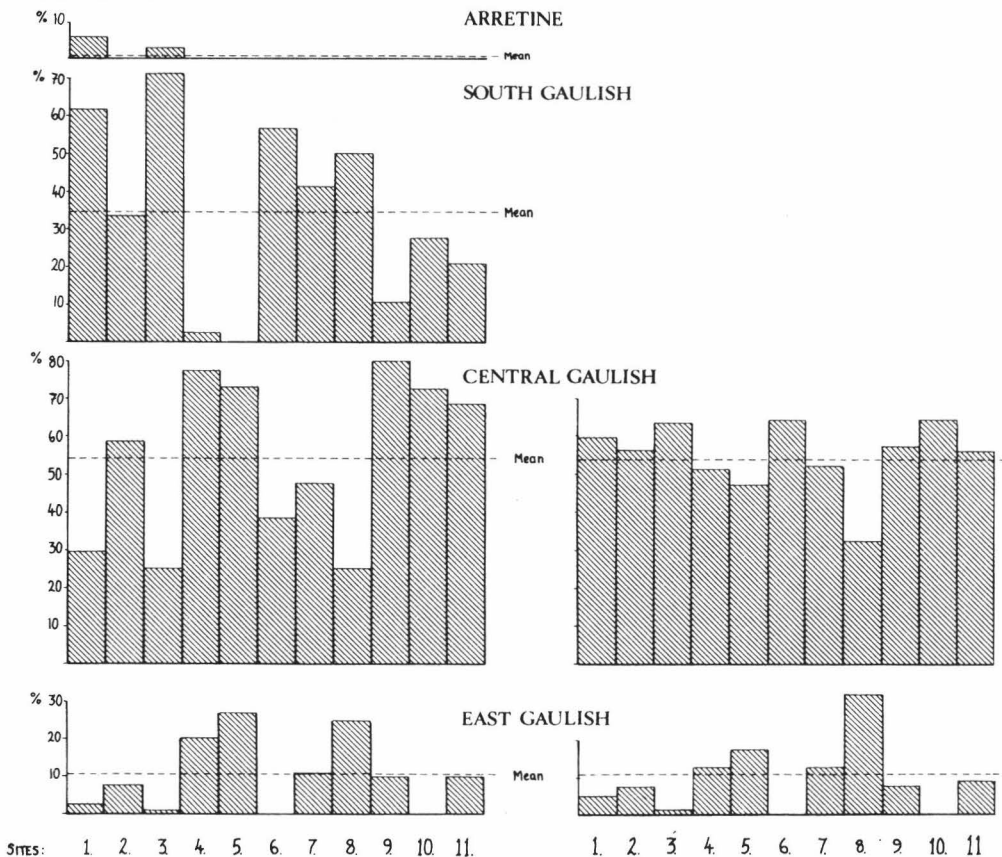
Fig. 22   Graph showing the percentages of the different samian fabrics. For identification of sites, and the figures see Table 1. For the explanation of the adjusted figures see text above.
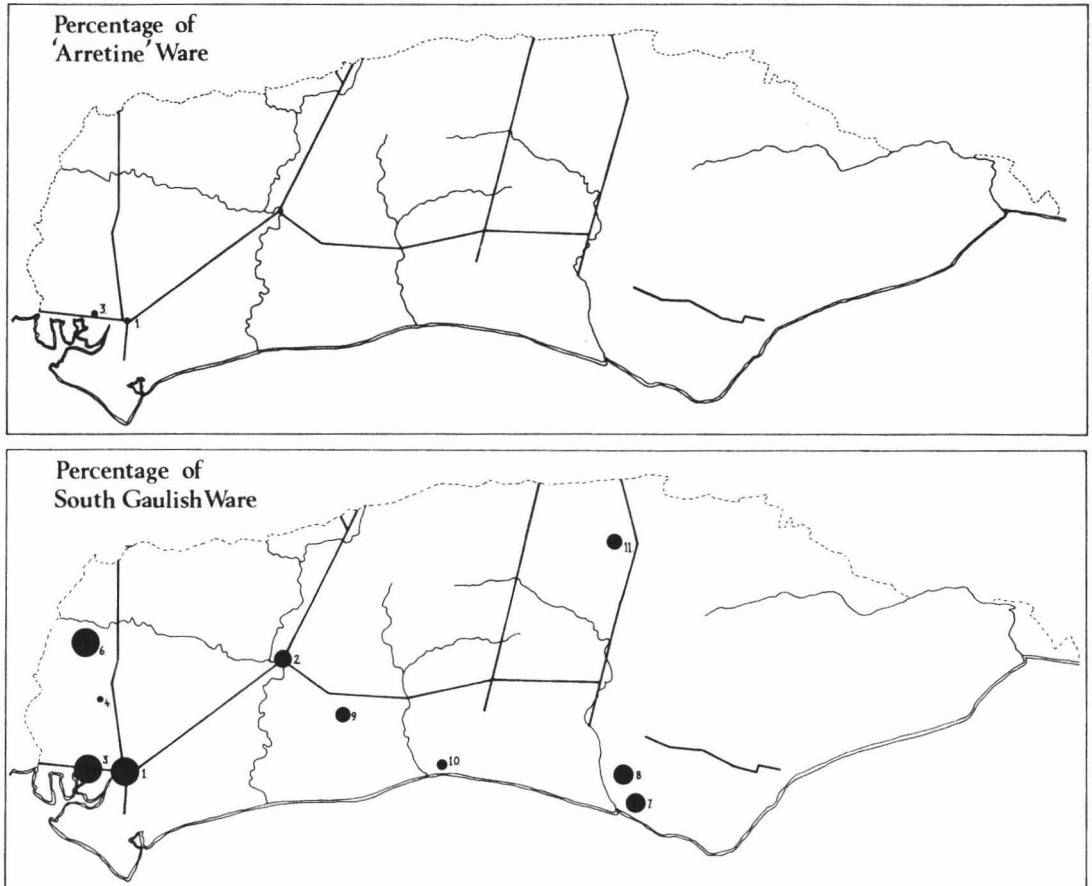
Fig. 23.   A-B Maps showing the distribution of the samian fabrics by percentage. For identification of sites and figures see Table 1.

The results, when plotted on the maps, show how the trade in samian ware expanded after the conquest and then contracted during the third century. They show a strong background pattern to which most sites can be expected to conform. The variations from the mean seem in some cases to have significance in terms of supply and site history, although in the case of Ranscombe Hill (site 8) for instance the sample size is obviously responsible. In the earliest period, immediately after the invasion, Arretine was only supplied to Fishbourne and Chichester. In spite of the claim that this material is pre-Roman (Goodburn 1972, 368-9; Rodwell 1976, 306-7), it seems more satisfactory to see it as a result of early military activity as there is an absence of other pre-conquest material in quantity. The coastal inlet here remains of crucial importance for trade throughout the period so despite the apparent abandonment of Fishbourne Palace, pottery continues to be supplied to the end of Roman rule. In the South Gaulish phase most sites, with the exception of the Chilgrove villas which presumably develop later, have ample supplies of samian, although in only three cases are there more than two pre-Flavian types represented (Fig. 24b). Two of these are Fishbourne and Chichester which we have already seen to have military origins. Garden Hill is the third, and this
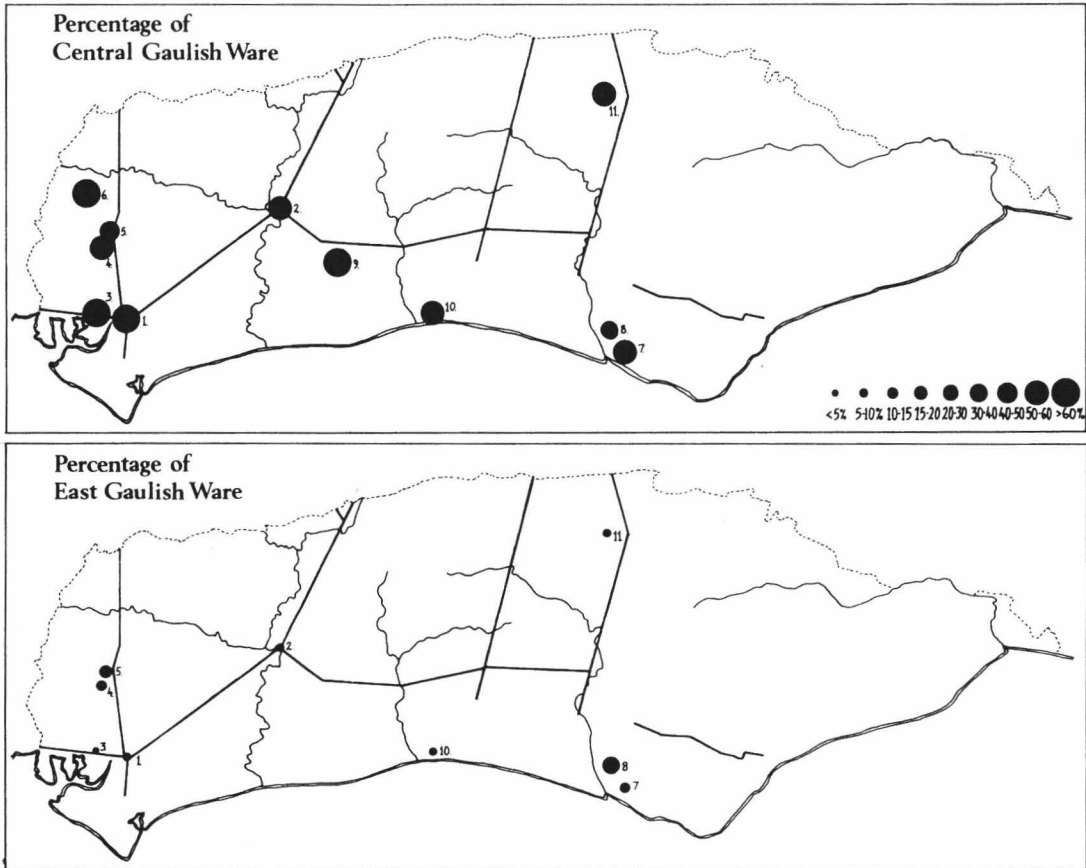
Fig. 23.   C-D Maps showing the distribution of the samian fabrics by percentage with adjusted percentage for Central and East Gaulish fabrics. For identification of sites and figures see Table 1.

seems to have been connected with iron working (Money 1977) which in the Weald may have been under official control (Frere 1974, 333), and it is perhaps for this reason that we find pre-Flavian material. In the period of Central Gaulish preeminence there is an even pattern with plentiful supplies reaching all sites. East Gaulish supplies are more restricted and did not reach several rural sites although the towns of Chichester and Pulborough (considered a 'small town' by this author not a Villa as Todd 1978, has suggested) as well as Fishbourne are also well below the mean suggesting a relative decline in comparison with the Central Gaulish period and earlier. The Chilgrove Villas are both above the mean suggesting growth in this period. There are clearly however problems with using these figures in this way as each period is effected by the other periods. Another complementary approach to this is to examine the variation between the different sites at the same time. Since it has been demonstrated in other cases with fine wares (Hodder 1974), one would not expect the quantity of samian ware to vary much between sites over such a small area. However, if towns are acting as centres for redistribution we would expect a wider variety of pottery (more types) to occur in them. Secondly if there are sites of higher status and wealth such as villas, we

Fig. 24.   A-B Maps showing the distribution of the samian fabrics by the number of types represented on each site. For figures and site identification see Table 2.

would expect them to have a greater variability in their pottery (i.e. more types) than the other rural sites.

With this in mind the number of forms represented on the eleven sites examined has been counted for each centre supplying it. This has also been done for Oxfordshire and New Forest wares, using the published corpora (Young 1977; Fulford 1975) with the addition of more recent information. There are obvious drawbacks to this approach as excavation, and samples, vary in size and one would expect that larger excavations would mean a larger variety of types. The figures (Table 2) show that this is partially true although there is other variation due to factors such as those shown in Fig. 20. The maps (Fig. 24 and 25) show this to some extent. The towns of Chichester and Pulborough have a wider variety of types throughout than the other, rural sites. In the case of the South Gaulish ware this may be the result of a buildup in sites with a longer period of supply. The sites with more than two pre-Flavian types show that this is not necessarily so as Garden Hill has a pre-Flavian presence but only a small variety of types which is consistent with its rural situation. The other uncertainty is that of the relative importance in the variety of material
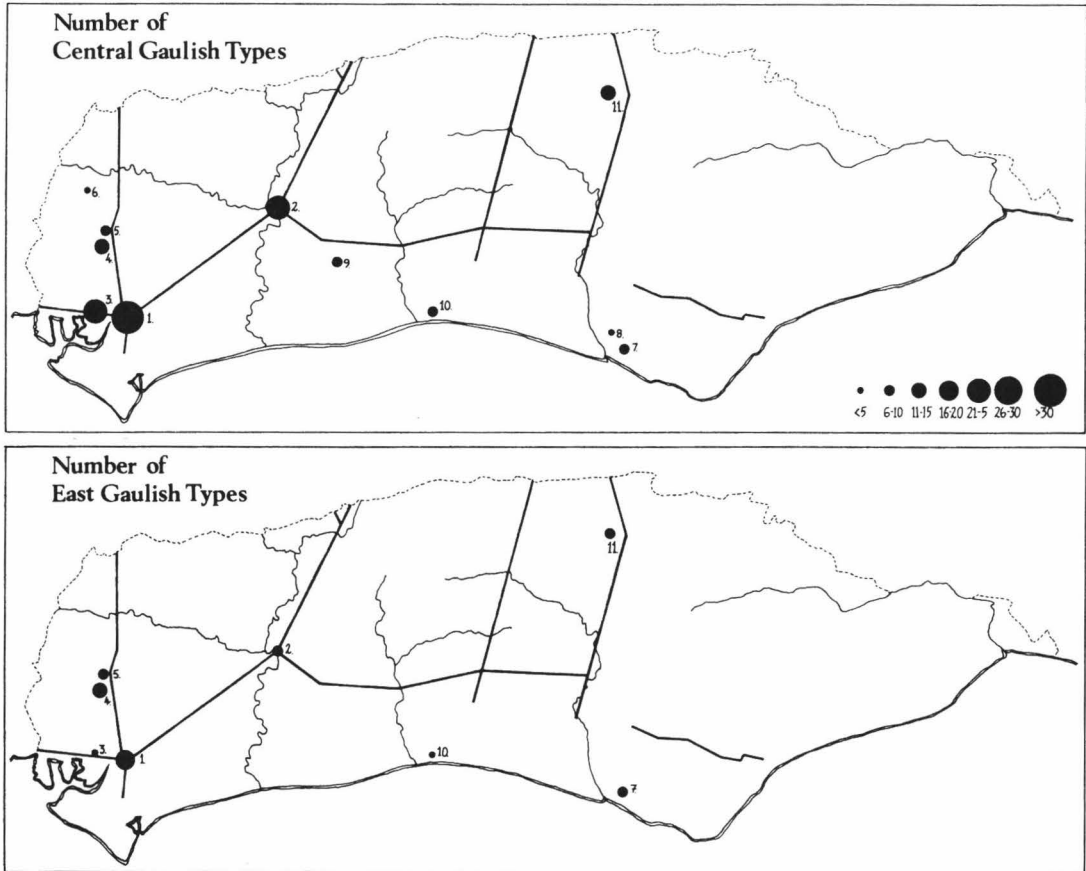
Fig. 24.   C-D Maps showing the distribution of the samian fabrics by the number of types represented on each site. For figures and site identification see Table 2.

present of the coastal location of Chichester and Fishbourne and their roles as high status centres, and Chichester's as a centre for redistribution. Even bearing these problems in mind the maps (Figs. 24 and 25) seem to indicate that the towns are redistributive centres in the periods of Central and South Gaulish supply, and during the period of New Forest and Oxfordshire supply. These latter also indicate, at Pevensey, the importance of the military factor in increasing the number of types supplied. The latest types rarely appear away from the towns or roads on the rural sites, perhaps suggesting that a declining industry (Fulford 1979) is contracting and only the powerful sites (the towns, and those with market pull, such as the military, or those with access to the roads) continue to obtain supplies.

A final aspect of the material which may reflect the factors suggested in Fig. 20 is the proportion of decorated material in the samian assemblages. The percentages for the various centres and different sites are given in Table 3. It is immediately clear from these figures that their 'normals' are different for the different suppliers although there is also considerable variation between different types of site. The only site which remains consistently well above the mean is
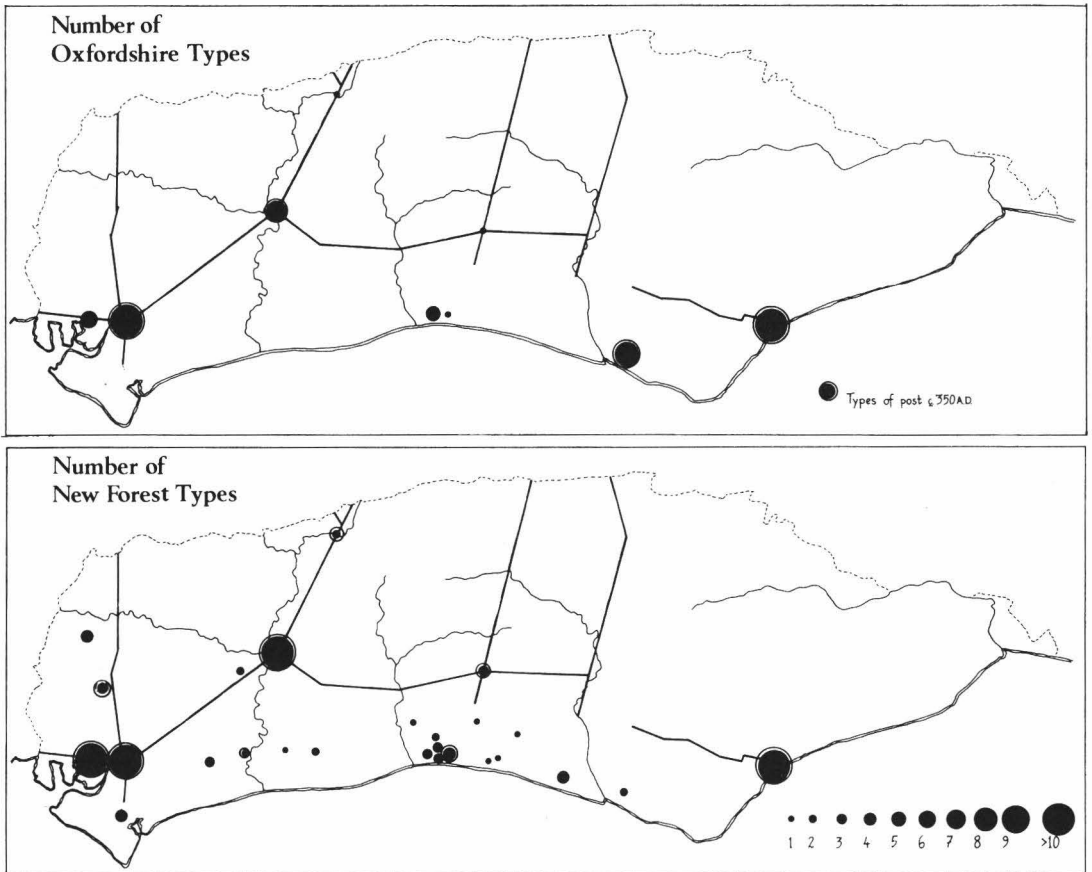
Fig. 25. A-B Maps showing the distribution of Oxfordshire and new Forest Fine wares by the number of types represented on each site. (Sources: Young 1977 and Fulford 1975b).

Pulborough (except that Arretine is absent), and the only one consistently below the mean is Garden Hill, surprising when one considers its privileged position as far as the other figures are concerned. The patterns of the other sites vary with time. Within this variation there are several other features of interest. First there is an absence of decorated East Gaulish wares on all sites but for the two towns of Pulborough and Chichester. With their large biases towards South Gaulish ware Fishbourne and Chichester are both below the mean for decorated material in this period. This may be the result of the large pre-Flavian element in their assemblages, when decorated wares are less common, depressing the overall figures in comparison with sites like, for instance, Elsted and Pulborough which have only Flavian supplies. The idea of a simple relationship between site status and the proportion of decorated materials is thus not upheld by these figures which seem to suggest little differentiation between rural sites and villas. The only differentiation seems to be between the towns, which attract more decorated material than the rural sites. Whether this is a function of social status or their redistributive role is not clear.

The information presented shows the complexity of interpretation in these patterns. What is undoubtedly needed is more control of the variables. The archaeological variability is the easiest to control. What we therefore need is to study and collect our material in a more controlled way. This

TABLE 1: Fabric Divisions

Site	Arretine	South Gaulish	Central Gaulish	East Gaulish
1. Chichester (2287)	143 (6.3%)	1409 (61.6%)	678 (29.6%) (adj. 59.4%)	57 (2.5%) (adj. 5.1%)
2. Pulborough (243)	—	81 (33.3%)	143 (58.8%) (adj. 56.8%)	19 (7.8%) (adj. 7.7%)
3. Fishbourne (1185)	32 (2.7%)	847 (71.5%)	299 (25.2%) (adj. 63.3%)	7 (0.6%) (adj. 1.2%)
4. Chilgrove 1 (175)	—	4 (2.3%)	136 (77.7%) (adj. 51.7%)	35 (20%) (adj. 12.9%)
5. Chilgrove 2 (52)	—	—	38 (73%) (adj. 47.1%)	14 (27%) (adj. 17.4%)
6. Elsted (70)	—	43 (61.4%)	27 (38.6%) (adj. 64.6%)	—
7. Bishopstone (92)	—	38 (41.3%)	44 (47.8%) (adj. 52.3%)	10 (10.9%) (adj. 12.3%)
8. Ranscombe Hill (12)	—	6 (50%)	3 (25%) (adj. 32.3%)	3 (25%) (adj. 32.3%)
9. Chanctonbury Ring (29)	—	8 (27.6%)	21 (72.4%) (adj. 64.6%)	—
10. Slonk Hill (69)	—	6 (10.2%)	47 (79.7%) (adj. 57.5%)	6 (10.2%) (adj. 7.1%)
11. Garden Hill (115)	—	24 (20.9%)	79 (68.7%) (adj. 56.2%)	12 (10.4%) (adj. 8.4%)
Mean	0.8%	34.6%	54.2%	10.4%

Notes:
Numbers in margin refer to maps and figure 22; sample size given below site name; adj. = adjusted percentage assuming that Arretine and South Gaulish figures are on mean.

information needs to be made available for other regions in a similar way. West Sussex provides a valuable area where a comparatively small project, on the lines of those already run by the Sussex Archaeological Field Unit, could provide invaluable information. The potential in West Sussex is exceptional as it has a wide range of types of site of military and non-military origin and a history of continuous occupation, without interruption, from A.D. 43 to the fifth century. I would therefore suggest that a selective field survey and excavation programme could be tied-in with that already underway under Alec Down's direction at the Chilgrove villas and Chichester. This project should examine total assemblages variability through time over a limited area and could be of extreme importance for our understanding of both the County and the subject of pottery itself.

ACKNOWLEDGEMENTS

Author: Martin Millett, Merton College, Oxford.

TABLE 2: Numbers of types represented

Site		Arretine	South Gaulish	Central Gaulish	East Gaulish
1.	Chichester	15 (9.5)	33 (42.7)	31 (21.9)	16 (3.6)
2.	Pulborough	—	10 (8.1)	20 (7.2)	6 (3.2)
3.	Fishbourne	8 (4)	22 (38.5)	21 (14.2)	3 (2.3)
4.	Chilgrove 1	—	4 (1.0)	13 (10.5)	10 (3.5)
5.	Chilgrove 2	—	—	6 (6.3)	6 (2.3)
6.	Elsted	—	5 (8.6)	2 (13.5)	—
7.	Bishopstone	—	10 (3.8)	9 (4.9)	5 (2.0)
8.	Ranscombe Hill	—	3 (2.0)	3 (1.0)	—
9.	Chanctonbury Ring	—	4 (2.0)	8 (2.6)	—
10.	Slonk Hill	—	5 (1.2)	9 (5.2)	2 (3.0)
11.	Garden Hill	—	8 (3.0)	11 (7.2)	6 (2.0)

Notes:
Numbers in parentheses are the average number of examples per type, but as the figures given in Table 1 represent sherd numbers, including unidentifiable types, the no. of types, no. of examples per type need not equal figures in table 1.

TABLE 3: Percentage of Decorated ware in Fabric Groups

Site		Arretine	South Gaulish	Central Gaulish	East Gaulish
1.	Chichester	2%	17%	17%	25%
2.	Pulborough	—	38%	23%	41%+
3.	Fishbourne	3%	16%	18%	0%
4.	Chilgrove 1	—	25%	13%	6%
5.	Chilgrove 2	—	—	11%	0%
6.	Elsted	—	43%	0%	—
7.	Bishopstone	—	7%	14%	0%
8.	Ranscombe Hill	—	17%	33%	0%
9.	Chanctonbury Ring	—	13%	19%	—
10.	Slonk Hill	—	33%	34%	0%
11.	Garden Hill	—	21%	14%	0%
	Mean:	2.5%	23%	17.8%	8%

Notes:
Pulborough East Gaulish figure includes the products of the Aldgate-Pulborough Potter.

HANDMADE POTTERY AND SOCIETY IN LATE IRON AGE AND ROMAN EAST SUSSEX

by Chris Green

INTRODUCTION

Excavators on Romano-British sites in East Sussex are unlikely to fail to find quantities of handmade black or dark brown pottery with a distinctly 'soapy' feel, much of which will appear quite uninformative. The purpose of this paper is firstly to describe typical specimens of this material (largely by illustration), with a brief account of vessels in similar fabrics which occur from pre-conquest times until the late first century A.D., and secondly to speculate on its implications for our knowledge of the society that produced it. Wheelthrown pottery is not described in detail, however, for no definite kilns have been excavated in the area. The interest of this region's ceramics lies not in its typically 'Roman' pottery, but in the fact that until *c.* A.D. 300, at least, over half of all the vessels used were produced by the techniques of the late Iron Age, a proportion probably unparalleled elsewhere in south east England.

I. POTTERY OF THE LATE IRON AGE, FIRST CENTURY B.C. TO *c.* A.D. 70

(For reasons which will become apparent, this section 'ignores' the invasion of A.D. 43. A very limited selection of pottery, all in the fabric described below, is illustrated in Figs. 27 and 28; for further examples see Bishopstone (Hamilton 1977), Charleston Brow (Parsons and Curwen 1933), Glynde (Wilson 1955), Crowhurst Park (Piggott 1938), Horsted Keynes (Hardy et al. 1937), Castle Hill, Newhaven (Hawkes 1939, Bell 1974), and Kingston Buci (E. Curwen 1933).)

Typology and date

East Sussex vessels of this period have received some attention, perhaps since many of them are decorated. They failed to conform to the 'Belgic C' of Hawkes' ABC scheme and were subsequently grouped with a scarcely coherent selection of pots from Essex and Kent as 'South Eastern B' (Ward Perkins 1938), a classification substantially retained in Cunliffe's 'Eastern Atrebatic' style (Cunliffe 1974a, 89-92, 344). Wilson and Burstow's (1948) analysis is much better, as it is more closely related to the material and ignores the non-Sussex finds, but such schemes have aimed largely at the definition of cultural groupings, at best a risky undertaking. It is as well to point out the general dangers, and the shortcomings in this particular case.

Firstly, pottery moves, either in trade or by 'informal' channels. Thus the eyebrow-decorated vessel reputedly found in Fetter Lane, London (Fig. 27.3) was almost certainly *made* in Sussex and is not therefore an indication of a cultural grouping spreading to the London area. (In this case even the Fetter Lane provenance seems a little doubtful). A study of the fabric may resolve such difficulties, and elsewhere has exhibited a well-established trade in pottery in late Iron Age times (Peacock 1969). Secondly, it is rarely clear that we are dealing with vessels of the same date. Most examples selected for cultural-typology purposes are museum specimens without recorded stratigraphic context, and East Sussex can in any case offer *only two* fairly well associated groups
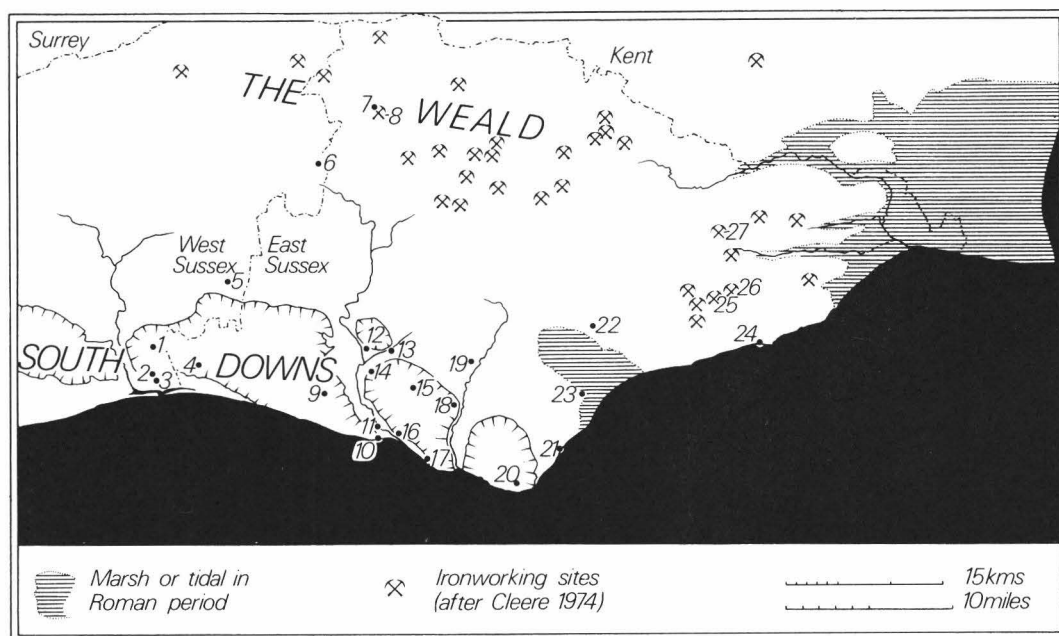
Fig. 26.   East Sussex sites mentioned in the text: 1 Thundersbarrow Hill; 2 Slonk Hill; 3 Kingston Buci; 4 West Blatchington; 5 Hassocks; 6 Horsted Keynes; 7 Garden Hill; 8 Pippingford; 9 Highdole, Telscombe; 10 Castle Hill, Newhaven; 11 Newhaven (villa); 12 Ranscombe Hill; 13 Glynde; 14 Asham; 15 Charleston Brow; 16 Bishopstone; 17 Seaford; 18 Alfriston; 19 Arlington; 20 Bullock Down; 21 Eastbourne; 22 Herstmonceux Castle; 23 Pevensey; 24 Hastings; 25 Crowhurst Park; 26 Beauport Park; 27 Sedlescombe.

(see below). Thirdly, most of these museum specimens are cremation urns, selected at the expense of more fragmentary vessels from occupation sites. Figs. 27 and 28 are an attempt to remedy this by illustrating mainly non-burial material, while omitting much-published vessels like the Horsted Keynes group. Fourthly, selection, while inevitable, may be carried to extremes, as in Ward Perkins' compilation (1938), which includes a pagan Saxon urn (from Plaxtol, Kent) and pottery from Kent and Essex whose curvilinear decoration bears little resemblance to the East Sussex material. Finally, and generally, we do not know that ceramic grouping equals cultural (ethnic? tribal?) entity (see also Collis 1977). It may or may not, but this at least requires the examination of other types of evidence, some of which will be reviewed below.

What, then, *can* be said of the hard typological evidence? A ceramic grouping in East Sussex is undeniable, and obviously differs both from its predecessor, the 'Caburn-Cissbury' style of 'saucepan' pots of the ?third to ?first centuries B.C. (Cunliffe 1974a, 329; Champion, this volume), and from the assemblages of surrounding areas. In north Kent the 'Aylesford-Swarling' and later 'Belgic' styles are immediately distinguishable. So too are the few comparable groups from West Sussex, and mid-first-century A.D. types from the London area, Hampshire, Hertfordshire and Essex. Most of the surrounding areas, in fact, developed 'bead-rimmed' styles in the first century A.D., in contrast to their rarity in East Sussex. Some groups from east Surrey contain vessels of more similar form and fabric, but still no really obvious parallels with Sussex types emerge (see Walton-on-the-Hill, Lowther 1949; Beddington, Orton and Perry, forthcoming). The most characteristic feature of late Iron Age styles in East Sussex is the occurrence of 'eyebrow' decoration on a sizeable proportion of pots. Since this feature is so rarely found outside the vice-
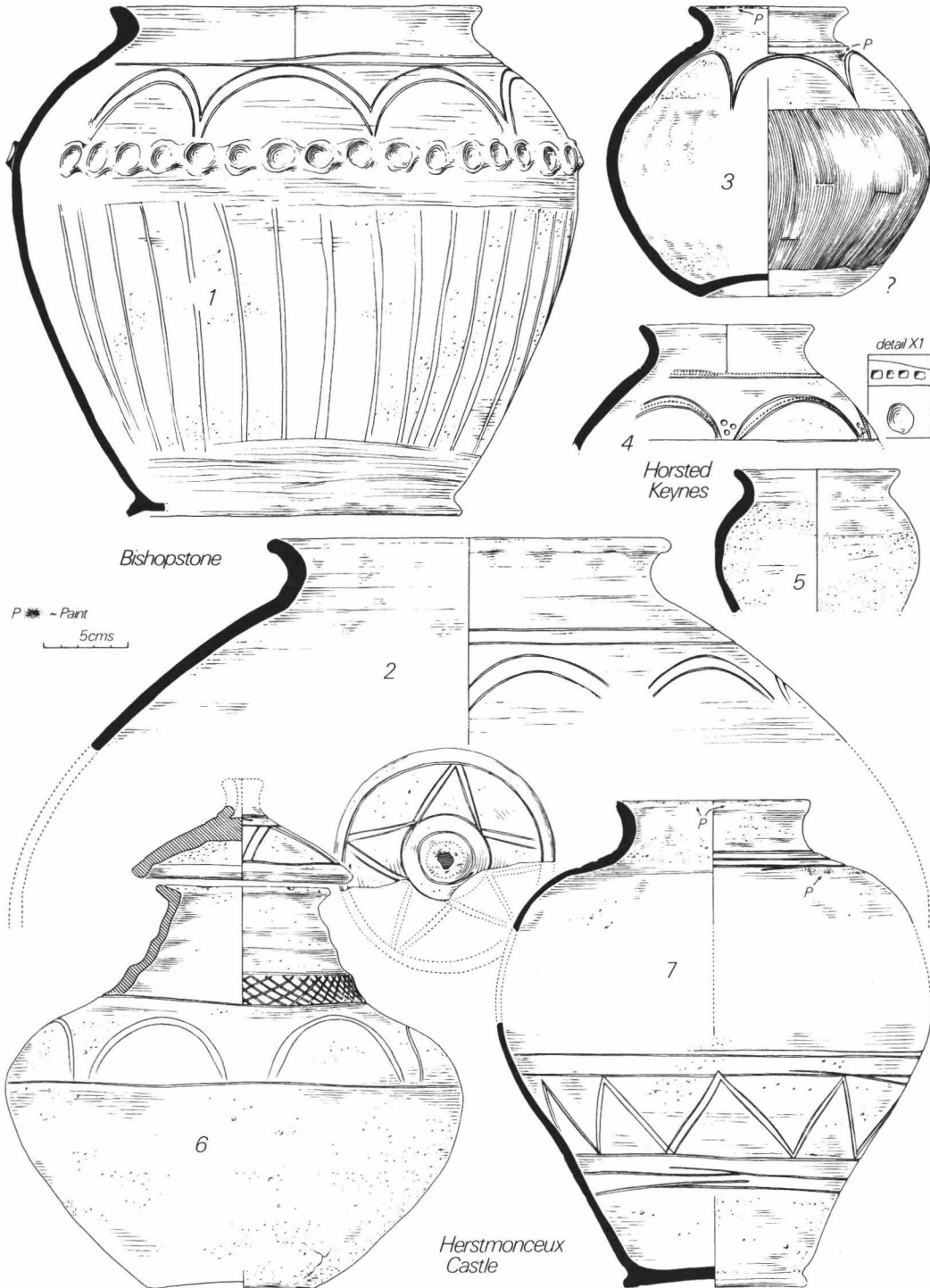
Fig. 27. East Sussex 'eyebrow' pots and related types: 1-2 Bishopstone; 3 ?Fetter Lane, London EC4 (Museum of London); 4-5 Horsted Keynes, all probably late first century B.C. to mid first century A.D.; 6-7 Herstmonceux Castle, Tiberio-Claudian period. (Scale ¼; detail of 4 actual size).

county there is every reason for thinking that the ceramic 'style-region' is much smaller than that envisaged by Ward Perkins and Cunliffe. The distribution is in fact roughly that of the 'East Sussex Ware' of the Roman period (see below and Fig. 32e; also E. C. Curwen 1937, 281 and Wilson and Burstow 1948).

Dating is difficult, not least because we ideally need a chronological nicety for this 'proto-historic' period that physical dating methods such as C-14 cannot yet supply. In East Sussex this is compounded by a desperate shortage of imported pottery, coinage and metalwork. It seems reasonable to assume that 'eyebrow' pottery emerged at some time during the first century B.C., in parallel with the late Iron Age styles of Kent ('Aylesford-Swarling' group) and the west of England ('Glastonbury Ware'), but there are no examples that can definitely be dated so early. In post-conquest times, it is known from excavations at Newhaven (Green 1976; Fig. 29.1-7 here), Bishopstone (Green 1977), Garden Hill (Fulford and Eade 1977), and at early ironworking sites such as Sedlescombe (Fig. 28.1-15), Beauport Park (inf. G. Brodribb) and Pippingford (Tebbutt and Cleere 1973). Romano-British cemeteries have produced further 'eyebrow' pots: at Seaford (Lower 1854, material in Hastings and Lewes Museums) and Hassocks, where a relevant vessel (though lacking the 'eyebrow' motif) is reported to have been found with a samian Drag. 33 bowl in its mouth (Couchman 1925; material in Lewes Museum). Intermediate fixed points of a sort are provided by Bishopstone pit 920, which produced an associated Colchester-type fibula of pre-conquest date (Bell 1977, 131), and by the small cemetery at Herstmonceux Castle, where two fineware vessels and the stylistic unity of the coarse pottery suggests a Tiberian or (more probably Claudian) date for the whole (Norris 1956). Horsted Keynes (Hardy et al. 1937) yielded first-century samian and butt-beaker sherds, but, sadly, the degree of association is far from clear.

Some inferences about development can be drawn despite the lack of well-dated material. Stamped and rouletted vessels are likely to be 'early', if only because they are not found on wholly Roman sites like Newhaven (e.g. Fig. 27.4; see also Elsdon 1975, 13-18 and Figs. 11-12 for further material). Plainer types invariably accompany them, though (e.g., possibly, Fig. 27.5). Conversely, sub-biconical 'Asham' pots (E. and E. C. Curwen 1930) seem to be late, since examples are known from Newhaven and from the Romano-British cemetery at Seaford (Figs. 28.16-18). One suspects, too, that the more highly decorated vessels ceased to be made not long after the conquest, but at this point we revert to speculation. There is, however, much firmer evidence for extremely localized production of distinct types, and in the past this has undoubtedly been taken for chronological development. Asham pots may be 'late', but equally they have only been found in the 3 mile (5 km) radius covering Asham Combe, Newhaven, Seaford and Alfriston. Jars with tall stepped necks are found further to the east, at Herstmonceux (Fig. 27.6), Sedlescombe (Fig. 28.6), Crowhurst Park (Piggott 1938, Fig. 1) and Beauport Park. Jars decorated with slashed or thumbed 'raised bands' (e.g. Fig. 27.1) seem to occur only west of the Cuckmere (Wilson and Burstow 1948, 105-6 and table viii for distribution). Nor must possible functional differences be mistaken for chronological development: special-purpose vessels are likely to have been made, and it seems probable that the very poorly fired Herstmonceux vessels, for instance, were made for the dead rather than the living.

At the eastern and northern boundaries of our area there are interesting signs of a more radical change. A number of the Sedlescombe pots (Fig. 28.7-11) would be stylistically at home with contemporary pottery from Kent, although their fabrics are indistinguishable in thin-section from those of 'eyebrow' vessels from the same site (e.g. Fig. 28.1-3). There is thus the likelihood of a gradual transition towards the 'Belgic' styles of the North Downs (as at Cheriton, Folkestone, for instance—Tester and Bing 1950), rather than a hard and fast boundary. Money has also noted local copies of 'Belgic' forms alongside 'eyebrow' types in the High Weald (Money 1978, 39).
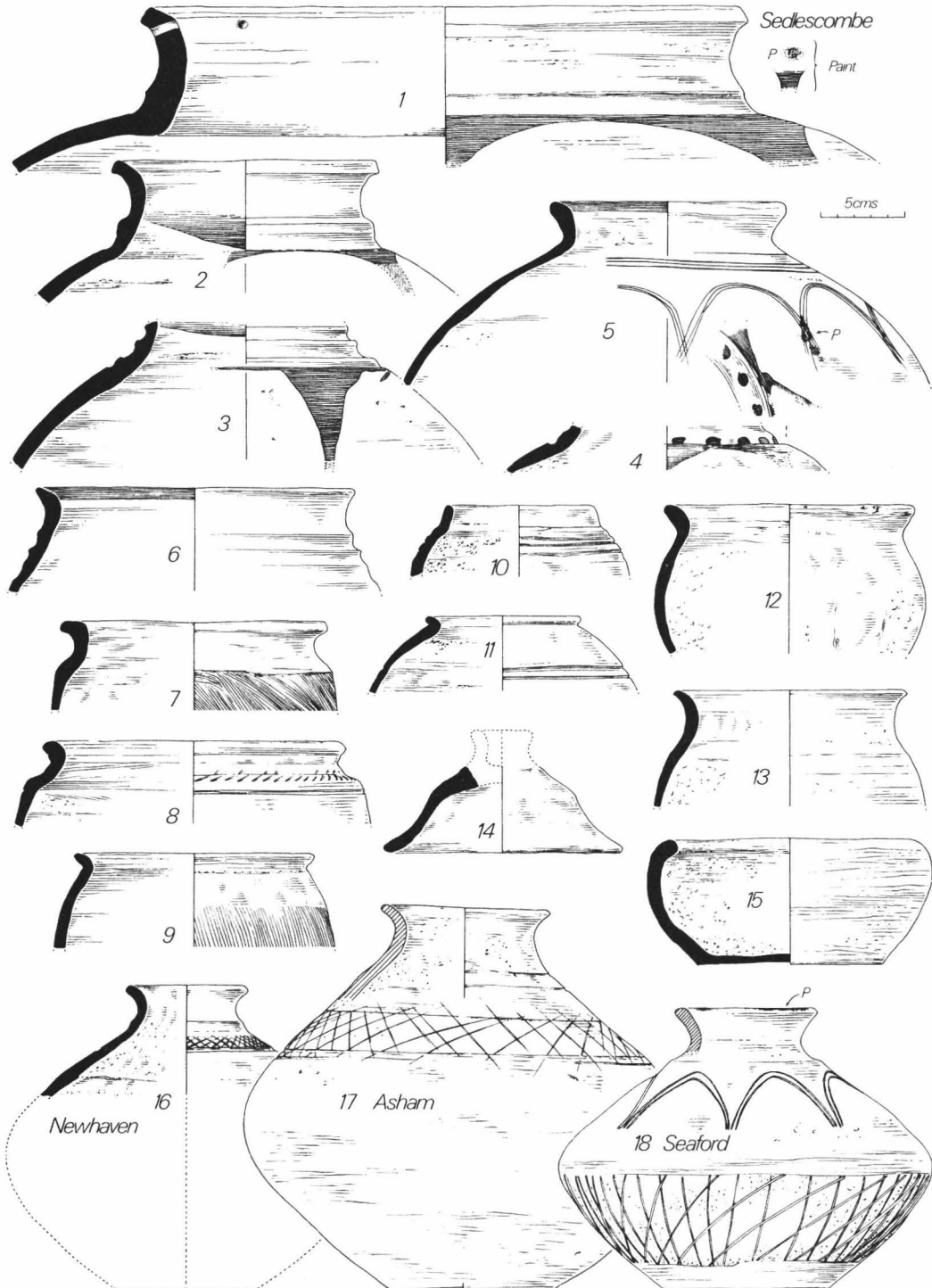
Fig. 28. East Sussex Ware vessels, all probably mid to late first century A.D.: 1-15 Sedlescombe; 16-18 'Asham' pots from Newhaven, Asham and Seaford. ($\frac{1}{4}$).

However, these areas of the Weald remain too poorly known for valid conclusions to be drawn, and it is again unclear whether pots of similar date are involved.

As with so much ancient pottery, it is difficult to assign specific functions to particular forms. For the 'pre-Roman' period, though, we should note: a) the high proportion of large vessels with more or less narrow mouths, only some of which need be non-portable storage jars, and b) a scarcity of bowl forms (the use of wooden bowls or broken jars seems possible).

Fabric and technique

Here we move to firmer ground, for the vessels under consideration show an essential unity throughout East Sussex regardless of the details of date, form and decoration.

E. C. Curwen noted as long ago as 1937 (p. 277) that the transformation of potting technique seems to have been dramatic and complete. The earlier Iron Age pottery of the region, whatever its quality, tends to have an appreciably sandy texture (i.e. it is tempered with quartz sand, which may have occurred naturally in the clay or have been added to reduce plasticity). Coarser vessels contain additional major inclusions of shell, calcined flint or vegetable matter, but 'grog' (i.e. crushed sherds or other baked clay) is only of accidental occurrence. It is more or less soft and easily disaggregated, and entirely handmade. 'Eyebrow' pots and associated vessels are quite different. The fabric is considerably harder and tougher. The fabric and surface colour is black, brown-black, reddish or grey and often variable across the vessel, as a result of uneven firing conditions. Sherds that have been subsequently burnt may be oxidised bright red or orange. A fresh fracture is rather like that of cork, and reveals red, brown or grey to black 'grog' fragments, normally in some abundance and up to 1.5 or 2 mm in diameter. Only rarely is it clear that this 'grog' is actually crushed pottery, however, and in view of the quantities required to build a single vessel, it seems possible that clay may have been specially baked for the purpose, while other grog-like inclusions are seen in thin-section to be laminae of shale or mudstone. White inclusions of similar shape, but usually smaller size, occur, and generally prove to be a siltstone composed of quartz grains $c.$ 0.01 mm in diameter with a little muscovite mica. Red-black ironstones are the only other prominent inclusion, seen as crushed or naturally rounded grains up to 2 mm in diameter, sometimes with smaller grains showing spheroidal structure (for instance in the Herstmonceux vessels). Macroscopically visible quartz and mica are very rare indeed, although quartz of 0.04 mm and less is scattered throughout the matrix, with ironstone splinters of similar size. The absence of larger quartz accounts for the markedly 'soapy' feel of the pottery of this period, in contrast to the abrasive qualities of earlier Iron Age fabrics and Roman sandy 'greywares'.

The pots are always hand-built, and coiling is often in evidence. Frequently the rim is trued up, but as simple a turntable as an old sherd placed beneath the pot might have served for this. Before firing, the vessels were normally burnished in horizontal zones, typically around the base, above the girth and over the rim, other areas being left rather rough (see illustrations). Decoration, where present, is interesting, for the very faintly inscribed 'eyebrows' or other designs (chevrons are quite common) are often seen to have been augmented with paint. All too often this has disappeared with time and the archaeologist's scrubbing brush, but the Horsted Keynes group and several Sedlescombe vessels (Chown 1947; Fig. 28.1-6 here) show painted arcs, which would have had round terminals (e.g. Fig. 29.5). Many others show traces of paint (Figs. 27.3,7; 28.18), and it is tempting to think that late Iron Age pottery received this treatment as a matter of course in East Sussex. The result must have been striking. The paint employed (now black and pitch-like) has not been analysed, but may have been a natural resin or wood tar. An intriguing detail is that casual, but repeated, observation has always shown that odd numbers of 'eyebrows' were drawn (5,7,9 and sometimes more).
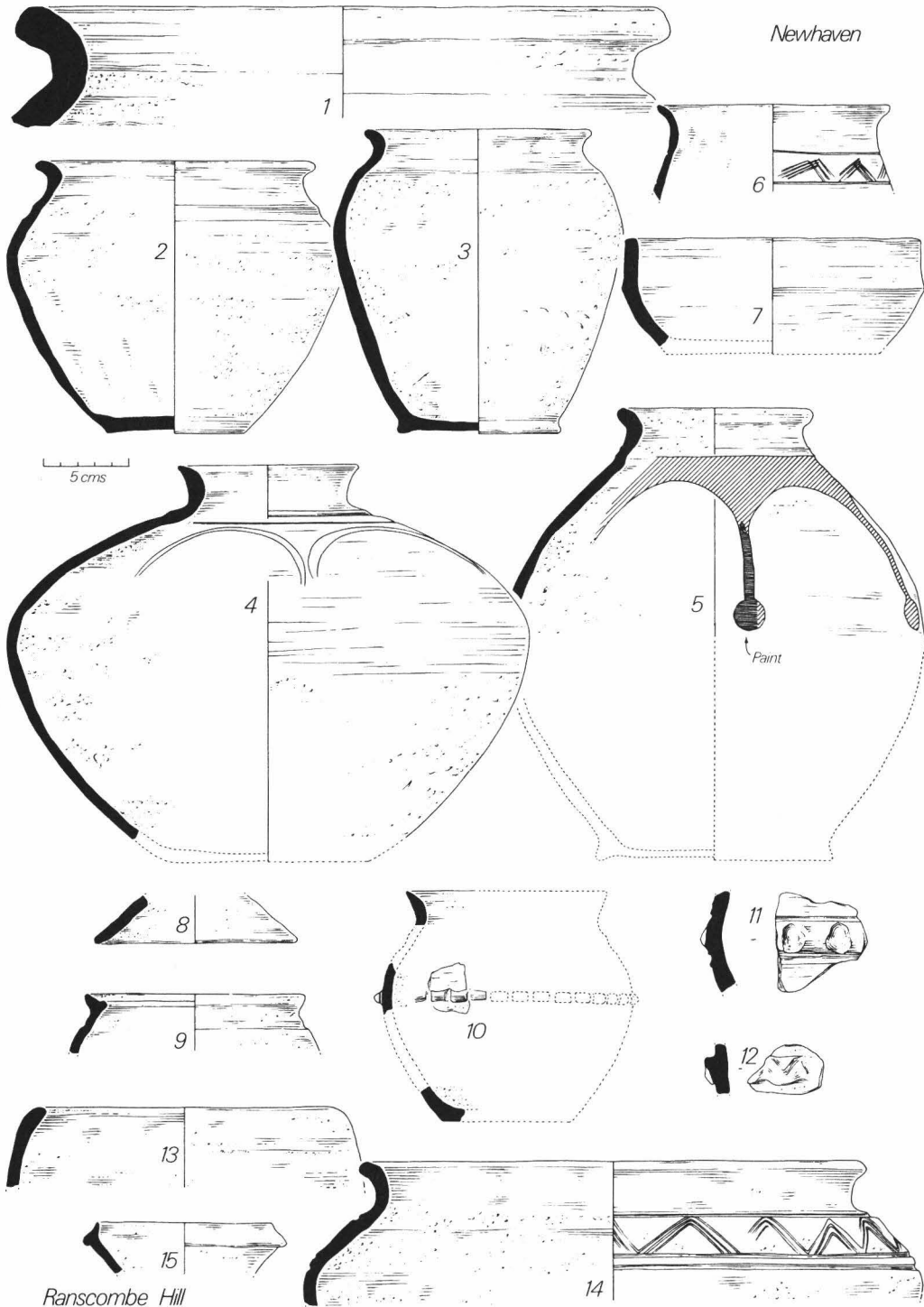
Fig. 29: East Sussex Ware: 1-7 Newhaven group i, *c* A.D. 70; 8-12 Newhaven and 13-15 Ranscombe Hill all late first to early second centuries A.D. ($\frac{1}{4}$).

These changes are not unique to East Sussex, but apply at least in part to large areas of south and east England, such as Surrey, the London area (though here only post-conquest material is available for study), and Hertfordshire. Equally there are many exceptions: Aylesford-Swarling pots are often sandy, while flint-tempering was used around Silchester and in parts of the Thames Estuary area, and shell-tempering is found in Surrey and parts of Kent. In north Kent, Hertfordshire and Essex technical innovation went further, and wheel-throwing was introduced in the pre-conquest period. In the absence of good dating evidence, and above all of systematic fabric studies, it is difficult to chart these developments. Fortunately Bishopstone, in the centre of our area, is the only site in southern England for which such a study has yet been made (Hamilton 1977); it shows a very complete transformation of fabric with the introduction of 'eyebrow' vessels. Bishopstone fabric 5, identical in its essentials to that described here, is associated with 'eyebrow' pottery and allied types, and with the latest Iron Age pits, virtually to the exclusion of other fabrics.

The fabric of the late Iron Age pottery of the region indicates some advances in potting technique: firstly grog-tempering, while laborious, may have produced a more controllable potting clay than the naturally occurring tempers used in the earlier Iron Age. The size and abundance of the 'grog' could be matched to a size of vessel. One suspects that this was also a more suitable technique for relatively high temperature firings than shell- or flint-tempering. Secondly, the general increase in the hardness of the finished product strongly suggests that something more than a simple bonfire was regularly used to fire it. A turf dome may have been added, as has been suggested for late Iron Age pottery in the Nene Valley (Woods 1974), though experiment with copies of Romano-British kilns shows that the simple expedient of stacking the pots upside-down in layers is another way of raising the temperature quickly (Bryant 1973). On the other hand, permanent or semi-permanent kilns are most unlikely to have been used. Not only is there no archaeological evidence for them in Iron Age Britain, but thin-sections of the vessels in question usually show an optically anisotropic clay matrix. Only in the case of some of the Sedlescombe vessels (e.g. Fig. 28.1), which are clearly exceptionally well-fired, is a (partially) isotropic matrix seen, indicating a firing temperature approaching 850°C. This condition is quite common in Roman kiln-fired pottery, however, and it is clear that some Roman potters could control firings in excess of 1000°C.

Between them, these points account for the late Iron Age potters' ability to build larger pots than any hitherto made in East Sussex (e.g. Figs. 27.2, 28.1), and their competence with difficult forms such as globular or sub-biconical pots with small mouths.

Archaeological evidence of this type of pottery production will naturally be meagre or non-existent. Nonetheless it can be assumed that it was practised at many centres, if not domestically, since the details of fabric (e.g. the presence or absence of siltstone) varies from site to site. The Lower Cretaceous clays of the Weald must have been the major clay source, but the clays of the Eocene outlier at Newhaven were no doubt used locally.

Other types of pottery found in the late Iron Age

Wheelthrown pottery in classical styles is remarkably rare before the Roman period. There is a minor distribution of mainly mid-first century A.D. *terra nigra* and some *terra rubra* on Downland sites, mainly from Roman contexts (Rigby 1973; examples from Newhaven, Bishopstone, Ranscombe Hill (Green 1978), Castle Hill, Newhaven (Hawkes 1939) and Seaford (Smith 1939)). Gallo-Belgic flagons of Camulodunum type 161 (Hawkes and Hull 1947) are known from Herstmonceux and Bullock Down (inf. D. Rudling), while the Herstmonceux cemetery also produced a butt-beaker identical in form and fabric to Camulodunum 113 (inf. V. Rigby). Both
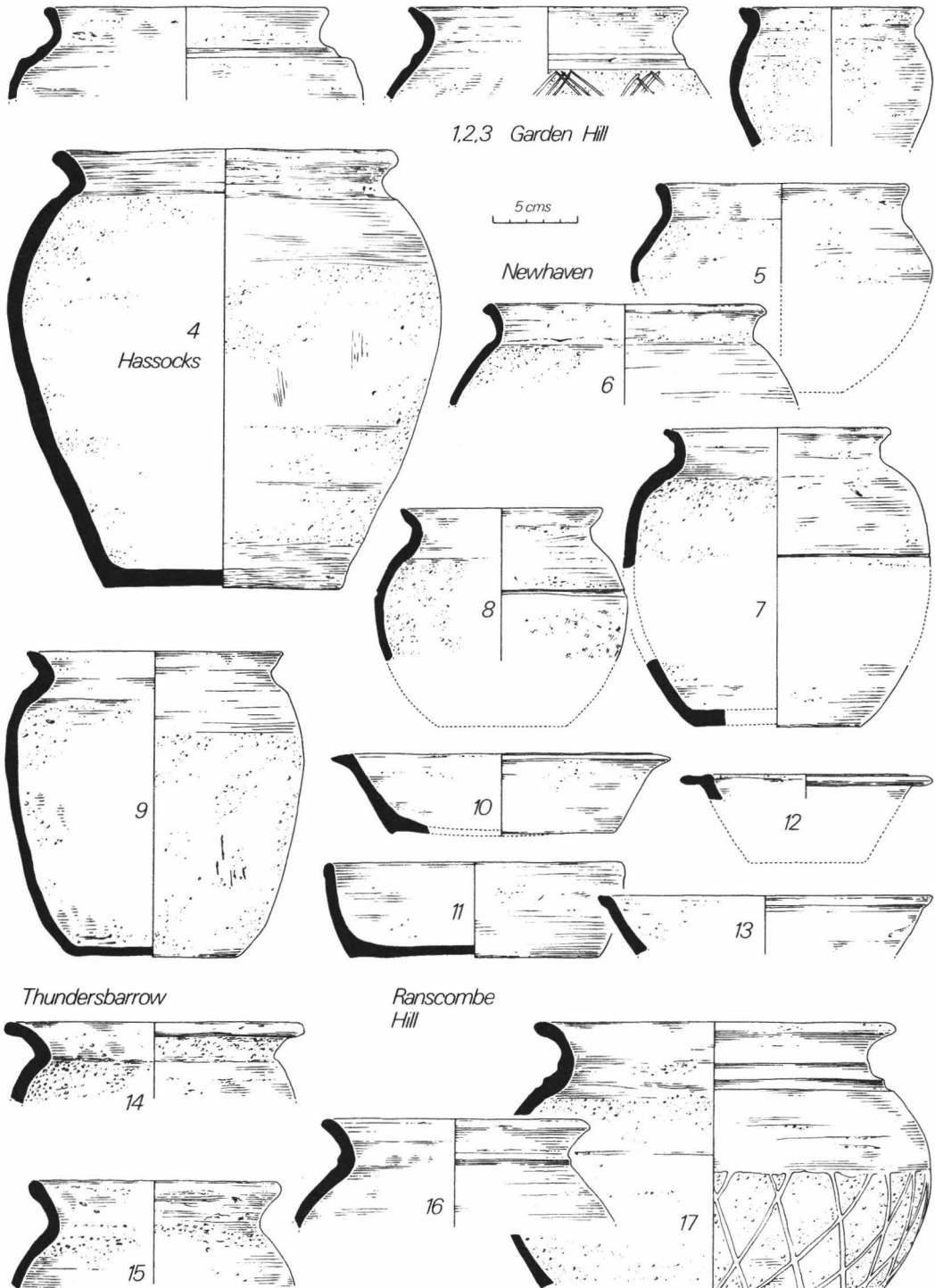
Fig. 30. East Sussex Ware: 1-3 Garden Hill and 4 Hassocks, late first or second centuries A.D.; 5-11 Newhaven group viii (?late) Antonine; 12-13 Newhaven second century A.D.; 14-17 fourth century grog-tempered types: 14-5 Thundersbarrow, 16-7 Ranscombe Hill. ($\frac{1}{4}$).

these types have a date range *c*. A.D. 25-60. However, Mediterranean amphorae are still unknown from pre-conquest Sussex, in contrast with the considerable numbers known from elsewhere in south and east England (inf. D. P. S. Peacock; see Fig. 32c).

II.   THE ROMANO-BRITISH PERIOD, *c*. A.D. 70-400+

(The pottery illustrated in Figs. 29-31 is in broadly chronological order and centres around the best-dated early Flavian and (? later) Antonine groups from the area, both from Newhaven (Green 1976, here Figs. 29.1-12 and 30.5-13). For further material see Bishopstone (Green 1977), West Blatchington (Norris and Burstow 1952), Telscombe (Preston 1936), Ranscombe Hill (Green 1978), and Slonk Hill (Fulford 1978). Third century pottery is very poorly understood, and is not illustrated here, but see Bishopstone (Green 1977, group iv) and West Blatchington (in part).The largest published fourth century groups are from Bishopstone (*ibid.,* groups v-viii); see also Thundersbarrow (Oakley 1933), Ranscombe Hill, Slonk Hill, and the unpublished material from Pevensey (Lewes and Hastings Museums)).

For the present purpose, the Romano-British period may be taken as beginning *c*. A.D. 70, since (with the exception of Herstmonceux cemetery) no site in East Sussex has produced more than the most meagre supply of recognisably Roman pre-Flavian artifacts. As pointed out by Cleere (1974), some easterly ironworking sites, notably Sedlescombe and Crowhurst Park, may have pre-Flavian or even pre-conquest beginnings, but there is nonetheless a dearth of classical material to demonstrate the point, and Sedlescombe has accordingly been dealt with above, though some of the examples in Fig. 28 may even be of second century date.

Development, c. A.D. 70-?250+

The most obvious point to be made is how little our picture of late Iron Age pottery production needs to be qualified for the bulk of pottery used in East Sussex in the following 200 years. The same fabric, methods of construction, clamp firing and finish were used, even to the extent of burnishing the same zones of the pots. It seems that the fabric is in general a little less coarse than in the Iron Age, perhaps because of the normally smaller size of the Romano-British vessels, and there is also an appreciably higher proportion of jet-black pots, presumably the result of deliberately sooty firings (a technique also used in the making of black-burnished wares—Farrar 1973). In no case, then, can an East Sussex hand-made pot of this period be distinguished from earlier material on other than stylistic grounds. I have applied the term 'East Sussex Ware' to the Romano-British pottery of this region which is thus technically identical to Iron Age types (Green 1977).

Nor does vessel type alter. The wholly classical types—amphorae, flagons, mortaria, tazze, and so on, are never found in East Sussex Ware, a point which adds strength to the view that this is basically prehistoric pottery. 'Cooking jars' are by far the most abundant form until the fourth century, though there are more bowls than hitherto; conversely large vessels and storage jars become rarer (Fig. 29.1 is exceptional). Occasionally finewares were copied in this fabric, for example Figs 29.6 (a carinated beaker) and probably 29.15 (?a *terra nigra* bowl). The potters were conservative in matters of form and decoration, so that intrinsic dating must be very rough and ready.'Eyebrows' and paint were probably employed until *c*. A.D. 100, and 'raised band' thumbed or slashed girth decoration (Figs. 29.10-12, *cf.* 27.1) may well survive into the third century, on the evidence of Bishopstone group iv (Green 1977). Fortunately, though, by the mid-second-century East Sussex Ware begins to share some of the general stylistic trends of southern Romano-British pottery. Antonine vessels from Newhaven (especially Fig. 30.6-7, 10, 12) very broadly resemble the contemporary Black-burnished Ware 1 of Dorset, for instance. The point at which characteristically 'late' forms develop is uncertain, but may not be much earlier than the end of the third century.

Development, c. A.D. 250-400+

A number of reasonably well dated late Roman groups are known, but unfortunately nearly all are from Downland sites. The Wealden ironworking sites, in particular, had apparently all ceased operation by this time (Cleere 1974). Furthermore these groups tend to be of late fourth century date, often representing 'terminal' deposits in disused corn-driers and pits.

As throughout the south of England, there is a tendency for local late jar forms to develop a strongly everted rim (e.g. Fig. 30.14-16). Flanged bowls appear (Fig. 31.1,3), and along with plainer forms (Fig. 31.2,4) tend to outnumber jars. Copies of finewares are unknown, doubtless since there were good supplies from major production centres.

Fabric and technique *does* change in the late period. While some late examples (e.g. Figs. 30.16, 31.1,3) show little apparent alteration from the earlier East Sussex Ware vessels, as many (such as Figs. 30.14-15,17 and 31.2,4) are visually distinct, and are best designated on an *ad hoc* basis until further work has clarified any possible groupings. The most obvious feature is that the inclusions are noticeably coarser than in earlier vessels (up to 3 mm), and very often only a perfunctory attempt has been made to finish the pots by burnishing. Some (e.g. Fig. 31.2) are very poorly constructed. There *may* be evidence for some centralised production centres, for the fabrics of vessels from Thundersbarrow and Ranscombe Hill, which lie 18 miles (29 km) apart, look suspiciously similar in the hand and in thin section, but given the technique used and the likely distribution of clay sources this may be fortuitous (Fig. 30.14-5,17). In these and some other examples the baked clay 'grog' is very homogeneous. Small fragments of flint or chert are additionally seen in a number of these late types.

Distribution and quantity

The known distribution of first and second century East Sussex Ware is shown in Fig. 32e, but need only be valid towards the west. To the north and east the near-total lack of known Roman Wealden sites prevents us from seeing a probable continuum into Kentish (? and Surrey) handmade types. To date the best published groups north of the Weald are from the Darenth Valley area of west Kent, where handmade grog-tempered pottery broadly similar to that from East Sussex certainly survives into the second century, and where a distinct production centre may have made the well-fired orange-surfaced 'Patchgrove Ware' into the third century (Philp 1973, 60-1). It is not yet clear whether all Kentish and East Sussex types are readily distinguishable, and in any case this may be an academic point, since the techniques used are often similar and the differences should merely reflect local styles and clay sources. A more important difference between East Sussex Ware and its counterparts elsewhere in the south-east would seem to be that it forms such a high proportion of a given 'population' of pottery. Philp's statistics (from small groups) show a decline of all handmade fabrics to perhaps 20% or less of all the pottery by the early second century. In East Sussex, however, the local hand-made product may account for as much as 80 or 90% of a second-century assemblage, and usually more than 50% in its 'core' area (e.g. 89% for an admittedly small group of first- to second-century material at Ranscombe Hill—Green (1978), and 78% of all pottery from Garden Hill, a largely first and second century site—Fulford and Eade 1977). East Sussex Ware is obviously just one aspect of a more widespread tradition of Romano-British pottery production, but on the present evidence it would seem that we have to go as far afield as Dorset to find comparable proportions of handmade pottery after the first century A.D.

In the later third and fourth centuries it is now clear that grog-tempered handmade pottery was also used on a large scale in Kent (e.g. Johnston 1972), Hampshire and part of Wiltshire (Fulford 1975) and perhaps elsewhere. (The position in Surrey is uncertain at present, but such material is known to be much rarer to the north in London and, for example, Hertfordshire). In general all
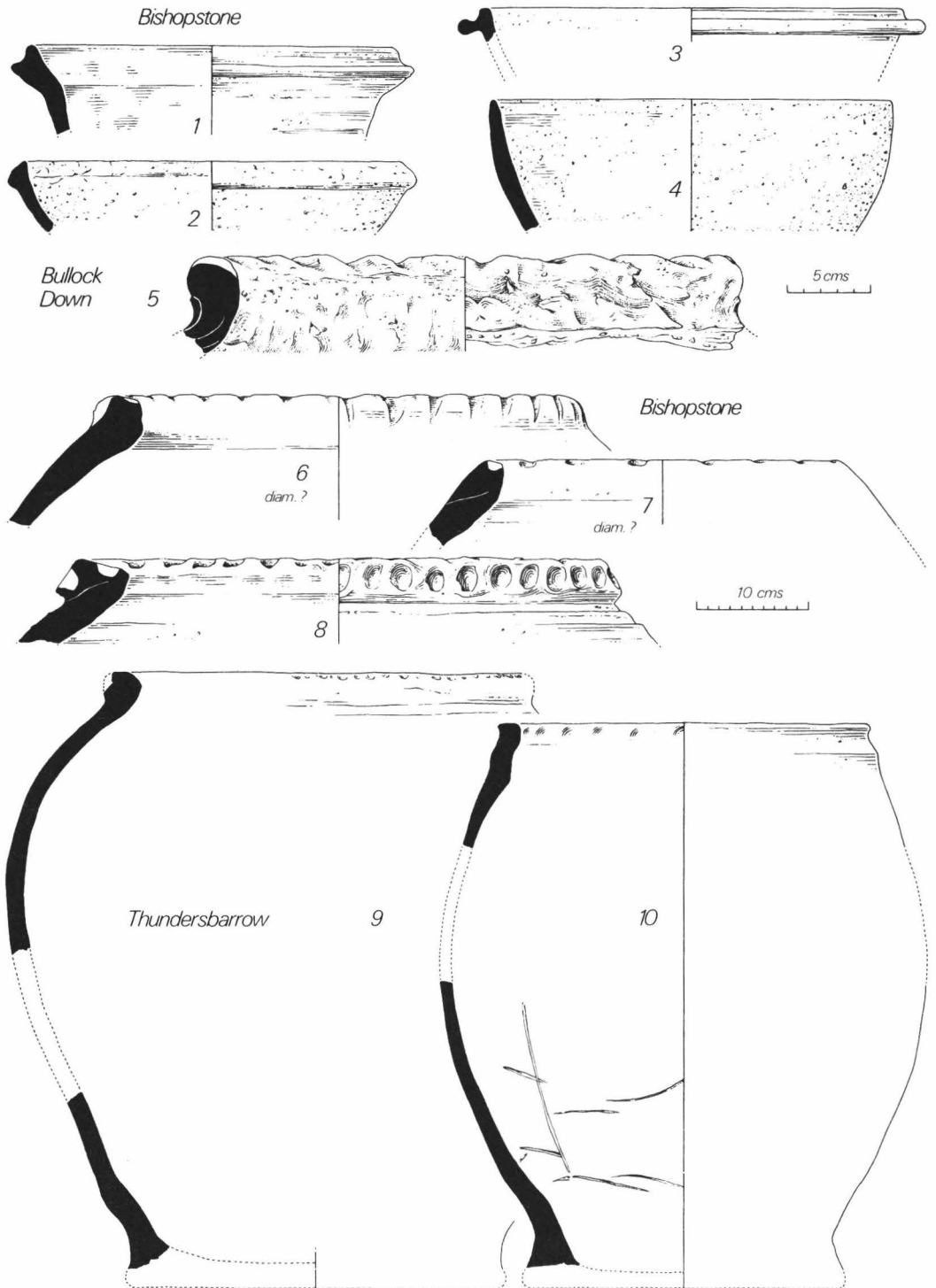
Fig. 31. 1-4 fourth century A.D. grog-tempered pottery from Bishopstone. 5-10 Thundersbarrow Ware: 5 Bullock Down, 6-8 Bishopstone, 9-10 Thundersbarrow (after Oakley 1933). (Scale 1-5 $\frac{1}{4}$; 6-10 $\frac{1}{6}$).

these late varieties share the coarse manufacture of the East Sussex vessels, and those from east Kent are not always distinguishable in the hand (e.g. from the Canterbury area, Richborough, and from late third and early fourth century deposits at Lympne; inf. C. J. Young). In Hampshire, the handmade Portchester fabric A (Fulford 1975) *may* derive from distinct production centres, but this is not conclusively shown, and wider study throughout south and south-east England is required.

Quantitative information on the later East Sussex types is difficult to gather, but there is an initial impression that handmade pottery was in a *relative* decline from the later third century, while it increased in importance elsewhere.

Thundersbarrow Ware

This is the East Sussex variety of a widespread southern 'family' of very large handmade storage jars, usually with 'roped' rims, which are common in fourth century contexts, although vessels in a similar style, but of different fabrics (often wheelmade) occasionally turn up in much earlier deposits (e.g. Newhaven type 89—Green 1976).

The type specimens are from the fourth century features at Thundersbarrow Hill, near Shoreham, and have the distinction of being the first British pots to be subjected to an (inconclusive) heavy mineral examination (Oakley 1933). The range of forms is shown in Fig. 31.5-10 (31.5 at $\frac{1}{4}$ scale; the rest at $\frac{1}{6}$ scale). The fabric was obviously prepared with the sole intention of reducing the plasticity of the clay, as it consists of a coarse aggregate of grog (both crushed pottery and crushed clay), calcined flint and some ironstone and chalk in a rather sparse and clear orange-brown clay matrix. Inclusions of up to 10 mm in diameter are the rule rather than the exception. Coil building is evident, and the vessels are unburnished and poorly fired. The absence of bases has suggested that the pots were fired upside-down (*ibid.*).

The mystery of Thundersbarrow Ware jars lies in their use and distribution. Even if bound in straw like a Chianti bottle they must have tended to fall apart under their own weight, and the idea of transporting them, with contents, seems inconceivable at first sight. Their use as *dolia* (storage vats permanently buried in the ground) seems more plausible, although none have been found *in situ* thus, and their volume (Fig. 6.9 as reconstructed would hold 75 litres) is very much less than that of a continental *dolium*. Yet the vessels examined (from Thundersbarrow, Bishopstone and Bullock Down; Portchester 179 is apparently very similar, see Fulford 1975—inf. M. Fulford) are so strikingly close in fabric that their use in a centralised commodity trade (presumably for dry goods) must be seriously considered.

Wheelthrown Roman pottery in East Sussex

A brief note must be made of the more typically 'Roman' pottery available in the area. Hassocks almost certainly produced grey sandy wares, as there are distorted and severely cracked examples from the cremation cemetery there (material in Lewes Museum), but no kilns have yet been found and thus the range of types made is unknown. An obviously local kiln (again unlocated) produced rough mortaria and fineware copies for the *Classis Britannica* site at Beauport Park, probably in the second century (inf. G. Brodribb).A fired structure, possibly a pottery kiln with opposed flues, has been excavated at Arlington (Holden 1979). Finally, finewares provisionally named 'Pevensey Ware' were produced from *c.* A.D. 350 in the coastal Weald, perhaps near Pevensey. The products (excellent copies of Oxfordshire redwares) are fully described elsewhere (Fulford 1973 and 1975; Green 1977).

This is the sum total of the direct evidence for pottery production. It is remarkably slight. Sources outside the vice-county were of course available, but were relatively little used before the fourth century. From early Flavian times onwards greywares are found in some quantity, but only

make up 50% or more of assemblages towards the western fringes of our area. Much of the first-century fineware comes from a West Sussex (?Chichester) source (Newhaven types 54-62—Green 1976), but imported fineware, other than a moderate supply of samian, is very sporadic in occurrence. First-century mortaria are most uncommon; in the second century a ?West Sussex source provided much of the supply. Imported amphorae remain rarities, with the exception of the common globular oil amphora, *Dressel 20,* a few sherds of which turn up on most sites.

By the fourth century, this isolation from the mainstream of Romano-British pottery supply had largely ended, and the products of the Alice Holt/Farnham industry, the Dorset Black-burnished ware centres, the New Forest, and above all the Oxfordshire and Pevensey Ware industries are all represented at Bishopstone (Green 1977). Nonetheless, handmade pottery may still have accounted for 50% or so of all late vessels there.

III.   POTTERY AND SOCIETY

In reviewing the Thundersbarrow finds, Oakley (1933) was perhaps the first archaeologist to concern himself with the presence of obviously handmade pottery alongside 'typical' Romano-British material. He had no difficulty in explaining the matter away: such pottery was produced at two periods—the immediately post-conquest phase, before Roman Civilization had fully diffused, and in the years approaching A.D. 410+, when the population slipped back into a barbaric 'Dark Age'. Today it has long been realised that prehistoric potting techniques persisted for much of the first century A.D., but the notion that handmade pottery found in association with late Roman finewares is necessarily 'sub-Roman' is only just being dispelled (*cf.* Alcock 1971, 182-3). We are now faced with hard evidence that in East Sussex (not to speak of other areas) such pottery was made continuously from the late Iron Age until, in all probability, the early fifth century, and in such quantity as to demand a more serious explanation. The fact that the East Sussex Ware of the Roman period coincides in fabric, technique and distribution with the 'eyebrow' pottery of late prehistory suggests that we need to examine East Sussex in the broader context of south and east England for both periods.

In the earlier Iron Age there is little evidence to suggest that society in East Sussex differed radically from that of wide tracts of southern England, though if anything the archaeological record appears to be rather richer than in many areas (e.g. as expressed by finds of fine metalwork—Champion, this volume). The later Iron Age, however, remains a shadowy and obviously rather impoverished period. A settlement site definitely of this period remains to be thoroughly investigated, and wherever modern excavation has taken place on multi-period sites (notably Bishopstone—Bell 1977) the evidence of occupation for the late Iron Age has consisted merely of pits containing pottery and little else.

The distribution of late Iron Age artifacts provides more helpful, if negative, evidence. This part of Sussex seems never to have formalised the use of money. A scatter of first-century B.C. Gallo-Belgic and British coins is known, but by the first century A.D. the pre-Roman coinage of East Sussex is virtually non-existent (see Fig. 32a, b). The area is clearly outside the main distribution of the gold coinage of Verica, and the fact that bronze coins are even rarer than silver and gold issues is certain indication that money was not used in exchange, i.e. as currency. A similar point can be made with reference to foreign trade and graphically illustrated by the non-occurrence of Mediterranean amphorae in pre-Roman Sussex (Fig. 32c). East Sussex accordingly lacks large *oppida* (although there are possibilities on a smaller scale, for example the now destroyed hillfort at Castle Hill, Newhaven). Amongst other signs of material 'deprivation', metalwork of the period is obviously scarce. All this is in stark contrast to the rich 'Belgic' areas of
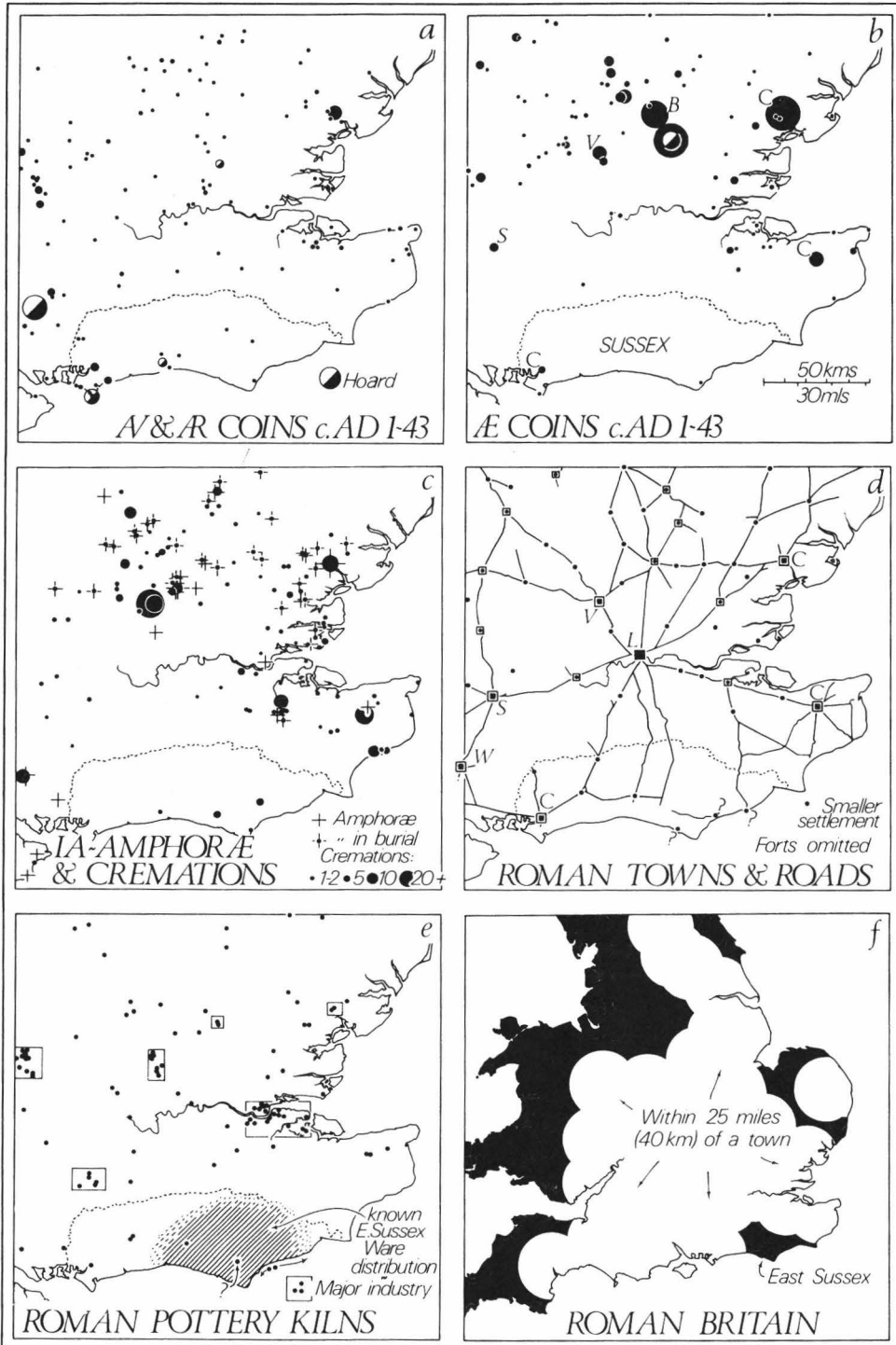
Fig. 32. *a* and *b* finds of gold, silver and (where appropriate) bronze issues of first century A.D. dynasts: Eppillus, Cunobelinus, Verica, Epaticcus and Caratacus (after Allen 1960 and Haselgrove 1978). *Oppida* and Roman towns with substantial finds are initialled in *b; c* Distribution of amphorae in pre-Roman contexts (after Peacock 1971 with additions) and pre-Roman cremation burials (inf. R. Whimster); *d* Roman towns and roads; *e* Distribution of Roman pottery kilns, first-fourth centuries A.D. (mainly after Marsh and Tyers 1978 with additions; information is incomplete for the northern edge of the area shown), and distribution of first-second century A.D. Romano-British East Sussex Ware; *f* the isolation of East Sussex from the nearest Roman towns.

north Kent, Essex, Hertfordshire, Bedfordshire and Hampshire, with their developed currencies, foreign trade and major centres of wealth and power (on the other hand it is equally clear that the area was not totally isolated from the rest of south and east England; we have seen that potting techniques and styles changed dramatically at this time, much as they did elsewhere. The change in burial practice to cremation is another shared characteristic, although in East Sussex the known examples are probably all mid-first century in date, and there are no large cemeteries (Fig. 32c; also Whimster 1977)).

The impression of late Iron Age East Sussex as an economic and political poor relation to the surrounding 'Belgic' kingdoms is scarcely modified in the Roman period. Material evidence for pre-Flavian Roman occupation is quite remarkably thin, especially when compared with the Chichester-Fishbourne complex in the west of the county. Thereafter there are outward signs of a healthy period of 'Romanization' with the establishment of early *villas,* some small 'semi-urban' settlements (Hassocks, Seaford), and the activities of the *Classis Britannica* amongst the Wealden ironworks. Nonetheless, the area continues to show an arrested development, for it boasted neither a regular currency nor a town.

a) Currency   Systematic data is not available for Roman coin finds, but it seems likely that a plot of first and second century issues would produce a pattern similar to that of Fig. 32a and b. Modern excavations on some scale in this region have produced a very small number of coins when compared with apparently similar sites in, say, Hertfordshire or Essex. Newhaven (Bell 1976) yielded three (including one third century issue); Bishopstone (Bell 1977, 187) nine, seven of which were third or fourth century; only a dozen were found in the near-total excavation of the Beauport Park bath house (inf. G. Brodribb). Bullock Down, site 16, has yielded some thousands of hoarded third-century issues, but only sixteen of the second century and none of the first century, despite search with a metal detector (Rudling 1978). The conclusion must be that there was too little coinage in East Sussex to serve as a regular currency before the third century, and it should be remembered that even in the later period finds from hoards may reflect wealth, but not necessarily the use of coinage as a medium of exchange.

b) Towns   The Roman towns of Britain are in general spaced at intervals of about 30 miles or less (often with an intermediate minor settlement), and connected by a 'lattice' of roads (Fig. 32d). In East Sussex and the rest of the Weald the resulting pattern disintegrates, so that modern Eastbourne is actually 48 miles (77 km) from its nearest Roman town: to be more remote from a Roman town one must travel to Swansea! (Fig. 32f). The largest known settlement (with the possible exception of the mid-fourth-century fort at Pevensey) was the apparently diffuse crossroads settlement of Hassocks. Other first- to second-century settlements existed at Seaford (Smith 1939), probably Pevensey, and (on the Saxon place name evidence alone) *possibly* Hastings (Hill 1978, 174-7). None seem likely to have been of even 'small town' magnitude. The major roads of the area can be interpreted as trans-Wealden routes simply intended to assist the removal of East Sussex's surplus of iron and wheat to London (Cleere 1974; Cunliffe 1973, 42-3).

The failure of East Sussex to develop more than the smallest industries producing wheelthrown pottery is reflected in the near absence of the kilns in which such vessels (but *not* normally handmade pots) were fired (Fig. 32e). They occur widely elsewhere in south and east England, alongside Roman towns and currency. Such an interconnection is unlikely to be fortuitous. The towns, rather than the countryside, were the main users of currency in the early Empire (Crawford 1970), and so we should perhaps expect to see so few coins in an area with only small settlements. Currency would surely have encouraged the development of wheelthrown pottery production, since

this involved specialised and time-consuming work—the building and maintenance of a kiln, digging, weathering and preparing large amounts of clay, and cutting fuel, quite apart from the potting and firing processes. But while this might have been accomplished with few cash transactions, the presence of a centre of population (a town or fort) would be crucial. A town would act, if not as a market place and centre of distribution (cf. Hodder 1974a and b) then simply as a steady source of demand (Romano-British pottery kilns were frequently sited close to, though rarely inside, towns). Conversely it is difficult to visualise a potter successfully operating a kiln in the absence of settlements of any size, as all transactions would have to be small ones made with more or less distant places, and would be particularly awkward if made in kind. In such an area, the continuation of late Iron Age potting techniques on a very small scale seems much more appropriate, since no special permanent structures were involved, and batches of pots could be made as and when they were needed. Finally, two empirical observations suggest that the production of wheelthrown pottery *is* dependent on the presence of towns and currency. Firstly the introduction of the potters' wheel in eastern England in the early first century A.D., apparently abrupt abandonment in the early fifth century, and re-emergence in late Saxon times synchronises neatly with the rise and fall of both. Secondly, a point of more local relevance is that the only East Sussex settlement which even approached the status of a town, Hassocks, is also the only one likely to have produced significant quantities of wheelthrown 'greywares'.

These remarks apply particularly to the first and second centuries A.D. The later Romano-British period is now known to have been a time of considerable change, in which wealth shifted from the towns to large *villa* estates in many parts of the country. Pottery production, too, underwent dramatic changes with the virtual cessation of imported supplies and the development of major regional industries. The place of handmade pottery production in this picture remains to be assessed, but at least it can be shown that there is no evidence that it coincides with a decline of wheelthrown supplies in a 'sub-Roman' period (Fulford 1975, 291).

CONCLUSION

It is helpful to see the handmade pottery of East Sussex in its context, if only as a corrective to the widely held impression that all Romano-British pottery is like that from the rich Romano-British sites published in the classic reports of the Society of Antiquaries—Richborough, Camulodunum, Verulamium, and so on. Future publications of allied types from other parts of the south east should modify this impression still further. But although it has been possible to suggest why the pottery of this area continued to be prehistoric in character, the general status of East Sussex and the Weald as a backwater in the 'Romanization' of Britain remains difficult to explain. Surely a poverty of natural resources cannot be argued. Recently it has been suggested, very plausibly, that Wealden East Sussex was an Imperial Estate, superintended by the *Classis Britannica,* since it was such an important source of iron (Cleere 1974, 1978). Normal settlement would thus have been forbidden and we should expect towns to be absent. However, it can be argued that East Sussex was a backwater *before* the conquest, as Fig. 32a-c illustrates. We can merely reflect that in south east England the balance of wealth established by the early first century A.D. was relatively unaltered by the Roman occupation, and that as an aspect of material culture the handmade pottery of East Sussex reflects the fact.

Author: Chris Green, Department of Urban Archaeology, Museum of London.

PAGAN SAXON POTTERY IN SUSSEX

by Caroline Dudley

Most of the pieces of pagan Saxon pottery known from Sussex come from burials, mainly from three cemeteries, Highdown, Alfriston and Hassocks. Other pagan cemeteries have yielded small quantities of pottery: for example, Kingston-near Lewes, Selmeston, South Malling and probably Ocklynge Hill, where a pot is recorded as having been found in 1909, but has since been lost (Budgen 1922). The Saxon cemetery at Bishopstone also contained pottery, which was not available for examination at the time of writing.

The circumstance that most of our examples come from burials is a common phenomenon, but almost certainly misleading. Bearing in mind that we are dealing with a period of nearly 300 years of occupation, the quantity of acknowledged pagan Saxon pottery from this area is very small and concentrated in a very few sites. It has been suggested that this is a true reflection of the state of affairs at the time. Professor J. N. L. Myres once suggested (Myres 1969, 111) that the absence of certain decorative schemes, particularly panel-style pottery, which is common elsewhere in the sixth century A.D., might mean that Sussex was lost to the Britons after the battle of Mons Badonicus. However, even disregarding the fact that sixth century metalwork is found in Sussex, the number of pots admittedly thrown or given away (Read 1895, 1896; Couchman 1925) or simply not found, make that a difficult hypothesis to support. The absence of particular forms may simply indicate a lack of contact with other areas of the country at this time. There is also the possibility that missing sixth century forms will be found among the pottery previously classed with the Iron Age material from the Highdown hill-fort investigations (Wilson 1940, 1950) drawn to our attention by Martin Bell (Bell 1977) when he found large quantities of his Fabrics 1 and 2 amongst it. It may well be that similar circumstances will also turn out to obtain elsewhere.

It might prove useful, therefore, to examine the criteria used to distinguish the pagan pottery from that which precedes and succeeds it. Most of the Sussex pottery has been assigned to this period through the circumstance of its being found in a pagan burial context. So far undisputed is the fact that it is hand-made, which sets it apart from most Roman and some types of late Saxon ware. It is also generally held to be rather clumsily made. The excavators at Mucking have gone on record as saying that they had no difficulty in separating the Saxon pottery from the Iron Age material, chiefly because the Iron Age examples were so much better potted (Jones 1975). It is questionable whether this is always true in Sussex—certainly there has been confusion in the past.

The remaining criteria employed are basically stylistic, because other evidence such as stratification or datable associated finds is either absent or very rare in the case of the Sussex pottery. Is it possible to evaluate whether these stylistic criteria are reliable guides to date and provenance?

A group of pots from the cemeteries at Alfriston, Highdown and Selmeston have been assigned to the early fifth century by Professor Myres (1969 & 1978) on the grounds of their similarity to Continental forms. Sussex is traditionally the kingdom of the South Saxons, and appropriately it is in their homeland of Lower Saxony, particularly in the district between the Elbe and Weser estuaries, that the closest parallels are found.

The first type of vessel which emerges as of very early date in the fifth century is the shallow carinated bowl with oval facets scooped or pinched out all around the pot on the point of carination. Two of these vessels were found at Highdown, one larger than the other but otherwise extremely similar. A slightly different type was found at Alfriston. Similar pots are most commonly found on sites in East Holstein *c.* 400 A.D. (Myres 1969) and have also been found on other English sites in contexts which confirm an early fifth-century date, such as Mucking, Essex (Jones 1975) and West Stow (West 1969).

Very close in design to these vessels is a slightly different type of sharply carinated bowl without facets. Two examples of this type of Schalenurne, one with three and the other with four grooved lines running around the top half of the pot, were found at Highdown and are also found in fourth- early fifth-century contexts on the Continent. Other pots found in Sussex have similarly been dated to the earliest period of settlement by comparison with Continental forms and forms found elsewhere in Britain.

The likelihood that these are very early pottery forms at Alfriston and Highdown is upheld by the presence of material in other graves, such as late Roman articles, military belt fittings and metalwork decorated in the Quoit Brooch style, all of which are consistent with an early to mid-fifth-century date for at least part of each cemetery, and all of which are unlikely to have been made on site. Especially interesting is the direct association of one of the Highdown carinated bowls with a cone-beaker of a type current in Egypt in the fourth/fifth century (Welch 1976).

It seems, therefore, as though at least some of the pottery dated primarily on stylistic grounds has been correctly assigned, although of course it does not guarantee the accuracy of later criteria.

Attempts to classify the remaining pottery of the period depend largely on typological analysis of form and decoration, supplemented by what evidence there is from associated finds. Few of the other pots from Alfriston or Highdown were found with many grave goods at all, and none were found with the Hassocks urns. It is reported that two of the cremation urns from Highdown contained the remains of circular brooches (Griffith 1925 and Wilson 1940), which presumably means disc brooches, but as we have neither the brooches nor know which the urns were we are not much farther forward. On the other hand, the presence of brooches and pins which belong to later Saxon periods in graves at Highdown and Alfriston indicates that both cemeteries continued in use for some time after the currency of the earliest pottery forms, which makes it likely that some at least of the remaining pottery is of a later date. However, as we have seen, Professor Myres believes that sixth-century pottery is largely absent from Sussex (and indeed from Kent) (Myres 1969, 111). Do we conclude, therefore, that pottery ceased to be made in Sussex during the sixth century, that Sussex was deserted by the Saxons during that period, that further cemeteries and sites remain undiscovered, or that we have the pottery in front of us and are failing to recognise it?

This is an appropriate point at which to acknowledge the debt that any student of pagan Saxon pottery must owe to Professor Myres, who in his latest publication, *A corpus of Anglo-Saxon Pottery of the Pagan Period,* illustrates and comments on most of the extant examples of the period from Britain. Both in these volumes and in his earlier book, *Anglo-Saxon Pottery & the Settlement of England,* Professor Myres suggests certain dating criteria which have emerged as a result of a life-time's study of pagan Saxon pottery, and these I propose to use as guidelines in this paper. The underlined numbers are Myres' Corpus numbers. Site names and numbers are museum accession numbers.

First, to recap on the information provided by the facetted carinated bowls, Highdown 4598 (5) Highdown 4563 (Myres 1969, Fig. 37 no. 5) and Alfriston (Myres 1969, Fig. 37 no. 11). These,

together with Highdown 4602 (3838) without facets are dated to around 400 A.D. by Myres from Continental parallels. Obviously they may well have continued to be popular for some time after that date, and their presence in Sussex need not imply such an early date. These forms are absent from the Bishopstone settlement and the other cemeteries, and are totally distinct from the bulk of Sussex pottery in their size, angular profile and the skill with which they have been made. Only one other vessel bears a clear relationship to the facetted group, Hassocks 161 (Fig. 33a). It too has a ring of facets around the body, but the profile has changed. With its more rounded contours and dropped waistline, it is much closer in shape to the majority of Hassocks pots, which are typically round-bodied and smooth in profile. It must be later, but how much later?

Another pot which poses a similar problem is Alfriston Grave D (Myres 1969, Fig. 17 no. 13). Its shape is again based on the carinated bowl but with slacker contours, and it carries a scheme of decoration which echoes earlier Continental *stehende bogen* motifs, but in such an abbreviated style that the swags are merely sketched in, unlike the original patterns which were more formal and complicated. Highdown 4595 (3839) also has a less sharply carinated profile, but with a scheme of stamped decoration. All three of these pots give the impression of being later copies of the earlier forms, but how late is impossible to say. They do indicate that later potters were obliged to draw their inspiration from old-fashioned models when they aspired to something more ambitious than a plain pot, perhaps because of a lack of more up-to-date imports.

Probably the two best known Saxon pots from Sussex are the two zoomorphic bossed urns from Grave 52, Alfriston (12) and Highdown 4567 (2438). The closest parallel to this type of pot, which Myres believes is the product of the same potter who also made pots found at Mucking (3866 & 3867), London (4199) and Northfleet (346) is an urn dated *c.* 400 A.D. from southern Norway (Myres 1969). The use of the bosses, which are unique amongst the Sussex pottery, and the broad tooling and the finger-tip dimples combine to support a fifth-century date for these pots. The quality and distribution of these pots make it unlikely that they were local Sussex products, but not improbable that they were made elsewhere in the south of England, which, if true, would imply that Sussex settlements were secondary in nature, as the historical sources state (A.S.C., Nennius). It also supports the impression that the earlier material from Sussex shows more contact with its neighbours than in later periods.

On the other hand, three pots from Highdown, 4562 (4), 4596 (3) and 4590 (3180) are of very high quality, and so alike in profile and decoration that Myres plausibly identifies them as the product of the same workshop. The fact that three are found on the same site might be taken to support the view that they were local products. Again, the evidence of the decoration points to a fifth-century date—broad tooling, dimples like spots on a domino and an elaborate, formal overall pattern. A few sherds from Alfriston Grave 65 (Fig. 33b) appear to share the same type of chevron decoration in combination with particularly broad horizontal grooves and the same fine hard black burnished surface finish as the Highdown examples. Grave 65 was in fact one of the most productive from the point of view of associated finds; amongst other items it contained a fine bronze pin and a single saucer brooch, together with three amber beads, suggesting that this grave was not among the oldest in the cemetery. On the other hand the sherds from this grave were a mixed bag, representing at least ten different pots (Griffith and Salzmann 1914) which may have been antique when they were thrown in.

The consistent links between Highdown and Alfriston are very marked, and it would be interesting to know whether it was a special relationship or one shared by more early Saxon sites. Unfortunately the pottery does not help a great deal here. It is certainly true that none of these early forms were found at Bishopstone, and yet the cemetery metalwork here includes a Quoit Brooch

0   5m
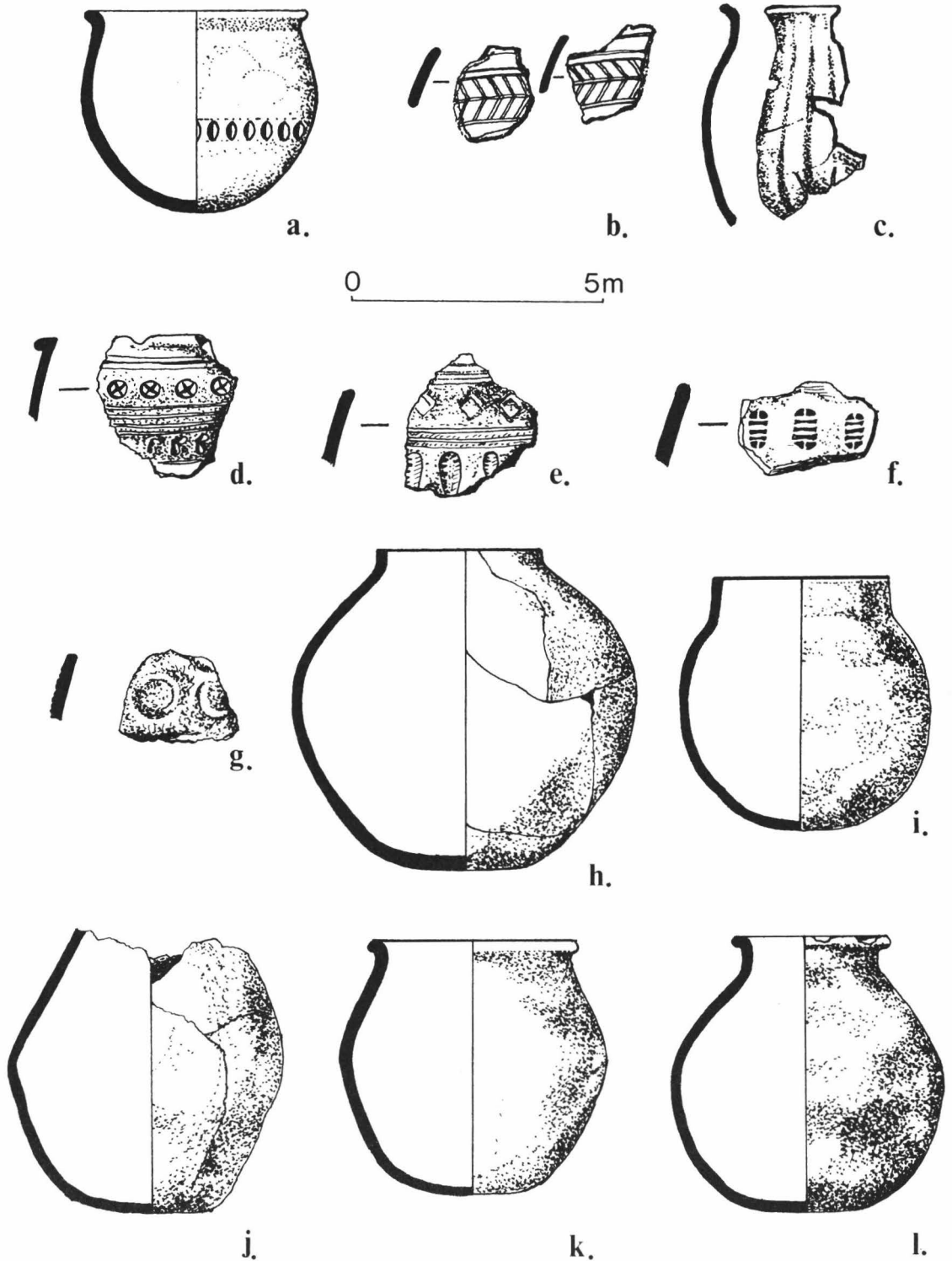
Fig. 33.   Pagan Saxon pottery in Sussex. (x⅓).

style buckle (Evison 1968) which should belong to the early fifth century. The settlement site did yield one piece of pottery of particular interest, however—a fragment of a tall, fluted vessel quite unlike anything else from Sussex (Fig. 33c) although paralleled in Kent and on the Continent (Myres 1969, 30 & 1978). Myres suggests that this surface modelling is based on imitation of late Roman fluted metal vessels, and its presence at Bishopstone would seem to be an indication that the settlement is contemporary with the early fifth-century phase at Alfriston & Highdown. Other cemeteries in East Sussex are also known to have begun in the fifth century but do not provide any relevant pottery links, except perhaps in fabrics.

Apart from the early fifth-century pottery and its derivatives, however, only a small proportion of the remaining pieces can be dated with any certainty. The trend that one would expect to see is the growth in popularity of stamped decoration, culminating in a predominantly 'stamps combined with linear decoration' fashion by the mid-sixth century. There are only a few pots which fall into this category from Sussex. Two sherds found at Highdown are stamped and grooved—Worthing Museum nos. 72/1170 and 72/1171. The first has the common cross-in-circle stamp and broad tooled lines (Fig. 33d) and the other is more interesting in having a well-cut fern-leaf stamp combined with horizontal grooves (Fig. 33e), which bears a distant resemblance to a barred stamp on a sherd from Bishopstone (Fig. 33c). An unusually elaborate pot from Hassocks (Lewes Museum 210, 8) has parellel grooves filled with small serrated crescent-shaped stamps around the neck, forming a collar, above a zig-zag row of the same crescent stamps and large individual rosette stamps, above a further row of 5-petalled stamps. The scarcity of linear guidelines, which Myres notes as a feature of late stamped pottery, combined with the large size and the profile of its rim probably puts this pot in the seventh century.

Another pot with a decorative scheme consisting mainly of stamps with a lightly grooved collar around the neck is Hassocks 160 (7). It shares the cross-in-circle and circular stamps with a stamped-only pot, Highdown 4566 (2437) combined with toothed comb impressions on the upper part of the body. Hassocks 201 (9) and Highdown 4566 (2437) have similar cross-in-circle stamps, and the latter has a similar circular stamp to that on Bishopstone Fabric 3 (Fig. 33g), where it occurs in conjunction with grooved lines. Only fourteen decorated sherds were found at Bishopstone, and the stamps represented are mainly rosette types with triangular or rectangular segments, the circular stamps on Fabric 3 and the barred stamp already mentioned. Highdown 4565 (6) is neatly stamped all over, mostly with a cartwheel stamp with occasional patches of cross-in-circle stamps. The decoration on all this group of pots is consistent with a date in the later sixth to seventh centuries on the basis of stylistic trends elsewhere in England. The profiles of the pots tend to support this—the taller narrow-necked vessels are typical of later pagan Saxon pottery, and the rounded body of Highdown 4566 is very close to the plain round-bodied pots of the later Hassocks cemetery.

Besides the stamped-only pots, there are also some with linear decoration only. Hassocks 29.147 (10) has a typical Hassocks profile with six pairs of rather deep vertical lines down the body, while a Hassocks pot in Brighton Museum (No. R2481 Fig. 33h) has finer vertical lines in groups running down the body from a horizontal line around the neck. Finer lines are also held to be a trend in later decorative schemes (Myres 1969) and the profile of the Brighton example, while not paralleled amongst the rest of the pottery, is consistent with a later sixth-century date. A sherd from Bishopstone has lines pricked out in a rectangular design (Bell 1977, Fig. 104 no. 46) but the fragment is too small to form any conclusions from it.

The decorated pottery accounts for just over a third of the pagan Saxon pottery from Sussex. The rest of the material is completely plain, and in attempting to classify it, one has to bear in mind

Distribution of pagan Saxon pottery in Sussex

Key

1. Pagham?
2. Highdown
3. Hassocks
4. Saddlescombe
5. Portslade
6. Moulescombe
7. Kingston
8. South Malling
9. Glynde
10. Selmeston
11. Alfriston
12. Bishopstone
13. Saltdean
14. Friston
15. Alfoldean?
16. Ocklynge Hill?

0   5   10miles
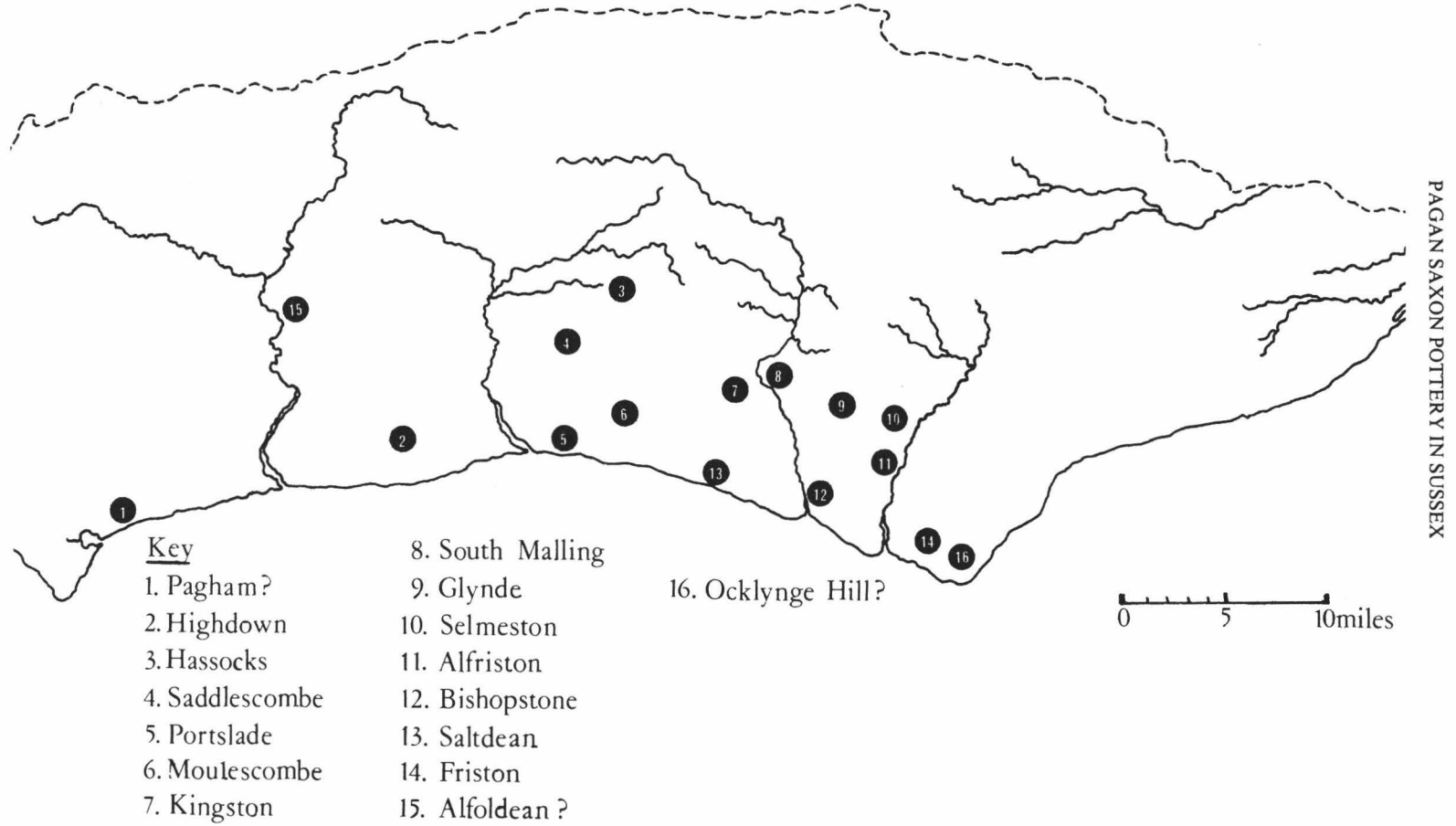
Fig. 34.   Distribution of pagan Saxon pottery in Sussex.

Myres' observation that practically any form can occur in early or late contexts, and that forms can occur simultaneously. Nevertheless, it is worth looking for what evidence there is by way of form or fabric.

Myres isolates the following forms as deriving directly from Continental types of the fourth century or earlier: sharply biconical forms, the hollow-necked series with pronounced shoulders or carinations and some globular urns, especially those with upright rims, a type which was Anglian rather than Saxon. After the initial period of settlement, these forms tend to lose definition and merge into a wide variety of mixed types with slacker contours. Scarcely any of the plain forms from Sussex can confidently be placed in the earliest category. In the bi-conical series the only possible example is Highdown 72/1169 (3846) which has already been noted for its similarity to Hassocks 161 (Fig. 33a) and thus indirectly related to the Schalenurne series.

Shouldered hollow-necked plain pots do not appear amongst the Hassocks, Alfriston or Highdown funerary vessels, nor in the Bishopstone settlement. The only truly shouldered pots are one from Selmeston (4111: unseen, in private collection) and one from Saltdean, Lewes Museum 51.31 (3658), which Myres regards as sub-Roman.

In the case of the globular pots, so many of the Sussex examples might fall into this category that it is most likely that in this area the form persisted throughout the pagan period with minor variations. One group of vessels which comes under this heading is the group from Hassocks with deep upright rims, of which Hassocks R595b/2 (Brighton Museum: Fig. 33i) is a good example. As Hassocks cemetery has been assigned a date-span of between c. 550 and 650 A.D., (Cunliffe 1974) this presumably precludes these forms being any earlier, and in fact the deep rims do not seem to occur on any of the other Sussex sites.

Two other categories with good claims to an earlier sixth-century date are the widemouthed bowls and those intermediate forms which are basically globular but with varying proportions and rim forms. Highdown 4597 (3842) is a representative example, and there are others from Hassocks. The low bulbous types and those with tall narrow necks, which Myres ascribes to the late sixth century or later, are rare in completely plain form—in fact, the type only appears in an unprovenanced pot in Lewes Museum (Fig. 33j) and in miniature in the beaker from Glynde. The form occurs in decorated examples, however, in conjunction with schemes of late stamped ornament.

We are left with few more clues and quite a few pots unaccounted for, although what evidence there is indicates a later rather than earlier date. The largest remaining category comes mainly from Hassocks: a group of six attractively curved if rather thick walled pots with smoothly everted rims (R595b/1; Fig. 33k) which seem to be partly related to the common globular shapes and partly to the taller narrow-necked profiles of the later pagan period. One vessel which seems to occupy an intermediate position in this progression is Brighton Museum R675/114 (Fig. 33l), noticeable for the care with which it has been smoothed and burnished to quite a high gloss.

On balance, therefore, an analysis of the extant material by stylistic criteria leaves one with the impression that the pottery from Sussex is not representative of the entire Saxon period. On the other hand, if one questions the validity of even some of these criteria, it would be possible to re-assess the picture in quite a different way. My own view is that such a re-assessment is unjustified at present, because many of the apparent anomalies could so easily be removed by the recovery of a larger sample of adequately stratified local material. Without Hassocks, for example, and its useful collection of later types, the picture of pagan Saxon occupation of Sussex, if based on the evidence of the pottery, would be one of almost total inactivity in the sixth and seventh centuries. As it is, the

Hassocks pots offer us a valuable clue as to what we might look for in pottery to fill the gap between the mid-fifth century and the later sixth century. Plain forms predominate, profiles are simpler and more rounded, and where decoration occurs it is sparser and less structured than in the earliest pottery. The 'missing' sixth-century pottery, if found in a fragmented condition, could thus be difficult to recognise, and here it is worth bearing in mind Martin Bell's discoveries of previously unrecognised Saxon fabric at Highdown, which suggest to him that buildings previously regarded as Roman or Iron Age are in fact connected with the cemetery. This points to the conclusion that even without further excavation, a programme of scientific fabric analysis on the material we have and a greater familiarity with the reserve collections in our museums might well provide significant results.

Author: Caroline Dudley, Brighton Museum.

POTTERS, POTTERY AND MARKETING, A.D. 700-1000

by Richard Hodges

The scarcity of Middle Saxon pottery from Sussex and the significant accumulation of Late Saxon pottery from the county urges me not to summarize data but to evaluate it as evidence of one well-documented craft in a period of economic change. For this reason my paper is in two parts. The first is concerned with the pottery as evidence of potters and with the distribution of these wares. Much in this part is to be found amplified in my monograph on the Hamwih pottery (Hodges 1980a). The second part is concerned with economic models drawn from economic geography and anthropology. Their relevance can now no longer be questioned as archaeology strides towards becoming an inter-disciplinary subject. In this instance these models are particularly apt as there is the distinct possibility that they may be tested in the field, a phenomenon all too rare in British archaeology.

1.

Middle Saxon Pottery

The Middle Saxon pottery from southern England can be briefly summarized (Hodges 1979a for all details). Disregarding Cornwall there is little or nothing from Devon and Dorset; the few hand-made sherds from Cheddar comprises the Somerset group (Rahtz 1974) while as few sherds have been found in Wiltshire. The massive collection of grass-tempered pottery from Old Windsor attests to one or more specialists operating in this area, but at present the evidence is particularly localized. London poses a complex problem that has been considered elsewhere, while from Kent there are several good groups. Two major assemblages have been found at Canterbury (possibly continuing the important Early Saxon sequence) and at Sandton on the coast. Individual vessels have also been found at Dover, Ospringe and Richborough. From Sussex there are similar groups though none of them are very large. White (1934) published the first from Medmerry Farm; Gregory (1976) has published an assemblage from nearby Pagham; Down (1978) has published a collection from Chichester though these wares are clearly absent on most of the many sites examined to date; and a small group have recently come to light at Selmeston (pers. comm. D. J. Freke). The pottery from the first three sites would certainly appear to be the modest products of specialists operating within the local potting tradition (Hodges 1980a, chapter 6).

Only from Hamwih, Saxon Southampton is there evidence of major pottery production, and here we are concerned with a site excavated on a massive scale (Addyman and Hill 1969; Holdsworth 1976). Seriation analyses have revealed the emergence of specialist potters in the first phase of the settlement early in the eighth century. These analyses have suggested that the early grass-tempered wares, which were very crude, were superseded by a sandy ware, class 3, that in turn was largely superseded by the flint and chalk-tempered wares that dominate the later eighth to early ninth-century features (Hodges 1977a; Cherry and Hodges 1978). These wares have been related to the other large assemblages of Middle Saxon pottery from southern Hampshire: from the excavations at Winchester, Chalton and Portchester. There are also several smaller groups, most of them coastal like the Sussex assemblages, that have been reviewed by Cunliffe (1974; 1976).

These southern English groups would seem to continue the Early Saxon forms. The plain wares, for example, from the Bishopstone settlement are paralleled in Middle Saxon domestic contexts (Bell 1977: 227-235); undecorated funerary wares from Bowcombe Down on the Isle of Wight and from Knockdean, Hampshire (Knocker 1957, Fig. 17, no. 1) are clearly typologically ancestral to many of the Hamwih forms. These forms essentially comprise globular cooking-pots some with shoulders and a very few with pierced lugs; high-necked jars and bowls. Pitchers from Hampshire and Sussex are very rare, and we may wonder if the Richborough vessel is not the exception in the Kent groups. None are known from the Canterbury and Sandton assemblages.

Very few of these Middle Saxon wares are decorated as is the case from England generally, and as in the Early Saxon period the ornamentation tends to be on the finest vessels. Indeed, both Dunning (1959: 50) and Cunliffe (1974: 133) have in the past suggested some of these to be Continental imports. These fine decorated vessels have been found only at Pagham in Sussex (Gregory 1976), continuing a tradition attested by the well-known Early Saxon vessel found in the churchyard (Myres 1978: 209). Decorated vessels have also been found in the Hampshire assemblages. From Hamwih, for example, we can get a clear impression of this expression of individualism by particular potters. Sixteen decorative styles had been identified by 1976 on forty-five sherds representing a minimum of twenty-three vessels. (Two stamps have also been found.)

There is so little Early Saxon pottery from southern England to the west of Kent that we may seriously speculate whether the industry neither developed nor changed between 500 and about 900 A.D. If, indeed, this is the case it contrasts with that in Kent and elsewhere in eastern England where the demise of the pagan burial rite in particular has a dramatic effect on the output and standards of Middle Saxon potting.

From southern England we can propose that pottery was seldom and most probably specifically made in the Middle Saxon period. We have evidence of specialists whose output was not massive and whom, we may suspect, were potters only 'part-time'. We have a little evidence of localized trading, though nothing that compares, for example, with the extensive distribution of (Middle Saxon) Ipswich ware in eastern England (Dunmore, Gray, Loader and Wade 1975, Fig. 33). In all these cases there is some real consistency in the modest range of forms. By contrast the few sherds from sites like Wareham, Cheddar, Whittington and Downton exhibit great typological and fabric variability. Many of the small groups of grass-tempered pottery from the Hampshire basin, such as those from Hamwih, also fall into this category. In these instances the crudity of the wares conforming to Anglo-Saxon styles, suggests that the pots were made in domestic contexts for occasions when and if they were required.

Late Saxon Pottery

There is good reason to debate the origins of the potter's wheel in East Anglia: was it introduced before or after the Danes arrived (Hurst 1976: 314, 318)? In southern England no such debate is needed, nor is it necessary to consider either Rhenish or northern French influences on the Late Saxon typology as in East Anglia. In ceramic terms two quite different cultures appear to exist: to what extent this initially reflects the creation of the Danelaw is still not clear. In southern England the wheel was evidently introduced after 878 A.D., the date that divides Middle and Late Saxon England. It was a tool that was slowly mastered and to which Middle Saxon 'hand-made' forms were often horribly adapted. This typological development, repeated in Denmark about a century later, can be easily documented.

The late ninth- or early tenth-century wares from southern England are mostly characterized by the half hand-made, half wheel-made, wholly and crudely trimmed vessels that bring the Middle
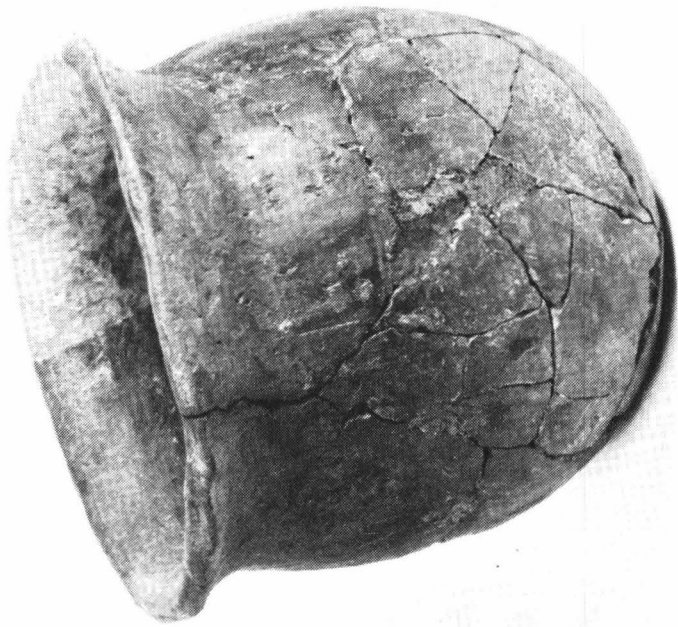
Plate I.   Two class 3 vessels from Hamwih, Saxon Southampton, *c.720-c.750* A.D. (Photo: Nick Bradford).
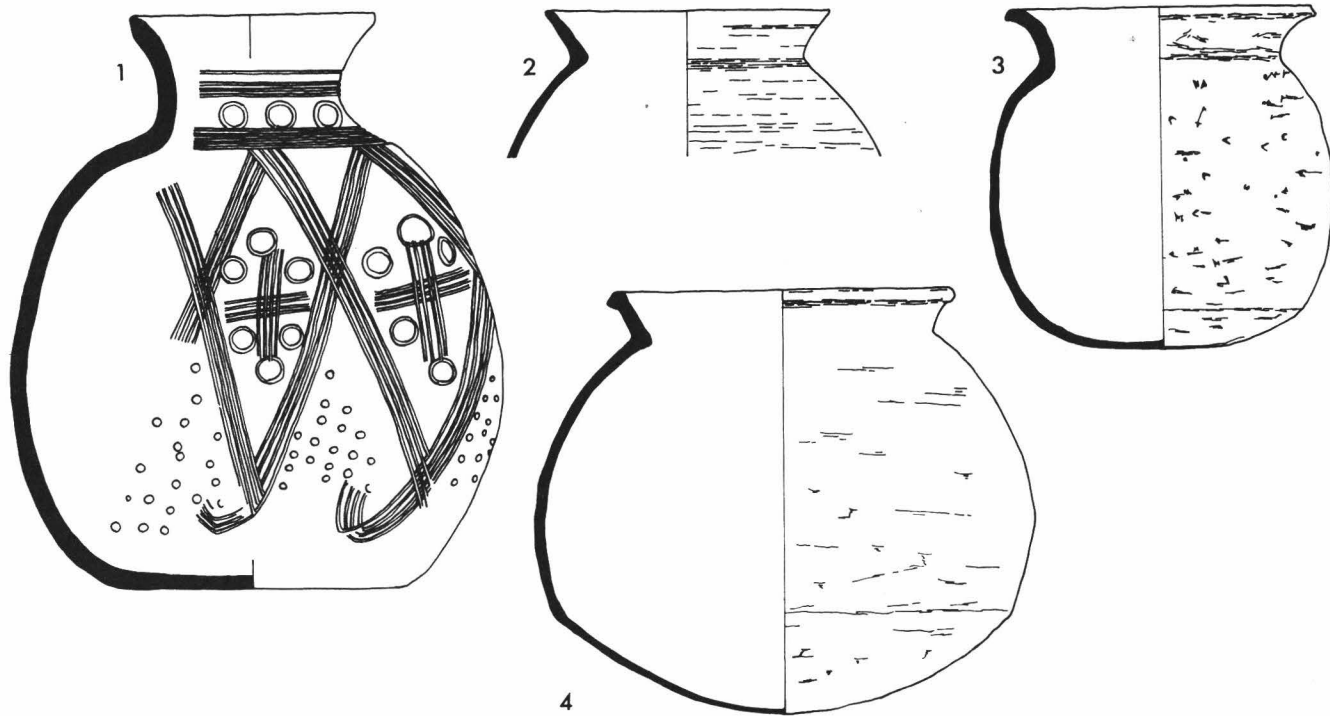
Fig. 35. A range of Sussex pots from the seventh to the eleventh centuries. 1 Pagham: seventh century/early eighth century? (after Cunliffe); 2 Chichester: early tenth century; 3 Chichester: tenth century; 4 Chichester: eleventh century (after Down). ($\frac{1}{4}$).

Saxon forms into a new age and to a larger populace. Good groups of this pottery 'in transition' exist from Canterbury (pers. comm. Ailsa Mainman), and from Chichester (Down 1978: 341-352 and refs, therein). The wares from Burpham (Sutermeister 1976) appear to be similar, while the well-studied Portchester assemblage provides an illuminating contrast being late tenth-century (at earliest) in date (Cunliffe 1976: 191). We have demonstrated this ceramic development at Wareham, Dorset where on a High Street site the pottery attains quality as the site changes from an essentially rural one through to one that is in many respects urban by the eleventh century (Hinton and Hodges 1977). By the latter date the three or four intervening generations of local potters had mastered the wheel and were producing wholly (or very nearly so) wheel-made wares in a range of forms.

By the eleventh century in Sussex several proficiently-made wares were being made. Portchester ware was probably produced near that site possibly at Wickham: these include elegantly decorated roller-stamped vessels (Cunliffe 1976: 190); the recent discovery of six eleventh-century clamp kilns in Chichester (pers. comm. A. Down) increases the evidence for that urban industry and may demonstrate its association with the West Sussex stamped wares in that distinctive oxidized fabric (e.g. Down 1978, Fig. 11.4); lastly there is the accumulated evidence of an industry operating in the Lewes area (Freke 1974: 78).

Glaze production does not strictly concern the Sussex industries. However, the important industry associated with Winchester, Winchester ware (Biddle and Barclay 1974), demands a brief note. An early tenth-century date for this industry, in view of its developed forms and decorations, must suggest that it was initiated in Alfred's or Edward's capital by alien potters. However, as most of the finds listed in the review paper by Biddle and Barclay are later in date we may more satisfactorily conclude that it owes its origin to the indigenous tradition we have just traced and commenced no earlier than Edgar's reign. The few glazed sherds from late ninth- or early tenth-century contexts in Canterbury emphasize this point. These wares are bungled attempts to apply glaze to Middle Saxon fabrics. The experiment clearly failed (Hodges 1980a). The one elegantly glazed Portchester ware pitcher (Cunliffe 1976: 189) lends still more weight to a later tenth-century date for Winchester ware. We may possibly speculate, therefore, whether it was a technique derived from the Stamford ware potters.

Imported Pottery

There is little evidence of Continental influences on the local traditions. Indeed, one obvious early Norman imitation from Hastings (Barker and Barton 1977, Fig. 11, no. 1) stands out as an exception. Similarly it is unlikely that the ornamentation on the West Sussex wares or the Portchester wares, for example, owe their origins to imported French pottery.

There are very few imports from Sussex from either the Middle or Late Saxon periods. However, from Hamwih, Saxon Southampton there is, of course, the major assemblage of Carolingian wares. More than thirty fabrics have been identified in this substantial collection with scarcely one form being duplicated in the extensive excavations across the settlement. These wares were mostly made in northern France though their precise origins are for the most part unknown. Very few of these classes have been identified in Middle Saxon contexts outside of Southampton. One class, class 14—Black wares, is the exception (Hodges 1977b). These have been found on most major Middle Saxon sites in southern and eastern England, while the tradition seems to have been occasionally imitated by the Ipswich ware potters (Hodges 1980a; 1980b). Of the sample *c.*270 imported vessels studied from Hamwih these represented about twenty per cent; it seems possible that they were originally traded as accoutrements to the wine trade (Hodges 1977b). Two vessels

were found at Portchester (Cunliffe 1976: 187) and one at Chichester (Hodges in Down 1978: 352-353) while a class 15, Grey ware pitcher was also found at Portchester Castle (Cunliffe 1976: 187).

A clear contrast is now apparent between the number of imports from Middle Saxon England and those from the Late Saxon period. Very obvious quantitative differences exist, for example, between the numbers for both periods at Southampton (Hodges 1977a) and at Ipswich (Hodges 1980b). This is discussed in part 2 below. It is difficult to substantiate this contrast from Sussex where few Middle Saxon and no Late Saxon imports have been found. In brief, from the Late Saxon period in southern England sherds of Beauvaisis and class 11 (Rouen region wares) have been found at Winchester, Wareham, Portchester (Cunliffe 1976: 187) and Southampton. Class 15 Grey wares have been identified at Sandton and Dover in Kent (Hodges 1976), while a class 13 (Meuse valley ware) sherd has been found in a late ninth- or early tenth-century context at Canterbury. Furthermore, from Winchester there are also some sherds of Badorf-type relief-band amphorae (Dunning 1962).

Exports

The question of Middle Saxon exports from this region has recently been raised (Leman and Cousin 1977). This might appear very curious especially as the Saxon hand-made wares are obviously very crude in comparison with the Carolingian pottery of the same period, yet a group of vessels have recently been found in the river Canche near Montreuil-sur-Mer and other vessels of this kind have been identified in the Pas-de-Calais and Nord (Hodges 1980a). Leman and Cousin (1977: 49) have indicated the similarity of these wares to those published from Hamwih and Portchester, suggesting that these might be related to traders from those sites visiting the now lost trading settlement of Quentovic which, it is usually believed, lies somewhere in the Canche valley (Dhondt 1962). Equally it might be argued that the vessels indicate the presence of the Anglo-Saxons who are thought to have emigrated to the Pas-de-Calais as well as to Britain. The discovery of hand-made wares in other northern French contexts to a certain extent supports this latter view. However, there are as yet no decorated wares and no such vessels from the numerous cemeteries excavated in this region. If a late (sixth-century) settlement is suggested we still have to demonstrate the post-Carolingian development of this pottery. For the moment, at least, it might be claimed that these vessels were associated with the poor English merchants who sought to avoid Charlemagne's tolls by passing themselves off as pilgrims.

Summary

The Middle Saxon pottery groups from southern England indicate the existence of a few craft-specialists who were probably operating for their own and perhaps neighbouring (kin-linked?) settlements (Vierck 1976). The pottery was crude and limited in typological variability, continuing certain of the forms known from Early Saxon contexts. This pottery production was translated into the new market-places at the end of the ninth or early tenth centuries. At this time the potters adapted the Middle Saxon fabrics and forms to the wheel in a bid to increase production and quality. It is quite clear that by the end of the tenth century proficiency in this new technique had been achieved. However, the integration of new forms and decorative motifs can be attributed for the most part to a strong indigenous tradition.

2.

The absence of a major mass-producing pottery centre in southern England during the eighth and ninth centuries fully corroborates the negative evidence for market places. The economy would

appear to have been primarily a redistributive one focused on central persons, either secular or ecclesiastical, rather than on central places as in classic marketing systems. However, the presence of certain localized distributions of Middle Saxon pottery might suggest the irregular existence of the market principle perhaps in a *peripheral* form (Bohannan and Dalton 1961) at fairs held at periodic intervals or possibly in the emporium at Southampton. (Metcalf has been proposing certain hillforts as the loci for Middle Saxon exchange following the discovery of sceatta finds in them or close by (1977: 91).) Equally, these minor distributions may simply relate to craft-patronage whereby peripatetic kings redistributed pots as bridewealth or in other gift forms.

Hamwih, Saxon Southampton, I have argued, is the external node (a 'gateway' perhaps (Hirth 1978)) in what has been termed a dendritic central-place system (Smith 1976). This is a partially commercialized trading system which operates through an external monopolistic market that exists on the periphery of a complex economic system. In essence, its purpose was to obtain vital goods from an underdeveloped (in our terminology) neighbour, Saxon England. Meanwhile the West Saxon kings regarded it as a means of acquiring prestigious goods vital to sustaining their central role where alliance-making elements both within the territory and beyond were important. Furthermore, the system brought useful goods for increasing agrarian production like schist hones and quern stones (Hodges 1980). The nature of this administered trade, and its controversial complexities both in theoretical and historical terms I have discussed elsewhere (Hodges 1980). It has significance for Sussex, however, as the few imported Middle Saxon vessels must have been obtained through this network rather than from the traders themselves. Hence, the existence of imports at Portchester may relate to the Bishop of Winchester who held a manor there (Cunliffe 1976: 3) and who, like other clerics, may have operated within this hierarchically organized long-distance trading system (Hodges 1980, on the church in this trade). Similarly, Metcalf and Welch have tentatively suggested the existence of a sub-king's *villa regalis* early in the eighth century at Chichester where Black wares have been found (Metcalf 1972: 65; Welch 1978: 27).

The new chronology that we have proposed for Hamwih has led me to further review the demise of this trading system (Cherry and Hodges 1978; Hodges 1980a). In this respect I have argued for the gradual emergence of new central places which began to function as market places during the middle of the ninth century (Hodges 1978). The appearance of new phases at Winchester, Canterbury and London seems to be a transitory stage between the redistributive system and the emergence of the central-placed competitive markets. Carol Smith's marketing typology might suggest these isolated settlements, functioning I believe, as primarily bureaucratic loci, to be nodes in a solar central-place system where the level of marketing is still fairly low and is certainly not significant (Smith 1976). To corroborate this model (discussed in greater length in Hodges 1980), there is little or no evidence of a significant development in the pottery industry.

The emergence of the competitive market was quite clearly encouraged in southern England by successive kings, Alfred, Edward and Athelstan, from the last decades of the ninth century. The laws of Edward the Elder, followed by those of Athelstan (with caveat) re-iterate the initial problems they faced with what had become illegal marketing outside the market-place (Attenborough 1922: 115; 135). It is possible to reconstruct the developments of the marketing system in southern England using mints and so have some impression of its penetration and importance. This has considerable significance for our understanding of the pottery industry.

In brief (Hodges 1980 for a full account), the first and major tier of markets in the later tenth century are those that were already operative more than a century before when the Danes invaded Wessex. They are, of course, Winchester, Canterbury and London. By Edward's death, Oxford had
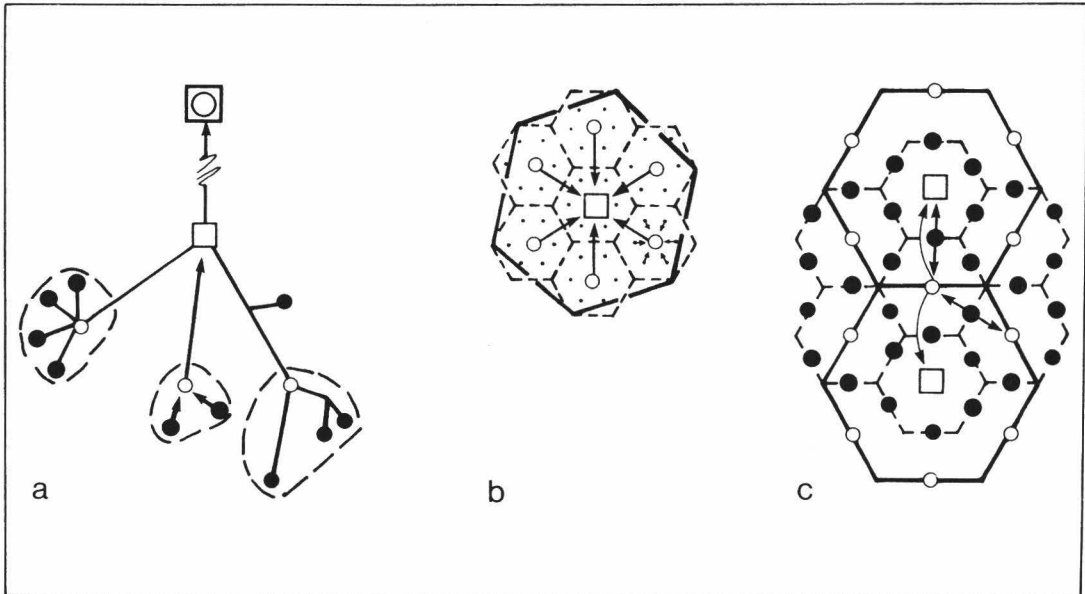
Fig. 36.   Spatial models after Smith. *a* dendritic system; *b* solar central place system; *c* competitive market system.

clearly joined this major tier having eight moneyers. The second tier were mostly set within the burhs founded by Alfred. In the area with which we are concerned, moneyers are to be found in Athelstan's markets at Southampton (2), Chichester (1), and Lewes (2) (Stewart 1978). The lowest and third tier of market-places must owe their origins to the inefficient distances that lay between those already listed, thus accounting in the first place for the strictures on illegal marketing in Edward's and Athelstan's laws. These were villages on the peripheries of the extant market system and consequently poorly serviced. (Their local location may be predicted using Reilly's Law of Retail Gravitation in the manner employed by Hodder (1974: 183-4.)) So we discover that by King Edgar's reign a third tier of market-places or at least places with minting-places (Stewart 1978) have emerged. Local demand would appear to have warranted this fully market-orientated economy and the kings were as concerned to control it using coinage (Petersson 1969). Before turning to consider the relevance of pottery, it should be affirmed that this latter tier was probably a most insubstantial market-place and possibly the location of no more than a weekly market as well as being the base of a few artisans (Hill 1978: 187). Alcock's work at South Cadbury, Somerset (1972) is an extensively excavated example of a comparable site.

This model is explicitly founded on an explicitly functional interpretation of coinage where it is used to mobilize the local economy. The strict control of moneyers through Athelstan's Grateley Laws and then in Edgar's reformation (Blunt 1976; Dolley and Metcalf 1961; Petersson 1969) tends to support this appraisal.

As in several African societies, potters tend to be some of the first occupants of the newly founded marketing system (Hodder 1965). There is, then, an important task to be undertaken in

rationalizing the sequence of potters in these new Sussex markets. In particular, unlike many other primitive marketing systems, there is a clear evidence that one centre specializing in this artifact for the entire region was a later medieval development. (This ethnographically documented pattern is, however, the case in Carolingia: Hodges 1980a.) In southern England there would appear to be potters as there are moneyers, though unlike moneyers whose raw materials are modest in quantity, a potter had to determine his place of activity with the practical variables of his production in mind: e.g. clays, wood, water etc.

The local pottery industries at Winchester, Canterbury and London were already substantial by the beginning of the tenth century. The origins of pottery production at Southampton itself are less clear, but the recent discovery of several clamp kilns at Chichester (Down 1978: 158; pers. comm. Alec Down 1978) and the recognition of a local industry in or around Lewes are the first evidence of the second tier of markets. In each case a finer chronology consistent with the monetary outline is vital. The Portchester ware products provide considerable information pertaining to a late tenth- or early eleventh-century pottery industry possibly located near Wickham or ? Bishop's Waltham (Cunliffe 1976: 188 for the former suggestion). To amplify this, fabric analysis of the Burpham pottery (Sutermeister 1976) is quite clearly required.

There are, of course, elements that do not *fit* the model. Predictably, Winchester ware like Stamford ware was traded over substantial area until local glazed wares were produced in the twelfth or thirteenth centuries. Similarly, odd vessels of the local centres stray beyond their catchments. Hence, there are reports of Portchester ware in north Hampshire and in West Sussex at Lancing (pers. comm. D. J. Freke).

The development of local industries will have negated the prestigious values of imported pottery, hence perhaps their scarcity in Late Saxon England. However, the modest nature of Late Saxon Southampton, for example, points to a modest concern with long-distance trade (Sawyer 1965: 160-2) which contrasts with the rapid expansion of the internal economy. A cursory comparison with the development of the Romano-British marketing system as analyzed by Hodder (1972) emphasizes the alacrity with which the local agrarian economy was articulated in the Late Saxon period.

The pottery industry, then, would seem to be an expressive index of the emergence of Late Saxon markets. If we come to understand its development in conjunction with the transformation of centrally-placed villages sustaining the market-principle into medieval market-places, then we have at hand appreciable data for modelling markets and their artisan aspects. This obviously necessitates satisfactory characterization of the ceramics to distinguish centres so that we may compare like with like rather than with a few sherds from here with a few from there. Moreover, it calls for greater emphasis on sampling procedures so that we possess a scientific understanding of distribution and its relationship to the settlement hierarchy (cf. Cherry, Gamble and Shennan 1978). Finally, we need to reflect on two points. First, the historian has less opportunity to examine economic models of this kind lacking, as he does, the quantitative data essential to test his results. Similarly, we must bear in mind the patchy qualities of the anthropological material often examined in unsatisfactory time-depth. It is when considered with archaeological models that these models will possess greatest validity. Thus we may concur with Robert Adams 'that important conceptual advances in the study of trade are more likely to emerge and be adequately tested in fields in which the archaeological remains can be joined to a historical chronology and written economic records' (1975: 458). Middle and Late Saxon pottery from Sussex, therefore, has considerable implications for our generalized understanding of potters and their context within early marketing systems.

ACKNOWLEDGEMENTS

Note

The very important series of papers in David Hill (ed.), *Ethelred the Unready,* B.A.R. 59, Oxford, 1978 appeared too late to consider in this paper. David Hill's contribution to this symposium clearly takes a similar course to the one discussed here.

Author: Richard Hodges, University of Sheffield.

POTTERS, KILNS AND MARKETS IN MEDIEVAL SUSSEX: A PRELIMINARY STUDY

Anthony D. F. Streeten, B.A.

The analysis of regional variations in style and fabric has superseded an earlier preoccupation with chronology (Moorhouse 1975, 165), but definition of 'ceramic regions' is clearly secondary to the identification of marketed products from specific kilns. Unlike metalwork, pottery and other ceramic materials are among the few household objects found in the archaeological record which are potentially capable of being linked with a source or area of production. Once the problems of identification have been overcome, not only will the evidence reflect local geology and style, but, as a traded commodity, the products may also give insight into the economic organisation of the pottery industry.

Several medieval kilns have been excavated in the county, and other centres such as Brede, E. Sussex (Austin 1946, 94-5) are known from wasters; indeed, the kilns at Bohemia, Hastings, E. Sussex are among the earliest recorded discoveries in Britain (Lower 1859 and Ross 1860). Archaeological evidence can be supplemented from documentary sources (V.C.H. 1907, 251-2) and the coincidence of early personal- and place-names may indicate other workshops. Some of the material has been summarised (Le Patourel 1968, 125) but a detailed evaluation of the archaeological evidence, documentary sources, personal- and place-names is being prepared by the writer. Many place- or field-names containing the element *pot-* are of recent origin, for instance Potter's Barn at Thakeham, W. Sussex probably takes its name from a local family (Mawer 1929, 182); others relate to post-medieval pottery manufacture; and even *crock-* or *pot-* names of proven antiquity may be derived from *crōc-* OE (crook) or *potte-* ME (pit) (Smith 1956, I,112 and II,72). Likewise, early personal names are not necessarily occupational, although those recorded before *c.* 1300 or containing the element *le* may be significant (Fransson 1935, 29). An important distinction must be made between specific documentary references to occupation, clay rent, or marketing of products, and the circumstantial evidence of personal- and place-names; but where, for instance at Framfield, E. Sussex, both *pot-* and *crock-* personal names occur in the same parish (Hudson 1910, 198 and 309) an association with pottery manufacture seems probable.

In south-west Sussex early place-names coincide with outcrops of Reading Beds and London Clay south of the Downs, and kilns have been excavated at Binsted and Chichester, W. Sussex (see p. 00); as expected, *pot-* and *crock-* names have not been found on the chalklands, but on the fringes of the Weald there is evidence for pottery production at Graffham and Midhurst, W. Sussex (V.C.H. 1907, 251) and suggestive place-names occur at Harting, W. Sussex (V.C.H. 1907, 252) and elsewhere. This close relationship to geology is also reflected on the north side of the Weald in south-east Surrey where kilns exploiting Tertiary clay sources have been found north of the Chalk at Ashtead (Frere 1941) and Cheam, Surrey (Marshall 1924). Kilns are known on the borders of the Weald at Limpsfield (Prendergast 1973 and 1974) and Earlswood, Surrey (Turner 1974), and there are a number of personal- and place-names associated with other villages in the area.

Few of the names or documentary sources can be traced earlier than the thirteenth century,

and this might be due to circumstances other than mere survival of the records. Thirteenth-century wares no longer have the mottled surface colours characteristic of earlier types, some of which are known to have been fired in clamp kilns (Down 1978, 158). The technological innovation of updraught kilns in south-east England, possibly during the thirteenth century, implies specialisation and at least seasonal investment of labour; this could account for the emergence of rural craft names. For the archaeologist, however, the change is even more significant: tangible evidence of kiln wasters can give an independent indication of the source of certain products quite apart from analysis of the raw materials.

Diagnostic inclusions in the fabric of pottery from an area of varied geology will demonstrate the use of clays which occur in a restricted outcrop (Vince 1977) but other methods are required for the study of sedimentary clay sources in south-east England. Rigorous standardisation of fabric descriptions (Peacock 1977a) and the establishment of a fabric type-series for direct comparison (Rhodes 1977) provides a starting point for more detailed analysis. Heavy mineral separation may help to identify the origin of some raw materials, but the technique is time-consuming and sometimes impractical (Peacock 1977b). Detailed examination of the fabric texture in thin-section is quicker, and is particularly suitable for comparison of marketed vessels with the products of known kilns. The technique, based on the principles of sedimentology, was applied to a collection of Romano-British sherds found at Fishbourne, W. Sussex (Peacock 1971) and a modified approach has been used to group the products of Romano-British kilns at Rowlands Castle, Hants. and elsewhere (Hodder 1974a). Preliminary results from medieval wasters in south-east England show that different centres of manufacture are characterised by a distinctive range of quartz grain sizes in the fabric of their products.

Graphical representation of the size-frequency has been adopted in preference to statistical measures of mean size, skewness and kurtosis, and detailed assessment of the revised methodology will form the subject of a separate paper. The prepared thin-section is examined first under the petrological microscope to identify the quartz and any other inclusions. A projected magnification is then used to measure, at 0.01 mm intervals, a sample of 160 grains which are plotted on a graph according to size-frequency. A pilot sample of five sherds from each kiln establishes the degree of variation, and the results can be plotted to show the mean frequency ± one standard deviation for each size group. By this method, the subtle differences in texture between the hard-fired products of three early sixteenth-century kilns in Kent and E. Sussex can be clearly distinguished (Fig. 37), and the technique has been used to confirm the identification of their marketed products (Streeten 1979).

Coarser medieval wares can be distinguished in the same way (Fig. 38), but textural analysis must not be isolated from diagnostic traits visible to the naked eye. The intention is to provide an objective standard against which visual identifications can be tested. Practical limitations govern the number of sherds which are sampled, but results from the Binsted kiln show that the initial graph derived from just three sherds is little altered by the addition of subsequent sections; further tests with larger samples are being undertaken. Consistency has also been observed, for instance at Tyler Hill, Kent, between different kilns in the same industry. Clearly, the number of distinct size-frequency curves is finite, and it is doubtful whether the method can be applied successfully to long-distance distributions where there is a possibility that nearer unknown kilns could produce a similar graph. The technique is best suited to definition of the often local market supplied from medieval kilns, and it may help to illustrate changing patterns at different periods. In west Sussex the evidence permits just such an approach.
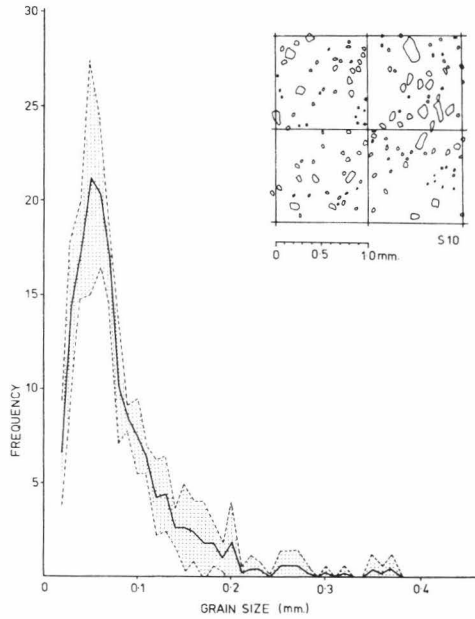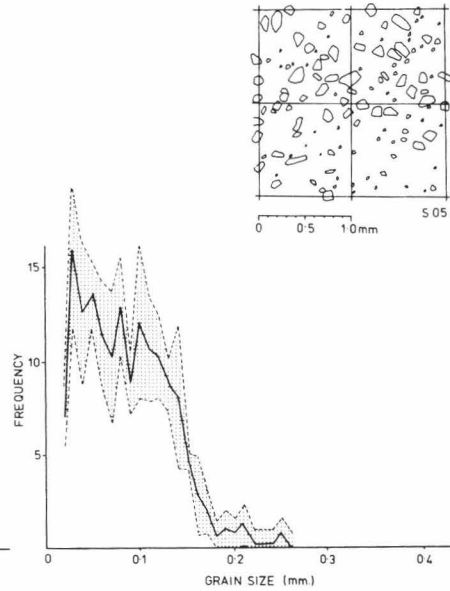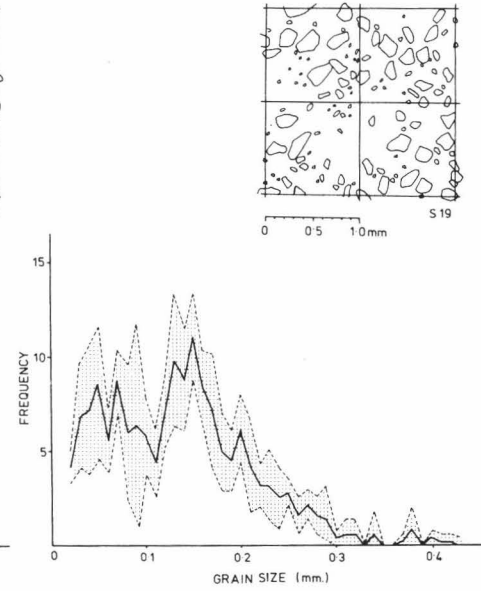
Fig. 37. Textural analysis: early sixteenth-century kilns.

Saxo-Norman wares were manufactured in Chichester, although the scale of early production is not yet certain (Down 1978, 158) and a possible early origin has also been suggested for an industry in the Midhurst area on the basis of contemporary terminology *potteresgavel* used to describe the thirteenth-century clay rent (Le Patourel 1968, 104); but this is yet unsubstantiated by the archaeological evidence. Later production is attested in both areas: thirteenth-century kilns have been excavated in different parts of Chichester (Down and Rule 1971, 153-64 and Down 1978, 10-160) and, although none of the wasters so far discovered at Graffham can be confidently dated earlier than the fourteenth century (Aldsworth and Down 1976), the 'composition from the men who made clay pots', held by the vicar of Graffham in 1341 (V.C.H. 1907, 252) and the *potteresgavel* of 36s 8d at Midhurst in 1283 (V.C.H. 1907, 251) imply the existence of an industry, perhaps of some size, in this part of the Weald. A thirteenth-/fourteenth-century date has also been proposed by Mr. C. Ainsworth for the kiln at Binsted (Wilson and Hurst 1967, 316) and the names of both Willo atte Potte and John le Tighelar appear in the taxation returns for 'Tortiton and Biensted' in 1332 (Hudson 1910, 256). In this part of the county at least, the evidence begins to demonstrate the density of production which is likely to have existed in other areas where raw materials were available.

The products of kilns in Chichester are distinctive, and it was clearly the intention of the Orchard Street and Southgate potters to produce red oxidised vessels (Barton 1971, 140), presumably from the London Clay. At Binsted on the other hand, use of the Reading Beds outcrop generally gives a paler fabric, although pockets of red clay in the deposit will fire to deeper colours. Flint- and sand-tempered fabrics are found at both Binsted and Chichester, but the sparse medium-sized flints in some of the Binsted wares occur naturally in the clay and need not therefore specifically represent the potter's technology. Some of the buff-coloured Graffham wasters are barely distinguishable from the sand-tempered Binsted products, but the Graffham fabric has greater variation and is generally coarser. Samples of the sand-tempered wares from Chichester, Binsted, Graffham and other Sussex kilns have been analysed for comparison (Fig. 38), but the differences are sufficient to permit tentative *visual* identification of marketed products.

Fieldwork of varied intensity, and the lack of finds from the vicinity of Chichester hinders precise definition of the distributions, but Binsted products have been found at a number of sites in the Worthing area, and a similar source has been suggested for finds further east at Stretham (Mr. A. Barr-Hamilton, pers. comm.) and Portslade, W. Sussex (the late Dr. G. C. Dunning, pers. comm.). Thin-section analysis, however, does not confirm this source for the Portslade vessels. If other identifications are correct, there is some indication of a possible riverine distribution inland where Binsted and Graffham wares seem to be found in the same area. Exotic items ascribed to the Binsted potters have also been found in Chichester (Down 1978, 353) but products of the Orchard Street kilns have not until recently been recognised outside the city (Gregory 1976, 216). Future finds must surely indicate more contact with the hinterland.

At present there is no evidence for continuity of either the Chichester or Binsted industries beyond the end of the medieval period. Pioneer work on the ceramic development of the region (Barton 1972 and 1979) highlights the difficulties of identifying late fourteenth-/fifteenth-century types, but the stratified sequence at Bramber Castle, W. Sussex (Barton and Holden 1977, 56) and coin associations at Tarring, W. Sussex (Barton 1963, 30 and 1964, 24 and 30) point to the emergence of new forms *c.* 1450-1500. These white-painted wares in a distinctive fabric (Barton and Holden 1977, 55) occur at a number of sites in Sussex and form part of a wider south-coast tradition (Cunliffe 1973, 46). Wasters found at Graffham (Down 1978, 363) indicate continuity
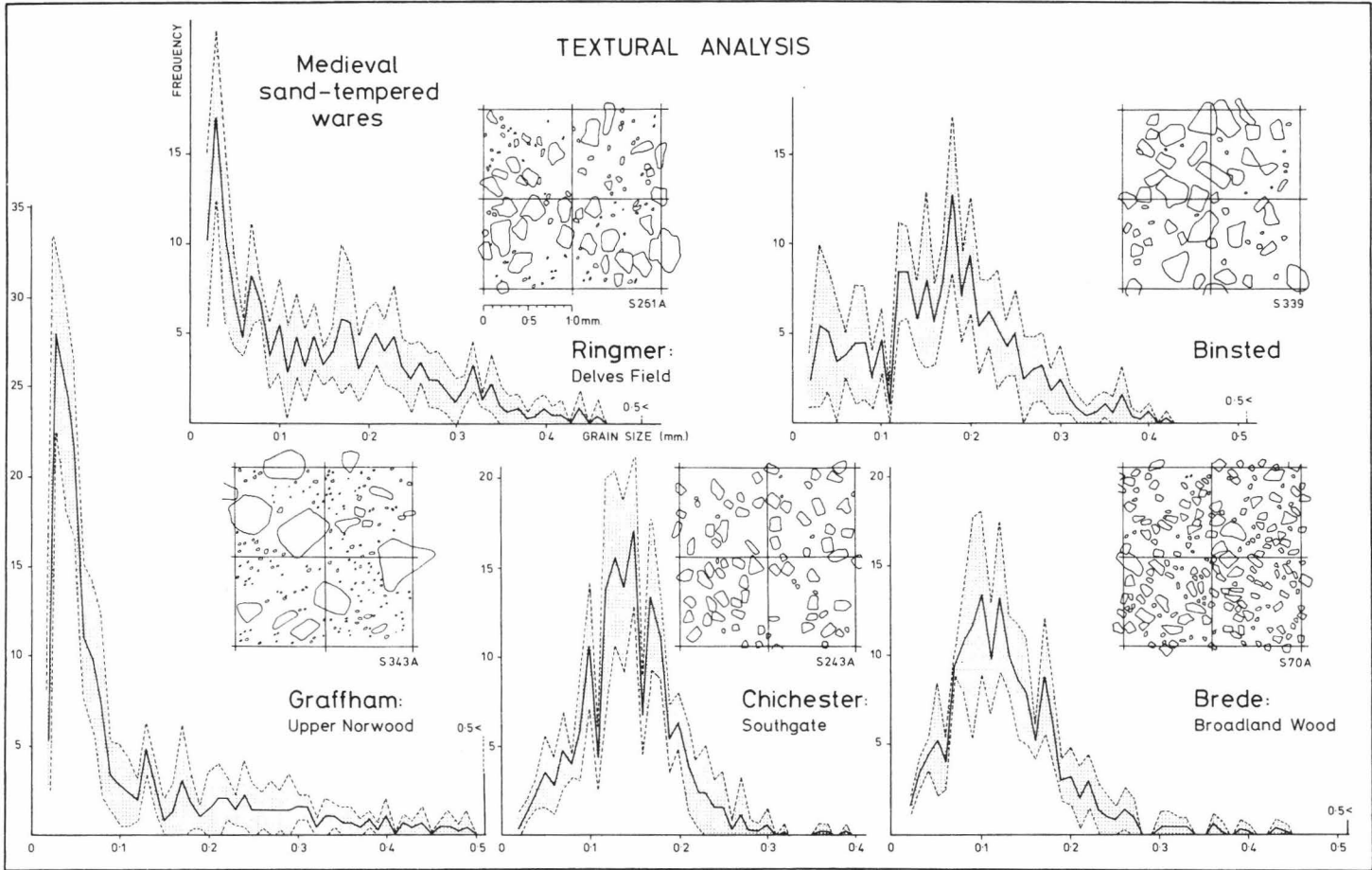
Fig. 38.   Textural analysis: medieval kilns.

there between the medieval and well-documented post-medieval industry (Barrett 1953, n.p.), but it has been suggested that vessels with white-painted decoration in the area are the products of more than one centre (Down 1978, 363).

Textural analysis, however, shows that white-painted wares from a wide geographical area conform to the quartz grain size-frequency of the Graffham products (Fig. 40). These were clearly being marketed in Chichester and a large group has also been found at Bramber Castle; a number of similar sherds from Pulborough, W. Sussex has also been sampled, and, in addition, the Worthing-area market, previously supplied from Binsted, seems to have been taken over by the Graffham white-painted wares (Fig. 41). West of Graffham, products have been recognised at Harting, and Idsworth, Hants.; and sherds from Chalton, Hants., hitherto suspected to be from a different source, conform to the Graffham pattern (Fig. 40, graph G). Further afield, complete characteristic bung-hole pitchers have been found at Wolvesey Palace, Winchester, Hants. and at Oyster Street, Portsmouth, Hants., but quantities here are small and probably represent subsidiary markets rather than the regular trade implied at Chichester. Known white-painted wares attributed to Graffham are listed in Table 1, and the sample of a roof-tile with white-painted decoration from Chichester (Down 1974, 92) (Fig. 40, graph F) may indicate that roof furniture was also manufactured there.

Many of the finds are from small-scale or salvage excavations which cannot permit reliable quantification of the material (Hodder 1974b, 340) and it is difficult to assess the significance of residual sherds in stratified assemblages. Some of the 'fourteenth-century' types may in fact continue into the fifteenth. Textural analysis has, however, enabled isolation of the products of a specific industry from a wider tradition of ceramic decoration (Fig. 40, graph H). Although alternative sources cannot be ruled out, the implication must be that some time after production at the medieval kilns in Chichester and Binsted had ceased, the Graffham industry captured these markets, and by c. 1500 was supplying a new range of wares to a large part of west Sussex and the Hampshire border. It remains to be seen whether such an interpretation can stand the test of continued fieldwork and excavation.

This pattern also seems to have continued into the later post-medieval period. Some Graffham products have characteristic stamped decoration (Wilson and Hurst 1964), a diagnostic feature which has not so far been recognised at other Sussex kilns, and the fabrics, too, are distinctive. The majority of vessels is in a smooth red fabric with green or brown glaze, but white wares with green or yellow glaze were also manufactured (Aldsworth and Down 1976) (Fig. 43, graphs A and C). Graffham types have been found at Chichester (Down 1978, 365), although there is also evidence for production of similar wares within the City itself (Mr. A. G. Down, pers. comm.) (Fig. 43, graph F), and a group of vessels from Old House, Pulborough, includes white wares and a large pan with stamped rim (Worthing Museum). Textural analysis of a sample from Dominion Road, Worthing, W. Sussex (Fig. 43, graph D) confirms visual identification of the fabric at other sites in the area, and a stamped sherd from Tortington, W. Sussex, only 2 km from the former medieval kiln at Binsted, indicates continuity of the coastal market now supplied from Graffham (Fig. 42). Further afield, small quantities of later wares reached Winchester (Fig. 43, graph E) but, as at Wickham, Hants., the bulk of the pottery was from elsewhere.

The apparent dominance of a single centre over large parts of the west Sussex market from c. 1500 or earlier, does not occur at the eastern end of the County. Archaeological evidence hints at a comparable density of medieval production, with kilns at Ringmer, E. Sussex (Martin 1902), Abbots Wood, Michelham, E. Sussex (Barton and Holden 1967, 7), Bohemia, Hastings (Lower

Fig. 39.   Medieval markets and pottery distribution in West Sussex.

The following text appears within the figure:

MEDIEVAL MARKETS AND
POTTERY DISTRIBUTION: WEST SUSSEX

○ Markets c.1350

◆ Medieval kilns

o Binsted products

□ Graffham products

o Chichester products

[Markets after Freke
(1978),with additions]

GRAFFHAM

CHICHESTER

BINSTED

m. 0   5   10
km. 0   5   10   15
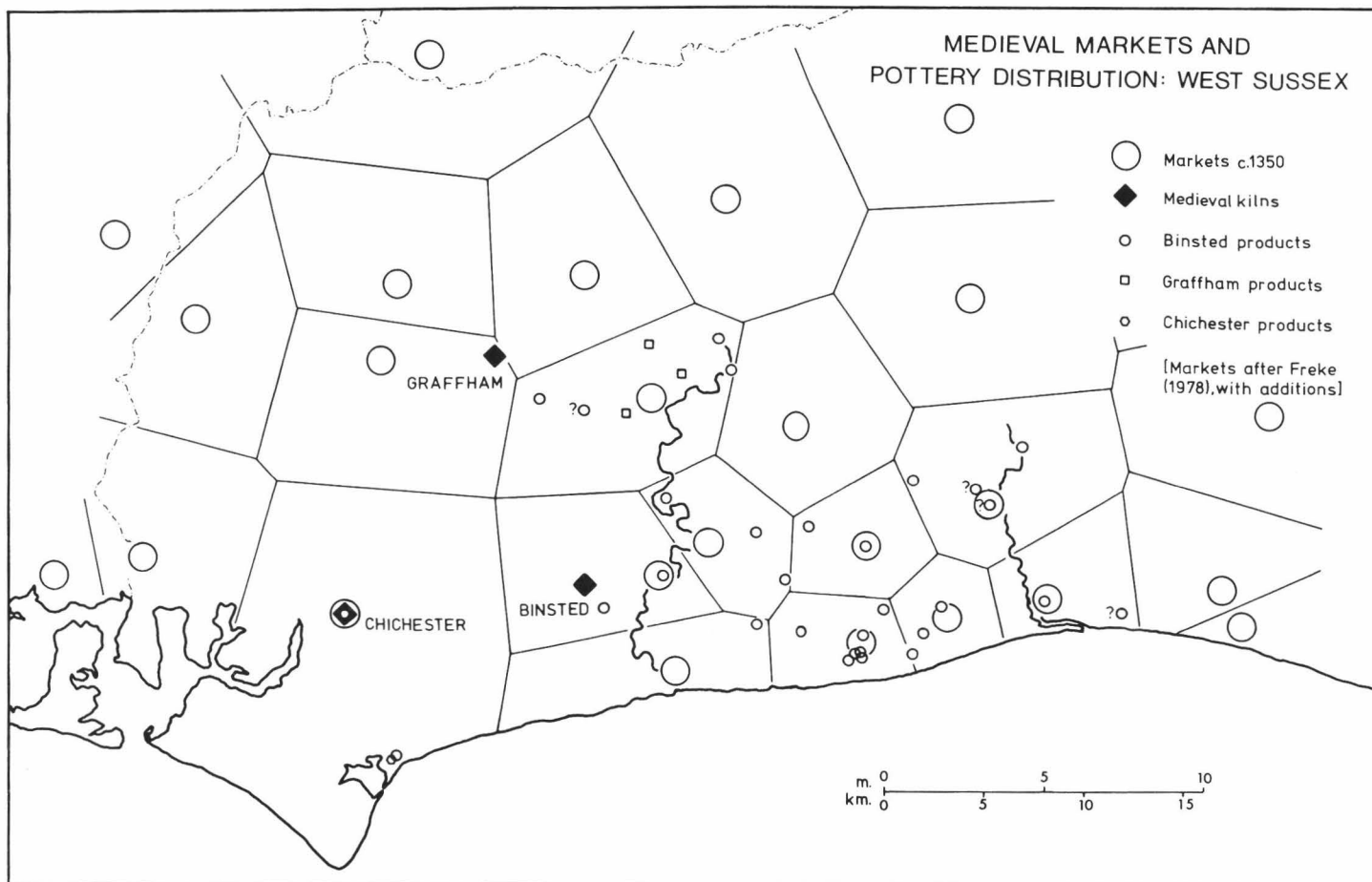
1859 and Ross 1860), Brede (Austin 1946, 94-5), and Rye (Vidler 1932; 1933; 1936), and documentary references to potters in 1533 (V.C.H. 1907, 251) demonstrate that the industry at Ringmer, like Graffham, remained in existence after *c*. 1500. Possible wasters from Brede may also be ascribed to this period, but the limited evidence from Abbots Wood suggests that production here was short-lived, and members of the Potten family at Rye, who may have been potters at an earlier date (Vidler 1932, 86), by the sixteenth century are recorded as fishermen (Hamilton Hall 1910, 10). In addition to Ringmer, and perhaps Brede, early sixteenth-century pottery manufacture is attested at Boreham Street, E. Sussex (Crossley 1972, 40) and at Lower Parrock, Hartfield, E. Sussex (Freke 1979). Products of the contemporary kiln at Hareplain, Biddenden, Kent (Kelly 1972) have been identified in association with a Parrock vessel at Bayham Abbey, E. Sussex, and other kilns can be inferred from analysis of marketed products elsewhere (Streeten, forthcoming). At High Hurstwood, E. Sussex, for instance, textural analysis has failed to identify hard-fired wares with known kilns at either Boreham Street (20 km) or Parrock (12 km), although the discovery of possible wasters near Buxted may indicate production in the area. In contrast to west Sussex, therefore, the early sixteenth-century market in east Sussex was evidently supplied from a number of small workshops; identification of the later Ringmer wares might help to establish whether a long tradition of manufacture enabled these potters to maintain a wider market than that served by the smaller kilns.

The sale of vessels could be through a variety of different outlets (Renfrew 1977, 9-10). Some would almost certainly have been sold at the workshop; others, as indicated for glass (Kenyon 1967, 111) might be carried by itinerant salesmen, or dispatched as a specific order. In some areas, requirements may have been met from distant potters operating on manorial lands, but the weekly market must have constituted one of the most important outlets. A close relationship between markets and pottery kilns need not be expected: the market often owed its origin to the whim of an entrepreneur and was intended primarily for the sale of agricultural produce, while the potter was usually tied to his raw materials and the availability of land. Proliferation of market charters granted before *c*. 1350 and the apparently local distribution of earthenware vessels may, therefore, derive quite independently from the general economic and social conditions of the thirteenth and early fourteenth century; but the two could conceivably be related. Even allowing for unsuccessful foundations, none of the population, *c*. 1350, in west Sussex would be far from a market, and pottery was supplied from a number of kilns (Fig. 39); for the post-medieval period, however, theoretical market areas are appreciably larger, and by that time the Graffham kilns had become predominant (Figs. 41 and 42). In east Sussex the medieval picture is the same (Freke 1978, Fig. 42), but perhaps here the post-medieval market, in particular the expanding iron industry, was more conveniently served by small enterprises.

The need for large excavations to establish dated ceramic sequences has become a familiar cry; perhaps a more realistic approach might be further fieldwork coupled with the analysis of pottery fabrics to define the extent of trade from specific kilns.
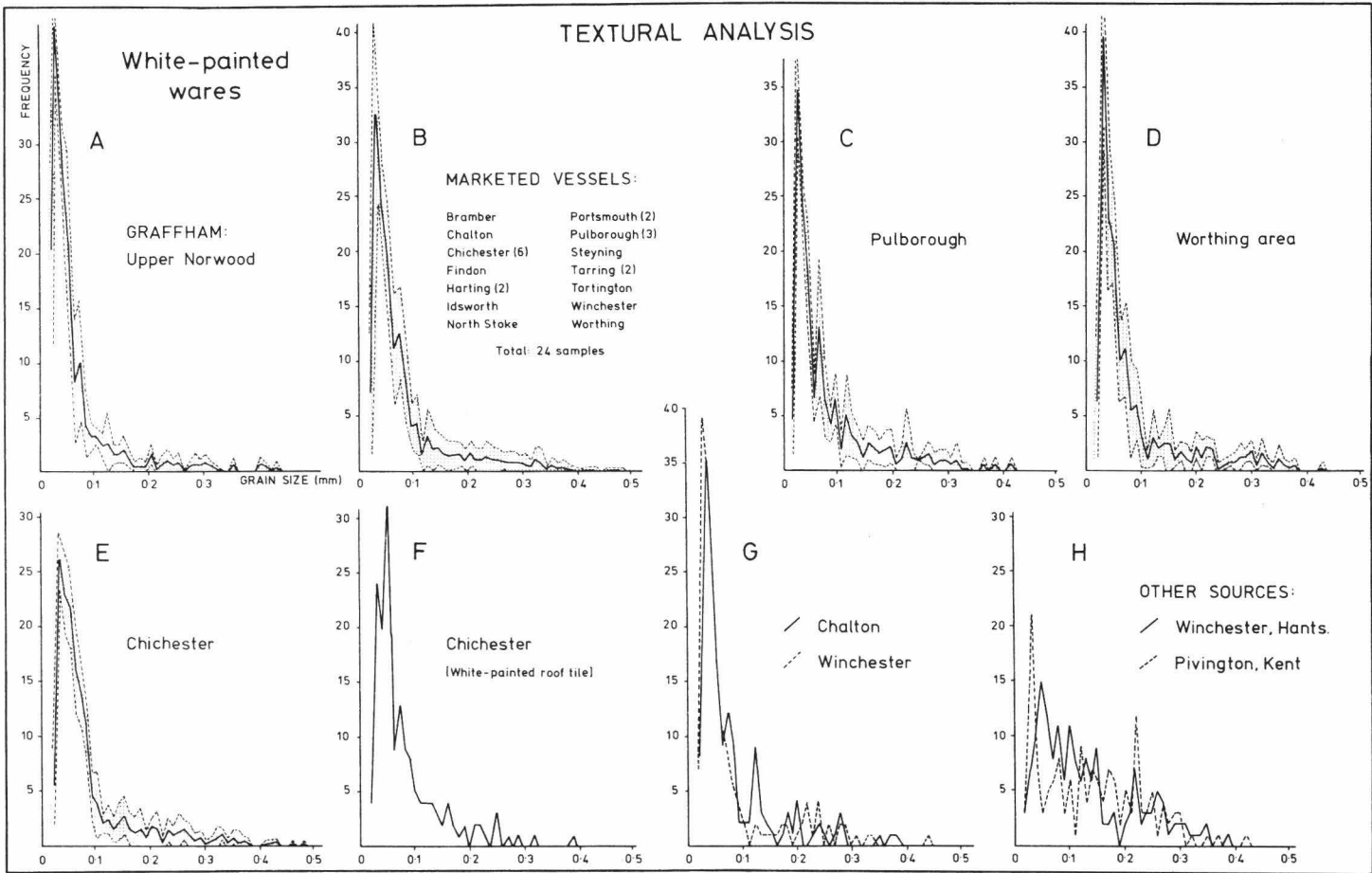
Fig. 40. Textural analysis: white-painted wares.
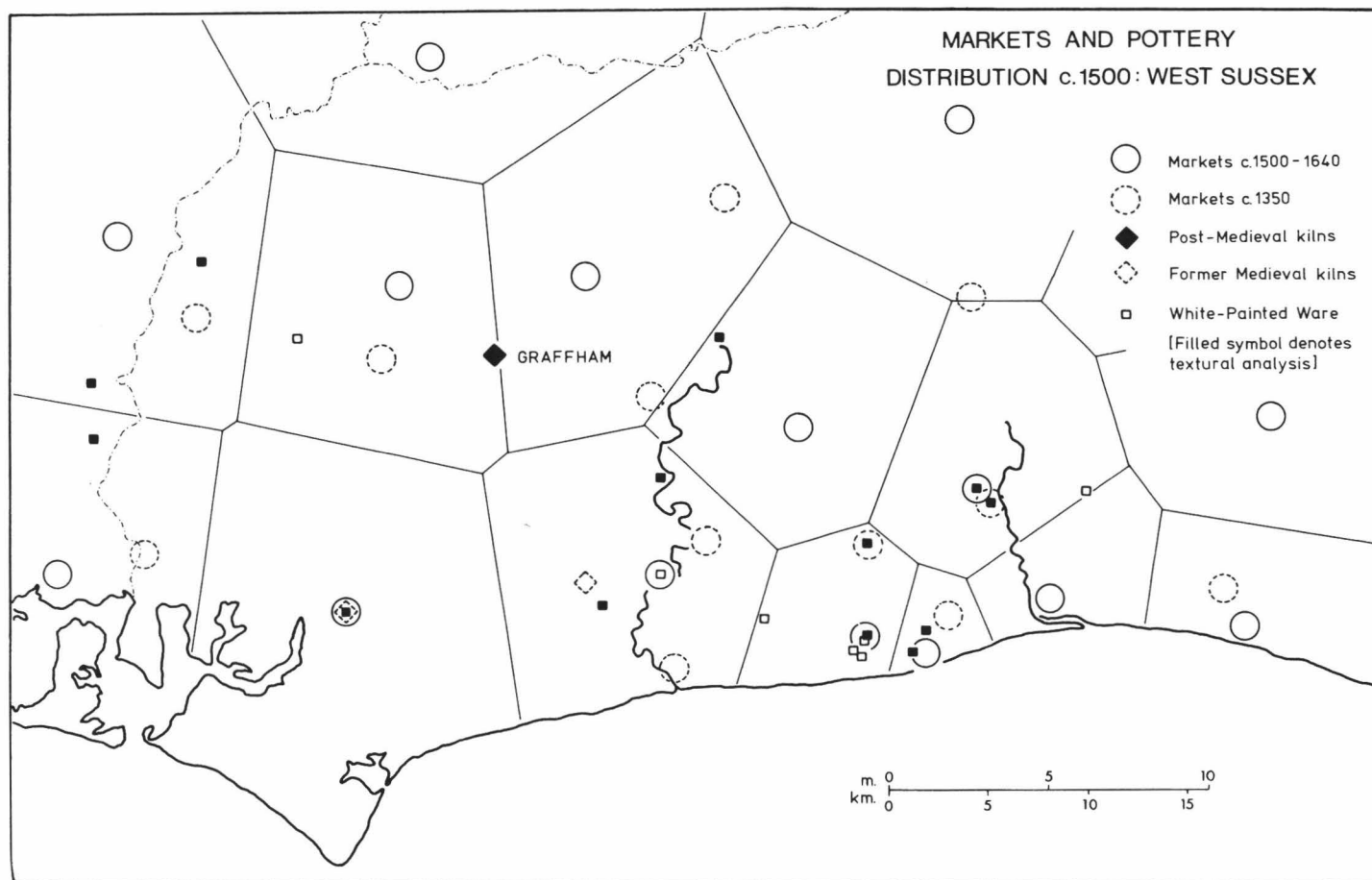
Fig. 41.   Markets and pottery distribution in West Sussex *c* 1500.

POST-MEDIEVAL MARKETS AND
POTTERY DISTRIBUTION: WEST SUSSEX

○ Markets c.1500-1640

◇ Former medieval kilns

◆ Post-medieval kilns

□ Graffham products

[Markets after Everitt (1967)]

GRAFFHAM

m. 0   5   10
km. 0   5   10   15
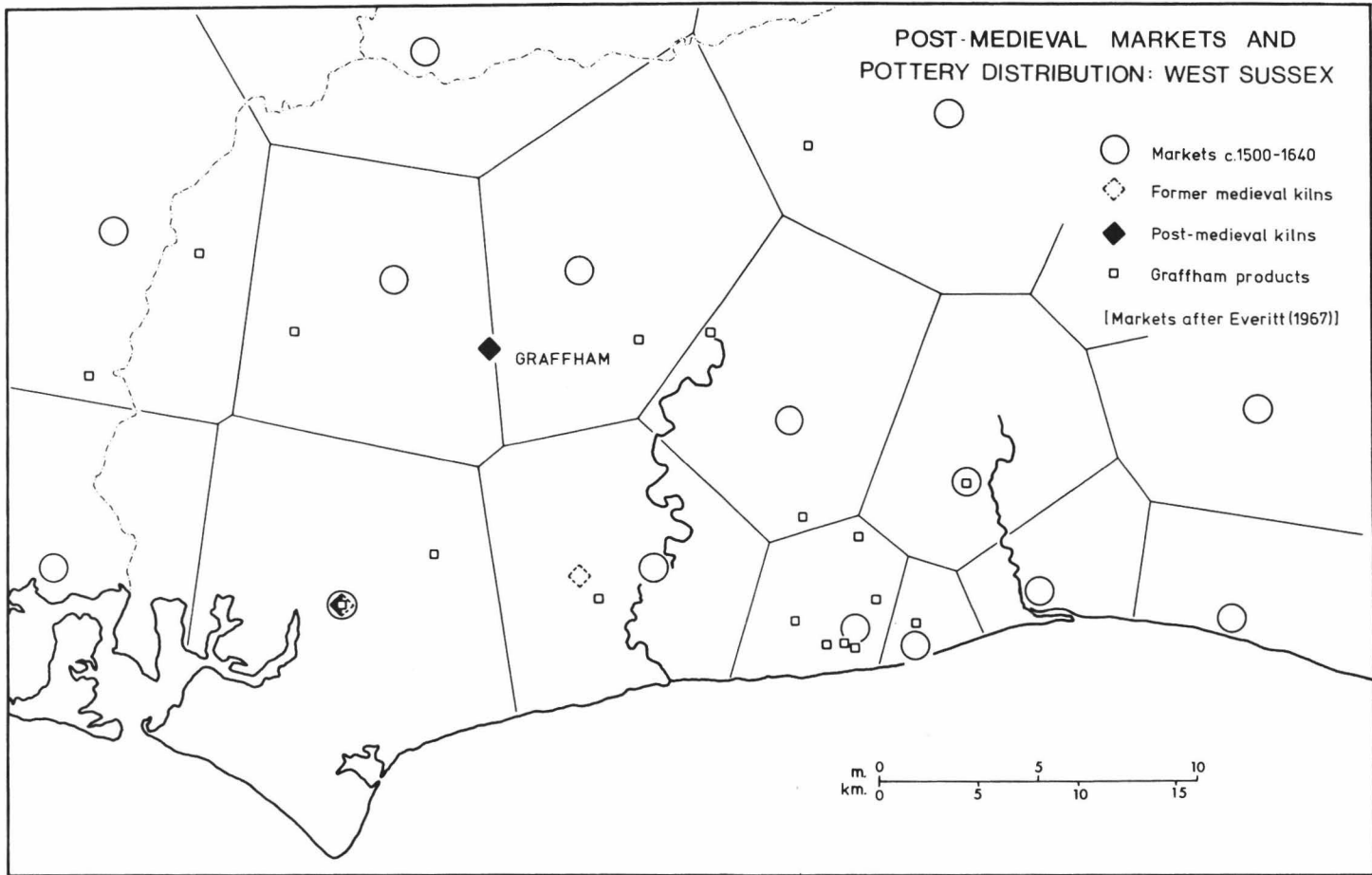
Fig. 42.   Post-medieval markets and pottery distribution in West Sussex.

TABLE 1.   Provisional list of white-painted wares and contemporary fabrics attributed to the Graffham kilns

Notes: 1   Grid references are given when available
　　　 2   * denotes number of thin-sections used for textural analysis
　　　 3   Museum accession numbers are listed where appropriate; numbers are not available for unregistered material

Site	N.G.R.	Publication	Textural Analysis	Museum/private collection
Probable kilns				
Lavington Common, EAST LAVINGTON, Sx.	SU 9460 1830	Aldsworth and Down 1976, 333	—	Chichester Excavations Committee
Upper Norwood, EAST LAVINGTON, Sx.	SU 9370 1790	Ditto	*****	Ditto
Marketed vessels				
Church of St. Nicholas, ANGMERING, Sx.	TQ 068 044	Bedwin 1975, 31	—	
Maison Dieu, ARUNDEL, Sx.	TQ 020 071	Evans 1969, 75	—	Worthing Mus. 68/1185-6
Bramber Castle, BRAMBER, Sx.	TQ 184 107	Barton and Holden 1977, 41	—	Worthing Mus.
Ditto (1956)	Ditto	—	*	Barbican Ho., Lewes 57/18
Manor Farm, CHALTON, Hants.	SU 732 162	Cunliffe 1973, 46	*	J. Budden Esq., Chalton
All Saints, CHICHESTER, Sx.	SU 86 04	Down 1974, 80 & 85-98	*	Chichester City Mus.
Central Girls School/ Clemens Yard, CHICHESTER, Sx.	Ditto	Down 1978, 86	—	Ditto
Chapel Street, CHICHESTER, Sx.	Ditto	Down 1978, 51	*	Ditto
David Greig Site, CHICHESTER, Sx.	Ditto	Down 1974, 140 & 152	—	Ditto
Eastgate, CHICHESTER, Sx.	Ditto	Down 1974, 72	**	Ditto
Post Office Site, CHICHESTER, Sx.	Ditto	—	—	Chichester City Mus. 1740 & 1970
St. Mary's Hospital, CHICHESTER, Sx.	Ditto	Down and Rule 1971, 31	*	Chichester City Mus.
41 & 42 Southgate, CHICHESTER, Sx.	Ditto	Down 1974, 21	—	Ditto
Tower Street, CHICHESTER, Sx.	Ditto	Down 1978, 173	—	Ditto
Wool Store Site, CHICHESTER, Sx.	Ditto	Down 1978, 99	—	Ditto
No provenance ? CHICHESTER, Sx.	Ditto	—	—	Chichester City Mus. 1485 & 1856
DIDLING, Sx.		—	—	Chichester City Mus.
Boulevard/ Littlehampton Road, DURRINGTON, Sx.	TQ 122 044	Barton 1965, 84	—	Worthing Mus. 64/—
EDBURTON, Sx. (1925)	c. TQ 23 11	—	—	Brighton Mus. R 2719
North Park, FINDON, Sx.	c. TQ 12 09	—	*	Worthing Mus. 76/133
Primary School, FINDON, Sx.	TQ 122 088	Evans 1968, 136	—	Worthing Mus.

Site	N.G.R.	Publication	Textural Analysis	Museum/private collection
Parlour Copse, HARTING, Sx.	TQ 7923 2200	—	**	Barbican Ho., Lewes 53/64/2
IDSWORTH, Hants.	SU 743 137	—	*	J. Budden, Esq., Chalton
NORTH STOKE, Sx.	TQ 024 107	—	*	Worthing Mus. 71/870
Portchester Castle, PORTCHESTER, Hants.	SU 625 029	Cunliffe 1977, 135-7	—	Portsmouth City Mus.
High Street, PORTSMOUTH, Hants.	SZ 64 99	—	**	Portsmouth City Mus. 631/1974
Oyster Street, PORTSMOUTH, Hants.	Ditto	—	—	Portsmouth City Mus. 150/1971
Old House, PULBOROUGH, Sx.	c. TQ 04 18	—	*	Worthing Mus.
Sails Field Manor, PULBOROUGH, Sx.	c. TQ 04 18	—	**	Worthing Mus. 57/363
St. Cuthman's Field, STEYNING, Sx.	TQ 17 11	—	—	Worthing Mus. 71/758; 760; 781; 808; 812; 818-9; 839-40; 898; 1337; 1342
STEYNING, Sx. (1925)	c. TQ 17 11	—	—	Brighton Mus. R 2702
STEYNING, Sx. (1962)	TQ 178 114	—	*	Worthing Mus. 71/761; 888-9; 431-4
Post Office, TARRING, Sx.	TQ 132 040	Barton 1963, 28-32	*	Worthing Mus. 62/742
Rectory Garden, TARRING, Sx.	Ditto	Barton 1964, 24	*	Worthing Mus. 63/2300
South Street, TARRING (1978)	TQ 133 040	Bedwin forthcoming	—	Worthing Mus.
TORTINGTON, Sx.	c. TQ 00 05	—	*	Worthing Mus. 68/—
Cathedral Green, WINCHESTER, Hants	SU 48 29	—	*	Winchester Research Unit
Wolvesey Palace, WINCHESTER, Hants	Ditto	—	—	Ditto
Offington Hall, WORTHING, Sx.	TQ 135 053	—	*	Worthing Mus.
Warwick Gardens, WORTHING, Sx.	TQ 152 025	Barton 1963, 27	—	Worthing Mus. 61/33

Roof-tiles				
All Saints, CHICHESTER, Sx.	SU 86 04	Down 1974, 92 Fig. 7.12 No.45	*	Chichester City Mus.
Downpark, HARTING, Sx.	SU 792 221	Barton 1963, 32	—	Barbican Ho., Lewes 53/64/2
Post Office, TARRING, Sx.	TQ 132 040	Barton 1963, 32	—	Worthing Mus. 62/742

ACKNOWLEDGEMENTS

Author: Anthony Streeten, University of Southampton.
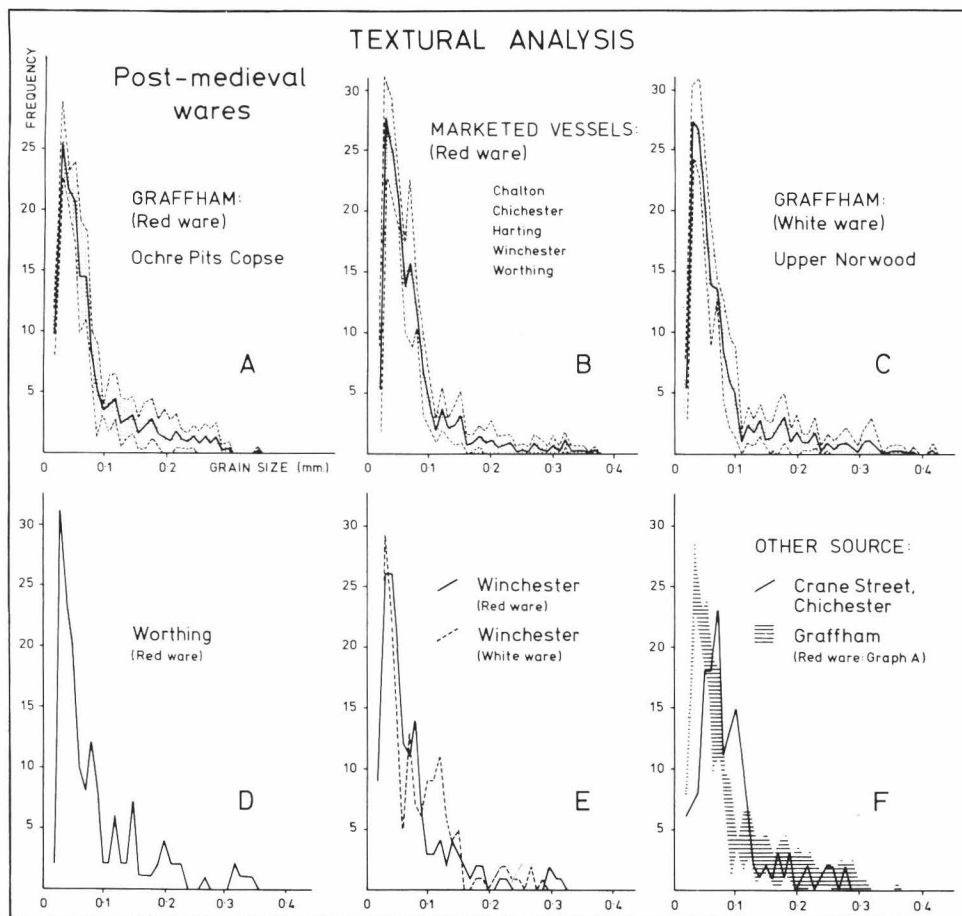
Fig. 43.   Textural analysis: post-medieval wares.

MEDIEVAL POTTERY IMPORTS IN SUSSEX

by J. G. Hurst

As Hodges has pointed out above (pp. 95-103) middle and late Saxon pottery imports from the continent are rarely found in Sussex. In contrast to the more than 30 middle Saxon classes known from Hamwih (Saxon Southampton) there is only a single class 14 black ware pitcher from Chichester. There are no definite late Saxon imports (Badorf or Reliefbandamphorae—Dunning 1959, 52-5) as there are in Hampshire to the west and Kent and London to the east and north. The first known group of imported pottery into Sussex may include a few pre-Conquest examples, but all could be later eleventh or twelfth century: these are the red-painted wares of Pingsdorf and northern French types (Dunning 1959, 55 & 62), which are known from six sites (Appendix 1). Most Sussex imported pottery is very fragmentary and only small sherds have been found but of the eleven complete, or almost complete, vessels (illustrated Fig. 44) three are red painted. A complete spouted pitcher of Pingsdorf type comes from Burlough Castle (Fig. 44 No. 1) in a post-Conquest context (Dunning 1959, Fig. 29, No. 9). This is of classic form with a frilled base and comma-type decoration typical of the Rhenish or Limburg kilns. Of different character, with a decoration of parallel lines, is a late Saxon or early medieval pitcher from Chichester (Fig. 44, No. 2), which is typical of Beauvais (Down 1978, Fig. 11, No. 5) and may be compared with another from Ipswich (Dunning 1959, 58, Fig. 29, No. 5).

Of later twelfth century date is the complete Normandy red-painted jug from Pevensey (Dunning 1958, 210, Fig. 2, No. 1). This is in a smooth off-white fabric with decoration of bands of rouletting and red paint (Fig. 44, No. 3). The circumstances of the Pevensey find in a pit, and the black burning on the front of the jug, clearly links this with the wine trade. All the red-painted vessels so far mentioned may be so identified, and show the importation of wine in the early Norman period from both the Rhineland and Normandy. The only other Rhenish import of the twelfth or thirteenth century is a blue-grey ladle, (Dunning 1959, 56) from Chichester. Other Normandy smooth and gritty wares of the twelfth and thirteenth century were found in the same Pevensey pit (Fig. 44, No. 4), (Dunning 1958, Fig. 2, No. 4). From the Low Countries, besides possible red-painted wares from Brunssum/Schinveld, examples of Andenne glazed wares (Borremans 1966) of the twelfth century are found at three Sussex sites.

With the full medieval period from the later thirteenth to fifteenth century, the pottery trade patterns change fundamentally, with the emphasis no longer on northern France, the Low Countries and Germany. There are examples of Alkaline glazed wares and Mediterranean Maiolica at quite a few sites in north-west Europe (Hurst 1968), but none from Sussex. These were likely to be either special imports or brought back by travellers, and are not, therefore, evidence for any extensive trade. The only Mediterranean imports found in Sussex are Spanish lustreware but these are all late medieval, fifteenth or early sixteenth century in date. Until recently there was only a single Valencian sherd from Battle (Hurst 1977, 75), but there have been two recent finds of late fifteenth century types in early sixteenth century contexts. From Eastbourne, associated with Raeren stoneware and Beauvais Sgraffito, is a complete Malaga albarello (Fig. 44, No. 5) with
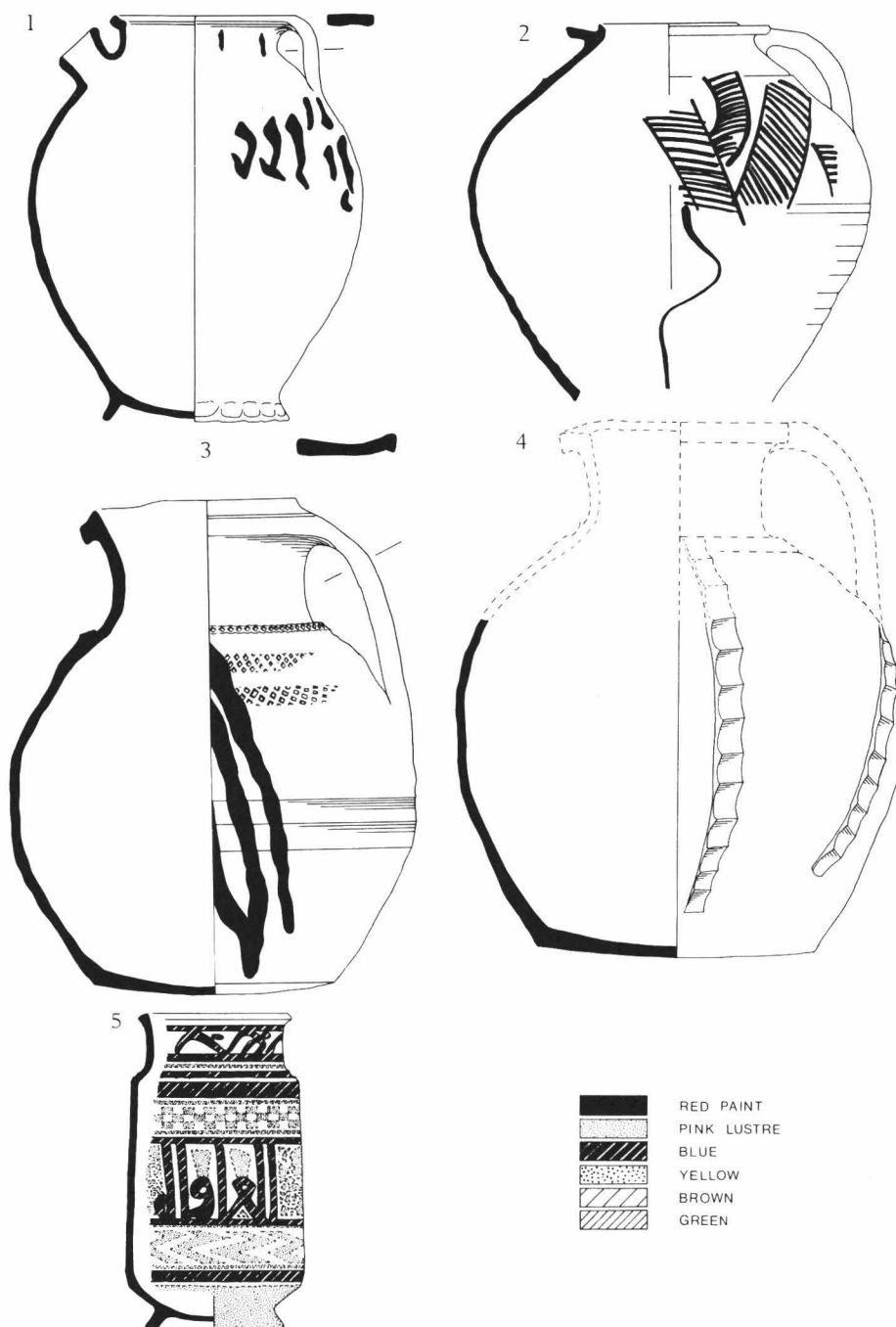
Fig. 44A.   Medieval imported pottery in Sussex (re-drawn by D. Freke): 1 Burlough Castle; 2 Chichester; 3, 4 Pevensey; 5 Eastbourne. See text for sources.

bands of decoration and mock arabic writing comparable with other imports (Hurst 1977, 83, Fig. 27, Nos. 14-17), particularly an unpublished example from Southampton (information R. G. Thompson) also in a sixteenth century context. From another sixteenth century site at Icklesham associated with mid sixteenth century Saintonge and Rhenish wares, are two Valencian sherds including a flanged dish also of fifteenth century type. These imports raise many problems of dating and may have been kept as heirlooms because of their unusual nature. These are examples of a luxury trade either for display in the case of dishes or holding special items such as spices as with the albarelli. There are, however, examples of coarse ware Spanish imports including amphorae and costrels which came in as containers (Hurst 1977, 96-103). Examples of the red micaceous Merida ware costrels are being increasingly recognised, but in Sussex so far only a single fragment has been noted, from a fourteenth century level at Glottenham (Martin 1972, 54 & Fig. 30, No. 5).

From the mid-thirteenth century onwards there is an increasing importation of pottery from the Saintonge in South West France which is also closely linked with the wine trade and indicates a shift from Normandy to Gascon wine drinking. The most distinctive examples are the fine ware polychrome jugs (Dunning 1968, 45), of which there are sherds in Sussex from eight sites, including a complete globular jug from Winchelsea with a characteristic decoration of birds, barred shields, a trefoil and applied heads round the rim (Fig. 44, No. 6). The coarser mottled green-glazed Saintonge wares are more common, appearing on twelve sites of thirteenth and fourteenth century date. There is a complete example, of unusual form with a tubular spout, (Fig. 44, No. 7), from Shoreham (Dunning 1969, 84).

This number of find spots raises the question of the manner of import. It is uncertain whether the pottery was brought into major centres like Southampton (Platt 1975) and Stonar, Kent (Grant forthcoming) and then transhipped by the coastal trade, or whether there were direct links between several Sussex ports and the continent. Now that increasing numbers of imports are being found at towns like Hastings, Lewes, Pevensey, Shoreham and Steyning, documentary work is urgently required to elucidate the mechanics of the trade, as little work has been done on this for 40 years. Some coastal trade is clearly indicated by the large quantities of Devon slate imported into Sussex (Holden 1965) but again it is not clear if this came in to one or several ports. Other examples of the coastal trade are the presence of pottery from Wessex in the west (Dulley 1967, 224) and Scarborough in the north (Dunning 1968, 39).

Despite this change in emphasis, pottery was still being imported into England from Normandy in the later thirteenth and fourteenth century. The most distinctive were the Rouen type jugs with yellow pellets on a brown background, hollow spurred rod handles and moulded rims with no spout (Barton 1966). There are examples from seven sites including two almost complete jugs from Pevensey (Fig. 44, No. 8) (Dulley 1967, 266-7). Green-glazed Normandy wares are harder to identify as they may often be confused with the Saintonge green: they have not therefore been separately listed. In addition there were other French wares imported from various parts of northern and central France; some sherds found at Seaford fall into this category, but their origin cannot be pinpointed with our present knowledge. A continuing problem is the origin of lobed cups. These are found not only on major but also on village sites (Hurst 1964, 127). It is not possible to add to the suggestions made in 1974 (Hurst 1974, 250).

There was still contact, too, with the Low Countries, but this was very slight in the thirteenth and fourteenth centuries. There are examples of Aardenburg type (Dunning 1976) and other Flemish highly decorated jugs (Dunning 1976, 190-1) from two sites. Coarse brown-glazed Low Country imports are being increasingly recognised along the east and south coasts (Platt 1975, 153-
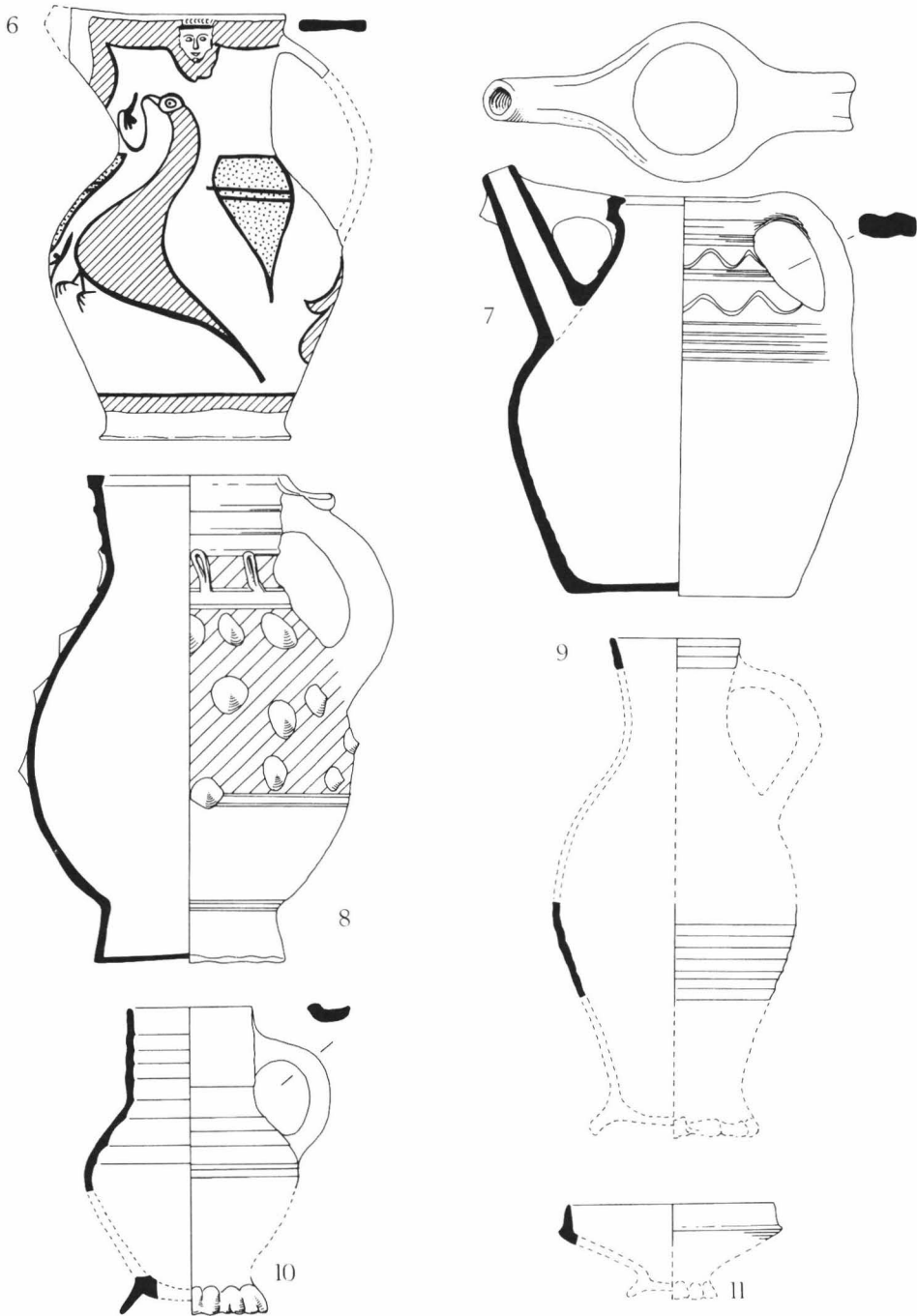
Fig. 44B.   6 Winchelsea; 7 Shoreham; 8 Pevensey; 9 Lewes; 10 Tarring; 11 Seaford. See text for sources. Colour key as Fig. 44A.

9). So far they have only been identified at one Sussex site (Hastings) but there may well be other examples unnoticed in collections.

From the early fourteenth century, Stoneware was made in northern France and the Rhineland. Surprisingly, in view of its closeness, examples of the dark Normandy or light Beauvais stoneware are very rare. There are Normandy sherds from only three sites in Sussex. The early forms are imperfectly understood as so little has been published but recent work in the Channel Islands is at last providing a series of types (Barton 1977). Beauvais stoneware is almost indistinguishable from Siegburg except for the jug shapes. The only possible import is the Seaford bowl (Fig. 44, No. 11, Freke 1978, 211, Fig. 10 No. 23), but these types were made at both centres. Rhenish stoneware is almost as rare, with the light grey Siegburg stoneware (Beckmann 1974) found at six sites and the dark iron-washed Langerwehe stoneware at three (Fig. 44, No. 9).

In the last quarter of the fifteenth century there was another fundamental change in pottery trade patterns. The first maiolica in north-west Europe was made at Antwerp (Hurst 1971), and examples have been found in the Icklesham assemblage. Saintonge pottery was still imported, but in reduced quantities. More was imported in the sixteenth century mainly ornate chafing dishes (Hurst 1974), of which there is a fine example from Icklesham. The most ubiquitous form, though, is the dark grey stoneware drinking mug with grey and brown glaze from Raeren (Hurst 1964a 142-3). This is known from at least twelve sites (for example from Tarring, Fig. 44, No. 10, Barton 1963, 29, Fig. 3, No. 6) and may be regarded as a type fossil of the late fifteenth and early sixteenth century on any site down to the lowliest peasant cottage. This was a period of mass importation of pottery, quite different from the medieval trade, and leads on to the ubiquitous seventeenth century Bellarmines.

Over the years a considerable amount of imported pottery has been found in Sussex, but the quantities are relatively small when compared with examples to the west at Southampton (Platt 1975) or at London. In addition many of the sherds are fragmentary; this can be seen in a typical Pevensey series where there are sherds from nine sources but only the Rouen jugs are anything like complete. The eleven vessels illustrated in Fig. 44 are in fact the total number of complete shapes of imported medieval pottery so far known in Sussex. Now that excavation is in progress in several towns and other centres future research must try to determine the mechanism of the trade, the quantities coming into the various ports, and whether this was a result of direct or coastal trade. Only then will it be possible to draw firm conclusions about patterns of trade as evidenced by the pottery which, is in any case, only the surviving aspect of a much more extensive economic exercise over a long period of time.

Author: J. G. Hurst, Inspectorate of Ancient Monuments, Fortress House, 23 Savile Row, London W1X 2HE.

APPENDIX I   SUSSEX MEDIEVAL POTTERY IMPORTS

This list is based on the stencilled list of imported pottery prepared and issued in 1968 by K. J. Barton, G. C. Dunning and J. G. Hurst. It has been brought up to date by J. G. Hurst with the help of D. Freke and R. Hodges and includes further additions made by members at the conference. Numbers refer to Figure 44.

EARLY

BADORF	None—Examples in Kent and Hampshire
RELIEF BAND AMPHORAE	None—Examples in Hampshire
HAMWIH CLASS 14 BLACK WARE	Chichester
OTHER HAMWIH TYPES	None—Examples in Kent and Hampshire
TATING	None—Examples in Hampshire
PINGSDORF TYPE	*Burlough* (1), Chichester, Lewes, Pevensey, Sompting, Steyning
BEAUVAIS RED PAINT	*Chichester* (2)
NORMANDY RED PAINT	*Pevensey* (3), Steyning
BLUE GREY	Chichester
NORMANDY GRITTY AND SMOOTH	Hastings, Lewes, *Pevensey* (4)
ANDENNE	Hastings, Lewes, Pevensey

FULL MEDIEVAL

MEDITERRANEAN ALKALINE AND MAIOLICA	None—Examples in Kent and Hampshire
SPANISH LUSTREWARE	Battle, *Eastbourne* (5), Icklesham
MERIDA	Glottenham, Icklesham
MEDITERRANEAN AMPHORAE	None—Examples in Kent and Hampshire
S W FRENCH POLYCHROME	Battle, Chichester, Erringham, Glottenham, Hastings, Pevensey, Steyning, *Winchelsea* (6)
S W FRENCH GREEN	Bayham, Bramber, Chichester, Glottenham, Hastings, Pevensey, Rye, Seaford, *Shoreham,* (7), Saxon Down, Steyning, Tarring
LOBED CUPS	Hangleton
ROUEN	Arundel, Bramber, Chichester, Hastings *Pevensey* (8), Seaford, Tarring
NORMANDY STONEWARE	Michelham, Panningridge, Steyning
AARDENBURG	Pevensey
LOW COUNTRY ROSETTES	Michelham
LOW COUNTRY BROWN GLAZED	Hastings
SIEGBURG	Bayham, Brookland, Hangleton, *Lewes* (9), Panningridge, *Seaford* (11)
LANGERWEHE	Hangleton, Lewes, Seaford
RAEREN	Bayham, Chichester, Eastbourne, Hartfield, Hastings, Icklesham, Lewes, Pevensey, Pulborough, Steyning, *Tarring* (10)

EIGHTEENTH AND NINETEENTH CENTURY SUSSEX WARE

by J. Manwaring Baines

Most of the pottery used in Sussesx was made by local potteries until the coming of the railways in the middle of the nineteenth century brought overwhelming competition from the great industrial works in London and Staffordshire. Some managed to eke out an existence till the end of the century but only by turning from the old traditional wares to new products such as the Rustic and Hop wares at Rye.

However the pottery produced in the eighteenth and nineteenth centuries forms a distinct and recognisable group, which completes the long series started in Neolithic days. The essential ingredient is the local clay but as the Wealden strata extend into Kent and even across to Belgium, the specific name suggested is 'Sussex Pottery', since 'Wealden' ware might be too easily confused with 'Whieldon'. 'Sussex Pottery' is first mentioned in contrast to the more usual and simpler 'brown ware' in 1777 (Drawbridge).

The clay contains iron, which oxidises during the firing to produce small black specks or streaks but only under the glaze. Unglazed ware is a clear flowerpot red. In general the western group of potteries around Chailey and Burgess Hill tended to produce light or even golden brown wares, whilst those at the extreme east of the county as at Rye produced much darker pottery, even in some cases a rich black. The variation was due to the controlled oxidation in the kiln. The red begins to darken after 1000°C.

This old Sussex ware was covered with an honest lead glaze and some potters, such as John Weller at Brede, used to chew orange peel to prevent lead poisoning. His formula for the glaze was a closely guarded family secret and he was justly proud of its reputation for hard wearing qualities. Some of his workmen were lured away to High Halden in Kent in an attempt to discover the mysterious ingredient, which finally proved to be human urine. This was also used for a time at least at the Dicker.

Marks were extremely rare since the potteries supplied the wants of the surrounding countryside and everybody knew them well. No other source of crockery was readily available, though a little might trickle in through nearby markets, especially near the coast. Towards the end of his life, when he had to compete with commercial factories, John Weller sometimes used leaden stamps JOHN WELLER and BREDE POTTERY, as did John Pelling at the much smaller Tivoli works near Silverhill, Hastings, with J. PELLING SILVERHILL POTTERY. The only works to use a stamp consistently from about 1860 was the Dicker, URIAH CLARKE & NEPHEW, and in its later days DICKER SUSSEX (all pieces mentioned are in Hastings Museum unless otherwise stated).

Every now and then a workman would scratch his name on the base of a piece, as 'John Clarke, Brede, 1840': a predecessor with the same name was a potter there from 1404 to 1428.

Many of the harvest flagons and some of the jugs bore three or more incised circles round the neck and shoulder region. It was suspected that this might represent some form of identification or signature. Enoch (Knocker) Weller of Brede, then a very old man, was approached and readily

confirmed this as he had worked in the family pottery at Brede as a boy. He promised to think back for details but unfortunately died before he could do so. Briefly, it seems that three equidistant rings were the mark of the master potter, and the spacing of the other denoted a certain order of precedence below him.

Similarly dates are rarely to be found, since there was no need for them until the gradual increase in documentary wares, such as christening or birthday pieces in the nineteenth century. The earliest known dated piece is a jug in the Worthing museum inscribed 'John Robinson 1707', though this is almost obscured by the thickness of the glaze. Brede however was unique in dating many of its pots in the closing years of the eighteenth and first decade of the nineteenth century. In every case these form part of an inscription and were the work of one man.

Decoration of the traditional ware followed ancient custom:—

(1) *Incising*. Surprisingly enough this was in general little used, though popular at Rye *c.* 1350. A few concentric rings on the larger flagons and jars was normal. Rouletting was extremely rare, only two pieces being known and both in the first quarter of the nineteenth century.

(2) *Slip*. Pipeclay applied with a quill or washed on in more liquid form turned a delightful golden yellow under the glaze. The use of combing and reserved panels added variety. Inscriptions were built up letter by letter by impressing bookbinder's type and filling the holes with slip.

(3) *Applied casts*. Pressing clay into moulds and then applying to the pot before firing was not generally used, since the ware was utilitarian and this added to both labour and time involved.

Documentary pieces, though often betraying the maker's scholastic ability, give an interesting glimpse of their times. A Rye jug is inscribed THIS CLAY WAS FOUND IN / THE BAPTIS CHAPPEL AT RYE / SUSSEX IN 1822 / W F. And William Jones' flask in the Battle museum (when translated into more orthodox spelling—'girl' was written 'gariel') has a paradisial ring, possibly prompted by a glimpse of the squire and his lady entertaining. OCEANS OF BRANDY AND RIVERS OF WINE / PLANTATIONS OF TEA AND / A GIRL TO YOUR MIND. Another old piece, much reproduced at the Dicker works (but fortunately stamped) was the Fanny Foster flask from Ditchling, 1800. THIS LITTLE BOTTLE HOLDS A DROP / THAT WILL OUR DROOPING SPIRITS PROP / IT IS GINEVA CHOICE AND GOOD / TWILL CHEER THE HEART AND WARM THE BLOOD. Contrary to general belief it was gin rather than brandy that formed the bulk of smuggled cargoes.

The one thing that Sussex Pottery of the eighteenth and nineteenth centuries had in common with its predecessors in medieval or even in prehistoric times was that it was designed to supply the needs of the immediate neighbourhood, though the range might be extended. It was made to be used and so new shapes appear such as the farmhouse teapot, when the new drink of tea became more available, but even this had an unobtrusive knob added above the rim to prevent the top falling off when pouring. The ubiquitous harvest flagon with its wide belly, slender neck and small rim was admirably designed for a field worker, who might be called upon to mind a horse, while taking refreshment from this balanced on his other arm, raised parallel to the ground and at a level with his mouth. He had to turn his head to drink from it, but the whole achieved the maximum capacity with perfect balance: a sudden movement would not spell total disaster. This piece marked as great an advance in the potter's art in its own way as placing a handle to make the first jug. Other new pieces designed for special purposes were the nightlight to afford comfort to a timid child in the long hours

Old Established
BREDE POTTERY,
SUSSEX.

Wash Pans		Ham Pans	Flat Bottom Ditto
24s 0d per dozen	1s 9d do.	3s 6d each	8 gallons 6s 0d each
18s 0d do.	1s 3d do.	2s 6d do.	6 gallons 4s 6d do.
12s 0d do.	10d do.		5 gallons 3s 6d do.
8s 0d do.	**Single Glazed Crocks**	**Common Ditto**	4 gallons 2s 9d do.
Hand Bowls	6 gallon 18s 0d per doz.	2s 6d each	**Bed Pans**
4s 0d per dozen	13s 0d do.	1s 6d do.	12s per dozen
3s 0d do.	11s 0d do.	**Glazed Basins**	**Chicken Pans**
2s 0d do.	8s 0d do.	5s 0d per dozen	2s 6d per dozen
1s 6d do.	6s 0d do.	3s 6d do.	**Spittoons**
Milk Pans	4s 0d do.	2s 6d do.	3s per dozen
14s 0d per dozen	3s 0d do.	1s 9d do.	**Stool pans**
10s 0d do.	2s 0d do.	1s 3d do.	6s per dozen
7s 0d do.	10 do.	10d do.	**Chair pans**
5s 0d do.	**Bottles**	**Flower pots & pans**	1s 6d per dozen
Dishes	6 quarts 12s 0d per doz.	5s 0d per dozen	**Candlesticks**
3s 0d per dozen	4 quarts 9s 0d do.	3s 6d do.	1s 6d per dozen
2s 0d do.	3 quarts 7s 0d do.	2s 6d do.	**Money pots**
1s 0d do.	2 quarts 5s 0d do.	2s 0d do.	1s 6d per dozen
10d do.	1 quart 2s 6d do.	1s 3d do.	
5d do.	**Glazed Crocks**	10d do.	**Ointment Jars**
4d do.	6 gallons 24s 0d per doz.	6d do.	7s 6d per dozen
Tongue Pans	5 gallons 16s 0d do.	5d do.	5s 0d do.
15s 0d per dozen	4 gallons 14s 0d do.	4d do.	**Seakale pots and covers**
11s 0d do.	3 gallons 10s 0d do.	**Beef Pans**	2s 0d each
8s 0d do.	2 gallons 8s 0d do.	4s 6d each	1s 6d do.
5s 0d do.	6 quarts 6s 0d do.	2s 9d do.	1s 0d do.
Pitchers	4 quarts 4s 0d do.	2s 0d do.	9d do.
10s 0d per dozen	**Handle Dishes**	1s 4d do.	
9s 0d do.	2s 0d per dozen	**Sewer Pipes**	**Butter Dishes**
5s 0d do.	1s 6d do.	9-inch 9s 0d per dozen	8d each
3s 0d do.	**Jars**	6-inch 6s 0d do.	6d do.
	9s 0d per dozen	5-inch 5s 0d do.	**Chimney Pots**
Pipkins	6s 0d do.	4-inch 4s 0d do.	4-feet 6s 6d
3s 0d per dozen	4s 0d do.	3-inch 3s 0d do.	3-feet 5s 0d
2s 0d do.	2s 0d do.	2-inch 2s 0d do.	2½-feet 3s 6d
1s 3d do.	1s 9d do.	1½-inch 1s 6d do.	2-feet 3 inches 3s 0d
10d do.	1s 3d do.	**Crocks & covers**	2-feet 2s 6d
5d do.	**Glazed Chambers**	12 gallons 4s 6d each	
Biscuit pans	3s 0d der dozen	8 gallons 3s 6d do.	
5s 0d per dozen	2s 0d do.	6 gallons 2s 6d do.	
3s 6d do.	**Common chambers**	**Glazed Ditto**	
2s 6d do.	2s 0d per dozen	bushel 5s 0d each	
	1s 6d do.	6 gallons 3s 3d do.	
		5 gallons 2s 6d do.	
		4 gallons 2s 0d do.	

☞ Orders Received at Mr. David Smith's Junr., Brede.

Plate II. *a* Pricelist of The Brede Pottery *c*. 1840. (Photo: J. M. Baines)

b and *c* Two pieces by Edward Rumens (Photo: J. M. Baines). Reproduced with permission Hastings Museum.

of darkness, or the wide-mouthed spittoon regularly to be seen on the floor of local inns, though now a bygone of the past.

Other farmhouse pieces, whose forerunners may perhaps be traced in earlier centuries, are the churns, pickling jars for hams and even the chicken fountain. But the eighteenth century brought a gradual spread of interest in education and the need for thrift to better one's lot. The traditional insurance for old age was a large family, the only alternative being parish relief or the poorhouse. So moneyboxes became a feature of a labourer's life and the social stratum immediately above him. The most common type was shaped like a turnip but others soon developed such as the three-chambered piece, designed to hold pennies, halfpence and farthings.

One interesting piece made in several works throughout the county was the Sussex pig, which could be taken apart, the head forming a cup or mug and the body a rough jug. Tradition says that this was to enable the timid to drink a hogshead to a bridal couple without unfortunate consequences, whereas a more robust drinker would no doubt prefer the deed to the will. The Mitchells at Rye revived these pigs *c.* 1860 but on a very much larger scale, with the glaze made to resemble tortoiseshell by the addition of manganese. The original pig was very much smaller, a better model of the animal, and the head would not stand up on its own. The later Mitchell model flattened the snout and lengthened the ears.

But every potter at some time must feel an urge to create something of his own, and at one time the Brede works specialised in pottery hedgehogs, which are obviously modelled from life. One example is depicted crouched down in anticipation of danger. Brede also produced a fanciful plaque of the Brede Ogre, depicting that much maligned gentleman, Sir Goddard Oxenbridge of Brede. Tradition says that he used to breakfast on babies, until the children of East Sussex and West Kent combined one evening to waylay him on his return from market and to saw him in two with a wooden saw near the Groaning Bridge (Austen 1946). The Bridge remains to this day to corroborate the story, though his tomb dated 1531 in Brede church does not mention it. The same plaque may be seen on many local firebacks and was probably taken from one.

Attempts to trace local potteries is bedevilled by the fact that many brick and tile works produced pottery for a period and then disappeared, when the clay gave out or building operations were completed. The influence of tilemaking may be seen in many pieces, such as an unwieldly cutlery container and a doorstop in the form of a pig from Staplecross. But it is often possible to trace a potter's career from the later Census returns which show the births of children registered in places which had potteries. One potter at the Dicker, William Mitchell, moved to High Halden where he had a son, also William, born in 1793. The son seems to have returned to the Hellingly area, where he had two sons, but by 1830 he had moved to Rye, where he died in 1871.

Documentary sources are scanty, since records only occur when there is a need to record some particular fact, whether it be a birth or a felony. Potters tended to move about and rarely settled in one place for long, unless they succeeded in owning the works. This was the case of the Wellers, who married into the Richardson family at Brede and later took complete control. Among their workmen, and indeed a relation, was Edward Rumens and a very fine flask with his name and date, 1795, is in the Victoria and Albert Museum. He specialised in one particular type of decoration: interlacing semicircles and tiny stars and a dated inscription, the whole most meticulously done (Plate II b and c). All his known work dates from the last decade of the eighteenth to the first of the nineteenth century, when it suddenly ceased. His style was copied but by no means so skilfully. Inspection of the burial registers for Brede and nearby parishes and also of other places where potteries were known to exist proved fruitless. The solution to the puzzle

appeared by accident in an advertisement in the *Sussex Weekly Advertiser* on the 1st May 1809.

WHEREAS EDWARD RUMMINGS OF THE PARISH OF BREDE was ballotted to serve in the Local Militia for the said parish and has left the same, without being enrolled or paying the penalty; NOTICE IS HEREBY GIVEN that if any person or persons will give information to the Churchwardens or Overseers ... that he may be apprehended, shall be handsomely rewarded for their trouble.

The said EDWARD RUMMINGS is supposed to have a woman with him of a stout stature. Rummings is about 5ft. 8in. high, rather of a light complexion, full-eyed, brown hair, and is supposed to be working in the neighbourhood of Ditchling in Sussex.

If the last statement were correct, it was evidently not under his own name nor using his own distinctive style of decoration.

Running a local pottery was an everyday run-of-the-mill affair with little need for more than the barest records, so is difficult to trace. Only when new hands were needed or one of the men got into trouble may a few facts be gleaned. Few presumably would care to go down to posterity like William Munnery of Graffham, potter, who was presented by the local churchwardens ...

'for that he upon Sunday 21st November 1624 was so exceedinge drunke that he spued in our church most beastly in the time of divine service at evening prayer before all the congregation.' (Johnstone 1948)

Even bills for the sale of crockery are very rare, most transactions probably being simply conducted in cash from one pocket to another, but the Hastings Museum possesses a price list of the Brede pottery about 1840 which gives a valuable insight into the types of ware made and their cost (Plate IIa).

In conclusion, it must be emphasised that 'Sussex Pottery' (defined as that made in the county from local clay and rapidly declining after about 1850) represents the last stage in the logical evolution of the potter's art which supplied the countryside from Neolithic to Victorian times. It was closely related to and designed to suit the particular needs of its day. It had no need for signatures, though the use of a special decoration has come to light from Brede and something similar may well have been in use elsewhere.

More research is needed into the factors affecting the designs made, and in the case of rims the whole evolutionary process might well repay more detailed investigation. Enormous numbers have been published, covering the whole period of pottery making, but little or no attention has been paid to the human element and the reasons behind particular shapes and reasons for their change.

Author: John Manwaring Baines, 138 St. Helens Road, Hastings.

BIBLIOGRAPHY

Adams, R. McC. 1975. 'The emerging place of trade in civilisational studies', in *Ancient civilisation and trade* (eds. J. Sabloff and C. C. Lamberg Karlovsky), 415-65. Albuquerque.

Addyman, P. V. and Hill, D. H. 1969. 'Saxon Southampton: a review of the evidence. Part II', *Proceedings of the Hampshire Field Club* (hereafter *P.H.F.C.*) **26,** 61-96.

Aitken, M. J. 1974. *Physics and Archaeology* (2nd edn.) Oxford: Clarendon Press.

Aitken, M. J. and Mejdahl, Vagn. (eds.) 1978 and 1979. *A specialist seminar on thermoluminescence dating* Part 2 and 3.

Alcock, L. 1971. *Arthur's Britain* London: Allen Lane.
    1972 *By South Cadbury is that Camelot* London.

Aldsworth, F. G. and Down, A. 1976. 'Medieval potteries at East Lavington, *Sussex Archaeological Collections* (hereafter *S.A.C.*) **114,** 333.

Allen, D. F. 1960. 'The origins of coinage in Britain: a re-appraisal', in *Problems of the Iron Age in southern Britain* (ed. S. S. Frere), 97-308.

Annable, F. K. and Simpson, D. D. A. 1964. *Guide catalogue of the Neolithic and Bronze Age collections in Devizes Museum* Devizes.

Asch, D. L. 1975. 'On sample size problems and the use of non-probabilistic sampling', in *Sampling in Archaeology* (ed. J. W. Mueller), **1,** 70-90. Tucson.

Attenborough, F. L. 1922. *The laws of the earliest English kings* London.

Austen, E. 1946. *Brede, the story of a Sussex parish* Rye.

Barker, P. and Barton, K. J. 1977. 'Excavations at Hastings Castle, 1968', *Archaeological Journal* (hereafter *Arch. J.)* **134,** 80-100.

Barrett, F. T. 1953. *Graffham through a thousand years* Wantage.

Barrett, J. 1975. 'The later pottery: types, affinities, chronology and significance', in R. J. Bradley and A. Ellison, *Ram's Hill,* B.A.R. 19, 101-16. Oxford.
    1976. 'Deverel-Rimbury: problems of chronology and interpretation', in *Settlement and economy in the third and second millennia B.C.* (eds. C. B. Burgess and R. Miket), B.A.R. 33, 289-308. Oxford.

Barton, K. J. 1963. 'Worthing Museum notes for 1961', *S.A.C.* **101,** 20-34.
    1964. 'Excavations in the village of Tarring', *S.A.C.* **102,** 9-27.
    1965. 'Worthing Museum notes for 1963', *S.A.C.* **103,** 81-93.
    1966. 'Medieval pottery at Rouen', *Arch. J.* **122,** 73-85.
    1971. 'A jug from the cloisters and other oxidised wares from the city', in A. Down and M. Rule, *Chichester Excavations I,* 139-41. Chichester: Phillimore.
    1972. 'The development and dating of the medieval pottery of Sussex', M. Phil. thesis, University of Southampton (unpublished). Copy in Barbican House, Lewes.
    1977. 'Medieval and post-medieval pottery from Gorey Castle', *Annual Bulletin Society Jersiaise* **22,** 77-9.
    1979. *Medieval Sussex pottery* Chichester: Phillimore.

Barton, K. J. and Holden, E. W. 1967. 'Excavations at Michelham Priory', *S.A.C.* **105,** 1-12.
    1977. 'Excavations at Bramber Castle', *Arch. J.* **113,** 11-79.

Beckmann, B. 1974. 'The main types of the first four production periods of Siegburg pottery', in *Medieval pottery from excavations* (eds. V. Evison *et. al.*), 183-220. London: Baker.

Bedwin, O. 1975. 'The excavation of the church of St. Nicholas, Angmering', *S.A.C.* **113,** 16-34.

Bell, M. G. 1974. 'Newhaven Fort', *S.A.C.* **112,** 154-5.
    1976. 'The excavation of an early Romano-British site and Pleistocene landforms at Newhaven', *S.A.C.* **114,** 218-305.
    1977. 'Excavations at Bishopstone', *S.A.C.* **115.**

Biddle, M. and Barclay, K. 1974. 'Winchester ware', in *Medieval pottery from excavations* (eds. V. Evison *et. al.*), 137-66. London: Baker.

Blunt, C. E. 1961. 'The coinage of Offa', in *Anglo-Saxon coins* (ed. R. H. M. Dolley), 39-62. London.

Bohannon, P. and Dalton, G. (eds.) 1961 *Markets in Africa* North-western University Press.

Borremans, R. 1966. *La ceramique d'Andenne* Rotterdam: Het Nederlandse Gebruiksvoorwerp.

Bradley, R. J. 1970. 'The excavation of a Beaker settlement at Belle Tout, East Sussex, England', *Proceedings of the Prehistoric Society* (hereafter *P.P.S.*) **36,** 312-79.

Brears, P. C. D. 1971. *The English country pottery* Newton Abbot: David and Charles.

Briggs, C. S. 1976. 'Notes on the distribution of some raw materials in later prehistoric Britain', in *Settlement and economy in the third and second millennia B.C.* (eds. C. B. Burgess and R. Miket), B.A.R. 33, 267-82. Oxford.

Brown, J. A. 1975. 'Deep-site excavation strategy as a sampling problem', in *Sampling in Archaeology* (ed. J. W. Mueller), 155-69. Tucson.

Bryant, G. F. 1973. 'Experimental Romano-British kiln firings', in *Current research in Romano-British coarse pottery,* (ed. A. P. Detsicas), C.B.A. Research Report 10, 149-60.

Budgen, W. 1922. 'Eastbourne: an Anglo-Saxon cemetery', *S.A.C.* **63**, 241-3.

Burgess, C. B. 1969. 'Chronology and terminology in the British Bronze Age', *Antiquaries Journal* (hereafter *Ant. J.*) **49**, part 1, 22-9.

　　1974. 'The Bronze Age' in *British Prehistory* (ed. C. Renfrew), 165-232. London: Duckworth.

Burgess, C. B. and Shennan, S. 1976. 'The Beaker phenomenon: some suggestions', in *Settlement and economy in the third and second millennia B.C.* (eds. C. B. Burgess and R. Miket), B.A.R. 33, 309-26. Oxford.

Burgess, C. B. and Miket, R. (eds.) 1976. *Settlement and economy in the third and second millennia B.C.,* B.A.R. 33. Oxford.

Bushe-Fox, J. P. 1926. *First report on the excavation of the Roman fort at Richborough,* Report of the research committee of the Society of Antiquaries (hereafter Rep. Res. Comm. Soc. Ant.) **6**. Oxford.

Butler, J. J. and Smith, I. F. 1956. 'Razors, Urns and the British Middle Bronze Age', *Univ. London Inst. of Arch. Annual Report* **12**, 20-52.

Case, H. J. 1977. 'The Beaker culture in Britain and Ireland', in *Beakers in Britain and Europe* (ed. R. Mercer), B.A.R. S26. Oxford.

Champion, T. C. 1976. 'The Iron Age in the region of the Lower Thames', D. Phil. thesis, University of Oxford (unpublished).

Cherry, J. F., Gamble, C. and Shennan, S. 1978. *Sampling in contemporary British archaeology,* B.A.R. 50. Oxford.

Cherry, J. F. and Hodges, R. 1978. 'The chronology of Hamwih, Saxon Southampton reconsidered', *Ant. J.* **58**, forthcoming.

Chown, E. 1947. 'Painted Iron Age pottery at Sedlescombe', *Sussex Notes and Queries* **11**, 148-51.

Clarke, D. L. 1970. *Beaker pottery of Great Britain and Ireland* (2 vols.). Cambridge: University Press.

　　1972. 'A provisional model of an Iron Age society and its settlement system', in *Models in Archaeology* (ed. D. L. Clarke). London: Methuen.

　　1976. 'The Beaker network—social and economic models', in *Glockenbecher Symposion: Oberreid 1974* (eds. J. N. Lanting and J. D. Van der Waals). Fibula—van Dishoek.

Cleere, H. 1974. 'The Roman iron industry of the Weald and its connections with the Classis Britannica', *Arch. J.* **131**, 171-99.

　　1978. 'Roman Sussex—the Weald', in *The Archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report 29, 59-63.

Collis, J. 1977. 'The proper study of mankind is pots', in *The Iron Age in Britain—a review* (ed. J. Collis), 29-31. Sheffield: University Printing Unit.

Couchman, J. E. 1925. 'A Roman cemetery at Hassocks', *S.A.C.* **66**, 34-6.

Cowgill, G. L. 1975. 'A selection of samplers: comments on archaeo-statistics', in *Sampling in Archaeology* (ed. J. W. Mueller), 258-74. Tucson.

Cowie, T. G. 1978. *Bronze Age Food Vessel Urns in Northern Britain,* B.A.R. 55. Oxford.

Crawford, M. 1970. 'Money and exchange in the Roman world', *Journal of Roman studies* **19**, 40-8.

Crossley, D. W. 1972. 'A sixteenth-century Wealden blast furnace; a report on excavations at Panningridge, Sussex, 1964-70', *Post-Medieval Archaeology* (hereafter *Post-Med. Arch.*) **6**, 42-68.

Cunliffe, B. W. 1966. 'Stoke Clump, Hollingbury and the early pre-Roman Iron Age in Sussex', *S.A.C.* **104**, 109-20.

　　1970. 'The Saxon culture sequence at Portchester Castle', *Ant. J.* **50**, 67-85.

　　1971. *Excavations at Fishbourne 1961-69* (2 vols.). Leeds.

　　1973. 'Manor Farm, Chalton, Hants', *Post-Med. Arch.* **7** 31-59.

　　1973a. *The Regni* London: Duckworth.

　　1974. 'Some late Saxon stamped pottery from southern England', in *Medieval pottery from excavations* (ed. V. Evison *et. al.*), 127-36. London: Baker.

　　1974a *Iron Age Communities in Britain* (1st edn.). London: RKP.

　　1975. *Excavations at Portchester Castle: I; Roman* Rep. Res. Comm. Soc. Ant. **32**.

　　1976. *Excavations at Portchester Castle: II; Saxon* Rep. Res. Comm. Soc. Ant. **33**.

　　1976a. *Iron Age sites in central southern England* C.B.A. Research Report 16.

　　1977. *Excavations at Porchester Castle: III; Medieval* Rep. Res. Comm. Soc. Ant. **34**.

　　1978. *Iron Age Communities in Britain* (2nd edn.) London: RKP.

Cunliffe, B. W. and Rowley, T. (eds.) 1976. *Oppida: the beginning of urbanism in barbarian Europe* B.A.R. S11. Oxford.

Curwen, E. 1931. 'Prehistoric remains from Kingston Buci', *S.A.C.* **72**, 185-217.

Curwen, E. and E. C. 1930. 'Lynchet burials near Lewes', *S.A.C.* **71**, 254-7.

Curwen, E. C. 1934. 'A late Bronze Age farm and a neolithic pit-dwelling on New Barn Down, Clapham, nr. Worthing', *S.A.C.* **75**, 137-70.

1937. *The Archaeology of Sussex* (1st edn.) London: Methuen.

1954. *The Archaeology of Sussex* (2nd edn.) London: Methuen.

Darvill, T. C., Pearson, M. P., Smith, R. W., and Thomas, R. M. (eds.). 1978. *New approaches to our past* Southampton.

Detsicas, A. P. (ed.) 1973. *Current research in Romano-British coarse pottery* C.B.A. Research Report 10.

Dhondt, J. 1962. 'Les problems de Quentovic', *Studi in onore d'Amintore Fanfani,* 185-248. Milan.

Dolley, R. H. M. and Metcalf, D. M. 1961. 'The reform of English coinage under Eadger', in *Anglo-Saxon coins* (ed. R. H. M. Dolley), 136-68. London.

Down, A. 1974. *Chichester Excavations II* Chichester: Phillimore.

1978. *Chichester Excavations III* Chichester: Phillimore.

Down, A. and Rule, M. 1971. *Chichester Excavations I* Chichester: Phillimore.

Drawbridge, S. 1777. Sale of stock in trade of Samuel Drawbridge 'shopkeeper and potter of Nutley', *Sussex Weekly Advertiser,* 15 September, 1777.

Drewett, P. L. 1975. 'The excavation of an oval burial mound of the third millennium B.C. at Alfriston, East Sussex, 1974', *P.P.S.* **41**, 119-52.

1975a 'A Neolithic pot from Selmeston, East Sussex', *S.A.C.* **113**, 193-4.

1976. *An extensive survey of plough damage to archaeological sites in East and West Sussex* Duplicated list, S.A.F.U., Institute of Archaeology, London.

1977. 'The excavation of a Neolithic causewayed enclosure on Offham Hill, East Sussex, 1976', *P.P.S.* **43**, 201-42.

1978. 'Neolithic Sussex', in *The archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report 29, 23-9.

1980 in *Later Bronze Age settlement in Britain* (eds. J. Barrett and R. J. Bradley). B.A.R. forthcoming.

Dulley, A. J. F. 1967. 'Excavations at Pevensey, Sussex 1962-6', *Medieval Archaeology* (hereafter *Med. Arch.*) **11**, 209-32.

Dunmore, S., Gray, V., Loader, T., and Wade, K. 1975. 'The origin and development of Ipswich: an interim report', *East Anglian Archaeology* **1**, 57-67.

Dunning, G. C. 1958. 'A Norman pit at Pevensey Castle and its contents', *Ant. J.* **38**, 205-17.

1959. 'Pottery of the late Anglo-Saxon period in England', in G. C. Dunning *et. al.,* 'Anglo-Saxon pottery: a symposium', *Med. Arch.* **3**, 31-78.

1962. 'Relief-band amphora of Badorf ware from excavations near Winchester cathedral', *Arch. J.* **119**, 221-3.

1968. 'The trade in medieval pottery around the North Sea', *Rotterdam Papers* **I**, 35-58.

1969. 'Tubular spouted jug imported from Saintonge' in K. Jane Evans. 'A discovery of two unusual objects in New Shoreham', *S.A.C.* **107**, 84-6.

1976. 'Aardenburg ware from Manningtree, Essex', *Essex Archaeol. Hist.* **8**, 184-98.

DoE. 1975. *Principles of publication in rescue archaeology* London.

Ellison, A. B. 1975. 'Pottery and settlements of the later Bronze Age in southern England', Ph.D. thesis, University of Cambridge (unpublished).

1978 'The Bronze Age', in *The archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report 29, 30-7.

1979. 'Towards a socio-economic model for the Middle Bronze Age in southern England', in *Pattern of the past: studies in honour of David Clarke* (eds. N. Hammond *et. al.*). Cambridge: University Press. Forthcoming.

Elsdon, S. M. 1975. *Stamp and roulette decorated pottery of the La Tene period in eastern England: a study in geometric design* B.A.R. 10. Oxford.

Evans, K. J. 1968. 'Worthing Museum notes for 1965 and 1966', *S.A.C.* **106**, 133-44.

1969. 'The Maison Dieu, Arundel', *S.A.C.* **107**, 65-78.

1974. 'Excavations on a Romano-British site, Wiggonholt, 1964', *S.A.C.* **112**, 97-151.

Everitt, A. 1967. 'The marketing of agricultural produce', in *The agrarian history of England and Wales IV (1500-1640),* (ed. J. Thirsk). Cambridge: University Press.

Evison, V. I. 1968. 'Quoit brooch styles', *Ant. J.* **48**, 244.

Evison, V. I., Hodges, H. and Hurst, J. G. 1974. *Medieval pottery from excavations* London: Baker.

Farrar, R. A. H. 1973. 'The techniques and sources of Romano-British Black-burnished ware', in *Current research in Romano-British coarse pottery* (ed. A. P. Detsicas), C.B.A. Research Report 10, 67-103.

Forde-Johnstone, J. 1965. 'The Dudsbury barrow and vessels with shoulder grooves in Dorset and Wilts', *Proc. Dorset Nat. Hist. and Archaeol. Soc.* **87**, 126-41.

Fox, C. and Wolseley, G. R. 1928. 'The early Iron Age site at Findon Park, Findon, Sussex', *Ant. J.* **8**, 449-60.

Fransson, G. 1935. *Middle English Surnames of Occupation 1100-1350* Lund.

Freke, D. J. 1975. 'Excavations in Lewes 1974', *S.A.C.* **113**, 67-84.

    1978. 'Excavations in Church Street, Seaford, 1976', *S.A.C.* **116**, 199-224.

    1978a. 'Medieval urban archaeology in Sussex', in *The archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report 29, 87-92.

    1979. 'The excavation of a 16th-century pottery kiln at Lower Parrock, Hartfield, East Sussex 1977', *Post-Med. Arch.* **13**, 79-125.

Frere, S. S. 1941. 'A medieval pottery at Ashstead', *Surrey Archaeological Collections* (hereafter *Sy. A. C.*) **47**, 58-66.

    1974. *Britannia: a history of Roman Britain* (2nd edn.). London.

Fulford, M. G. 1973. 'A fourth-century colour-coated fabric and its types in south-east England', *S.A.C.* **111**, 41-4.

    1975. 'The pottery', in B. W. Cunliffe, *Excavations at Portchester Castle: I; Roman* Rep. Res. comm. Soc. Ant., 271-367.

    1975a. *New Forest Roman pottery* B.A.R. 17. Oxford.

    1977. 'Pottery and Britain's trade in the later Roman period', in *Pottery and early commerce* (ed. D. P. S. Peacock), 35-84. London: Academic Press.

    1978. 'The Roman pottery', in R. Hartridge, 'Excavations at the prehistoric and Romano-British site on Slonk Hill, Shoreham', *S.A.C.* **116**, 69-142.

    1978a. 'The interpretation of Britain's late Roman trade: the scope of medieval historical and archaeological analogy', in *Roman shipping and trade: Britain and the Rhine provinces* (eds. H. Cleere and J. du Plat Taylor), B.A.R. 24, 59-69. Oxford.

    1979. 'Pottery production and trade at the end of Roman Britain: the case against continuity', in *The end of Roman Britain* (ed. P. J. Casey), B.A.R. 71, 120-32. Oxford.

Fulford, M. G. and Eade, C. 1977. 'Romano-British pottery', in J. H. Money, *Britannia* **8**, 339-50.

Goodburn, R. 1972. 'Review of "Excavations at Fishbourne" by B. W. Cunliffe', *Britannia* **3**, 368-72.

Goven, R. 1973. *Ancient pottery*.

Grant, N. M. Forthcoming report on excavations at Stonar, Kent.

Green, C. M. 1976. 'The coarse pottery', in M. G. Bell, *S.A.C.* **114**, 256-86.

    1977. 'The Roman pottery', in M. G. Bell, *S.A.C.* **115**, 152-78.

    1978. 'Ceramic finds', in O. Bedwin, 'The excavation of a Romano-British site at Ranscombe Hill, South Malling 1976; *S.A.C.* **116**, 241-56.

Gregory, V. L. 1976. 'Excavations at Becket's Barn, Pagham, W. Sussex', *S.A.C.* **114**, 207-17.

Griffith, M. A. 1925. 'Some notes on Anglo-Saxon antiquities from Highdown, near Worthing', *S.A.C.* **66**, 219-24.

Griffith, M. A. and Salzmann, L. F. 1914. 'An Anglo-Saxon cemetery at Alfriston, Sussex', *S.A.C.* **56**, 16-53.

Groube, L. M. 1978. 'Priorities and problems in Dorset archaeology', in *New approaches to our past* (eds. T. C. Darvill *et. al*). Southampton.

Hamilton, S. D. 1977. 'The Iron Age pottery', in M. G. Bell, *S.A.C.* **115**, 83-118.

Hamilton-Hall, W. 1910. *Sussex Wills 1518-1659* British Record Society. London.

Harding, D. W. 1974. *The Iron Age in Lowland Britain* London: RKP.

Hardy, H. R., Curwen, E. C. and Hawkes, C. F. C. 1937. 'An Iron Age pottery site near Horsted Keynes', *S.A.C.* **78**, 251-65.

Haselgrove, C. 1978. *Supplementary gazetteer of find-spots of Celtic coins in Britain, 1977*.

Hawkes, C. F. C. 1939. 'The pottery from Castle Hill, Newhaven', *S.A.C.* **80**, 269-92.

    1939a. 'The Caburn pottery and its implications', *S.A.C.* **80**, 217-62.

    1940. 'The pottery from the sites on Plumpton Plain', *P.P.S.* **1**, 39-59.

Hawkes, C. F. C. and Hull, M. R. 1947 *Camulodunum* Rep. Res. Comm. Soc. Ant. **14**.

Hill, D. H. 1978. 'The origins of the Saxon town,' in *The South Saxons* (ed. P. Brandon), 174-89. Chichester: Phillimore.

Hinton, D. A. 1977. '"Rudely made earthen vessels" of the twelfth-fifteenth centuries,' in *Pottery and early commerce* (ed. D. P. S. Peacock). London: Academic Press.

Hinton, D. A. and Hodges, R. 1977 'Excavations in Wareham, 1974-5,' *Proc. Dorset. Nat. Hist. and Archaeol. Soc.,* **99**, 42-83.

Hirth, K. 1978. 'Interregional trade and the formation of prehistoric gateway communities,' *American Antiquity* **43**, 35-45.

Hodder, B. W. 1965. 'Some comments on the origins of traditional markets in Africa south of the Sahara,' *Trans. Institute of British Geographers* **36**, 97-105.

Hodder, I. 1972. 'Locational models and the study of Romano-British settlement,' in *Models in Archaeology* (ed. D. L. Clarke), 887-909. London: Methuen.
  1974. 'A regression analysis of some trade and marketing models,' *World Archaeology* **6**, 172-89.
  1974a. 'Some marketing models for Romano-British coarse pottery *Britannia* **5**, 340-59.
  1974b. 'The distribution of two types of Romano-British coarse pottery in the West Sussex region,' *S.A.C.* **112**, 86-96.

Hodder, I. and Orton, C. R. 1976 *Spatial analysis in archaeology.*

Hodges, R. 1976. 'La ceramique grise de Sorrus,' *Sepentrion* **6**, 67-70.
  1977a 'The Hamwih pottery—a contribution to the study of eighth and ninth century ceramics, trade and economics,' Ph.D. thesis, University of Southampton (unpublished).
  1977b. 'Some early medieval French wares in the British isles: an assessment of the early medieval French wine trade with Britain,' in *Pottery and early commerce* (ed. D. P. S. Peacock), 239-55. London: Academic Press.
  1978. 'State formation and the role of trade in Middle Saxon England,' in *Social organisation and settlement* (eds. S. Green *et. al.*), B.A.R. S47, 439-55. Oxford.
  1980. *Dark Age economics: an archaeological essay on urban origins and trade A.D. 600-1000.* London, forthcoming.
  1980a. 'The Hamwih pottery; the local and imported wares from thirty years excavations and their European context,' C.B.A. Monograph, forthcoming.
  1980b. 'Trade and urban origins in Dark Age England, an archaeological critique of the evidence.' *Berichlen R. O. B.* **27**, forthcoming.

Hodson, F. R. 1962. 'Some pottery from Eastbourne, the "Marnians" and the pre-Roman Iron Age in southern England,' *P.P.S.* **28**, 140-55.
  1964. 'Cultural groupings within the British pre-Roman Iron Age,' *P.P.S.* **30**, 99-120.

Holden, E. W. 1965. 'Slate roofing in medieval Sussex,' *S.A.C.* **102**, 67-78.
  1972. 'A Bronze Age cemetery barrow on Itford Hill, Beddingham,' *S.A.C.* **110**, 70-117.
  1979. 'A Romano-British pottery kiln at Polhill's Farm, Arlington,' *S.A.C.* **117**, 57-62.

Holleyman, G. A. and Curwen, E. C. 1940. 'Late Bronze Age lynchet settlements on Plumpton Plain, Sussex,' *P.P.S.* **1**, 16-38.

Hudson, W. 1910. 'Sussex subsidies 1296, 1327 and 1332,' *Sussex Record Society* **10**.

Hurst, J. G. 1964. 'Lobed cups,' in E. W. Holden, 'Excavations at the Deserted Medieval Village of Hangleton Part II,' *S.A.C.* **102**, 127-9.
  1964a. 'Stoneware jugs,' in B. W. Cunliffe, *Winchester Excavations 1949-60* I, 142-3. Winchester Museum.
  1968. 'Near eastern and Mediterranean pottery found in North West Europe,' *Archaeologia Lundensia* **3**, 195-204.
  1971. 'South Netherlands Maiolica,' in G. Beresford, 'The Old Manor, Askett,' *Rec. Buckinghamshire* **18**, 362-4.
  1974. 'Sixteenth- and seventeenth-century imported pottery from the Saintonge,' in *Medieval pottery from excavations* (eds. V. Evison *et. al.*), 221-55. London: Baker.
  1976. 'The pottery,' in *The archaeology of Anglo-Saxon England* (ed. D. M. Wilson), 283-348. London.
  1977. 'Spanish pottery imported into medieval Britain,' *Med. Arch.* **21**, 68-105.
  1977a. 'Langerwehe stoneware of the fourteenth and fifteenth centuries,' in *Ancient Monuments and their interpretation* (eds. M. R. Apted *et. al.*), 219-38. Chichester: Phillimore.

Jewitt, L. 1851. 'On Roman remains, recently discovered at Headington, near Oxford,' *J. Brit. Archaeol. Assn.* **6**, 52-67.

Johnston, D. E. 1972. 'A Roman building at Chalk, near Gravesend," *Britannia* **3**, 112-48.

Johnstone, H. (ed.) 1948. 'Churchwardens' presentments,' *Sussex Record Society* **49**, 126.

Jones, M. U. 1975. in 'Recent archaeological excavations in Europe,' (ed. R. Bruce-Mitford). London.

Kelly, D. B. 1972. 'An early Tudor kiln at Hareplain, Biddenden,' *Archaeologia Cantiana* (hereafter *Arch. Cant.*) **87**, 159-76.

Kenyon, G. H. 1967 *The glass industry of the Weald* Leicester: University Press.

Kenyon, K. M. 1948 *Excavations at the Jewry Wall site, Leicester* Rep. Res. Comm. Soc. Ant. **15**. Oxford.
  1952. 'A survey of the evidence concerning the chronology and origins of Iron Age A in southern and midland Britain,' *University of London, Institute of Archaeology 8th Annual Report*, 29-78.

Knocker, G. M. 1957 'Early burials and an Anglo Saxon cemetery at Snell's Corner near Horndean, Hampshire,' *P.H.F.C.* **19**, 117-70.

Lanting, J. N. and Van der Waals, J. D. 1972 'British Beakers as seen from the Continent,' *Heliniuim* **12**, 20-46.

Leman, P. and Cousin, J. L. 1977 'Contribution a la recherche de Quentovic: decouvertes de tessons du Haut Moyen Age dans la Canche,' *Revue de Nord,* **59**, 489-500.

Le Patourel, H. E. J. 1968. 'Documentary evidence and the medieval pottery industry,' *Med. Arch.* **12**, 101-26.

Longworth, I. H. 1961. 'The origins and development of the primary series in the Collared Urn tradition in England and Wales,' *P.P.S.* **27**, 263-306.
forthcoming *Collared Urns and related vessels of Great Britain and Ireland* Cambrigde: University Press

Lower, M. A. 1854 'Memorials . . . of Seaford,' *S.A.C.* **7**, 73-150.
1859 'A medieval pottery at Hastings,' *S.A.C.* **11**, 229-30.

Lowther, A. W. G. 1949 'Roman villa at Sandilands Road, Walton-on-the-Hill, . . . ,' *Sy.A.C.* **51**, 65-81.

Marsh, G. and Tyers, P. 1978 'The Roman pottery from Southwark,' in *Southwark Excavations 1972-4* **2**, 533-82. Southwark and Lambeth Excavation Committee.

Marshall, C. J. 1924 'A medieval pottery kiln discovered at Cheam,' *Sy.A.C.* **35**, 79-97.

Martin. D. 1972 *Excavations at the moated site known as Glottenham Castle, Mountfield, Sussex, 1964-71,* Robertsbridge District Archaeology Society.

Martin, W. 1902 'A forgotten industry: pottery at Ringmer,' *S.A.C.* **45**, 128-32.

Mawer, A., *et. al.* 1929 *The place-names of Sussex* (2 vols.). Cambridge University Press.

Mayes, P. 1968 'A 17th-century kiln site at Potterspury, Northamptonshire,' *Post-Med. Arch.* **2**, 55-82.

Metcalf, D. M. 1972 'The Bird and Brooch sceattas in the light of a find from Abingdon,' *Oxoniensia* **37**, 51-65.
1977 'Monetary affairs in the time of Aethelbald," in *Mercian studies* (ed. A. Dornier), 43-61. Leicester: University Press.

Money, J. H. 1977 'The Iron Age Hill-fort and Romano-British iron-working settlement at Garden Hill, Sussex: interim report on excavations, 1968-76,' *Britannia* **8**, 339-50.
1978. 'Aspects of the Iron Age in the Weald,' in *The archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report 29, 38-40.

Moorhouse, S. 1975. 'Review of "Medieval pottery from excavations,"' *Arch. J.* **132**, 365.

Mueller, J. W. (ed.) 1975. *Sampling in archaeology* Tucson.

Musson, R. C. 1954. 'An illustrated catalogue of Sussex Beaker and Bronze Age pottery,' *S.A.C.* **92**, 106-24.

Musty, J. 1974. 'Medieval pottery kilns,' in *Medieval pottery from excavations* (eds. V. Evison *et. al.*). London: Baker.

Myres, J. N. L. 1969. *Anglo-Saxon pottery and the settlement of England* Oxford: University Press.
1978 *A corpus of Anglo-Saxon pottery* Cambridge: University Press.

Norris, N. E. S. 1956. 'Romano-British cremations at Herstmonceux,' *S.A.C.* **94**, 4-5 and Fig. 1.

Norris, N. E. S. and Burstow, G. P. 1950. 'A prehistoric and Romano-British site at West Blatchington, Hove,' *S.A.C.* **89**, 1-56.
1952 'A prehistoric and Romano-British site at West Blatchington, Hove; part 2; the finds,' *S.A.C.* **90**, 221-40.

Oakley, K. P. 1933. 'The pottery from the Romano-British site on Thundersbarrow Hill,' *Ant. J.* **13**, 135-51.

Orton, C. R. 1974. 'An experiment in the mathematical reconstruction of the pottery from a Romano-British kiln site in Highgate Wood, London,' *Bull Inst, Archaeol. Univ. London* **11**, 41-73.
1975. 'Quantitative pottery studies, some progress, problems and prospects,' *Scientific Archaeology* **16**, 30-5.

Orton, C. R. and Perry. J. forthcoming 'Excavations at Bandon Hill, Beddington.' *Sy.A.C.*

Parsons, W. J. and Curwen, E. C. 1933. 'An agricultural settlement on Charleston Brow, near Firle Beacon,' *S.A.C.* **74**, 164-80.

Peacock, D. P. S. 1969. 'A contribution to the study of Glastonbury ware from south-western Britain,' *Ant. J.* **49**, 41-61.
1969a. 'Neolithic pottery production in Cornwall,' *Antiquity* **43**, no. 170, 145-9.
1971. 'Petrography of certain coarse pottery,' in B. W. Cunliffe, *Excavations at Fishbourne 1961-69,* 255-9.
1971a. 'Roman amphorae in pre-Roman Britain,' in *The Iron Age and its hill forts* (eds. D. Hill and M. Jesson), 161-88. Southampton University.
(ed.) 1977 *Pottery and early commerce* London: Academic Press.
1977a. 'Ceramics in Roman and medieval archaeology,' in *Pottery and early commerce* (ed. D. P. S. Peacock), 21-33. London: Academic Press.
1977b. 'Bricks and tiles of the Classis Britannica: petrology and origin; *Britannia* **8**, 235-48.

Petersson, H. B. A. 1969 *Anglo-Saxon currency* Lund.

Philp, B. J. 1973. *Excavations in West Kent 1960-70.*

Piggott (née Preston), C. M. 1938. 'The non-Roman pottery from Crowhurst Park,' in E. Straker and B. H. Lucas, 'A Romano-British bloomery in East Sussex,' *S.A.C.* **79**, 224-52.

Piggott, S. 1963. 'Abercromby and after: the Beaker cultures of Britain re-examined,' in *Culture and environment* (eds. I. Ll. Foster and L. Alcock). London.

Platt, C. P. S. 1975. *Excavations in Southampton, 1953-69* Leicester: University Press.

Powell Cotton, P. H. G. and Crawford. O. G. S. 1924. 'The Birchington hoard,' *Ant. J.* **4,**

Prendergast. M. D. 1973. *The coarseware potteries of medieval Limpsfield in Surrey* Privately circulated.

1974 'Limpsfield medieval coarseware: a descriptive analysis,' *Sy.A.C.* **70**, 57-77.

Preston, C. M. 1936. 'Report on the pottery from Highdole, Telscombe, and a note on finger-tip impression wares,' in G. A. Holleyman, 'An early British agricultural village site on Highdole Hill, near Telscombe,' *S.A.C.* **77**. 202-21.

Rahtz, P. 1974. 'Pottery in Somerset, A.D.400-1066,' in *Medieval pottery from excavations* (eds. V. Evison *et. al.*), 95-126. London: Baker.

Read, C. H. 1895. 'Highdown excavations,' *Archaeologia* **54**, 369.

1896. 'Highdown excavations,' *Archaeologia* **55**, 203.

Redknap, M. and Millett, M. 1980. 'Excavations on a Romano-British farmstead at Elsted, W. Sussex,' *S.A.C.,* this volume.

Redman, C. L. 1975. 'Productive sampling strategies for archaeological sites,' in *Sampling in archaeology* (ed. J. W. Mueller), 147-54. Tucson.

Renfrew, C. 1977. 'Introduction: production and exchange in early state societies, the evidence of pottery,' in *Pottery and early commerce* (ed. D. P. S. Peacock), 1-20. London: Academic Press.

Rhodes, M. 1977. 'A pottery fabric type-series for London,' *Mus. J.* **76**, 150-2.

Rigby, V. 1973. 'Potters' stamps on terra nigra and terra rubra found in Britain,' in *Current research in Romano-British coarse pottery* (ed. A. P. Detsicas), C.B.A. Research Report 10, 7-24.

Roach Smith, C. 1846. 'On Roman potters' kilns and pottery,' *J. Brit. Archaeol. Assn.* **1**, 1-2.

Rodwell, W. 1976. 'Coinage, oppida, and the rise of Belgic power in south-eastern Britain,' in B. W. Cunliffe and T. Rowley (eds), B.A.R. S11, 181-359.

Ross, T, 1860. 'Medieval pottery at Hastings,' *S.A.C.* **12**, 268.

Rowlands, M. J. 1976. *The organisation of Middle Bronze Age metal-working* B.A.R. 31. Oxford.

Rudling, D. R. 1978. 'Roman rural settlement in south-east Sussex,' M.A. dissertation, University of London (unpublished).

Sawyer, P. H. 1965. 'The wealth of England in the eleventh century,' *Trans. Royal Hist. Soc.* **15**, 145-64.

Shepard, A. 1956. *Ceramics for the archaeologist* Washington.

Smith, A. H. 1956. *English place-name elements* (2 vols.). Cambridge: University Press.

Smith, C. A. 1976. 'Exchange systems and the spatial distribution of elites: the organisation of stratification in agrarian societies,' in *Regional Analysis II* (ed. C. A. Smith), 309-74. London.

Smith, I. F. 1965. *Windmill Hill and Avebury: Excavations by Alexander Keiller, 1925-39* Oxford: University Press.

1967. 'Report on the pottery,' in P. M. Christie, 'A barrow-cemetery of the second millennium B.C. in Wiltshire, England,' *P.P.S.* **33**, 336-66.

1974. 'The Neolithic,' in *British Prehistory* (ed. C. Renfrew), 100-36. London: Duckworth.

Smith, M. A. 1959. 'Some Somerset hoards and their place in the Bronze Age of southern Britain,' *P.P.S.* **25**, 144-87.

Smith, R. A. 1927. 'Park Brow: the finds and foreign parallels,' *Archaeologia* **76**, 14-29.

Smith, V. G. 1939. 'An Iron Age and Romano-British site at Seaford,' *S.A.C.* **80**, 293-305.

Solheim, W. G. 1960. 'The use of sherd weights and counts in the handling of archaeological data,' Current Anthropology. **1**, 325-9.

Solon, M. L. 1885. *The art of the old English potter* London.

Stewart, I. 1978. 'The Sussex mints and their moneyers,' in *The South Saxons* (ed. P. Brandon), 89-137. Chichester: Phillimore.

Streeten, A. D. F. 1979. 'Fabric analysis and distribution,' in D. J. Freke, *Post-Med. Arch.* **13**, 114-6.

Sutermeister, H. 1976. Burpham: a settlement site within the Saxon defences,' *S.A.C.* **114**, 194-206.

Tait, H. and Cherry, J. 1978. 'Excavations at the Longton Hall porcelain factory: Part I,' *Post-Med. Arch.* **12**, 1-29.

forthcoming 'Excavations at the Longton Hall porcelain factory: Parts II and III,' *Post-Med. Arch.* **13** and **14.**

Tebbutt, C. F. 1974. 'The prehistoric occupation of the Ashdown forest area of the Weald,' *S.A.C.* **112**, 34-43.

Tebbutt, C. F. and Cleere, H. 1973. A Romano-British bloomery at Pippingford, Hartfield,' *S.A.C.* **111**, 27-40.

Tester, P. J. and Bing, H. F. 1950. 'A first-century urn-field at Cheriton, Folkstone,' *Arch. Cant.* **62**, 21-35.

Thompson, F. H. forthcoming 'Three Surrey hillforts: excavations at Anstiebury, Holmbury and Hascombe, 1972-7,' *Ant. J.* **59**.

Tite, M. S. 1972. *Methods of physical examination in archaeology* London and New York: Seminar Press.

Todd, M. 1978. Villas and Romano-British society,' in *Studies in the Romano-British villa* (ed. M. Todd), 197-208. Leicester.

Turner, D. J. 1974. 'Medieval pottery kiln at Bushfield Shaw, Earlswood: interim report,' *Sy.A.C.* **70**, 47-55.

Turner, G. M. and Thompson, R. 1977. Behaviour of the earth's magnetic field as recorded in the sediment of Loch Lomond,' *Earth and Planetary Science Letters* **42**, 412-26.

Vidler, L. A. 1932. 'Floor tiles and kilns . . . , Rye,' *S.A.C.* **73**, 83-101.

    1933. 'Medieval pottery and kilns found at Rye,' *S.A.C.* **74**, 44-64.

    1936. 'Medieval pottery, tiles and kilns found at Rye, *S.A.C.* **77**, 107-18.

Vierck, H. 1976. 'Noel Myres und die Besiedlung Englands,' *Praehistorische Zeitschrift* **51**, 43-55.

Vince, A. G. 1977. The medieval and post-medieval ceramic industry of the Malvern region,' in *Pottery and early commerce* (ed. D. P. S. Peacock), 257-305. London: Academic Press.

V. C. H. 1907. *Victoria County History (Sussex)*, 2

Wainwright, G. J. 1972. 'The excavation of a Neolithic settlement on Broome Heath, Ditchingham, Norfolk, England,' *P.P.S.* **38**, 1-97.

    1978. 'Theory and practice in field archaeology,' in *New approaches to our past* (ed. T. C. Darvill *et. al.*), 11-27. Southampton.

Wainwright, G. J. and Switsur, V. R. 1976. 'Gussage All Saints—chronology,' *Antiquity* **50**, 32-9.

Ward Perkins, J. B . 1938. 'An early Iron Age site at Crayford, Kent,' *P.P.S.* **4**, 151-68.

Welch, M. G. 1976. *Highdown and its Saxon cemetery* Worthing Museum and Art Gallery publication no. 11.

    1978. 'Early Anglo-Saxon Sussex: from *civitas* to shire,' in *The South Saxons* (ed. P. Brandon), 13-35. Chichester; Phillimore.

Whimster, R. 1977. 'Iron Age burial in southern Britain,' *P.P.S.* **43**, 317-27.

White, G. M. 1934. 'A settlement of the South Saxons,' *Ant. J.* **14**, 393-400.

Whittle, A. 1977. *The earlier Neolithic of south England and its Continental background* B.A.R. S35. Oxford.

Wilson, A. E. 1940. 'Report on the excavations on Highdown Hill, Sussex, August 1939,' *S.A.C.* **81**, 173-208.

    1950. 'Excavations on Highdown Hill, 1947,' *S.A.C.* **89**, 163-78.

    1955. 'Sussex on the eve of the Roman conquest,' *S.A.C.* **93**, 59-77.

Wilson, A. E. and Burstow, G. P. 1948. 'The evolution of Sussex Iron Age pottery,' *S.A.C.* **87**, 77-111.

Wilson, D. M. and Hurst, G. 1967. 'Medieval Britain in 1966: Binsted, Sussex,' *Med. Arch.* **11**, 316-8.

Wilson, D. M. and Hurst, J. G. 1960. 'Medieval Britain in 1959: Graffham, Sussex,' *Med. Arch.* **4**, 164.

Wilson, M. G. 1972. 'The other pottery,' in S. S. Frere, *Verulamium Excavations I*, Rep. Res. Comm. Soc. Ant. **28**. Oxford.

Woods, P. J. 1974. 'Types of late Belgic and early Romano-British pottery kilns in the Nene valley,' *Britannia* **5**, 262-81.

Young, C. J. 1977. *The Romano-British pottery industry of the Oxford region* B.A.R. 43. Oxford.

    1979. 'The Roman fine wares,' in A. Down, *Chichester Excavations 4: the Roman villas at Chilgrove and Upmarden*, 194-8, Chichester: Phillimore.

    (ed.) 1980. *The processing and publication of Roman pottery* DoE Occasional Paper.

INDEX

Note: Two changes have been made from procedure in previous indexes:—
    (a) Period subdivisions under a subject heading are now chronological instead of alphabetical.
    (b) Slight modifications have been made to punctuation in order to assist clarity.

AN EARLY MESOLITHIC SITE AT RACKHAM, WEST SUSSEX

by Daryl Garton, B.A.

The site is on Sparrite Farm, on the Parham Estate, Rackham, West Sussex (TQ 048 147). It lies on the Sandgate beds of the Lower Greensand series of the Weald (McRae and Burham 1975, 599), c.300 m to the west of Amberley Wild Brooks, a waterlogged area east of the River Arun, separated from it by a low sand ridge. The South Downs escarpment lies 1500 m to the south. The site is c.400 m south of the late Neolithic site reported by E. Holden and R. Bradley (Holden and Bradley 1975, 85).

INTRODUCTION

The site was located by Mr. and Mrs. E. Holden on clearance of an area of secondary woodland. The removal of a group of conifers just northeast of the Rackham to Greatham road revealed an assemblage of flakes, blades, an obliquely blunted point and a scraper. The tools and the character of the debitage suggested an early Mesolithic date for the assemblage (R. Jacobi, pers. comm.). Money was allocated by the D.o.E. for the excavation of the site on the basis that it was probably early in date, and that as the site had not been ploughed recently, it was hoped that pollen analysis would produce some environmental evidence for this period. Pollen analysis from the nearby late Neolithic site (Holden and Bradley 1975, 85), gave evidence of Neolithic clearance, forest regeneration followed by permanent clearance resulting in heathland with acidification and podzolisation of the soil (Dimbleby and Bradley 1975, 179). The soil profile in the area of the Mesolithic site was much disturbed unlike that of the Neolithic site to the north (K. Thomas and J. Sheldon, pers. comm.). The removal of the shallow rooting conifers had not disturbed the deeper part of the site, but had removed the upper part of the soil profile. Erosion of the sand had also occurred between clearance and excavation so that no samples for pollen analysis were taken as any pollen could not have been related to the artifact levels. The depths at which the artifacts were found vary over the excavated area (5-30 cm). This is thought to be partly dependent on the depth of truncation of the soil profile which was variable, and could not be determined at any single point. The soil material in the area of the excavation was convoluted sand and sandy clays, the textural differences picked out by iron and humic staining, the sands white, the sandy clays orange to dark brown. The most abundant flintwork was recovered from the areas of clean white sand.

EXCAVATION

An area of 260 square metres was excavated. An initial area of 100 square metres was opened, and extended following the heaviest concentration of flintwork. The area was divided into 1 metre squares and excavated by trowel in 2.5 cm levels, all the flintwork being plotted *in situ,* and all the spoil being dry sieved. The flintwork from each 1 metre square, and 5 cm depth was collected together as groups for storage and to be catalogued. The site was excavated to at least a depth of 25 cm, and in some areas to 40 cm, excavation ceasing only when no flintwork was recovered in the last 5 cm. The variability of artifact depth is partly related to the areas of concentration, and

possibly the variability in the depth of the erosion of the soil profile.

All the debitage was in a very fresh state, the edges had not been rolled and were sharp. Most of the flint was of high quality and dark grey, the cortex fresh and chalky and probably from the South Downs 1500 m to the south. Only a small number of the pieces had been flaked from abraded flint nodules.

Two complete microliths were recovered from the excavation, an obliquely blunted point A1a (Clark 1934, 52; 1939, 61), Fig. 3 no. 1, and an elongated trapeze, Fig. 3 no. 3. A retouched broken blade may also have been an obliquely blunted blade A1c (Clark op. cit.), Fig. 3 no. 2. Parallels for the obliquely blunted point may be found at Iping (Keef, Wymer and Dimbleby 1965, 89, Fig. 2, no. 13), and West Heath (Clark, 1932, 149, Fig. 2, nos. 4, 12; Brailsford, 1937, 227, no. 18,28); for the possible obliquely blunted point at Iping (Keef, Wymer and Dimbleby 1965, 89, Fig. 2, no. 14), and for the elongated trapeze at Thatcham (Wymer 1962, 373, Fig. 7, no. 67).
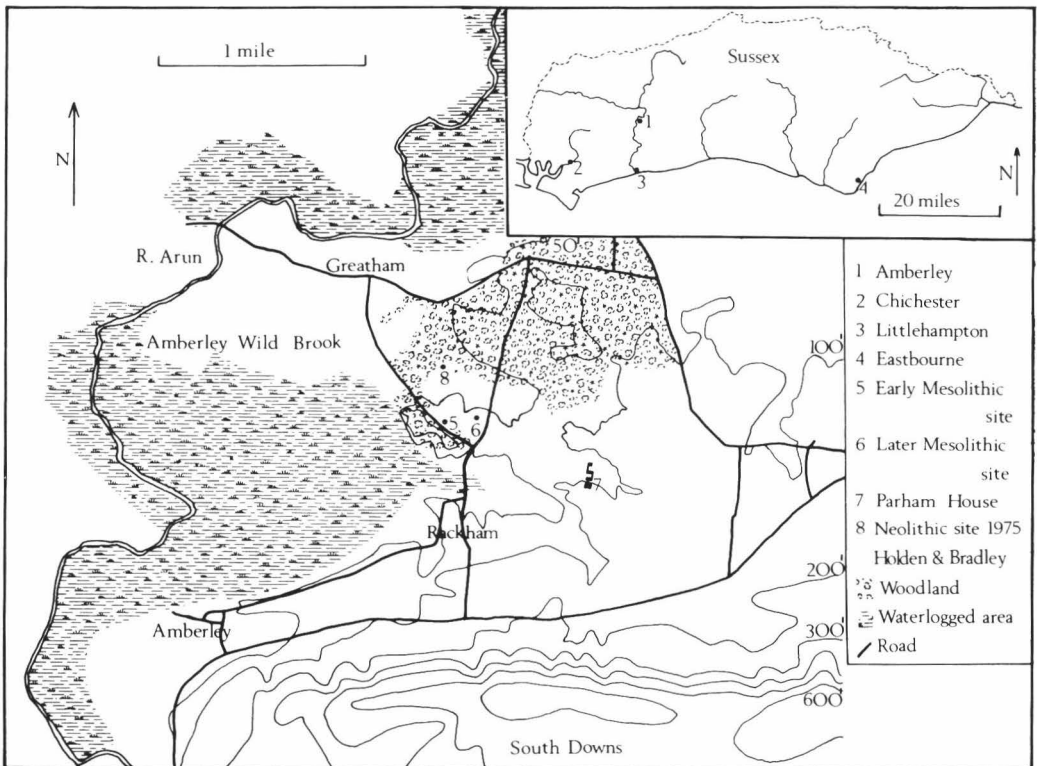
Fig. 1. Location map of the site.

ASSEMBLAGE ANALYSIS

Table 1.

Firecracked flints	Flakes	Blades	Microliths	Cores	Rough Waste
108	376	432	3	14	14

Only 61 of the blades and flakes show any sign of retouch (i.e. 7.2%), and then it is mostly blades (46). Of these six were scrapers.

Table 2.

Analysis of flakes and blades

	Retouched	Core prep.	a.t.f.*	microlith	unused	firecracked
Flakes						
a) complete with cortex	3	3			33	2
b) complete without cortex	3	4	1		59	5
c) incomplete with cortex	2	1			42	11
d) incomplete without cortex	7	15	2		149	34
Blades						
a) complete with cortex	5	1			30	1
b) complete without cortex	18	5		1	92	2
c) incomplete with cortex	5	1			24	4
d) incomplete without cortex	18	8		2	178	37

* Axe thinning flake.

There were six end scrapers on blades, of which four were complete; one was also retouched along part of one side (Fig. 3, no. 4). Other scraper-like tools include one flake which had been prepared but not utilised, and two frost shattered flakes that had been utilised to produce scraper-like tools. (These are not shown on Fig. 3 as scrapers).

No axes or tranchet sharpening flakes were recovered, however three axe thinning flakes were found within the central concentration of flintwork (two were recovered in the preliminary fieldwalking). (Fig. 3, no. 13. Table 2).

The number of cores and core preparation flakes would suggest that this was a flintworking area. Fourteen cores were recovered. They may be broadly classified:—

Table 3.

Single platform with flakes removed part of the way round (Fig. 3, no. 5)	3
Single platform, near conical (Fig. 3, no. 6)	1
Two platforms	6
Shattered pieces from cores	4

The cores vary in quality, and only four could still produce useful flakes. One core had been crested (Fig. 3, no. 5). The production of blades necessitates careful core preparation. Core preparation flakes include crested blades (15) (Fig. 3, no. 7, 8), a technique used to ensure production of narrow blades (M. Newcomer pers. comm.); core tablets, that is flakes struck parallel to an existing platform (15) (Fig. 3, no. 9, 10, 11); and core rejuvenation flakes which may be divided into two groups, those from the bottom of a core to produce a striking platform (4), and those struck parallel to existing flakes (4), one of which has a double bulb of percussion (Fig. 3, no. 12). Thirty two of the core preparation flakes have no cortex. This probably indicates that once a core was prepared it was utilised to the end of its useful life. This may also be illustrated by the high proportion of core preparation flakes to cores compared to available figures from other sites.

Table 4.

	Core prep. flakes : Cores
Rackham	38 : 14
West Heath (Clark 1932, 148)	4 : 14
Iping (Keef, Wymer and Dimbleby, 1965, 90)	"common" : 55
Thatcham (Wymer 1962, 340)	129 : 283
Oakhanger (Rankine 1952, 32)	341 : 705

O 1m

N

. Flake/Blade
∘ Firecracked Flint
▪ Core
▫ Core Preparation
Flake
▵ Scraper
▴ Microlith
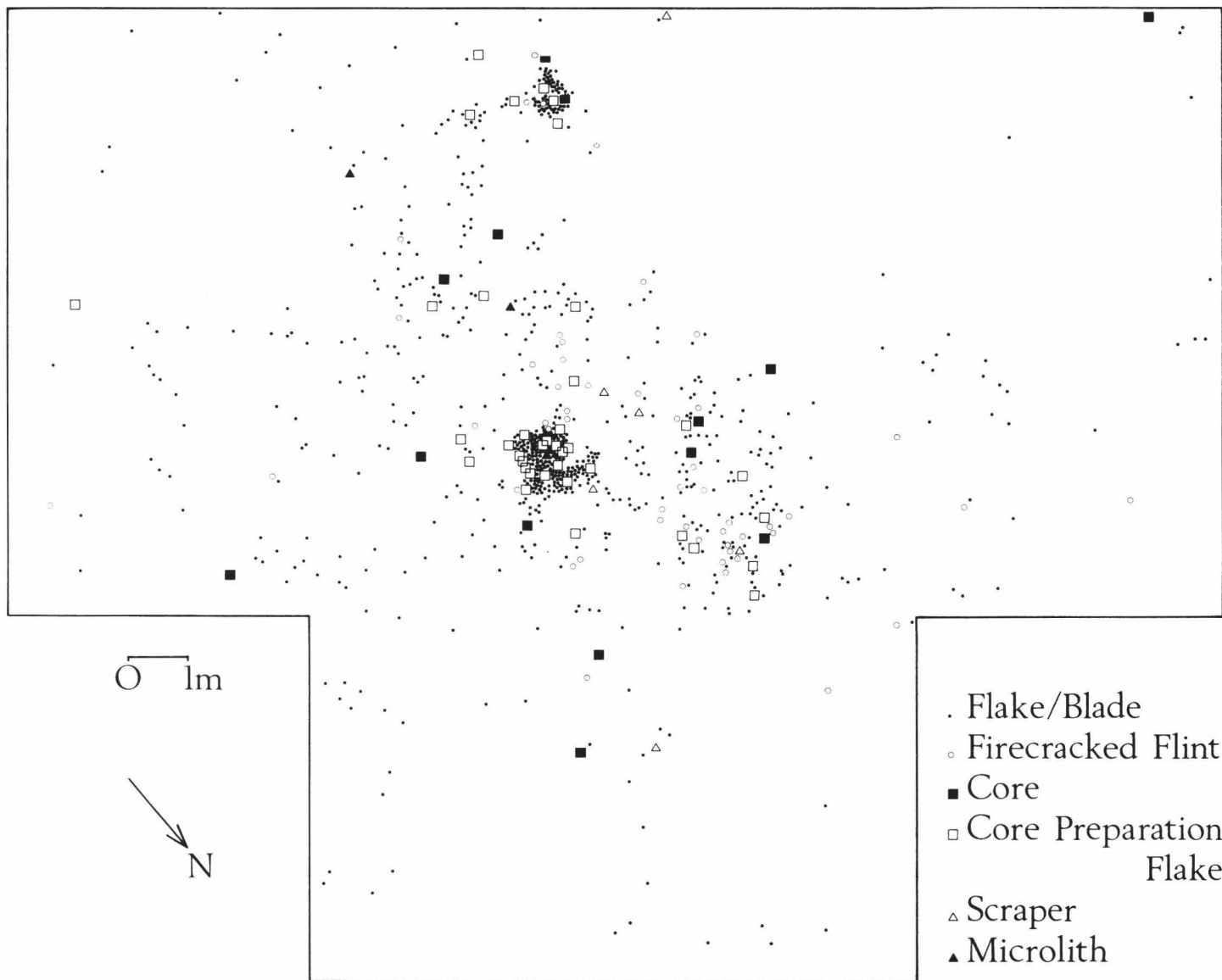
Fig. 2. A plan of the excavation, flintwork plotted *in situ*

Fourteen pieces of rough waste were also recovered (defined as a piece of flint where some flakes have been intentionally removed but soon abandoned).

The cores recovered were prepared for blade production. Blades comprise 51% of the total knapped assemblage, and are more abundant than flakes. (Table 1). Blades were divided into three groups by width, Blade widths between 1.2 and 1.9 mm are most numerous, with a smaller number of the smaller and larger blades.

Table 5.

Blade width	◁ 1.1 mm	1.2-1.9 mm	▷ 2.0 mm
Complete	39	68	48
Incomplete	92	155	30

Only 155 of the blades were complete. The Breadth : Length ratios of the complete blades and flakes are presented below.

Table 6.

Breadth : Length (M. Pitts and R. Jacobi, 1979, 163)

B : L	◁.2	.2-.4	.4-.6	.6-.8	.8-.10	1.0-1.2	1.2-1.6	▷ 1.6
%	2.7	28.3	36.5	12.3	5.7	5.3	6.1	3.1

Visual comparison with data from other Mesolithic sites (supplied by R. Jacobi and M. Pitts) would group Rackham with those sites designated as early (M. Pitts and R. Jacobi 1979, 165-7).

The assemblage from Rackham may best be compared with sites of Maglemosian type (R. Jacobi, pers. comm.). Cluster analysis of sites typologically (Jacobi 1978, 7), grouped Sussex sites of the southwest arc of the Lower Greensand e.g. Iping (Keef, Wymer and Dimbleby 1965, 85), with Thatcham (Wymer 1962, 329); which Jacobi (1978, 19), would date to the early eighth millennium B.C. Rackham is probably part of this Sussex group, geographically and typologically. The sites from West Heath were not included for cluster analysis as only a small proportion of the material survives, however, Jacobi considers the published assemblages to fit a Maglemosian context (Jacobi 1978, 17). No site provides an exact parallel to the Rackham assemblage, this may be due to the different functions of the sites.

Table 7.
(See also Mellars 1976, 387).

	Rackham	West Heath Clark 1932	West Heath Brailsford 1937	Iping Keef et al. 1965	Thatcham Wymer 1962
Conical cores	1	✓	✓	×	4
One platform cores	3			37	100
Two platform cores	6	✓		18	155
Other cores	4				24
Core prep. flakes	38	✓	✓	✓	283
Obliquely blunted pt.	2	✓	3	105	187
Other microliths	1	✓		3	98
Microburin		✓	×	26	72
Scraper	6	✓	9	10	132
Transverse sharpening flake	2		×	7	16
Notched flake		✓			
Graver/awl/burin	2		1	2	61
Serrated edge blade		✓			19
Axe/adze					17
Fabricator				1	6
Ground edge blade					9
Punch				2	8
Pick				1	
Segmented blade		✓		46	40

At Rackham, Iping and Thatcham, single and two platform cores are the most common, with few conical cores, whereas the latter were the predominant type at West Heath (Clark, 1932, 151; Brailsford 1937, 228). Otherwise the assemblage from West Heath (Brailsford 1937, 224), most closely parallels the Rackham assemblage, both having a restricted range of tools; three microliths, and six and nine scrapers respectively with no microburins or transverse sharpening flakes at either site. (Note that three axe thinning flakes were recovered from Rackham implying some axe use). This West Heath site, as Rackham, has very few microliths in contrast to other sites (Mellars 1976, 387). The West Heath sites reported (Clark 1932, 145; Brailsford 1937, 224), appear to be of different characters; this could be due to their different functions, or the limited size of the excavations.

The size of the area of flint debitage recovered may be paralleled at Iping (Keef, Wymer and Dimbleby 1965, 85) and West Heath (Clark 1932, 148). A comparison of the density of flintwork is difficult due to a lack of published data. However, it would appear that the flint densities at Rackham are lower than comparable published sites of the same size, e.g. Iping (Keef, Wymer and Dimbleby 1965, 88). This, taken with the site size, and patterning, suggest that Rackham is a single phase site.
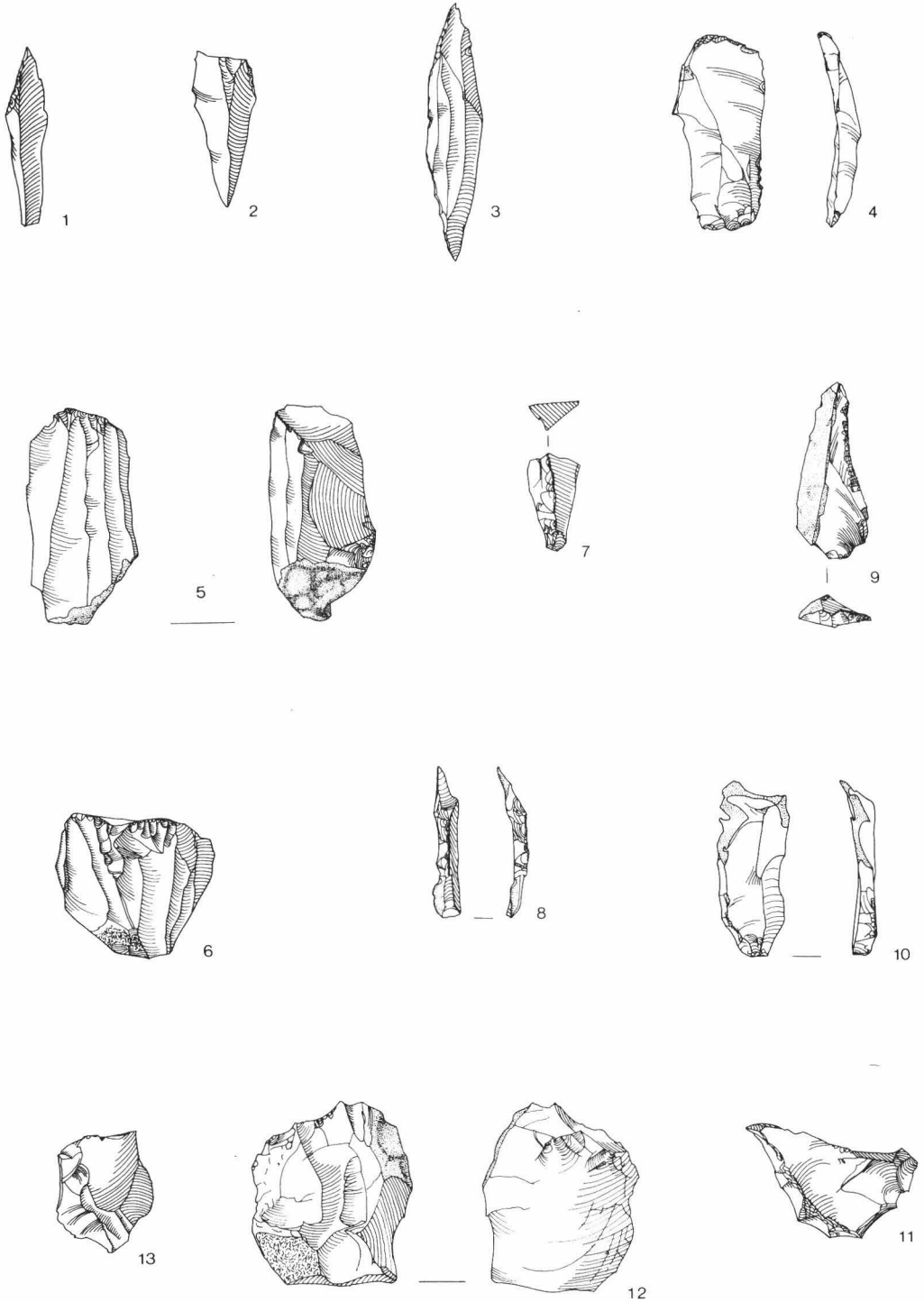
Fig. 3. Examples of the flintwork. Nos. 1-3 microliths 1/1. Nos. 4-13, scraper, cores, core preparation flakes and axe trimming flake $\frac{1}{2}$.

The flintwork was found in an area *c*. 10 m x 10 m. There are two concentrations of flintwork, the largest in the centre of the excavation, and the other 5 m to the southwest. (Fig. 2).

The central concentration of flintwork comprises mainly of flakes and blades (128, 14 of which were retouched), with seventeen core preparation flakes and one microlith and scraper. Fourteen additional core preparation flakes were found within 3 m, four cores within 2 m, and a further eight cores within 5 m of the concentration of flintwork. This strongly suggests that this was a flint working area. Conjoining of debitage has not been attempted. Most of the core preparation flakes outside the main cencentration, but within 3 m of it, lie to the west and northwest. This patterning is reproduced by the scrapers (with one exception), the majority of firecracked flints, and is also the area with the highest proportion of retouched blades and flakes. It should also be noted that the highest proportions of blades, and of debitage with cortex occurred in this area.

The flintwork concentration by the northwestern edge of the excavated area is much smaller, comprising 75 flakes and blades, with two cores and four core preparation flakes. Two core preparation flakes were found within 1 m of it.

INTERPRETATION OF THE RECOVERED DATA

1. The assemblage is typologically early Mesolithic. The proportions of the debitage confirm this interpretation.
2. The site was visited on a limited number of occasions, probably only once.
3. Cores were prepared and worked within the excavated area.
4. Few microliths were recovered. These may have been removed at the time of production, although the total lack of microburins would argue against this as a microlith production site.
5. The site may be divided into two flint knapping areas, with an activity area to the west and northwest of the largest flint knapping area.
6. The proposed activity area may have been bounded on its northwest edge by a rough shelter or windbreak, the flintwork and firecracked flint densities drop rapidly, although there is no structural evidence (cf. Mellars 1976, 377).
7. The highest proportion of scrapers and retouched blades and flakes occur in the proposed activity area. This patterning is also recovered at other sites where the distribution of retouched tools has been plotted (Mellars 1976, 377).
8. It may be proposed that the site was a short stay camp for a small group of hunter/gatherer people. The limited number of tools and size of assemblage being indicative of this function.

There were no structural features which could be associated with the Mesolithic assemblage, although it should be noted that the areas of abundant flintwork coincided with those of clean white sand. Part of the site had been disturbed by 'U' shaped gulleys (12-20 cm wide, and 13-60 cm deep), cut into the sand of the Mesolithic levels, and filled with humic earth. A section of one of the gulleys contained part of a stem of clay pipe; no flintwork was recovered in those sections excavated, and they did not appear to disturb the patterning of the Mesolithic assemblage. The purpose of these gulleys is unclear.

Fieldwalking in an adjacent ploughed field (TQ 052 147) and a subsidiary excavation (36 square metres conducted as described above) revealed a heavy concentration of flintwork.

Table 8.

Tools	Excavation	Fieldwalking
Cores	12	12
Crested blades	9	
Core tablets	6	5
Axe thinning flakes	4	
Tranchet sharpening flakes	2	1
Notched blades	9	
Scrapers	10	10
Backed rods	3	1
Hollow based point		1
Barb and tanged arrowhead		1
Microburin		1

Table 9.

	With Cortex		Without Cortex		
Excavation	Retouched	Unused	Retouched	Unused	Total
Flakes	23	129	22	186	360
Blades 2.0 mm	7	11	13	10	41
Blades 1.2-1.9 mm	17	47	50	125	239
Blades 1.1 mm	3	37	25	173	238
Fieldwalking					
Flakes	15	79	13	68	175
Blades 2.0 mm	3	8	1	2	14
Blades 1.2-1.9 mm	0	13	13	24	50
Blades 1.1 mm	2	5	1	20	28

The composition of the fieldwalking and excavation assemblages suggest a later Mesolithic date. The amount of flintwork would suggest a large site, or perhaps a site visited on a number of occasions. The small area of the excavation, and the effects of ploughing, do not favour a discussion of patterning to discern activity areas.

ACKNOWLEDGEMENTS

Author: Daryl Garton.

REFERENCES

Brailsford, J. W. 1937 'A new microlithic site on West Heath', *S.A.C.* **78**, 224-229.

Clark, J. G. D. 1932 'A microlithic flaking site at West Heath, W. Harting', *S.A.C.* **73**, 145-155.

Clark, J. G. D. 1934 'The classification of a microlithic culture', *Archaeological J.* **40**, 52.77.

Clark, J. G. D. and Rankine, W. F. 1939 'Excavations at Farnham, Surrey', *P.P.S.* **5**, 61-118.

Dimbleby, G. W. and Bradley, R. J. 1975 'Evidence of pedogenesis from a Neolithic site at Rackham, Sussex', *J. Arch. Science* **2**, 179-186.

Holden, E. W. and Bradley, R. J. 1975 'A late Neolithic site at Rackham', *S.A.C.* **113**, 85-103.

Jacobi, R. M. 1978 'The Mesolithic in Sussex', in *Archaeology in Sussex to A.D. 1500*, (ed. Drewett, P. L.), 15-22.

Keef, P. A. M., Wymer, J. J. and Dimbleby, G. W. 1965 'A Mesolithic site on Iping Common, Sussex, England', *P.P.S.* **31**, 85-72.

McRae, S. G. and Burham, C. P. 1975, 'The soils of the Weald', *Proc. Geologists Assoc.* **86**, 559-60.

Mellars, P. 1976 'Settlement patterns and industrial variability in the British Mesolithic', in *Problems in Social and Economic Archaeology*, (ed. G. de Sieveking, I. W. Longworth and D. Wilson).

Pitts, M. W. and Jacobi, R. M. 1979 'Some aspects of change in flaked stone industries of the Mesolithic and Neolithic in Southern Britain', *J. Arch. Science* **6**, 163-177.

Rankine, W. F. 1952 'A Mesolithic chipping floor at The Warren, Oakhanger, Selbourne, Hants', *P.P.S.* **18**, 21-35.

Wymer, J. J. 1962 'Excavations at the Maglemosian sites at Thatcham, Berkshire, England', *P.P.S.* **28**, 329-354.

A GAZETTEER OF MESOLITHIC FINDS ON THE WEST SUSSEX COASTAL PLAIN

by M. W. Pitts

This article aims to be a comprehensive gazetteer of all known Mesolithic sites on the Coastal Plain of Sussex west of the Arun (up to February 1977). The area covered extends north to the E-W grid line 070 and west to the N-S line 800, extending beyond this to cover the whole of the Selsey peninsula. This area (c. 220 square km) is the same as that covered by the writer's gazetteer of Roman material[1] (Fig. 1).

ABBREVIATIONS

C.D.M.   Chichester District Museum.

Palmer   S. Palmer, *The Mesolithic Industries of the Southern Littoral Areas of England,* (unpub. M.Phil. thesis, Univ. of Southampton, 1973).

P.P.S.   *Proceedings of the Prehistoric Society.*

S.A.C.   *Sussex Archaeological Collections.*

S.N.Q.   *Sussex Notes and Queries.*

GAZETTEER

1. *Arundel.* TQ 010060.
    Palmer (p. 73) writes of a tranchet celt[2] from this grid reference.
2. *Marsh Farm, Binsted.* SU 994048.
    Between about 1940 and 1960, Mr. E. E. Wishart of Marsh Farm, Binsted, assembled a collection of flint artifacts from an area mainly confined to a single field. Apart from the Mesolithic celts, the flints are typical of the many flint-producing sites on the Plain. I am grateful to the finder for showing the find-area to me, for allowing me to examine the collection and to borrow some of the pieces for drawing. Outline drawings by the writer of the core tools not illustrated here have been placed with the C.D.M. Apart from the artifacts here described, the collection includes two flaked Neolithic celts found by Mr. Wishart in one of his fields at Gumber Farm, at SU 954115; their lengths are 202 mm and 125 mm respectively. All the objects are in Mr. Wishart's possession.
    The soil at the site is a variant of the Lyminster series. Hodgson's specimen profile No. SuW 17 lies within the area of the finds: he describes the C horizon as a 'pale brown . . . very friable, structureless loamy sand'.[3]

Table 1.   Contents of the collection

Flakes	303	
Small blades or blade fragments[4]	30	(Fig. 2.4-8)
Spherical flint hammerstone, *c.* 80 mm in diameter	1	
Cores	5	(Fig. 2.9-13)
Tranchet celts (cf Table 2)	8	(Fig. 2.1-3)
Pick (cf Table 2)	1	(Fig. 3.1)
Other core tools (cf Table 2)	2	
Scraper	1	(Fig. 3.4)
Bifacially worked oval disc	1	(Fig. 3.2)
Tanged point	1	(Fig. 3.3)

Table 2.   Details of core tools (measurements in mm)

No.	Description	Fig.	Length	Width[i]	Thickness[ii]
1	Tranchet celt	2.1	136	48	43
2	Tranchet celt		123	42	31
3	Tranchet celt	2.2	122	49	32
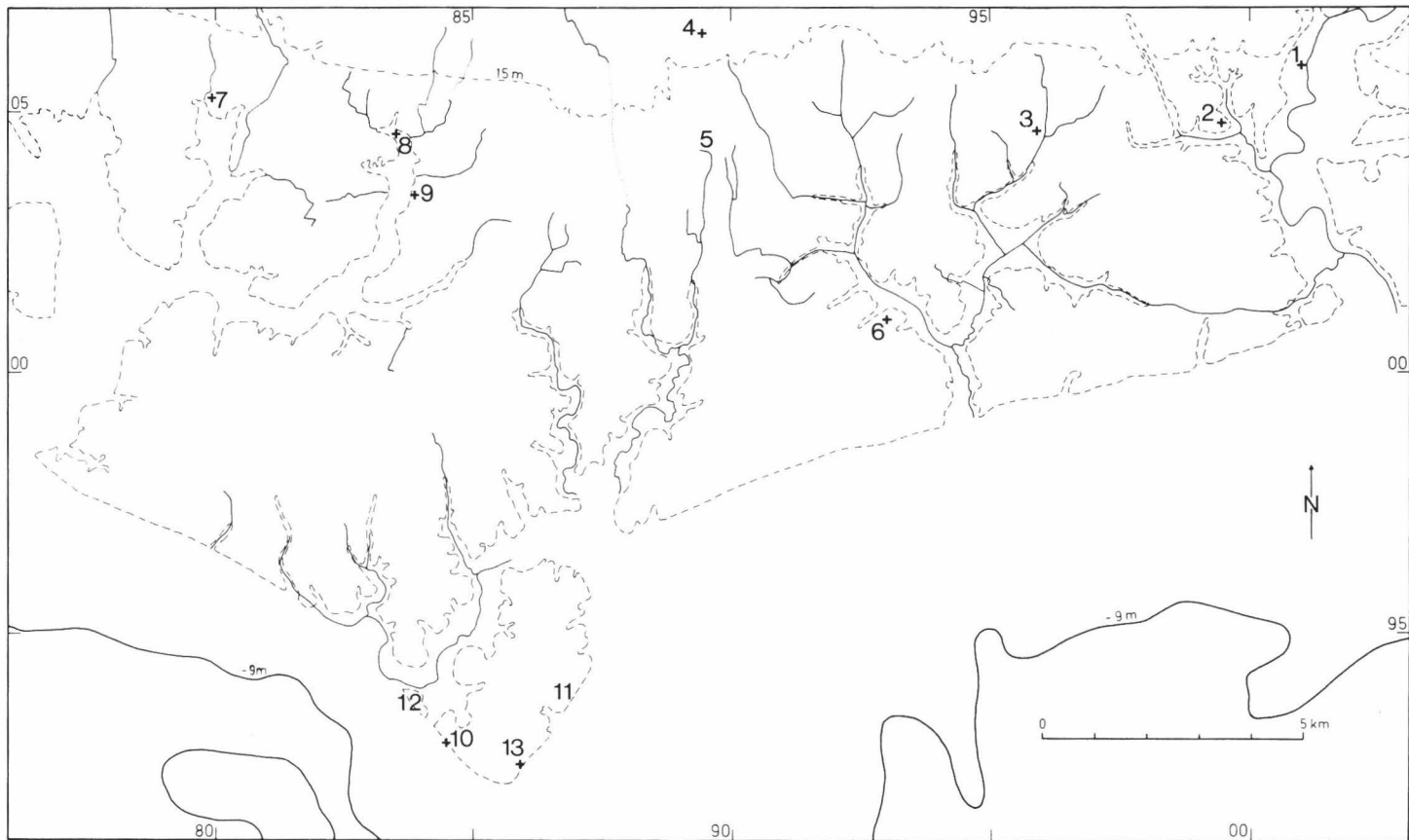
Fig. 1. Mesolithic sites on the West Sussex Coastal Plain. Submarine contour taken from O.S. 1:63,360 map, 1968-69 revision. Dashed line marks modern coast, except where carried inland along edge of estuarine alluvium (at Pagham, Bognor Regis and Arundel)

4	Tranchet celt		110	42	31
5	Tranchet celt		105	42	30
6	Tranchet celt		96	40	25
7	Tranchet celt		91	42	28
8	Tranchet celt	2.3	85	35	24
9	Unfinished tranchet celt?		113	60	44
10	Pointed core tool		85	35	26
11	Pick	3.1	133	38	35

(i   Maximum width parallel to axis of cutting edge).
(ii   Maximum thickness perpendicular to axis of cutting edge).

As with most surface collections, artifacts of more than one period are present. The two largest blades, distinguished also by their colour, one (Fig. 2.7) patinated dark grey-blue, and the other (Fig. 2.8) of creamy red-brown flint, would not be out of place in a late Glacial context, although large blades are found in apparently Mesolithic assemblages.[5] The tanged point (Fig. 3.3), probably the oval disc (Fig. 3.2) and possibly the scraper (Fig. 3.4) would seem to be of Late Neolithic or Early Bronze Age date. The pick (Fig. 3.1) is probably also Late Neolithic.

The Mesolithic material comprises eight tranchet celts, at least some of the blades (e.g. Fig. 2.4 and 6) and cores (e.g. Fig. 2.9, 10 and 11) and one microburin (Fig. 2.5). The absence of microliths (apart from the indirect evidence of the single microburin) in a collection containing well over 300 unretouched flakes or blades, many of small size, is probably significant.

Seven of the Marsh Farm celts have patches of cortex remaining, generally in a way that suggests that long nodules of circular section were selected as raw material. This feature is clearly demonstrated at Farnham, where such a nodule, which appears to have broken in half while being flaked into a celt, was found in Pit I.[6] The most regularly flaked, as well as the least damaged celt (Fig. 2.2), has small, steep scarring on part of one face of the cutting edge, as would be consistent with it having been hafted as an adze—rather than an axe-blade. Unlike the other celts, Fig. 2.1 has for most of its length its thickness greater than its width. Since the nature of the flake scars indicates that this feature was deliberately produced, it is possible that it represents a different hafting position (i.e. as an axe) from the others, which on analogy with No. 1, could all be adzes.

3. *Barnham Nurseries, Eastergate. c.* SU 959046.

The writer noted seeing a relatively large tranchet celt from Barnham handed in to the C.D.M. for examination in 1974-75. No record of this could be found in the museum.

There are two iron-stained tranchet celts on view in Littlehampton Museum marked 'Barnham'. Together with a similar celt in the same case, these are probably the three referred to by Hearne[7] as a 'Thames pick ($5\frac{3}{4}$in. long)' and two 'roughly shaped picks or chisels, brownish-yellow', from Barnham Nurseries, found with a number of apparently later flints. The writer was unable to examine these celts as no key could be found to the cabinet.

4. *Strettington Farm, Boxgrove.* SU 993067 area.

A quantity of struck flint was picked up during the Oving Field Survey in 1974-75[8] east of Maudlin. Amongst about 90 pieces, the majority of which are probably Neolithic or later in date, are a few of Mesolithic character. These include a very regular prismatic blade core with two opposed platforms (47 mm long) and a conical blade core with one platform (40 mm long). The latter is patinated a mottled grey-blue. Of the whole collection, only eight other pieces (none of which is retouched) are patinated. Of these, five could have come from such a blade core: indeed it is possible that one small blade came from this very core, the colouring of the flint and cortex of the two pieces being identical. Of some interest is the finding on this site of a flat, red pebble (? quartzite)[9] used as a hammerstone (Fig. 6.1); such pebbles are a characteristic feature of several of the wealden Mesolithic sites.[10]

5. *Oving. c.* SU 8904.   J. Evans, *The Ancient Stone Implements, Weapons and Ornaments, of Great Britain,* 2nd ed. (1897), Fig. 15.

Evans illustrates a fairly large tranchet celt, from 'Oving, near Chichester'. This object is now in the Ashmolean Museum, Oxford (Ac. no. 1927. 3793). L 167 mm. W 53 mm. T 40 mm.

6. *North Bersted, Bersted.* SU 930010.

(a) *Introduction.* Excavations north of Hazel Road directed by the writer in 1975 revealed a small hollow containing seven pieces of struck flint of Mesolithic character. Fourteen other pieces in later contexts complete the collection from this site. Although slim, this evidence is important in demonstrating the presence of Mesolithic settlement (as opposed to the dropping of celts during hunting forays, as would probably have been argued in the not too distant past) on the Plain. The seven pieces referred to also constitute the sole stratified group from the area. In view of its significance in the present context, it has been decided to publish the material in detail here, rather than with the main excavation report.[11]

An important point concerns the reasons for separating these few pieces from a collection of more than 400 flints, ascribed by the writer to a latest Neolithic/Early Bronze Age context. These are three: stratigraphy, typology/technology and patina. The association of seven pieces in a small hollow (Fig. 4.1-7 and Fig. 5) at the south end of the excavated area contrasts with the area of Beaker settlement about 45 m (50 yards) further north, from which slightly less than a third of all the flints from the site derive. Taken together, the pieces in this hollow are undoubtedly Mesolithic. The small blade technology contrasts strongly with the generally unprepared core technique represented by the later material. Two pieces
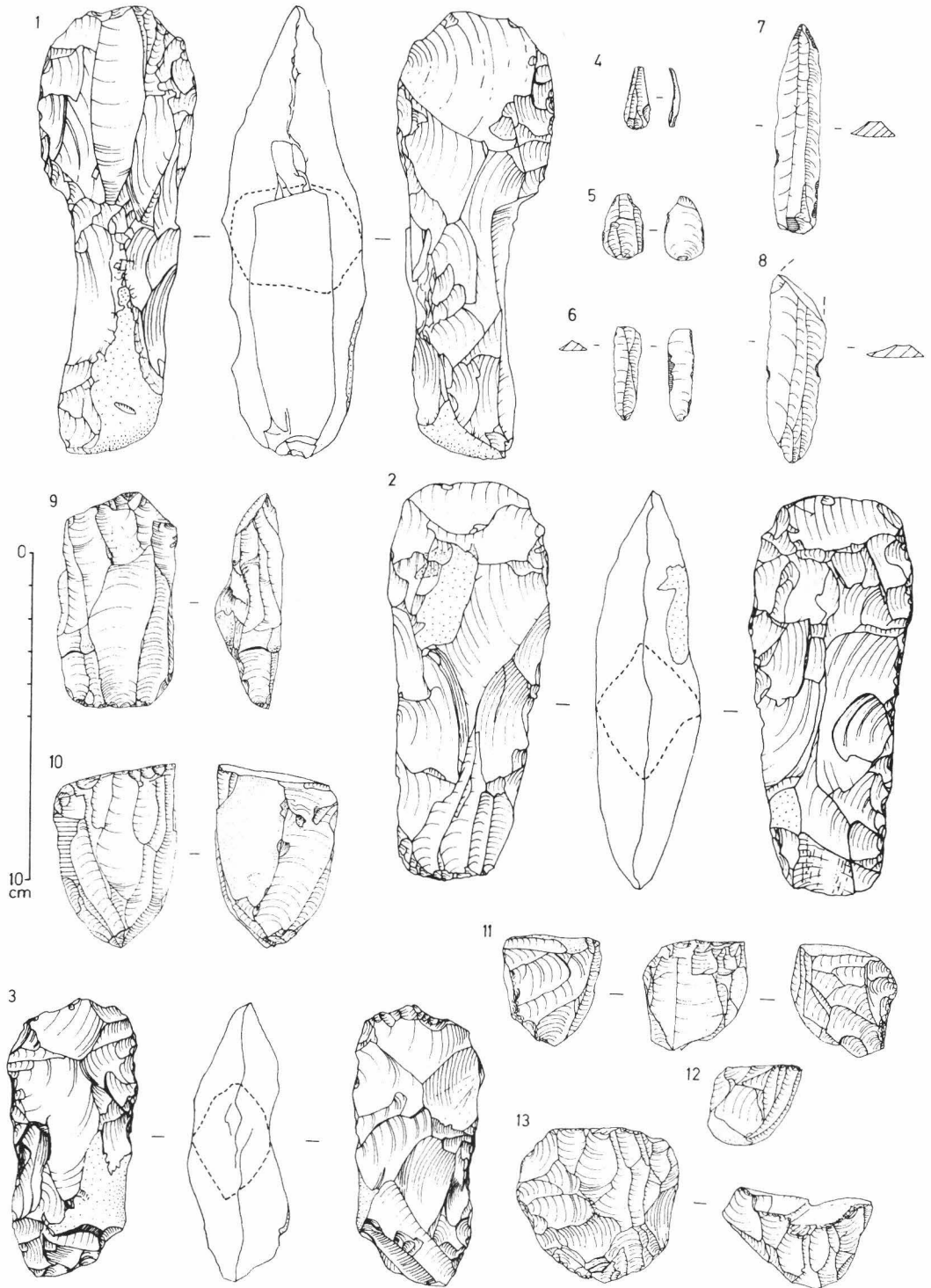
Fig. 2.   Finds from Marsh Farm, Binsted (Gazetteer No. 2)
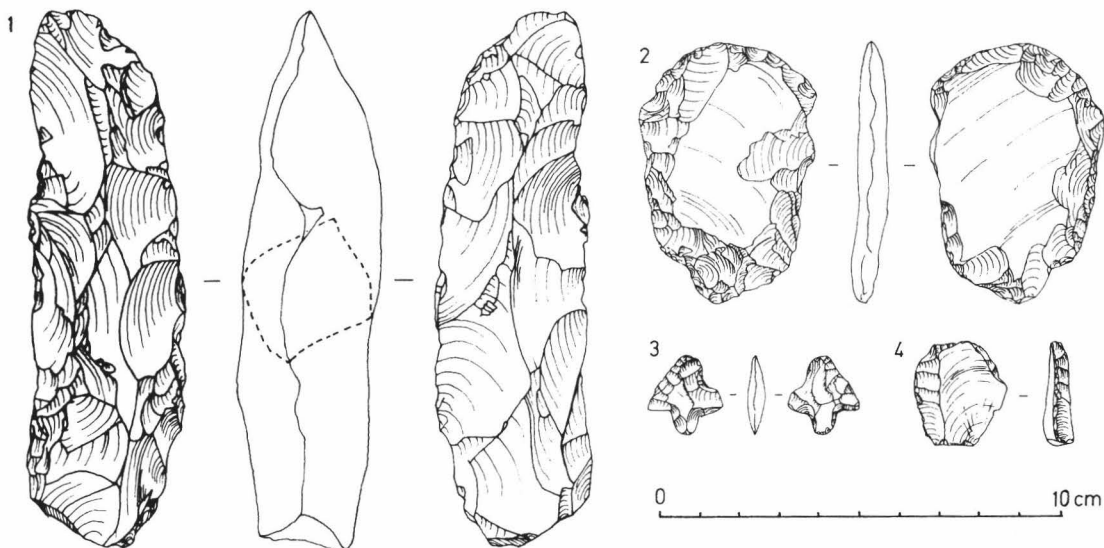
Fig. 3.   Neolithic flints from Marsh Farm, Binsted (Gazetteer No. 2)

in the pit are patinated. There are only about a dozen patinated pieces in the whole collection, of which two (Fig. 4.9 and 4.14) are again clearly Mesolithic; conversely, there are no Neolithic types which are patinated. The significance of patination has also been noticed at Strettington Farm (Gazetteer No. 4).

(b) *Pit (Fig. 5)*.   The pit was dug into orange-brown brickearth, in places quite sandy. There were a number of broken flint nodules in layer 3 of the type that occur in diffuse layers in the brickearth on the site, apparently sorted by periglacial action. None had any humanly produced flake scars.

Layer 1   Hard, structureless, dark grey plough-soil.
Layer 2   Orange-brown brickearth.
Layer 3   Orange-brown slightly sandy brickearth.

After wetting and scraping off the surface of the profile, layer 2 was distinguished from 3 by the former absorbing more water. This process also revealed the presence of vertical earthworm channels in layer 3, but not in 2. All the flint artefacts were found in layer 3.

(c) *Flint artefacts* 1-7, from the pit:

1. Plunging flake off a blade core, which has removed the edge of the striking platform opposite that from which the flake was struck. Patinated pale bluish-white.
2. Hinging blade, patinated pale milky blue.
3. Small flake with tip broken off.
4. Small flake with fine abrupt retouch on centre of right dorsal edge.
5. Small flake with tip broken off.
6. Small flake with fine parallel retouch on right ventral edge.
7. Truncated blade.
   8-21, from Neolithic and later contexts:
8. Blade with abrupt microlithic retouch along the whole of the left dorsal edge, with a small area of fine scarring on the opposite edge, which also has a notch on the ventral face, produced by the removal of a single flake.
9. Thinly patinated blade with small 'burin de Siret' (flaking accident) on the butt.
10. Blade with serrations on right dorsal edge and a retouched notch (possibly damage) on left ventral edge.
11. Flake patinated pale bluish-white with abrupt retouch at tip. Fine direct scarring on the proximal end (the butt is removed) suggests this to have been the working edge of the implement (this scarring is not visible in the drawing).
12. Small flake with abrupt retouch on its distal end. Both ventral edges have fine discontinuous scarring.
13. Fine blade in mint condition.
14. Hinging blade patinated bluish white.
15. Small core with two surviving platforms.
    (16-21 are not illustrated).
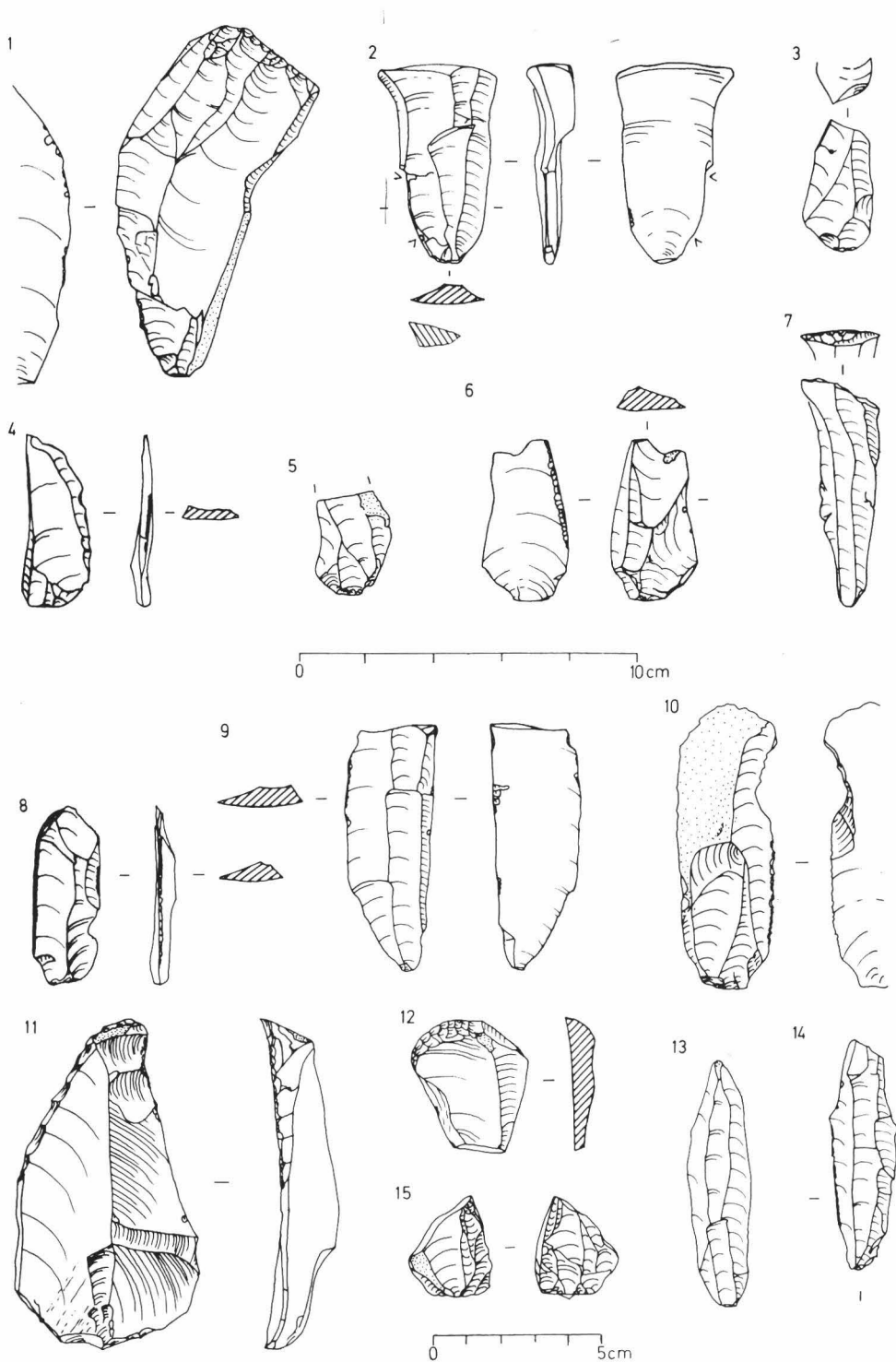
Fig. 4.   Finds from North Bersted (Gazetteer No. 6). All at natural size, except for No. 15 (x $\frac{1}{2}$). Nos. 1-7 are all the
artifacts from the pit (Fig. 5)

16. Small blade-flake with abrupt retouch across tip. The retouch, however, may be a product of post-depositional damage.
17. Small blade fragment.
18. Flake from a prepared core with at least two platforms, patinated creamy blue.
19. Lightly patinated blade, 35 mm long. Unretouched, but scarring suggests use of distal end, which is shaped like the tip of a truncated blade.
20. Truncated blade, 40 mm long, patinated greyish-white.
21. Heavily damaged blade, 25 mm long.

7. *Bosham.* SU 799053. *S.N.Q. 17* (1969), pp. 125-6.

B. Hooper has described a 'mesolithic core' of 'the saddle-shaped variety with two opposing platforms' found with other lithic material which he considered to be later in date, the collection made during roadworks on the A27. Dr. Jacobi notes that Newbury Museum has a tranchet celt, apparently from Bosham.

8. *New Fishbourne, Chichester.* SU 835045 area.

Cunliffe *(Excavations at Fishbourne 1961-1969 1* (1971), p. 6) refers to an unabraded tranchet celt which was found in estuarine silt at *c.* 2.75 m OD, during excavations at the Roman palace. Palmer (her Fig. 3) illustrates what appears to be a second tranchet celt from the same area (L 15 cm. W 5 cm. T 5 cm). There are a few flint flakes on display in the museum at Fishbourne, described as indicating the activity of 'hunters' on the site: however, there seems no reason to regard these as Mesolithic.

9. *Apuldram, Appledram. c.* SU 840030.

One of a group of boxes in the C.D.M. labelled 'Mesolithic Apuldram' with the above grid reference contains as well as 94 flint flakes, 65 small blades (less than 70 mm long, several less than 40) and seven plunging blades off blade cores. Many of the blades are very fine, and would seem to be most probably Mesolithic. Mr. A. G. Woodcock, the museum curator, informed the writer that two microliths had been found at Apuldram. Although one of the afore-mentioned boxes contained a small label reading 'microlith, obliquely blunted, Form A 1', these could not be found in Chichester. However, the Barbican House museum, Lewes, has two flints from Apuldram, presented by a Mr. H. Morris and marked 'CH.H.'. One of these is a small broken flake, but the second is a true microlith, the only such to have been seen by the writer from the area of this Gazetteer (Fig. 6.2). Palmer illustrates a microlith from 'Appledram' (her Fig. 7.5), which is apparently different from that figured here; however, she only refers to a single microlith, and the difference may be illusory.

10. *The Looe, Selsey.* SZ 845929. E. Heron-Allen, *Selsey Bill, Historic and Prehistoric,* Duckworth (1911), Pl. XII.

This plate illustrates four views of a tranchet celt, apparently at a reduction of x ½. The unadjusted measurements from the photograph (length 115 mm, width 32 mm, thickness 29 mm) perhaps suggest that in fact it is printed at or near actual size.

11. *East Beach, Selsey. c.* SZ 8794.

There are three Mesolithic tranchet celts in the C.D.M. (acquisition nos. 121-3) from Mr. E. Ll. White's collection. 121-2 are marked 'East Beach'. Their measurements are: 121, L 136 mm, W 48 mm, T 36 mm; 122, L 132 mm, W 47 mm, T 40 mm. There is also a box of flints in the museum labelled 'Selsey East'. It contains 25 flakes, 28 end-scrapers on flakes, 13 blade or blade fragments (one of which is from a polished flint celt) and nine flake cores. Besides these are three blade cores (one with one platform, the others with two opposed platforms; all three have blades struck from about three-quarters of the platform circumference) and a plunging flake from a blade core; and a noticeably irregular tranchet celt (L 95 mm, W 48 mm, T 33 mm). These five Mesolithic pieces are possibly to be associated with the two 'East Beach' celts.

12. *West Beach, Selsey. c.* SZ 8393 (?).

Tranchet celt: L 124 mm, W 52 mm, T 50 mm (from Mr. White's collection, C.D.M. acquisition no. 123).

13. *West Street, Selsey.* SZ 845930.

Tranchet celt in British Museum found in Mr. S. H. Day's garden at the shore end of West St. in 1906, '*under* the Coombe Rock on surface of Raised Beach' (BM 1934 10.13 10). L 225 mm, W 63 mm, T 56 mm.
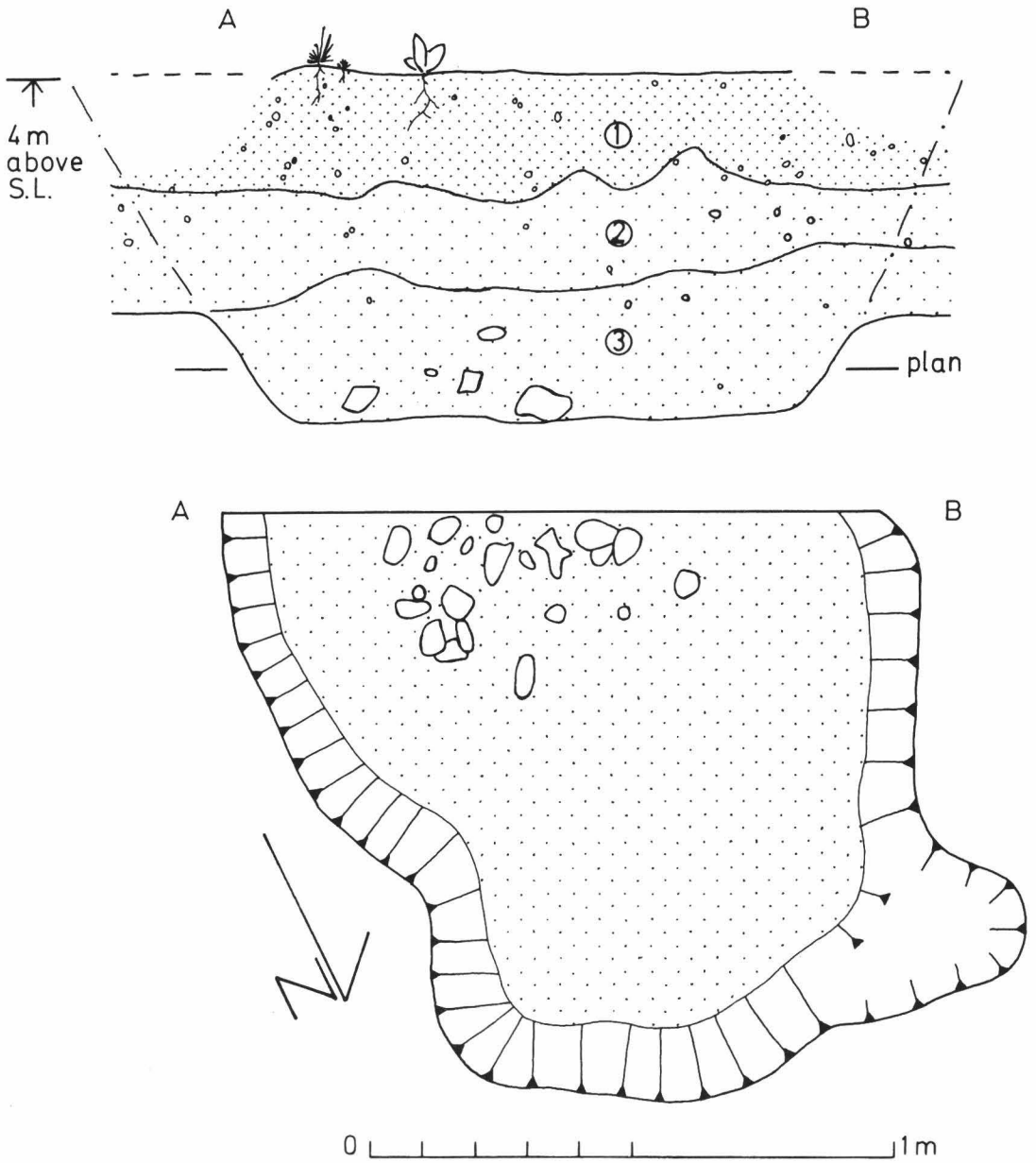
Fig. 5.   Section and plan of Mesolithic hollow at North Bersted (Gazetteer No. 6)

GENERAL DISCUSSION

The material is too sparse to warrant any detailed consideration of early post-glacial activity on the Plain. The sites noted would appear to be of a very different nature to the prolific Mesolithic sites in the Weald to the north and east. The absence of quantities of microliths and associated manufacturing debris is noticeable, and although this could be ascribed to the small size of the collections from all of the sites, this point in itself may be significant; several of the sites are represented by a very few Mesolithic pieces present in sizeable collections, apparently mainly of later date (Gazetteer nos. 2, 3, 4, 6, 7 and 11). The same absence, or small number of microliths apparently occurs in the coastal and inland districts to the west in Hampshire.[12]

This rarity of microliths and the common presence of tranchet celts (a pattern that, as is demonstrated by quantities of material in the C.D.M., continues northwards on to the Downs) may indicate a date relatively late in the Mesolithic (Apuldram, with its quantity of fine blades and obliquely blunted point, may be the one early site). If this were so, the activities represented would have coincided with a fairly dramatic change in the landscape, and as a consequence, in the available resources, associated with the continuing post-glacial rise in sea level. The five fathom contour in Fig. 1 has been drawn as much to symbolise this change as to give an accurate representation of the coast line at any particular date. Though no detailed evidence is available for this area, it seems likely, on analogy with dated deposits elsewhere, that the migration of the coast from the five fathom contour northwards to run into the inlets now represented by estuarine alluvium, took place during the Mesolithic/Neolithic transition. Here, this was a period marked both by the arrival of people from outside the region bringing a new technology and subsistence basis, and by a serious reduction in the area of land available to the native hunter-fishers.

ACKNOWLEDGEMENT

Author: M. W. Pitts, Alexander Keiller Museum, Avebury.
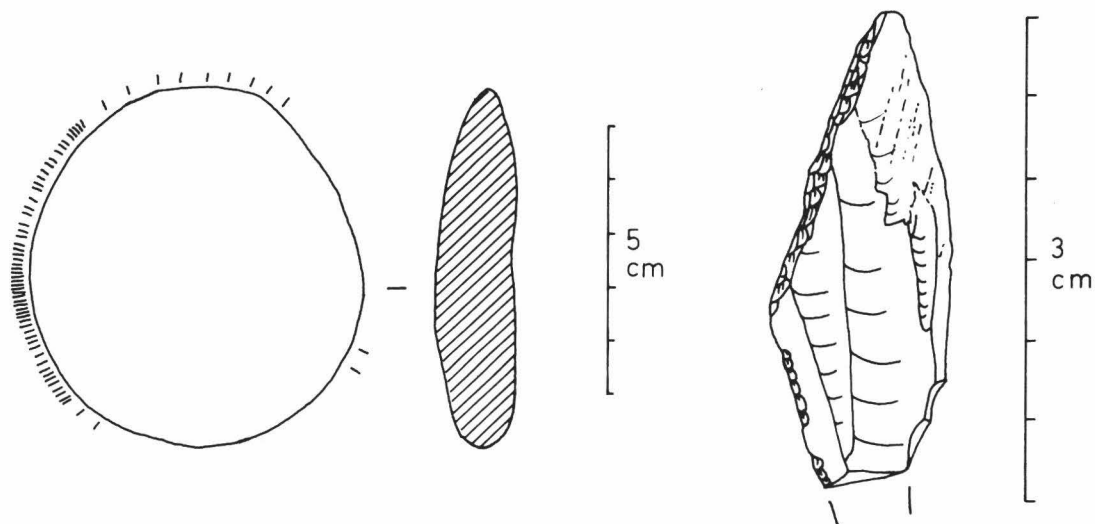
Fig. 6.   Pebble hammerstone from Strettington Farm (Gazetteer No. 4) and obliquely blunted point from Apuldram, Appledram (Gazetteer No. 9)

[1]   M. W. Pitts, 'A gazetteer of Roman sites and finds on the West Sussex coastal plain', *Sussex Archaeological Collections*, **117** (1979), 63-83.

[2]   'Celt' is used throughout this article in preference to 'axe' or 'adze', avoiding the doubtful interpretations implied by the latter two terms.

[3]   J. M. Hodgson, *Soils of the West Sussex Coastal Plain*, Harpenden (1967), pp. 89-90.

[4]   Defining a blade as a removal, with straight parallel edges and one or more ridges, whose length is at least twice its width, and a blade fragment as a piece with more or less parallel ridges, implying fulfilment of the conditions for a blade when complete.

[5]   E.g. Pett (E. Sussex), *S.A.C. 110* (1972), p. 8; Minsted (W. Sussex), *S.A.C. 113* (1975), p. 60. In the latter report the relevant blade is again distinguished from its associated material by its colour.

[6]   *P.P.S. 5* (1939), Fig. 13.1, p. 81.

[7]   *S.N.Q. 5* (1934), pp. 57-60; in his article, Hearne labelled the celts numbers 3, 8 and 9.

[8]   *Sussex Archaeological Society Newsletter 15* (1975), p. 68.

[9]   This piece is currently in the hands of the CBA Implement Petrology Group for the SE. Any further information will be published in a subsequent 'Shorter Notices' in the *S.A.C.*

[10]   W. F. Rankine, 'Pebbles of non-local rock from Mesolithic chipping floors', *P.P.S. 15* (1949), pp. 193-4. Rankine (*op. cit.* and in his *The Mesolithic of Southern England,* Research Paper of the Surrey Archaeological Society No. 4 (1956), pp. 55-8) although suggesting both the Thames gravels and Chesil Bank in Dorset as possible sources of some of these pebbles, preferred the South West of England as the main provider, and used this interpretation to support his own peculiar brand of *Wanderlust.* A further possible source that Rankine did not consider is the area covered by this Gazetteer. Hodgson (*op. cit.* note 3, p. 10) has referred to the presence of erratic stones in the Pleistocene raised beach deposit that underlies the Coastal Plain. In order to test the suggestion that some at least of the foreign pebbles in the Wealden Mesolithic sites could be erratic pebbles from this raised beach, a careful watch was kept during the 1974-75 Field Survey (cf note 8) for any pebbles of this nature, whether or not they showed any sign of use. In the event, all the foreign stone recovered consisted of angular fragments, except for the single pebble illustrated in this article, which is undoubtedly an artifact. Whatever the origin of the Mesolithic pebbles, their movement as objects of exchange is, on present evidence, at least as likely as their association with wandering groups of people.

[11]   O. Bedwin and M. W. Pitts, 'The Excavation of an Iron Age Settlement at North Bersted, Bognor Regis, West Sussex, 1975-76', *S.A.C.* 116 (1978), 293-346.

[12]   J. C. Draper, *Proc. and Papers Hants Field Club 23,* (1968), pp. 110-119; R. Bradley and E. Lewis, *Rescue Archaeology in Hants, 2* (1974), pp. 5-18.

NEOLITHIC AND IRON AGE MATERIAL FROM A COASTAL SITE AT CHIDHAM, WEST SUSSEX 1978

by Owen Bedwin, B.A., Ph.D.

A small excavation was carried out at a site identified by Iron Age pottery and burnt flint eroding from the tidal margin. A single early Iron Age feature, part of a small pit (possibly an evaporation pan) was found. This contained pottery, charcoal and a few briquetage fragments; the latter suggest the production of salt from sea-water at the site.

Unexpectedly, large numbers of worked flints were also found; the commonest implement types were various forms of scraper, particularly notched or concave. This unusual flint assemblage is dated to the Neolithic, and is interpreted as evidence of exploitation of salt-marsh resources at that time.

INTRODUCTION

During the 1960s, Richard Bradley carried out an archaeological survey of the Chichester, Langstone, and Portsmouth harbours. Several Iron Age and/or Romano-British salt-working sites were identified (Fig. 1 and Gazetteer, below), among them one at Chidham (Gazetteer site 18). Iron Age pottery, briquetage and burnt flint were seen eroding from a small headland to the west of the Chidham peninsula. (Briquetage is a coarse form of pottery, with plant inclusions in the fabric, and is associated with the production and transport of salt). The coastal location of the site (Fig. 1) and the presence of briquetage suggested the preparation of salt from sea-water here.

No Iron Age or Romano-British salt-working site had previously been excavated in Sussex. By the summer of 1977, less than twenty metres of the small headland where the site lay, survived beyond the sea-wall, and pottery and burnt flint were continually being exposed by coastal erosion. The Sussex Archaeological Field Unit therefore decided to carry out excavation for three weeks in September, 1978. At the present rate of erosion, the site would have disappeared in a few more years.

Few contemporary settlements are known in the area; there are none on the Chidham peninsula itself. The nearest Iron Age material is pottery from chance finds on Thorney Island (Bedwin and Pitts 1978; Gazetteer section, sites 44 and 45). However, the subsoil in the Chidham area is brickearth, and the difficulty of finding sites on such a soil has been pointed out elsewhere (Bedwin 1978).

EXCAVATION

The edge of the small headland on which the site was situated consisted of a step about 50 cm high. From this vertical, though irregular, edge, burnt flint was eroding over a continuous 30 m stretch, at a depth of 25-30 cm below the modern land surface (Fig. 2). A few sherds of flint-gritted pottery were usually visible at any given time in this eroding edge. One conspicuous U-shaped feature was exposed; this was cut about 30 cm into the brickearth subsoil, and its fill contained charcoal and pottery.
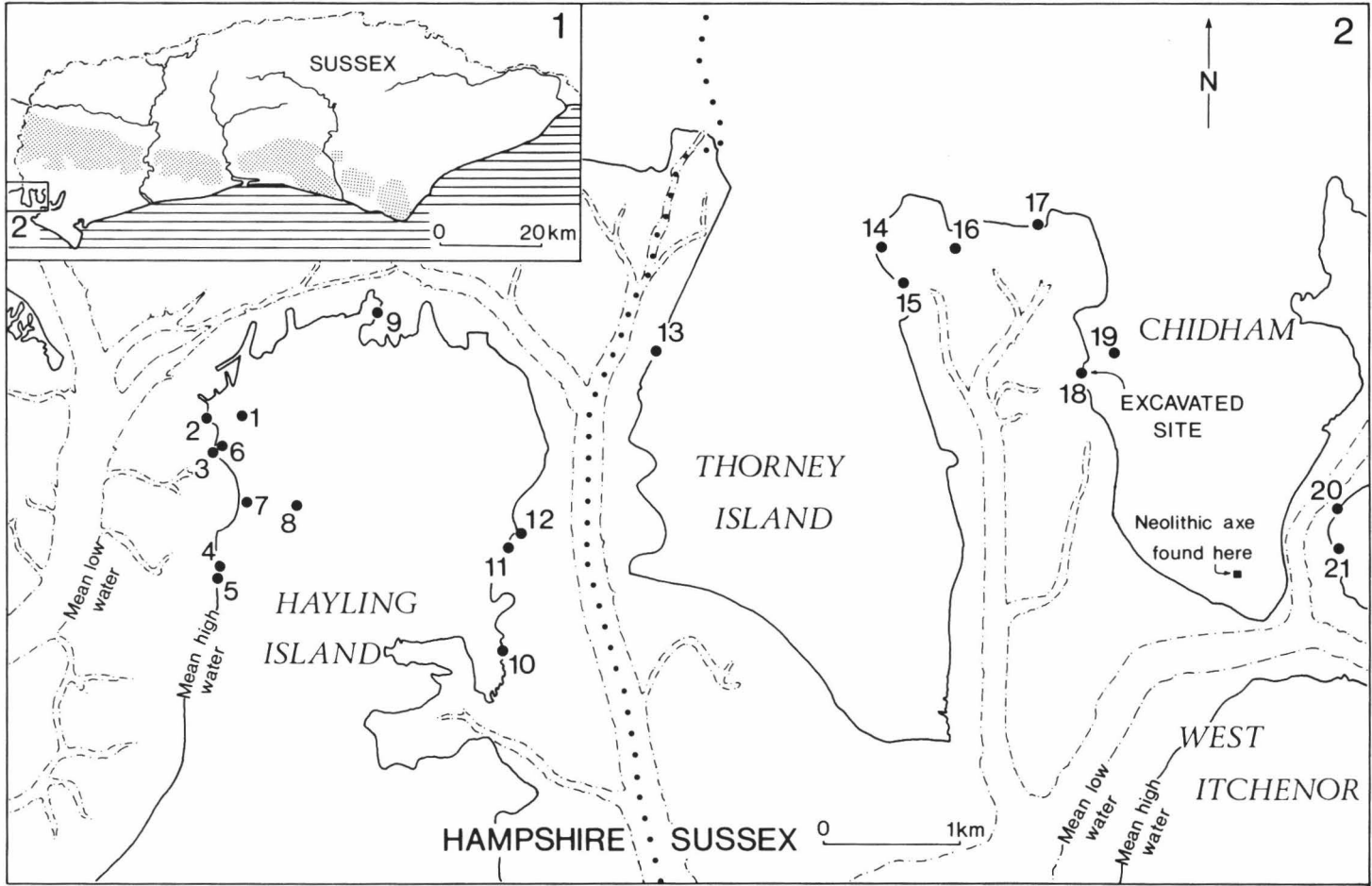
Fig. 1   Chidham 1978. Site location; the numbered sites are those referred to in the Gazetteer

The headland was covered with thick, coarse grass and, apart from the eroding material, there were no surface indications of the presence or boundaries of a site. After clearing the grass, two areas, centred approximately on the single visible feature, were hand-excavated (Fig. 2). Turf and topsoil were removed, followed by about 20 cm of uniform, buff overburden, to a level at which burnt flint, worked flint and pottery began to appear. At this level, the excavated areas were trowelled, plotting in the positions of pottery and flint artifacts as they were found (Fig. 2). A surprisingly large number of flint artefacts came to light (630 in all). Even more noteworthy was the high proportion (133) which could have been used as scrapers. As the distinction between overburden and undisturbed subsoil was impossible to identify either by colour or texture, trowelling was simply continued until finds died out.

The only feature found was the one already revealed by erosion. This consisted of part of a shallow, steep-sided pit, about 30 cm deep and about 40 cm wide at the top (Fig. 3). Within its dark grey lower fill was much charcoal, early Iron Age pottery, some fragments of briquetage, a few flint flakes, and some calcined flint. Given the context of the site and the presence of briquetage, it may be that this feature represents the partial survival of an evaporation pan, in which sea-water was trapped and allowed to evaporate. An alternative possibility, that it was simply a rubbish pit, cannot be ruled out.

DISCUSSION

Iron Age material

The limited evidence for salt-production was disappointing; Bradley (pers. comm.) originally noted at least three features in the tidal margin, and it must be concluded that two of these had been washed away by the time excavation began in 1978. From the single surviving feature, it is possible to infer only that the preparation of salt from sea-water took place here in the early Iron Age, and that briquetage vessels were involved. It is worth pointing out that Bradley assigned the site to the late Iron Age on the basis of pottery being exposed (Gazetteer, below). Most of the pottery found during the excavation belongs to the early Iron Age, however, though a few sherds of sand-tempered wares are clearly later (Pottery report, below). It is thus particularly unfortunate that the site was not investigated earlier, as there may well have been evidence for salt-working activity over most of the Iron Age.

Neolithic material

In contrast to the relative poverty of Iron Age material, a total of 630 worked flints belonging to the Neolithic period was found. This was completely unexpected. No worked flint was being exposed when the site was first recorded (Bradley, pers. comm.), nor are any Neolithic sites known nearby. Furthermore, the assemblage is an unusual one in that a high proportion of the artefacts are scrapers, with an emphasis on notched or concave types. No comparable assemblage is known in Sussex, and Drewett (below) has suggested the preparation of spears and arrow-shafts, or the preparation of osiers for plaited fish-traps as likely uses for these scrapers.

The worked flints were distributed evenly over the excavated area (Fig. 2). It was not possible to trace them further by excavation, but there was a general scatter of flint flakes among the shingle for about 1 km along the coast to the north of the site. There were also considerable numbers of flint flakes in ploughed fields on the inland side of the sea-wall behind the site. In addition, part of a polished flint axe (Fig. 4.11) was found 1 km to the south of the site (Fig. 1) while the excavation was in progress. Nowadays, the Chidham peninsula is well-drained and intensively farmed, but in
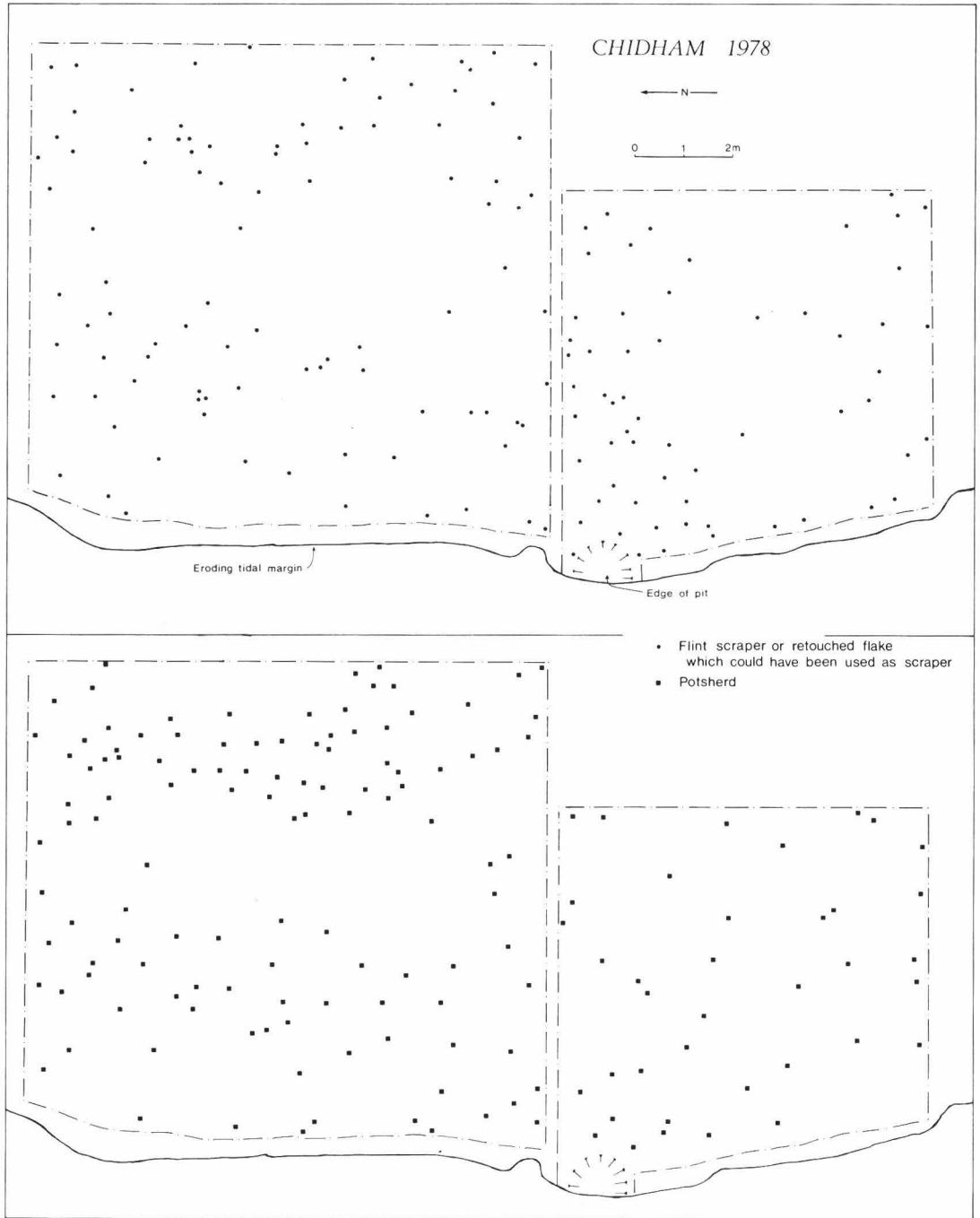
Fig. 2 Chidham 1978. Plan of the excavation showing the distribution of flint scrapers and Iron Age pottery

the Neolithic, it is probable that much of the area was salt-marsh, the fauna of which would have provided a useful source of food. Further investigation of Neolithic activity in this area would obviously be valuable.

THE FINDS

The flint industry (by P. L. Drewett)
An assemblage of 630 worked flints was found during the excavation. All but six came from the uniform buff/brown brickearth (Fig. 3, layer 2) which covered the entire site immediately below the topsoil. It would be unwise to consider material from such a context as a securely associated group; however, the probability is that the assemblage is contemporary.

Layer 2

Waste flakes with cortex	228
Waste flakes without cortex	142
Cores: Class 2A	3
Cores: Class B3	3
Rough Workshop waste	26
Retouched flakes with cortex	69
Retouched flakes without cortex	16
Concave scrapers (Fig. 4. Nos. 1 and 2)	53
Notched scrapers (Fig. 4. Nos. 3 and 4)	36
Other scrapers (Fig. 4. Nos. 5 and 6)	44
Borer (Fig. 4. No. 7)	1
Leaf-shaped arrowheads? (incomplete)	3
(Fig. 4. Nos. 8-10)	
Total:	624

Layer 3

Retouched flake	1
Waste flakes with cortex	3
Rough Workshop waste	2
Total:	6

The flint used is almost exclusively a brown gravel flint. Eight pieces of grey flint may derive directly from the Chalk, while the one strikingly red piece is probably gravel flint. The few properly prepared cores conform to Clark's types 2A and B3 (Clark 1960, 216), but the rough workshop waste includes lumps from which flakes have been struck.

The most peculiar aspect of the assemblage is the astonishingly high number of implements which could be used as scrapers (133). The scrapers (Fig. 4. Nos. 1-6) did not, however, fall easily into the usual scraper classifications (e.g. Clark 1960, 217). Many are roughly made, with 101 being made on flakes with cortex while 16 are on rough nodules. The wide variety of shape and the roughness of manufacture presented problems of classification, so the table (below) simply shows the percentage of the perimeter which has been retouched. This clearly shows that the bulk of the scapers are retouched around 10-20% of their perimeter, but that 30 scrapers have less than 10% of their perimeter retouched. This group consists largely of the small notched scrapers with only the notch being retouched. This type grade into 53 concave scrapers. Thus 83 of the scrapers are specialised scraping tools of the type required for clearing arrow shafts and spears.

Table 1

Chidham 1978; Scrapers.
Percentage of perimeter retouched:

Less than 10%	10-20%	20-30%	30-40%	40-50%	More than 50%
30	61	23	13	5	2

The three small flakes with fine retouch along part of their perimeter appear to be arrowheads in the process of manufacture (Fig. 4. Nos. 8-10). It is difficult to be certain as to their final shape had they been completed, but their similarity to incomplete leaf-shaped arrowheads from Offham (Drewett 1977, 215) and Belle Tout (Bradley 1970, 353) would suggest that they could have been made into leaf-shaped arrowheads.

One borer was found together with 85 flakes with a little irregular retouch. Sixty nine of these were on flakes still retaining cortex.

Clearly this assemblage represents some specialised activity and its date, though uncertain, is most likely to be Neolithic on the basis of the probable leaf-shaped arrowheads. It is possible, therefore, that we are looking at the material remains of the utilisation of strand and salt-marsh resources rather than any real settlement. The large numbers of notched and concave scrapers suggest the preparation of arrowshafts and spears, but could also have been used for preparing osiers to be plaited into wicker fish traps (if such a technique was in use in the Neolithic in this area).

The widespread use of salt-marsh resources in the Neolithic elsewhere in Britain is well known (e.g. Hedges in Buckley 1980), although study of this aspect of Neolithic economy in Sussex has barely begun. The finding of a broken
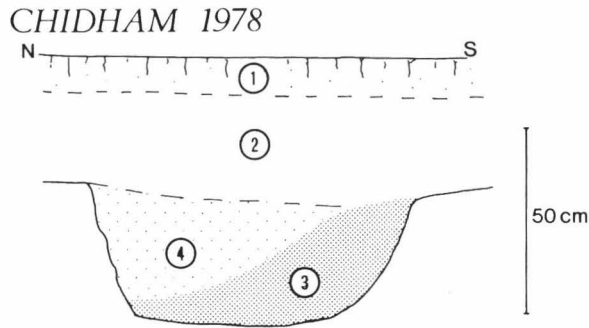
CHIDHAM 1978

Fig. 3   Chidham 1978. Section through the Iron Age feature

Neolithic polished stone axe (Fig. 4.11) by Mark Roberts to the south-east of the site (SU 7905 0228) confirms Neolithic activity in the area.

Pottery

A total of 135 sherds weighing 1610 g were recovered. From layer 2, there were 90 sherds, weighing 810 g; all were small and abraded. There was also a considerable number of sherds so badly decayed as to be unrecoverable by the trowel. In layer 3, there were 45 sherds weighing 800 g; this feature contained the only large sherds.

Fabrics Almost all sherds were of a heavily flint-gritted fabric; in many cases, calcined flint grits stood out of the surface of the sherd, indicating the decay of the original surface. The colour of the fabric was almost always reddish-brown; the surface was often cracked. Only sherds from the illustrated vessel (Fig. 4.12) differed, being reddish-brown outside but black inside.

In layer 2, most of the sherds were undiagnostic body sherds with heavily flint-gritted fabric. There were, however, ten sherds of a hard, grey-brown, sand-tempered fabric characteristic of the late Iron Age.

The four flat sherds of briquetage (up to 16 mm thick) were only lightly flint-gritted, and the fabric contained a variable number of small inclusions of carbonised plant material.

Forms The single diagnostic vessel (Fig.4.12) was made up of several large, unabraded sherds. The slightly raised cordon with regularly spaced fingernail impressions is typical of the early Iron Age, as is its flint-gritted fabric. All the briquetage sherds were flat, undecorated and undiagnostic..

In layer 2, among the ten sherds with sand-tempered fabric, were two rim forms of late Iron Age type. These closely resembled material found at North Bersted (Bedwin and Pitts 1978; Fig.21.200 and Fig. 22.213), and indicate late Iron Age use of the site.

Charcoal (identified by Caroline Cartwright)

85 g of charcoal was recovered from layer 3; the following four species were present;

Crataegus sp. (hawthorn)   *Quercus* sp. (oak)
Ulex sp. (gorse)   *Corylus* sp. (hazel)

Gazetteer of salt-working sites

The following list presents in summary form the notes made by Richard Bradley on salt-working sites found during his survey of the Chichester, Langstone and Portsmouth harbour areas. The numbered sites are shown in Fig. 1, from which it can be seen that most sites are revealed by erosion at or near the high water mark.

1. SU 7181 0353   Two flues excavated by Margaret Rule; saucepan pottery and briquetage found in the flues.
2. SU 7150 0341   Pottery and calcined flint on the shore.
3. SU 7151 0321   Iron Age pottery and briquetage exposed on the shore.
4. SU 7157 0259   Scattered briquetage on a gravel bar. Most of the briquetage sherds of 1 cm thickness. Faces of these sherds well eroded; mainly chaff-tempered. No definite dating.
5. SU 7158 0226   Considerable spread (c. 100 m) of abraded briquetage. Scattered sherds of Iron Age and Romano-British pottery but no direct association with the briquetage.
6. SU 7163 0323   Iron Age pottery and fragmentary briquetage sherds seen in spoil from a trench.
7. SU 7182 0282   Abraded briquetage and strut fragments.
8. SU 7210 0270   (Northwood Farm) Surface spread of charcoal plus Iron Age rimsherd. Two flues or gullies seen in section.
9. SU 7275 0426   Areas of calcined flint in the saltings.
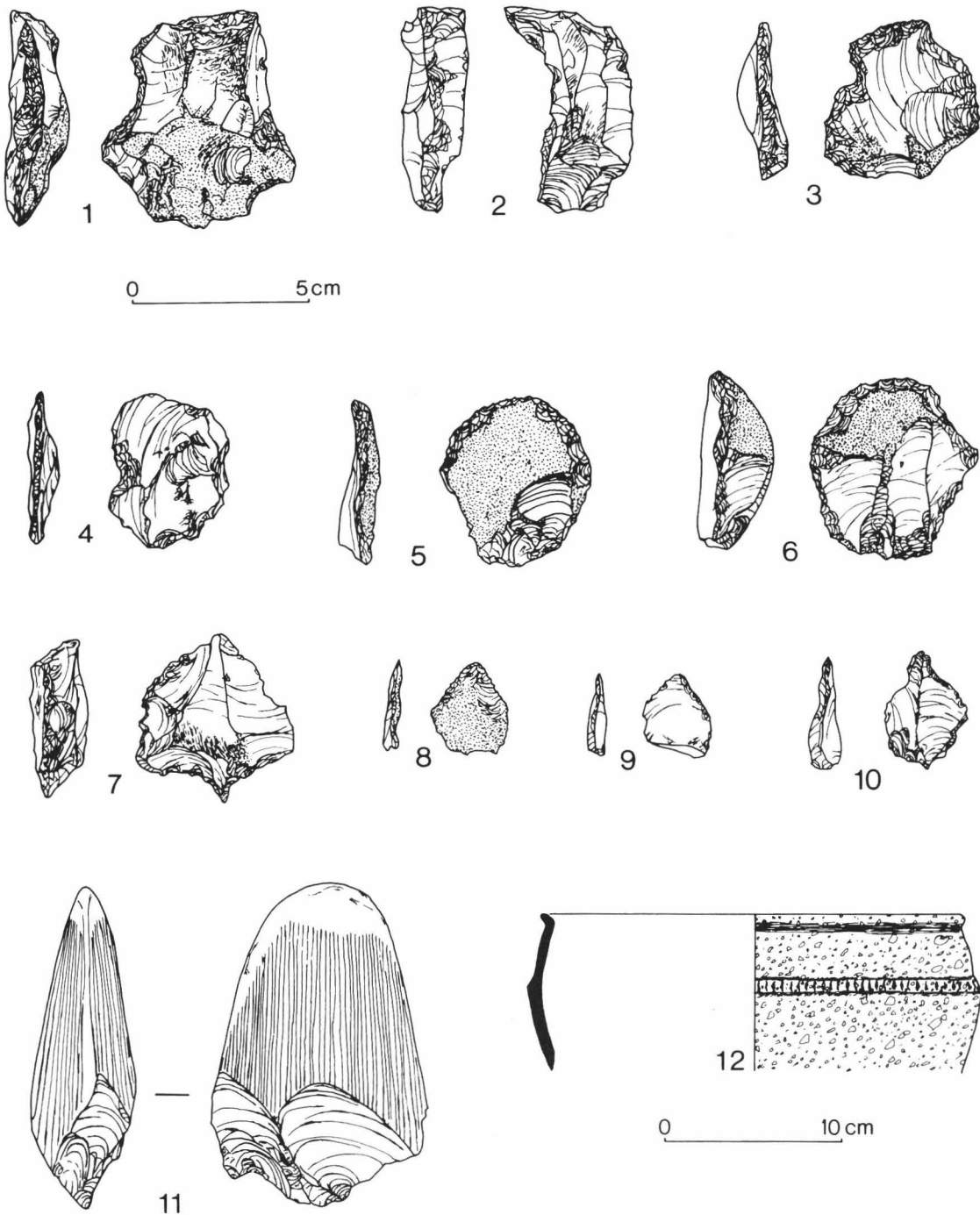
Fig. 4 Chidham 1978. Flintwork and pottery; note different scales

10. SU 7357 0175   Calcined flint on the beach.
11. SU 7370 0248   Calcined flint in spoil on the shore. A serrated blade plus four Iron Age sherds.
12. SU 7377 0256   Patches of burnt red clay and many small body sherds seen in section on the shoreline. Suggestion of a gully or pit.
13. SU 7483 0396   Much calcined flint, and some charcoal. No direct dating evidence. Many broken shells.
14. SU 7635 0471   Saucepan pottery and other later Iron Age wares, and briquetage found in the yacht basin at Prinsted. Wedge-shaped struts present with chaff-tempering.
15. SU 7659 0437   Two separate nuclei of Iron Age sherds and calcined flint from a modern drainage ditch on the landward side of the sea-wall.
16. SU 7699 0473   Surface finds from a large feature; pottery and calcined flint.
17. SU 7757 0481   Coarse sherds (not obviously late Iron Age) and calcined flint below the high water mark.
18. SU 7790 0378   (The excavated site at Chidham) Four parallel channels or flues seen in eroding section. Briquetage and mid/late Iron Age pottery present.
19. SU 7820 0393   Calcined flint, a few Iron Age and Romano-British sherds found after ploughing. A few fragments of burnt clay.
20. SU 7977 0278   Five ill-struck cores plus flakes and a scatter of calcined flint on the shore.
21. SU 7980 0249   Fired clay fragments; probably not briquetage.

ACKNOWLEDGEMENTS

Author: Owen Bedwin, Sussex Archaeological Field Unit, Institute of Archaeology, London.

REFERENCES

Bedwin, O. 1978 'Iron Age Sussex—the Downs and the Coastal Plain', in *The Archaeology of Sussex to A.D. 1500* (ed. P. L. Drewett), C.B.A. Research Report No. 22, 41-51.

Bedwin, O. and Pitts, M. W. 1978 'The excavation of an Iron Age settlement at North Bersted, Bognor Regis, W. Sussex 1975-76', *Sussex Archaeol. Collect.* **116**, 293-346.

Bradley, R. J. 1970 'The excavation of a Beaker settlement at Belle Tout, East Sussex', *Proc. Prehist Soc.* **36**, 312-79.

Buckley, D. (ed.) 1980 *The Archaeology of Essex,* C.B.A. Research Report (forthcoming).

Clark, J. G. D. 1960 'Excavations at the Neolithic site of Hurst Fen, Mildenhall, Suffolk', *Proc. Prehist. Soc.* **26**, 202-45.

Drewett, P. L. 1977 'The excavation of a Neolithic Causewayed Enclosure on Offham Hill, East Sussex 1976', *Proc. Prehist. Soc.* **43**, 201-42.

THE EXCAVATION OF TWO BRONZE AGE BARROWS AT FRIDAY'S CHURCH, BARPHAM HILL

by Alec Barr-Hamilton

Two Bronze Age barrows, of dissimilar type, were totally excavated. Barrow No. 1, the smaller of the two, had an incomplete ring ditch. There was a central inhumation which had suffered considerable recent disturbance, and an unurned secondary cremation. There was also evidence, in the form of Romano-British pottery and coins, for shallow burials in the barrow during the Roman period. Excavation of barrow No. 2 revealed four cremations, one unurned beneath a small cairn of flints, another in a small bipartite vessel, and two in Collared Urns, one upright, the other inverted. There was no ditch around this barrow.

INTRODUCTION

The site (Fig. 1; TQ 067 097) lies just within the parish of Burpham, the boundary at this point being marked by a fine cross-ridge dyke, *c.* 200 m distant. The barrows were known locally as Friday's Church and a former water-holding pit known as Friday's Spring, 100 m to the north-west in a patch of scrub, suggests that the two sites had been associated in men's minds for a very long time. The clay bottom of Friday's Spring was perforated in 1893, when a 'small pin of Roman type' was found (Curwen and Curwen 1922). The curious name of the site has given food for thought and it has been suggested that it was the derisory application of early Saxon Christians, associating it with 'Queen Freya', and the scene of Good Friday games. In the latter connection, it is noted that there is, or was, a 'Friday Barrow' in Lullington parish.

The barrows were first noticed by the writer in 1953, during the excavation of Bargham Church site (Barr-Hamilton 1961), nearby; recent ploughing had shown a large number of Romano-British sherds, and a mental note was made that it might be useful to excavate the barrows before they were lost to the plough. Eventually, the first barrow was excavated in 1963, and the second (plus a third which turned out to be a natural clay knoll) from 1971 to 1977.

Grinsell (1934) records three barrows in the vicinity, but despite constant searches in various circumstances, only two barrows (his nos. 14 and 15) were encountered. There is some evidence of late nineteenth century investigation of barrows in the area; we learn that a Mr. Collyer of Peppering and a Mr. E. J. Hearne were active in excavating the barrows in the last decade of the last century, and it is recorded that several Anglo-Saxon barrows were opened 'near Friday's Church'. The only finds, besides skeletons, were two iron knives and a small bronze pin. It is further recorded that 'Mr. Collyer opened the mound on which the trigonometrical point was placed'. From our knowledge that this point was formerly on barrow No. 2, we can confirm Mr. Collyer's discovery that 'the slightly raised mound called Friday's Church was found to consist of a rough platform of flints embedded in clay' (Collyer 1896).

Hadrian Allcroft (1924) mentions Friday's Church as a 'group of small barrows, scattered by the plough' and says that the older generation of Downlanders might tell you that 'Queen Fridias is buried here'.
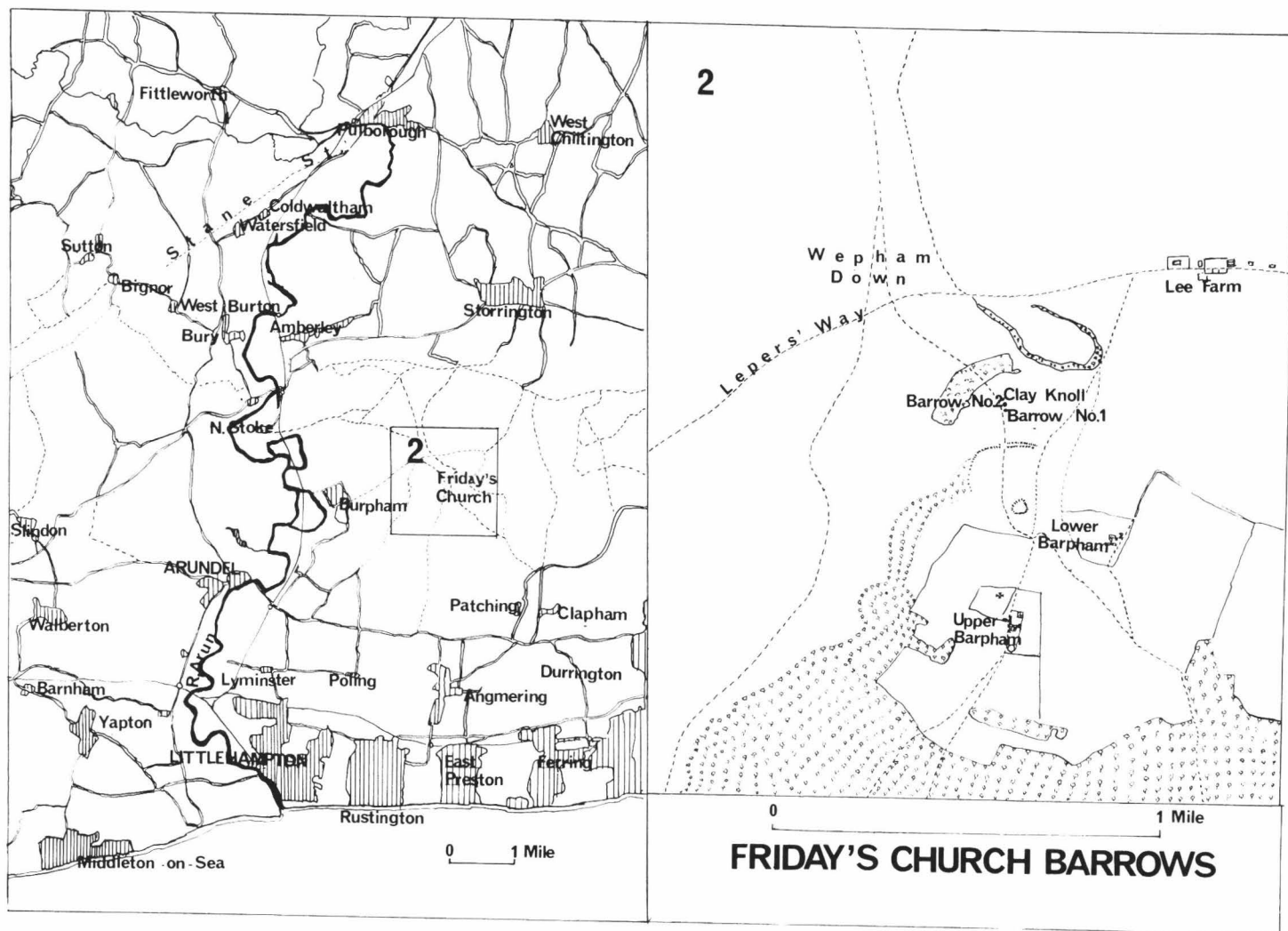
Fig. 1   Friday's Church barrows. Site location
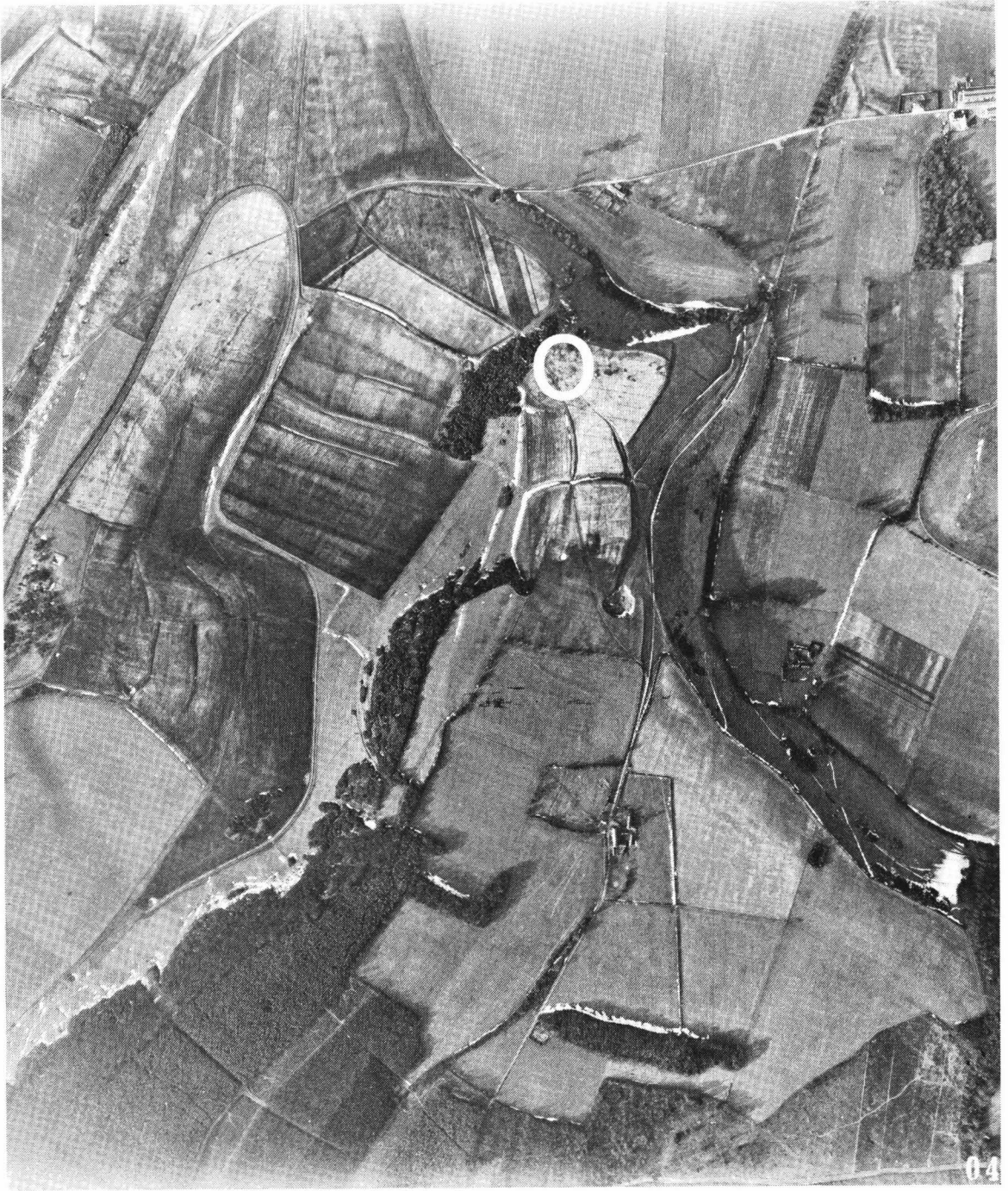
Pl. 1   Friday's Church barrows (inside the white circle). Aerial photograph taken by Meridian Airmaps Ltd. in March, 1965. Copyright of West Sussex County Council

Grinsell (1934) concludes his reference to his barrow no. 15 (our No. 1) with a note that it was opened by Mr. E. J. Hearne, who found the remains of a (?Saxon) skeleton 'now in Littlehampton Museum'.

BARROW No. 1

Excavation

In the summer of 1963, work began on the smaller of two visible barrows on the site, a ring of nettles indicating the presence of a ditch. The barrow was excavated by the normal quadrant method.

On removal of the turf, the south-eastern quadrant (Fig. 2) yielded a mass of loose flints and a large number of comminuted sherds, 635 in all, of Roman date and four of the seven Roman coins which were found in the barrow. Some of these appeared to have been burnt. The pottery, mainly rough wares, derived from a variety of forms and sizes; on balance, it seems most likely that both pottery and coins came from cremations which had been placed shallowly in the barrow. The coins are probably all of second century date (specialist report, below).

When the mixture of ploughsoil and loose flints had been removed from this quadrant, it became obvious that the barrow had a ring-ditch, which bounded the quadrant at a radius of *c*. 5 m. From the bottom of this ditch came three sherds of an orange-hued, roughly-fired pot, one with twisted-cord impression, evidently of Bronze Age date. The ditch averaged 30 cm in depth, with a fairly sharp 'V' in section (Fig. 3). Travelling across the quadrant from the west, starting about a metre north of the ditch, which it crosses at the east, was a shallow groove (feature G2 in Fig. 2). This was *c*. 10 cm deep, and from east of the point at which it crosses the ring-ditch came a finely-worked flint axe (Fig. 6, no. 1). The extreme eastern end of the groove was not traced; it was impossible to determine whether the groove or the ditch was the earlier feature.

About three metres from the centre of the barrow was the remains of a flint curb, 27 cm wide, and up to 27 cm deep, and consisting of loose flints (Fig. 2). Just inside this curb was a circle of flints 61 cm in diameter (feature B in Fig. 2); on removing these flints, a small pit was found, containing charcoal and a little bone, i.e. the remains of a cremation.

In the north-west quadrant, the ring-ditch petered out *c*. 50 cm west of the north-south baulk; the flint curb was, however, continuous (Fig. 2). Another shallow groove was found, though its extreme west end was not traced (feature G1 in Fig. 2). Flint artefacts were found on the chalk surface over the whole of this quadrant (specialist report on flintwork, below).

The north-east quadrant revealed both the ring-ditch and the flint curb. Just inside the curb was a small pit (feature C in Fig. 2), 25 cm deep and 30 cm square. This pit was empty but was covered by a large, tabloid flint knapped on one side, presumably to give an impression of neatness. The pit was at the feet of the primary burial, and perhaps answered some ritual purpose.

Lastly, the south-west quadrant was cleared. The curb was again continuous, but the ditch petered out (Fig. 2).

Finally, the baulks were removed and the primary burial pit cleared. It proved to have been an inhumation which had been disturbed at least twice. The first interference, presumably by pot-hunters of the last century, had resulted in the deposition of a broken wine bottle in such a manner that it was evident that the bottom of the pit had been reached. On the second occasion, Canadian soldiers, no doubt observing that to dig in the depression left by the pot-hunters would be easier to do than in the surrounding chalk, had excavated a square fox-hole, 1 m across and 1.20 m deep. This contained a number of .303 cartridges, one unspent, and a good deal of ash from a fire. The contents of the pit were sieved, resulting in the finding of a bone awl (Fig. 6, no. 4) and many

FRIDAY'S CHURCH

BARPHAM HILL

No.1 Barrow

a axe
c Roman coin
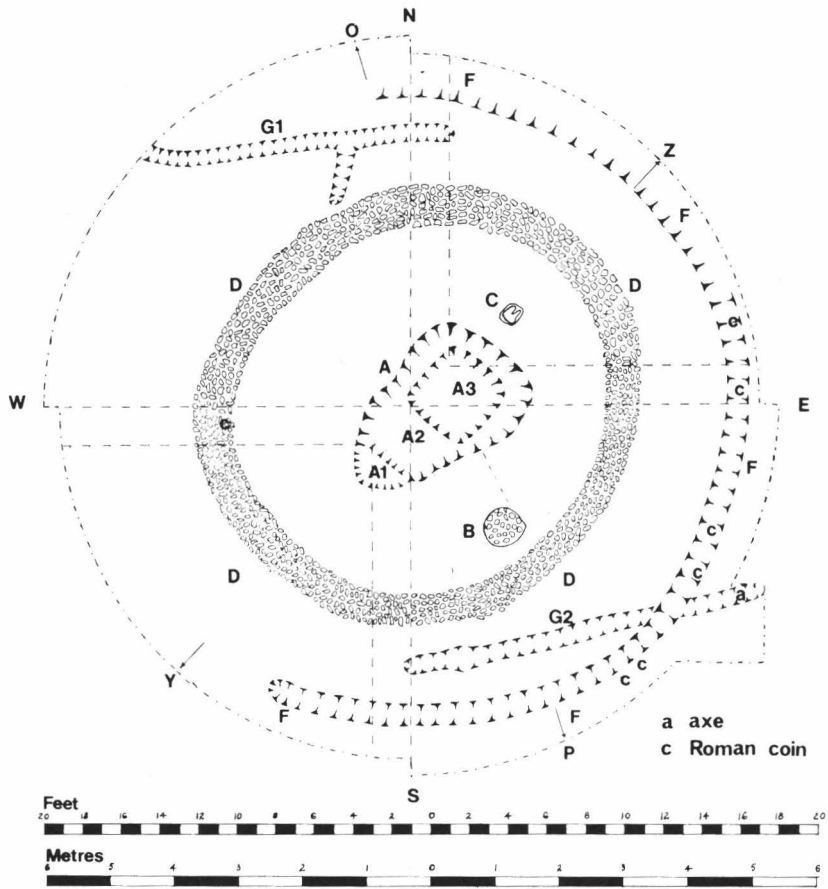
Fig. 2   Friday's Church barrows. Plan of barrow No. 1

particles of bone. These latter derived from a slightly built individual; it was not possible to determine the sex due to the fragmentary nature of the material (see more detailed report, below).

Discussion

Barrow No. 1 appears to be a fairly typical Bronze Age round barrow in terms of its construction. The inhumation and cremation are probably contemporary, and a date of *c.* 1500 B.C., or earlier, seems likely.

The Roman coins probably arose from urned cremations placed shallowly in the south-east quadrant of the barrow. Three fragments of apparently Roman brick, three of Millstone Grit (perhaps parts of a quern), and a piece of greensand resembling part of a roof-tile, were found when the ploughsoil was cleared, and possibly arose from manuring operations.

BARROW No. 2

Excavation

The excavation of barrow No. 2 (10 m north-west of No. 1) began at Easter, 1971, there having been no suitable time for excavation in the intervening years. Work was again carried out using the quadrant method (Fig. 4). Work began on the east quadrant, taking 1 m strips and leaving 1 m baulks. At an early stage it was recognised that the construction of this barrow bore little resemblance to No. 1. It was formed of clay and flints, had no ditch or curb, and was placed on a natural base of clay with some chalk. The clay occurred in pockets of various sizes, each of which had to be excavated with care, lest it should prove part of the barrow.

During these investigations, a Collared Urn was found (Fig. 6, no. 5), containing a cremation. The vessel had been placed upright in a carefully constructed pit of the precise shape and size to take it (Fig. 4). The upper part of the urn had been damaged by ploughing and the walls had disintegrated because the fabric had merged into the wet clay which had seeped into the pit. The ashes appeared to have been secured by a rectangular tabloid flint, about 15 cm square, which lay on their surface within the urn. The dimensions of this vessel are as follows; mouth diameter 31 cm, base diameter 12 cm, and height 45 cm. It was decorated with twisted cord impressions; a date of 1400-1000 B.C. is thought likely (see pottery report, below).

In and about the barrow in this quadrant were three World War II fox-holes. About 4.5 m to the east of the barrow, at the limit of excavation, an inhumation burial was found. It was marked by a group of flints, close under the turf, and consisted of part of the upper half of a human skeleton, placed in a shallow scoop, and much damaged by the plough.

The west quadrant had been disturbed by a number of World War II fox-holes. A trench, possibly that of Mr. Collyer, ran in a north-south direction, and another west-east (Fig. 4). One small sherd of apparently Bronze Age pottery was the yield of this quadrant.

Work on the south quadrant produced another cremation. It was contained in a Collared Urn, this time in an inverted position. A rectangular tabloid flint, *c.* 15 cm square, rested upon its base, which had been damaged, apparently by ploughing. This urn bore a close resemblance to the first.

The north quadrant was then cleared, with nothing of interest to report. Then the baulks were dismantled; beneath the south-east one was a small cairn covering a cremation. This had been efficient, for little remained beside the ash. The cover stone, a huge tabloid flint, was 45 cm by 40 cm.

The removal of the south-west baulk disclosed a very small bipartite vessel (Fig. 6, no. 6); it was undecorated and its dimensions were as follows; mouth diameter 13.5 cm, base diameter 8.0

Section N—S

Section W—E

FRIDAY'S CHURCH

BARPHAM HILL

No.1 Barrow

	Plough - soil and flints
	Darker plough - soil
	Plough - soil, flints and broken chalk
	Broken chalk
	Flint kerb
	Frost - damaged chalk surface
	Ash
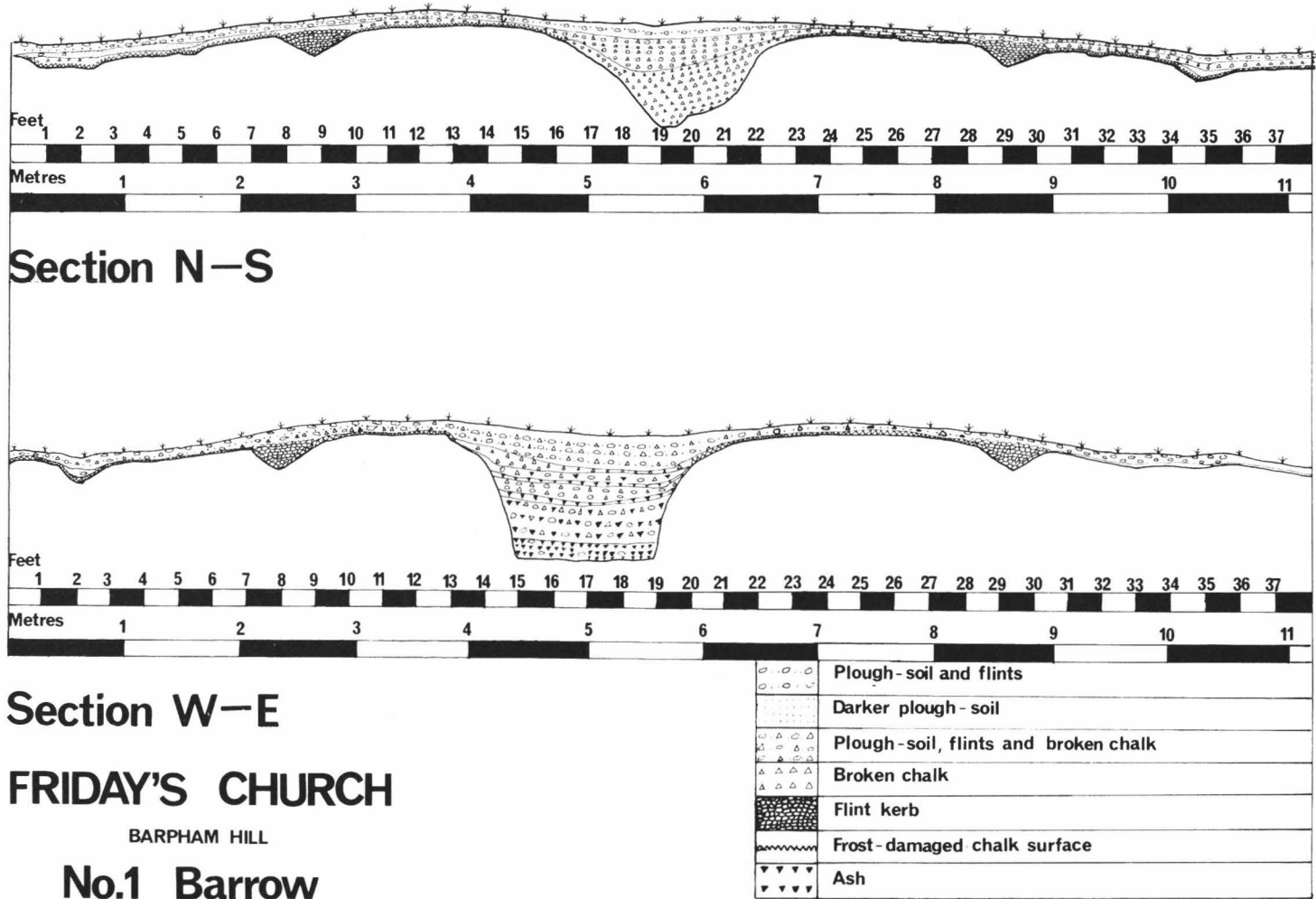
Fig. 3   Friday's Church barrows. Barrow No. 1 sections

cm, and height 13.2 cm. Again, the cremation had been efficiently conducted, only the colour of the ash being visible. The pot was on its side and crushed, probably by ploughing.

In the north-east baulk, 163 sherds of Romano-British pottery were found, the remains of several vessels of rough reddish ware.

Discussion

Barrow No. 2 was oval in plan, its axes measuring 19 m by 13 m, with the direction of its main axis north-north-west. It was constructed largely of flints and clay. The oval plan and the finds within it suggest that it was built at a later date than barrow No. 1; on the evidence provided by the pottery, a date of 1400-1000 B.C. seems likely.

SPECIALIST REPORTS

Bronze Age pottery (Dr. I. H. Longworth)

Collared Urn (from east quadrant; Fig. 6, no. 5)   Approximately half the vessel survives. The paste is fairly well fired, tempered with a little grog, both faces being patchy brown to dark brown. Decoration: on the inside of the rim, a row of blurred twisted cord horseshoes. On the collar, twisted cord hurdle pattern, in some places additional impressions being added between the horizontal elements. On the shoulder, deep, elongated twisted cord loops.

Bipartite vessel (from south-west baulk; Fig. 6, no. 6)   The vessel has been restored to an oval shape. It is of well-fired, coarse, slightly porous paste with various inclusions, including grog and very sparse crushed burnt flint, being brown externally, grey to brown internally with a dark grey core. It is undecorated.

Comment   The Collared Urn belongs to the Secondary Series and to the south-eastern style within that series, carrying as it does the row of twisted cord horseshoe loops on the shoulder characteristic of the style. Other vessels in Sussex to carry the feature have been found at Brighton (Holleyman and Yeates 1960) and Alfriston (Musson 1954, no. 220). The Burpham vessel is unlikely to belong to an early phase of the tradition and a date somewhere in the region of 1400-1000 B.C. seems likely.

Little can be said of the small, bipartite vessel. Its coarse paste and general misshapen appearance suggest that minimal care went into its manufacture. Along with simple bipartite vessels like the one from Cliffe Hill, Lewes (Musson 1954, no. 250), the vessel may represent the coarser end of the domestic range of the period about which we still remain largely ignorant. Certainly, there seems no good reason to exclude this from the date already suggested for the Collared Urn.

Roman coins
1. Second brass of Hadrian (A.D. 117-138). Reverse: Britannia seated on a rock, her left hand holding a spear, with a large shield by her side.
2. Sestertius of Antoninus Pius as Augustus (A.D. 138-161). Reverse: Indulgentia seated left, inscribed INDULGENTIA AUG COS IIII. S C beneath chair on which she is sitting.
3. Possibly silver denarius (burned) of Marcus Aurelius (A.D. 161-180). Inscription: AURELIUS CA(ESAR AUG) P II FLG. Reverse: TR POT VI COS II S C. Fortuna (standing) with her rudder and wheel.
4 and 5. Too worn for identification.
6. Too worn for identification. Figure on reverse probably Annona holding cornucopia.
7. Sestertius. Antoninus Pius (A.D. 138-161). Reverse: Minerva with javelin and shield S C.

Flintwork (A. Woodcock)

Axe from feature G2, Barrow No. 1 (Fig. 6, no. 1)   The axe shows a high standard of workmanship. It remains in a sharp condition, although it has a dense white patina. It is 12.3 cm long, 4.9 cm wide, with a maximum thickness of 2.8 cm. The implement has been carefully worked over both faces, but is somewhat asymmetrical in its outline. The cutting edge too has been left particularly blunt and it seems probable that the implement has never been used. No attempt has been made at polishing the surface. Axes of this type can be paralleled at all the Sussex flint-mine sites, including Harrow Hill, which lies only 1 km to the east.

Artefacts from beneath Barrow No. 1, north-west quadrant   Since flint modules are abundant in this area, the raw material used for them is probably of local origin. All have a heavy white patina and a few show evidence of weathering and deterioration of the surface. As the flints were recovered from beneath the barrow it seems probable that at least some of them had been lying on the old land surface for some time before the barrow was constructed. Although the flakes were found in a small group, and it is possible that they are all of one date, there is no reason why the debris should not represent knapping on several successive occasions, spread over a fairly long period.

Histograms have been produced (Fig. 7) for the unbroken flakes in the assemblage (of which there were 54 out of a total of 73 pieces), for indices of length, breadth, breadth/length ratio, and degree of cortex remaining on the flake surface. The sample is so small that too much reliance should not be placed upon the results. These are, for instance, in broad

FRIDAY'S CHURCH

BARPHAM HILL

No.2 Barrow
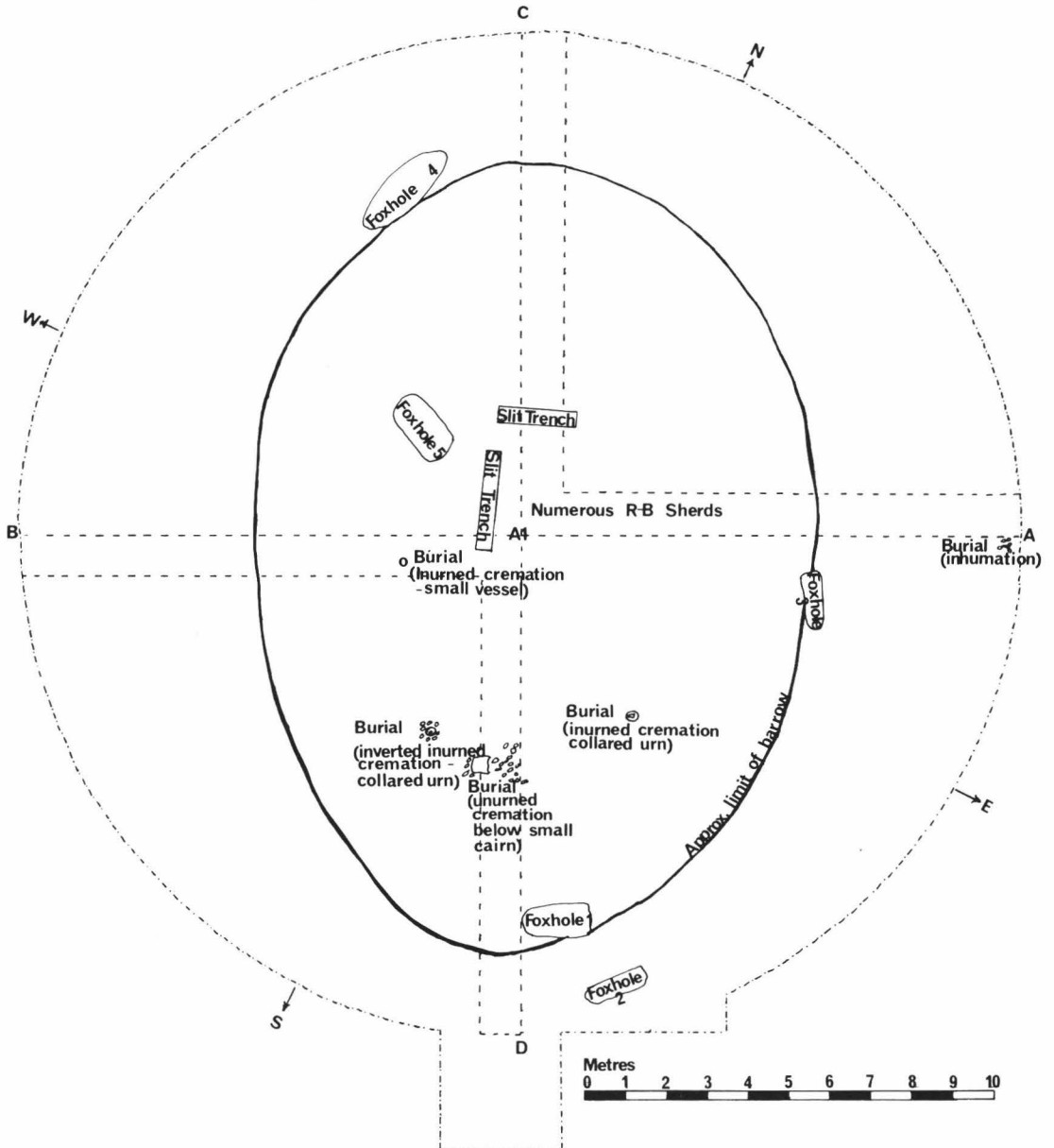
Fig. 4   Friday's Church barrows. Plan of barrow No. 2

FRIDAY'S CHURCH No.2 BARROW; Sections

A ——————————————————————— A′

Chalk

Dark brown clay
with flints

Dark
brown
clay &
gravel
with flints

D. brown
clay &
gravel

D. brown clay
with many large
flints

3
4
5

D. brown
clay with some
large flints

2

A′ ——————————————————————— B

D. brown clay with
some large flints

Chalk

0   1   2   3   4   5m

C ——————————————————————— C′

Chalk

Brown
clay

D. brown clay

Clay &
gravel

Clay with
flints

Yellow
clay &
flints

Very dark
clay & gravel

D. yellow clay

Yellow clay

Clay with dark gravel

C′ ——————————————————————— D

Clay with
dark gravel

D. brown clay
with small flints

Very dark brown clay

Chalk

KEY

1 Ploughsoil

2 Clay with occasional flints

3 & 4 Increasing clay with occasional flints

5 Chalk

6 Flint scatter

Fig. 5   Friday's Church barrows. Barrow No. 2 sections

agreement with those from the Neolithic causewayed enclosure at Offham, near Lewes (Drewett 1977); however, such features as the high proportion of flakes with a breadth/length ratio between 2:5 and 3:5 can be quite easily accounted for by the shape of the nodules being worked, rather than indicating any particular industrial tradition or technique. All the flakes are of simple type as would result from the working of cores. None are those which one would expect from the trimming or finishing of an axe. Only one flake (Fig. 6, no. 3) shows any sign of wear attributable to use, though the detection of such wear is difficult due to the depth of patination.

The only core (Fig. 6, no. 2) is discoidal in shape, worked on both surfaces, and is quite in accordance with the nature of the flintworking debris described above.

Human remains (R. H. B. Ratcliffe-Densham)

The inhumation (Barrow No. 1)   The central cist contained comminuted fragments derived from a single human skeleton. Most of the long bones and much of the skull and spinal column survived. Age at death was about 18 years. The individual was of slight stature, but the bone fragments were too small to allow determination of sex. Dental health was good.

The cremation (Barrow No. 1)   The effect of cremation had been uneven; the lower spine and proximal limb bones had suffered most. Sufficient skeletal material had survived, however, to indicate that the remains were of a single small adult, probably a woman. Age at death was over 25 years.

The soils (Martin Bell)

In view of the paucity of palaeoenvironmental evidence from the South Downs, it is unfortunate that no distinct buried soil was found under the Barpham barrows. The weathered mound material lay on undisturbed subsoil with little intervening trace of an old land surface. It appears, therefore, that the palaeosol has disappeared; this might have been the result of deturfing or profile truncation, which is attested elsewhere, but it is also possible that some degree of biogenic, particularly earthworm, reworking has occurred through the shallow mound, thus removing the largely organic palaeosol and effectively lowering the mound onto the subsoil.

Even in the absence of clear buried soils, the excavations have contributed to our knowledge of the pedological history of the area. Photographs of barrow No. 1 indicate that the chalk surface was higher where protected by the flint mound, a phenomenon first documented by Atkinson (1957), which suggests that the surrounding chalk surface has been lowered by solution or the plough. Barrow No. 2 comprised a very shallow mound of weathered Clay-with-flints overlying apparently unweathered Clay-with-flints; the latter stood above the level of the surrounding chalk and contributed partly to the visible mound. This would seem to suggest that either the mound was deliberately constructed on a small, natural rise of Clay-with-flints, or more probably, in view of the nature of the mound material that the mound has protected a small area of formerly more extensive superficial deposits which have been largely eroded away in this area since the Bronze Age.

ACKNOWLEDGEMENTS

Author: A. Barr-Hamilton, 226 Hangleton Road, Hove.
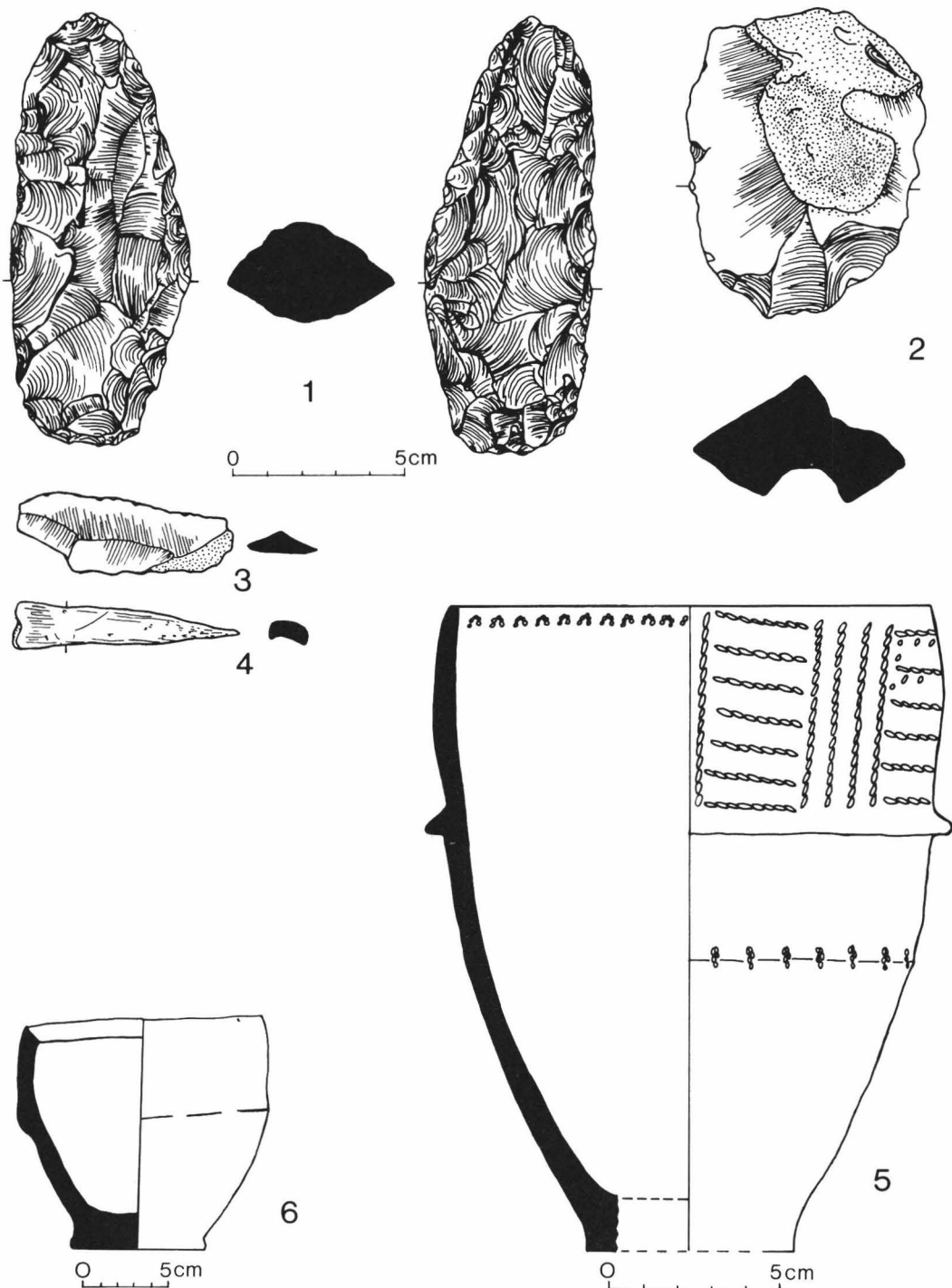
Fig. 6   Friday's Church barrows. Flintwork (nos. 1-3), bone awl (no. 4), and Bronze Age pottery (nos. 5 and 6). Note different scales
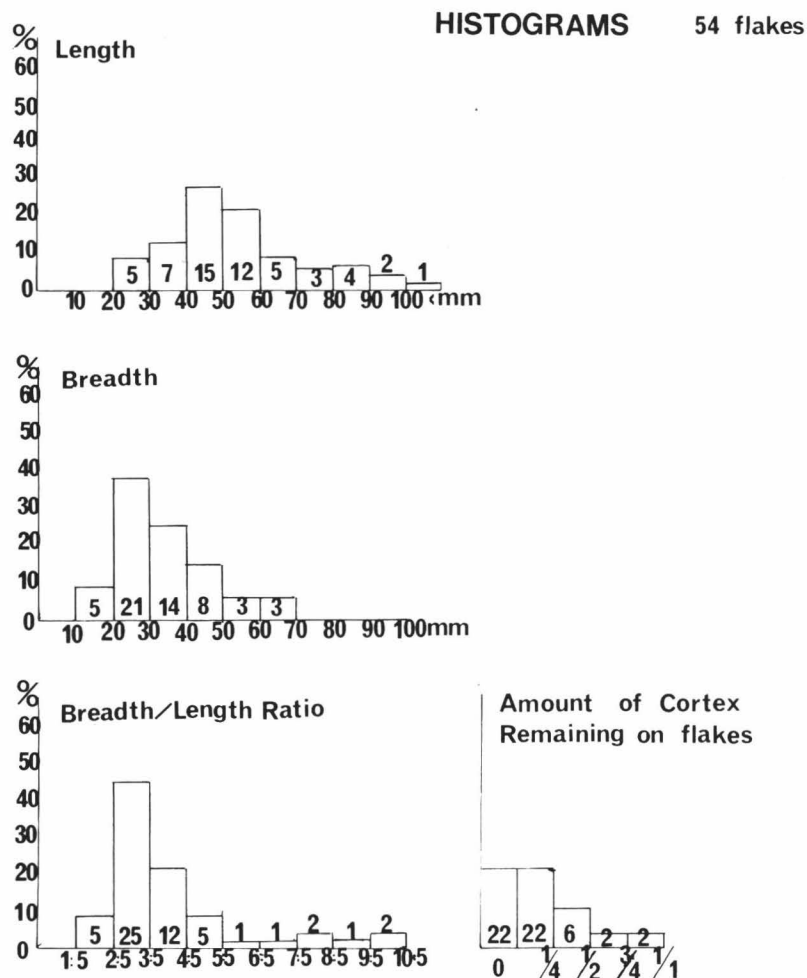
Fig. 7   Friday's Church barrows. Flint flake histograms from barrow No. 1

REFERENCES

Atkinson, R. J. C.   1957   'Worms and weathering', *Antiquity* **31**, 219-33.

Barr-Hamilton, A.   1961   'The excavation of Bargham Church site', *Sussex Archaeol. Collect.* **99**, 38-65.

Collyer, H. C.   1896   in *Proc. Croydon Nat. Hist. Club,* p. 181.

Curwen, E. and Curwen, E. C.   1922   'Notes on the archaeology of Burpham and the neighbouring Downs', *Sussex Archaeol. Collect.* **63**, 1-53.

Drewett, P. L.   1977   'The excavation of a Neolithic causewayed enclosure on Offham Hill, East Sussex, 1976', *Proc. Prehist. Soc.* **43**, 201-41.

Grinsell, L. V.   1934   'Sussex Barrows', *Sussex Archaeol. Collect.* **75**, 217-275.

Hadrian Allcroft, A.   1924   *Downland Pathways.*

Holleyman, G. A. and Yeates, C. W.   1960   'Excavations in the Ditchling Road area north of Brighton, 1950-57', *Sussex Archaeol. Collect.* **98**, 133-48.

Musson, R. C.   1954   'An illustrated catalogue of Sussex Beaker and Bronze Age pottery', *Sussex Archaeol. Collect.* **92**, 106-24.

A FURTHER SURVEY OF STAMPED TILES OF THE CLASSIS BRITANNICA

by Gerald Brodribb, F.S.A.

Roman tile bearing a stamp formed of the letters CL BR (Classis Britannica) has been found on several coastal sites in south-east Britain; it has also been found at Boulogne, which was at one time the headquarters of the British fleet. The finding of similar stamps on tile at several iron-working sites in East Sussex has shown that the navy was also involved with the production of iron. These stamps have a wide range of form and style, varying from the elegant to the crude. The practice of CL BR stamping seems to date from the early second century to the mid-third century, but it is difficult to establish precise dates. Nearly 100 different forms of CL BR stamps have been discovered in Britain, and there is evidence of British-made tile being found in France, and vice-versa. Evidence of grain-marking suggests that the dies were made of wood, but dies made of baked-clay or metal are a possibility. The Legions likewise produced stamped tile with a great variety of stamps, and the whole purpose of stamping seems to have been to establish an authority and to safeguard against the misuse of official tile. These stamped tiles provide much information about the production and procedure of tile-making, since apart from the stamps the tile also often carry the tile-maker's personal mark as well as tally-marks, probably numerals, cut on the edge.

This paper is a survey of over 1500 examples of CL BR stamps with a full analysis of their types and characteristics.

INTRODUCTION

Roman tile bearing the stamps of the 'Classis Britannica' was first discovered by the Rev. John Lyon at Dover in 1778, and since then CL BR stamps have been found in varying quantity at other coastal sites, e.g. Lymne (1850), Pevensey (1906), Folkestone (1924), and Richborough (1932). In 1951 the discovery of a tile stamped CL BR at the inland iron-working site at Bardown, E. Sussex gave rise to the theory that such sites might be connected with the fleet. This theory was supported by subsequent finds at Cranbrook in 1955, at the inland port of Bodiam in 1959, and at Beauport Park, near Battle in 1968 (Brodribb 1972). One stamp also has been found in London. There has been much discovery of CL BR stamps in recent years, especially at the iron-working site at Beauport Park where from the area of a bath-house of only 114 m² over 1300 complete or partial stamps have already been recorded. Stamped tiles have also been found at Boulogne, and Dr. David Peacock has shown that at least seven of the types found in France occur on tile made of British fabric, while one example found in Dover was made in France (Peacock 1977).

The purpose of the stamping, which occurs on almost all types of tile, would seem to be not only for general prestige, but to discourage any unauthorised use of tile belonging to the fleet. The Legions also stamped their tile, as did other official bodies, and the practice of such marking is continued today by the Ministry of Defence. In the course of research, I have examined over 1500 pieces of tile carrying a complete or partial stamp: 27% show a complete stamp.
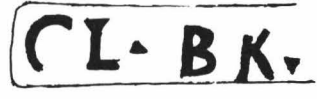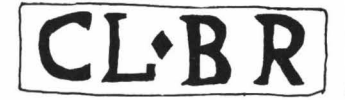
Fig. 1. British CL BR stamps (x$\frac{1}{2}$)

Fig. 2. British CL BR stamps (x$\frac{1}{2}$)

TYPES OF STAMP

The stamps have a very wide range of form that differs in size, letters, and style: some stamps are elegant, some crude: most are oblong, but some are circular: some have round or diamond-shaped stops in the middle or at the end: one has ansate (winged) ends to the frame like those on many Legionary stamps. 96 different stamps have been identified from British sites, which seems a high proportion for the total number of finds of 1524. Regrettably, it has not been possible to include here coverage of stamps found at Dover in recent years.

The lettering is usually CL BR, but other readings include CLA B, CLS BR, CLA BRI, and CLASIS BRIT (spelt thus with a single S). One French stamp reads simply 'OF. NNCAE': a Legionary stamp from Druten, Holland also contains the letters OF, short for Officina (workshop), so perhaps this abbreviation should be understood for all fleet stamps, followed by a genitive case. Indeed at the British Museum a note to a fleet stamp from Lymne states that the letters stand for 'Classis Britannic*ae*,' i.e. in the genitive case.

Since all dies have to be cut in reverse, it is not surprising to find many errors in the cutting. In ten examples from Beauport Park the whole stamp has come out retrograde as a result of the cutter mistakenly copying what he saw on the tile before him: there are no French retrograde stamps. Sometimes single letters come out upside down or backwards, or B and R come out resembling H or K: sometimes an L is written as a single stroke, or with an open angle, or given a 'heel', and there are examples of an A being formed with the central bar vertical or even omitted.

An examination of the 2400 entries in R. P. Wright's THE ROMAN INSCRIPTIONS OF BRITAIN (Vol. I) shows how often these forms appear in inscriptions on stone. The obtuse-angled L was found on 33 entries, the heeled L on 8, and the A without a cross-piece on 21. The author (Wright 1968) states that these three forms appear on graffiti at Pompeii, which must pre-date A.D. 79, and that though they were in use in the first and second centuries, they were more likely to be found in the third and fourth. Peacock (1977) has noted that some French stamps have an unusual form of the letter R. It was hoped that features of lettering might help dating; for example, the now obsolete English long S could be said to have some dating value, but it seems that the lettering of CL BR stamps provides little evidence. The Beauport Park collection of tile comes from a site operating from between A.D. 120 and the mid-third century; this accords with Cunliffe's comment that 'there is no evidence for the existence of stamped tiles before the early second century or after the mid-third century' (Cunliffe 1968).

Ten sites in Britain have produced CL BR stamps, and some types have occurred at more than one site, especially *Type I,* which has been found on as many as seven sites. (See Fig. 1). This suggests that *Type I* may have been the official prototype stamp concerned with tile dispersed from some central depôt. If the single find (a *Type 24* stamp) at Richborough is discounted as an intruder from elsewhere, all the British CL BR sites lie within an overall distance of 50 miles.

There is further information from the ubiquitous *Type I* stamp, which has several variants. In *Type I B* there is a hole in the lower half of the letter B which would seem to have been caused by a nail-head not being completely driven in. A nail could have been used for attaching the stamp to a handle: though there are no other such examples with CL BR stamps, Boon (1972) states that certain Legionary stamps have similar signs of nail-holes. In another variant, *Type I C,* there is instead of the hole, a blob of clay in the same place—an exactly central position: this could have been caused by the nail having been driven in too far. Any such oddities in a die are very helpful for identification.

Though some types of stamps are found at more than one site, each site tends to have types

Fig. 3. British CL BR stamps (x½)
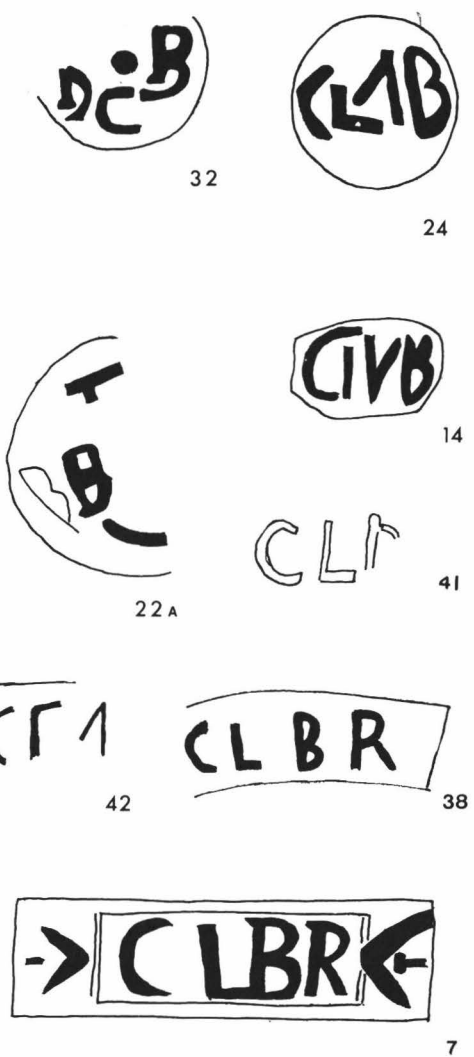
Fig. 4. British CL BR stamps (x½)

peculiar to that site, which suggests that tiles were made locally by itinerant tile-makers, and did not come from a central depôt. Certainly the very wide range of stamps is puzzling. No doubt Roman officialdom could have maintained a standard issue of stamp, but it seems that a free hand was given to individuals to create their own designs. At Beauport Park, for example, of the 78 different types of stamp so far found, 45 are unique examples, all but six unknown elsewhere.

Grain marks on many stamps suggest that dies were usually cut from wood, and no CL BR dies of metal or baked clay have been found. Grain evidence is also very clear on a large floor tile from Beauport Park on which there is an impression of a tile comb in addition to the ordinary stamp (Brodribb 1973). This unique impression shows the comb to have a long handle, and the teeth are clearly visible: even this wooden comb has the letters CL BR carved on it, though, since they were never intended to make any impression, the letters have come out in reverse.

Experimental attempts at making CL BR stamps have shown that they are difficult to cut. Most CL BR dies have been made by hollowing out the letters so that when impressed they stand up from the surface. The few exceptions in which the letters have been cut into the surface seem to have had them scratched on by a stick or instrument; there are fifteen examples of these from Boulogne, several from Dover, and one from Beauport Park. It was noticed that the way in which the stamping die was applied could affect the inmpression considerably, and even alter the size and alignment of the frame; the natural shrinkage of the tile must also be remembered when trying to measure stamps. Some dies seem to possess certain characteristics such as being over-impressed at one end, or being very shallow or very deep. There are also some instances of stamps coming out in thin, almost broken, letters, caused possibly by clay being picked up on the stamp when the tile was too wet. Some imbrices have splash marks down the side, like runny paint.

SOME ODDITIES

Tiles with double stamps have been found at Lymne, Dover, Boulogne, and Beauport Park. The last named site produced ten examples, all on tegulae. It does not seem that the second stamping was made because the first was too indefinite, and at times the stampings overlap. No double stamps are known on imbrices, where the stamp is usually put on the side at the wider end, but the handler of *Type 2* has put all but one of the 109 examples across the top of the gable at the wider end. The one exception has been superimposed across a distinctive mark put on the side of the imbrex. A mark such as this may be regarded as a personal mark worthy of the term 'Signature.' Signatures occur on all types of tile and brick, and, as will be discussed later, they take many various forms. One complete imbrex from Beauport Park is neither stamped nor signed, but all others have either a signature or a stamp. The one oddity of the 109 examples of *Type 2* just mentioned has a signature as well as a stamp, and the stamp has been superimposed as though cancelling the signature. This stamp, usually put on the gable, has on this occasion been put on the side. This odd cancellation should provide some information about the procedure of stamping, but at present remains a mystery. Some other stamp types on imbrices always go across the gable, while others are always put on the side, and there is enough evidence to show that individual stampers tend to have set habits. Gable stamping is likely to produce uneven impressions, and the frames go out of line, but there are few examples of stamps slipping and thereby spoiling the letters.

RELATIONSHIP OF TILE TYPES AND STAMPS

It is possible to find some relationship between the different types of tile and the stamps used on them. The material forming the basis of this evidence comes from the Beauport Park collection.
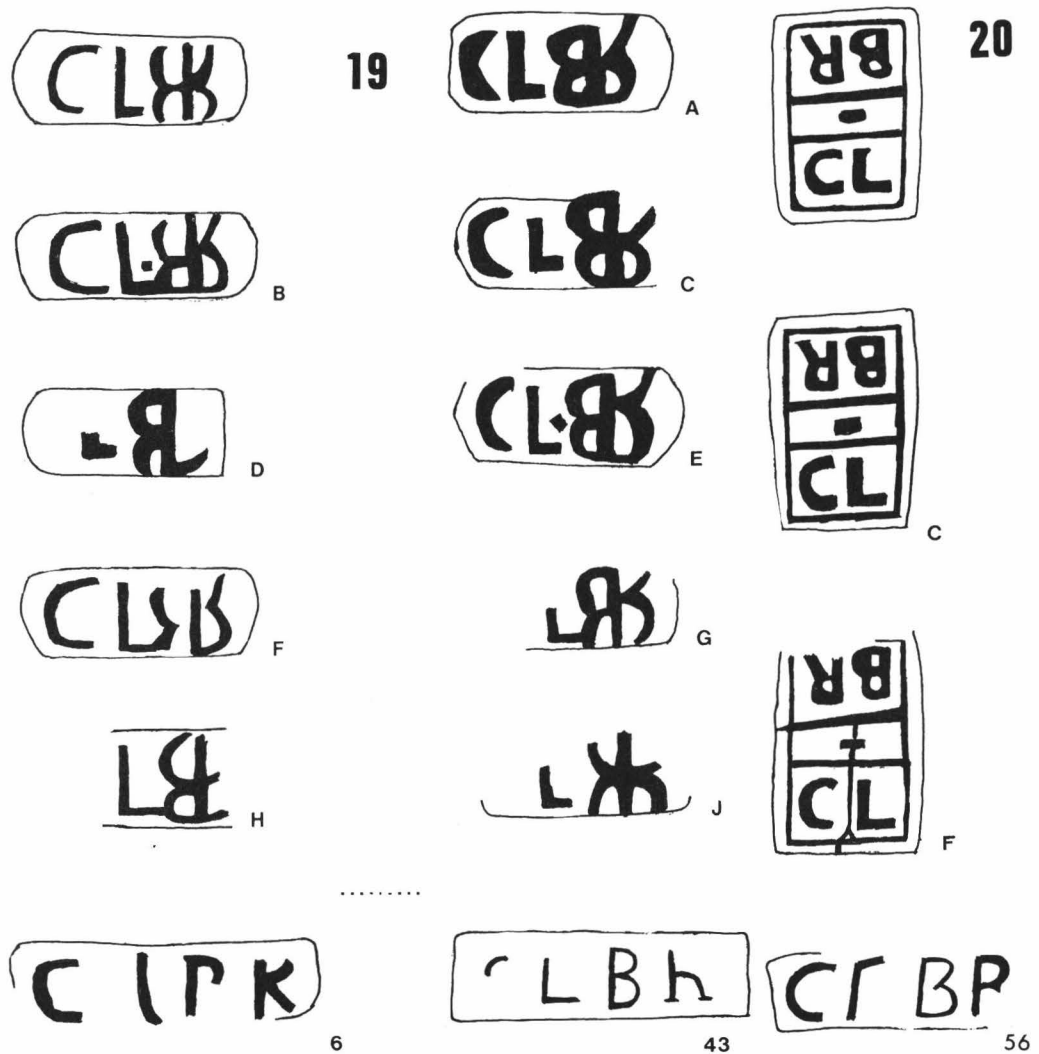
Fig. 5. British CL BR stamps (x½)
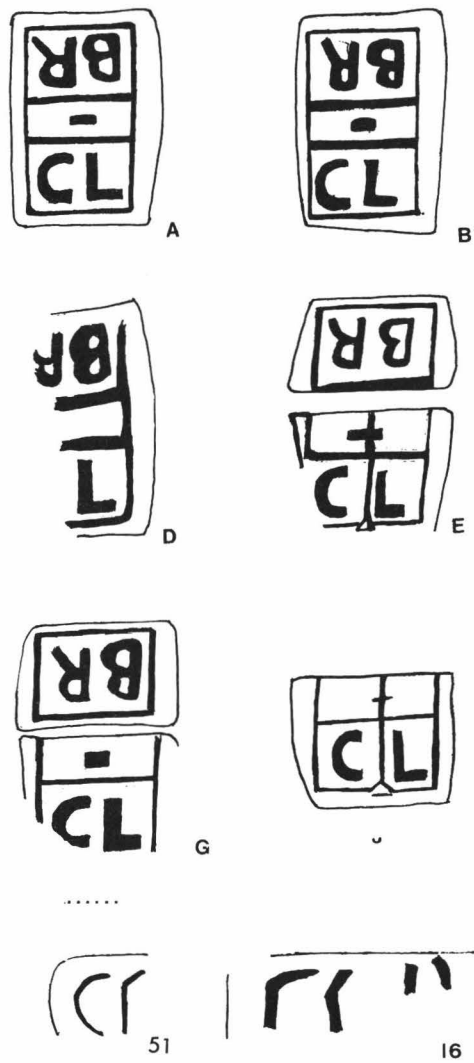
Fig. 6. British CL BR stamps (x½)

From the very start of excavation there I decided to keep every scrap of tile to be examined for marks of all kinds. Among these marks were 170 human or animal prints, but only one of these was found on an imbrex, and this showed how a dog's paw had torn at the edge of the tile, and suggested that whereas tegulae and other flat brick were put on the ground to dry out, imbrices were placed on a horizontal rack at a level the dog had to reach for.

Among the eleven tons of tile collected from Beauport Park there were 41 complete tegulae, and since only one of these was unstamped (it was one of two odd ones of unusual size), it can be assumed that the general practice was that all tegulae should be stamped. With one exception, imbrices carried either a stamp or a signature: on 47 complete imbrices there were 40 stamps and 6 signatures. There were various forms of imbrex, some being longer or shallower than others, and these different forms had different stamps. There were a few examples, also stamped, of semi-circular taperless tiles that might have been used as ridge tiles across the apex of the roof.

Most of the brick fragments came from bonding courses, but when the floors were inspected sixteen large tiles were temporarily lifted, and thirteen had stamps, There were many fragments of box-flue, but only three carried stamps. There were no stamps on any of the 200 hollow voussoirs found. The almost complete absence of stamps on box-flue tile is odd: though the Cranbrook site provided nine, no others have been found in Britain, and only one from Boulogne. The possibility of a connection between certain stamps, and certain types of tile is demonstrated by the following table, based upon material from Beauport Park.

TABLE 1

Stamp Type Number	Tegulae	Imbrices	Bonding/ Floor tile	Box-flue	Total
1	95	5	10		110
2		109			109
20	198		14		212
25	194		30		224
27	1	62			63
28		81			81
29	2	148			150

Finally, a tally of all CL BR stamps covered in this survey up to the end of 1979. The total of 1693 is made up of 1524 complete or partial stamps from Britain, and 169 from France. The number of varieties comes to 145, 95 from Britain, and 52 from France: two types are known to both Britain and France. Drawings of most of the stamps listed here are given in Figures 1-10, the exception omitted being slight variants. A number of the more distinctive types from France are also given. Though some of the stamps labelled as 'unclassified' have unusual features suggesting that they may be a different type, they are not specified here, and will not have a type number until a more convincing example has been found. The letters after any number mean distinctive variants of a basic type. The order of numbering has no significance, and depends largely upon the order of the discovery of the stamp.

This table supersedes my previous survey (Brodribb 1969).

CL·BR
1

CLBR
3

ıSPRŧ
23

∧SB.
49

CL·BR
30

CLBR
32

ASBr
15

CIBP
5

BR
45

ГВІS
35

BR
17

14

38

39

CLBP
43

CLI
22

C·L·BR
11

CLRP
10

CL·Bı
4
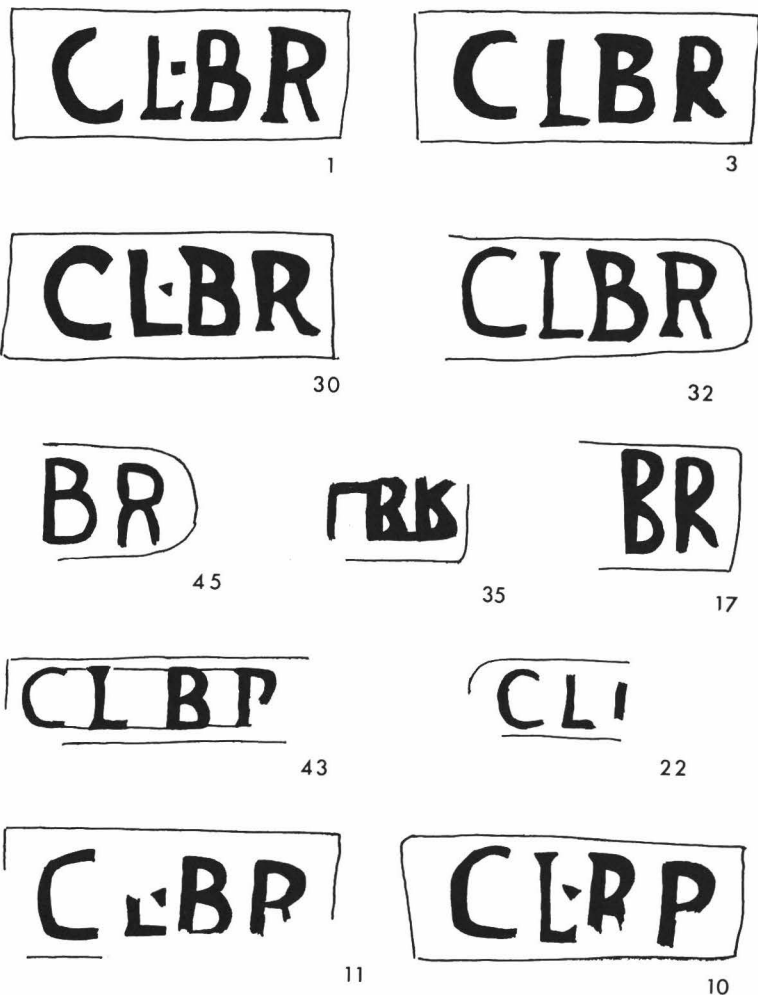
CL·BR
44

Fig. 7. French CL BR stamps (x½)
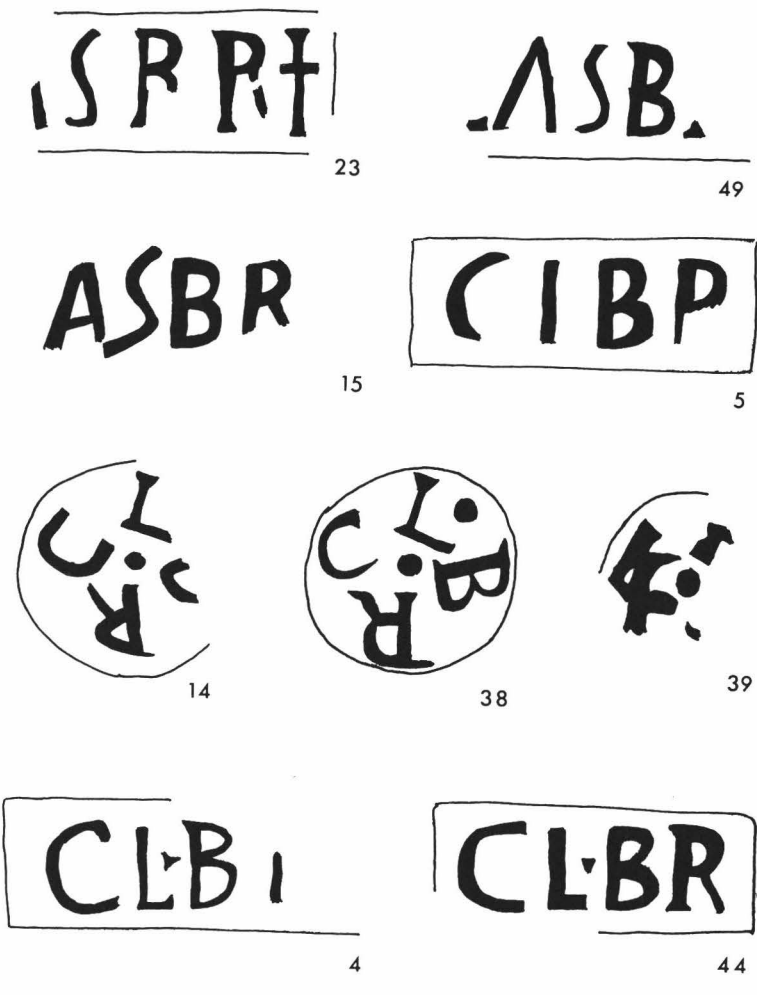
Fig. 8. French CL BR stamps (x½)

TABLE 2

Type Number	Bardown	Beauport Park	Bodiam	Cranbrook	Dover	Folkestone	London	Lymne	Pevensey	Richborough	Total
1	2	110	7		8		1	4			132
1A		25							1		26
1B		10			1			2			13
1C		12			3						15
2		109			6			2			117
2A		1									1
2B		1						3			4
3					1						1
4				1							1
5		1									1
6		1									1
7						3					3
7A										1	1
8		2	1	16							19
8A					1						1
9	2				1						3
10			3								3
11				2							2
12	2	4			1						7
12A		9									9
13		1									1
14		1			1						2
15	1	6	2	1	1						11
16		1									1
17		1									1
18		1									1
19		2		7							9
19A				1							1
19B				1							1
19C			1								1
19D				1							1
19E		2		1	1						4
19F		1		2							3

Table 2 (continued)   TABLE 2

	Bardown	Beauport Park	Bodiam	Cranbrook	Dover	Folkestone	London	Lymne	Pevensey	Richborough	Total
Type Number											Total
19G			1								1
19H					1						1
19J	1										1
19?	2		1	12	4						19
20	2	212			3						217
20A		9									9
20B		10									10
20C		2									2
20D		1									1
20E		6			1						7
20F		1	2								3
20G		3									3
20H		7									7
20J		1									1
20K		1									1
20L		1									1
20M		1						1			2
21		1					1				2
21A		1									1
21B		2									2
21C		2					1				3
21D									1		1
22		23			1			3			27
22A		2									2
22B		1									1
22C		1									1
23						2					2
24		3	2								5
25		224	2					1			227
25A		3									3
26		3									3
27		63									63

Table 2 (continued)   TABLE 2

Type Number	Bardown	Beauport Park	Bodiam	Cranbrook	Dover	Folkestone	London	Lymne	Pevensey	Richborough	Total
28		81									81
28A		1									1
28B		1									1
29		150									150
30		9									9
31		1									1
32		1									1
33		11									11
34		1									1
35		1									1
36		7									7
37		1									1
38		1									1
39		9									9
40		1									1
41		1									1
42		1									1
43		1									1
44		1									1
45		1									1
46		1									1
47		1									1
48		1									1
49		1									1
50		1									1
51		1									1
52		1									1
53		1									1
54		1									1
55		1									1
56		1									1
Unclassified	15	156	9	8	11			7			206
TOTAL	27	1,333	31	53	46	7	1	22	3	1	1,524

BOULOGNE (MADE OF BRITISH CLAY)

BOULOGNE (EN CREUX)

CL▲BR 31

CL·BR· 28

CL·BR· 27

CLЯK 36

L⅄K 37

◣⅃

BR 33

CL·HR 21

CLH⅄ 26

CLBR 25

LBR 24

CLBR 20

CLB· 34

CLE 8

LB 48

B 46

CB 51

C 50

LB 47

BI 13

∩D 19

OF∏∏CAE 52

CL 16
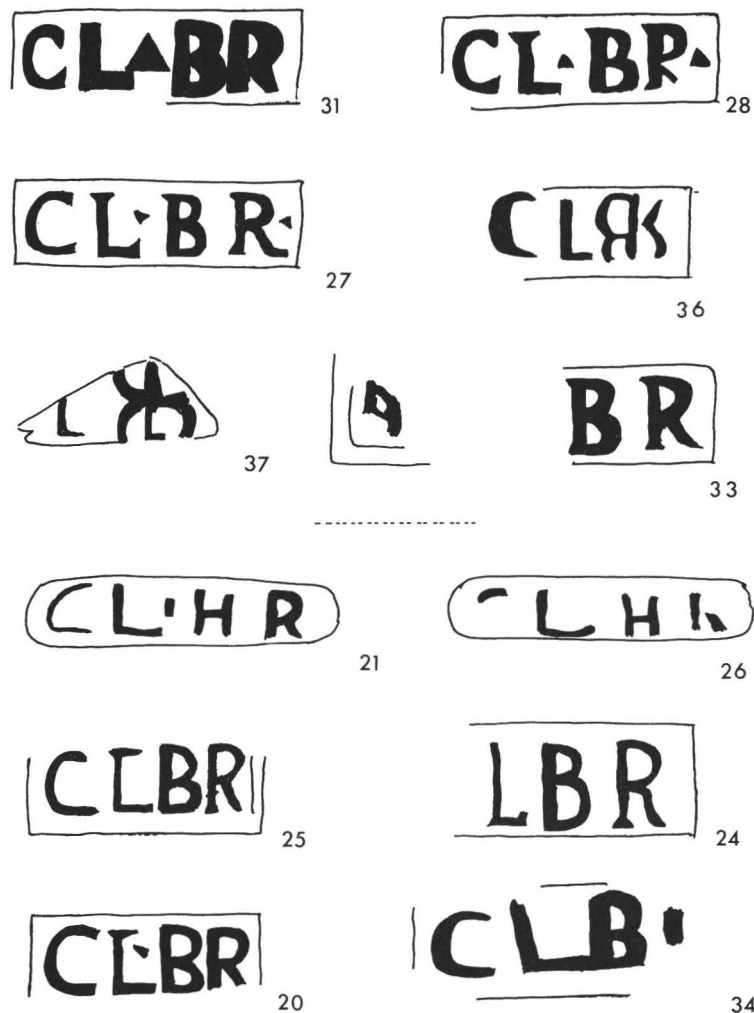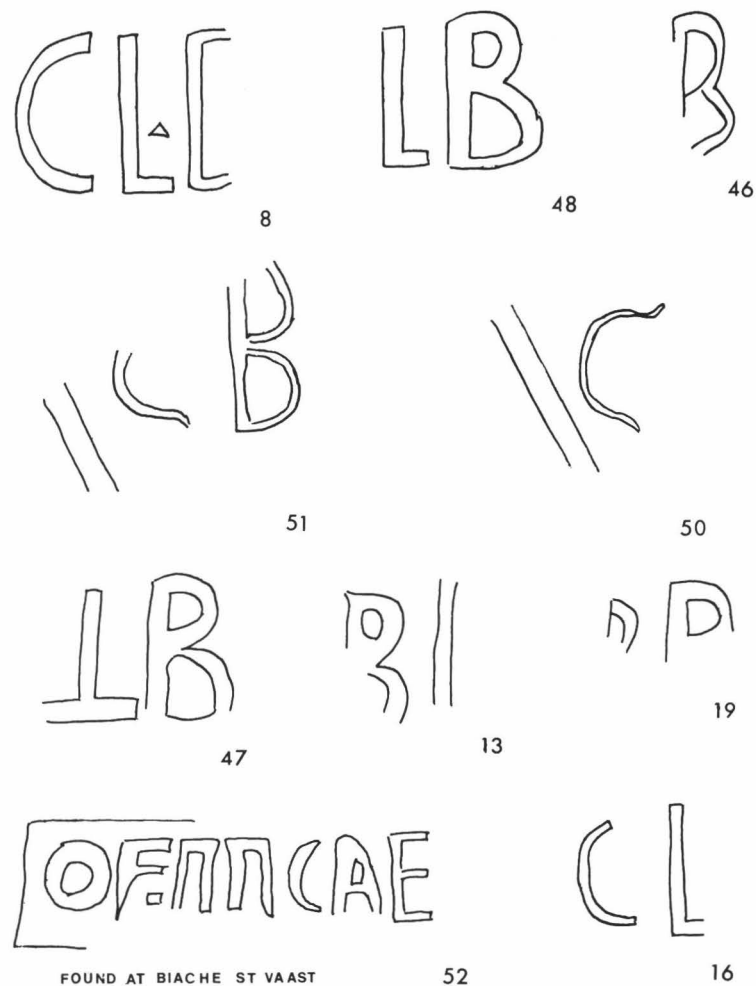
FOUND AT BIACHE ST VAAST

Fig. 9. French CL BR stamps (x½)

Fig. 10. French CL BR stamps (x½)

The varieties of tile on which these stamps have been found work out as follows:

Tegulae	722
Imbrices	580
Bonding/floor	175
Box-flue	12
Unidentified	35
	1524

Of the 169 stamped tiles found in France, 53 were found between 1862 and 1910 in the area south of the walled city of Haute Ville, Boulogne, 110 have been found between 1968 and 1976 within the city itself, and the rest come from nearby sites in the Pas de Calais.

SIGNATURES

As has been mentioned, tile and brick often carry marks: on tegulae these are generally semi-circular, placed near the bottom of the face. These rings, sometimes double or even treble, appear usually to have been made with the finger, and are very regular and seldom show a slip. Ward (1911) stated that the marks were merely decorative, but on the evidence of 474 examples from Beauport Park (352 on tegulae, 62 on brick, and 60 on imbrices) it seems that they represent the personal signed mark of some tile-maker or group of tile-makers. Apart from the semi-circular type of signature, at least 20 other distinctive varieties have been found, some of them matching tile from the nearby site at Bodiam. These different forms of signature have been given letters as a type identification. Most links between sites are likely to be local, and though in theory a tile-maker could use a different signature every day, he would be more likely to keep to his regular mark in the same way as individual thatchers still leave a special mark on their work. It is possible though that a signature might represent a group of workers, but the purpose would be the same.

There are 95 examples of tile from Beauport Park which carry both signature and stamp, enough to make one consider whether there might be any correlation between them. As the table below will show, stamps *Type 20* and *Type 25* are associated with different sets of signatures, and *Type 25* stamp also has six examples of 'No signature,' which is rare.

TABLE 3

| | Signature Types | | | | | | | | | | | | No sig. | Total |
Stamp type	A	B	C	D	E	F	G	J	N	Q	P	R		
20	7	7	1	6	1	8		1	12	1				44
25											16	2	6	24
1	2			15	2		1							20
12				1						1				2
22													1	1
Unidentified				1	1									2
No stamp				1						1				2
	9	7	1	24	4	8	1	1	12	3	16	2	7	95

There is some useful evidence concerning the procedure of marking. On the twelve ocasions when stamp and signature have overlapped, the stamp has always been superimposed. There are also occasions when the bottom of the signature has been cut off by the trimming of the bottom edge of the tegula. This suggests that the signature preceded stamping and trimming, and that these

functions need not be the concern of the same man. Examination of 25 complete tegulae that carried *Type 20* stamp gave some support to this, since every tile had a line right across the top that linked the cut-aways at the top end of the flange. This line was not found on any other tegulae, so seems to be confined to this stamp only. This suggests that the stamper was also the man who made the cut-aways, and since this job might be a longer one than the basic forming of the clay in the mould, that might account for there being a greater variety of stamps than of signatures.

TALLY-MARKS

There is one more feature to be considered. Investigation of the Beauport Park tile showed that some tegulae and brick had marks cut on the fore-edge. There were some twenty varieties of these marks, and the obvious resemblance of most of them to numerals suggests a term such as 'tally-marks.' 28 of the 95 tiles noted in Table 3 carried tally-marks. A similar proportion was found on the complete tegulae, since 14 out of 41 bore marks. But it would be unwise to conclude that 30% was a general proportion for tally-marking on all tile, since the quantity varied with the type of stamp, as Table 4 will show.

TABLE 4

Stamp type	Quantity	Tally-marks
20	44	6
25	24	0
1	20	18

The reason for the variation is not yet clear, nor indeed the exact purpose of the tally-mark. The so-called 'batch-marks' on Romano-British pottery from the Rowlands Castle kiln (Hodder 1974) provide a possible parallel.

A further investigation was made of some 140 examples of tile from Beauport Park that carried both signature and tally-mark. There were fifteen varieties of signature, with three types predominating, Type L (36 examples), Type C (30), and Type M (20). All but 17 of the 140 tally-marks were found on tegulae. Tally-marks were originally found on tiles from most of the Classis Britannica sites, including Boulogne, indicating perhaps that they might be confined to fleet production. Similar marks, however, have now been discovered on single examples from Chichester, Caerleon, Ribchester, Colchester and Chester, which suggests that military tile-makers also indulged in tally-marks. I have seldom (e.g. Amos 1921) seen any reference to such marks on tile found in Britain: methodical investigation of signatures and tally-marks could provide new information on tile and its production.

ACKNOWLEDGEMENTS

Author: Gerald Brodribb, Stubbles, Ewhurst Green, Near Robertsbridge, East Sussex.

REFERENCES

Amos, G.   1921   Note in *Journal of Roman Studies* **11**, 239.

Boon, G. C.   1972   Personal communication with present author.

Brodribb, G.   1969   'Stamped tiles of the Classis Britannica,' *Sussex Archaeol. Collect.* **107**, 102-125.

Brodribb, G.   1972   *Britannia* **3**, 240.

Brodribb, G.   1973   *Britannia* **4**, 333 and pl. xli a.

Cunliffe, B. W.   1969   *Fifth report of excavation of the Roman fort at Richborough, Kent*, Rep.Res.Comm.Soc.Ant., 257.

Hodder, I.   1974   'Distribution of two types of coarse pottery in W. Sussex,' *Sussex Archaeol. Collect.* **112**, 89-96.

Peacock, D. P. S.   1977   'Bricks of the Classis Britannica.' *Britannia*, **8**, 235-248.

Ward, J.   1911   *Romano-British Buildings and Earthworks, 263* London: Methuen.

Wright, R. P.   1968   Personal communication with present author.

EXCAVATIONS ON A ROMANO-BRITISH FARMSTEAD AT ELSTED, WEST SUSSEX

by Mark Redknap and Martin Millett

with contributions from Caroline Cartwright, Helen Porter, Valery Rigby, Amanda Saunders, Tom Blagg, Geoff Marsh, Terry O'Connor, Mike Pitts, Richard Reece and John Shepherd.

Excavations on a plough-damaged Romano-British site just north of the South Downs at Elsted, in West Sussex revealed occupation from the first to late third centuries A.D., together with a scatter of Iron Age pottery. A number of post holes and pits was revealed inside an enclosed courtyard, which was apparently associated with a rectangular building to the north detected by infra-red aerial photography and confirmed by resistivity.

INTRODUCTION

During the summer of 1975 excavations were undertaken on behalf of the Sussex Archaeological Field Unit and sponsored by the Department of the Environment, on a Romano-British farmstead half a mile south at Elsted, West Sussex (Figs. 1 and 2) situated on a chalk outcrop to the north of the South Downs (SU 813 191). The site was discovered in 1974 during a field survey of the area[1] and excavation was undertaken with the kind permission of the owners, the Shaxson family of Elsted Manor Farms Ltd. A total of 520 m² was cleared by hand. This report is concerned with the site and its local area. A fuller version of this report, together with the finds and archive has been deposited at Chichester City Museum. The report was originally submitted for publication in March 1976.

Acknowledgements

THE ENVIRONMENTAL BACKGROUND *by Helen Porter*

Man's occupation of the parish can be seen as one exploiting three major zones, defined by the basic geology (Figs. 2 and 3). This in turn gives rise to the soil types and patterns of vegetation. The
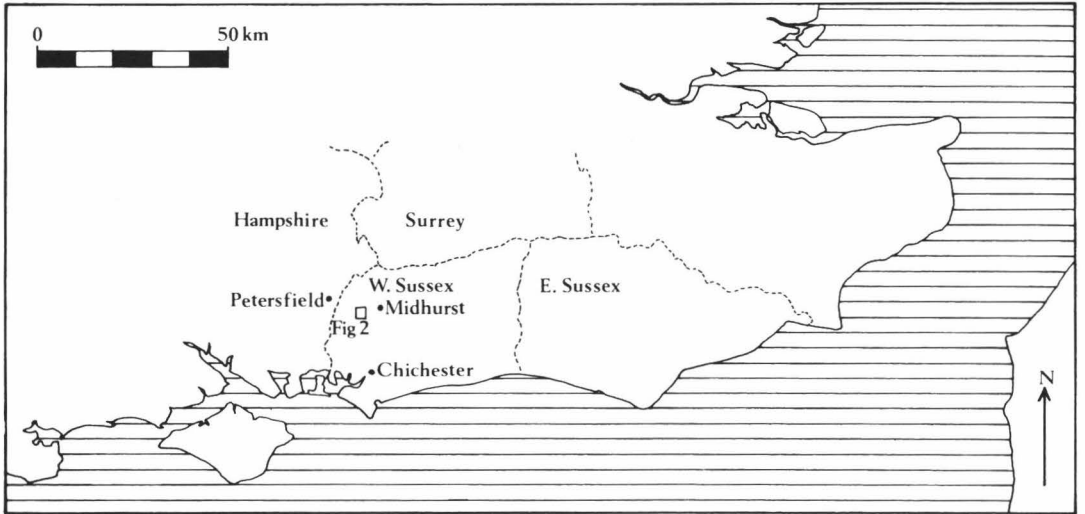
Fig. 1.   Location of the site in southern England.
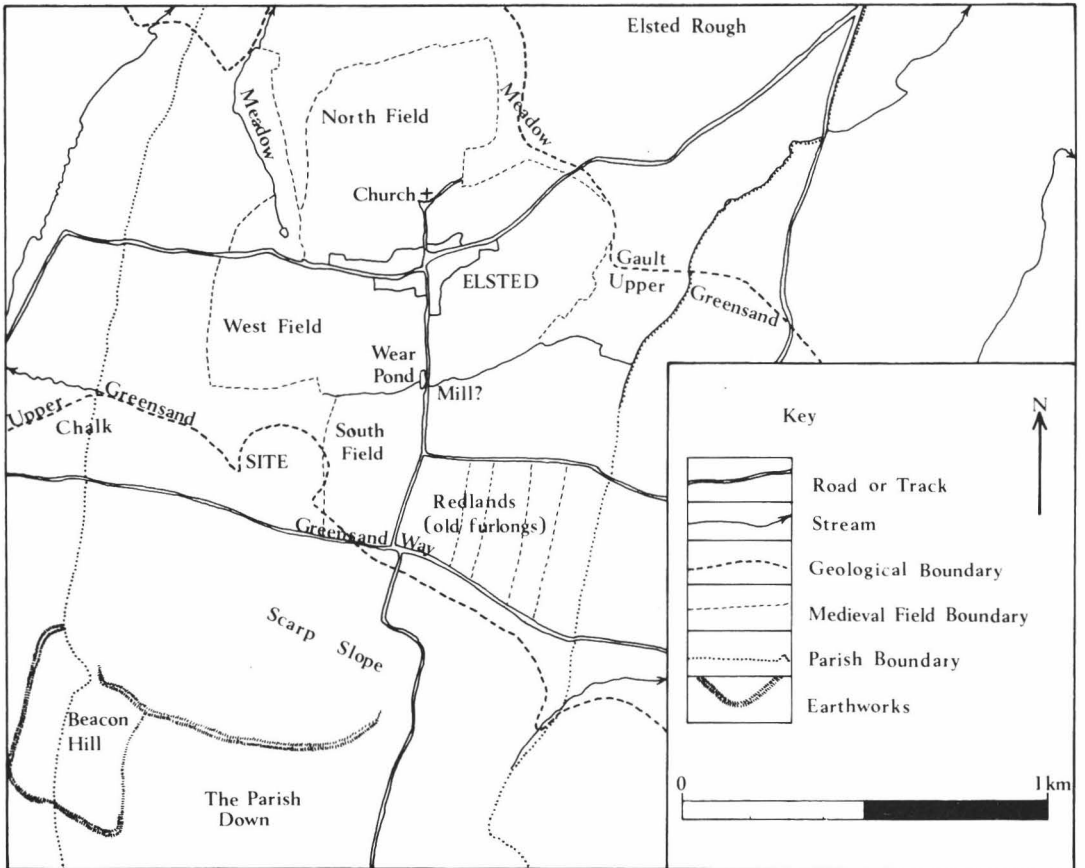
Fig. 2.   Location of the site in relation to the mediaeval village and its fields.

area was examined during the excavation to build up a picture of the potential of the landscape and how it has been exploited.

About twenty five hedges in the parish were studied in some detail, including species' counts based on Dr. Hooper's method[2], and all details of the survey are in the site archive.

The Upper Greensand Bench

In this region the stone is known as 'Malmstone', a soft, grey-green calcareous sandstone with a high silica content; and it forms a bench about half a mile wide from the base of the Downs northwards. It is gently undulating, and the village lies on a knoll rising just above 76 m O.D. The bench slopes slightly towards the south, and there is thus a hollow corridor at the base of the Downs, which has been a main routeway connecting the scarp-foot settlements. Many roads still follow this 'Greensand Way'[3], and field boundaries also respect it. Hedge counts along various sectors showed between four and eight for the average species number, the high figure representing mature hedges on banks beside sunken lanes.

Before clearance, the vegetation of this area probably reflected the transitional character of the zone, with elements of the chalkland forest, i.e. ash, hornbeam and beech, with elder and whitebeam as a shrub component[4]. None of this remains today, and the area is likely to have been cleared at least since Romano-British times, and although the evidence from the site for cereal production is inconclusive, it is assumed that this area of the Weald was an important corn growing one during during the Roman period.

If the Roman occupation was centered around the excavation site, the emphasis changed later on, with the Saxon village in a more commanding position about half a mile to the north. The three field system of the Mediaeval village may denote the relative prosperity of a mixed economy; sheep pastured on the Downs and arable rotations on the Greensand. The present fields are large and rectangular, a result of eighteenth and nineteenth century Inclosure, but they respect the plan of the open fields, and the strips show as crop-marks in oblique light when seen from the Downs. Around the village smaller 'in-fields' crown the knoll.

The Gault

The Greensand bench forms a scarp where it falls away north of the present village, to a flat vale of Upper Gault clay, an argillaceous variant of the Greensand. Northern and eastern areas of the parish lie on this clay plain, and the straight roads and regular field boundaries indicate the nineteenth century pattern of Inclosure and drainage. The heavy soils are unlikely to have been ploughed before this time, and before complete clearance this area would have supplied pasture or woodland resources to the settlements. Relic woodland areas today are oak-with-hazel coppice (e.g. Elsted Rough) and the thick ground cover of moss, ferns, horsetails and wet grasses indicates the nature of the soil. Domesday Book gives a high figure for swine render at Elsted[5], which may indicate the importance of this area for pigs.

Not all inclosure was as late as the nineteenth century however, and many of the field boundaries are characteristic of the Tudor period, when a low single bank was planted with standard oaks about 15 m apart. Today the shrub component of these hedges is kept down by modern management, although relic lines of hawthorn remain in places. Several boundaries contained six-nine species, these were either assarts of the mediaeval period, or wood-pasture boundaries running parallel to the stream.

Today, the summer springline is the Gault-Greensand junction due to the lowering of the water-table; but stream valleys cut the Bench right up to the base of the Chalk. There is a mill-site
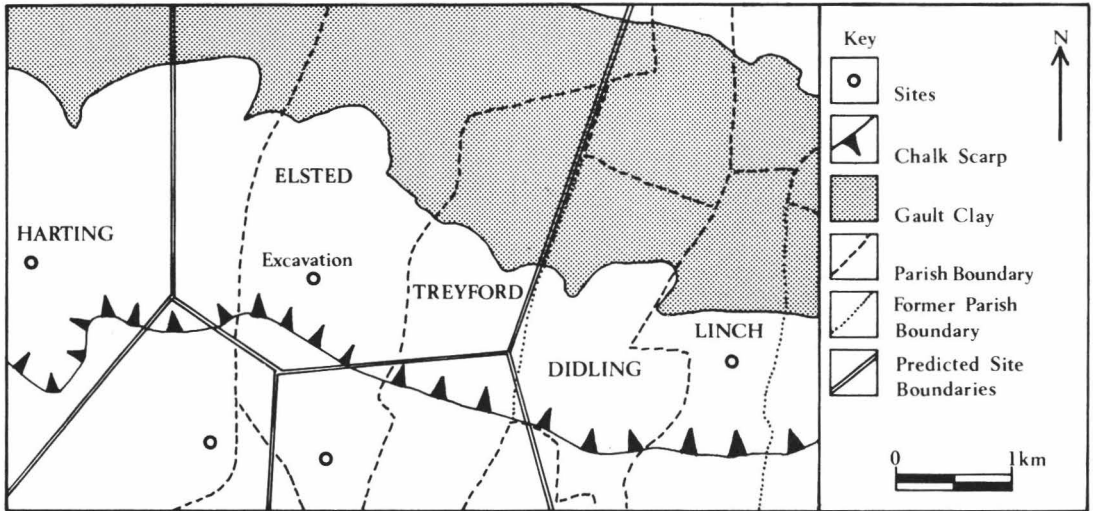
Fig. 3.   Distribution of Romano-British sites in the area, in relation to geology, and parish boundaries. For discussion of their possible estate boundaries see text.
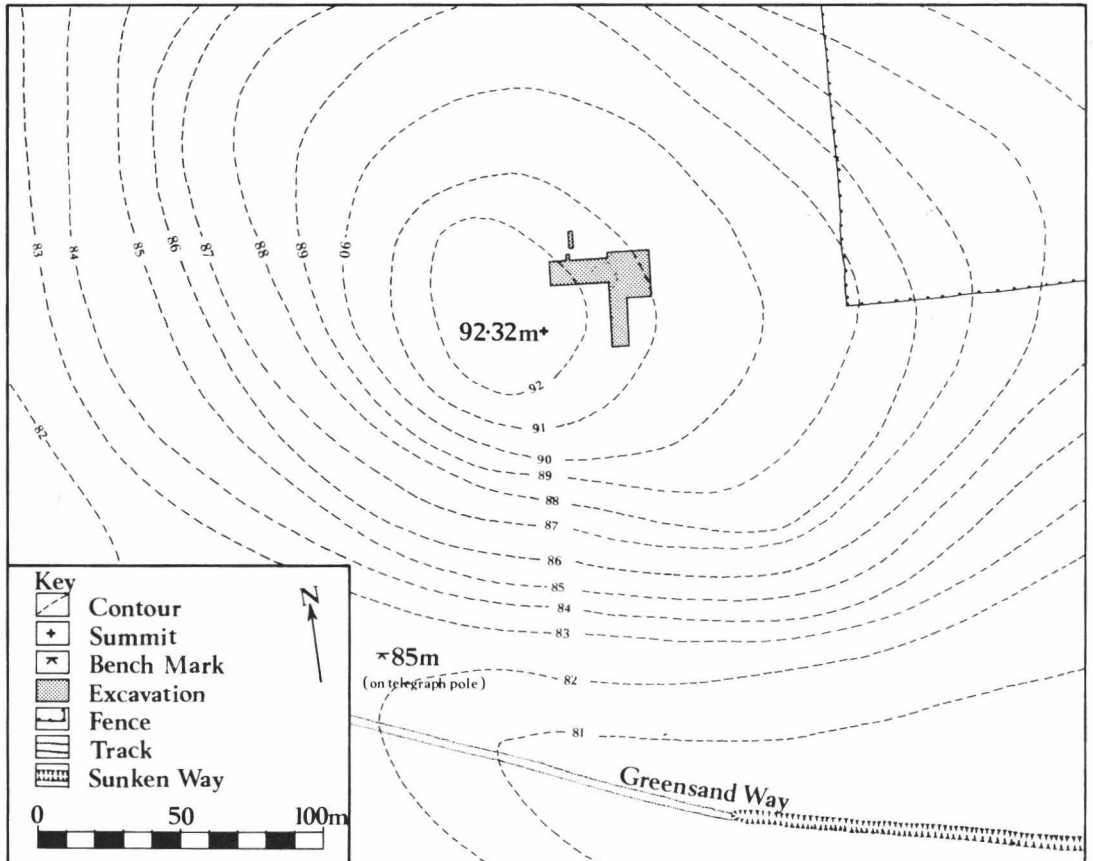
Fig. 4.   The excavated area in relation to contours.

on the Greensand, which is presumably the Domesday site, which means that the stream must have been reliable then, although it is now an insignificant drainage ditch; it is the nearest water course to the site.

The Chalk

From the site, on the Lower Chalk, there is a hollow of the Greensand Way before the steep rise of the chalk scarp, climbing to over 200 m O.D. (Beacon Hill is 242 m). Beyond the ridge, the dip slope falls gently away to the Chichester Plain to the south, and there are Roman settlements in the sheltered dry valleys which follow this dip.

The parish stretches southward to enclose one of these valleys, reflecting the emphasis on chalkland grazing in the economy. Sheep remains are well represented on the site, and probably formed an essential part of the villa economy, providing dairy produce, meat and wool as well as manure when turned onto the stubble. The mechanics of this dual-economy are discussed by Applebaum with reference to Bignor[6].

The Chalk grassland may have been established for over 2,500 years, with prehistoric cross-dykes around Beacon Hill attesting division into units which were most likely sheep-runs or pastures. More recently, parts of the Downs have been ploughed up, and from the late nineteenth century, rabbits replaced sheep as the agency maintaining the grassland against woodland regeneration.

Relic yew woods occupy some coombe heads and slopes on scarp and dip slope sides; the former are now part of the mixed plantation covering most of the slope, the latter have in some cases been spreading since the end of pressure from grazing, hawthorn and juniper forming protective low shrubs about the yews. Beech only occurs today as pure stands or 'hangers' on the scarp faces, these islands which are characteristically free of ground cover contrast with the mixed deciduous woods elsewhere.

At the base of the scarp slope, there are relic hedges stretching about 75 m into the woodland, evidence of fields once continuing further back than at present.

Hedge studies along lanes and fields running north from the base of the Downs showed some of the richest and most varied patterns. This may be due to the 'reservoir' of species in the managed woods nearby; although the routes must connect the two most important areas of the Roman and early mediaeval settlements.

It is perhaps not too dangerous to see in the establishment of the village at its present site a movement reflecting a shift in the economy; while prehistoric and Roman settlement exploited the Chalk and Upper Greensand areas, the Saxon and later periods utilised the Gault woods and pastures to a greater extent.

THE EXCAVATION

An area in the plough scatter, just to the east of the brow, was selected for excavation as aerial photography had indicated that the top of the hill, the centre of the plough scatter, had been ploughed to natural (Fig. 5). Initially, a strip 6 m by 33 m was cleared by hand to expose natural subsoil (R-W 1-33, Fig. 5). The natural, which varied from about 200 mm to 400 mm below the surface, was marly Lower Chalk, overlain by a superficial deposit of stiff yellowish brown clay. The exceptionally dry conditions had baked the plough soil and underlying clay which thus tended to break away from the Chalk in large lumps. Over this area and that subsequently cleared to the east (I-Q 18-33, Fig. 6) the only strata surviving lay in features cut into the natural. However, greater

Fig. 5. Overall site plan.
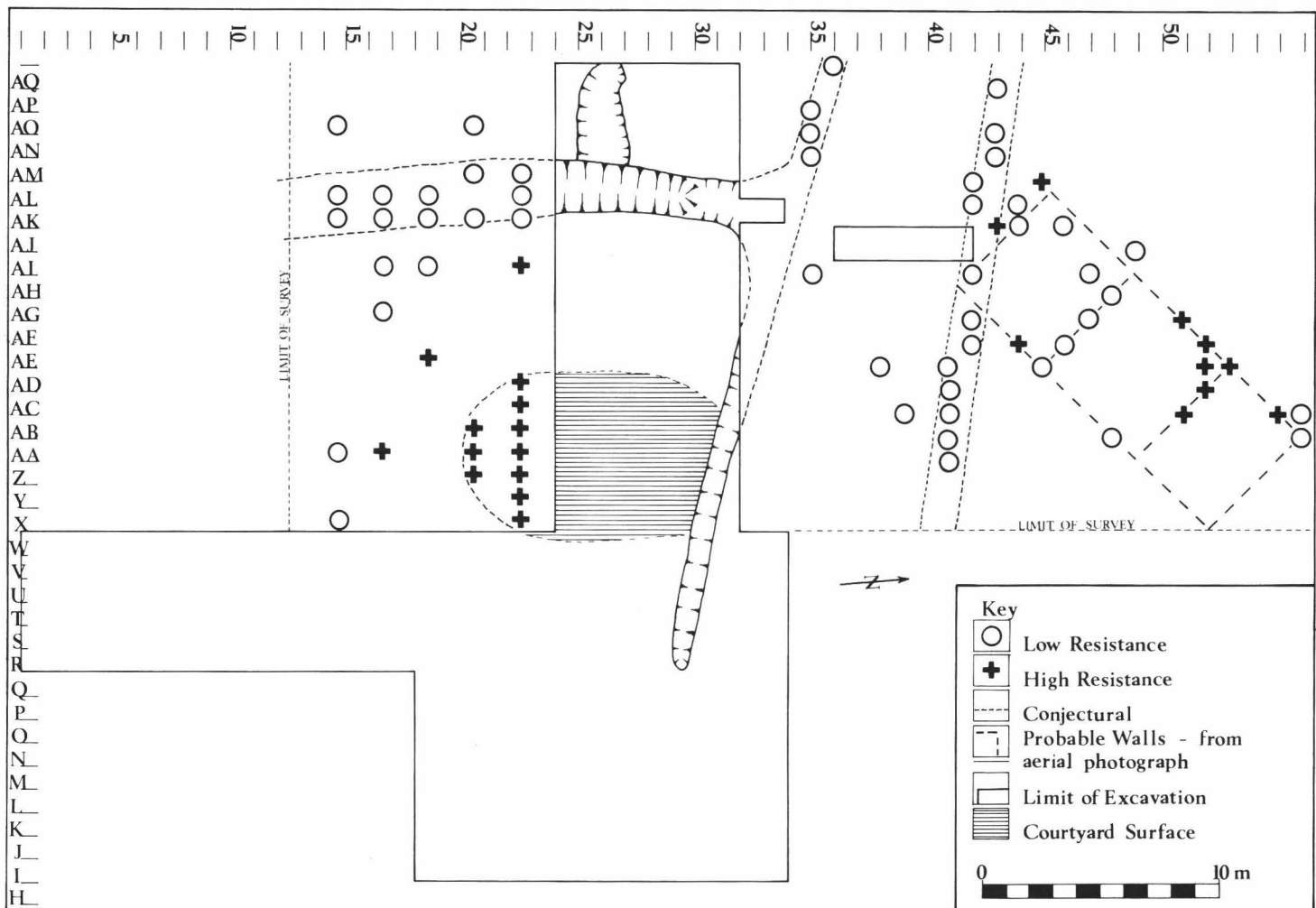
soil depth in the western extension (X-AQ 24-31, Fig. 6, Pl. 3) had the surface stratigraphy though this had also been damaged to the west (AK-AQ 24-31). Excavation took place in three phases; (i) R-W 1-33; (ii) I-Q 18-33; and (iii) X-AQ 24-31, each area being backfilled with the spoil from the next.

Description of the site

As the site was plough damaged, and the majority of the features were stratigraphically isolated, detailed phasing is impossible. However, most of the features produced sufficient pottery for an approximate date to be assigned to them. The pottery report (below) details the evidence upon which these dates are given. The only feature not to produce pottery was feature 1, a pit, which may possibly, on these grounds alone, be Iron Age. Where surface stratigraphy survived, in the courtyard area (Fig. 6) two phases could be isolated:

(i)   layer 35 being the 'cobbled' courtyard surface (Pl. 4) which lay directly on the natural surface. This probably dates to the first-mid second century, and is contemporary with phase i of the ditch (below).

(ii) Layers 29, 30, 37 and 49 and the lower part of layer 2, which overlay the courtyard surface in the area bounded by the ditch. It was apparently homogenous and seems to represent the build-up of muck during the use of the yard. Because of the difficulty of recognising differences within the layer, it was not possible to tell where post holes and pits were cut from within the layer. This layer was contemporary with the infill of the ditch phase i and the phase ii recut. The pottery from it was mixed and dates from the first to the mid fourth century A.D.

These phase ii deposits were excavated using a 1 m grid to plot the distribution of pottery. This experiment failed to produce any valuable results relating to activity areas within the courtyard. Nevertheless the fact that packing stones were *in situ* around post holes 4, 5, 10, 15, 17, 23, 25, 27-8, 31-2, 36 and 38, and that adjoining sherds of pottery were scattered over less than 3 m squares suggests that the strata had been little disturbed by ploughing. The post holes in this area, and elsewhere proved difficult to interpret (their fill being identical to that of layer 30), but the following alignments are possible:

(a)   1, 2, 3 and 4
(b)   6, 7, 8, 9, 10, 12, 13 and 14
(c)   19, 20, 21 and 22
(d)   23, 24, 25 and 26

Although buildings could be 'constructed' from these there is no evidence for their validity, and so the exercise is singularly unprofitable.

The ditch (Figs. 5 and 6, Pl. 2) which surrounded the courtyard consisted of two sections, one running east-west, the other running north-south. The east-west sector continues to the west of its junction with the north-south sector, and seems to be part of a field boundary system as well as the enclosure around the courtyard (see below). The ditch was up to 1 m deep, but had a causeway across it at the junction of the two sectors. There are two phases:

(i)   Deep steep-sided flat-bottomed ditch, layers 20=82, 23=83 and 84) which dates to the late first-second century.

(ii) Shallow 'U' shaped recut (layers 7=57) which dates to the second/third to mid fourth century A.D.
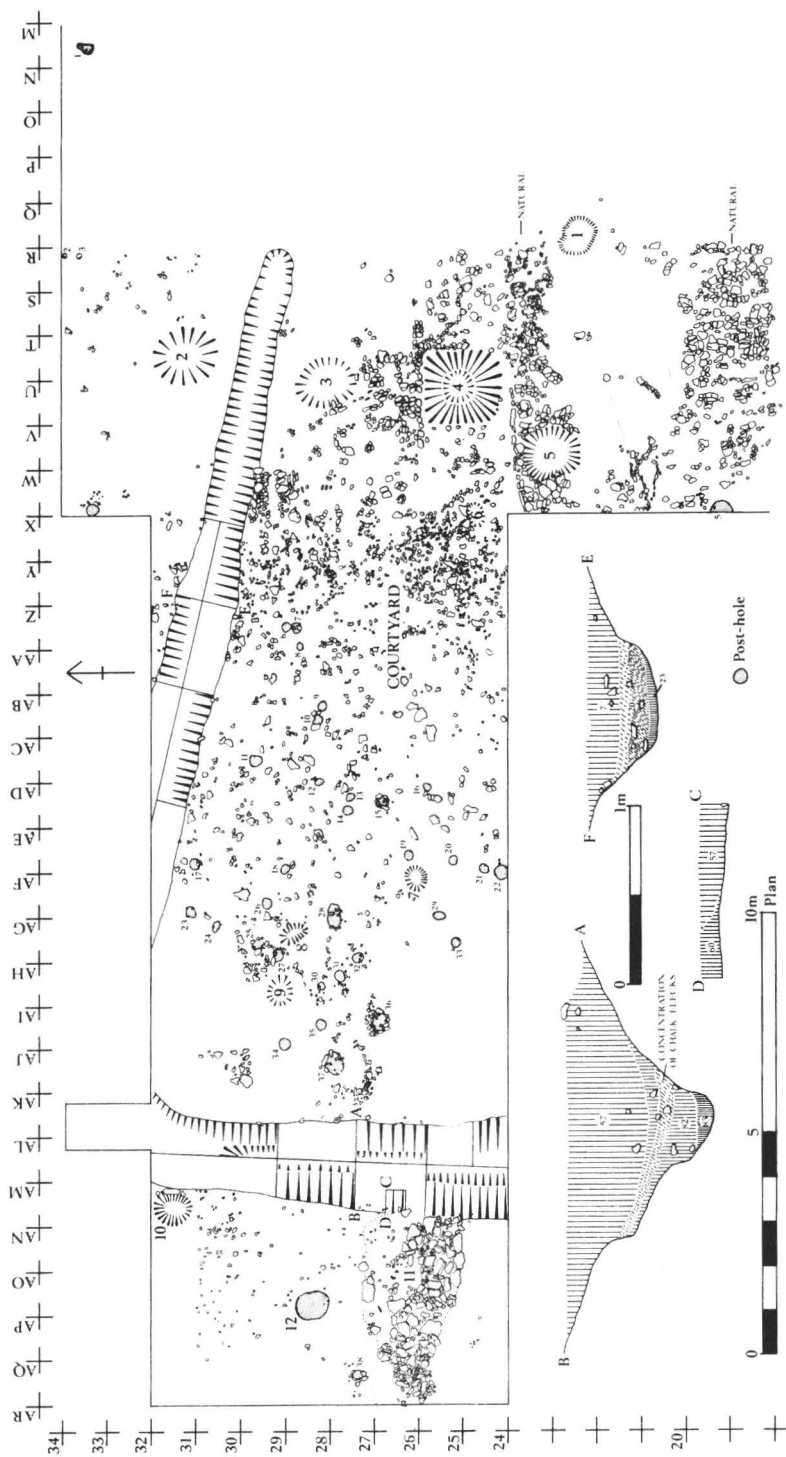
Fig. 6.   Plan of the courtyard with ditch sections.

The other features

These, mainly pits, are shown on Figs. 6 and 7, and are not described in detail. Their dates are as follows:

Features 1 and 12: not dated although feature 1 *may* be Iron Age.

Feature 4: Pre *c.* A.D. 150.

Features 6, 8 and 11. Second century A.D.

Feature 5: Second-third century A.D.

Features 2 and 3: Third century A.D.

Features 7 and 9: Contemporary with or later than courtyard Phase (ii).

Feature 10: Later than ditch phase (ii) (which it stratigraphically overlay).

Feature 13: Late medieval.

An infant burial (Pl. 4) came from feature 8 (Pl. 1) of which T. P. O'Connor notes:

Feature 8: Oval shaped hollow which contained an infant burial in a foetal position.

Remains of human infant, of indeterminate sex, aged *c.* −1 month to 4 months. No teeth were present in the excavated remains. Vertebral elements all ossified, but not fused. Status of petro-mastoid not clear, due to the condition of the bone. No obvious pathology. The skeleton is small enough, and lacking dental evidence of suitable developmental stage to be of an age between the last month of pregnancy and about the fourth month after birth.

Pottery from the feature indicates a second century date.

Feature 13 is an east-west alignment (*c.* 800 mm north of grid ST) of large flints and chalk blocks in the plough soil which seems to be a medieval ploughing feature (field boundary?).

The building to the north

During the course of the excavation aerial photography was arranged using infra-red film to take advantage of the ripening barley crop. The results showed a number of field boundaries while a rectangular building was indicated to the north by stunted crop growth. A small slit trench (AJ 36-41) was excavated above the estimated location of its southernmost corner. This established that the courtyard did not extend to the north, but failed to locate the structure. Following the autumn ploughing a resistivity survey was undertaken (Fig. 5). This confirmed that the continuation of the north-south ditch and the westwards continuation of the east-west section. It also revealed anomalies consistent with the presence of the stone footing of the building shown on the aerial photographs.[7]

Interpretation

The nature of the excavated remains together with the presence of a building to the north showing that we were dealing with only the southern edge of the occupied area. The ditches are best interpreted as defining three sides of a courtyard, although the western extension of the east-west ditch suggests an additional function as a field boundary. The north-south ditch was deeper than the east-west, allowing for the greater run-off of groundwater on this side, below the hill-brow. Although the post holes cannot be shown to belong to individual buildings, their presence probably indicates agricultural structures within the courtyard.

The stone building probably represents the living quarters, although the simple three or four roomed plan could also be a bath block. Dating had not been possible although most tile (76 of the 86 fragments) came from late contexts. It is similarly impossible to say whether the whole site went out of use in the early fourth century.
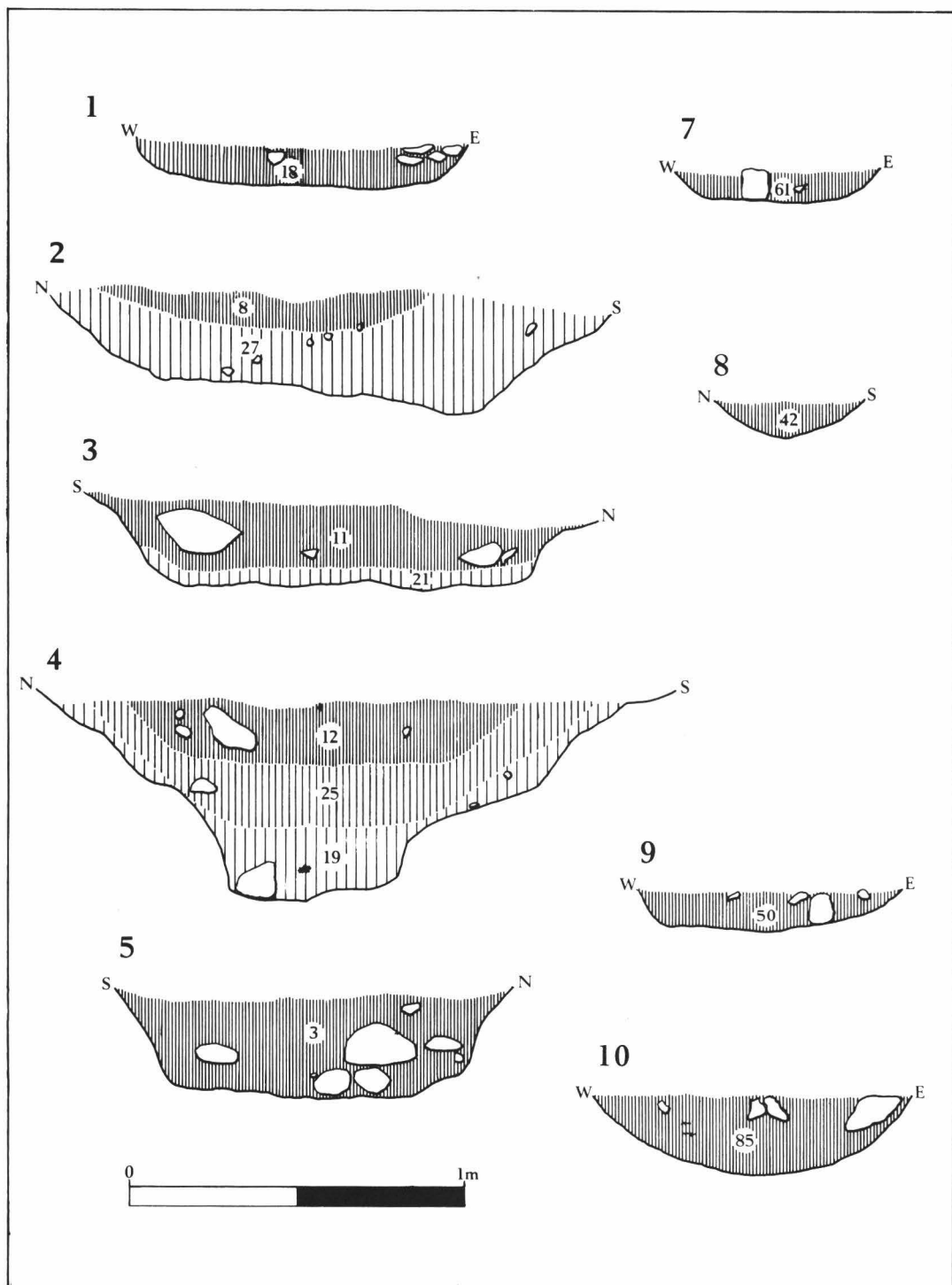
Fig. 7.   Sections of the pits.

The pits offered no functional information, but their uniform character suggests a similar function. The exception of this is perhaps feature 4 (Figs. 6 and 7) where a large post (similar in dimensions to post hole 36) seems to have been dug out.

THE POTTERY (by Martin Millett)

Pottery provides the only dating evidence for the site and thus, although fragmentary, has been dealt with extensively. Two basic approaches have been adopted. First, it was divided into groups on the basis of a subjective assessment of the fabric. For each stratigraphic unit the relative amounts of these fabric groups was measured (Table 4). Secondly, a typology was established for each of these fabric groups and the types compared with those from other sites to facilitate dating. The Samian and New Forest wares were dealt with separately with reference to published typologies.

Throughout this work three methods of quantifying the pottery were used and the results from these compared to see whether they altered the pattern. These methods were: a) sherd count; b) gross weight; and c) adjusted weight. This last method was a slight modification of that suggested by Hulthén.[8] The pottery in each group was taken in turn and each fabric group was divided by thickness using a scale calibrated in 50mm units. Each of these thicknesses was multiplied by the factor to bring them up to a standard thickness of 200 mm. This standardisation of the thickness gave a crude measurement of the quantity of pottery roughly equivalent to the sherd area. This method has the advantage of evening the extremes of diverse thickness and sherd size. The results from a comparison of these methods is published elsewhere.[9]

In order to facilitate comparison, the quantified results have been presented as percentages. In most cases the pottery examined came from the stratified layers (including the courtyard) but in the case of Fabric Groups A and B the material from the ploughsoil was also examined.

Throughout the pottery report the following abbreviations are used:

Fishbourne. B. W. Cunliffe *'Excavations at Fishbourne 1961-1969'*, two volumes. (Leeds, 1971).

Neatham. D. Graham and M. Millett (ed.) *'Excavations of a Romano-British Small-Town at Neatham, Hants 1969-1980'.* Forthcoming.

Portchester. B. W. Cunliffe *'Excavations at Portchester Volume I Roman'* (London, 1975).

Rigby. V. Rigby. *'Potters' stamps on Terra Nigra and Terra Rubra'* in Detsicas (ed.) *'Current Research in Romano-British Coarse Pottery'* (C.B.A. Research Report 10, 1973).

Tilford. M. Millett *'A Group of First Century Pottery from Tilford'* in *Surrey Archaeol. Collect.* 70, 19-24. 1975.

Wiggonholt. K. Jane Evans *'Excavations on a Romano-British Site, Wiggonholt, 1964'* in *Sussex Archaeol. Collect.* 112 97-151, 1974.

The Fabric Groups

The pottery was divided subjectively into groups of fabrics defined by their visible inclusions and texture. Where possible they have been attributed to a source (e.g. Fabric Group D), but in other cases the grouping probably includes wares from several production centres (e.g. Fabric Group E).

Group A: coarse, hand-made ware, tempered with crushed flint which commonly penetrates the surface. The forms indicate a native, Iron Age, origin, and it has been pointed out that the locally occurring clay which caps the chalk, is very sticky and would thus require much tempering to make it workable. This indicates that this ware was made on, or near the site.

Group B: a dark buff to black ware with much crushed flint as a temper. Unlike the Group A ware this has smooth surfaces. Both wheel-made and hand-made types occur. Types of both Iron Age and Roman origin occur and again a local origin is probable.

Group C: fine sand tempered ware with a little mica in the surface and some larger inclusions of crushed flint.

Group D: ware tempered with fine multicoloured sand and having some mica in the surface. This is Farnham ware as defined by the author.[10]

Group E: other sand tempered ware, some of which almost certainly originated from the Rowlands Castle kilns and some which appears to be from the New Forest. Other origins are also probable.

Group F: ware tempered with fine sand but with frequent inclusions of grog and some visible iron oxide. Most of the sherds are reduced although some, generally the thicker walled types, are oxidised. Examination indicates that the size of the inclusions is smaller in forms which might be later. Some of the types are similar to those from the Rowlands Castle kilns and this suggests an origin there.

Group G: chaff tempered ware.

Group H: orange to red wares with smooth, often burnished surfaces. The ware is generally soft and micaceous. Some sherds contain a little iron oxide. These should be grouped with early Sussex fine wares considered by Dr. Fulford[11] to be late first to mid second century in date.

Group J: white or creamy white sand tempered ware.

Group K: amphorae.

Group L: mortaria.

Group M: Rhenish ware, as defined by Brewster.[12]

Group N: New Forest fine wares, as defined by Fulford.[13]

Group P: late Roman grog tempered ware *(Portchester* fabric A), as defined by Cunliffe.[14]

Group Q: Samian ware or *Terra Sigillata.*

The Typology

Within the fabric groups identified, a typology was established on the basis of rim sherds and diagnostic fragments. Types were defined at a detailed level as little material had previously been treated in this way in West Sussex. Types are
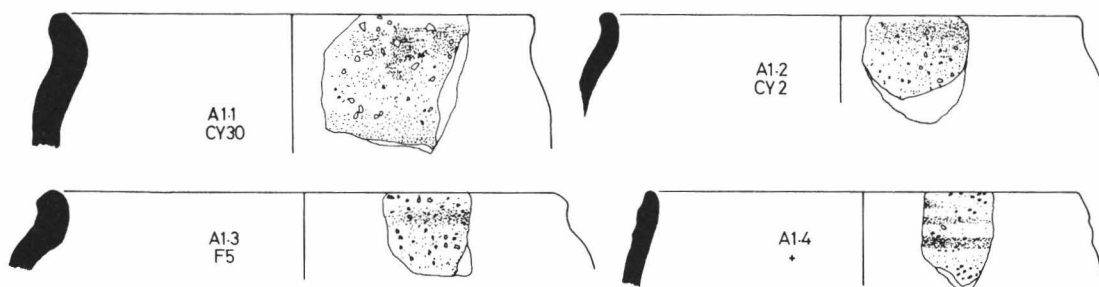
Fig. 8.   The Pottery Types (A 1.1 to 1.4). Scale 1:3.

not dated by association with coins, but by comparison with other sites. To save space, where forms are identical between fabric groups, only one drawing has been provided. The following conventions are used to label the pottery drawings:

A 1.2 = Fabric Group A, type 1, variety 2.
CY 30 = Context.
The abbreviations used for contexts are:
+ = unstratified;
CY = courtyard (followed by layer number);
D = ditch (followed by (i) or (ii) for the phase);
F = feature (followed by the feature number);
PH = post hole (followed by the post hole number).

Fabric Group A (Fig. 8)
1.1 to 1.4.   A series of jars in the 'saucepan pot' tradition closely similar to those from Torberry and Chalton,[15] suggesting a date in the third-second centuries B.C. at the earliest.
2.   A larger jar similar to type 1. Not illustrated.

Fabric Group B (Fig. 9)
3.   Hand-made jar with bulbous body and outcurved rim. Probably late Iron Age 'Southern Atrebatic' type.[16]
4.   Straight necked jar with out-turned rim. Not illustrated.
5.   Straight sided dish with grooved wall. Not illustrated.

Fabric Group C
6.   Bead rim jar. No dating significance as these types are known to have continued in use in this area from the first century onwards, on Neatham evidence.
7.   Straight neck jar with bead rim. Wiggonholt in first century, but continues through second century at Fishbourne.
8.   Plain rim storage jar.
9.   Large curved rim jar.

Fabric Group D
10.   Dish based on Gallo-Belgic form (Rigby types 21-2). Probably first century, and likely to be Pre-Flavian.
11.   Shallow dish with footring. Tilford and Neatham indicate a date in the first century.
12.   Dish with flat top to rim. Fishbourne type 216 dated to late first-second century, but Neatham indicates that the type continues into third century.
13.1-13.5.   Dish with carination below rim, several varieties dated at Neatham to first-late second century.
14.   Dish with rim similar to 13 but without carination.
15.   Dish with bead rim and curved wall. Fishbourne type 217, early second century, but continues at Neatham into the third century.
16.   Plain, straight sided dish. Post *c.* 150 A.D. at Neatham.
17.   Dish with groove around wall.
18.   Straight sided bowl. Neatham indicates this type ceases production by mid second century.
19.   Bowl with flange level with top of rim. Neatham indicates a late second-mid third century date.
20.   Flanged bowl which Neatham evidence indicates mid second-fourth century date.
21.   Strainer (not illustrated) as Neatham type 20 dated to the late third century onwards.
22.1-22.2.   Bead rim jar with two varieties. Not of any dating value on Neatham evidence.
23.   Jar with broad cordon below rim dated at Neatham to the second century.
24.   Plain everted rim jar. Form as F73 (not illustrated) dated to the third century at Fishbourne (313) but continues into the fourth century (Portchester).
25.   Facetted rim jar dated to late third-fourth century at Neatham.
26.1-26.2.   Tall-necked jar dated to first-mid second century at Neatham and Fishbourne.
27.   Necked jar with sloping top to rim, dated at Neatham to first-second century.
28.   Tall straight necked jar dated to the first-third centuries at Neatham.

Plate 1.   Infant in feature 8. 1=skull. 2=face. 3=arm. 4=shoulder blade. 5=hand.
6=spine. 7=pelvis. (Scale in cm.; photo M. Redknap).
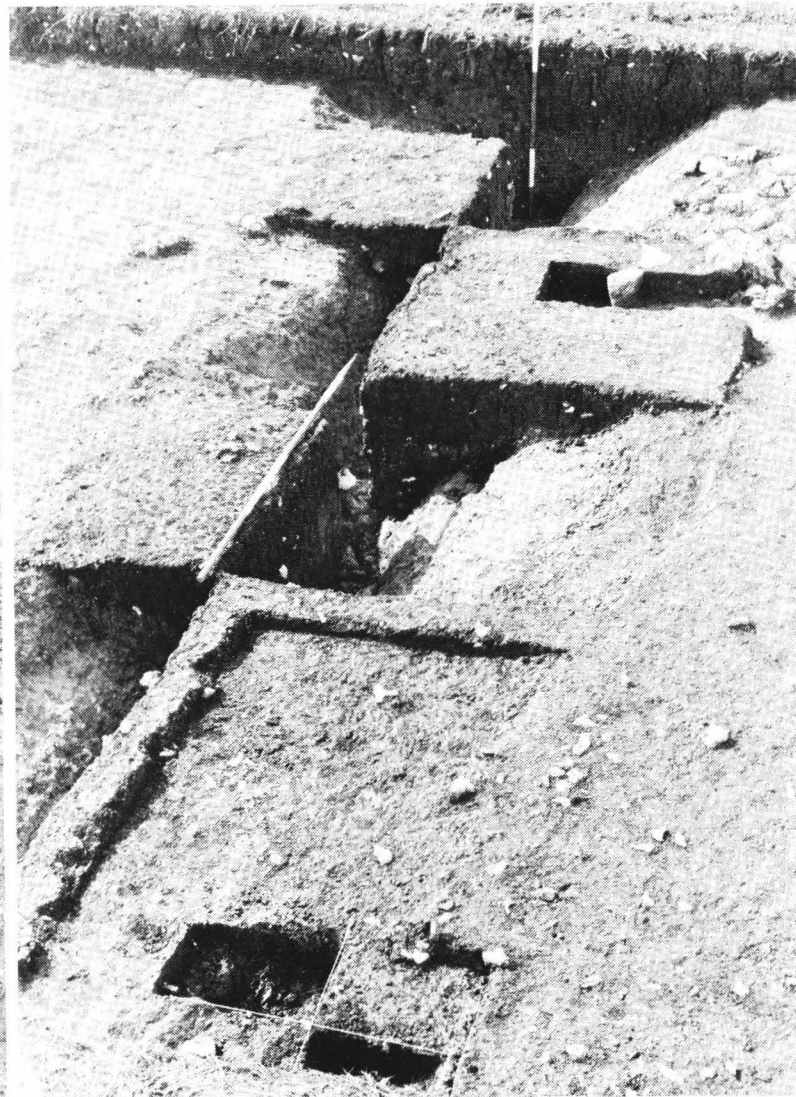
Plate 2.   The ditch at the western end of the courtyard looking south.
(Metric scale, photo M. Redknap).

Plate 3. General view of courtyard looking west. (Metric scale, photo M. Redknap).

Plate 4. Courtyard surface, layer 35. Grid squares AB-AD 29-31. (Metric scale, photo M. Redknap).
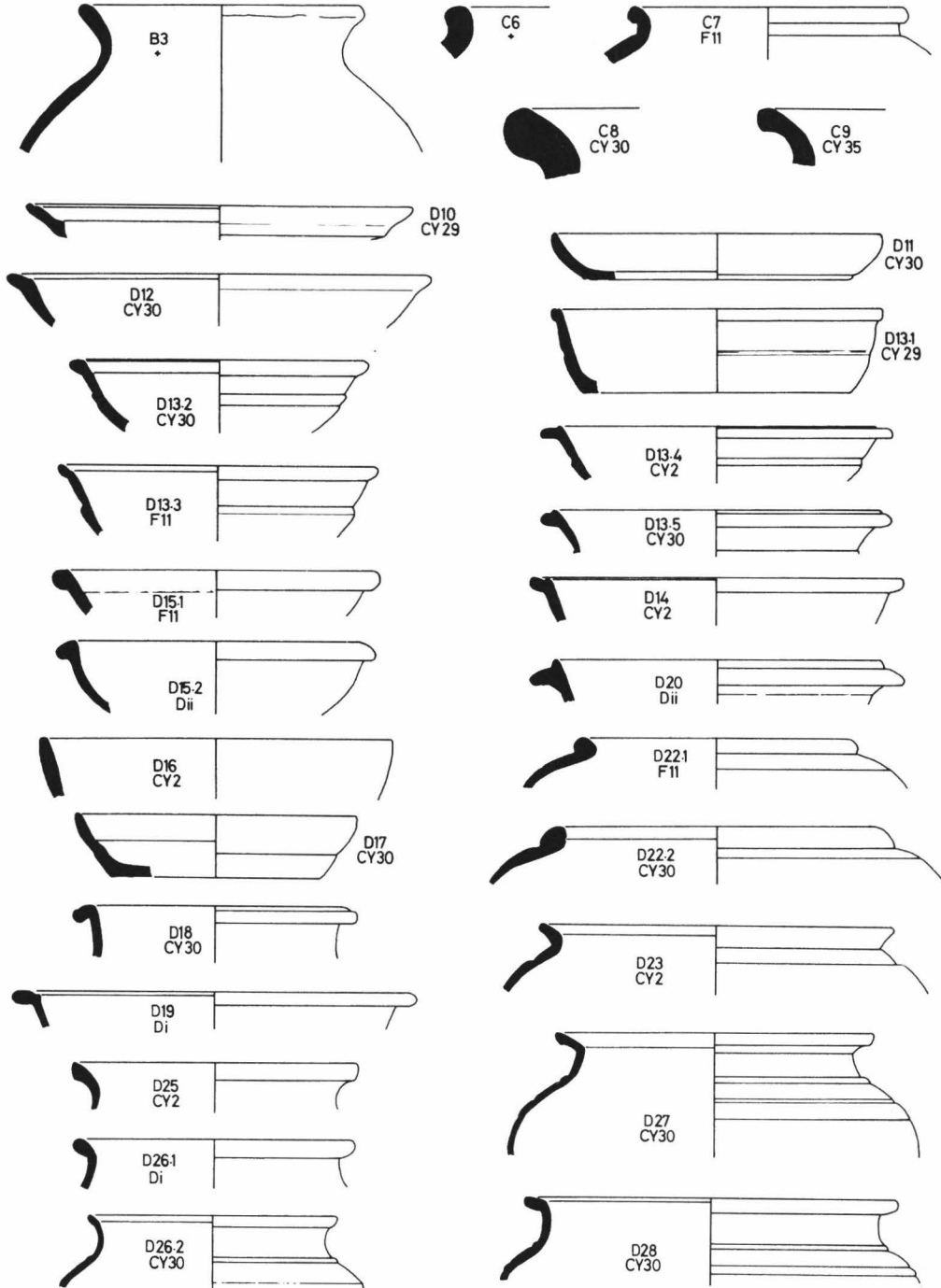
Fig. 9.   The Pottery Types (B3-D28). Scale 1:4.

29. Hooked rim jar dated at Neatham to third-fourth century.
30. Cooking pot imitating black-burnished forms. The type dates from the late second to fourth centuries at Neatham, but are not common before the mid third century.
31. Imitation of Gallo-Belgic butt beaker, with cordon around neck. These types are not common but are dated to the first century (pre A.D. 80) at Fishbourne and this date fits with that suggested for a similar type at Tilford.
32. Storage jar dated at Neatham to third century onwards.
33. Internally grooved lid dated at Neatham to the second-third centuries.
34. Flagon.
35. Folded beaker with 'squat' shape, probably third-fourth century.

Fabric Group E
36. Dish imitating Gallo-Belgic form (Rigby types 12, 16, 19, 21 and 22). First century and probably Pre-Flavian.
37. Dish imitating Gallo-Belgic form (Fishbourne 4 and 19) probably first century.
38. Straight sided dish dated at Fishbourne to second century onwards.
39. Dish with beaded rim, form as D15.2, early second-third century. (Not illustrated).
40. Bowl, form as D18. (Not illustrated).
41. Bowl, form as D14. (Not illustrated).
42. Flanged bowl, form as D20. (Not illustrated). Dated to mid second century onwards at Neatham.
43. Large bowl with thick, flat rim.
44. Heavy bowl, a variety of Fulford type 7.2 dated to *c.* A.D. 270-350.
45.1-45.2. Bead rim jar of no dating value on the Neatham evidence. (E45.2 Not illustrated).
46.1-46.2 Jar form similar to C7, first-second century.
47. Jar with rim curved over.
48.1-48.5 Straight necked jar forms similar to D26-28 dated to first-third century. (E48.1 as D26.2. Not illustrated).
49. Tall necked jar form as D28, first-third centuries. (Not illustrated).
50. Jar with outcurved rim and slight carination on shoulder, similar to Fishbourne type 84, dated to before A.D.80.
51.1-51.2. Everted rim jar. Both are similar to the form of F73, and 51.1 which is identical is not illustrated. Third-fourth century.
52. Sloping topped rim with broad cordon below, similar to type D23, dated to the second century.
53. Imitation of a Gallo-Belgic butt beaker similar to Fishbourne type 64.2, first century, and probably Pre-Flavian.
54.1-54.2. Everted rim storage jar.
55. Beaded rim storage jar.
56. Plain lid.
57. Hofheim type flagon neck similar to Fishbourne types 113-114, dated to the late first-second century, although generally regarded as Pre-Flavian.
58. Base of flagon neck with three narrow cordons.
59. Body sherds (not illustrated) of poppy beakers, which are dated at Fishbourne to the second century.

Fabric Group F
60. Dish based on Gallo-Belgic type (Rigby types 16-17). First century, and probably Pre-Flavian.
61. Dish form as D12 dated to the first-third centuries. (Not illustrated).
62. Shallow dish.
63. Dish with slightly beaded rim.
64. Bowl imitating Dr. form 38, probably late second-third century.
65.1-65.3 Beaded rim jar of little dating value on the basis of the Neatham data. 65.1 form as D22.1, not illustrated.
66. Jar with flat top to rim.
67. Jar with outcurved rim, similar to Fishbourne type 338, of the third century.
68. Necked jar with moulded rim and cordon around base of neck, probably first-mid second-century.
69.1-69.3 Straight neck jar with beaded rim, similar to type D26, dated to first-mid second century. 69.2 form as D26.2, not illustrated.
70. Large tall necked jar with grooved top, cordons at the base of the neck and on the carination, similar to Fishbourne type 180 dated to the first-second century.
71.1-71.3 Curved rim jar.
72. Curved rim jar, with undercut rim.
73. Everted rim jar, Fishbourne type 313, dated to the third-fourth century. The example with the reversed 'n' graffito on the shoulder is paralleled on a number of other Sussex sites and are usually attributed to the Rowlands Castle kilns.[17]
74. Storage jar rim.
75. Beaker(?) with multiple grooves on neck.

Fabric Group H
76. Bowl similar to Wiggonholt No. 123, probably second century.
77. Small decorated sherds, possibly imitating Samian form 29.
78. Globular jar with two grooves on the exterior and everted rim.

Fabric Group P
79. Jar with outcurved rim as Portchester type 123 of the late third-fourth century.
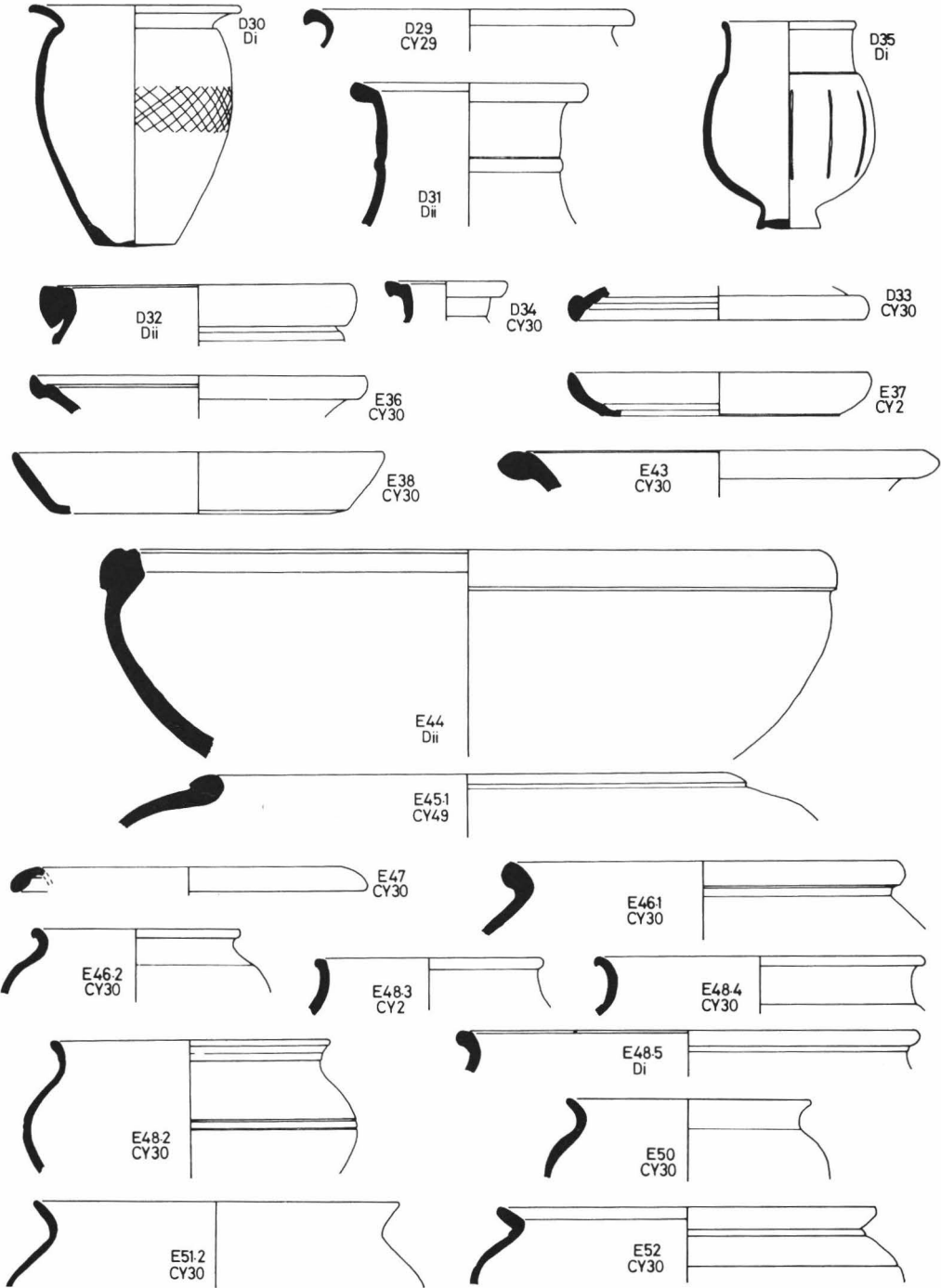
Fig. 10. The Pottery Types (D29-E52). Scale 1:4.

THE SAMIAN
(by Geoff Marsh)

Unstratified
Dr. 37. South Gaulish, showing fragments of leaf tips. A.D. 75-95.
Dr. 37. South Gaulish, showing fragment of leaf. A.D. 75-95.
Dr. 18. South Gaulish. Flavian.
4 unidentified South Gaulish sherds. First century.
Dr. 18/31. Martres. A.D. 100-130.
4 unidentified Martres sherds. First century.

Courtyard (30 etc.)
Dr. 29. South Gaulish, fragment of basal border showing V-shaped leaves. A.D. 70-85.
Dr. 37. South Gaulish, S-shaped gadroons. A.D. 75-90.
Dr. 37. South Gaulish, divided into panels with wavy line borders and rosette terminals. Panels contain a row of arrow heads and a saltire. A.D. 75-95.
Dr. 37. South Gaulish, fragment of saltire. A.D. 75-95.
Dr. 37. South Gaulish, very much abraded ovolo. A.D. 75-95.
Dr. 37. South Gaulish, hind legs of running animal, possibly a dog. Fragment of wavy line border and rosette. A.D. 75-90.
Dr. 37. South Gaulish, single bordered trident ovolo. A.D. 75-95.
Dr. 37. South Gaulish, very abraded fragment probably showing foliage, A.D. 75-95.
Dr. 30. South Gaulish, decorated in panels with saltire and formal foliage. A.D. 55-75.
Dr. 18. South Gaulish. Flavian.
Dr. 35. South Gaulish Flavian: the clay used for the ivy leaves is different to that of the vessel, same as that from Ditch i.
Dr. 35. South Gaulish. Flavian.
Dr. 37. South Gaulish. A.D. 75-95. Mended with lead rivet.
7 unidentified South Gaulish sherds. First century.
Dr. 18/31. Martres. A.D. 100-130.
Dr. 18/31. Martres. A.D. 100-130.
Dr. 18/31. Martres. A.D. 100-130. (Burnt).
12 unidentified Martres. First century.

Ditch i
Dr. 37. South Gaulish, decorated in panels with a fragment of a saltire and a bestiarius facing left, 0.1102. A similar design appears on a bowl of Pudens (Knorr, 1919, Taf. 68). A.D. 75-95.
Dr. 35. South Gaulish. Flavian: same as Dr. 35 from courtyard.

Ditch ii
Dr. 37. South Gaulish, highly abraded ovolo. A.D. 75-95.
Dr. 37. South Gaulish, showing a badly smudged trident ovolo, a wavy line border and a fragment of a scroll. A.D. 75-95.
Dr. 18/31. Martres. A.D. 100-130.
Dr. 27. Central Gaulish. A.D. 125-150.
Dr. 27. Central Gaulish. A.D. 125-150.
3 unidentified South Gaulish sherds. First century.

Feature 2
Dr. 30. South Gaulish, with a trident ovolo and decorated in panels with a wavy line border and rosette terminals. A.D. 70-90.

Feature 4
Dr. 18/31. Martres. A.D. 100-130.
Unidentified South Gaulish sherd. First century.

Feature 11
Dr. 37. South Gaulish, with a trident ovolo beneath which is a wavy line border and leaf scroll. A.D. 75-95.

Post Hole 36
Dr. 27. Martres. A.D. 100-130.

References
O.-F. Oswald. *'Index of Figure-types on Terra Sigillata'* (1936-7).
Knorr, 1919. R. Knorr, *'Topfer und Fabriken verzierter Terra-sigillata des Ersten Jahrhunderts'*. Stuttgart.

Fabric Group N   The New Forest Wares
A total of 36 sherds of New Forest fine ware were recovered, whilst it seems probable that some at least of the Fabric Group E ware was New Forest coarse ware. The fine wares are listed below on the basis of Fulford's typology.[13]
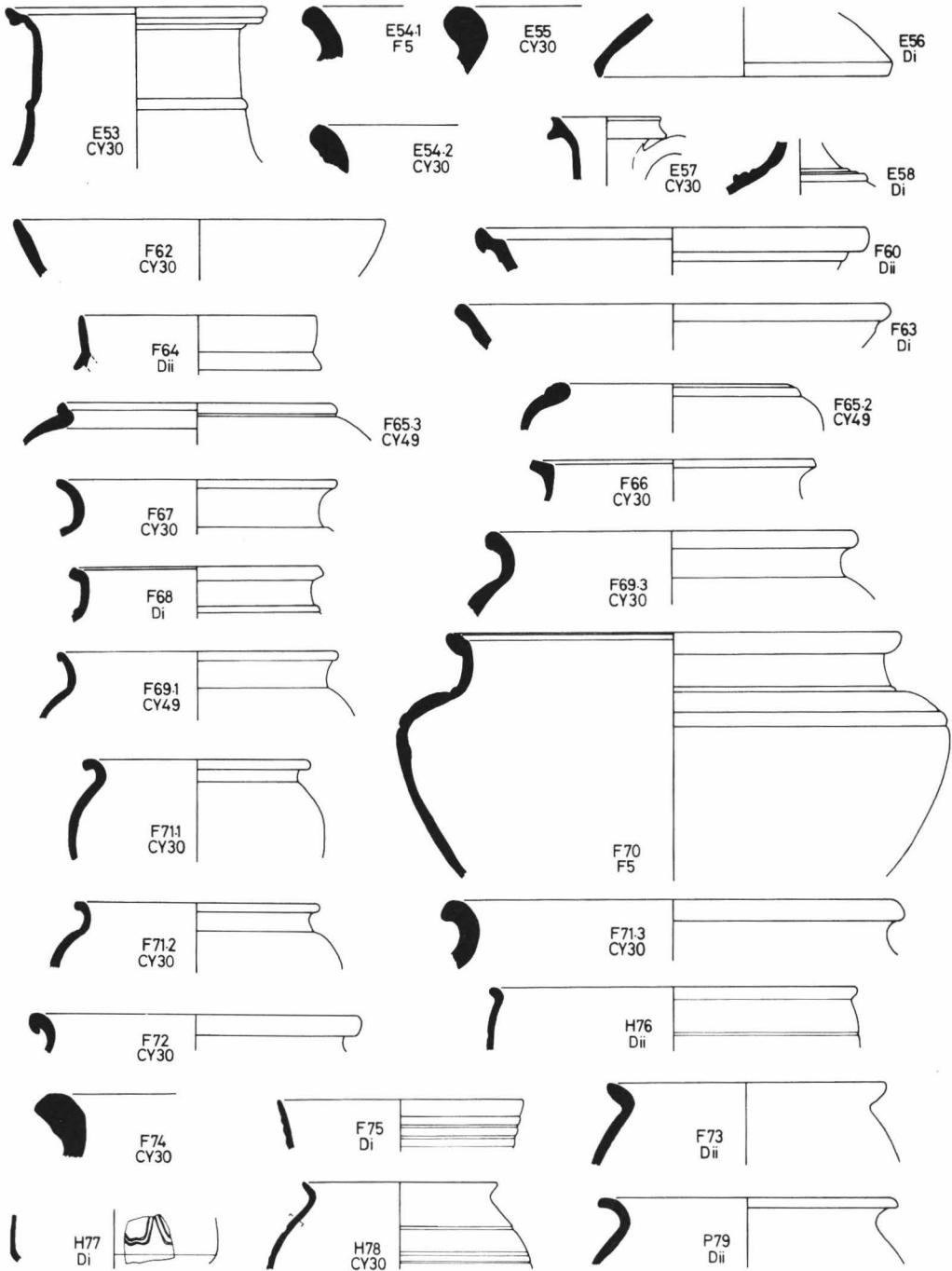
Fig. 11. The Pottery Types (E53-P79). Scale 1:4.

Courtyard (30 etc.)
Type 39.7-39.7, decorated. First half of the fourth century. Fabric 1b.
Eight Type 27, two in fabric 1a, the rest in 1b. *c.* 270-350.
Type 45.1, probably 300-340 A.D. Fabric 1a.
Flagon handle, probably from a Type 12, *c.* 300-350. Fabric 1a.
Body sherds: Fabric 1a, 4 sherds.
            Fabric 1b, 7 sherds.

Ditch (phase ii)
Two Type 27 both in fabric 1b, *c.* 270-350.
Type 41, fabric 41. Probably first half of the fourth century.
Body sherds: one, from a beaker (?), in fabric 1a.

Feature 4 (surface, possibly intrusive)
Type 27, fabric 1b. *c.* 270-350.

THE POTTER'S STAMP (by Valery Rigby)

Ditch, phase i, layer 82 (SF 83)
    A potter's mark placed centrally on the upper surface of a plain flat-based platter. Fine-grained sandy grits, grey core, orange-brown cortex, grey-brown surfaces, very worn so that no finish survives (Fabric Group E).
    No other stamps from this particular die have been identified but three stamps from very similar dies have been found at Wiggonholt and Hardham Camp, Sussex. Considering the proximity of these sites, it seems likely that all the platters, despite being in different fabrics, are from the same, or a closely related, source; the dies may have belonged to one potter.
    The 'wheat-ear' motif is one of the few motifs used on locally made coarse wares in Britain to have a strictly limited distribution. To date no examples have been found outside this region of Sussex. None of the stamps is closely dated. The practice of stamping coarse ware copies of imported fine-ware cups and platters began in the early first century A.D., but was more common and widespread later in the century continuing in some areas until the middle of the second century.

FUNCTIONAL CATEGORIES

    In an attempt to consider the functions of the pottery and the area excavated, a statistical breakdown of the functional groups of vessel types was carried out. The results are presented below:

Category	Numbers	Percentage
Jars	421	72.586
Storage jars	6	1.034
Bowls	45	7.759 } combined 19.138
Dishes	66	11.379 }
Flagons	10	1.724
Beakers	26	4.483
Lids	4	0.690
Mortaria	2	0.345

    Interpretation of this data is difficult as there is little evidence of this nature from other sites[18]. The exceptions to this indicate that the overall pattern, with a predominance of jars, is essentially chronological. However, at least one category, the mortaria, may not be chronologically determined, as the number of mortaria present is very low. There are several possible explanations for this, the two most likely being that either there were no suppliers in the area in the earlier part of the period; the second possibility is that there was no demand for these vessels on the site. If the latter is accepted as an explanation it implies that the site was relatively 'unromanised'. In general terms the results are similar to those from other sites, and as these are from domestic sites it seems likely that the layers we are dealing with are also domestic.

Degree of 'Trampling' of the Pottery
    Using the statistics discussed above[9] it is possible to provide a measure of the degree of fragmentation of the pottery. This is done by dividing the adjusted weight by the number of sherds for each stratigraphic unit. The value of such a statistic is that it gives a measure of the average sherd size which is presumed to be related to the length of time over which the sherds were in circulation. Hence that in the more trampled courtyard has a value of 7.9 which is below that of the average for the pits and ditch. It seems likely that this statistic could be used as a measure of likely dating value, as a deposit with a low value will probably have been 'open' for longer than one with a high value. These values have thus been taken into account in the dating of the features.

Discussion
    Before going on to discuss pottery and its significance, the principles used for dating the deposits must be outlined. In nearly all cases the features produced too few pottery forms to suggest a definite date. Thus the date given is that of the overall period indicated by the sherds present. There is scattered Iron Age pottery from the third century B.C. onwards and this is followed by a number of Gallo-Belgic imitations, which probably date to the pre-flavian period. The Samian is all dated between *c.* A.D. 70 and *c.* 150, although this is true of many Sussex rural sites[19] and seems to point to a supply pattern rather than a limitation in occupation. The only stratified New Forest ware came from two assemblages (the ditch phase ii and the courtyard) and none of it need be later than *c.* A.D. 350 on the present evidence, indeed the majority of it need not be later than *c.* A.D. 300. Thus a terminal date on the basis of the pottery seems to be the first half of the fourth

century. The limited number of chaff tempered sherds (fabric group G) may be early Saxon, although this is by no means certain.

The pottery from the site gives a general idea to the relative importance of local suppliers. This information is provided in Table 2. In a quantified, and standardized form, the percentages only give an approximate idea of the importance of the suppliers as, with the exception of the largest groups, the samples were very small. In spite of this some tentative conclusions can be drawn. First, it is clear that the majority of the pottery found was of Fabric Groups D, E and F together with a significant proportion of Fabric Group C. D ware is probably Farnham ware and F ware probably Rowlands Castle ware. The relative proportions of these two types is not constant but shows only slight chronological differentiation. There is more Farnham ware proportionately in the courtyard and ditch phase ii. This is significant as it suggests that by the third century the Farnham industry was beginning to overshadow the Rowlands Castle industry.

The only other observation of value is that there is little Samian (Fabric Group Q) of the second century, although the other pottery indicates a continuity of occupation. The reason for this might be that competition from the Fabric Group H ware (Sussex fine red slip ware) was succeeding in taking this market. However, this lack of later Samian is common to Sussex rural sites[20] and probably results from overall supply problems.

The Post-Roman Pottery

A total of 62 sherds of post-Roman pottery was recovered from the ploughsoil, in association with feature 13. Most of the pottery comes from two vessels:
1. Wheel-made straight sided jug (?) with a flat base, in bright orange ware with multi-coloured sand temper. The vessel is well made and the ware hard. The exterior is spotted with brown glaze.
2. Wheel-made globular vessel with the stump of a handle on the shoulder. Fabric similar to (1), but without glaze.
Several other sherds were in the same ware with brown glaze. None of the sherds were suitable for illustration, although their character indicates a later mediaeval or post-mediaeval date.

SMALL FINDS (by Mark Redknap)

Objects are listed according to material in the following order: bronze, bone, iron, glass and stone. In each case, the first number is its publication number, followed in brackets by its feature number, site layer number and original 'small-finds' number: *indicates illustrated material.

Bronze (Fig. 12)
   1* (Ditch, 23, 64). Nauheim derivative. Bow is slightly curved, tapering from kick at head to a knife-edge foot. Solid catch-plate, four coil spring. Very common on sites in the area. Though usually dated to the first century A.D., it would appear probable that so simple and cheap a form remained in use well into the second century, and consequently is of limited dating value. Length 40.5 mm.[21]
   2* (Ditch, 57, 57). Neuheim derivative, as above. Pin missing. Length 44.5 mm.
   3* (Courtyard, 30, 22). Wire suspension ring, found in association with (4). Diameter 13 mm.[22]
   4* (Courtyard, 30, 21). Tweezers, ends missing. No decoration. Length 23 mm.[23]
Coin. (Identified by Richard Reece)
(Unstratified, Square W1)
   5 *As*. Probably of Gordian III (238-244 A.D.). Very unusual in Britain.
Bone (Fig. 12)
   6* (Ditch, 57, 85). Piece of trimmed bone, smooth and slightly curved, Spatula? Likely skeletal sources are gomial area of mandible, distal end of scapula, proximal shaft of tibia of distal shaft of femur and humerus (horse or cow). Length 74 mm, width 45 mm.
Iron (Fig. 13)
   7* (4, 4, 7). Iron socket-ferrule or 'shoe' for attachment to wooden shaft, from a primitive plough or ard. Cf. examples from Slonk Hill, Sussex. Length 97 mm[24].
   8* (Courtyard, 30, 30). Knife blade with straight edge, back making continuous curve with tang. Point missing. Length 79 mm[25].
   9* (Ditch, 7, 53). Split spiked loop. Driven into wood, head remaining on surface. Ends hammered flat if projecting. Very common. Width 68 mm[26].
   10 (Y30 7, 27). One example of the numerous sandal studs found—their distribution revealed several concentrations suggesting loss while attached to leather.
   11* (Unstratified) Hob nail? Width 13 mm.
   12 (Ditch 83). Nail. Length 38 mm. Most examples had square heads, most coming from context 30. Table 3 gives the frequency of nail and stud finds in their stratigraphic contexts. Only complete nails were measured, and no differentiation in size is made.

The results show that nails appear predominant inside the courtyard, while studs occur equally both in and within the ditch. In the absence of a 'nail to volume-of-context' ratio the numbers may simply reflect the size of each deposit.

Only crude distributions of nails within the courtyard were provided, due to the insensitivity of the grid system though several concentrations of shoe-studs were recorded (Ditch, 83, sectors W 2 and E 2; Ditch, 57, sector S 4).
   13 (Ditch, 57, 81). Fragment of iron, flat and semicircular. Diameter 26 mm.
   14* (Courtyard, 30, 26). Iron object, possibly a plough/ard fragment. Length 55 mm.
   15* and 16* (Unstratified). (Ploughsoil, 2, 38). Two objects, either heads of type II[27] triangular headed nails or tool (chisel?) ends. Incomplete. Lengths 24 mm and 41 mm respectively.
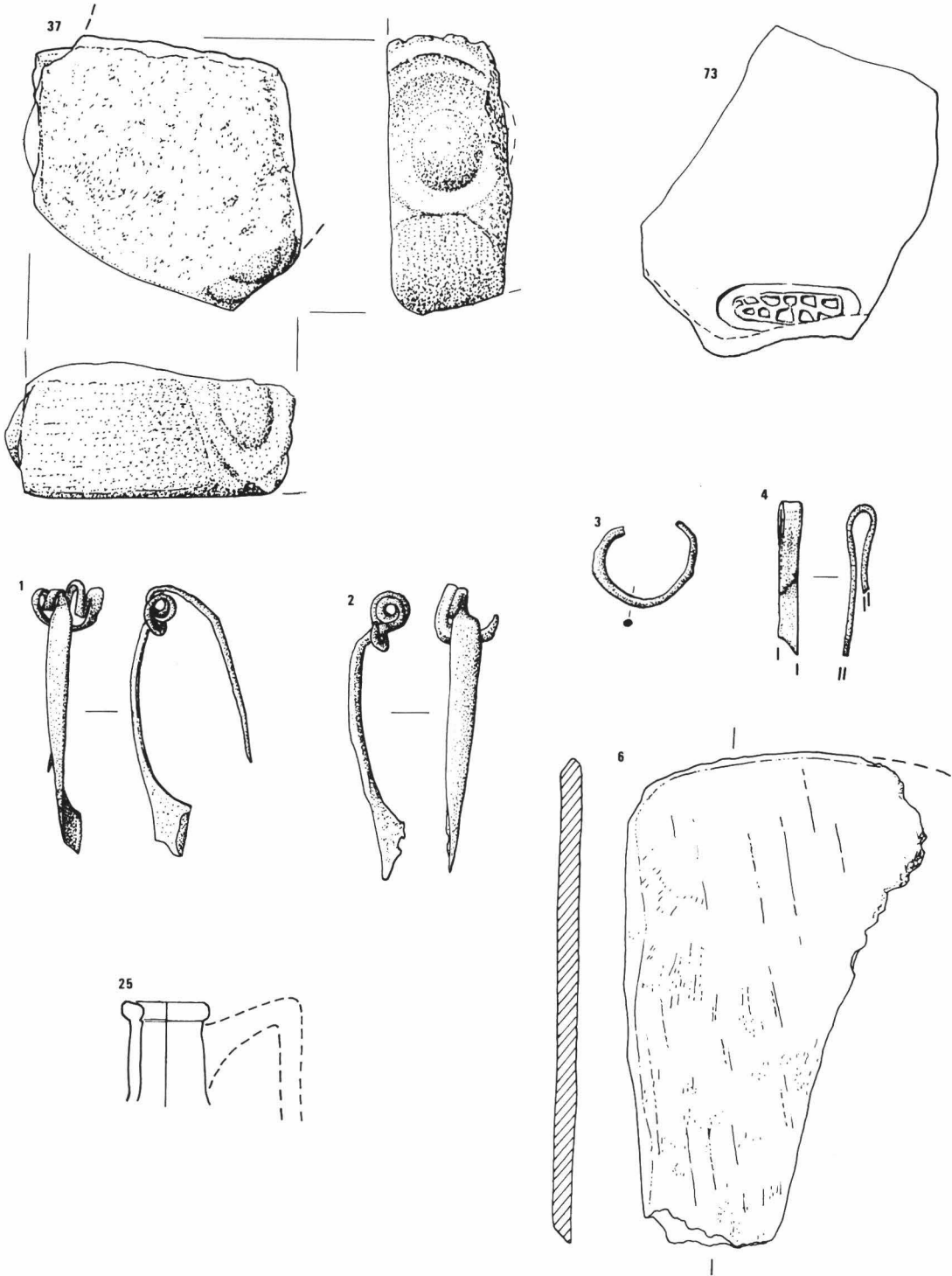
Fig. 12.   The Small Finds, Scale 1:1 except for stonework and glass at 1:2.

17*, 18*, 19 (Courtyard, 30, 47). (Courtyard, 30, 23), (Courtyard, 29, 46). Iron rings of wound tapering strips. Diameters 16 mm, 21 mm and 22 mm respectively.
20* (Courtyard, 29, 42). Iron ring of re-used nail shaft. Diameter 11 mm.
21 (Courtyard, 49, 51). Iron fragment, possibly a knife blade. Length 35 mm.
22* (Courtyard, 30, 15). Fragment of strap hinge, tapering towards one end. Length 97 mm.
23* (Courtyard, 29, 62). Strap hinge, square nail hole at one end. Length 70 mm.
24* (Unstratified). Hook. Length 42 mm. Roman?

Glass (Fig. 12). Identifications by John Shepherd.
    All the glass comes from layers 1 and 2, within grid squares I-W 1-34, and apart from three abraded fragments of bottle and a dark green splinter, which appear to be post-mediaeval, are all of a similar light bluish-green colour. Technical observations provide no evidence of date.
25* (1, 1, 3). Neck and rim of flask; bluish-green. Vertical sides and infolded, flattened rim. Form *Isings* 50a/51a.[28]
26 (1, 2, 10). Fragment of rim of (27) above.
27 (1, 2, 9). Plain fragment of bottle side; pale green. Abraded, iridescent. Cylindrical body. *Isings* 51.
28 (1, 1, 12). Fragment from body of globular ribbed bowl (*Isings* 67c?). Decorated with a blown thin marvered rib of same colour; tapering section.
30-32 (1, 1, 2). Two fitting fragments of vessel side, one fragment plain glass; bluish-green. Flat with single rib. Section thickens in centre. Probably modern; appears to be machine made.
33 (1, 1, 4). Fragment of vessel side; bluish-green. Single rib. Section thickening in centre. Kick of shoulder (or corner) at one end. Two air bubbles on inside surface. Probably from same vessel as (30)-(32).
34 (1, 1, 5). Dark green splinter of bottle shoulder. Iridescent with abraded outer surface. Mediaeval.
35-36 (1, 1, 3). (1, 2, 8). Bottle rim; milky pale green. Abraded surface, lip thickening to bottom, and fragment of pale green glass. Machine made: modern.

Stone (Fig. 5, 12 and 13)

Stonework by T. F. C. Blagg (Fig. 12)
37* (Courtyard, 30, 40). Fragment of what appears to be an architectural moulding with decoration on two sides: 76 mm wide by 81 mm deep by 39 mm high (all maximum). The bottom, back and right-hand side are broken. The top and sides are worn, but the broken underside is less weathered. There are no tool marks. The front and right-hand side show traces of exposure to fire. The stone is greensand (identification by Department of Geology, University College, London).
    The decoration on the front consists of a raised oval outline in low relief, 38 mm wide, with a central oval boss 23 mm wide in higher relief. The forward part of the left-hand side is curved. Its rear part is cut at an angle of approximately 50 degrees to the front face, the lower edge inclined inwards slightly. It is rather worn but appears to have a similar oval with boss, its long axis vertical, and its lower part is broken off.
    The simple decoration is not part of orthodox Roman architectural ornament, though it might derive from the bead element of the bead-and-reel motif. In view of this, and the fragmentary nature of the piece, it is difficult to say with certainty what function it had. It could be part of a projecting string-moulding, of a column capital, or of a table top (though the distribution of these is further west in Britain and their characteristic chip-carved ornament is lacking on this piece). I have not at present found any close parallel.

Whetstones (Table 4, Fig. 13)
    Of the whetstones described below only two are complete, having a rectangular cross-section modified to varying degrees by usage (nos. 38-9). The broken condition of the rest may result from some secondary function. The three quern-rubber fragments (No. 53) fit together, indicating contemporaneity of the fill of ditch ii and post-hole 36 (layers 44 ' and 57).
38* (Courtyard, 30, 61). Greensand; smooth concave surfaces, rounded sides. 65 mm by 90 mm by 42 mm.
39* (Courtyard, 30, 35). Complete. Greensand. Worn smooth on all except two ends. Slight hollowing on top and bottom. 74 mm by 57 mm by 37 mm.
40* (Courtyard, 30, 56). Greensand. Fine grained, speckled reddish-grey. Rectangular. 84 mm by 71 mm by 42.5 mm.
41 (Courtyard, 49, 69). Fragment of Greensand, top and bottom worn smooth, traces of exposure to fire.
42 (Ditch, 82, 82). Fragment of Greensand; signs of exposure to fire.
43* (Ditch, 57, 77). Fragment of Greensand, all surfaces except ends worn smooth. Rectangular. 93 mm by 52 mm by 32 mm.
44 (Ditch, 57, 80). Fragment of Greensand; burnt. Small surviving area of worn surface.
45 (Ploughsoil, 2, 68). Fragment of Greensand; fits (46).
46 (Ploughsoil, 2). Fragment of Greensand; possibly whetstone.
47 (Unstratified, 89). Fragment of Greensand; possibly whetstone. Worn on top and bottom.
48 (Courtyard, 30, 60). Nut-brown, coarse-grained ferruginous sandstone. Carstone. Possible whetstone. 92 mm by 43 mm by 42 mm.
49 (Courtyard, 29, 55). Fragment of Carstone; one worn surface.
50 (Unstratified, 86). Fragment of Carstone. No visible working, but may have belonged to whetstone.
51 (Ditch, 57, 92). Bunter pebble; smooth surface, with traces of exposure to fire. Whetstone? Length 46 mm.
52 (Unstratified, 90). Bunter pebble; one worn surface. Length 46 mm.

Quern-rubber (Fig. 13)
53 (36, 44, 74). (Ditch, 57, 71). (36, 44, 70). Three fragments of Bunter pebble; mottled pink, hard, fine grained. They fit together to form most of a heavy quern-rubber. The largest face has peck marks—indicating its use as a hammer stone, and possibly explaining its broken condition. Length 150 mm.
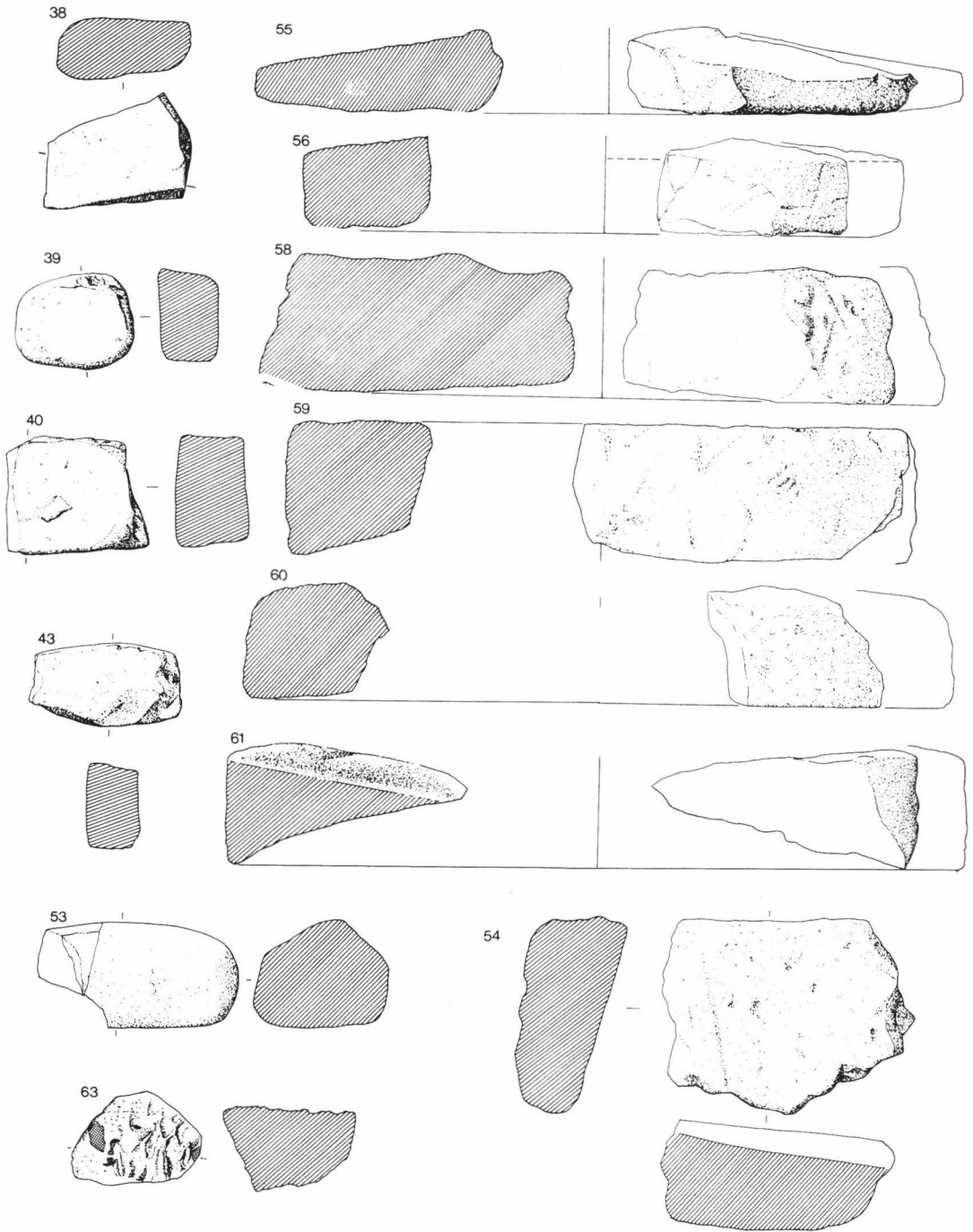
Fig. 13.   The Small Finds. Scale 1:4.

Quernstones (Fig. 13)

Altogether nine fragments of quernstone and four probable fragments of quernstone, all Greensand, were recovered, two from the packing material of post hole 36. All were of rotary type, unlike a Greensand fragment of saddle quern found while fieldwalking inside Harting Beacon during the course of excavation, and presumably of Iron Age date (Fig. 13, 54).

55* (36, 44, 72). Fragment of lower quernstone; well worn, flat and thin in cross-section. Greensand.
56* (Ploughsoil, 1, 11). Fragment of lower quernstone; Greensand.
57 (36, 44, 73). Fragment of upper quernstone; Greensand. Rounded top surface.
58 (Courtyard, 49, 50). Fragment of upper quernstone; Greensand.
59* (Courtyard, 30, 19). Large fragment of upper quernstone; Greensand.
60* (Ditch, 82, 65). Section of upper quernstone; trimmed top and side, with rough grinding surface.
61* (Ploughsoil, 1, 13). Fragment of upper quernstone with section of handle slot; well worn grinding surface.
62 (Unstratified, 78). Fragment of quernstone; one worn surface. Possibly from upper stone.
63* (Courtyard, 30, 25). Fragment of upper quernstone; one very worn surface, roughly reworked with tool grooves (worn older surface shown in grey stone).
64 (11, 60). Fragment of Greensand; one worn surface. Possible quernstone.
65 (Unstratified, 79). Fragment of quernstone. No visible worked surfaces.
66 (Ploughsoil, 1, 14). Fragment of Greensand; one worn surface. Possibly from quernstone.
67 (Unstratified, 84). Fragment of Greensand; possibly from quernstone.

THE FLINT ARTEFACTS FROM ELSTED[29] (by Mike Pitts)

The 267 pieces of flint submitted for examination fall into two groups: those from the excavation (111; 42%) and those from the surface of the adjacent field (156; 58%). Of these, 37 of the former, and 21 of the latter, have been identified as artefacts (in the broad sense of being man-altered). All these have been treated together; there does not appear to be any significant locational clustering within the excavation trench.

There are problems in distinguishing true artefacts from products of the general rolling and battering to which any disturbed material is liable to be subjected. All the illustrated pieces have been included in the count of artefacts. Most of these 58 items are heavily damaged flakes, and many have retouched edges. The nature of the retouch ranges from very fine and regular (cf. Fig. 14, 68-72) to extremely coarse and irregular. Until evidence is forthcoming that certain forms of 'retouch' cannot be produced by the action of soil movement, the passage of farm machinery, etc., there seems little justification in separating those flakes with retouch at the regular end of the continuum as representing flake implements damaged in use or deliberately blunted.[30] The collection also includes four irregular and somewhat battered cores (of which Fig. 14, 70 is one).

The most interesting piece for consideration is shown in Fig. 14, 72. This small flake (of pale creamy brown flint) has had its butt removed by inverse retouch, which extends down the two sides of the piece: the tip of the flake has been squared off by direct retouch. Flakes retouched on the butt end are rare in the English literature (this may be partly a product of this feature not being considered worth noting). The affinities of this piece seem to lie with relatively recent 'gun-flints' and 'strike-a-lights'. In 1917, Chandler[31] claimed to have found evidence for a gun-flint factory in Kent, although he does not seem to have found any actual finished pieces. About a decade later, Clay[32] described similar material from Wiltshire, illustrating one 'finished strike-a-light or gun-flint'.[33] In its general size and shape, and particularly in the way its butt has been removed by inverse retouch, Clay's flint is closely comparable to the one from Elsted. The evidence for either of these flints being strike-a-lights or gun-flints is somewhat circumstantial, as systematic work on these categories of artefacts has yet to be done. The most comprehensive work on the subject was written by Mr. S. B. J. Skertchly in the later nineteenth century.[34] Skertchly had a Brandon knapper make a collection of gun-flints for him. Most of these were of the well-known rectangular wedge-shaped type, but he also illustrates a few others, including what he called an 'English strike-a-light'.[35] Fig. 14, 71 illustrates an example of this type from the Coastal Plain, east of Chichester, West Sussex.[36] This could be seen as a better made specimen of a general type also represented by the Elsted example. There are six of these in Barbican House, Lewes, one of which is contained in a tied cloth bag, along with eleven other flints of the traditional gun-flint type, the whole being described as 'gun-flints in original bag'; this would suggest that Skertchly's 'English strike-a-light' could also be a gun-flint. Skertchly also illustrates a 'French strike-a-light' and a 'German gun-flint'.[37] but it appears that the first of these at least was actually made in England. To avoid confusion, therefore, it is suggested that Skertchly's terminology is not adopted: 'but strike-a-light' would seem quite adequate.

In conclusion, there is clearly insufficient material to indicate any pre-Roman settlement on the site of the excavation. If we are to avoid assigning the struck flint to the Roman occupation, we could perhaps invoke the agency of field manuring in the third or second millennia B.C.[38]

SUMMARY OF ENVIRONMENTAL EVIDENCE (by Helen Porter)
(with charcoal identification by C. Cartwright)

Due to the base-rich, shallow soil covering the site, very little organic material was preserved in any context. Table 5 summarises investigations carried out on soil samples collected. Only the seed identifications are shown in full; soil descriptions, results of mechanical analysis and pollen counts are with the site notebooks. Pollen was sparse and badly preserved. Only carbonised seeds are listed: all samples contained numbers of sub-fossil specimens.

Charcoal samples discussed and shown in Table 6 were collected during the course of excavation, and are not included in Table 5.
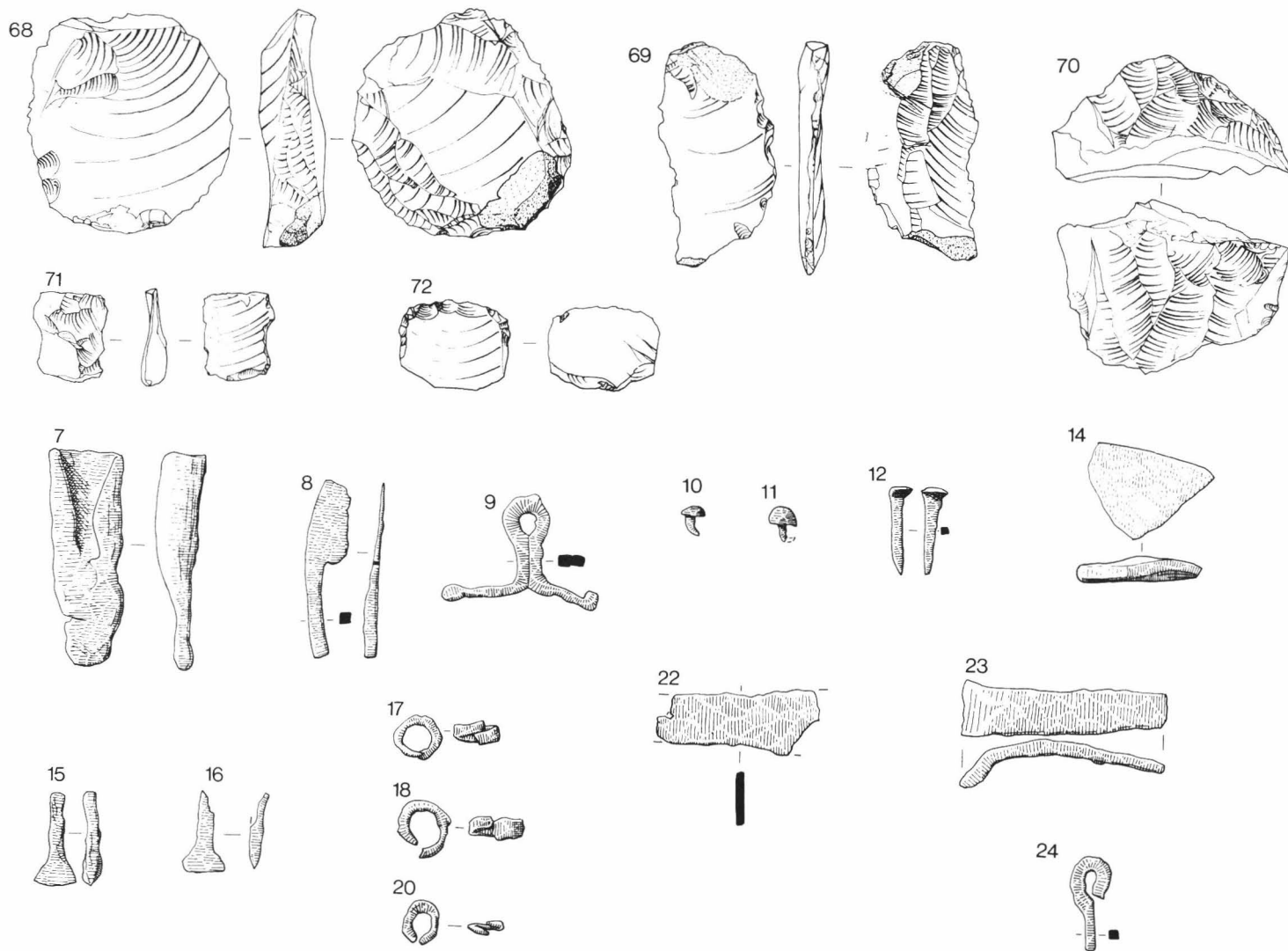
Fig. 14.   The Small Finds, Scale 1:4 and flints, Scale 1:2.

Charcoal analysis (see Table 6)

The largest and greatest variety of species was found in the layers of the courtyard area. This was the only feature, except for two postholes (Features 2 and 10) which contained *Quercus* sp. (oak). Although there was no great amount of charcoal found anywhere on the site, the absence of oak from most of the postholes is interesting.

The possible presence of *Calluna* (heather) is an unusual one, it is more typical of light, acidic soils. However, it could have been a component of some stage of scrub growth.

There is not enough evidence to make any comments about the assemblage of species. *Corylus* (hazel) and *Craetegus* (hawthorn) are ubiquitous in the area, and would have served a great variety of purposes on the site. *Betula* (birch) is well-represented, and *Alnus* (alder) too, neither of which are found in the vicinity of the site today. They may have flourished in disturbed, open areas close to human occupation.

THE ANIMAL BONES (by Amanda Saunders)

All the bone fragments excavated (1,915) were examined. A large number of fragments (1,056) were unidentifiable because they had been broken up, probably by butchery and subsequent trampling. The bone was fairly well preserved (soil pH in pits 6.8-8.9). Fragment and minimum numbers are tabulated below in Table 7: unstratified bones are omitted. For fragment numbers, teeth in mandibles and maxillary fragments are not counted and mandibles are counted as skull fragments. For minimum numbers, bones within layers were fitted together wherever possible, and ages were taken into account. Minimum numbers were calculated within stratigraphic units, several layers being combined where other evidence, such as pottery, suggested that this was permissible. The 1 m squares would give an unnaturally high minimum number count, while to ignore what little stratigraphy there is and combine all the bones would also be unrealistic, giving very low counts.[39] Goats may have been present but were not distinguishable, so the sheep/goat group will be referred to as sheep throughout.

Skull and tooth fragments occur in large proportions, suggesting that animals were butchered on the site and that a fair amount of bone erosion has taken place. A few cut marks were observed on certain mandibles (cattle and sheep) and on some long bones and ribs. Cut bones are more easily weathered and this may explain why more butchered bones did not occur. Long bones do not appear to have been split for marrow. One or two long bones of cattle appeared to have been chewed by a dog. The weathered surface pattern of other cattle long bones gave the false impression of having been gnawed by rodents. The only pathology to be found was an unevenly worn cattle maxillary molar, presumably caused by loss of a tooth from the mandible, and a sheep's third mandibular molar with only two cusps; these are really only variation, not pathology.

The lack of complete mandibles made age estimation unreliable in most cases. Where possible, dates of epiphyseal fusion were used to test the information, or to add to it.[40]

These ages give little information as they are so imcomplete. No bones showing arthropathic changes due to old age were found.

It is hard to draw valid conclusions from such a small assemblage of bones. Sheep and cattle are well represented throughout. It is interesting to note that from bone fragment numbers it would appear that cattle are more numerous than sheep, while from minimum numbers sheep predominate. Pig is present but not numerous. It is impossible to say whether or not the dogs were eaten. The animals appear to have had healthy teeth and jaws show no signs of malnutrition. A list of measurements of the more complete bones is available with the notebooks.

GENERAL DISCUSSION

The flints recovered possibly indicate activity in the Neolithic or Bronze Age but the first settlement evidence is of third to second century B.C. date. This is later than Beacon Hill[41] and may imply a shift in emphasis from the Chalk to the Chalk and Upper Greensand. Although there are no Iron Age features the pottery shows that the site continued to be occupied from then on into the Roman period.

The location at present seems inhospitable; as the hill is very exposed, and both water supply and communications are distant (Fig. 2). These factors would not have been so severe in the Roman period as the water table has probably fallen, causing the springs to the east and west of the site to recede from it. There has also been a shift in communications; the present roads are the result of mediaeval developments and the now defunct Greensand Way, probably a Roman road, ran close to the site. The position on the Chalk/Upper Greensand boundary is at the centre of the site's potential resource area as it is probable that the Gault to the north was still wooded (see above). This can be seen as a stage in a longer term progression; the Iron Age settlement initially on the Chalk, the Roman on the Chalk/Upper Greensand boundary and the mediaeval village in the centre of the Greensand bench, This change probably being the result of an increase and diversification in land use.

In an attempt to estimate the area farmed from the site, all known Romano-British sites in the region were plotted (Fig. 3). If it is assumed that they lay in the centres of their resources areas, their boundaries can be suggested (Fig. 3). In the absence of sites on the Gault, this area is assumed to have been unoccupied. This method gave a potential resource area of *c*. 450 ha., which probably represents the maximum of exploitable land for the site. A problem is posed by the sites on the Downs (Fig. 3) which may simply be shepherds' huts on the open downland, dependent on the Greensand settlements. Whichever applies, the economic importance of sheep to the site is confirmed by the excavation (see above). The coincidence of parish boundaries with those suggested by this method may support the validity of the approach. Whilst this might represent an unchanged pattern, it cannot be used as evidence for continuity of settlement from Roman to Mediaeval as it may only have been determined by the same environmental factors.

If the above is adopted the limited environmental and bone evidence fits the pattern. Most of the livestock (predominantly sheep) was on the Downs, with the pigs also in the woodland, and the extremely fertile Upper Greensand as arable supporting wheat and probably other crops. This pattern has remained relatively unchanged in this area until the present century.

The bias of the area excavated precludes detailed discussion of the degree of 'Romanisation'. There are, however, a few notable features which are worth mentioning. Firstly, the presence of imitation Gallo-Belgic forms of pottery indicates an early Romanising influence, already noted on other Sussex sites[42], though no increase in its intensity can be traced after this. Indeed the only evidence (however slight) of stone buildings is of third century date (see above), this does not confirm Cunliffe's conclusions about early villa development.[43] The evidence for a terminal date is inconclusive owing to the ploughing, however, the area examined *need not* have continued beyond the early fourth century. This negative evidence has little value in refuting theories of continuity into the Saxon period.

Authors: Mark Redknap, Institute of Archaeology, London.
           Martin Millett, Merton College, Oxford.

TABLE 1. Occurrence of Coarse Pottery Types in the Features

Category of ware	Form	Courtyard (30, etc.)	Courtyard (35, etc.)	Ditch (phase i)	Ditch (phase ii)	Feature 2	Feature 3	Feature 4	Feature 5	Feature 6	Feature 8	Feature 11	Post Hole 15	Post Hole 25	Post Hole 36	Ploughsoil	Total
A	1.1	2	—	—	1	—	—	—	—	—	—	—	—	—	—	1	4
	1.2	3	—	—	1	—	—	—	—	—	—	—	—	—	—	—	4
	1.3	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	1.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
B	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	4	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
	5	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
C	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	7	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
	8	5	—	—	1	—	—	—	—	—	—	—	—	—	—	—	6
	9	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
D	10	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	11	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	12	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	13.1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2
	13.2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	13.3	4	—	1	—	—	—	—	—	—	—	1	—	—	—	—	6
	13.4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	13.5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	14	7	—	1	—	—	—	—	—	—	—	—	—	—	—	—	8
	15.1	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	3
	15.2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	16	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	17	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
D	18	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	19	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	20	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	21	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3
	22.1	12	—	1	2	—	—	—	—	—	—	2	—	—	—	—	17
	22.2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	23	3	—	—	1	—	—	—	—	—	—	—	—	—	—	—	4
	24	48	—	—	1	—	—	—	—	—	—	—	—	—	—	—	49
	25	4	—	—	1	—	—	—	—	—	—	—	—	—	—	—	5
	26.1	2	—	1	1	—	—	—	—	—	—	—	—	—	—	—	4
	26.2	16	—	1	2	—	—	—	—	—	—	—	—	—	—	—	19
	27	10	—	—	1	—	—	—	—	—	1	2	—	—	—	—	14
	28	8	—	1	1	—	—	—	—	—	—	—	—	—	—	—	10
	29	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	30	9	—	1	5	—	—	—	—	—	—	—	—	—	—	—	15
	31	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	32	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	33	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	34	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	35	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	Both from one
E	36	2	—	1	1	—	—	1	—	—	—	—	—	—	—	—	5
	37	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	38	9	—	—	—	—	—	—	—	1	—	1	—	—	—	—	11
	39	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	40	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3

TABLE 1. Occurrence of Coarse Pottery Types in the Features

Category of ware	Form	Courtyard (30, etc.)	Courtyard (35, etc.)	Ditch (phase i)	Ditch (phase ii)	Feature 2	Feature 3	Feature 4	Feature 5	Feature 6	Feature 8	Feature 11	Post Hole 15	Post Hole 25	Post Hole 36	Ploughsoil	Total
E	41	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
	42	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	43	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	44	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	45.1	16	—	2	3	—	1	—	—	—	—	—	—	—	—	—	22
	45.2	5	1	—	—	—	—	—	—	—	—	—	—	1	—	—	6
	46.1	9	—	—	—	—	—	—	—	—	—	—	—	1	—	—	10
	46.2	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
	47	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	48.1	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	2
	48.2	13	—	1	3	—	—	—	—	1	—	2	—	—	—	—	20
	48.3	8	—	1	3	—	—	—	—	—	—	—	—	—	3	—	15
	48.4	5	—	—	2	—	—	—	—	—	—	—	—	—	—	—	7
	48.5	1	—	2	2	—	—	—	—	—	—	—	—	—	—	—	5
	49	3	—	2	1	—	—	—	—	—	—	—	—	—	—	—	6
	50	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3
	51.1	43	—	5	4	1	1	—	1	—	—	1	—	—	2	—	58
	51.2	1	—	—	2	—	—	—	—	—	—	—	—	—	—	—	2 from same
	52	12	—	1	1	—	—	—	—	—	—	2	—	—	—	—	16
	53	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	54.1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
	54.2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	55	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2
	56	1	—	1	—	—	—	—	—	—	—	—	—	—	1	—	3
	57	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	58	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	59	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
F	60	1	—	—	1	—	1	—	—	—	—	—	—	—	—	—	3
	61	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	62	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	63	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	64	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2
	65.1	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	6
	65.2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	65.3	1	—	—	1	—	—	2	—	—	—	—	—	—	—	—	4
	66	3	—	—	—	2	—	—	—	—	—	—	—	—	—	—	5
	67	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
	68	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	2
	69.1	27	—	—	1	—	—	—	—	—	2	—	—	—	—	—	30
	69.2	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2
	69.3	9	—	—	1	—	—	—	—	—	—	—	—	—	—	—	10
	70	4	—	—	1	—	—	1	1	—	—	—	—	—	—	—	7
	71.1	2	—	—	2	—	—	—	—	—	—	—	—	—	—	—	4
	71.2	1	—	—	2	—	—	—	—	—	—	—	—	—	—	—	3
	71.3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	72	4	—	—	1	—	—	—	—	—	—	—	—	—	—	—	5
	73	7	—	—	2	—	1	—	—	—	—	1	1	—	—	—	12
	74	5	—	1	1	—	—	—	—	—	—	—	—	—	—	—	7
	75	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
H	76	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
	77	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	78	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
P	79	—	—	—	3	—	—	—	—	—	—	—	—	—	—	—	3

TABLE 2
Percentage of Fabric Groups in Features and Layers (correct to one decimal place)

Feature/layer	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	Total adj. wt. in kg.
Courtyard/30	1.1		4.7	29.1	47.6	16.0	0.1	0.6	0.1	0.4	0.1	0.1	0.3		0.2	55.121
Courtyard/35	15.7		10.4	22.2	26.1					25.2						0.575
Ditch i/20	3.7		2.7	22.5	51.0	19.2		0.8								0.725
Ditch i/23	3.2		0.6	27.7	42.4	24.8			1.3							0.314
Ditch i/82	0.8		6.0	45.8	35.1	10.6		0.3	1.1						0.3	3.531
Ditch i/83				5.3	88.9	5.8										0.377
Ditch i/84					88.2										11.8	0.051
Ditch ii/7	2.1	0.2	3.9	33.1	42.1	16.6		0.3		0.1			1.5			2.948
Ditch ii/57	0.3		7.0	34.5	39.2	17.1		0.8	1.1				0.2	0.1	0.9	8.787
Feature 2/8	3.8			3.8	44.0	25.2	4.4								18.9	0.159
Feature 2/27			72.7		27.3											0.022
Feature 3/11	5.6		12.8	23.0	19.1	37.0		2.6								0.392
Feature 4/12	9.9		2.8	3.6	41.1	39.7							1.4		1.4	0.705
Feature 4/19	33.7		20.7		10.1	35.5										0.169
Feature 4/25	8.7		4.4		17.4	69.6										0.230
Feature 5/3	5.0		4.5	5.0	46.4	39.0										0.992
Feature 6/5			2.7	2.5	75.7	16.4		2.6								0.951
Feature 7/61				100.0												0.020
Feature 8/42				28.6	28.6	42.9										0.140
Feature 9/50			50.0		16.7	16.7		16.7								0.060
Feature 10/85					100.0											0.020
Feature 11/60			12.7	34.4	44.4	7.4									1.1	0.945
Feature 12/59			40.0		20.0	40.0										0.050
Post Hole 4/4					100.0											0.025
Post Hole 7/70			100.0													0.010
Post Hole 14/63		100.0														0.004
Post Hole 15/32				75.5		15.1		9.4								0.053
Post Hole 18/41						100.0										0.025
Post Hole 19/74				100.0												0.020
Post Hole 22/33					100.0											0.025
Post Hole 25/48				37.0	44.4	18.5										0.108
Post Hole 27/47			45.5	54.5												0.033
Post Hole 28/72					100.0											0.007
Post Hole 36/44		4.1	6.6	13.2	59.5	14.9									1.6	0.605

TABLE 3. Occurrence of nails within features

Layer	Broken	Complete	Details	Total	Studs
1	7	—	—	7	1
2	13	—	—	13	7
Ditch i	4	2	30mm. bent 38mm.	6	9
Ditch ii	12	1	37.5mm.	13	9
Courtyard (30)	43	2	68mm. 23mm.	45	23
44	2	—	—	2	1
12	2	—	—	2	—
19	1	—	—	1	3
Total	84	5	—	89	53

TABLE 4. Occurrence of Whetstones on site

Layer No.	Greensand	Carstone	Bunter Pebble
Topsoil	1	—	1
Courtyard	4	2	—
Ditch i	2	—	1
Ditch ii	1	—	—
2	2	—	—
Total	10	2	2

TABLE 5

	Seeds	Charcoal	Mech. An.	Pollen
Courtyard Layer 30	*Rumex? acetosa*	NID	*	
Ditch Layer 23	—	—	*	*
Layer 82	—	NID	*	
Feature 1 Layer 18	—	NID	*	*
Feature 2 Layer 8	—	NID	*	*
Layer 27	—	3 bits *Quercus* sp.	*	*
Feature 3 Layer 11	—	NID	*	
Feature 4 Layer 12	4 *Triticum vulgare* 1 *Triticum dicoccum* 5 *Rumex? acetosa* 2 *Polygonum? perspicaria* 6 *Chenopodium alba*	NID	*	
Feature 5 Layer 24	—	NID	*	
Post Hole No. 15**	1 ?*Triticum vulgare* 2 *Polygonacaca* 5 *Chenopodiacaca*			

Key
*   Mechanical analysis or pollen analysis done.
NID   No identifiable charcoal present.
**   Result of on-site flotation carried out by D. Williams.

Layer 12 is the top of a pit, and a 250 g sample produced the only appreciable number of seeds. The weed species are all common to cultivated, disturbed ground, and only one cereal could be positively identified as Emmer *(T. dicoccum)* as all were poorly preserved and incomplete.

TABLE 6

Feature	Layers	Hazel	Hawthorn	Birch	Oak	Alder	NID	
Courtyard	2, 29, 30	*	*	*	*	*	*	
Ditch (i)	20					*		*Calluna*
Ditch (ii)	7, 57	*	*	*			*	
Feature 2	8, 9						*	
Feature 4	12, 25	*	*	*		*	*	
Feature 5	3		*					
Feature 7	61						*	
Feature 10	85				*			
Feature 11	60		*					
Post Hole 3	14	*						
Post Hole 4	4		*				*	
Post Hole 25	48		*					
Post Hole 29	80		*					
Post Hole 36	44			*		*		
Post Hole 37	52			*				

NID=No charcoal could be identified.

TABLE 7. Cocurrence of bone in features: a=longbone fragments, b=skull fragments, c=teeth fragments, d=rib fragments, e=vertebral fragments, f=scapula fragments, g=pelvis fragments, h=horn-core. Features 9 and 12 and post-holes 7, 18 and 35 each contained one or two pieces of unidentified bone

		Courtyard 30, etc.	Ditch phase i	Ditch phase ii	Feature 2	Courtyard 35, etc.	Feature 3	Feature 4	Feature 5	Feature 6	Feature 8	Feature 11	Post Hole 9	Post Hole 15	Post Hole 25	Post Hole 27	Post Hole 36
Cattle	a	66	2	16	30			3	3	1	1	1					
	b	114	16	71	1				1	1							1
	c	63	5	15	10				3								
	d	10	1	1				1									
	e	16	5	3						1							
	g														+		
	h															1	
total		269	29	106	41			4	7	3	1	1		+	1		1
minimum		6	2	2	1			2	2								
Sheep	a	54	5	6	1	1		+	2		1						1
	b	52	4	3	3	1		2	2								
	c	100	3	11	1	1	3	1	2		4	3					
	d	17	5					1		1							
	e	13															
	f									1							
total		236	17	20	5	3	3	4+	6	2	5	3					1
minimum		11	4	2	2			2			2						
Pig	a	6		1									1				
	b	3		1	1												
	c	20	1	1	1												
	e	1														1	
total		30	1	3	2								1			1	
minimum		2															
Dog	a	4															
	b	4															
	c	1	1														
	d	7															
total		16	1														
minimum		2															
Horse	a	14	1			2											
	b	1															
	c	5				1											
	d																
	e					1											
	f					1											
total		20	1			5											
minimum		1															
Deer	a																
	b																
	c			3													
TOTAL		571	49	132	48	8	3	8	13	5	6	4	1	+	1	1	2
Unident.		690	104	50	83		16	68	15	5		7		7			

TABLE 8

Cattle	Sheep	Dog
Courtyard 30, etc.		
1 at 15-18 mo. (30 mo.)*	1 under 24 mo. (40 mo.)	
2 under 36 mo. (42 mo.)	9 over 18 mo. (36 mo.)	
3 over 28 mo. (42 mo.)	1 foetal	
Ditch phase i		
1 at 18-30 mo. (30 mo.)	1 under 24 mo.	1 over 3 mo.
Ditch phase ii		
1 under 60 mo.	1 under 24 mo. (40 mo.)	
	1 over 18 mo. (36 mo.)	
Feature 3		
	1 under 24 mo. (40 mo.)	
Feature 5		
	1 over 18 mo. (36 mo.)	
Feature 4		
	1 foetal	
Feature 8		
	1 foetal	

*The first age (in months) refers to modern breeds (usually improved) and the second (in brackets), in the case of cattle, to nineteenth-century Chaveau cattle. In the case of sheep, the second age refers to semi-wild, hill sheep (from 1790).[40]

Footnotes

Note:

[1] M. Bell and T. Tatton-Brown "A field survey of the parish of Elsted and adjacent areas, West Sussex", *Bull. Univ. London Inst. Archaeol.* 12 (1975), 58-66.

[2] M. D. Hooper *'Hedges and Local History'* (London, 1971).

[3] I. D. Margary *'Roman Ways in the Weald'* (London, 1948), first used this term.

[4] Tansley *'Britain's Green Mantle: past, present and future'*.

[5] P. 451 in S. H. King's contribution to H. C. Darby and E. M. J. Campbell's *'The Domesday Geography of South East England'* (Cambridge, 1971).

[6] S. Applebaum "Some observations on the economy of the Roman villa at Bignor, Sussex", *Britannia* 6 (1975), 118-32.

[7] We would like to thank Mr. A. C. Braithwaite for arranging the resistivity survey and aerial photography, and Mr. A. Clark for discussing the results of the latter.

[8] B. Hulthén "On choice of element for the determination of quantity of pottery", *Norwegian Archaeol. Rev.* 7, 1 (1974). 1-5.

[9] See pp. 77-81 in M. Millett (ed.) *'Pottery and the Archaeologist'*, Occasional Paper No. 4 of London Institute of Archaeology (1979).

[10] M. Millett "The Dating of Farnham (Alice Holt) Pottery", *Britannia* 10 (1979), 121-37.

[11] Thanks to Dr. M. G. Fulford for discussing these sherds with me.

[12] N. H. Brewster "Corbridge—its significance for the study of Rhenish ware", *Archaeol. Aeliana* (3) 50, 205-216.

[13] M. G. Fulford *'New Forest Roman Pottery'* (Oxford, 1975).

[14] B. W. Cunliffe "The Saxon Culture Sequence at Porchester Castle", *Antiq. J.* 50 (1970), 67-85.

[15] B. W. Cunliffe *'Iron Age Sites in Central Southern England'* (London, C.B.A., 1976) Fig. 19, nos. 69-70; Fig. 20 no. 86 from Torberry and Fig. 36, nos. 26-28, Fig. 38, nos. 51-5 from Chalton.

[16] *Op. cit.* note 15, fig. 20, no. 83; also B. W. Cunliffe *'Iron Age Communities in Britain'* (London, 1974), Fig. A28, no. 16.

[17] I. Hodder "The distribution of two types of Romano-British pottery in the West Sussex Region", *Sussex Archaeol. Collect.* 112 (1974), 86-96.

[18] See now Millett *op. cit.* note 9 (pp. 35-48) for discussion of these figures in relation to other sites.

[19] M. Millett "An approach to the Romano-British pottery of West Sussex" in Freke (ed.) *'The Archaeology of Sussex Pottery'*. *Sussex Archaeol. Collect.* 118, this volume.

[20] Op. cit. note 19.

[21] B. W. Cunliffe *'Fifth Report on the Excavations on the Roman Fort at Richborough, Kent'* (Oxford, 1968), 77.

[22] S. S. Frere and J. R. St. Joseph "The Roman Fortress at Longthorpe" in *Britannia* 5 (1974), Fig. 32, No. 79.

[23] B. W. Cunliffe *'Excavations at Portchester Castle Vol. I: Roman'* (London 1975), Fig. 113, 54-5.

[24] R. Hartridge "Excavations at the prehistoric and Romano-British site on Slonk Hill, Shoreham, Sussex", *S.A.C.* 116 (1978), Fig. 11, nos. 4 and 15.

[25] A. C. C. Brodribb *et. al. 'Excavations at Shakenoak Farm, near Wilcote, Oxfordshire, Part I'* (Oxford, 1970), note 20, Fig. 41, Nos. 16-17.

[26] A. Robertson, *et al. 'Bar Hill: A Roman fort and its finds'* (Oxford, 1975), Fig. 31, No. 1; and S. S. Frere *'Verulamium Excavations Vol. I'* (London, 1972), Fig. 68, No. 90.

[27] H. F. Cleere "Roman Domestic Ironwork, as illustrated by the Brading, Isle of Wight, Villa" *Univ. London Inst. Archaeol. Bull.* 1, 55.

[28] C. Isings *'Roman Glass from dated finds'* (Groningen, 1957).

[29] I would like to thank Dr. M. H. Newcomer for helpful comments on technological and other matters concerning flint assemblages. The opinions expressed are my own.

[30] The situation is very different when dealing with undisturbed material in its original stratified context, *cf.* R. Tringham *et al.* "Experimentation in the formation of edge damage: a new approach to Lithic analysis", *J. Field Archaeol.* 1 (1974), 171-196. The potential and some of the problems of surface collections will be considered by the author in a forthcoming article.

[31] R. H. Chandler, "Some supposed gun flint sites", *Proc. Prehist. Soc., East Anglia* 2 (1918), 360-65.

[32] R. C. C. Clay "A gun-flint factory site in south Wilts.", *Antiq. J.* 5 (1925), 423-26.

[33] *Op. cit.* (note 36).

[34] S. B. J. Skertchly, *'On the manufacture of gun-flints (etc)'* Memoir of the Geological Survey of England and Wales, H.M.S.O.

[35] *Op. cit.* (note 31), Fig. 20.

[36] Found during field-survey work directed by the writer (see *Sussex Archaeol. Soc. Newsletter*, 15 (1975), 68).

[37] *Op. cit.* (note 31), Figs. 21 and 61.

[38] Cf. J. Radley and L. Cooper, "A Neolithic site at Elton: an experiment in field recording", *Derbyshire Archaeol. J.* 88 (1969), 37-46.

[39] For discussion of this see D. K. Grayson "On the methodology of faunal analysis" in *American Antiquity* 38, 432.

[40] J. M. Ewbank *et al.* "Sheep in the Iron Age: a method of study", *Proc. Prehist. Soc.* 30, 425 and also I. A. Silver in E. Higgs and D. Brothwell (eds.) *'Science in Archaeology'* (London, 1969), 283.

[41] B. W. Cunliffe, *'Iron Age Communities in Britain'* (London, 1974). Fig. 13.21 suggests that Harting Beacon Hill went out of use in the first century B.C. See also O. Bedwin, *Sussex Archaeol. Collect.* 116 (1978), 225-240.

[42] B. W. Cunliffe *'The Regni'* (London, 1973), 94-95.

[43] See review of Cunliffe op. cit. note 47 by Rivet in *Britannia* 5, 490-491 for criticism of his views on the early development of villas in Sussex.

OCKLYNGE HILL ANGLO-SAXON CEMETERY EASTBOURNE

by Patricia M. Stevens

In March 1970 a rescue excavation took place on the site of a known Anglo-Saxon cemetery on Ocklynge Hill, Eastbourne. Originally envisaged as a ten-day rescue excavation, the work extended over a period of four months due to the additional features uncovered; two medieval millsteads and the site of a horizontal windmill, not included in this report. A total of twenty-six skeletons were recovered in various states of preservation, in general without grave goods, only six having knives, being of the type usually associated with seventh century cemeteries. In an effort to put the discoveries into some order, the writer has produced a gazetteer of Anglo-Saxon sites in the Eastbourne area.

INTRODUCTION

Location

The Ocklynge Hill Anglo-Saxon cemetery at Eastbourne is situated at TV 595 008, on the A22, approximately 2.4 km north of Eastbourne town centre, just above the 60 m contour (Fig. 1).

The site now lies well within the Eastbourne borough boundary, but, at the time of the 1822 and 1909 discoveries of skeletal material, the cemetery was adjacent to the Parish boundary of Eastbourne and Willingdon partially on the Willingdon side. Eastbourne first extended their boundaries in 1911, to become a County Borough (Fig. 2).

The site of the cemetery, excavated in 1970, which the following report records, is now occupied by the development called 'Saxon Place'.

Topography

Ocklynge Hill is on a detached, Middle Chalk spur of the eastern escarpment of the South Downs overlooking Willingdon Levels to the east.

In medieval times the area would appear to have been open land with scrubby growth. Eastbourne Tithe Map (1842), shows the area as open farmland. The first development of the site took place in 1912, when numbers 99 and 101, Willingdon Road were built, but the greatest development has taken place since the last war, the area now being densely developed.

Historical background

It is clear that within Eastbourne we have two distinct nucleations of Anglo-Saxon burials, namely those of the Pagan period centred around Mill Gap and those of the transitional period on Ocklynge Hill. (Fig. 2).

The discoveries centred around Mill Gap would appear to be those of a Pagan cemetery; the graves in the main being furnished with elaborate grave goods and within the 30 m contour.
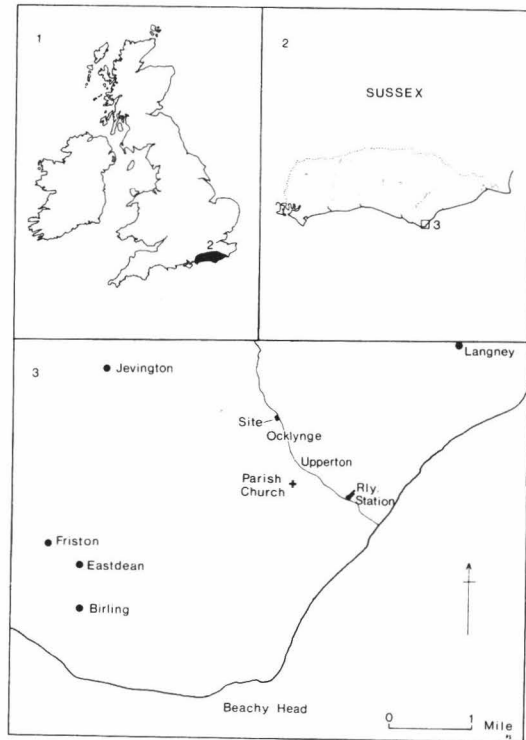
Fig. 1. Location of Ocklynge Hill Anglo Saxon Cemetery, Eastbourne.
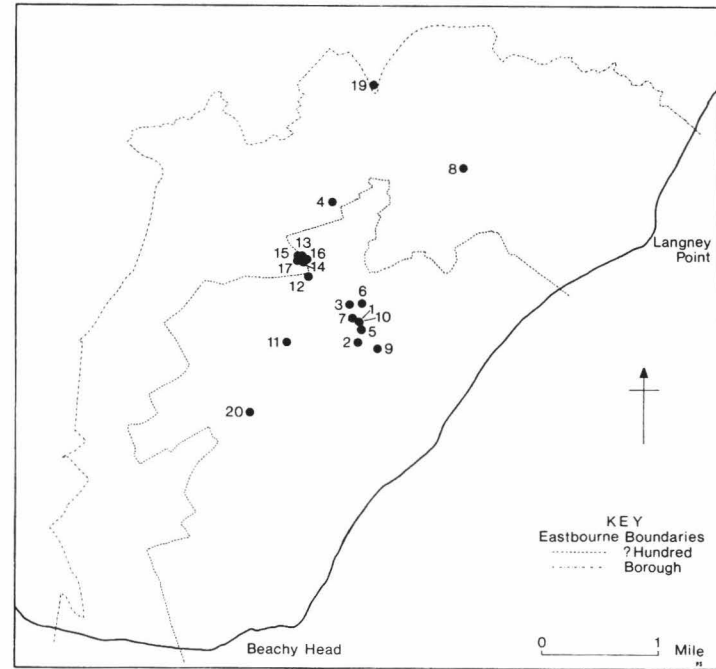
Fig. 2. Plan showing Anglo Saxon sites within, and close by the Eastbourne Borough Boundary.

Sites 12-17 are obviously all part of the same cemetery. Site 12, said to have stretched from Bakers Mill to the New cemetery (Ocklynge), was discovered during cutting away the crown of the hill. Budgen (1921) thought that the area of the discoveries was from Bakers Mill northwards to the crown of the hill. But, the evidence of the bones having been re-interred by the Rev. Dr. Brodie (Vicar of Eastbourne) suggest that the bones were found within the Parish of Eastbourne and not in the Parish of Willingdon, as would have been the case if Budgen's hypothesis were correct. The record of the 'black pottery', site 13, may refer to a fragment of Saxon pottery and not a complete pot. No Saxon pottery was discovered during the 1970 excavations, but two fragments of Iron Age pottery were found, so it may be that the earlier find was also Iron Age.

The other associated discoveries further support the theory that the area is probably a transitional or early Christian cemetery, formerly lying partly within Willingdon Parish.

Two possible habitation sites within the area are Kitcheners Furlong (site 6) and Enys Road (site 9).

In the outlying areas, but still close to the area under discussion Holly Grange (site 4) would appear to be the most important, where there appears to be the site of a possible Saxon tumulus, with a small cinerary urn nearby, together with other fragments and calcined human bone. It is possible that we have another cemetery and/or settlement site in this area. The escutcheon from a hanging bowl from an unlocated site in Willingdon, would also point to a settlement site.

Reason for excavation

All the previous discoveries of burials in the area were chance finds and apart from the excavation of the two skulls in 1921 and the skull excavated by Karl Wilkinson at the same time, there had been no planned archaeological excavation.

The opportunity to excavate arose when the two houses, 99 and 101 Willingdon Road were demolished prior to redevelopment. The excavation was undertaken at the request of the Research Committee of the Sussex Archaeological Society, and the attempt was made to excavate and record as much that remained as possible. The site was dug entirely without funds, the Research Committee having none available for rescue excavation.

Method

The earlier discoveries had been made mainly during roadworks and prior to building on the plots to be excavated. In order to cover as much of the area as possible in the time available, trenches were first cut in the front garden of the two plots, and later, random trenches were dug in the two plots (Fig. 3). The excavated areas were all hand-dug by volunteers with further assistance from boys from the fifth and sixth forms of the Eastbourne Grammar School. The first burials discovered, numbers 1-6, were all fragmentary, lying between 5 and 8 cm below the surface. The burials 7-20, were found between 18 and 25 cm below the present ground level (Fig. 4). The remainder were uncovered by workmen when digging the foundations, after removing a concrete path which we had been unable to dispose of, having no funds.

Money was collected in a site donations box, and enough was collected to pay for a tin wheelbarrow and a machine to backfill the site.

While the excavations were in progress, Mr. Bob Rushbridge of Lower Willingdon, made a colour cine film, recording aspects of the work.
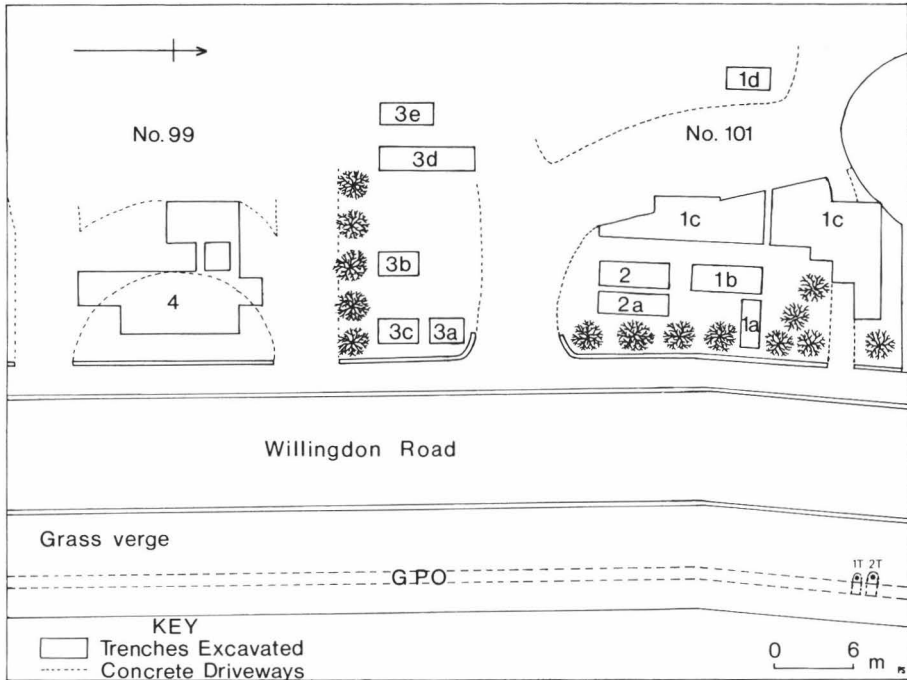
Fig. 3. General Plan showing areas excavated relating to the Anglo Saxon cemetery.
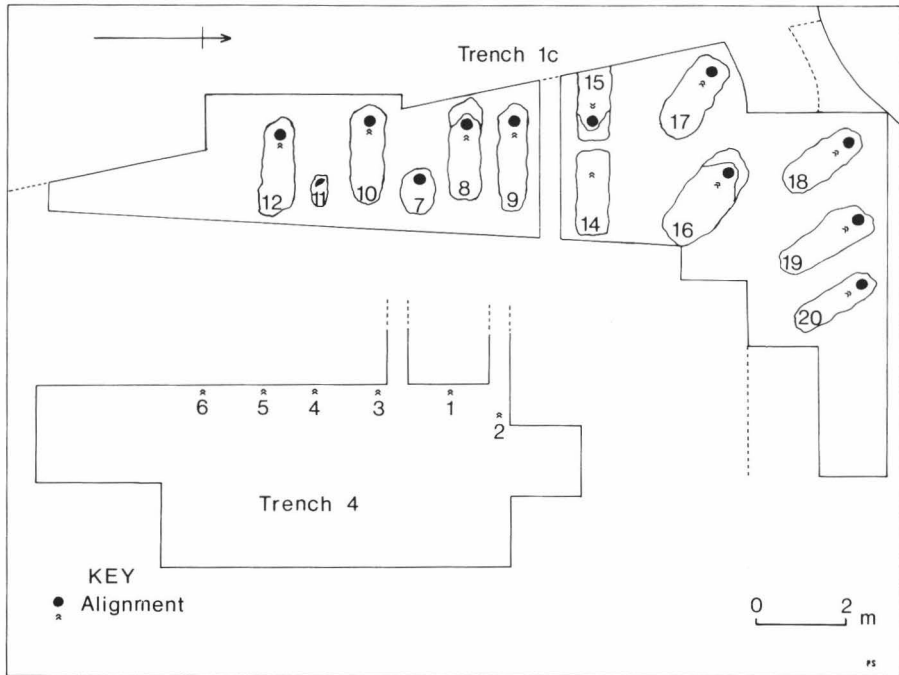
Fig. 4. Distribution plan of the burials and their alignment.

LIST OF BURIALS

GRAVE	SHAPE	ORIENT:	SEX	AGE	CONTENTS	FINDS
1	No grave	W-E	F	30	Very fragmentary—no remains below femur. Bones present: Lower jaw, R. arm lying by side, L. arm crossing from elbow to abdomen, hand in pelvis. The anterior dentition showed signs of mild enamel hypoplasia, possibly as a result of illness in childhood.	—
2	No grave	W-E	ind.	Ad.	Very fragmentary. Bones present: Distal femur (R. & L.), proximal (R. & L.), tibia and fibula, R. & L. patella.	—
3	No grave	—	ind.	Ad.	Unidentifiable fragments.	—
4	No grave	—	ind.	Ad.	Very fragmentary remains of tibia and/or fibula.	—
5	No grave	—	ind.	Juv.	Unidentifiable fragments.	—
6	No grave	W-E	?M	Ad.	Bones present: Distal (R. & L.) Tibia and fibula, some feet bones. Articular surfaces of most of the foot bones showed evidence of mild osteoarthritis.	Clay pipe stem
7	Scoop oval 76 x 71 cm	W-E	ind.	Inf. ?6 mnth.	Lying on L. side. Bones present: fragmentary remains of skull, with remains of humerus and ?radius. The teeth indicate an age of not more than six months, and it is possible that this infant died at birth.	—
8	Well cut 183L x 58cm deep. Rectangular excavation for skull.	W-E	F	35	Bones present: Skull (pushed to R.), R. & L. humerus, radius and ulna, pelvic fragments, R. & L. femur, patella, tibia, fibula and feet (incomplete). Both arms lying across into pelvis. Of slender build and about 165 cm. in height. Oral health was fair, there being only slight calculus accumulation. There were indications of moderate periodontal recession. Of interest was the total destruction of both mastoid processes by an inflammatory erosive disease. Such chronic mastoiditis is not uncommon, and can lead to a variety of hearing disorders. Measurement: Tibia max. length—35.4 cm.	—
9	Rectangular Well cut 209 x 79 cm 76 cm deep Ill. Fig. 5	W-E	F	18-22	Skull crushed and broken due to pressure. R. arm straight by side, L. arm crossed from elbow, hand in pelvis. Bones present: R: ribs, clavicle, scapular, humerus, radius, ulna, hand (incomplete); L: humerus, radius, ulna, hand (incomplete), some ribs, lumbar vertebrae, sacrum, pelvis, R. & L. femur, patella, tibia, fibula, feet (incomplete). Of slender build, approx. 165 cm in height. The right mastoid region showed marked erosion and destruction, probably of pathological origin (c.f. burial 8). Measurements: Humerus max. length—31.7 cm. Radius max. length—22.7 cm.	Tanged knife— from L. side of burial, partially under pelvis. (Fig. 6).
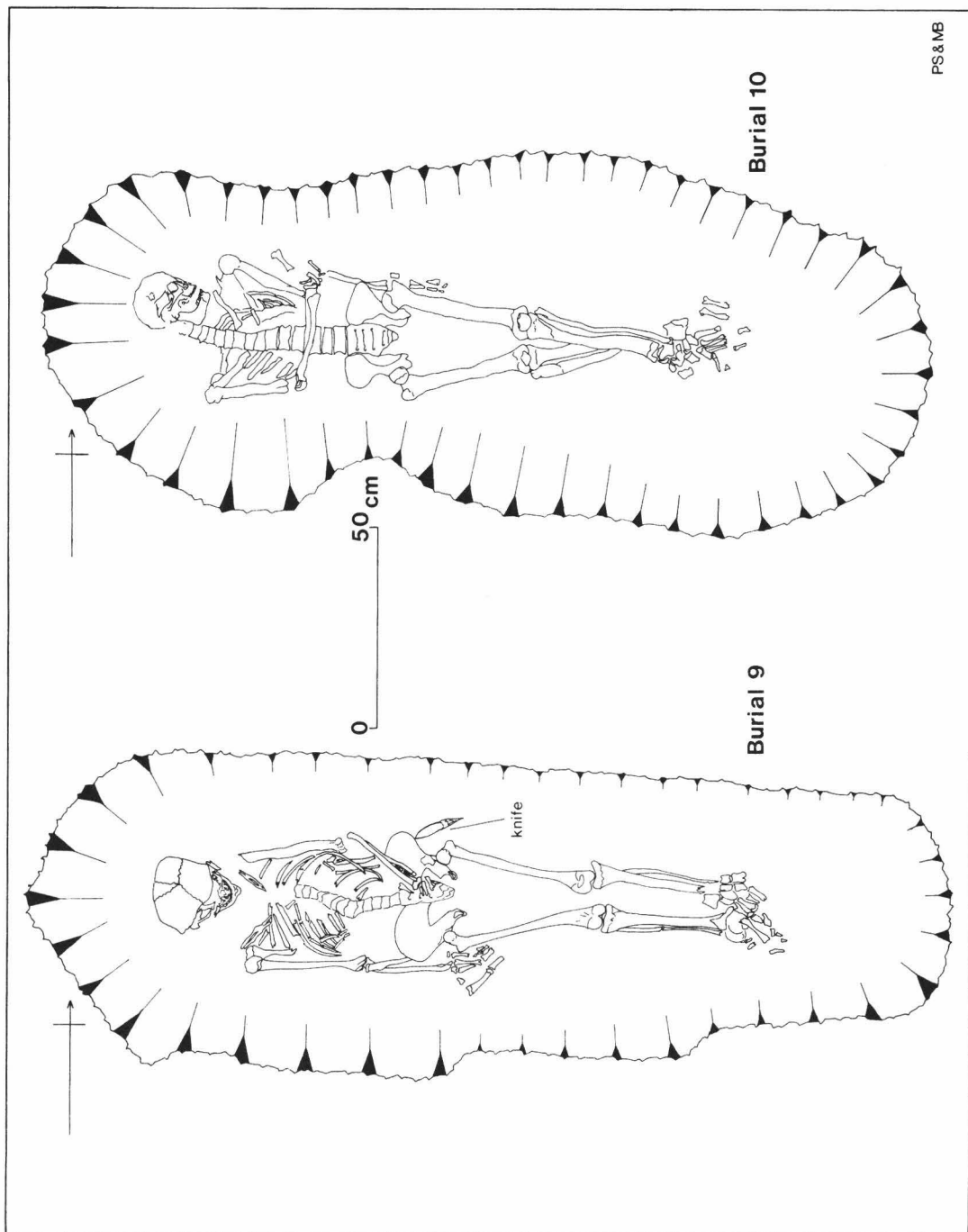
Fig. 5. Plan of Burials 9 and 10.

GRAVE	SHAPE	ORIENT:	SEX	AGE	CONTENTS	FINDS
10	Rectangular fairly well cut. 188 cm long 66 cm deep Ill. Fig. 5	W-E	F	Over 50	Skull present but broken by vandals. L. arm straight by side, R. arm crossed from elbow across thorax, hand on L. elbow. Feet crossed L. over R. Bones present: R. & L. scapula and clavicle, humerus, radius, ulna, hands, ribs, vertebrae, sacrum, pelvis, R. & L. femur, patella, tibia, fibula and feet. About 160 cm in height, was markedly muscular. Oral health was remarkably good for such an age, there being only slight calculus accumulation and traces of enamel hypoplasia in the anterior dentition. Osteoarthritic damage was noted in the lumbar and sacro-iliac regions, and signs of rheumatoid arthritis in the right foot. Of interest was a small foramen in the right olecranon fossa. This is a common feature which is transmitted genetically. The most striking feature of the cranium was the considerable thickness of the vault. Intense, rather spicular, proliferation of the diploic tissue had reached a thickness of 20 mm in places. The nature of this proliferation resembled Pagets Disease, but in the absence of any corroborative pathology from the post-cranial skeleton, this vault thickening should probably be seen as a symptom of senile remodelling of the skeleton. Measurements: Femur max. length—41.5 cm Tibia max. length—34.5 cm	D-shaped metal buckle at a depth of 2.75 cm. above R. shoulder area. Pottery sherd probably Iron Age. Identified by M. G. Bell as similar to that from Bishopstone (Bell 1977) Fig. 6.
11	Shallow oval. 77 x 22 cm	W-E	ind.	Inf. ?less than 12 mnth.	Skull fragmentary, together with fragments of some long bones and ribs.	—
12	Fairly well cut rectangular 190 x 61 cm	W-E	M	30-35	Skull inclined to L., R. arm bent at elbow, hand in pelvis, L. arm laid across R. at wrist, hand in pelvis. Bones present: R. & L. scapula, clavicle, humerus, radius, ulna, hands (incomplete), ribs and vertebral fragments. R. & L. femur, patella, tibia, fibula, feet (incomplete). About 167 cm in height, this man suffered with rheumatoid arthritis, there being joint degeneration in both feet, and in the right hand and elbow. The right hip showed osteoarthritic damage. Of particular note was the complete blockage of the left auditory meatus by a bony ridge. Measurements: Humerus max. length—34.2 cm Fibula max. length—35.8 cm Radius max. length—25.0 cm Femur max. length—44.2 cm Tibia max. length—37.5 cm	—
14	Fairly well cut. Rectangular 175 x 61 cm 84 cm deep	W-E	M	Ad.	Disturbed burial, no skull. Bones present: R. & L. tibia and fibula, some ribs and vertebrae, and foot bones. Some foot bones and patella found in fill above foot of grave.	Tanged knife found on R. side of burial. Pottery sherd, probably Iron Age. Identified by M. G. Bell as fabric 5 in Bishopstone (Bell 1977). Fig. 6.
15	Well cut Rectangular with excavation for skull. 71 cm deep.	E-W	ind.	7	Skull collapsed on lifting. Bones present: Fragmentary remains of R. & L. humerus, L. clavicle and some ribs. The maxilla showed signs of mild periodontal recession. Two Wormian bones were noted in the right arm of the Lambdoidal suture. These are a genetic trait of unknown aetiology.	Tanged knife—L hip area. Fig. 6. 2 clay pipe stem fragments. 2 18th century pottery fragments. William III halfpenny from layer above grave.

GRAVE	SHAPE	ORIENT:	SEX	AGE	CONTENTS	FINDS
16	Well cut Rectangular with excava-tion for skull. 213 x 152 cm 71 cm deep.	WNW-ESE	F	20-22	Skull collapsed on lifting. R. arm bent at elbow, forearm across abdomen, hand under L. elbow. L. arm bent at elbow, forearm over R. with hand in pelvis. Bones present: R. & L. scapula, clavicle, humerus, radius, ulna, hands, ribs, verte-brae, pelvis. R. & L. femur, tibia, fibula, patella, feet bones (mixed). Skull inclined to L. This female stood some 183 cm in height. Muscular impressions were well pronounced on all long bones, indicating a powerful physique. Her teeth were in excellent condition. Measurements: Humerus max. length—36.0 cm Femur max. length—50.0 cm Tibia max. length—40.5 cm	?metal pin. Tanged knife L. shoulder area. Fragment of sheet lead on floor of grave, in skull excavation. Fig. 6.
17	Fairly well cut. Rectangular 157 x 102 cm 81 cm deep.	WNW-ESE	?F	7-8	Skull pushed to L. R. arm by side, L. arm crossing into pelvis. Bones present: R. & L. clavicle, humerus, radius ulna, ribs, vertebrae, pelvis. R. & L. femur, tibia, fibula and feet, all in poor state of preservation. Both lower dm_1 bore small protruberances of enamel on their labial surfaces. These did not appear to be pathological in origin.	Tanged knife—lying in pelvis. Fig. 6.
18	Fairly well cut. 182 x 92 cm 38 cm deep	WNW-ESE	F	40-45	Skull inclined slightly to R. Both arms laid with hands in pelvis. Bones present: R. & L. humerus, radius, ulna, hands. L. scapula, clavicle. Vertebrae, pelvis and ribs. R. & L. femur, patella, tibia, fibula and feet (mixed) 160 cm high. There was a moderate degree of periodontal recession, and slight dental calculus. The left mandibular condyle showed signs of osteoarthritic damage. Both external auditory meati bore small tori auditivi, a common genetic trait. The right olecranon fossa was perforated by a small foramen. Measurements: Fibula max. length—33.4 (est.) cm Tibia max. length—33.0 cm	Clay pipe stem.
19	Fairly well cut. 198 x 97 cm 38 cm deep	WNW-ESE	M	30-35	Skull turned to R.—mouth open. Both humeri by side of body, with forearms crossed R. over L., hands in pelvis. Bones present: R. & L. clavicle, humerus, radius, ulna and hands; ribs, vertebrae, pelvis, coccyx; R. & L. femur, patella, tibia, fibula and feet. Approximately 185 cm in height. A moderate degree of osteoarthritis was evident in the lumbar region. The distal ends of the R. radius and ulna bore small areas of inflammatory periostitis. This would be expected to accompany some trauma to this part of the body, although no such trauma could be identified. There was slight arthritic degeneration of the R. elbow. Measurements: Humerus max. length—37.5 cm Femur max. length—50.2 cm Ulna max. length—30.0 cm	Tanged knife Fig. 6. 4 flint pebbles from under skull.
20	Poorly cut 175 x 91 cm 28 cm deep	WNW-ESE	?M	approx. 6	Skull fairly intact. L. arm parallel to body, R. humerus by side, forearm crossed into pelvis. Bones present: L. clavicle, R. & L. scapula, humerus, radius, ulna, hands; vertebrae, ribs, pelvis, coccyx; R. & L. femur, tibia, R. fibula and foot. Bones fragmentary. The maxilla showed signs of perio-dontal recession.	—

AFTER COMMENCEMENT OF LEVELLING FOR BUILDING

21/22	No grave	?W-E	M	30	Bones lifted by workmen. Bones present: skull fragments, some long bones, and scapula. This burial was a muscular 172 cm in height. The L. scapula showed slight arthritic degeneration. Measurement: Tibia max. length—37.5 cm	—
23/24	No grave	?W-E	M F ind.	20-25 6-7	The remains of three burials uncovered and pushed out of position by JCB. Bones present: skull fragments, some long bones and part of pelvis. A few adult teeth were located. A child of 6-7 years of age was identified by the presence of teeth.	—

GRAVE	SHAPE	ORIENT:	SEX	AGE	CONTENTS	FINDS
25/26	No grave	?W-E	M ind.	Ad. 8	The remains of two burials disturbed by JCB and recovered from spoil deposited by same. Bones present: skull fragments, pelvis and long bones; some feet and/or hand bones. The adult was of sturdy build, six teeth were located from this individual. The left elbow was markedly osteo-arthritic and bore a large entepicondylar exostosis. The second individual was represented by three teeth.	—
T2A	No grave	?	ind.	Ad.	Fragments of part of the feet bones of one individual in poor condition. No other bones or grave visible.	Fragments of bones of sheep *(Ovis aries,* L.)

From GPO CABLE TRENCH on East Side of Willingdon Road

GRAVE	SHAPE	ORIENT:	SEX	AGE	CONTENTS	FINDS
1T	Trench cutting through burial	W-E	ind.	?4	Incomplete, well preserved. Bones present: Part of skull with jaw in E facing section of trench. Some rib fragments and broken long bones.	—
2T	Trench cutting through burial	W-E	ind.	?4	Incomplete, well preserved. Bones present: Skull in E facing section of trench. Some ribs and long bones. The L. orbit showed a raised area of cribra orbitalis. This condition is fairly common, but its cause remains unknown.	—

HUMAN REMAINS (by T. P. O'Connor)

Remains from 28 burials were submitted for study. These were examined for information regarding, age at death, sex and pathology. Complete long bones were measured in order to allow some calculation of stature. Figures given for stature should be regarded as very approximate, as no allowance can be made for people with disproportionately sized limbs. Estimations of age at death are largely based on tooth eruption in juveniles and tooth attrition in adults.

The health of this population appears to have been quite good. The incidence of dental caries is extremely low when compared with other pre-Medieval British populations. There were four cases of periodontal disease. This term covers several gum and jaw inflammations, and is often virtually endemic in early populations. Two cases of enamel hypoplasia were noted. These were not severe, but indicate some arrest of enamel growth during childhood. This could well have been due to illness, particularly bearing in mind the apparent concentration of deaths between three and eight years. This period of life can perhaps be seen as the time when a child begins to mix extensively with other children outside the family, and thus to contract infectious diseases. Life expectancy was not high, about nine-tenths of this group being dead by the age of forty. The occurrence of two cases of chronic mastoiditis is interesting, as is the occurrence of two perforated olecranon fossae. This latter phenomenon is one of the few skeletal traits which can definitely be said to be transmitted genetically. The same is probably true of tori auditivi, and Wormian bones (Burials 18 and 15). This group of skeletons serves to illustrate one of the major failings of palaeopathology. Burial 16 was the skeleton of a tall, powerfully built young woman, apparently in excellent health. Why she died it is impossible to say. There are very many soft tissue diseases which can kill without leaving a mark on the skeleton, and it seems that this range of diseases must be blamed for the demise of at least the younger individuals in this cemetery, as none had any obvious fatal pathology identifiable in the skeletal remains.

Summary
The major population statistics are listed below.

Total number of males	—	8 (7 adults, 1 immature)
Total number of females	—	8 (7 adults, 1 immature)
Indeterminate	—	12 (4 adult, 8 immature)
Average height of males	—	172 cm (average of 4)
Average height of females	—	162 cm (average of 4)

Distribution by age groups:
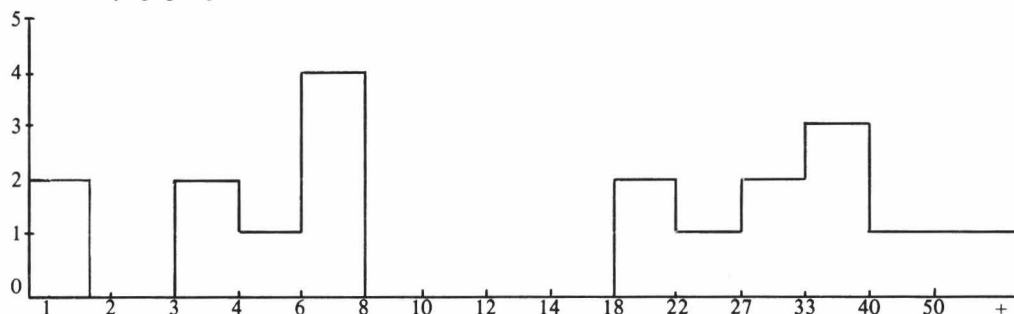
Proportion of carious teeth: total erupted teeth — 11:282

— 3.9%

GRAVE GOODS (by G. K. Craddock)

The majority of the graves in the cemetery were unfurnished; only six out of 28 contained grave goods. Only grave 16 contained anything in addition to an iron knife, namely three fragments of iron, and these were so corroded that it was impossible to determine their function. They may have been fragments of a single object. Several of the knives have sloping backs, and these appear frequently in late graves. (Hawkes and Meaney 1970). The other objects found with the burials were an iron nail and a piece of lead. Illustrations Fig. 6.

Descriptions

Grave 9   Tanged iron knife, broken in two pieces. Curved back; straight cutting edge. There appear to be fragments of wood attached to the tang. Very corroded.
Length 11.9 cm.

Grave 14   Tanged iron knife, broken in two pieces. Appears to have a curved back and a straight blade, but corrosion is extreme.
Length 12.4 cm.

Grave 15   Tanged iron knife, with curved back and straight blade. Very corroded.
Length 9.9 cm.

Grave 16   Tanged iron knife broken into three pieces. Back curves gently towards the point. Straight cutting edge. Very corroded.
Length 10.0 cm.
Iron nail. Length 4.5 cm.
Fragment of iron, probably cylindrical in section. Very corroded. Length 3.0 cm.
Fragment of iron L-shaped. Two pieces fused together by corrosion. Both probably cylindrical in section. Length 4.0 cm.
Iron object, cylindrical in section. This object has a pronounced foot at one end, and a slight curve at the other. Object very corroded. Length 8.4 cm.
Fragment of lead. Length 3.3 cm.

Grave 17   Tanged iron knife. The back curves immediately after the tang and gradually falls away to the point. Very corroded. Length 14.7 cm.

Grave 19   Tanged iron knife, broken into two pieces. Back of the blade slightly curved. Cutting edge straight. Very corroded.
Length 11.0 cm.

CONCLUSIONS

In all, an area of approximately 85 square metres was excavated and from this we recovered twenty-six burials, eight male and eight female; in both cases, seven adult and one immature. Of the remainder there were four adult and eight immature of indeterminate sex. The range being eighteen adult and ten immature, the ages from one year or less to fifty plus. As only six of the burials had grave goods in the form of iron knives with sloping backs, and, apart from one burial the graves were aligned roughly W-E, it would seem fair to assume that the cemetery is probably of a late seventh century date.

The nearest similar cemetery to that at Ocklynge is Crane Down, Jevington (Holden 1969). The cemetery was on a spur of the downs just above the 90 m contour, and the graves were aligned

roughly W-E as at Eastbourne, and with few grave goods. Miss V. I. Evison, F.S.A., examined the evidence at Jevington and suggested that the cemetery might well be of a late seventh century date.

The extensive discoveries at Eastbourne, in the area between the 'new' cemetery (Ocklynge), and the crown of the hill, point to the fact that there must have been a large settlement in the area, or perhaps several smaller settlements. A large proportion of the burials would have been in Willingdon Parish (Fig. 2), but an equally large proportion was within the Parish of Eastbourne, and would have been within the boundary of the Hundred of Borne. The presence of Saxon burials on Parish Boundaries has been discussed with particular reference to Wiltshire by Desmond Bonney (1972), in whose opinion, they seem to reflect boundaries of a Roman or Iron Age date. It is interesting to note that Ocklynge cemetery is in close proximity to an established Iron Age site (Salvage c.1952) in Windmill Close, and that the two fragments discovered in the fill of two of the graves were also Iron Age. The odd burials away from the main cemetery at Ocklynge Hill, e.g. Holly Grange (site 4) lie very close to the boundary of the Hundred of Borne, perhaps reflecting the pattern that Bonney describes.

On the evidence of the discoveries of 1822 and 1909, Strickland (S.A.C. LII 1909) proffered the theory of a battle cemetery, because of the 'knives and spears' found "sticking" in the skulls and ribs of the skeletons. This theory can now be disputed with confidence. It is clear that when a body deteriorates, objects buried with it are likely to come in contact with the bones. In the case of the early discoveries it is more than likely that the remains of knives had fallen into positions which would give the appearance of the person having been stabbed. The theory can be further disputed, for the burials excavated in 1970 consisted of a normal range of men, women and children, some having lived to be quite elderly, and apparently in quite good health. There is no evidence of deliberate injury or weapons with any of the graves excavated. The apparent concentration of deaths in the three to eight year age group, was perhaps the time when a child began to mix with others outside the immediate family group. Death would probably have been caused by some soft tissue disease which would leave no evidence.

In general the burials had been carefully made. The graves were fairly well cut and in some cases a cranial scoop had been made. No associated structures were observed. There was some evidence of lack of care in burial (grave 8), where although the grave had been well cut, with a cranial scoop, the burial itself gave the impression of being placed in a grave perhaps not large enough. The skull, inclined to the right, had obviously been forced in. Burial 15, a child of about seven years, was the only contra-orientated interment. There was a cranial scoop, so there can be no doubt about its intended alignment. Such contrary alignments have been recorded in similar contexts, but as yet no satisfactory explanation has been forthcoming (Hawkes & Meaney 1970).

There was no overlapping of graves in the cemetery, so presumably they had been marked in some way.

The slight variations in alignment of the graves may be attributed to the time of year at which the burials took place. The alignment would therefore vary according to the seasonal position of the sun. If this is so, those burials aligned WNW-ESE would have taken place in early winter.

Turning from Ocklynge Hill, where there is no evidence for settlement, to the Mill Gap area, where between 1876 and 1961, we have discoveries which are certainly of a Pagan origin. Martin Bell (1978) states that 'Possibly the most complete sequence of Anglo-Saxon occupation on the downland has been uncovered as the result of building work on the Upperton ridge at Eastbourne.' The cemetery here is of a probable sixth century date, and some of the burials have elaborate grave goods. To the north-east of the cemetery, at Kitcheners Furlong (site 6), loom weights were
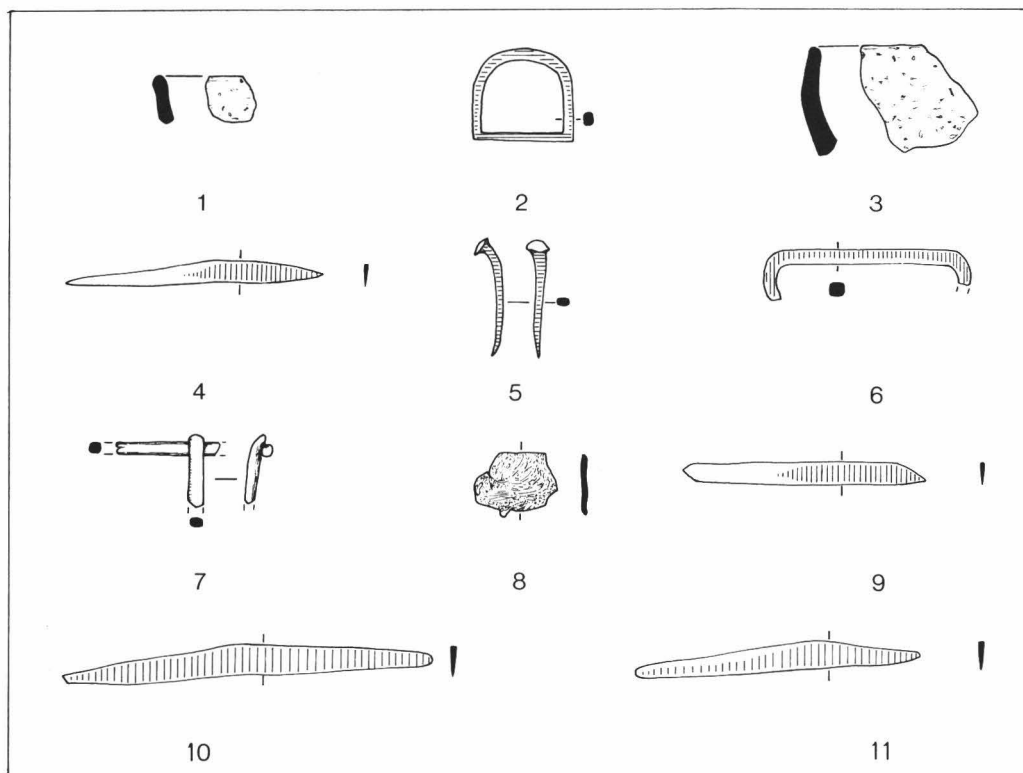
Fig. 6. Metalwork and pottery from the cemetery drawn by Mrs. Lysbeth Drewett, 1/3 natural size. Nos. 1 & 2 from Grave 10; No. 3 from Grave 14; No. 4 from Grave 15; Nos. 5-9 from Grave 16; No. 10 from Grave 17; and No. 11 from Grave 19.

discovered, and to the south, at Enys Road, loom weights and fragments of a late Saxon pottery vessel were recovered. These two sites, together with the scatter of Roman pottery and Saxon glass scattered over the western slopes of Upperton ridge enforce this theory.

The Parish Church of St. Mary was built between 1160 and 1180, and the church guide states that a wooden Saxon church stood on the site prior to the stone-built church. This is an unsupported hypothesis. Immediately opposite the church, archaeological excavations (the Eastbourne Urban Medieval Excavation Project) have been uncovering medieval foundations (Stevens 1978). No evidence of Saxon settlement of any kind has been discovered on this site. The writer feels that the Ocklynge Hill area is a more likely site for the church, especially taking into consideration the size of the cemetery.

Perhaps the movement of settlement was gradual and only completed with the building of the church at Borne. The area immediately north of the church was likely to have been swampy, as this is the area of the source of the Bourne Stream, therefore the settlement is most likely to have been on the Upperton slopes or the western slopes of Ocklynge Hill.

The skeletal remains and teeth charts, together with the metal-work, are deposited at Barbican House Museum, Lewes.

ACKNOWLEDGEMENTS

Author: Patricia M. Stevens, 10 Calverley Road, Eastbourne, Sussex.

REFERENCES

Ade, C. 1848 'Anglo Saxon coins at Milton Street', *Sussex Archaeological Collections* 1, 38-40.

Argus, Evening (1970) 24 March, 1 April, 6 April.

Baldwin Brown, G. 1915 *The Arts in Early England* 4, 675, 684. John Murray; London.

BH. Acc. Register A. Barbican House Accessions
Register A: 27.80   D: 1977.6
           B: 55.47   E: 1977.6
           C: 49.19   F: ?27.213
           52.18   G: 39.14

Bell, M. G. 1977 'Excavations at Bishopstone', *Sussex Archaeological Collections* 115.

Bell, M. G. 1978 'Saxon Settlements and Buildings in Sussex' *The South Saxons* (Ed. P. Brandon), 49. Chichester: Phillimore.

Bell, M. G. 1979 'Saxon Sussex' *Archaeology in Sussex to AD 1500* (Ed. P. L. Drewett) C.B.A. Research Report No. 29.

Bonney, D. 1972 'Early Boundaries in Wessex' in *Archaeology and the Landscape* (Ed. P. Fowler), 168. London: Baker.

Bradley, R. 1968 *Sussex Archaeological Society Archaeology Map.*

British Museum, *Department Medieval and Later Antiquities.*

Budgen, W. 1921 *Eastbourne Chronicle* 30 April.

Budgen, W. 1922 'An Anglo-Saxon Cemetery' in *Sussex Arhaeological Collections* 63, 241-3.

Budgen, W. 1925 Reports of Local Secretaries in *Notes and Queries, Sussex Archaeological Collections* 66, 239.

Budgen, W. 1926 'Anglo-Saxon Burials' in *Sussex Notes and Queries* 1, No. 4, 112.

Chambers, G. F. 1910 *East Bourne Memories*, 8-9.

Chronicle 1921a, 9 April, 30 April.

Gazette, 1970, Eastbourne Gazette 8 April.

Guide 1929, *Brief Guide to Exhibits in the Museum, c.* 1929.

Hawkes, S. C. and Meaney, A. L. 1970 'Two Anglo-Saxon Cemeteries at Winnall' *The Society for Medieval Archaeology,* Monograph Series No. 4.

Herald 1970, Eastbourne Herald 4 April.

Holden, E. W. 1969 'Anglo-Saxon Burials at Crane Down, Jevington' in *Sussex Archaeological Collections* 107, 126.

Lower, M. A. 1848 'Square Leaded Cist from Willingdon' in *Sussex Archaeological Collections* 1, 160.

Lower, M. A. 1866 'Square Leaded Cist from Willingdon' Illustration in *Sussex Archaeological Collections* 18, 63.

Meaney, A. 1964 *Gazetteer of Anglo-Saxon Burial Sites*, 248.

Mortimore, W. J. 1953 'Friston Hill Skeleton' in *Sussex Notes and Queries* 13, Nos. 13 and 14, 290.

Salvage, S. 1972 Windmill Close Iron Age Pottery on loan to Eastbourne Natural History and Archaeological Society.

Sussex Archaeological Society Research Committee Report (1961) in *Sussex Notes and Queries* 15, Nos. 11 & 12, 250.

Spurrell, H. 1882 'Antiquarian Notes on the District' in *Transactions of the Eastbourne Natural History Society,* New Series 1, 30-31.

Steer, J. 1970 Unpublished note presented to the author.

Strickland, W. 1909 'A Supposed Battlefield near Eastbourne' in *Sussex Archaeological Collections* 52, 193.

Stevens, L. 1978 'Jesus House and Vicarage Site' an Interim Report *Eastbourne Natural History and Archaeological Society.*

Stevens, P. M. 1971. *Sussex Archaeological Society Newsletter* 4, 2.

'Medieval Britain in 1970' in *Medieval Archaeology* 15, 134.

1929 'A Saxon Spearhead at Eastbourne' in *Sussex Notes and Queries* 2, No. 6, 193.

Whitley, H. M. 1884 'Notice of a Cinerary Urn found at the Mill Gap, Eastbourne' in *Transactions of the Eastbourne Natural History Society,* New Series Vol. 1, 6.

Whitley, H. M. 1890 'Recent Archaeological Discoveries in the Eastbourne District' in *Sussex Archaeological Collections* 37, 111-112.

Whitley, H. M. 1893 'Notes on the History and Topography of Eastbourne' in *Transactions and Reports of the Eastbourne Natural History Society* New Series 2, 368.

Whitley, H. M. 1894 'Recent finds of Pottery in the Eastbourne District' in *Sussex Archaeological Collections* 39, 94.

Wilson, A. E. 1941 'The Early Saxon Settlements' in *Sussex Archaeological Collections* 82, 45.

Woodford, C. 1972 *Portrait of Sussex* 17 and 82, London: Robert Hale.

GAZETTEER OF EARLY ANGLO-SAXON SITES IN EASTBOURNE

1	603998	1822	The Grange site. Regularly spaced graves with knives, spear heads, umbos, bound wooden drinking bucket, armlet, stirrup and swords.	Spurrell (1882) M. Whitley (1890) Guide (1929) Meaney (1964)
2	601997	1884	Mill Gap-Carew Road area. Fragments of Saxon drinking vessels mixed with Roman pottery abundantly scattered over west slope of hill.	M. Whitley (1884) M. Whitley (1890) Baldwin Brown (1915)
3	602001	1893	New road from St. Johns Mill to Tutts Barn. ?Pennanular brooch found when building road.	M. Whitley (1893) M. Whitley (1894)
4	599016	pre 1925	Holly Grange, 'near south west entrance to Eastbourne Corporation Park' (Hampden Park). Small Anglo-Saxon cinerary urn and other fragments found. A small low mound recorded by Grinsell—?Saxon tumulus noted near the same site. The site cleared and redeveloped (1975) nothing further recovered.	W. Budgen (1925)
5	604997	1926	Building at northern limit of Torfield Estate. Two skeletons recovered, with one small knife, aligned W-E. Found at a depth of about 92 cm.	W. Budgen (1926) Meaney (1964)
6	60350018	1927	Kitcheners Furlong. Four whole and two half loom weights found in a rubbish pit.	BH. Acc. Register A: Bell (1979)
7	604998	1929	Top of St. Annes Road, on the east side by the enclosure wall of Eastbourne Waterworks Co. reservoir. A Saxon spear head and nearby part of a shield boss and two large studs and human teeth.	SNQ (1926)
8	610028	1941	Hydneye—Saxon Cemetery recorded and said to have been excavated—no evidence to substantiate either comment.	A. E. Wilson (1941)
9	606995	1955	Enys Road. Found during trenching, large fragments of pottery vessel with strap decoration and Saxon loom weights.	BH. Acc. Register B: Bell (1979)
10	603998	1961	College of Further Education, St. Annes Road. An Anglo-Saxon sword and knife found during building operations on new site for college.	SAS Research Com. (1961)
11	593995	c1968	At junction of Dacre Road and Victoria Drive. Two late Saxon body sherds found.	R. Bradley (1968)
12	5950056	1822	Willingdon Road, Bakers Mill to new cemetery. Upwards of 100 skeletons discovered when the crown of the hill was being cut away for road improvement. A large number of 'carving knives' were found. The bones were collected and 'buried in a pit in the churchyard' by Dr. Brodie, the vicar.	H. M. Whitley (1890) Chambers (1910) Baldwin Brown (1915) Budgen (1921) Meaney (1964)
13	59510073	1909	Levelling at the top of Willingdon Road. Trench of skeletons about 61 cm below surface, shoulder to shoulder and a further row lying parallel with burials about 304 cm apart. Trench uncovered for a few hundred metres until it went under adjoining land. 'Many' skeletons recovered. One knife found and 'one example of black pottery vessel was found'.	Budgen (1921) Budgen (1922) Meaney (1964)
14	59490077	1921	Further levelling at Willingdon road about 122 cm from site 13. Seven or eight burials disturbed, feet pointing east, 146 to 156 cm deep and about 122 cm apart. Probably same row as those in site 13. 3 skulls recovered, one of these excavated and reconstructed by the late K. Wilkinson.	Chronicle (1921a) Chronicle (1921b) W. Budgen (1922) BH. Acc. Register C:
15	59750045	1955	During building the turn-a-round at the south end of the service road to the bungalows immediately north of site 17. About six skeletons found at a depth of 76 cm, feet pointing east.	Steer (1970)
16	5952008	1970	G.P.O. trench on east side of Willingdon Road. 2 skeletons recovered by workmen.	Argus (1970) BH. Acc. Register D:
17	595008	1970	Rescue excavations on west side of Willingdon Road, after demolition of Nos. 99 and 101 Willingdon Road. Remains of 26 burials recovered, some with knives and two fragments of Iron Age pottery.	Herald (1970) Gazette (1970) Argus (1970) Stevens (1971) Med. Archaeology (1972) Woodford (1972) BH. Acc. Register E:

FURTHER ANGLO-SAXON SITES—NEAR EASTBOURNE

18			Milton Street. Anglo Saxon Coins found.	C. Ade (1848)
19	c604031	1847	Square leaded cist with corded ornament found at Willingdon when the railway was extended from Polegate to Eastbourne.	M. A. Lower (1848) M. A. Lower (1866) BH. Acc. Register F:
20	584990-572004	1894-5	Between Eastbourne Downs Golf Links and Willingdon Hill. 11 Saxon or Norman Spear heads found while excavating for flints.	BH. Acc. Register G:
21	545999	c. 1953	Friston Forest. Skeleton found while digging post holes about 92 cm deep in chalk. No associated finds apart from two Early Iron Age pottery fragments. Burial thought to be Anglo Saxon.	W. J. Mortimore (1953) Meaney (1964)
22		c. 1958	Willingdon. Escutcheon from a hanging bowl, with scroll design, from unlocated site. 'On permanent loan' at British Museum.	British Museum
23	56650315	1965-6	Crane Down, Jevington. Part of inhumation cemetery disturbed by chalk quarrying.	Holden (1969)

EXCAVATIONS IN THE PARISH CHURCH OF ST. THOMAS THE MARTYR, PAGHAM, 1976

by D. J. Freke, B.A., M.A.

A substantial part of the nave and crossing of the church of St. Thomas the Martyr at Pagham was excavated prior to the installation of central heating. Two periods of stone building pre-dating the present standing structure were uncovered, and a fragment of a tenth-century ring-headed cross was found in a grave filling.

INTRODUCTION (Fig. 1)

In 1976, Mr. F. Aldsworth, Archaeological Adviser on the Chichester Diocesan Arts Council, informed the Sussex Archaeological Field Unit that underfloor central heating ducts were to be installed in the parish church at Pagham. This would entail considerable disturbance of the archaeological layers under the floor of a church which was considered to have a possible late Saxon wall still visible,[1] and which is in an area of proven middle and late Saxon activity. With the kind permission of the incumbent, the Reverend J. Maynard, and the essential co-operation of the contractors, Betteridge and Sons, excavations under each half of the nave and crossing were undertaken in two ten-day periods in October and November, 1976.[2] The work was directed by the author, assisted by Gilian Craddock, B.A., Ian Blair, students from the Institute of Archaeology, London, and local voluntary help. Only the areas which were to be disturbed by the ducting and the re-laying of the floor were excavated. None of the graves detected were emptied, so Myres' suggestion that there might be an extensive pagan Saxon cemetery in the area was not checked.[3] In this report the term 'stage' is used to describe the accumulated standing fabric at a particular time. The term 'phase' is used to denote a period of building activity. They may describe the same thing, for example, Stage 1 is also Phase 1.

HISTORICAL BACKGROUND

The earliest evidence of occupation in the area is the Roman material discovered in the excavations at Becket's Barn in 1974.[4] Middle Saxon pottery was found in the same excavations. The sixth-seventh century pot found in the churchyard in 1954[5] is further evidence for middle Saxon settlement in the area. Pagham is the subject of a transaction dated *c.* 680 in which Caedwalla gave the area to Bishop Wilfred, the missionary to the South Saxons, although the charter recording this transaction is probably not as early as the seventh century.[6] A church in Pagham is first mentioned in Domesday Book. Fleming considered that this referred to the chapel of St. Andrew[7] whose ruins are in the grounds of 'Little Welbourne' west of the church, but there is no evidence to suggest that this structure is any earlier than the early thirteenth century.[8] The excavations reported here showed fairly conclusively that the Domesday church and probably at least one earlier church were on the site of the present parish church of St. Thomas the Martyr.

THE EXCAVATIONS (Fig. 3)

The removal of the pews from the south side of the nave and crossing made available for

PAGHAM CHURCH OF ST THOMAS the MARTYR

EXCAVATIONS 1976

LEWES

CHICHESTER

0   25 K.

CHICHESTER

PAGHAM

BOGNOR

Church

Beckett's
Barn

0   5 K

0   100   200 M

SELSEY

Lagoon
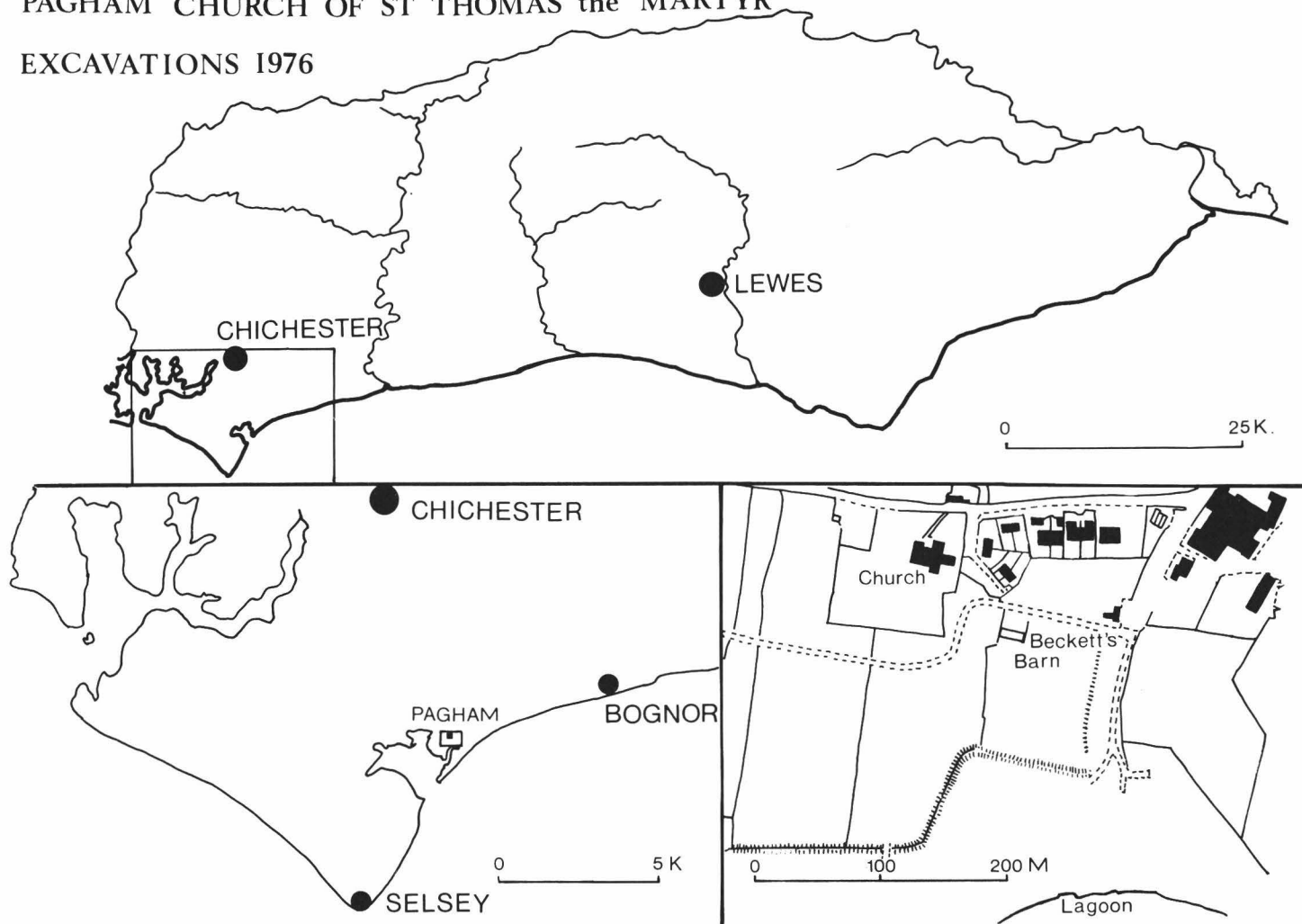
Fig. 1.   Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Location map

excavation a sub-floor area aproximately 14.8 m by 2 m with a 2 m by 0.3 m extension eastwards and a 3 m by 0.2 m spur across the south aisle. A similar trench 10.6 m by 2.9 m with a spur 3 m by 0.65 m became available after the removal of the pews from the northern side of the nave and crossing. It was excavated after the heating ducts and flooring had been installed in the southern half.

A sub-floor space had been excavated under the pews when they were installed in 1837.[9] The restoration carried out at this date also raised the floor level approximately 16 cm.[10] This was confirmed by two slabs of polished Paludina limestone, one trapped under the refacings of each of the piers west of the crossing, 16 cm beneath the present flagged floor. Shallow brick sleeper walls had been built down the length of each trench to carry the joists of the wooden floor, and their foundation trenches had penetrated earlier layers and features (Fig. 4).

Under general layers of soft debris (Layer 1) over the whole of both trenches, there were intermittent layers of hard mortar (Layers 2 and 42). The date and function of these layers are conjectural, but as the Paludina limestone slabs (see above) were bedded on them, they probably represent the bedding of a flagged floor of which the limestone slabs are the sole survivors. The layer in the northern trench (Layer 42) had a hard, almost polished surface which may indicate that there were no slabs in this area. Only the area of surfaced mortar is shown on the plan. This surface was not found in the southern trench, but it may have been lost when the sub-floor space was excavated in 1837. The mortar varied in thickness, being up to 12 cm thick in places. It overlay a layer of dirty clay (Layer 41a) above the natural silty clay. No other lower floors were detected in the area of the trenches, although the fact that the mortar covered the earlier demolished walls at the east end of the trench (Fig. 4) implied that Layers 2 and 42 could not have been the original floor.

The graves cut through this mortar were not emptied. They consisted of three types: 1, brick vaults; 2, stones over an earth filled grave; and 3, earth filled. Twelve of the latter were recognised although more may have escaped detection as the fillings were virtually identical to the surrounding earth. There was one brick vault under the unexcavated central aisle which projected into the southern trench and three stone covered graves were also found. A fragment of a tenth-century ring headed cross was found amongst the stones covering the one in the northern trench (report by D. Tweddle below).

Two masonry phases were found under the mortar layers at the east end of the trench. Lack of time allowed only three sections to be cut through these walls (Fig. 3 for locations). The smaller, and presumably earlier, structure (Fig. 5, stage 1) had walls approximately 90 cm thick, constructed with a double skin of facing stones filled with beach pebbles and mortar. Some of the facing stones came from the Mixon Reef, now under the sea off Selsey Bill, but accessible in the medieval period. The mortar was made with beach material (report by S. Hamilton below) and *in situ* it was so hard that it could not easily be removed without power tools, despite the fact that only one course of masonry survived. The foundations consisted of a foundation trench approximately 30 cm wider on the inside of the wall and 40 cm wider on the outside of the wall. It was 'U' shaped, about 1 m deeper than the lowest masonry course, and was filled with various forms of hard-core: coarse gravel and beach pebbles in clay under the southern arm, and larger flints, pebbles and clay under the west and north portions. This structure is the first evidence of any building on the site. No traces of an earlier timber building were found, although if one had existed on the same plan as the masonry structures, any post-holes or beam-slots would have been obliterated. No medieval post-holes or beam-slots were found.

PAGHAM CHURCH OF ST THOMAS the MARTYR
EXCAVATIONS 1976
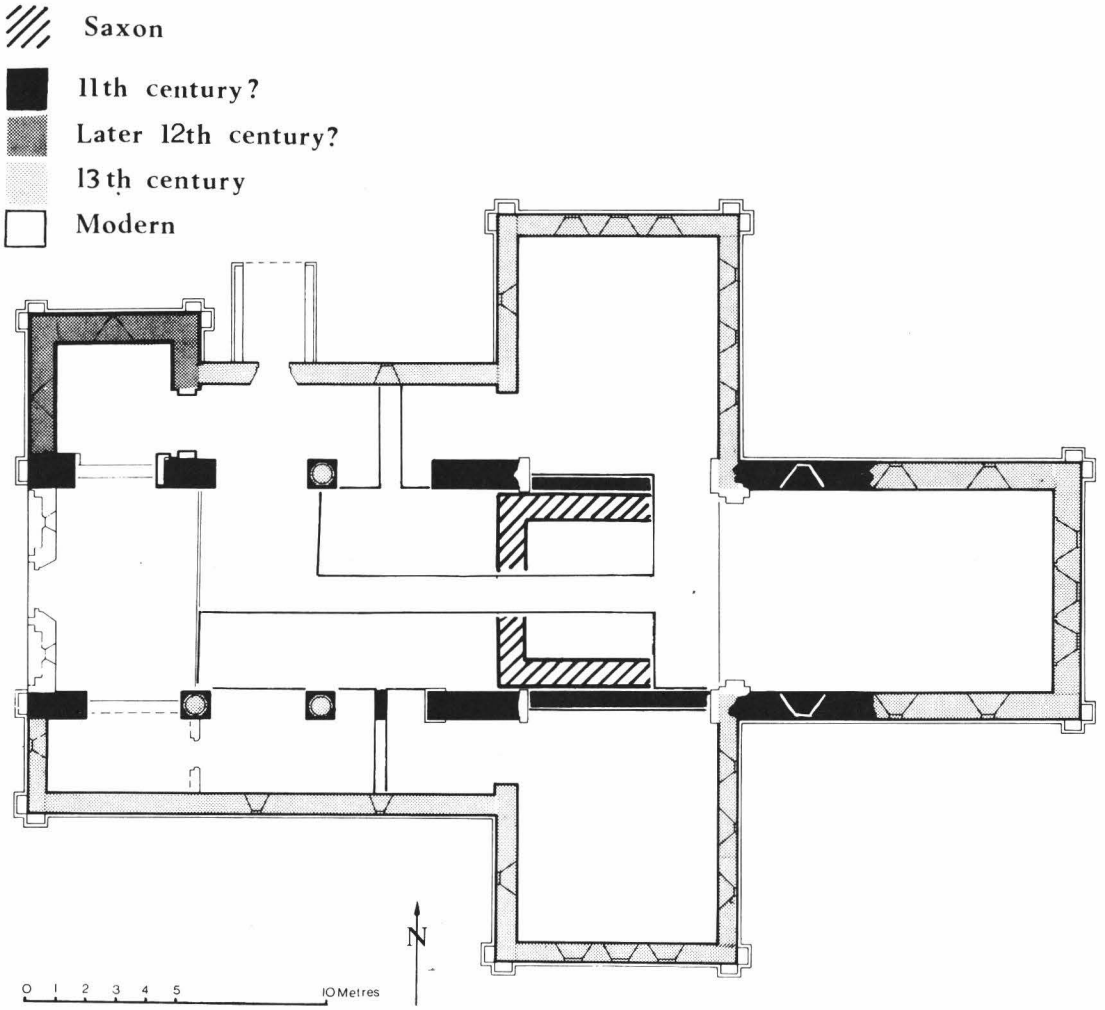
Fig. 2.   Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Phases of building, position of trenches. Based on a survey by F. Aldsworth

The second masonry structure (Fig. 5, Stage 2), encased the north and south sides of the earlier one, but extended further to the west. Its 1 m thickness was only completely exposed in the narrow spur trench across the south aisle. Its construction was similar to that of the earlier structure, except that its 1 m deep foundation trench was filled with mortared pebbles and flints. Only one course of facing stones survived. No west wall of this phase was found in the length of our trenches.

It is possible that the quoins visible on the outside of the south wall of the chancel are a surviving upstanding portion of this stage. The spur trench across the north aisle revealed no trace of this phase of building (Fig. 4b), so there is a possibility that this stage incorporated a north aisle *or* north porch. Figure 5, Stage 2, shows a conjectural north aisle, but there is no evidence in 1976 to decide which of the two possibilities is more likely. This second phase has been assigned to the eleventh century, following Fisher and Poole, on the basis of the quoins and quasi herring-bone work in the south wall of the chancel.

The main structure of the church as it is now seen under its nineteenth century renovations, is thirteenth century. The sections of the second phase, visible in our trenches, were demolished to provide foundations for the present crossing piers and south nave arcade. Possibly the north aisle outer wall is contemporary with Phase 2, or rebuilt upon the same foundations.

CONCLUSIONS

Stage 1

The date of Stage 1 is impossible to fix. The fragment of tenth-century cross was discovered, re-used with other stone fragments, in a grave which must post-date the Phase 2 reconstruction, as it was cut through the mortar which covers both Phase 1 and 2 masonry. The cross itself does not prove the existence of a tenth-century phase of building. The presence of St. Wilfred in the vicinity in the seventh century is tantalising, but a church at Pagham is not mentioned until the Domesday Survey. The fragments of a late Saxon pot (Fig. 6, No. 1) and a medieval pot (Fig. 6, No. 2) came from disturbed areas at the east end of the southern trench. They were unstratified. The most that can be said is that the earliest phase is very likely to be Saxon on three grounds, none of them conclusive:

1. It is the earliest structure found on the site in an area of known middle and late Saxon occupation.
2. It is very narrow (4.6 m). out of 43 measured churches considered by Fisher to be Saxon or on Saxon foundations, only four are narrower (Chithurst, Poling, Selham and West Stoke) and two others equal (Coombes and Sompting).
3. It pre-dates Phase 2, which may incorporate features considered to be Saxon.

The length of the nave and the shape of the chancel of Phase 1 cannot be estimated. The churches mentioned above have nave lengths varying from 7.5 m to 14.6 m.

Stage 2

The west end of Stage 2 probably underlies the remodelled present west end. The east end of this stage is conjectural. The quoins in the south wall of the chancel may indicate the east end of the nave or the chancel. The former would give an atypical (for Sussex) ratio of width to length for the nave of 1:4, whereas the latter, assuming the Stage 1 west end served as the foundation for a chancel arch, gives a ratio of approximately 1:2, which is much more likely. The possibility of a north aisle or porch is discussed above. It may be this Stage 2 structure in which St. Anselm consecrated the Bishop elect of London in 1105.[11]

PAGHAM CHURCH OF
ST THOMAS the MARTYR
Excavations 1976

$\longrightarrow$ N

0   1   2   3   4 M

FRAGMENT
OF SAXON
CROSS HEAD

CENTRAL

AISLE

SECTION B

PALUDINA
LIMESTONE SLAB

PALUDINA
LIMESTONE
SLAB

SECTION ——————— SECTION ——————————— SECTION A

STANDING MASONRY

MORTAR FLOOR

GRAVES
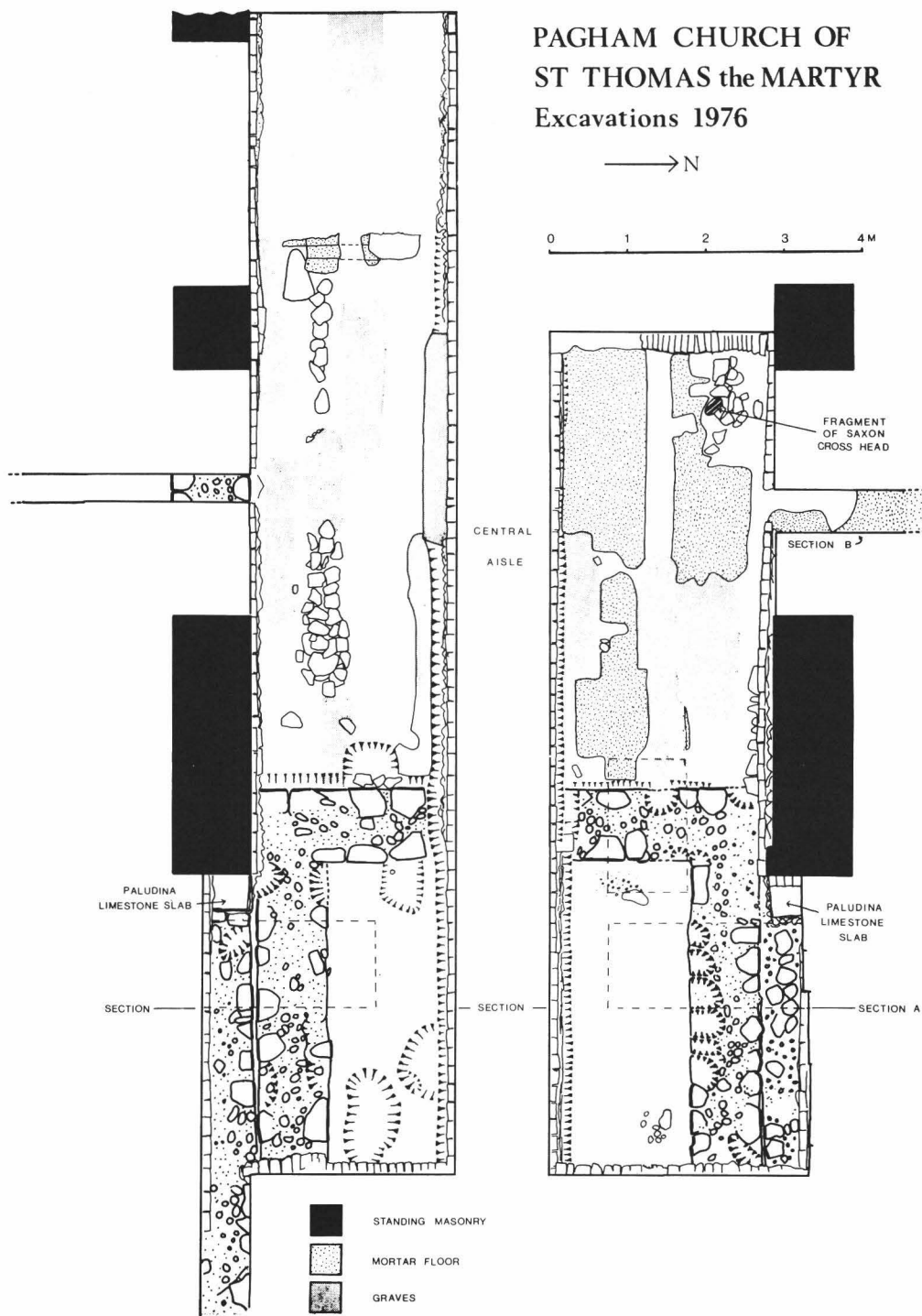
Fig. 3.   Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Plan of features
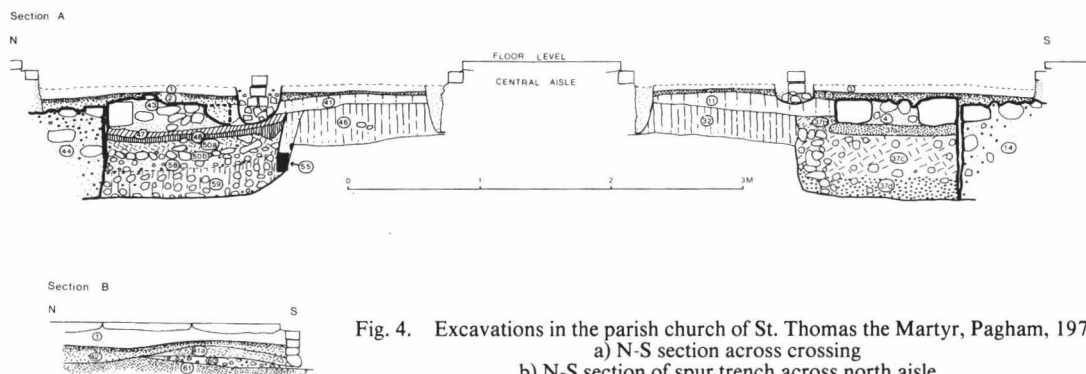
Fig. 4. Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976
a) N-S section across crossing
b) N-S section of spur trench across north aisle

Descriptions of layers in Figure 4

1. Soft rubble, mortar, and wood shavings.
2. Hard packed surface of mortar. Some brown earth (Floor).
4 and 43. Wall, single course of dressed facing stones, with beach pebble and very hard mortar infill (Phase 1).
11. Soft brown earth.
14 and 44. Wall, single course of dressed facing stones, with beach pebble and very had mortar infill (Phase 2).
32. Medium hard, dark brown earth.
37a. Hard packed mortar.
37b. Brown sandy clay.
37c. Brown clay and flint nodules.
37d. Gravel and shell.
41. Soft brown earth.
41a. Soft brown clay.
42. Hard packed surface of mortar. Some brown earth (Floor).
46. Medium, hard, dark brown earth.
47. Hard brown earth.
48. Hard grey earth.
50a. Flint nodules and clay.
50b. Flint nodules.
55. Oak and elm timbers (Identification by C. Cartwright).
58. Pebbles and sandy clay.
59. Pebbles and clay.
60. Mortar fragments and brown earth.
61. Dark brown clayey earth.

Stage 3

The tower is dated to the thirteenth century by Poole[12] after Fleming,[13] but is considered to be Norman by Pevesner.[14] On architectural grounds, particularly the way the north aisle arcade butts up against the tower arch, it is considered by this writer to be earlier than the thirteenth-century arcade. It may be twelfth century, but certainly pre-dates the present aisle arcade.

Stage 4

The present shape of the church was arrived at in the thirteenth century.

Later work included internal and external renovation in 1837 and the insertion of the nineteenth-century west end.

STAGE 1

STAGE 3
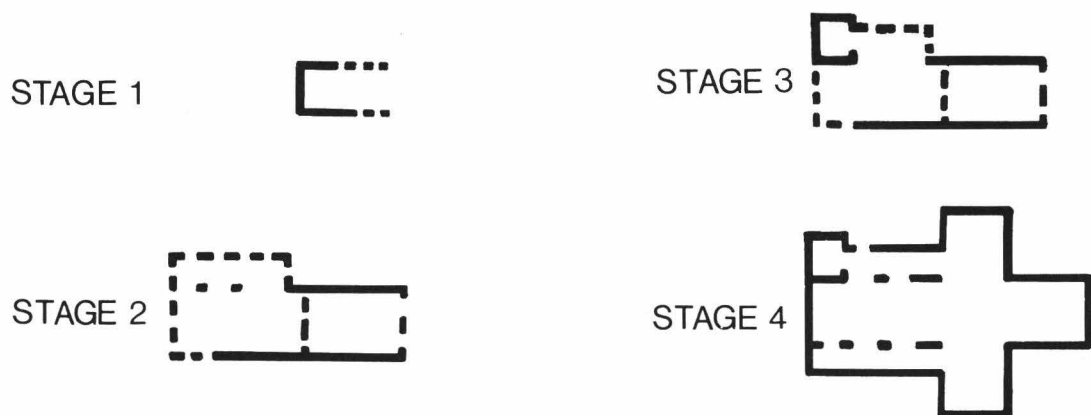
STAGE 2

STAGE 4

Fig. 5.   Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Stages in the building

THE FINDS (Fig. 6)

There were very few finds. Two large fragments of pottery and a spindle whorl were found in a disturbed area in the southern trench.

No. 1.   Rim of late Saxon cooking pot, medium flint filler, black reduced ware, external surface patchy buff-grey. Layer 2.

No. 2.   Twelfth-century (?) cooking pot, fine flint filler, black reduced ware. Layers 33 and 35.

No. 3.   Fired clay spindle whorl, medium flint filled, grey. 30 gm. Layer 33.

No. 4.   Tenth-century cross (Plate II). See report by D. Tweddle, below.

THE FRAGMENT OF PRE-CONQUEST SCULPTURE
(by Dominic Tweddle, B.A.)

Description

Part of an arm and the ring of a ring-headed cross. The inner end of the arm is roughly broken, the break rising from right to left. The outer end is convex, the curve being continuous with that of the outer edges of the short surviving portions of the ring, each of which terminates in a rough break. The sides of the arm are concave, the curves being continuous with those of the inner edges of the ring. The front and rear faces are framed by narrow, plain, raised mouldings of indeterminate section, the front face being decorated in relief with a flaccid, disorganised interlace, the similar decoration of the rear face being largely defaced. Along the edges of the outer end of the arm damaged narrow, plain frames confine a panel of four-strand plait, separated by narrow, undecorated zones from further fragmentary interlace.

The fragment, of Corallian limestone, is a maximum of 12 cm high, 23.5 cm wide, and 10 cm deep, and was orginally *c.* 35 cm in diameter. It was found in the fill of a grave, feature 53.

Discussion

The stone is unusual as it is the first fragment of an Anglo-Saxon cross head to be discovered in Sussex, and one of the few to survive from southern England. These can be classified as follows:

Free-armed:

         Reculver (Kent);[1] Amesbury (Wilts);[16] Bath (Somerset),[17] 2; Colyton (Devon);[18] Glastonbury (Somerset).[19]

Ring: Bath;[20] Glastonbury Tor;[21] South Leigh (Oxon);[22] Deerhurst (Glos);[23] Bradford-on-Avon (Wilts).[24]

Plate II. Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Scale in cm. a) Stone cross fragment. Front b) Stone cross fragment. Edge. Photos D. Freke

Plate I. Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Plate 1 and 2, looking west, south side. Scale: 2 m. Photo D. Freke
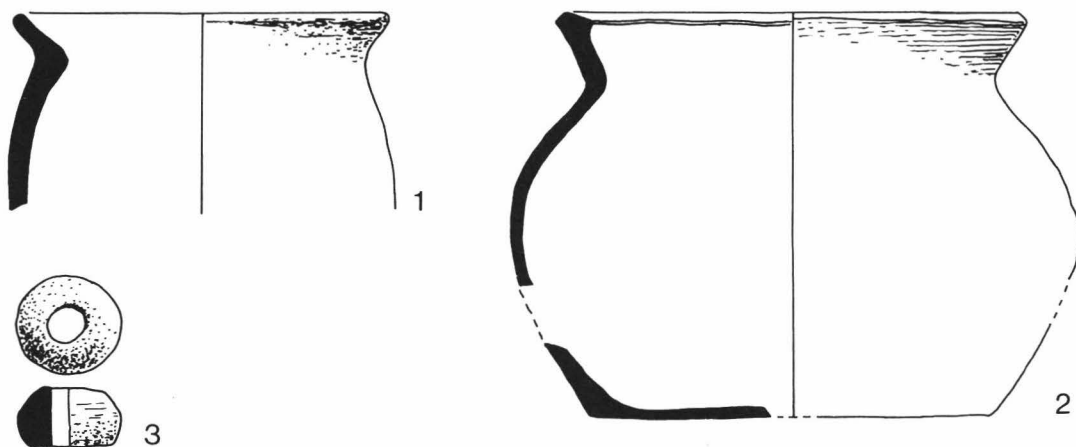
Fig. 6. Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Finds (x¼)

Circle: All Hallows-by-the-Tower (London).[25]
Hybrid   Amesbury.[26]
Ring/Circle:
Disc: Abingdon (Berks);[27] Rodbourne Cheney (Wilts);[28] St. John, Walbrook (London).[29]
Indeterminate: Puddleton (Dorset);[30] Cattistock (Dorset).[31]

The arms of a free-armed head are not linked, whereas those of a ring-head are linked by straight or curved bars, which on a circle head are continuous. The disc-head has a cross marked on each face of an unpierced disc.

Of the southern English ring-heads those at Bath and Bradford-on-Avon probably belonged to large standing crosses, but the small diameters of those from Deerhurst (c. 25 cm), Glastonbury Tor (38 cm), and the closely related example from South Leigh (c. 40 cm), suggest that they belonged to small memorial crosses similar in form to those of the East Midlands.[32] These originally stood about 1 m high, and their heads ranged from c. 35-45 cm in diameter. The small size of the Pagham head suggests that it belonged to a similar small memorial cross.

The suggested function of the Pagham fragment is supported by the fact that no large standing cross, complete or fragmentary, survives in Sussex,[33] although there is monumental sculpture. Around Midhurst; at Chithurst,[34] Stedham,[35] and Cocking,[36] is a group of grave slabs made of the local greensand. These are probably of eleventh-century date, since the example from Cocking was recovered from the foundations of the chancel, dated to c. 1080,[37] and those at Stedham from the foundations of the eleventh or twelfth-century nave,[38] and at Steyning are two similar slabs, one of which came from the foundations of the mid-twelfth-century nave.[39] At Stedham also a single round-headed headstone survives of the four which were discovered built into the walls of the twelfth-century nave.[30] On the basis of this material it is possible to suggest that in the late pre-Conquest period in Sussex there were active local traditions of the manufacture of grave slabs and markers in stone. It is against such a background that the Pagham fragment should be viewed, and it may, therefore, represent a pre-Conquest cemetery associated with the late Saxon church, the evidence for which is assessed above.

The Pagham fragment, however, may be slightly earlier than such eleventh-century monumental sculpture. Based upon their distribution, Collingwood suggested that the wheel-head (comprising both the ring and circle heads) was a type associated with the area of Scandinavian

settlement, originating in the Isle of Man, and spreading thence to the mainland in the early tenth century.[41] To Collingwood's map, however, must be added the more recently discovered southern English examples, and when the sheer bulk of those which have survived in Northumbria is weighed against the meagre survivals in southern England, the existence of these must seriously weaken Collingwood's argument for the association of the type solely with the areas of Scandinavian settlement. Moreover, the discovery at Deerhurst of a fragment ornamented with ninth-century seed-pod decoration, also in an area well away from the Scandinavian settlements, suggests that this type of head originated in the ninth-century, and strengthens the suggestion that its origin should be sought in a non-Scandinavian context.

Despite these reservations, Collingwood's assertion of a principally tenth/eleventh-century date for this type of head remains unshaken. The Pagham head should probably be placed in the tenth-century since there is a tendency for later examples to be more angular, with square-ended arms.[42] The Pagham head should, therefore, be placed typologically earlier than the examples of this type from Glastonbury Tor and South Leigh, which are probably of eleventh-century date. The flaccid interlace ornament is of little help in close dating, but would support a broadly tenth/eleventh-century date.

ANALYSIS OF THE MORTAR (by Sue Hamilton, B.Sc.)

A sample of mortar, from the Stage 1 structure, weighing 143 g was disaggregated to extract molluscan inclusions for identification. The disaggregated sample was then treated with 10% hydrochloric acid. When all the mortar was dissolved (17.6% by weight) the remaining inclusions were wet sieved through a nest of sieves. The particle size distribution of these and the shells is represented by a cumulative graph (Fig. 7) and is as follows:

Sieve intervals	% by weight
63 μm	9.47
212 μm	26.82
500 μm	1.36
1 mm	19.21
2 mm	39.83
6 mm	3.31
Total:	100

This size distribution and the presence of multi-coloured inclusions is suggestive of beach shingle. Under the microscope, the mollusca comprised fragmented marine gastropods and bivalves. One intact shell was identified by M. Bell, B.Sc., namely *Gibbula cineraria* (L). This is a marine gastropod found in clean, sheltered habitat in pools or among seaweeds and common on all rocky shores.

The inclusions tend to confirm the marine origin of the shingle used in the mortar. An obvious local source is the extensive shingle bar across the mouth of Pagham Harbour.

Author: D. J. Freke, Rescue Archaeology Unit, University of Liverpool.
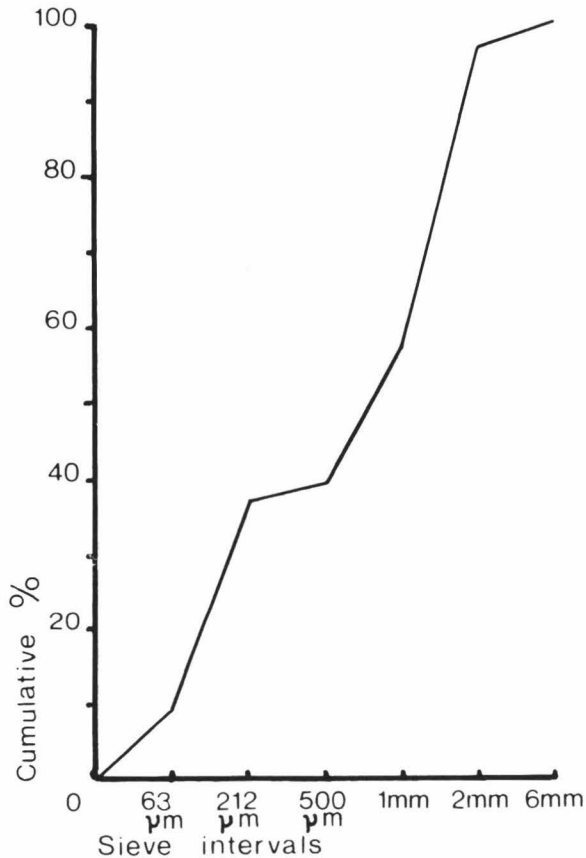
Fig. 7.   Excavations in the parish church of St. Thomas the Martyr, Pagham, 1976. Particle size distribution of phase I mortar sample

REFERENCES

[1]   A. E. Fisher, *The Saxon Churches of Sussex* (1970) 161-2. H. Poole, *Victoria County History* 4 (1953) 231-2.

[2]   The interim report in P. L. Drewett (ed.), 'Rescue Archaeology in Sussex' *The Bulletin of the Institute of Archaeology* 14, (1977) 50-1, was written when only the southern half had been excavated. This report supercedes that one, especially the plan p.51.

[3]   J. N. L. Myres in A. H. Collins, 'Saxon cinerary urn from Pagham churchyard,' *Sussex Notes and Queries* 14, nos. 7 and 8 (1955), 123-5.

[4]   V. L. Gregory, 'Excavations at Becket's Barn, Pagham, West Sussex, 1974' *Sussex Archaeological Collections* 114 (1976), 207-217.

[5]   B. Cunliffe, 'Some late Saxon stamped pottery from Southern England' in V. I. Evison, H. Hodges, J. G. Hurst, (eds.), *Medieval Pottery from Excavations* (1974), 127-135 and A. H. Collins, 'Saxon cinerary urn from Pagham churchyard'. *Sussex Notes and Queries* 14 nos. 7 and 8 (1955), 123-5.

[6]   E. Barker, 'Sussex Anglo Saxon charters' *Sussex Archaeological Collections* 86 (1947), 50-58.

[7]   L. Fleming, *History of Pagham* (3 vols.) (1949), 6, 585-6.

[8]   *Victoria County History* 4 (1953), 227, note 11.

[9]   I. Nairn and N. Pevsner, *The Buildings of Sussex* (1973), 289.

[10]   L. Fleming, *ibid* (1949), 596.

[11]   L. Fleming, *ibid* (1949), 15.

[12]   H. Poole, *ibid* (1953), 231.

[13]   L. Fleming, *ibid* (1949), 593.

[14]   I. Nairn and N. Pevsner, *ibid* (1973), 289.

[15]   C. R. Peers, 'Reculver: its Saxon Church and Cross', *Archaeologia* 77 (1927), 253, Fig. 9.

[16]   Unpublished.

[17]   J. O. Westwood, 'Archaeological Intelligence: Saxon and Early Norman', *Archaeological Journal* 3 (1846), 356, Figs. p.356.

[18]   T. D. Kendrick, *Late Saxon and Viking Art* (1949), pl. XXXIV.

[19]   F. B. Bond, 'Glastonbury Abbey', *Proceedings of the Somerset Archaeological and Natural History Society* 59 (1913), 62-3, Fig. 1.

[20]   T. D. Kendrick, 'Fragment of a Cross head from Bath', *Antiquaries Journal* 21 (1941), 75-6, pl. XVIII.

Ring heads of a non Anglo-Saxon type from Cornwall and Devonshire are excluded from this survey.

[21]   P. Rahtz, 'Excavations on Glastonbury Tor, Somerset, 1964-6', *Archaeological Journal* 127 (1971), 48-9, Fig. 21.

[22]   Unpublished.

[23]   P. Rahtz, *Excavations at St. Mary's Church, Deerhurst, 1971-73* (1976), 26, Fig. 14.11, pl. XI.

[24]   A. Burder, 'Excursions: Bradford-on-Avon and Great Chalfield', *Proceedings of the Somerset Archaeological and Natural History Society, Bath and District Branch* (1904-8), 180.

[25]   E. Okasha, 'An Anglo-Saxon Inscription from All Hallows, Barking-by-the-Tower, London', *Medieval Archaeology* 11 (1967), 249-51, pl. XXXIXA and B.

[26]   A. R. Dufty, 'Amesbury Church', *Archaeological Journal* 104 (1947), 178, Fig. 7.

[27]   E. A. G. Lamborn, 'A Note on a Fragment of an Anglo-Saxon Wheel Cross found at Abingdon', *Berkshire Archaeological Journal* ns. 39 (1935), 88-9, Figs. 1, 3, and 4.

[28]   C. E. Ponting, 'Notes on the Churches of Rodbourne Cheney, Lydiard Millicent, Stapleford, Wylye, Wishford, Steeple Langford, and Little Langford', *Wiltshire Archaeological Magazine* 35 (1907-8), 372, pl. opp. p.372.

[29]   W. R. Lethaby, *London Before the Conquest* (1902), 170-1, Fig. 33.

[30]   *Royal Commission on Historical Monuments,* Dorset III pt.i (1970), xlviii, pt.ii (1970), 225. Hereafter cited as *RCHM*.

[31]   *RCHM*, Dorset I (1952), xxvi, 76, pl. 6.

[32]   Fully discussed in C. Fox, 'Anglo-Saxon Monumental Sculpture in the Cambridge District', *Proceedings and Communications of the Cambridge Antiquarian Society* 23 (1920-1), 15-45.

[33]   There are several fragments of interlace built into the base of the war memorial at Selsey, near Pagham. It has been suggested that these formed part of a large standing cross, but they have been trimmed for re-use, and their original function is, therefore, a matter for speculation. E. Heron-Allen, *Selsey Bill: Historical and Prehistoric* (1911), 102-3, pls. XXI-XXII.

[34]   P. M. Johnston, 'Chithurst Church', *S.A.C.* 55 (1912), 106, pl. VI.

[35]   J. E. Butler, 'The Antiquities of Stedham Church', *S.A.C.* 4 (1851), 19-21, Figs. 1 and 5.

[36]   P. M. Johnston, 'Cocking and its Church', *Archaeological Journal* 78 (1921), 182, Fig. 1.

[37]   P. M. Johnston, *Ibid* (1921), 182.

[38]   J. E. Butler, *Ibid* (1851), 19-20.

[39]   M. H. Bloxham, 'Notes on Places Visited on the Annual Meeting, 14th August, 1863. The Churches', *S.A.C.* 16 (1864), 238.

[40]   J. E. Butler, *Ibid* (1851), 20, Fig. 2.

[41]   W. G. Collingwood, *Northumbrian Crosses of the Pre-Norman Age* (1927), 137-9, Fig. 153.

[42]   W. G. Collingwood, *Ibid* (1927), 142.

EXCAVATIONS AT OLD ERRINGHAM, SHOREHAM, WEST SUSSEX
PART II THE 'CHAPEL' AND RINGWORK[1]

by E. W. Holden, F.S.A.

INTRODUCTION

Two hundred and twenty-five metres north-east of the Saxon weaving hut and 40 m east of the ancient river-cliff stands a flint, stone and brick dwelling known until recently as Old Erringham Manor House, a much altered building largely of Tudor date, but containing some medieval features in the west wing[2] (Fig. 1). Immediately north of the manor house is a small, partly-timber-framed cottage, again with later accretions, possibly of medieval origin.[3] Twenty metres south-west of the manor house stands a small flint and stone building, known as the 'chapel' (Figs. 2, 3 and 4).

A low bank was visible in the grass 20 m south of the 'chapel', running eastwards from the top of the river-cliff, then curving towards the manor house garden wall just east of the 'chapel'.[4] The ground there rose a metre or so to a flattish area which was at the same level as the manor house garden to the north of the wall. To the south and east of this small plateau was disturbed ground and a modern track. Further to the south lay recent farm buildings and a modern farmhouse.

A terraced, probably ancient, track led from the farm buildings northwards down the slope of the river-cliff. Near the foot of this track is a low mound on the edge of the flood-plain of the River Adur resembling a saltern mound (Fig. 1) of which there were many prior to recent drainage schemes, in the Adur valley between Erringham and Bramber.[5] This is the only mound close to Erringham and it could well represent waste material produced during salt-making by inhabitants of Erringham in the Saxon or medieval periods. A low causeway of uncertain date runs northwards to the west of the mound, but is lost where it meets the railway embankment. This may be a fragment of a track between bends of the river shown on Wm. Faden's map of 1795, before there was a riverside road between Shoreham and Upper Beeding.

A double-lynchet track of undoubted antiquity comes in from the east past another range of agricultural buildings at the eastern side of the farm, then divides, one branch taking a sinuous course across the field to the top of the track which descends to the flood-plain, while the other turns north as a shallow hollow-way uphill towards New Erringham Farm, which lies about 1 km to the north-east.[6] No medieval settlement is known at New Erringham and it is probable that the house was so named to distinguish it from the manor house at what would then, of necessity, be called 'Old' Erringham.

The stippled area on the site plan (Fig. 1, inset) south and south-east of the manor house has been pasture for many years and is marked with irregular mounds and hollows including several possible house platforms. Medieval pottery has been found in molehills and rabbit scrapes. The area appears to be undisturbed archaeologically with the exception of a large pit, dug in 1954 and now showing as a depression south-west of the farm buildings. The stippled area is probably the nucleus of the small medieval settlement. North of the eastern buildings is an area hatched on the site plan (Fig. 1, inset) in which slight banks, suggesting division into possible crofts, are visible. The rest of the land between the manor house and the eastern buildings, and south of the stippled area, is disturbed.
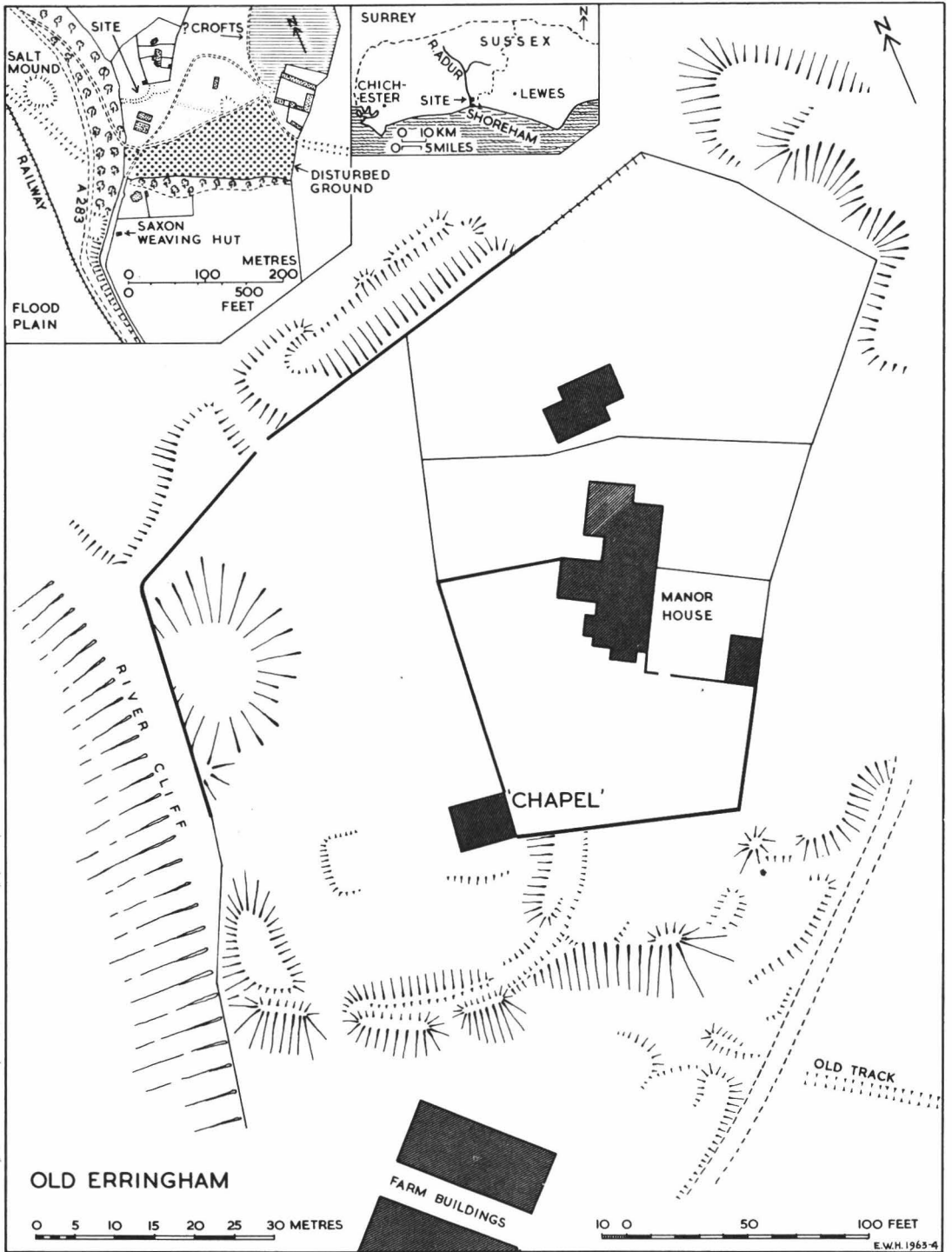
Fig. 1.   Site and location plans. The A283 road is shown as it was before road-widening in 1964.
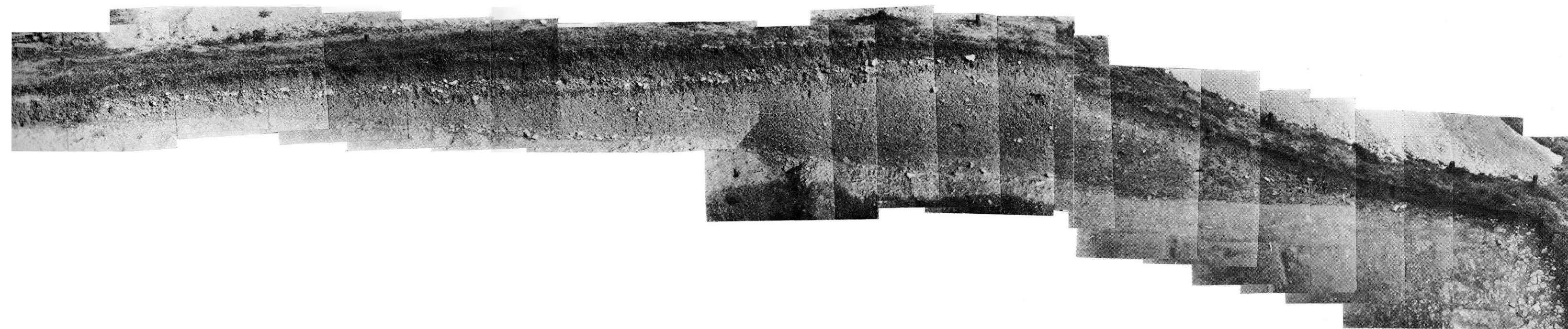
PLATE XX. Composite picture of the positive lynchet section. (Photo: B. Westley)
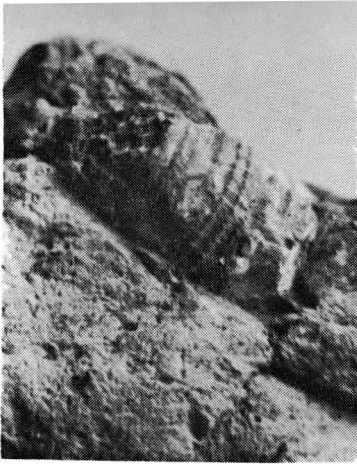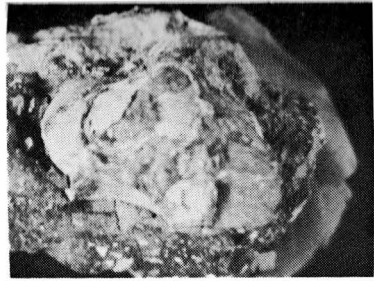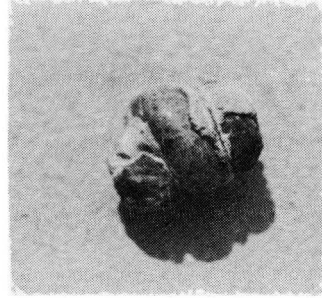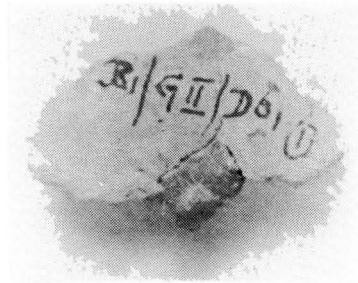
PLATE XXI.   Fossil molluscs in the Iron Age pottery and fired clay objects
(Photos: B. Westley and P. Porter)

The subsoil is Upper Chalk, covered by a thin topsoil. Over Areas A-E the latter was virtually stoneless, demonstrating that the ground had not been cultivated for a long time, if at all. In Areas G and H (Fig. 12) some rotovation has been done since 1957. The large, shallow depression near Area H appears to be natural rather than man-made and may be the result of solifluxion. Other traces of the Ice Age were the presence of involutions and frost shattering in the surface of the chalk, especially in Area E. Below the surface deposits of the eastern trench in Area F was a thick layer of Head made up mainly of rounded chalk pebbles and pellets, with angular pieces of flint.[7]

Area A was excavated in 1957 to investigate the wall-lines immediately west of the 'chapel' which were visible in the grass under parched conditions. They appeared in 1957 as seen by Packham in 1920, except for the south 'doorway', which did not show (Fig. 3).[8]

The curved bank south of the 'chapel' was examined between 1963 and 1966 (Areas B-F), in advance of the erection of three farm cottages. Unfortunately, shortage of funding and farming requirements precluded large-scale area excavation. A watching-brief was carried out during construction of the cottages.

The archaeology in Areas A-F has now been destroyed and roadworks have disturbed Areas G and H. The 'chapel' and the earthwork remains of the medieval settlement to the south and east, both scheduled as an ancient monument, survive.

Part I of this report quoted Mawer and Stenton's 1929 interpretation of the Saxon place-name *Erringham,* viz., 'homestead of Erra's people.' More recent work, however, suggests that the place-name ending indicates 'a land in a river-bend' (Dodgson's *hamm* 1).[9] When the Saxons first settled at Erringham there was no embanked river such as exists today, the valley then being a tidal estuary. The land on which Erringham stands is a downland spur which in Saxon times would have been a promontory into the estuary. It is suggested, therefore, that Dodgson's alternatives, *hamm* 2a 'a promontory of dry land into marsh or water', or *hamm* 2b, 'a promontory into lower land even without marsh or water' perhaps hence 'land on a hill-spur', would be more in keeping with the Saxon topography.

HISTORY (by F. W. Witten, B.A.)

Erringham lay within the parishes of Old Shoreham and Beeding, extending over some 800-1,000 acres, if the present area of farms bearing this name can be relied on as indicating the original extent. Administratively, it was in the hundred of Burbeach and part of the Rape of Bramber.

The earliest written record of Erringham comes from Domesday Book. The translation reads as follows: 'William de Braiose holds Erringham. Fredri held it of King Edward and could go where he pleased. It was then assessed for five hides and now for half a hide. There are two villeins and five bordars having nothing. In the time of King Edward and now, it was worth 40 shillings. When received 20 shillings.'

The settlement at Erringham was always part of the parish of Old Shoreham whilst the tithes, by agreement, were paid to Sele Priory at Beeding. Shortly after 1086 a move appears to have been made to instal an underlord at Erringham. The evidence is indirect and uncertain in that it comes from the Battle Abbey chronicles dated *c.* 1177[10] in which the writer, a monk of Battle, when listing the various gifts of lands, tenements etc., which the first William de Braiose had given to the abbey states (translation): 'Also on behalf of a certain knight in his service, by the name of Hanselin, he freely gave, in like manner another hide of land which is called Erringham.' Since the gift is by Wm. de Braiose, and as the name Hanselin occurs in a number of variants as witness of gifts by William to Sele Priory, there is much to suggest that the statement in the chronicles refers to Erringham. This record of a gift of one hide of land to Battle, however, appears nowhere else in the abbey

records, nor in the custumals of Battle Abbey can any trace of this quite considerable amount of land be found, though records of tenements in Bramber and Shoreham, also mentioned in the same chronicles, do appear. There must, therefore, be some doubt about the positive connection of Hanselin with Erringham. The grant, if made, must have taken place between 1086 and 1095, because William de Braiose died in the latter year.

During the twelfth century a William de Harcourt, in some unknown manner, acquired about 120 acres of land in Erringham. Following his death this land was given to his younger daughter Agnes by her sister Alina in an agreement dated 1190.[11] Since Agnes was a wife of William de Wiston, this portion of Erringham became an outlying member of the manor of Wiston. From a fourteenth century owner of Wiston it subsequently became known in documents as Erringham Braiose (later corrupted to Brewse or Breuse).[12] There is a possibility that this area of land (assuming 1 hide equals c. 120 acres) might be the same as that acquired by the Harcourts. Did Battle Abbey sell the land to the Harcourts, thus separating this land from the rest of Erringham? It has to be admitted that this theory is speculative.

The other portion of Erringham, consisting of about 800 acres was kept by the Lord of the Rape (de Braiose), and passed through the hands of a series of people who held by some form of period or life tenure. Nothing has been found concerning the status or condition of those who actually worked the land. It was this portion of Erringham that from a fifteenth century holder became known as Erringham Walstead.

The first evidence of this area comes from a charter of Sele Priory dated to 1239[13] in which Philip Talcurteys (knight) and Lady Isabel de Waubadon accept their responsibility for the tithes due on two thirds of Erringham. In a later charter dated to 1254,[14] Philip Talcurteys alone accepts this duty. Philip, who last appears in 1260 as a witness to a Sele charter, may have sold Walstead to Richard and Margaret Fillol, the next known holders, who are recorded in 1294[15] as having sold 'two parts of the manor of Erringham to Richard de Heghes, clerk, for 20 marks.' This Richard may be 'Rici-le-clerk' who was one of the assessors for the parish of Old Shoreham in the 1340 Nonae Inquisition. There is nothing about Erringham in that record. An Inquisition of 1362[16] shows John atte Hyde holding Erringham as part of the baronry of Bramber from John de Mowbray for one quarter of a knight's fee. In the Poll Tax of 1379 he is recorded as paying 6s.8d whilst the other sixteen people mentioned each paid four pence.[17] The last known holder on this basis was Walter Walkstede, 'clerk', who in 1411 purchased the area from Richard and Pauline Sonde.[18] The remarkably complete record of holders of Erringham Walstead ends with Walter Walkstede and there follows a gap in the records until 1490. It is not known how long Walter held Walstead, but it must have been of considerable duration for it to have assumed his name.[19]

The Black Death of 1348/9 had some impact on Erringham Braiose, it being recorded in the Wiston Rolls for 1357-8 that out of eight holdings six were 'in the lord's hands',[20] but it is not known how Walstead was affected. The Poll Tax of 1379 mentioned above, which covers presumably both Erringham Braiose and Walstead, demonstrates that the settlement survived the disaster.[21]

The political, economic and social changes of the fifteenth century had a considerable effect upon Erringham. The hamlet gradually declined and was allowed progressively greater abatements on taxation. In 1433-4, ten shillings was allowed on a fixed quota of £2 10s 0d[22] and in 1445-6 the allowance had risen to 30 shillings.[23] Erringham does not appear on the abatement list of 1452-3,[24] though some village names are illegible, and by this date it may have been depopulated except for the main tenant and perhaps a few farm servants. With the grant of the baronry of Bramber to

Thomas West, Lord la Warr in 1485,[25] following its forfeiture by John, Duke of Norfolk, the ownership of Erringham Walstead may have been purchased by Thomas Bellingham of Lyminster from the new overlord at the same date. Strength is added to this suggestion by the Wiston records which show that Thomas Bellingham leased Erringham Braiose from Ralph Shirley in 1484 which would have allowed him to farm the whole of Erringham as a single unit. Certainly he owned Walstead at his death in 1490, for he bequeathed it to his eldest son Ralph.[26] Despite the assertions by Cheal[27] no written proof has been found that any member of the Bellingham family actually lived on the manor until about 1560, though it is possible that Thomas Bellingham's son Edward, who died in the early 1520s may have done so.

In the 1520s, Erringham Walstead was, although still owned by the Bellinghams, in the hands of tenant farmers. The Lay Subsidies of 1524 and 1525 show Richard Swan paying £1 on a valuation of £20 for Erringham, whilst his servants, two in the first year and three in the second year, each paid four pence.[28] Later, the Will of John Cobye showed that he was farming Erringham Walstead until 1544.[29] Erringham Braiose was also leased to various tenants during this period. The Will of John Bellingham who died in 1541, describes him as being 'of Little Horsted (near Uckfield) and also in possession of Haselholt in Southwick and the manor of Erringham Walstead.'[30] He left a young son also called John. It was this John Bellingham, born about 1536, who lived at Erringham and built, or substantially enlarged, the manor house. He also brought the two parts of Erringham together again by purchasing from Sir Thomas Shirley of Wiston 'lands called Erringham Breuse (sic) being intermingled with the said lands'.[31] The Bellinghams kept Erringham until 1650 when it was sold to John Juxon of Albourne. His son sold it in 1664 to Cecil Tufton whose descendants sold the estate to Colville Bridger in 1776. It has remained in the hands of the Bridger family up to the present day.

Exterior
from S.E.
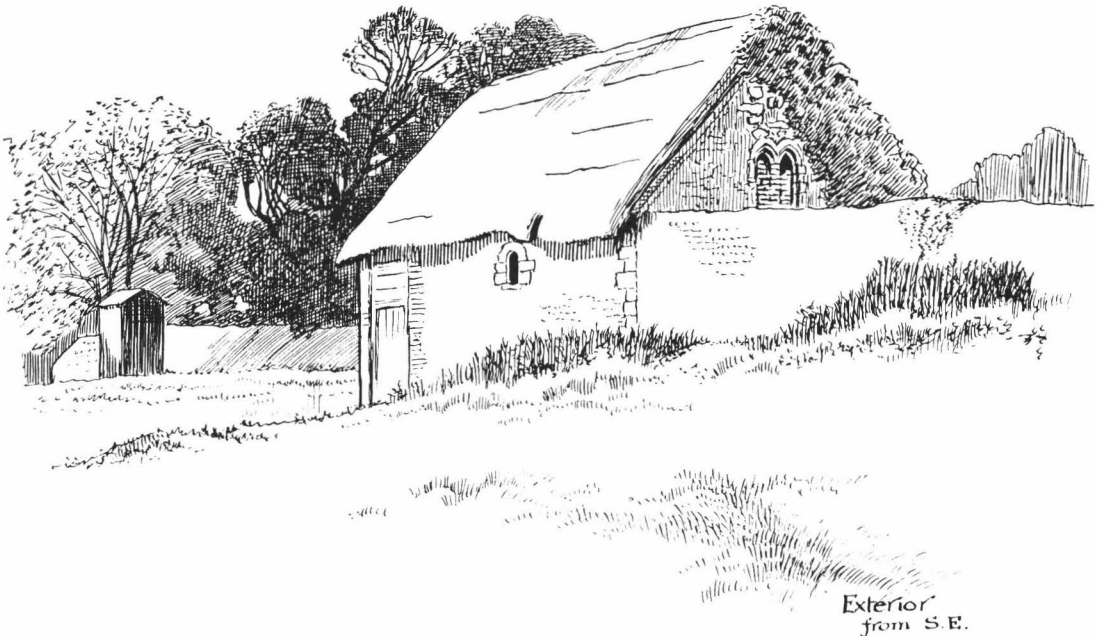
Fig. 2.   Old Erringham. The 'chapel' from the south-east in 1920 (after Cheal and Packham).

THE 'CHAPEL' (Figs. 2, 3, 4, 6; Plates IA & IIIA)

It must be said at once that the 'chapel' strongly resembles the chancel of an early church, especially when consideration is given to the possible 'nave' to the west (discussed below). The building is constructed of random flints in a pebbly mortar with Caen stone quoins at the east end. The north and south walls each have a small, unglazed slit window of Caen stone, rebated externally and much weathered (Plate IIIA). There are single splays and semi-circular heads inside. Both slit windows appear to be coeval with the walls. The east window, however, has the appearance of being a replacement and is described by Cheal as being of two lights, partly blocked, belonging to the Transitional period.[32] This window also is of Caen stone, though much robbed inside and out and partly blocked with Tudor and later brick, and flintwork. The outer face of the east wall bears traces of rendering. A modern door has been inserted into the south wall at the western end. The base of the west wall may belong to that shown by Grimm in his sketch of 1787 (Fig. 4a), but the greater part has been rebuilt in flint on two occasions since, and no longer projects above the roof. The relationship at the north end of the west wall between the 'chapel' and the structure to the west could not be established owing to various disturbances which had destroyed any homogenous bonding or 'straight joint' between them. The footings of a wall connected with the western structure, only one flint thick and which had lost its mortar, turned south (Fig. 6) until terminated by a modern pit. This suggests that there could have been an opening between the two structures, such as a chancel arch, of which only part of the northern abutment remained.

The roof timbers are of crownpost construction, with one tie-beam replaced by a rough tree-trunk, not squared as shown by Packham (Fig. 4b). The roof was thatched, the floor, earth, when first seen by the writer in 1934, since replaced by asbestos and concrete.

The building is not quite square, the average internal dimensions being 6.02 m by 4.42 m (19ft. 9in. by 14ft. 6in.). The three original walls vary in thickness, the north wall averaging 813 mm (2ft. 8in.), the east wall 838 mm (2ft. 9in.), and the south wall 686 mm (2ft. 3in.). The orientation along an east-west axis is between 98 and 98½ degrees east of true north, using a prismatic compass (which is no more accurate than within half a degree). The orientation of the structure to the west is practically the same, being only c. 20 minutes less than that of the 'chapel'.

An interesting discovery, not previously recorded, was a scratch dial, revealed after ivy had been removed from the lower parts of the south face of the south-east Caen stone quoin of the 'chapel'. It consists of a gnomon hole from which three rays emerge in the bottom left hand quarter of an imaginary circle. If the gnomon hole is thought of as the centre of a compass the rays are at (approx.) 95, 113, and 128 degrees east of north respectively. The weathering of the stone was such that the rays were only just discernible in 1957.[33]

No written records have been discovered relating to the 'chapel'. The only method of dating is by architectural features, some of which, like Saxo-Norman pottery, changed little over a century or more. The two-light replacement lancet window in the east wall (Fig. 2) is unlikely to be earlier than thirteenth century and does not date the construction of the building, indicating rather, improvements at that time. The roof timbers, likewise, do not appear to be particularly early, being of crownpost construction with a collar purlin and curved braces. R. T. Mason considers this roof form to be not earlier than 1250.[34] Those, too, may have been a thirteenth century replacement. Scratch dials are known from Norman times onwards into the Middle Ages, but are useless for chronology as they could be added at any time to a standing building.

Early flint walls are virtually undatable except sometimes by thickness, those of Saxon times being generally thinner for similar work, i.e. in churches,[35] than later walls. Considering the modest
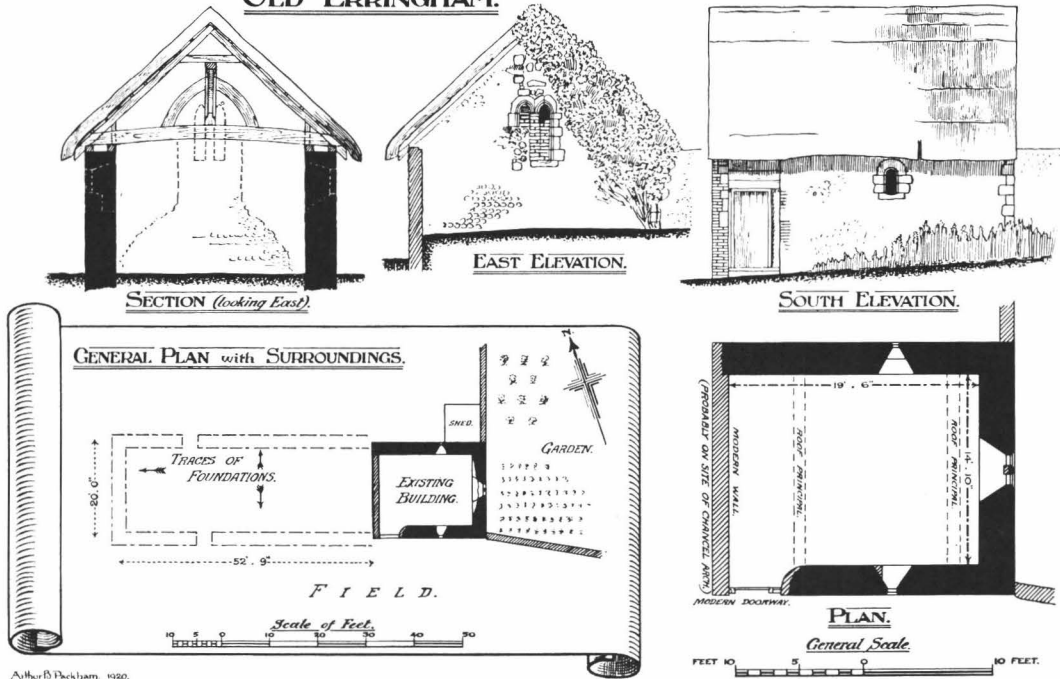
Fig. 3.   Details of the 'chapel' in 1920 (after Cheal and Packham).
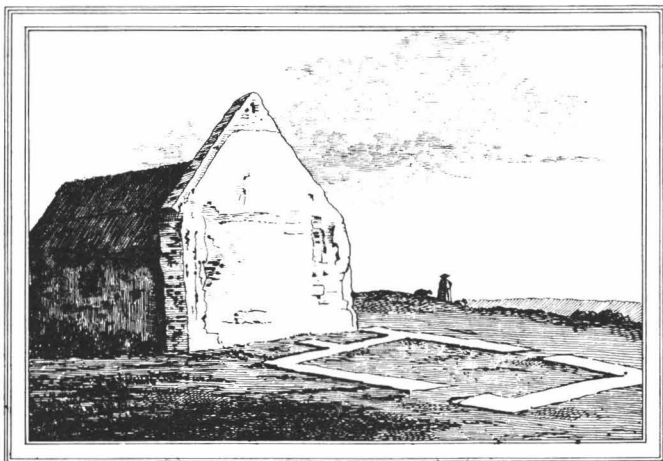
Fig. 4.   A. The 'chapel' area in 1787.   B. The 'chapel' interior (after Cheal and Packham).
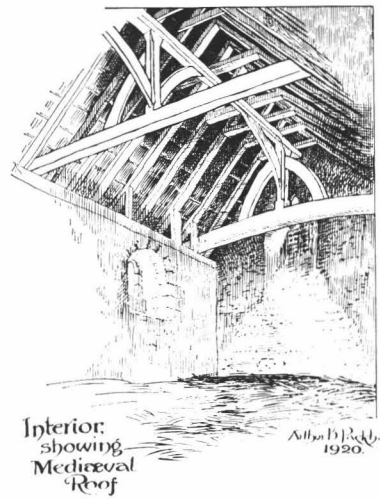
size and height of the 'chapel' the east and north walls are not thin enough to be conclusively Saxon. Ovingdean church has a chancel 5.8 m by 4.27 m (19ft. by 14ft.) inside, only slightly less than the Erringham building, with north and south walls averaging 762 mm (2ft. 6in.) (O.E., 2ft. 8in. and 2ft. 3in.) and an east wall thickness of 965 mm (3ft. 2in.) (O.E. 2ft. 9in.).[36] Poole considers Ovingdean to be the D.B. church (1066-1086)[37] and Fisher says: 'It has many Saxon looking features: nave and chancel walls, ... some windows. In view of the primitive character of Sussex Saxon work which persisted long after the Conquest, Ovingdean may well be considered a Saxon church in spite of its post-Conquest, perhaps early twelfth-century date.'[38]

The two slit windows at Erringham are the earliest elements in the building, one being practically a repeat of the other (Plate IIIA). Such windows are known in several Sussex churches where there is apparent Saxon, also Norman, work,[39] but they are notoriously difficult to date accurately. As an example, Fisher records two narrow, small windows in the north wall at Ford church, with single internal splays and jambs of Caen stone rebated externally for a shutter.[40] The latter, according to Fisher, is not known elsewhere in the county, so those at Erringham are additional examples. Various writers on Ford church had their own views: Baldwin Brown denied the church to be Saxon, Poole thought it doubtfully Saxon, Johnston dated the earlier parts to *c*. 1040, Tristram thought it contained Saxon work, while Fisher says that certain parts (including the two narrow windows) 'appear to be Saxon and may be pre-Conquest'.[41] Such lack of firm agreement between experts emphasises the problems of dating. The Taylors, however, referring to windows say: 'A feature that seems to give fairly reliable evidence of pre-Conquest date is the cutting of a shallow rebate, an inch or less in depth, round the exterior face of a single-splayed window, possibly as a housing for a hinged wooden shutter or a fixed wooden window frame.'[42]

It would help very much to know when Caen stone was first imported into Sussex. Jope has doubts regarding its arrival before 1066,[43] whereas Pelham says: 'Caen stone was being imported into Sussex before the Norman Conquest, since it is found in Saxon churches at Bosham, Ford and Sompting, but it was during the twelfth and thirteenth centuries that the largest quantities were brought over.'[44] Johnston stated that there was Caen stone in the narrow, Saxon (double-splayed) window in Poling church.[45] Fisher, too, has no doubt that Caen stone was being imported into Sussex 'long before the Conquest.'[46]

Whereas the slit windows on the evidence of the shutter rebates may be 'fairly reliable evidence of pre-Conquest date'[47] the Caen stone quoins at the eastern angles of the building do not exhibit the 'long and short' work sometimes favoured in Saxon church building. According to Fisher, however, 'genuine long and short quoining is almost absent from Sussex except at Sompting, Woolbeding and Worth.'[48] Its absence, therefore, is no guarantee that the masonry is definitely post-Conquest.

To sum up: the 'chapel' cannot be dated with any degree of accuracy solely by its architectural features. It may be pre-Conquest, probably not earlier than the second quarter of the eleventh century, but on the other hand Fisher has pointed out that Saxon work continued into the early twelfth century.[49] In that case the shutter rebates might be an archaic feature. Only a broad date range of, say, 1025-1125 can at present be suggested.

THE EXCAVATIONS

Area A (Figs. 3, 4a, 6; Plate IA)—the 'chapel'

The thin topsoil, which included small chalk rubble and flints, was stripped from the area west of the 'chapel' where grass marks suggested the presence of walls. A further southwards trench, 3 m
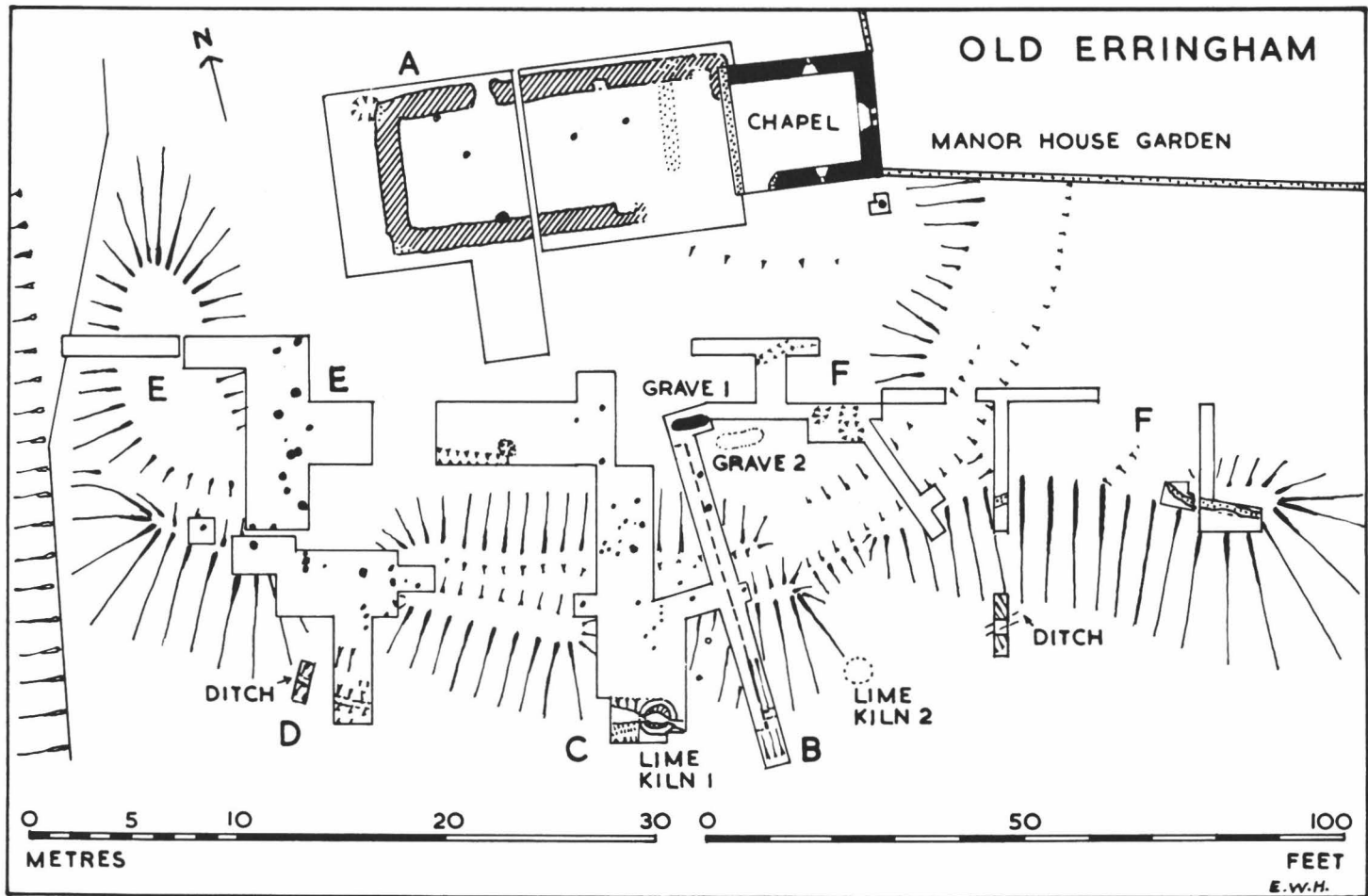
Fig. 5. Plan of excavations.

wide and 4.88 m long, was barren of features. There were a number of post-medieval and modern post holes, and a small modern pit near the 'chapel' wall.[50] There was much white lime mortar or plaster in the topsoil near the 'chapel', and the base of one of the cross-walls shown in Grimm's drawing of 1787 was revealed (Fig. 4a). This contained two pieces of brick which were similar to those in the west quoins. Two recesses in the bases of the north and south walls, which again had some pieces of brick around them, suggested that there may have been another post-medieval cross-wall of which all other traces had gone. There were patches of beach pebbles and cobbles on the chalk and a section of the south wall base next the 'chapel' had vanished. These remains suggested that the east end of the building had been altered and used as stabling in the seventeenth or early eighteenth centuries, certainly before 1787. The 'chapel' itself is recorded by Sir William Burrell in 1782 as 'converted into a stable' at a time when it was 'occupied by a farmer.'[51]

The parched grass marks covered a single, sometimes scattered, layer of flints that had been laid in a sea-beach pebble mortar from which the lime had leached out. The south-west and north-west corners of this rectangular structure had been robbed of their Caen stone dressings (of which a few tiny fragments were seen) and replaced with red-brown bricks 58-63 mm ($2\frac{5}{16}$-$2\frac{1}{2}$in.) thick, which would not be out of place in the latter part of the seventeenth or early eighteenth centuries. The filling of a deep pit against the north-west quoin (Feature 78) contained similar brick fragments, mortar and other post-medieval material. It is probable that a buttress had been originally at this corner and that it, too, was robbed for its stone at the same time as the quoins, but not replaced, only the pit re-filled. There is a dated stone of 1710 in the externally-projecting chimney breast on the south face of the manor house which contains, as well as flint, Caen stone dressings and a brick upper part; the bricks resemble those just described. There is presumptive evidence that the western quoins were robbed in 1710, which means that the main walls of the structure were still standing at that date, but were demolished before 1787 as indicated by Grimm. There was not much flint tumble over the area, showing that the flints from the demolished walls had been removed for use elsewhere.

Flint walls built on solid chalk need no foundation trenches as may be seen in the section (Fig. 6), but the load is spread if the bottom courses are wider than the walling above, forming a rough plinth. This appears to be the case here where the brick replacements in the quoins were c. 150 mm (6in.) back from the outer edge of what appears to be a flint footings course. If it is assumed that the same factor applied inside, then the thickness of walls would have been c. 914 mm (3ft.). The internal length of the structure would be 15.39 m (50ft. 6in.) up to the face of the north footing of the possible chancel arch, but if a similar setback is required to find the face of the actual wall above, then the length would be 15.54 m (51ft.). The internal width, measuring overall the brick quoins and deducting the thickness of two walls, each of 914 mm (3ft.), is 5.33 m (17ft. 6in.).

Apart from the post-medieval cobbling there was no floor other than the solid chalk and no signs of hearths, burnt chalk or medieval partitions. There was a noticeable slope of c. 813 mm (2ft. 8in.) towards the western end. The south doorway recorded by both Packham and Grimm appeared to be an illusion caused possibly by a post-medieval post hole or pit (Feature 85) which had disturbed the area slightly. It would still be possible for there to have been a south doorway somewhere if it is assumed that the footings course(s) ran right through below the opening for the doorway. The opening in the north wall, allowing for a setback each side from the face of the footings course, would be c. 914 mm (3ft.) to 1 m wide, enough for a door. The fragment of brick by the eastern jamb might indicate that the opening was post-medieval, but the flints were so scattered and lacking in depth, that the brick might be a piece dropped after demolition.
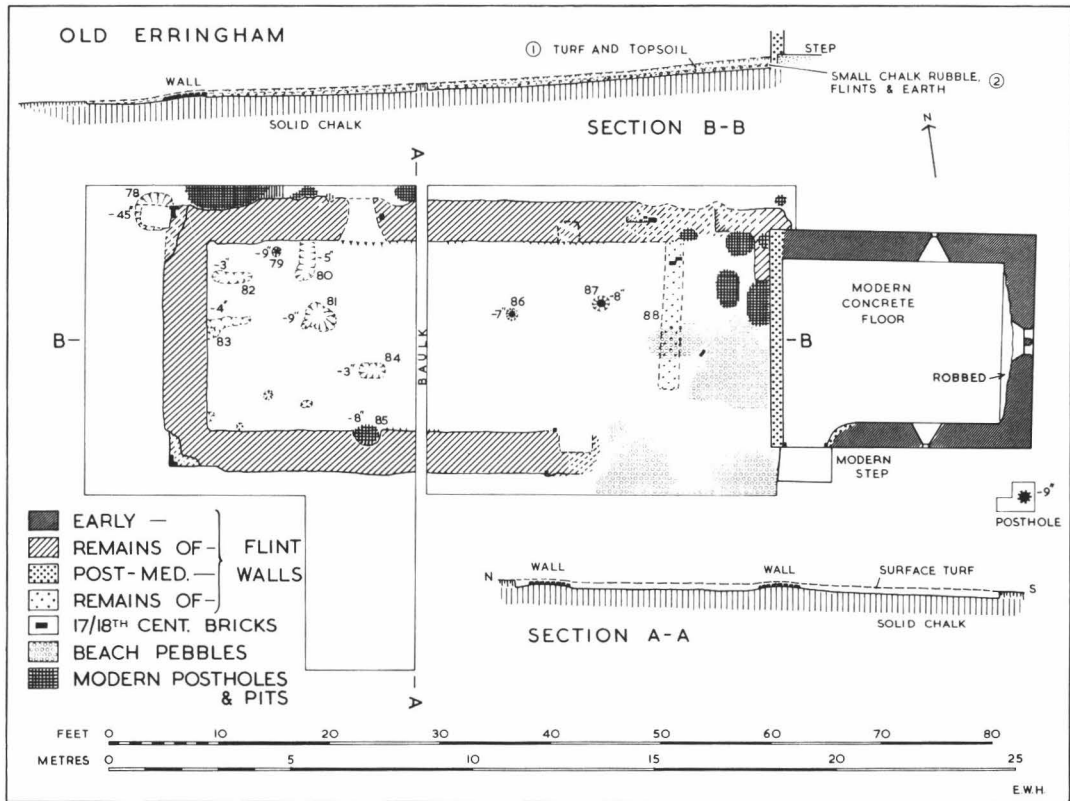
Fig. 6.   Area A excavations. The 'chapel' and area to the west.

There was a light scatter of post-medieval building material and some objects inside the building, including a farthing dated around 1700, and pottery of about that time as well as later material. Feature 81 may be also post-medieval as it contained a Westerwald sherd (1680-1720). Features 79, 82 and 86 were undatable, 80 and 87 included some medieval sherds; 83 may be a natural hollow.

The small amount of pottery discovered over the whole of the inside of the building, less than 25 sherds of Saxo-Norman and thirteenth- to fourteenth-century wares, is discussed in the pottery section, below. Feature 84, however, a small shallow depression, was packed with 274 sherds, almost all unabraded, suggesting a deliberate burial of rubbish. The date of the latest pottery is late thirteenth to early fourteenth century, so the burial probably took place early in the fourteenth century. Also in this depression was the fret-cut, copper-alloy curved decorative strip (Fig. 16, 20), possibly from a chest.

The sections (Fig. 6) show that the solid chalk below the footings course is c. 100 mm (4in.) higher than the chalk surfaces inside and outside the building, which reflects the differential weathering by the elements, especially rain, acting on the solid chalk, in conjunction with wear by human and animal traffic. There are too many factors to permit any firm conclusions to be drawn by attempting to calculate the age of the structure from the amount of weathering.

Areas B, C, D, E, F, G, H (Figs. 1, 5, 7, 8, 9, 11, 12; Plate IB)—the ringwork

The curved earthwork had three gaps in it, the major one to the west in Area D seeming to be a gateway or entrance (Fig. 1). The shallow gap between Areas B and C was caused by traffic when the later medieval lime kiln 1 was being used and the other gap between Areas B and F may be connected with the now grassed-over track leading to the small chalkpit near the eastern farm buildings. This pit probably was the source of some of the chalk for the lime kilns. The 'plateau' at the east end of Area F was found to be made-up soil placed there during landscaping for the manor house garden at the end of the medieval period. There was post-hole evidence of several modern and post-medieval fences following the curve of the bank. These post holes are not shown on the plans. The slight hollow seen in various sections (e.g. Fig. 9, ca-cb) close to the north side of the highest part of the bank may be where a low flint wall of unmortared construction (possibly using puddled chalk), had been erected during medieval or later times, but in the absence of many flints remaining in the hollow, it may represent the remains of a path used by the lime kiln workers.

Area B (Fig. 7)

What appeared as a slight rise proved to be the collapsed remains of a bank with a V-section ditch nearly 2 m (*c.* 6ft.) deep. The material from the ditch had been thrown up into a dump form of construction, the extra depth of the buried soil (period I) near the inner lip of the ditch showing where the topsoil was the first to be deposited. In the buried soil was a coin of Aethelred II dropped *c.* A.D. 1000 or soon afterwards. Two small post holes (nos. 3 and 4) about 150 mm (6in.) diameter and *c.* 2.51 m (8ft. 3in.) between centres, passed right through the chalk rubble and soil forming the bank, just penetrating the top of the solid chalk. There is a possibility that post hole 3 was a replacement, as suggested by a colour change in the chalk rubble close to the post-hole filling, but post hole 4 appeared to be coeval with the bank (period II). The posts may have rotted *in situ* judging by the large numbers of snail shells found in the fillings, since these creatures seem to like decaying wood. The rubble bank around post hole 5 was not demolished, and only the soil in the filling, which again contained numerous snails, was removed. Solid chalk was reached 710 mm below the top of the rubble. This post leaned 75 mm towards the south before decaying (it is unlikely to have been deliberately fixed at an angle) which suggests gradual slumping of the chalk bank into the ditch not long after construction. The buried soil and bank material both included a quantity of oyster, mussel and winkle shells, and fragments of animal bone. Some of the shells were in concentrations, suggesting remains of meals taken during the making of the ringwork.

Potsherds in the old soil were Saxo-Norman, like those in the bank and lower part of the chalk rubble in the ditch filling. A few thirteenth- to fourteenth-century sherds were in the top of the bank, as well as one or two fragments of slate, all of which may be intrusive. The upper 600 mm of the ditch contained mollusc shells, Saxo-Norman, thirteenth- and fourteenth-century sherds, and rare fragments of coal, slate and roof tile. The topsoil ceased behind the bank where it had been worn away by traffic, eventually being replaced by scattered flints and some beach pebbles in the form of a rough metalling (layer 6). This metalling continued westwards in a swathe some 6-8 m wide (layer 8 in Areas C and D) as far as the gateway in Area D, where the flints thinned out. The date of this metalling, based on pottery finds below, is in the second half of the thirteenth century. Two large post holes, nos. 1 and 2, occurred below the metalling. There were no finds to date them with precision, but two Saxo-Norman sherds suggest the pre-bank period I, but they could also be of the time of the ringwork (period II). Several tiny stake holes near post hole 5 are of period I.
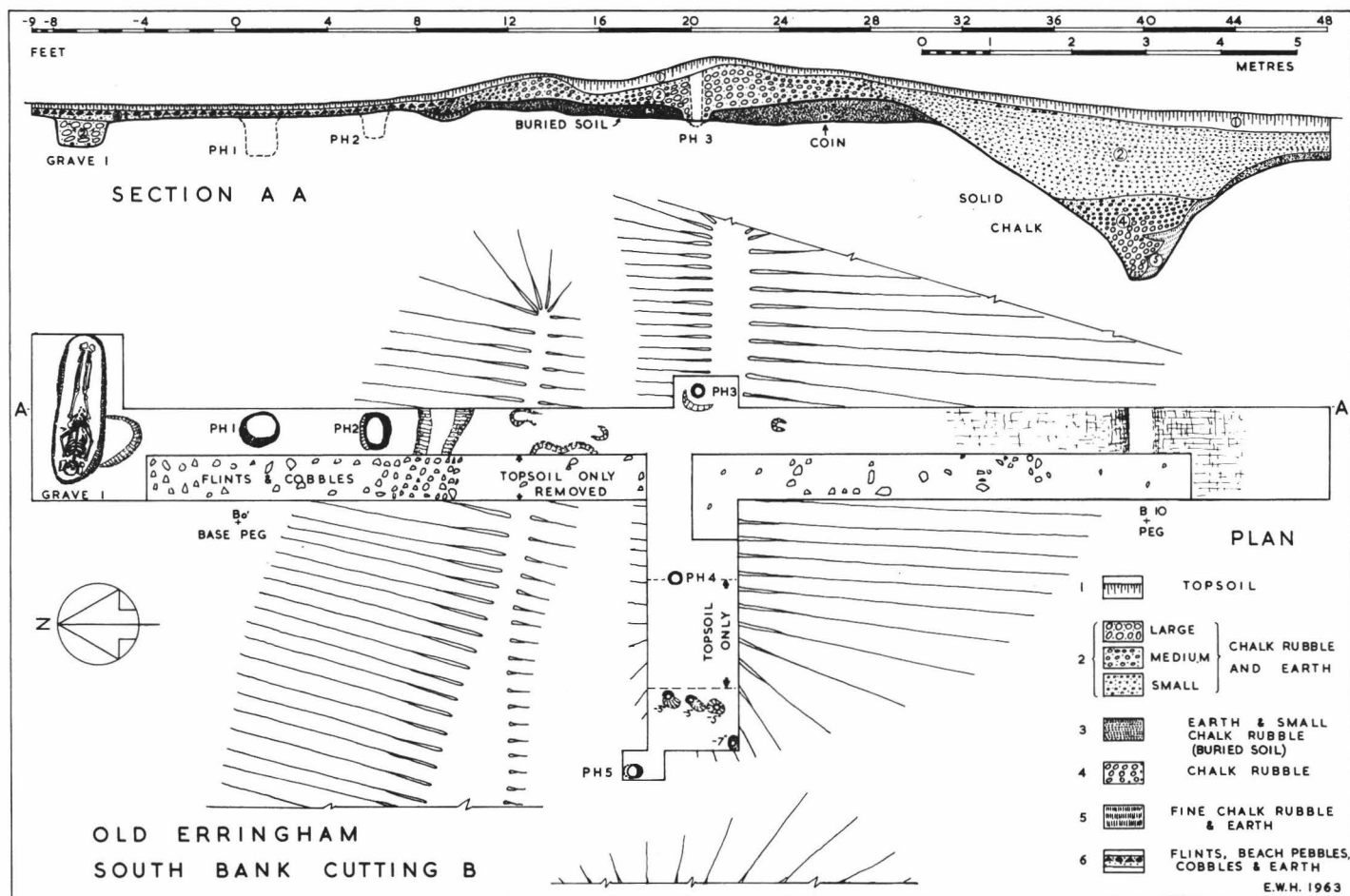
Fig. 7. Area B excavations. Section through ringwork.

Area B—Burials (Figs. 5, 7, 8; Plate IIIB)

Grave 1 was found at the north end of trench B. A hole had been dug into the solid chalk, *c.* 2 m long by 0.7 m wide and 0.4 m deep, with slightly sloping sides and rounded ends. The skeleton lay supine with head to the west, oriented *c.* 97 degrees east of true north, the skull and cervical vertebrae supported by a flat chalk block with one on either side; there were smaller chalk blocks at the feet. The filling consisted of chalk rubble and soil with some flints, in which were a few marine and land shell fragments and two nails, one with a large flat head. Well down in the grave, level with the skeleton, was a single late Saxon sherd of pottery. There was no trace of a coffin. The grave appeared to have been back-filled with the originally excavated soil and rubble. Intrusive items near the top were a tiny piece of roofing slate and one Saxo-Norman sherd. As burials are unlikely to have taken place here after the Conquest, when Old Shoreham church would have demanded its right of interment, this grave is considered to be late Saxon, and could be contemporary with the weaving hut.

Grave 2 was discovered adjacent to Area B when foundation trenches for the new houses were being machine-excavated. Workmen removed and handed over the skull, a few vertebrae, one clavicle and some bone fragments, the remainder being excavated archaeologically. The grave would have been slightly larger than Grave 1, at 0.8 m wide and 0.6 m deep. The head to the west and the filling were similar to Grave 1, but no objects of any kind were found in the rubble. The orientation was also almost the same, this time being 94 degrees east of true north.

Grave 1 contained a female skeleton and Grave 2 a male. There is a possibility that the two persons were related (see report below). The similarity of the grave pits and orientation suggests that no great length of time elapsed between the two burials. Grave 2 is also considered to be late Saxon.

Area C (Figs. 8 and 9; Plate IIA and B)

The period II bank section here was similar to that in Area B, including another post hole (no. 24) on the same arc as post holes 3-5 and 2.67 m (8ft. 9in.) from 5, the same distance as between post holes 4 and 5 (Fig. 13). Once again, this post had penetrated the buried soil into a prepared shallow hole in the solid chalk. A tiny piece of roofing slate and some small bone fragments were found near the bottom of post hole 24 filling, the latter being dark soil mixed with a small amount of chalk pellets. As the slate is unlikely to be earlier than thirteenth century and there was no trace of disturbance in the chalk rubble of the bank, the slate may have been brought down by worm action. There would be no worms in the heart of the chalk rubble bank, but a pocket of soil, containing only a little small chalk, could be attractive to worms. The bone could have already been present in the buried soil (layer 3). No slate whatsoever was found in the buried soil in any cutting.

Post holes 9-23 under the tail of the bank, pre-date the bank (period I). Nothing closely datable, however, apart from featureless Saxo-Norman sherds, was found in them.

The ditch filling had been almost totally turned over by the construction of a lime kiln in the first half of the fifteenth century (below), but the bottom of the V-section ditch remained. A second Aethelred II coin of about the same date as the one in Area B came from the buried soil 450 mm (1ft. 6in.) east of post hole 24 and once again 40-50 mm above the solid chalk. It was remarkably fortunate to find two such coins not far apart, confirming a late Saxon presence at the site.

At the north end of Area C were several post holes (nos. 27-30) of uncertain, possibly Saxo-Norman or early medieval, date. Overlying the rather scattered metalling (layer 8) was an area of beach pebbles and cobbles of *c.* eighteenth century date, probably the remains of a dump placed there before being used for hard standings for the stabling inside the building west of the 'chapel'. There was a dearth of sixteenth- or seventeenth-century finds at the north end of Area C.
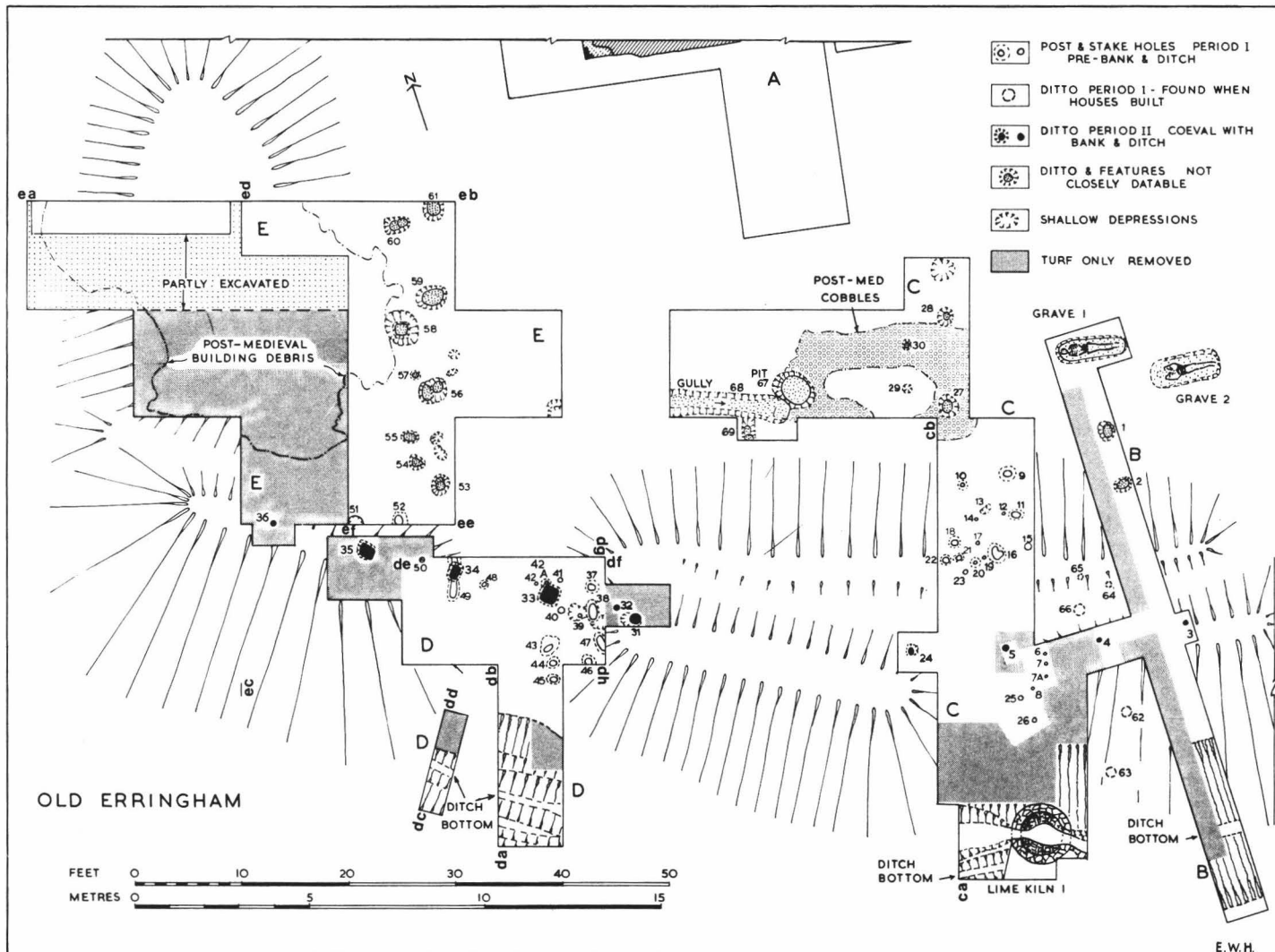
Fig. 8.   Excavation plan, areas C, D, and E.

Under the scattered flint layer was a pit (Feature 67) in the solid chalk, 685 mm deep, filled with loosely packed brown soil, chalk rubble and some large flints. Finds included 44 Saxo-Norman or early medieval sherds, representing a minimum of ten vessels; a little charcoal, a piece of sandstone quern, fragmentary bones (ox, sheep, pig, bird), some seafood shells and two corroded iron points, one of which might be the tip of a knife. A gully (Feature 68) sloped from the west towards the pit and it is possible that its far end was found in the corner of the eastern part of Area E, an overall length of *c.* 7 m. The bottom of the gully had a downward slope towards the pit of 1 in 15, whereas the land fell the other way at 1 in 19. It was filled with very hard-packed chalk rubble, with little soil, and, like the pit, included some large flints. Saxo-Norman or early medieval potsherds, similar to those in the pit, though not exactly the same wares, were in the filling, with shells, bone and a piece of quernstone, showing the two features to be contemporary. They had each, however, been filled in a different manner, the gully material having the feel of being rammed.

Feature 69 was a depression that possibly had been truncated by Feature 68. A post seems to have occupied the southern part, the bottom of which was 230 mm below the solid chalk. The fall in gully 68 towards the pit 67 suggests a rainwater channel rather than a beam-slot, thus making Feature 67 a sump. The logic of this is obscure as the somewhat friable chalk had good natural drainage. Owing to the limits of excavation, it is not known whether there was below the bank a post-structure (period I) incorporating Feature 69 and associated with gully 68 and sump 67.

Area C—Lime kiln 1 (Fig. 10; Plates IVA & B)

A lime kiln was set into the silted-up ditch at the south end of Area C. It would have had ramps on the east and west sides (which were only partly excavated) leading downwards to opposing stokeholes. The solid chalk on the north side of the ditch had been cut back to insert the structure. The kiln was circular with an internal diameter of 1.22 m at a distance of 1.2 m above the base. It was built of roughly cut blocks of the local bedrock, chalk, bedded in clay which had reddened on the inside face. There were remains of clay plastering on the inside, fired red, and collapsed burnt clay lying at the bottom. The walls tapered in the form of an eggcup towards the bottom making an oval base, *c.* 915 mm by 610 mm, formed by the natural chalk. On this there was *c.* 50 mm of fine ash, fragments of coal and white powdery material. The arch blocks above the kiln openings had fallen, but the western 'eye' had been *c.* 380 mm high and up to 300 mm wide. The natural chalk outside each stokehole had been subjected to heat and was caked with fine ash. Fallen chalk blocks occupied the lower part of the kiln and there were some outside. A calculation of the approximate volume of the tumbled blocks demonstrated that they would have added *c.* 600 mm to the height of the kiln as found, bringing it to ground level which is a suitable place for the top of a lime kiln, permitting easy loading from above with chalk and fuel without undue lifting.

Besides some residual sherds throughout, the lower part of the kiln had one sherd of the fifteenth century, plus seafood shells, coal, slate and roof tile fragments (some with vestigial nibs). Above and to each side of the remains of the kiln was chalk rubble, flints and soil containing a mixture of sherds dating back to the first half of the fifteenth century, and some fragments of painted roof tile, dating to *c.* 1450-1500. A mid-fifteenth-century date for the kiln is suggested. Tip lines may be seen in the section (Fig. 9, ca-cb) where the ramps were filled in with the chalk rubble originally dug out to make a kiln. At the top of the filling over the kiln was a trace of a poorly built flint wall running east-west with which was associated a fragment of painted roof tile.

Several medieval lime kilns with opposing stokeholes have been described elsewhere,[52] and there is reference to the construction of 'flare' kilns in that form at the end of the sixteenth century.[53]

Plate 1A   Old Erringham. Area A, showing excavated wall bases of nave. The chancel, known locally as the 'chapel'—top right; manor house—top left.

Plate 1B   Old Erringham. The ringwork from the gateway in area D, looking towards trench B excavation in progress (Photos: E. W. Holden).

Plate IIA   Old Erringham. Area C, north end, topsoil removed.
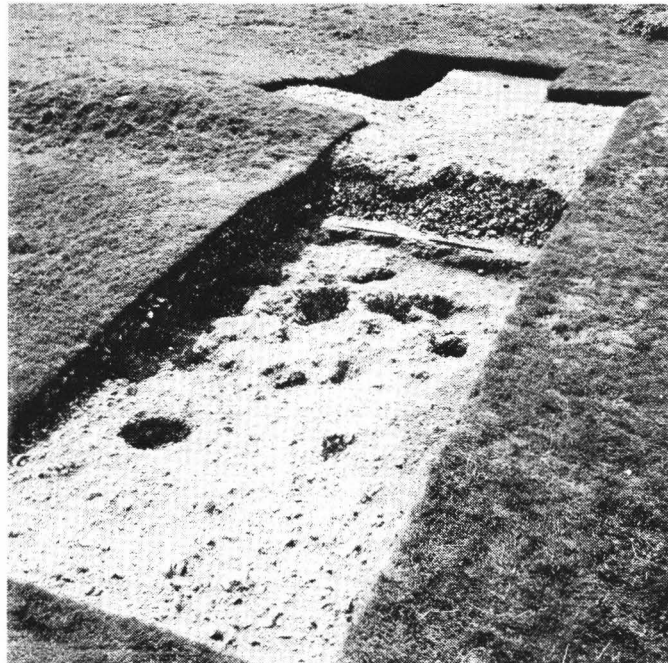
Plate IIB   Old Erringham. Area C, north end, after excavation. (Photos: E. W. Holden).
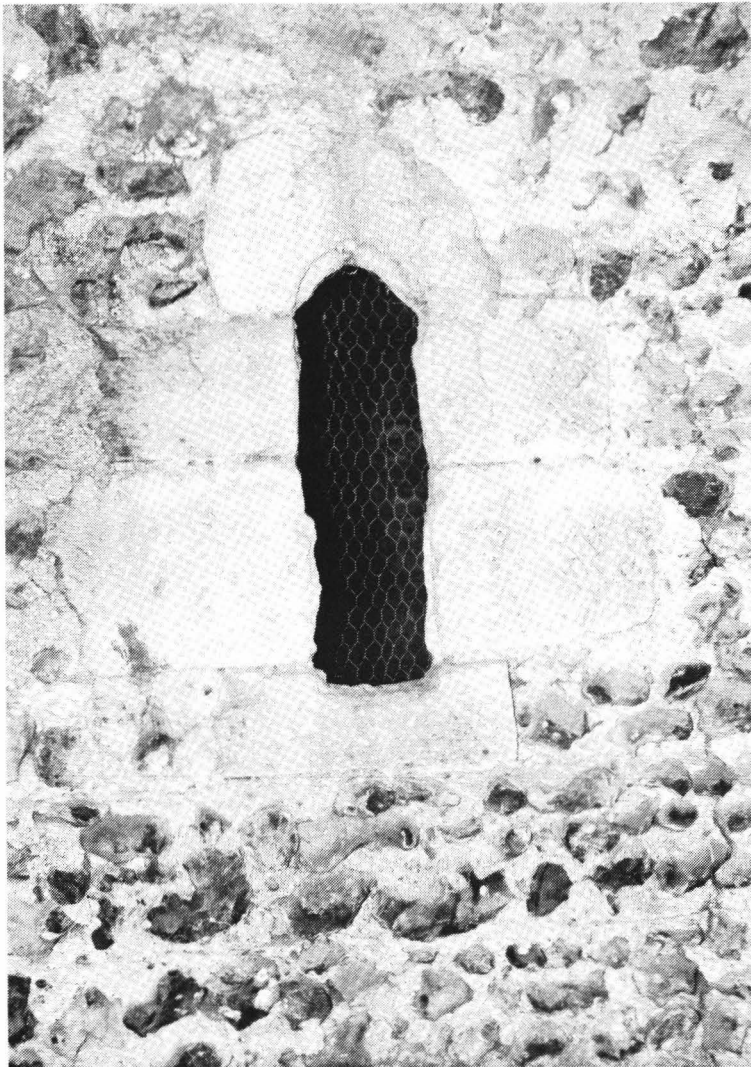
Plate IIIA   Old Erringham. North window in the chancel. (Photo: A. C. Roper).
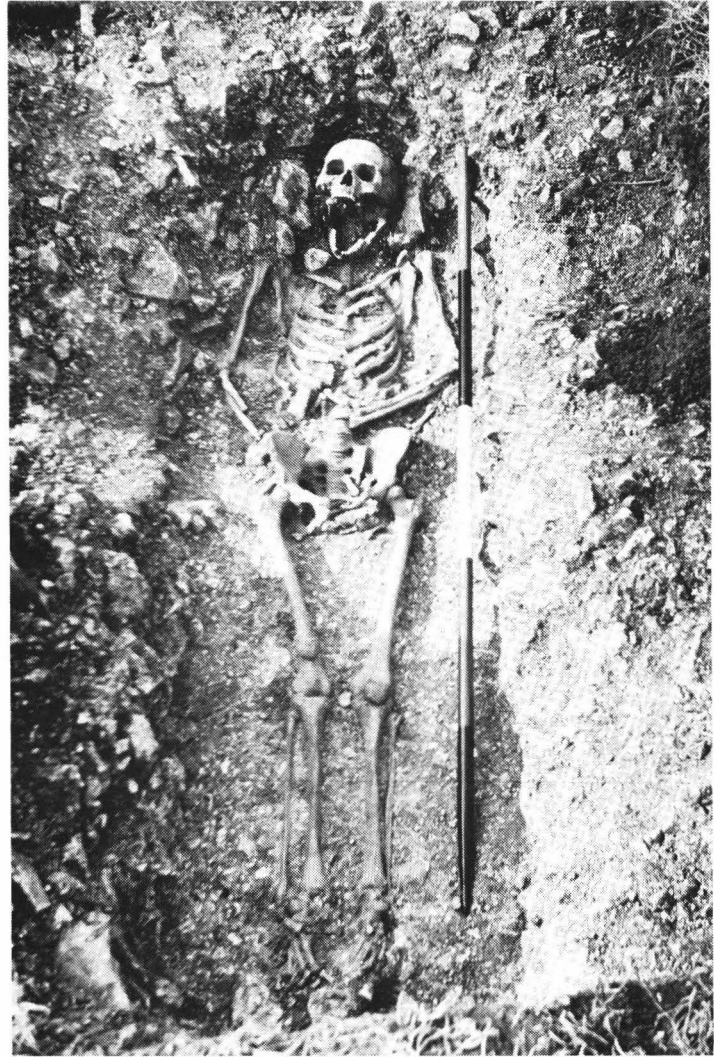
Plate IIIB   Old Erringham. Skeleton of woman in Grave 1. (Scale in feet). (Photo: E. W. Holden).
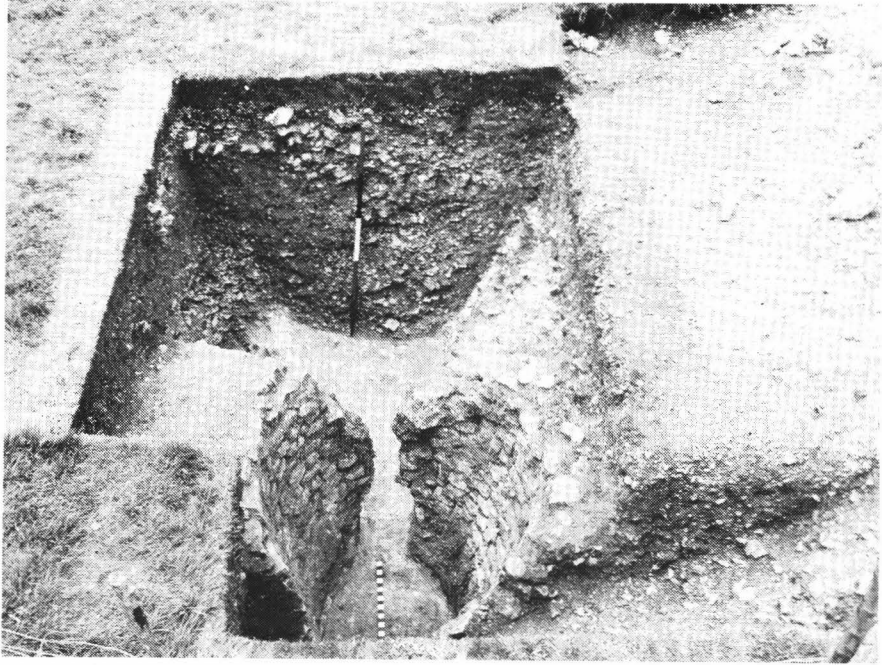
Plate IVA   Old Erringham. Lime kiln 1, looking west.

Plate IVB   Old Erringham. Close-up of lime kiln 1. (Photos: E. W. Holden).
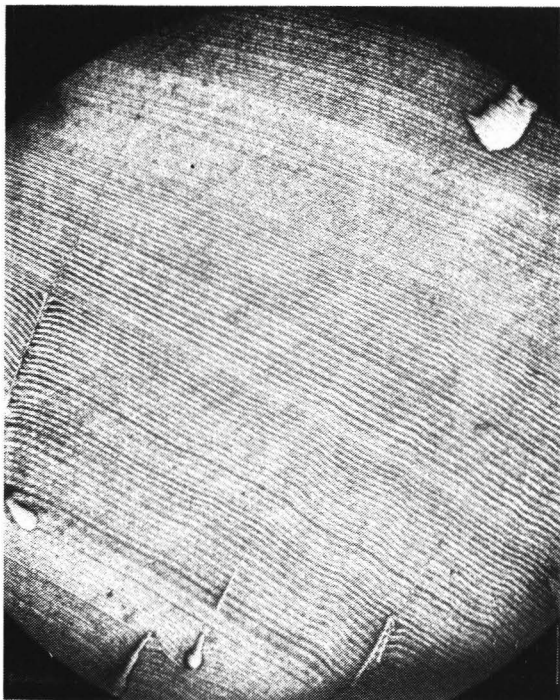
Plate VA   Old Erringham. Section of glass linen smoother showing weathering layers. Taken in a register clear of cracks. Some manganese-rich intrusions visible (Mag. 60 X). (Photo: G. Shaw).
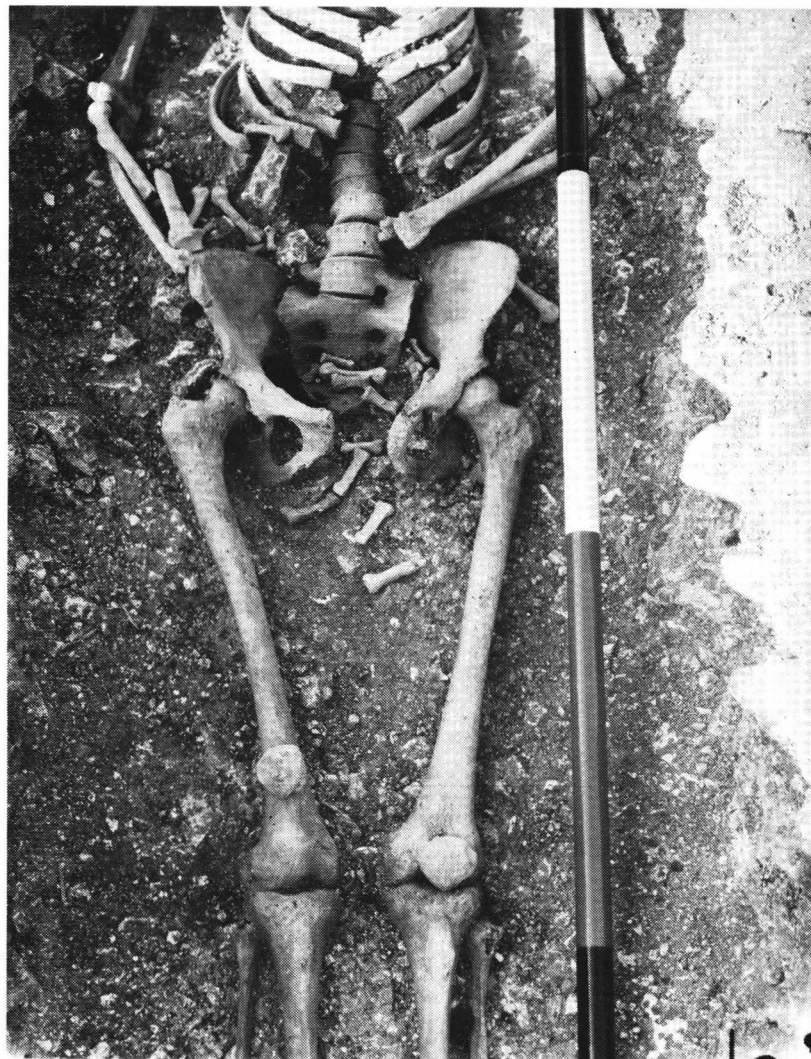
Plate VB   Old Erringham. Central part of skeleton in Grave 1. The anomaly affecting the sacrum is visible. (Photo: E. W. Holden).
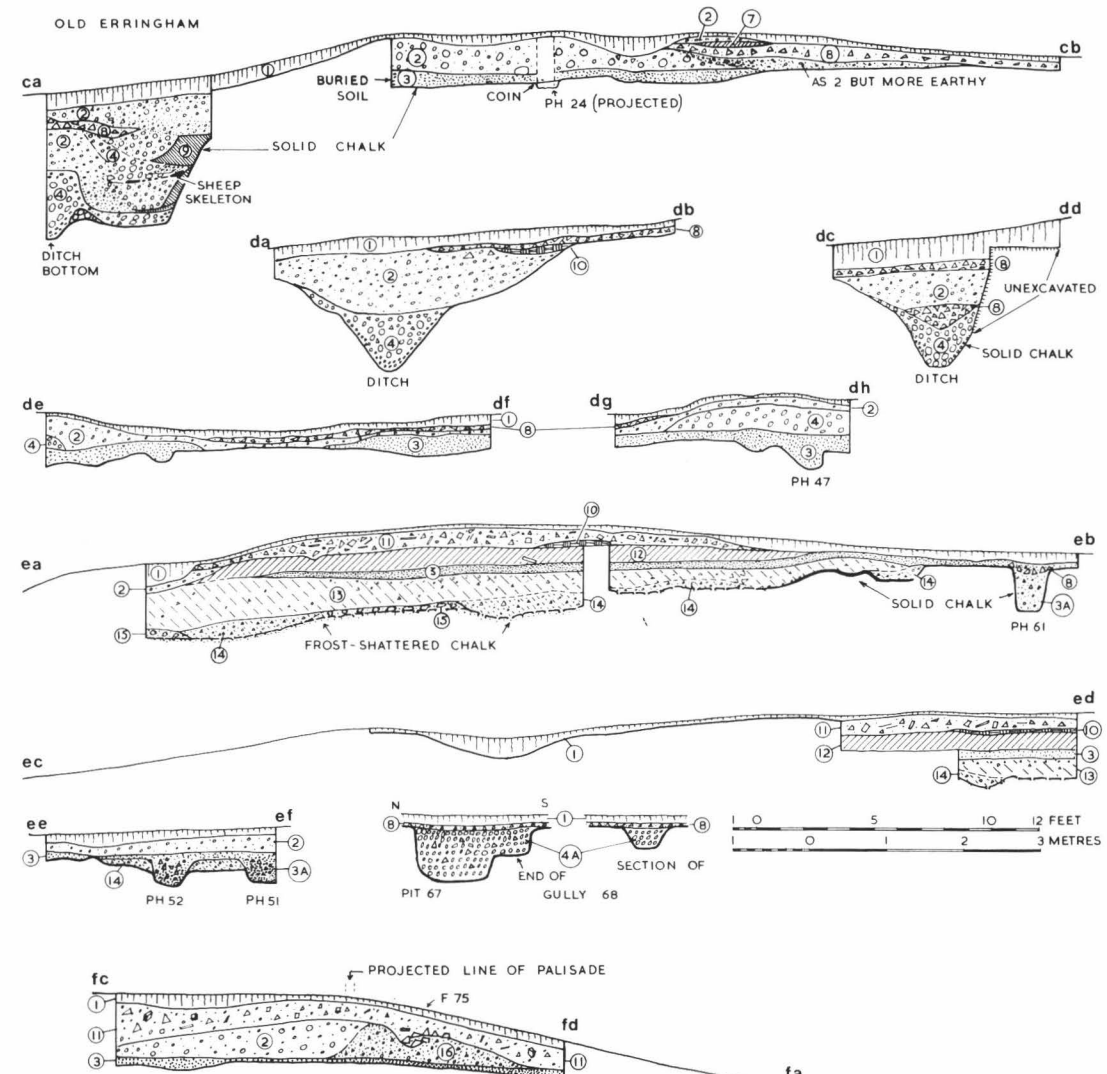
1. Topsoil
2. Chalk rubble and earth
3. Brown soil, occasional chalk rubble and small flints (buried soil)
3A. Similar to 3, but darker and some larger flints
4. Chalk rubble
4A. Chalk rubble, some large flints and earth
5. Fine chalk rubble and earth
6. Flints, beach pebbles, cobbles and earth
7. Old turf
8. Broken flints and chalky earth
9. Chalky silt
10. Chalk and lime mortar

11. Building debris, flints and earth (plus chalk rubble in fc-fb)
12. Grey-brown soil, occasional small chalk rubble and small flints
13. Light brown soil, occasional small chalk rubble and angular flints
14. Red-brown clayey soil with much chalk rubble and angular flints
15. Red-brown clayey soil with friable chalk rubble
16. Fine soil, rolled pebbles of chalk and flint, small chalk rubble and angular flints
17. Broken roofing slates

Natural solifluxion materials (head)
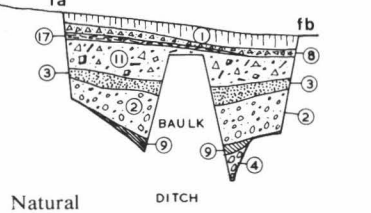
Fig. 9. Various sections from areas C-F.

The Erringham kiln is about the same size as the late sixteenth-century kiln mentioned by North, 'sixe foote heighe foure or five foote broade at the bryme but growing narrower at the bottom, having two lope holes in the bottome which they call the kill eyes.' Davey quotes Cato on the building of lime kilns, where reference is made to two furnace entrances and the necessity of having them protected from the wind.[54] The latter injunction was well observed at Erringham by sinking the kiln below ground. Two medieval lime kilns below ground level have also been excavated at Bramber Castle.[55]

A small lime kiln with walls of chalk blocks, protected from the flames by a thin layer of clay can hardly have had other than a short life. Probably it was made at some time during the fifteenth century to manufacture lime for a building phase of the manor house rather than to produce agricultural lime. The presence of coal for use as fuel, or to augment wood, is of interest, but coal is known in thirteenth/fourteenth-century contexts in Sussex,[56] and Erringham lies near a port.

Area D (Figs. 8 and 9)

There was a gap in the bank between post holes 33 and 34 which were larger than other bank post holes. They were also deeper, penetrating 250 mm and 330 mm into the solid chalk, both cutting through period I post holes, of which there were others nearby (nos. 37-50). Post holes 33 and 34 may have provided gateposts. Saxo-Norman sherds were present in the old soil and a small number of late Saxon sherds was found, with daub and loom weight fragments. More late Saxon material was found in Area D than elsewhere. Post holes 31, 33 and 36, all in the bank, were at approximately the same distance apart as the bank post holes in Areas C and D. The distance overall between centres of post holes 3-24 is 7.85 m (25ft. 9in.), which is repeated almost exactly between any other four on the same curved alignment, e.g. 24-30, 31-35, or 33-36. Post holes 35 and 36 passed through the bank 760 mm and 860 mm respectively to the solid chalk. There was much more soil (rather than chalk rubble) in the bank at post hole 35, which could indicate a replacement post.

The ditch sections (Fig. 9, da-dd) show the same V-cut bottom as to the east, but the depth has become less. As the ditch is not interrupted for the gateway (which would confirm them as contemporary) it has to be assumed that some sort of bridge over the ditch was required. The gap is not more than 3 m across and such a bridge could be very simple and easily removable, rather than a well-carpentered fixed structure. No traces of anything of either nature survived in the limited excavation. The objects in the ditch were similar to those in Area B, but there was one find of some interest 760 mm from the surface in layer 2 of the main trench across the ditch. This was about half of a glass linen smoother (Fig. 16,8), an object known in Saxon and medieval times. The weathered crust of the smoother had a mean count of 780 layers (see below) each of which may represent a c. one year cycle.[57] This would give a burial date of c. A.D. 1184, which would not be out of place.

The old soil between the gate post holes had worn away and had been replaced by rough flint metalling containing pottery ranging from late Saxon to recent, making dating difficult (Fig. 9, de-df). The flint layer north of Areas B and C is thought to be thirteenth century so it is possible that the gateway flints, too, are of that period.

Area E (Figs. 8 and 9)

The eastern part of this area was cleared down to solid chalk (which had in its surface numerous shallow involutions filled with sterile red-brown clay) by removing the topsoil, small chalk rubble and scattered flints. These layers rarely exceeded 150-230 mm in depth, and in places were much less. The soil contained a small number of residual sherds from the Saxo-Norman period

MEDIEVAL LIME KILN I

OLD ERRINGHAM, SHOREHAM, SX.

EARTH &
CHALK RUBBLE

CHALK BLOCKS
BEDDED IN
CLAY

BURNT CLAY

SOLID CHALK

ASH

SECTION A-A

BTM. OF EARLIER DITCH

N

1 O 1 2 3 4 5 6 7 8 9 10 11 FEET

METRES

E.W.H.
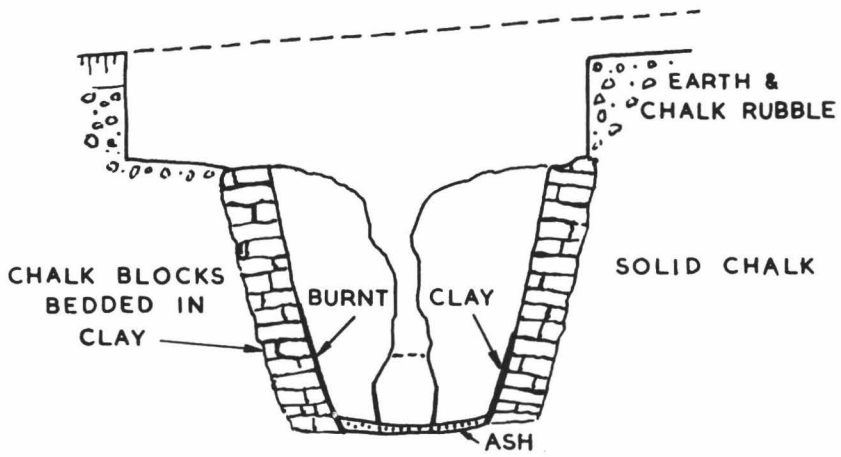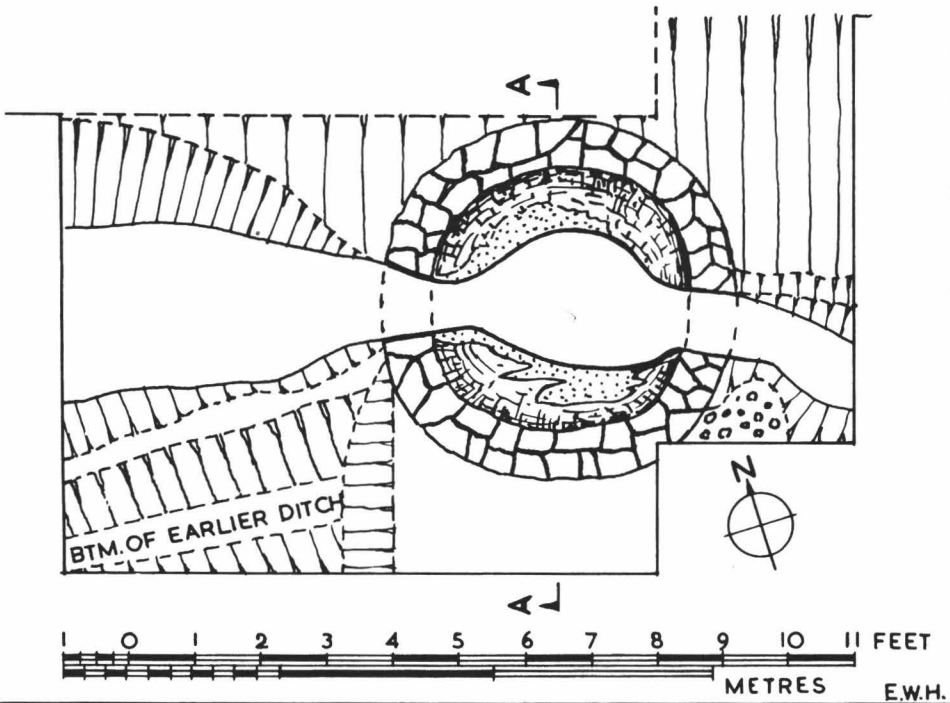
Fig. 10.   Details of fifteenth century lime kiln.

to c. 1500 (but none of the sixteenth/seventeenth centuries), small quantities of eighteenth/twentieth-century wares, with occasional fragments of roofing tile, stone and slate, brick, bottle glass, foodshells and bone, some of the latter showing signs of butchery.

Of numerous post holes filled with chalk rubble, flints and soil, none showed post-pipes from which the diameters of the wooden posts could be obtained. Nos. 51 and 52, being below the topsoil, could be placed in period I (pre-bank), but the others shown in Fig. 8 were not closely datable. Nos. 54 and 55 had no finds in them; 53 and 57 only featureless coarse sherds which could be Saxo-Norman or medieval; nos. 56, 58, 59, 60 and 61 each had similar sherds, with fragments of roof tile and slate which are unlikely to be earlier than thirteenth century. Post holes 53, 56, 58, 59, 60 and 61 all had large flints in the top of the filling. Nos. 56 and 60 were double post holes which appeared to be for replacement posts. It will be seen that post holes 53, 56, 59 and 61 are more or less in line with gate post hole 34 and are about the same distance apart from one another. This line, therefore, might represent a fence leading northwards from the earlier gatepost. However, a later undatable post (not shown on plan) was set into the filling of post hole 34 in its south-western corner, lining up with, and of the same character as, those described above. The fence, hypothetically later, might, therefore, have continued southwards past the period II gateway. Apart from this possible fence line, the post holes made no recognisable pattern.

The long, low mound covering the western part of Area E, and which appeared to turn north from the ringwork, had no part in the defensive system of earthworks. The following sequence of events seems to have occurred (Fig. 9, ea-eb for west-east section). Excluding layers 13-15, products of solifluxion, the buried soil (layer 3) which developed on top of layer 13 contained Saxo-Norman sherds, with a very small number of medieval sherds as well, and those only from parts excavated where layer 12 (above) was non-existent or virtually so. During this Saxo-Norman period a thick layer of good soil, probably topsoil, was brought in from elsewhere and deposited to form an incipient mound. In this layer were some Saxo-Norman sherds. Owing to a hiatus in this particular area from the late medieval period to the late seventeenth century, the layer remained undisturbed until c. 1700, when flints, roofing tile, slate, Horsham stone, decayed mortar and other building debris, including some pottery of the late seventeenth/early eighteenth century, and two clay pipes, c. 1700, were added to the mound (layer 11). Unlike the somewhat similar but earlier layer 11 in Area F (Fig. 9, fa-fd), the rubble in Area E contained practically no chalk. There were also a few residual sherds present. A soil formed on top of the deposit into which were incorporated later eighteenth/twentieth century objects, but not in any quantity.

The 1710 date-stone in the south chimney of the manor house suggests that this deposition of building rubble may relate to building alterations at that time.

Area F (Figs. 9 and 11)

Exploratory trenches uncovered several gullies, depressions or small pits (Features 71-74) none of which could be dated more precisely than Saxo-Norman to early medieval. Those at F (west) lay below flint metalling which included building rubble. The bank was sectioned (Fig. 9, fc-fd) without locating any post holes other than a modern one (no. 70). Flints and mortar from the base of a post-medieval wall were encountered (no. 75). Overlying the bank and ditch filling was a thick deposit of chalk rubble and soil (layer 11) containing building debris, used to level the area south of the present boundary wall of the manor house garden. The rubble included fragmentary pieces of Horsham stone roofing 'slate', Devonian-type roofing slate, roofing tile, crested ridge tile, brick rubble (bricks between 50 mm (2in.) and 63 mm ($2\frac{1}{2}$in.) thick) and decayed lime mortar with
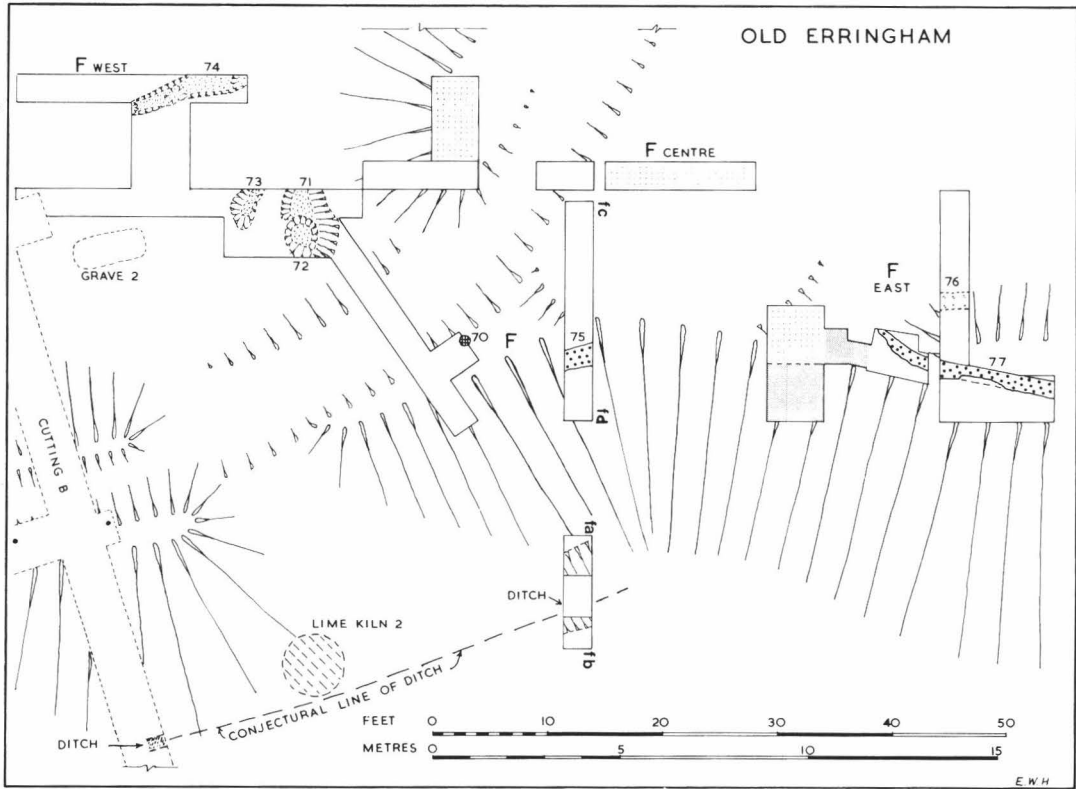
Fig. 11. Area F, trial trenches (hatching conventions as Figs. 6 and 8).

tiny beach pebble inclusions. Other material included seafood shells and animal bones (probably food remains).

The ditch (Fig. 9, fa-fb) was not fully excavated, but it was evident that it followed the same curve in plan as in Areas B, C and D. The bank and ditch were then 'lost' under the dumped soil. The ditch had silted up as elsewhere but had acquired a turf layer (layer 3), not seen in Areas B or D, before being covered with the dumped soil and rubble (layer 11). On top of layer 11 was a scatter of roofing slate (layer 17) and flints above that (layer 8). The buried topsoil over the ditch had no sherds in it later than the fourteenth century, but since the trench was small, this dating evidence is inconclusive. It does provide, however, an earliest possible date for layer 11 above.

The bank, unlike the ditch, seems to have been stripped of its topsoil before dumping occurred, as none showed in the section (fc-fd). Topsoil would be needed to cover made-up ground of poor quality and it is possible that the topsoil was taken from the bank and redeposited at a higher level later on. The bulk of the pottery in the made-up soil was fifteenth century, but there were earlier residual sherds and two sixteenth-century imported pieces: a small sherd of Raeren ware (first half of the sixteenth century—not illustrated) and one from Frechen (Fig. 14,105) dating to the second half of the sixteenth century. The small fragments of brick in the made-up soil are not easy to date as thickness is not always a reliable guide. The presence of brick pieces up to 63 mm (2½in.) thick suggests that they could be the same age as those found in the western quoins of the nave-like structure in Area A, which have been tentatively dated to a building period c. 1710, but such bricks

might well appear anywhere within the seventeenth or early eighteenth century. Local sixteenth century bricks tend to be about 50 mm (2in.) thick. A small number of seventeenth-century sherds were found in the dump layer (but where it was only 200 mm thick below the topsoil) and thus, like some of the brick, might be intrusive. The most one can say is that the superimposed soil and rubble (layer 11) may have been spread either in the seventeenth century, or, possibly, in the latter part of the sixteenth century.

The southern boundary of the levelled area was limited by a cobble wall of which some traces remained in the east trench of Area F (Feature 77). Probing to the east showed that the wall extended another 6 m, then turned north to join the present corner of the manor house garden wall. Halfway along the return there seemed to be a gap for a gateway. The landscaping extended westwards as far as Area F (centre), as indicated by hachures in Fig. 11. The levelled area shows that the garden extended farther to the south several centuries ago.

Area G (Fig. 12)

A trench was dug across the hollow in the north-west part of the manor house complex. Solid chalk was reached at 250-300 mm from the surface, the upper half comprising only topsoil with small chalk rubble, soil and occasional flints below. A short trench at the southern end investigated a small mound to the west, which was modern. Nothing was found in the main trench other than a very small quantity of recent sherds. There was no clay over the hollow to suggest that it might once have been a pond. Natural clay (solifluxion material) occurred 3 m from the buttress of building H, being 180 mm thick where it met the latter. This seemed to confirm that the hollow was a natural feature, probably the head of a miniature coombe which was truncated by the formation of the Pleistocene river-cliff. It is puzzling that not a single piece of early pottery was found in the long trench, when one considers that a reasonable amount was recovered from Areas A-E. It seems that there could have been no occupation at all in this area.

A short trial trench, c. 17 m north of Area A reached chalk at the same depth as in Area G, and, again, was barren apart from modern material.

Area H (Fig. 12)

The base of a wall built of random flints and some sea cobbles in lime mortar was butted by foundations for two later buttresses. These had bricks at the corners, the same size and manufacture as those in the quoins of the building in Area A, dated to c. 1710. The wall did not pass under the north garden wall and any trace of an east return close to the boundary wall had been lost. Trial trenches to the south found a return corner, with a space where a brick had lain, while another small cutting located a return wall running east. A height of 300 mm was left of the flintwork in the main trench, resting on the natural clay subsoil. There were no signs of any form of floor. Only one sherd of nineteenth-century pottery and three nails were found.

The remains appear to be part of a post-medieval barn, probably of the seventeenth century and demolished before 1851, since it is not shown on the Tithe Award map. The first edition of the 1875 25 inch O.S. map shows alterations to the enclosing walls and fences, the wall along the top of the river-cliff having been built since 1851. It then turned north-eastwards, passing the end of the building in Area H, to join the old boundary. These alterations occurred probably at a time when the manor house ceased to be in single occupation and was turned into dwellings for two families of farm-workers, that is, between 1851 and 1875.
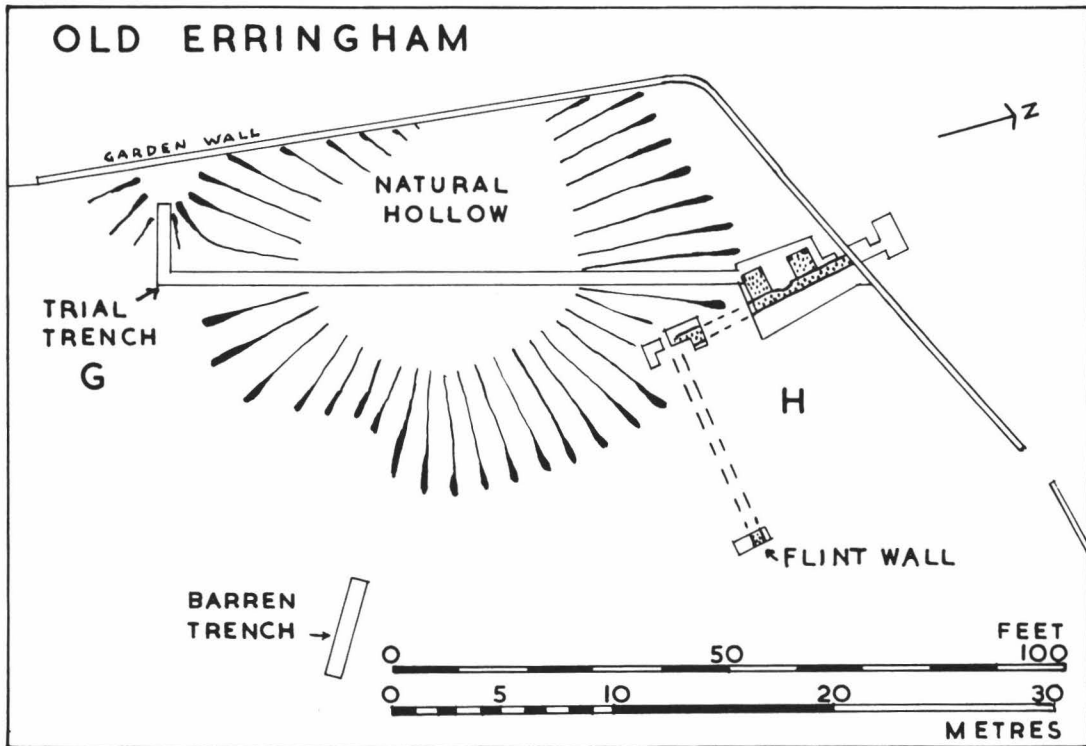
Fig. 12. Trial trenches, Area G. Area H, post-medieval building with buttresses.

Other Features—Lime kiln 2 (Fig. 11)

A second kiln was noted by Mr. F. Witten during building works in 1966. It showed only as a circular area of reddened chalk, so wrecked that details were unobtainable, except that it was about the same diameter as kiln 1. It might be 50-100 years earlier or later as lime kiln construction is unlikely to have changed much over that period. This kiln, like kiln 1, was located in the fill of the ditch.

Various post holes (Figs. 5 and 8)

A test hole was dug near the south-east corner of the 'chapel' to see if a wall extended to the south (Fig. 5). There was no wall, but a post hole was found. The solid chalk was covered by flint metalling and topsoil to a depth of 450 mm, over 180 mm of small chalk rubble. There was no trace of a post hole in these layers. The post hole—340 mm top diameter, 280 mm bottom diameter, and 230 mm deep into the solid chalk—contained only chalk rubble and soil. Building works prevented further excavation.

Five more post holes were seen in the sides of foundation trenches where dug into the solid chalk (Fig. 8, nos. 62-66). All appeared to belong to period I as they did not pass through the buried topsoil. Nos. 62 and 63 had depths of 430 mm and 600 mm, the other three being 150, 280 and 250 mm deep respectively. There were no finds.

DISCUSSION AND CONCLUSIONS

The principal features of the site are the ringwork, the extant building known as the 'chapel' and its adjacent structure.

In Area A, the plan (Fig. 6) shows what seems almost certainly to be a church or chapel comprising nave and chancel. The internal dimensions of the nave, 15.8 m by 5.33 m (51ft. by 17ft. 6in.) with walls 914 mm (3ft.) thick, are almost the same as St. Botolph's church, at Botolphs, on the other side of the Adur valley, viz. 15.7 m by 4.93 m (51ft. 6in. x 16ft. 2in.) with 914 mm (3ft.) walls.[58] The proportion of length to breadth in both examples is about 3:1, a Saxon feature,[59] whereas the 914 mm thick walls are a Norman feature.[60] St. Botolph's nave is pre-Conquest according to Godfrey[61] and 'undoubtedly Saxon, possibly late,' following Fisher,[62] but we have already discussed the difficulties experts have in dating such churches to within fifty years or more. Another indication of a church is the sloping floor, which is less likely to be tolerated in a domestic building: locally, both Rottingdean and Hangleton churches have floors sloping to the west.

There is no documentary evidence for a church at Erringham, but chapels for hamlets within a parish a long distance from the mother church are not uncommon in Sussex, e.g. Allington, Balsdean and Chilgrove.[63] It is probable that the Erringham building is another such chapel erected to serve the spiritual needs of a small community within the parish of Old Shoreham. The date of its foundation remains unresolved: it may be pre-Conquest, but could well be post-Conquest. It is tempting to speculate that the knight, Hanselin, who may have been at Erringham between 1086 and 1095 (history section, above) was the founder of the chapel.

The chancel had a new east window and the roof timbers were replaced not earlier than the second half of the thirteenth century. A candidate for this renovation could be Rici-le-clerk who was at Erringham in 1294 and still operative within the area in 1340. The deliberate burial of pottery in Feature 84 in the middle of the nave floor suggests that the function of the building had become secular during the fourteenth century. Nothing was found to indicate this function until c. 1710 when the western quoins were robbed for their Caen stone ashlar. The blocking up of the chancel arch, or building of a new wall between nave and chancel, thus preserving the chancel more or less intact, took place before the sixteenth century, by which time the east window had been robbed of its stonework. It is possible that the chancel alone could have continued in use as a chapel during the fourteenth and fifteenth centuries.

The fact that internal partitions were noted by Grimm in 1787 (Fig. 4a) suggests that the nave roof was still existing in the early eighteenth century, when the nave, or its east end at least, was adapted for stabling. Alternatively, the whole roof of the nave may have been down a long time before that date, and the eastern part only re-roofed during the period of eighteenth-century stabling. A ruined nave without a roof would still be useful to farmers for enclosing animals, provided the walls stood to a reasonable height; the Norman church at West Blatchington was so used in the nineteenth century.[64] The replacement of stone by brick in the western quoins shows that the nave was still capable of being utilised for some purpose. After 1787 the wall between nave and chancel was pulled down, possibly leaving some lower courses, then rebuilt in flint, and yet later renovated at the top to finish below the verges of the thatched chancel roof covering (Fig. 3).

The excavations did not reveal the relationship between the chapel and the ringwork. We know that the earthwork must be later than c. 1000, when the coins in the buried soil were dropped, and the chapel could be either pre- or post-Conquest. King and Alcock stated in 1966 that the evidence of excavated ringworks has uniformly supported dates in the post-Conquest period.[65] Since that was written, however, an oval defensive bank and ditch, constructed in c. 1000, and in width and
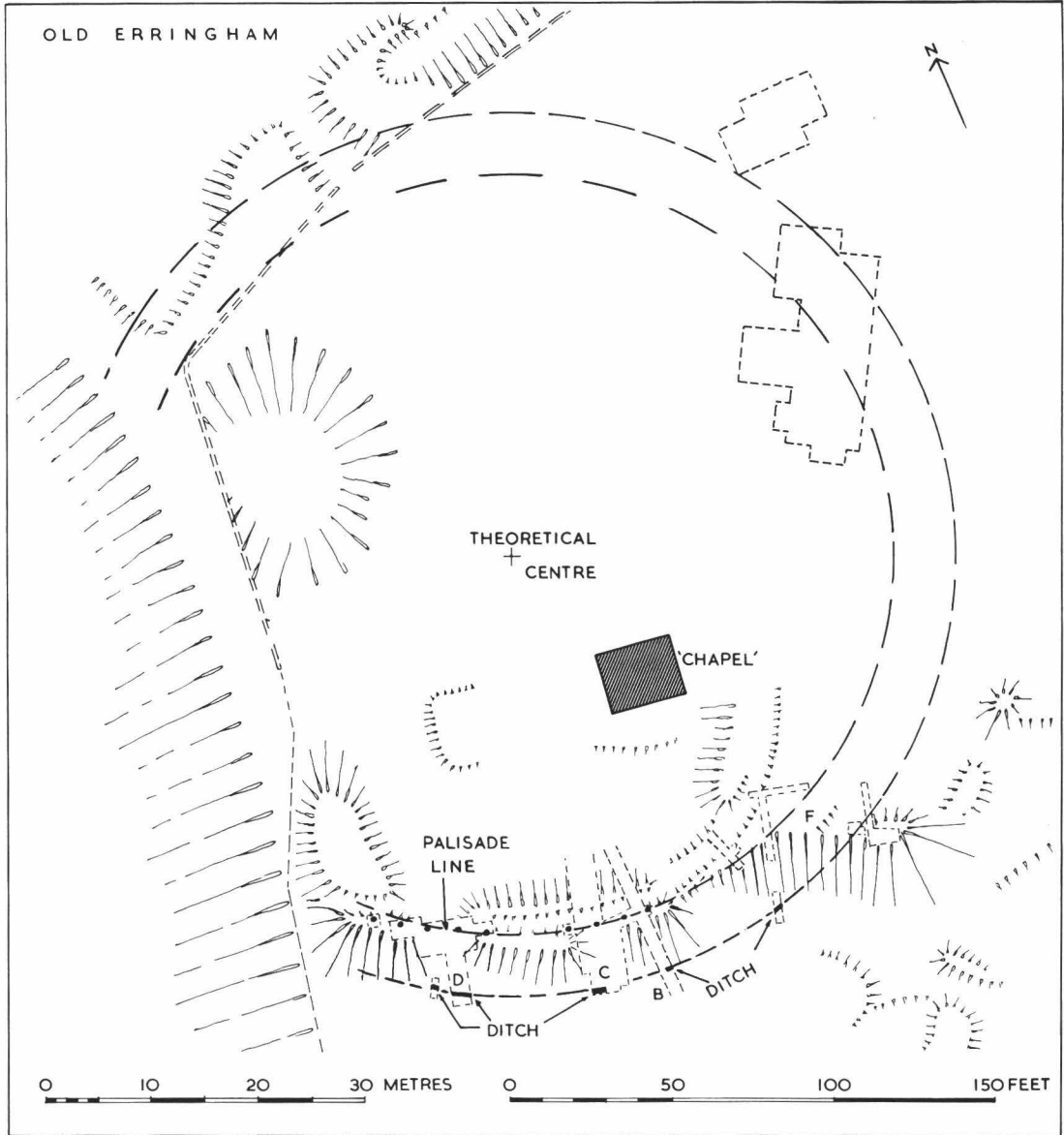
Fig. 13.   Conjectural lines of a circular ringwork.

depth not unlike that at Erringham, has been excavated at Goltho, Lincolnshire.[66] It is known also that a late Saxon *ceorl* of some standing could have a palisade or entrenchment around his house, 'probably ... some stockade, some rude rampart; he will have a bank'.[67] Thus there is no reason why there should *not* be a defensive earthwork at Erringham before 1066. If one looks for the motive to create a ringwork, apart from that of prestige, there were troublous times both in the eleventh and twelfth centuries. Erringham, furthermore, lying on a tidal estuary, would not be immune from seaborne attacks.

It is arguable whether the ringwork was ever completed. A simulation of a truly circular earthwork based on the palisade post holes and the ditch bottom is shown in Fig. 13, the post-hole line having a radius of c. 36 m and the ditch, 42 m. The curvature of the palisade does not quite agree with the theoretical curve at the western end, but this is of little consequence. We cannot be sure that the earthwork was intended to be truly circular, but if it was, the northern arc should terminate at the river-cliff near the north-west corner of the garden wall. This could be tested by future excavation. The disturbed ground in that area appears to be linked with the post-medieval garden and boundary layout and not with the ringwork. No pottery was found in Areas G and H, which suggests there was little activity in that area during Saxo-Norman or medieval times. The reason for this lack of material may be that the ringwork was never completed.

The southern section of the ringwork seems to have silted up reasonably quickly, the ditch showing no indications of re-cuttings. The posts set into the bank at intervals could not have been very effective in supporting the rampart, or as a breastwork, unlike the much earlier ramparts of the Iron Age which had massive timbering in their construction. The use of light posts in a ninth-century rampart is attested at Wallingford, Berkshire, where vertical stakes were set in a rampart, though not in a regular pattern.[68]

In describing the excavation, the general assumption has been that the posts within the rampart, and the gateway in Area D, were coeval with the construction of the ringwork, but there could be an alternative interpretation. Although several of the rampart post holes showed no apparent signs of being later insertions through the chalk rubble of the bank, there were problems about post holes 3 and 35, both of which might have been intrusive into the bank material. Tiny fragments of roofing slate were found in one or two post holes, perhaps due to worm action, but that argument is not entirely convincing. The gate post holes, too, cannot be assigned to the time of the ringwork construction (period II) with complete confidence and the continuation of the ditch in front of the gateway is not in favour of their contemporaneity. The line of fence-posts running north-westwards in Area E from gatepost 34 also seems to be not earlier than the thirteenth century. It is possible, therefore, that the bank was continuous when made and only later, possibly in the thirteenth century, was a gateway formed and a fence erected, following the line of the bank around to the east of the chapel.

There was little or no domestic activity in the ringwork area after the early fourteenth century, by which time the small settlement to the south-east (stippled area on Fig. 1, inset) had apparently become the centre of occupation. The manor house began to take on a larger form by the fifteenth and sixteenth centuries, while at the same time, the little settlement of farm dependants and their families became virtually deserted.

THE FINDS

Pottery

Romano-British
    The excavation yielded eighteen small Romano-British sherds of undistinguished coarse wares, impossible to date with accuracy, but which might be third century A.D. There were four tiny, featureless Samian sherds which could be earlier, also a small fragment of scored flue tile.[69] All were much weathered and are typical of pottery to be found on the Downs over what were once cultivated Romano-British arable fields.

Late Saxon—fifteenth century
    No whole vessels were found and none that could be completely restored: virtually every drawable sherd is shown. Illustrated sherds are arranged by layers or groups, some of which are sealed, rather than by form or fabric. Little of the collection is capable of being closely dated and the majority of sherds can only be given general terms such as 'Saxo-Norman', 'early medieval', etc. The late Saxon sherds are too small to decide the method of manufacture: where Saxo-Norman and later sherds are large enough they appear to be wheel-thrown, although many are too small to be certain.
    The separation of fabrics adopted for the Saxon weaving hut in Part I[70] has not been followed exactly as there was little difference between some of those divisions. The following fabrics are based on the fillers (tempering) in the clay, as

examined using a hand lens. Fillers 1-4 may sometimes include chalk. The fillers for all medieval and earlier sherds, apart from the few known imported wares, could have been obtained locally.

Description of fabrics
No. 1   Black or dark grey ware, burnished externally, with a filler of coarse crushed flint; late Saxon, as at weaving hut (there was no pottery of this fabric).
No. 2   Similar to no. 1, but without burnish, the filler coarse to medium flint. These sherds appear to be residual late Saxon and were infrequent.
No. 3/4   The bulk of the potsherds found, commonly oxidised reddish, red-brown, occasionally buff, more rarely reduced, sometimes patchy. Filler of crushed flint, sometimes with coarse to medium sand (which may contain rolled flint and rare shell fragments). Fabric 4 is somewhat finer than fabric 3. An attempt to divide the two was made during the early stages of sorting, but was abandoned owing to the subjectivity of selecting by eye alone.
No. 4a   Coarse to medium sand filler, the ware being glazed, or bearing spots of glaze.

The following wares were usually oxidised red or red-brown.
No. 5   Medium to fine sand filler.
No. 5a   As no. 5, but glazed or with spots of glaze, or with slip decoration.
No. 6   Very fine sand filler.
No. 6a   As no. 6, but glazed or with spots of glaze, or with slip decoration.

Where the angle of a rim can be determined, a solid horizontal line is indicated on the drawings; where uncertain, a broken line (e.g. no. 3). The absence of a rim line denotes that the angle cannot be ascertained (e.g. no. 88). I am indebted to Messrs. K. J. Barton and J. G. Hurst for generous assistance and advice regarding the pottery. They are not, however, responsible for any errors in description or dating.

Buried soil sealed below bank (Figs. 7 & 9, layer 3; Fig. 14, 1-26; Saxo-Norman)
Fabric 2
1.   Rim of ? cooking pot.
2.   Owing to edge damage the form of the vessel is uncertain. It might represent the bottom part of the wall and start of a convex-based pot (as drawn), but it could be shown the other way up as the damaged rim of a shallow bowl or dish.
3.   Rim of a vessel *c.* 180 mm diameter.

Fabric 3/4
4.   Rim of bowl with thumbed piecrust decoration (*Chichester Excavations,* 2, p. 85, Fig. 7.8, no. 4, which is late Saxon).
6-8, 11-14.   Rims of cooking pots. No. 7 has thumbed piecrust decoration and no. 8 has a trace of the same. No. 11 is *c.* 300 mm, no. 13 is *c.* 165 mm in diameter. No. 12 thickens below the rim which appears to be a Saxo-Norman feature.
5, 9, 10.   Rims of ? storage jars.
15-17.   Rims of bowls or dishes. No. 16 is *c.* 280 mm, no. 17 is 305 mm in diameter.
18.   Convex (otherwise known as sagging) base of a cooking pot with slightly rounded angle. Several other sherds of similar bases not illustrated.
19, 20, 25.   Sherds with stabbed decoration (Saxo-Norman similarities at Chichester, *op. cit.,* Figs. 7.8 and 7.9; for no. 25, *S.A.C.,* 106, p. 129, Fig. 10, no. 7).
21, 23, 24.   Sherds with crude grooved decoration.
22.   Possibly grooving, but may be the underside of a rim.
26.   Body sherd, orientation uncertain, with remains of an applied thumbed strip of triangular section. This type of applied strip fits Barton's definition of Saxo-Norman strips.[71]

Chalk rubble and soil in bank (Figs. 7 & 9, layer 2; Fig. 14, 27-35; Saxo-Norman)
Fabric 2
27.   Thumbed rim, oxidised, ? cooking pot.

Fabric 3/4
28.   Slightly hollowed thumbed rim of bowl.
29, 30.   Flat rim sherds of bowl.
31.   Rim of ? bowl, *c.* 300 mm in diameter.
32.   Basal angle of cooking pot; may be the same vessel as no. 34.
33.   Thumbed rim of cooking pot.
34.   Rim of cooking pot, thickening towards neck; may belong to no. 32.

Chalk rubble and soil in lower part of ditch (Figs. 7 & 9, layer 4; Fig. 14, 36-38)
Fabric 3/4
36.   Well defined collared rim sherd of large vessel, ? bowl. Found 0.75 m above bottom of ditch in trench B. Some resemblance to thirteenth century forms, but see no. 7 for a Saxo-Norman rim with a somewhat similar profile.
37.   Rim, lightly thumbed on inside edge, ? bowl. From same bag as no. 36. Probably Saxo-Norman.
38.   Flat-topped rim from a thick vessel. Saxo-Norman or early medieval.
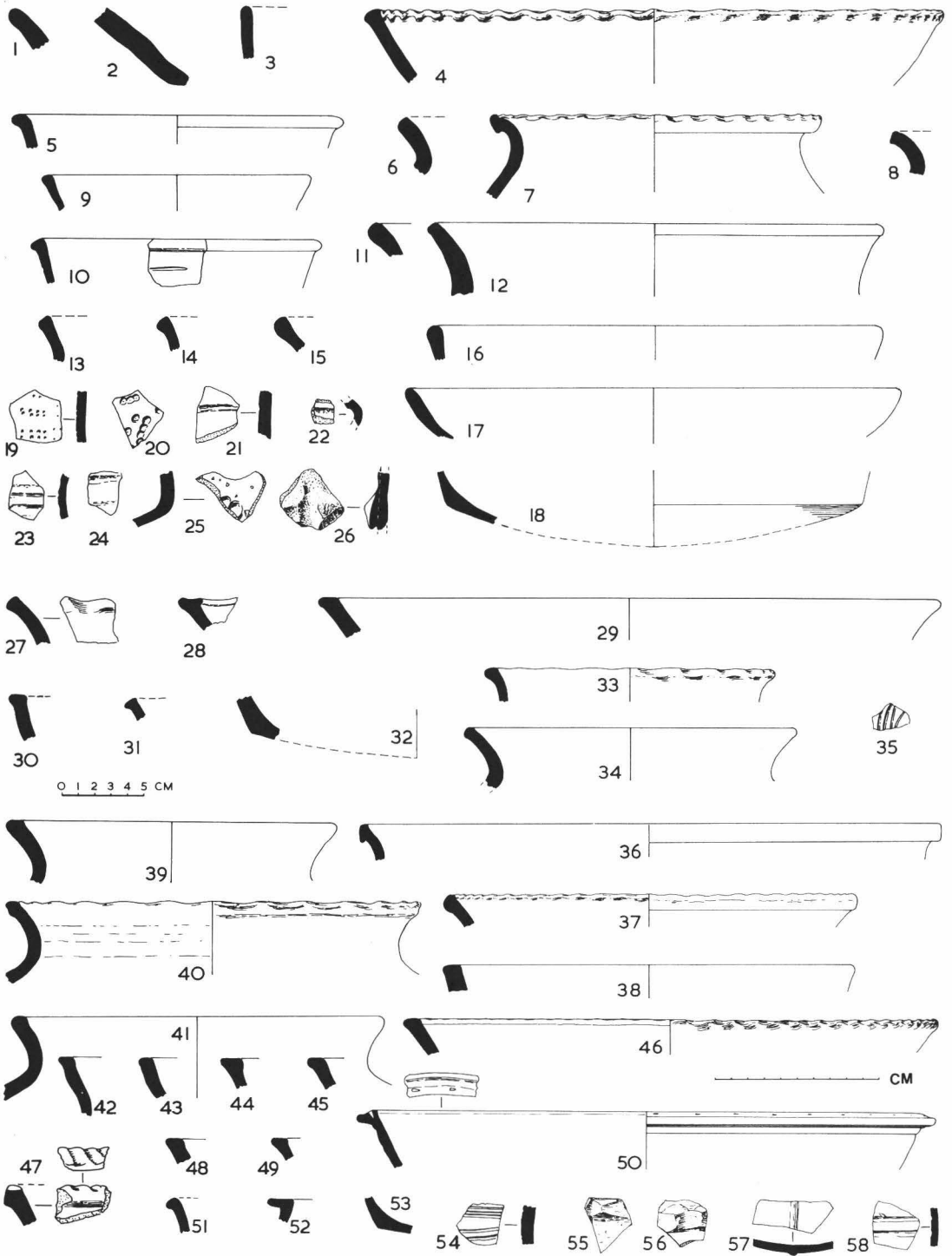
Fig. 14. Old Erringham. Saxo-Norman and medieval pottery, Scale 1:4.

Chalk rubble and soil in upper part of ditch (Figs. 7 & 9, layer 2; Fig. 14, 39-58)
Fabric 3/4
39-41.   Rims of cooking pots, no. 40 slightly thumbed and some black residues externally. Difficult to date as forms could be Saxo-Norman down to thirteenth century.
42, 45, 48, 49, 51, 52.   Small sherds of rims, dating as 39-41.
46.   Rim sherd, thumbed decoration on outer edge, from a bowl, probably Saxo-Norman.
47.   Collared rim sherd decorated with half-round impressions at an angle across the top of the rim. Probably Saxo-Norman.
50.   Everted flanged and hollow rim of bowl of finer fabric with stab-holes on top; from Area D, associated with roof tile, slate and coal fragments. Probably thirteenth century.
53.   Typical of several convex-base sherds.
54.   Body sherd with lightly-scratched lines as decoration.

Fabric 5
55, 56.   Body sherds from different vessels with applied thumbed strip; thirteenth/fourteenth century.

Fabric 5a
57, 58.   Body sherds, green glazed externally, no. 57 with a raised strip, no. 58 with rilling; plus four more glazed body sherds, none of which are from the same vessel. All West Sussex ware, thirteenth/fourteenth century, from Area D.

Flint metalling and soil (Fig. 7, layer 6; Fig. 9, layer 8; Fig. 15, 59-64). Later than bank
Fabric 3/4
59-61.   Residual Saxo-Norman rim sherds. No. 60 is *c.* 280 mm in diameter; no. 61, *c.* 350 mm (cf. no. 66).
62.   Part of a round-section jug handle. Residual Saxo-Norman or early medieval.

Fabric 5
64.   Body sherd with applied thumbed strip; residual thirteenth/fourteenth century.

Fabric 6a
63.   Body sherd of cream fabric, glazed externally light green, with the end of a pinched strip on outer face in a light brown clay, covered with glaze. Rouen import, thirteenth century.

From old soil immediately below metalling (Fig. 15, 65-72)
Fabric 3/4
65.   Rim of cooking pot, resembles no. 7, minus the piecrusting.
66.   Rim of cooking pot, *c.* 300 mm in diameter, similar to no. 61.
67.   Rim of ? storage jar, not unlike no. 12.
68.   Rim of ? bowl, *c.* 350 mm in diameter.
69.   Rim of large vessel, thumbed on top, mostly along the inside edge (as drawn), some resemblance to no. 4.
70.   Everted rim of large vessel *c.* 400 mm in diameter, deeply thumbed on top. There is a trace of a shoulder to come at the bottom of the sherd. Some of the chalk in filler has burnt out, leaving indentations.
71.   Convex base sherd with slightly rounded angle.
Nos. 65-71 could all be Saxo-Norman.
72.   Thin body sherd (4 mm) reduced externally, oxidised inside, with incised lines and circular stick-end impressions between. Late Saxon (Burpham, *S.A.C.*, 114, p. 206, Fig. 8, nos. 13 & 14) or Saxo-Norman *(Chichester Excavations*, 2, p. 87, Fig. 7.9, no. 24).

Area A, generally (Fig. 6, layer 2; Fig. 14, 73-77)
(Nos. 73, 74 and 76 are from inside the building, nos. 75 and 77 from outside, south)

Fabric 3/4
Not illustrated. Rim sherd with some resemblance to nos. 27 or 81 and another as no. 61 (both Saxo-Norman). Three joining base sherds, in profile as no. 53 (Saxo-Norman or medieval).
74.   Rim sherd of bulbous profile. Possibly Saxo-Norman.

Fabric 5
73.   Rim of bowl, *c.* thirteenth century.
75.   Rim of ? jar, *c.* 380 mm in diameter, *c.* thirteenth century.
76.   Splayed rim of vessel, *c.* 300 mm in diameter, *c.* fourteenth century.
77.   Wall and convex base of cooking pot, slightly rounded angle, thirteenth/fourteenth century.

Area A, Feature 84 (Fig. 15, 78-79a)
A small shallow depression in the solid chalk, filled with small chalk rubble and soil, no different from layer 2, containing 274 sherds and the copper alloy decorative strip (Fig. 16, 20). A minimum of four vessels is represented.
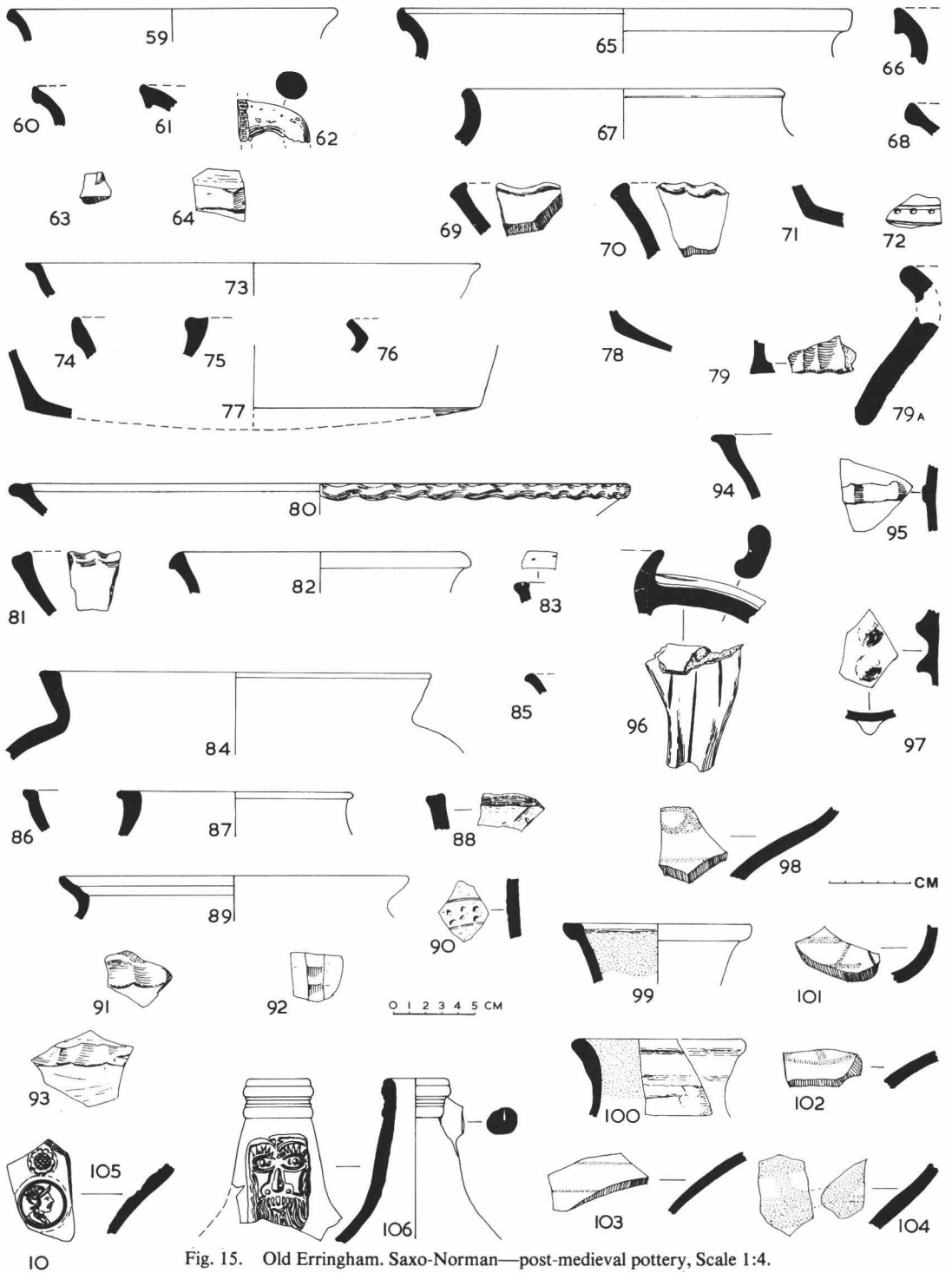
Fig. 15.   Old Erringham. Saxo-Norman—post-medieval pottery, Scale 1:4.

Fabric 2

79a. One large grey body sherd 17 mm thick, and two small pieces of grey everted rim, possibly to be reconstructed as drawn, plus 33 sherds, mostly tiny. Three are vitrified and others show signs of intense heat. Probably from a big vessel which had been subjected to abnormal burning before burial. The large sherd has some resemblance to the wall of a crucible, but there are still a few grains of chalk as filler along one broken edge and a crucible is unlikely to have chalk in its filler. Many sherds have lacunae suggesting that chalk has been burnt out. The sherds found represent only a very small portion of the vessel. Residual late Saxon.

Fabric 3/4

All but six of the remaining sherds are of this fabric, including the convex base no. 78. Most are thin body sherds of the finer fraction of this fabric. There is one minute fragment of the edge of a thin everted rim, possibly from the large vessel to which belongs the bulk of the sherds. A smaller, thicker vessel is represented by thirteen body sherds. All appear to be *c.* thirteenth century.

Fabric 5/5a

79. A sherd of thumbed base and five body sherds, probably from the same vessel, some with specks of glaze. Typical of late thirteenth- to early fourteenth-century jugs and pitchers.

Area E (Figs. 8 & 9; Fig. 15, 80-83)
Fabric 3/4

80-83. Saxo-Norman sherds similar to others previously described. No. 80 from layer 12, 81-83 from the buried soil, layer 3.

Fabric 5a

Not illustrated. A piece of thumbed base as no. 79, but with a splash of green glaze underneath; from topsoil, layer 1.

Lime kiln 1 (Figs. 8, 9 & 10; Fig. 15, 84-93)
All early sherds are residual.
Fabric 3/4

84. Rim of large cooking pot; Saxo-Norman or early medieval.
85-86. Small rim sherds; probably thirteenth/fourteenth century.
87. Thick, flat rim sherd of ? storage jar; dating as last (cf. Hangleton, *S.A.C.*, 101, Fig. 20, no. 47).
88. Flat rim with bevel below, slightly thumbed on top, traces of linear indentations, possibly decorative; Saxo-Norman or early medieval.
90. Body sherd, partly reduced, bearing crude incised lines and irregular stick-end impressions; see no. 72; late Saxon.
91. Thumbed strip sherd, well oxidised; late twelfth/early thirteenth century.
92. Thumbed strip, finer than no. 91; late thirteenth/early fourteenth century.

Fabric 5

89. Rim of a large vessel; *c.* 1400-1450. A second rim sherd (from the same pot) shows it bellying out as if towards a pulled lip, though a lip on a vessel of this size is unlikely.

Fabric 5a

93. Thumbed strip from a large vessel, bearing one spot of olive glaze; thirteenth/fourteenth century.

Area F (Figs. 9 & 11; Fig. 15, 94-97)
All from made-up soil which included post-medieval objects.
Fabric 5

94. Rim of bowl, *c.* 450 mm in diameter, from Area F, eastern trench; fifteenth century.
95. Thumbed strip, from Area F (centre), north trench; thirteenth/fourteenth century.
96. Handle of pitcher or jug with knife slashes on upper surface. The method of joining the pulled handle to the body of the pot is clearly visible where fractured and is indicated by broken lines in the section. A circular 'mortice and tenon' joint was used. From Area F (east); fifteenth century.

Fabric 5a

97. Pale grey throughout body sherd with two blunt conical bosses on outer face, possibly from a decorated jug, green glazed externally. From Area F (east); thirteenth/fourteenth century.
Not illustrated. A sherd of Western French polychrome ware of the late thirteenth century occurred with no. 95. This has already been illustrated and described by Dr. G. C. Dunning in *S.N.Q.*, 17, p. 192-3.

Painted wares (Fig. 15, 98-104)
(Creamy-white slip shown dotted)
Fabric 5a

99. Rim of jug, oxidised, patchy yellow green glaze externally from lower part of rim downwards; slipped internally for a short distance below rim; top of rim not so treated. An early form of painted ware, probably late fourteenth/early fifteenth century. From Area F (centre).

100. Two rim sherds of ? jug, both from same vessel, brown both sides, grey core. Both bear specks of olive-green glaze. Slip has been applied inside for a short distance and partly on top of the rim. The external finish is crude, unlike nos. 98, 101 and 103, but there is a trace of painted line at the bottom right-hand corner of one sherd exactly like those on the better made pots, so probably should be dated *c.* 1450-1500. From Area E (Fig. 9, layer 11).

104. Two body sherds from a large vessel, oxidised, but slipped externally to fire grey-brown. Decoration in the form of brush painted curves; *c.* 1450-1500. Internal wheel-marks show that the sherds are from the same pot, as indicated, despite being found 12 m apart in the topsoil. One from Area F, centre, the other from Area C.

Fabric 6a

98, 101, 102.   Body sherds of large vessels, slipped overall externally to fire dark grey and with brush painted curvilinear designs; *c.* 1450-1500. All from Area F, centre, topsoil.

103. One body sherd brown both sides with grey core, not slipped overall externally, but patchily reduced and with two painted lines; *c.* 1450-1500. From Area F, east, below topsoil.

Sixteenth century and later pottery (Fig. 15, 105-106)

Apart from the painted wares previously described, which might go into the early sixteenth century, there are no coarse wares until the late seventeenth century. Even the latter and eighteenth century sherds are not plentiful, but there is a minor quantitative increase in poor quality nineteenth- and twentieth-century wares, doubtless reflecting the sub-division and occupation of the manor house by farm workers. With the exception of a very small number of foreign imports, there is a gap in the pottery sequence from *c.* 1450-1500 until the late seventeenth century. The latter wares were more common in Area E, while Area F had more of the eighteenth century pottery.

Owing to limitations of space, the sherds from the post-medieval coarse wares have not been drawn. They consist of pancheons, bowls and similar domestic household wares, of reasonably good quality, such as might be used by yeoman farming families during the late seventeenth and early eighteenth centuries, with a smaller number of later eighteenth century sherds. Only a selection of the pottery has been retained; the remainder, and all nineteenth- and twentieth-century sherds, were discarded on site.

Imported wares

Not illustrated. One tiny rim sherd of Raeren grey stoneware, glazed both sides, bronze-colour inside, natural grey outside, dating to the first half of the sixteenth century (J.G.H.). From Area F (centre), layer 11, above buried soil in ditch (Fig. 9, fa-fb).

105. One sherd of Cologne Frechen ware from the body of a grey stoneware vessel, reddish-brown and slightly lustrous inside and external bronze-coloured glaze; stamped decoration moulded in relief, depicting a flower head and a helmeted head in a medallion. From made-up soil, Area F (centre). J. G. Hurst has contributed the following note on this sherd:

'Decoration of medallions associated with acanthus leaves and foliage bands is typical of Cologne in the first half of the sixteenth century.[72] By the middle of the century when the potters moved to Frechen, and more particularly in the second half of the sixteenth century, the medallions become larger and more debased forming looser overall patterns often associated with stamped pads or the jugs are stamped overall.[73] It is hard to be sure from the small sherd but the Erringham example is more likely to be Frechen datable to the second half of the sixteenth century.'

106. Neck of Bellarmine glazed stoneware jug with the stub of a handle remaining in which there is a stab mark; decoration in the form of a mask. Whether it is German or English stoneware is not decided and the exact dating of Bellarmines is hazardous. It comes from layer 11 in Area E (Fig. 9, ea-eb) which is thought to have been deposited *c.* 1700, so the latter part of the seventeenth century would appear to be a reasonable one for this jug. Three more sherds came from the same area and only one other piece of Bellarmine, part of a base, was recovered from Area F, topsoil.

Not illustrated. One small body sherd of Westerwald grey stoneware, dating 1680-1720 (K.J.B.); natural colour inside, externally a pale blue-grey, with dark blue rilling and glazed overall. From ? post hole, Feature 81, in Area A.

Discussion

The amount of useful information to be obtained from analysis of the pottery is limited, as much depends on the number of sherds into which the original vessels had been broken, or if a sherd spotted with glaze, possibly by accident, should be classed as 'glazed'. Furthermore, in many instances it is impossible to apply a date to body sherds, but only to separate them into fabrics, some of which, especially fabric 3/4, are to be found ranging over several hundred years. In the remarks below, only sherds from late Saxon to fifteenth century are considered. The few exotic imports, painted ware and post-medieval wares are excluded.

There are no glazed sherds in the three most significant groups concerned with the bank and ditch, viz., the buried soil below the bank (layer 3), the material in the bank itself (layer 2), and the lower part of the ditch filling (layer 4). This is a strong hint that there was no glazed pottery in general use when the ringwork was built and thus supports an early date. As will be seen in Table 1, 625 sherds (32% of all sherds) came from the buried soil. Numerically this is a good sample and it seems that there was either intensive occupation nearby over a short period, or the area was not greatly disturbed over a longer period, during which the potsherds accumulated. As signs of intensive occupation were lacking in the areas tested, as a theory, the longer period probably is to be preferred.

The pottery in question, as in the bank material, apart from a small number of residual late Saxon sherds, can be classified as Saxo-Norman *c.* A.D. 1000-1150, but this does not help in pinning down the date of the earthwork to pre- or post-Conquest. Mr. K. J. Barton's opinion is that some of the Saxo-Norman pottery tends to be twelfth rather than eleventh century, and thus a post-Conquest date is a possibility. On the other hand, a pre-Conquest date need not be

entirely ruled out, for as Mr. J. G. Hurst says: 'the Norman Conquest had no impact at all on pottery manufacture in England. The fundamental changes from Saxon to medieval pottery were already well advanced in the early eleventh century and were very much a local Anglo-Saxon development.'[74] At Chichester, cooking pots, spouted pitchers and spouted shallow bowls were being produced from c. early eleventh century and were still being produced a century later.[75] Mr. D. Freke, excavating at Lewes in 1975, was unable to decide whether Saxo-Norman pottery was pre- or post-Conquest.[76] In the writer's opinion it is hazardous to date the earthwork on the evidence of the pottery alone, other than within the general period known as 'Saxo-Norman.'

TABLE 1. Summary of Potsherds, Late Saxon to Fifteenth Century

Situation	Total of sherds	% of total	Late Saxon	Saxo-Norman or Early Medieval	13th to 15th c.	Number glazed	% Abraded
Buried soil below bank	625	32%	13	612	—	—	16%
Material in bank	119	6%	10	109	—	—	17%
Lower part of ditch	24	1¼%	—	24	—	—	25%
Upper part of ditch	284	14½%	1	224	59	16	24%
Area A (excluding south trench)	25	1¼%	—	12	13	5	16%
Area A Features 80, 85 & 87	16	1%	—	—	16	1	12½%
Area A Feature 84	274	14%	36	—	238	2	—
Area A south trench	39	2%	—	—	39	1	15%
			60	981	365		
Other areas and layers	550	28%		Not separated 550		28	not noted
	1956					53	

Glazed sherds (5%) make their appearance in the upper part of the ditch filling (layer 2), as well as medieval unglazed sherds, which is to be expected, being closer to the surface. Only Saxo-Norman sherds were in the lower filling. This proportion of glazed to unglazed sherds is approximately the same (within ½%) as the pottery from other areas (excluding Area A). The glazed sherds are tentatively dated as not earlier than thirteenth century.

Area A is remarkable in that only 25 sherds were found within it (excluding the southern trench), of which five were glazed; the southern trench yielded 39 (one glazed). Only 12 of the 25 were residual Saxo-Norman, all others being thirteenth/fourteenth century. Features 80, 85 and 87 within the 'nave' produced 16 between them (one glazed), while Feature 84 contained the deliberate burial of 274 mostly small sherds (two glazed). Feature 84 is anomalous, in any case representing fragments of about four incomplete pots only. The small quantity of pottery inside the building in Area A suggests that the latter was never domestic.

Fired clay objects
Daub
Small quantities of shapeless burnt clay fragments came from the old soil layer, bank material and elsewhere, all of which appears to be daub. In Area D, some larger pieces were found and some of these had wattle impressions on one side.

Brick (Fig. 16)
Not illustrated. Four bricks, well-fired, red/brown, came from the western quoins in Area A. In size they range between 210/216 mm long, by 104/106 mm wide and 58/63 mm thick. Pieces were also found as hardcore just south of the 'chapel'. Thinner brick fragments, down to c. 50 mm came from made-up soil in Area F, also Area E, layer 11. Other pieces from this layer in Area E (deposited c. 1710) are of poor quality yellow fired clay; two are 85 mm wide, of which one is 48 mm thick; the depth of the other cannot be measured.
1. Piece of yellow brick, 86 mm wide, 38 mm thick, made with a weathering on top and a throat below; possibly for a drip mould over a window, or a sill brick. Area E, layer 11. Another yellow fragment came from the same layer of which only the thickness (58 mm) could be measured.
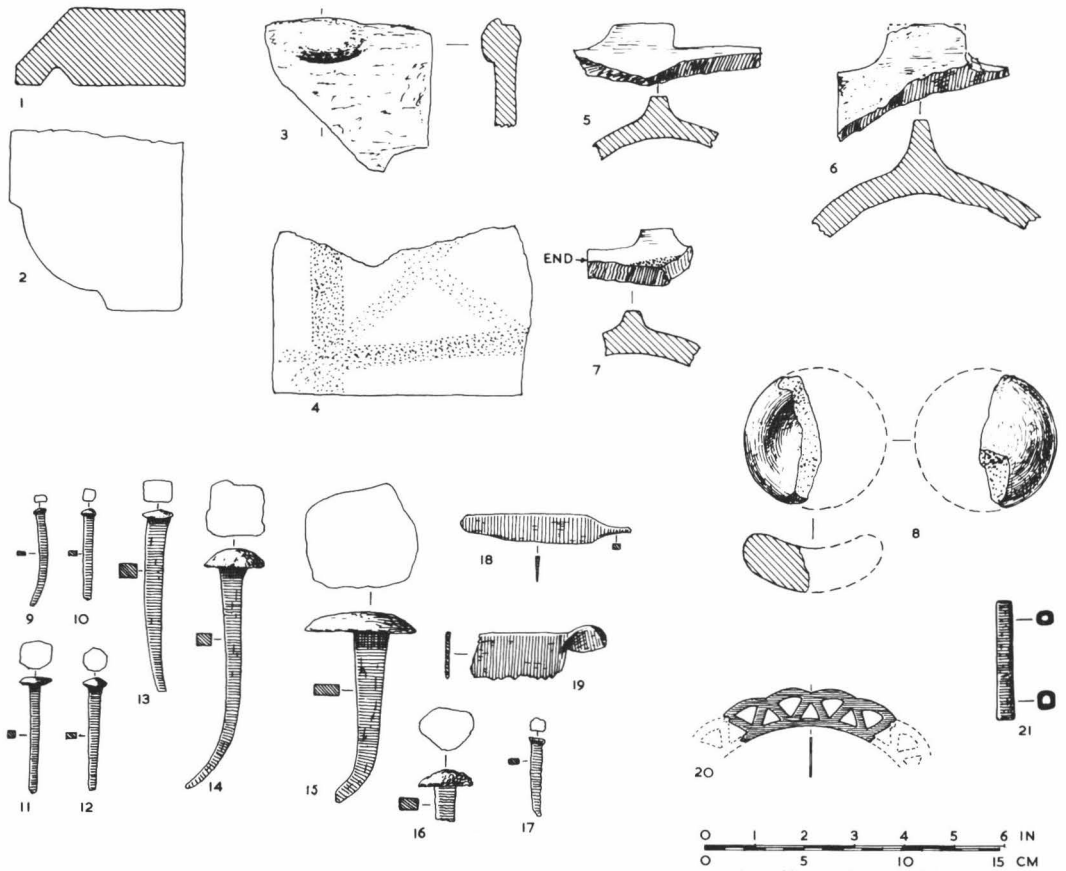
Fig. 16.   Old Erringham. 1-2 Bricks; 3-7 Roof tiles; 8 glass linen smoother; 9-17 Iron objects; 20 Bronze strip;
21 Bone knife handle.

2.   A piece of pink brick, 88 mm wide and 47 mm thick, broken at one end. The other was ovolo moulded before firing;
suitable for a window or door jamb. Area E, layer 11. This and other pieces from the same layer represent material
removed during alteration at the manor house in c. 1710.

Floor tile
One piece of well-fired pink floor tile, 22 mm thick, with traces of pale green glaze on one face. From Area A, not in
a datable context; it could be medieval.

Roof tiles (Plain)
A small number of plain roof tile fragments were found in the upper part of the ditch and top of the bank, metalling,
etc., which cannot be dated any closer than medieval. All other pieces of tile were in the topsoil, the building rubble
deposits, or around and over the lime kiln. Such tiles could be several centuries older than the deposits that contained
them. It is unfortunate that none of the tiles can be closely dated, but some 'latest possible dates' can be given. No whole
tiles, or any capable of yielding length and breadth were encountered. Most pieces were of plain tiles, roughly made,
occasionally with a peg hole (none illustrated), and some bore traces of mortar.

Nibbed tiles (Fig. 16)
3.   Plain tiles with crude nibs were found in the filling around and over lime kiln 1 and in the made-up soil, Area F (four
pieces in all). No peg holes are present, but specimens are small. Nibs on plain tiles, for long thought to be a modern
innovation (they never seem to be found on post-medieval plain tiles until the nineteenth century), are now known in
medieval contexts (e.g. Bodiam Castle Museum; Stretham moated site—information kindly given by Mr. A. Barr-
Hamilton—and many other sites). These all have one nib and one peg hole.

Not illustrated. Two pieces of well made tile each with a large single nib. Curvature across the width of the bigger piece suggests that they are fragments of Dutch pan-tiles. From Area E, layer 11 and topsoil; not later than 1710. Pan-tiles are known in England certainly by 1687 (J. Worlidge, *Systema Agriculturae* (1687), 4th edn., p. 237) and probably much earlier in East Anglia where they are common. They did not become popular in Sussex.

Painted tile (Fig. 16)

4. Six pieces of hard, pink tile not including any peg holes, painted with a white slip decoration in the form of marginal lines with crossed diagonals similar to those from Tarring fifteenth-century well *(S.A.C.,* 101 (1963), 32, Fig. 3). Associated with painted crested ridge tile (below). These tiles appear to be too well made to be earlier medieval and a fifteenth-century date is appropriate. From made-up ground in Area F and the lime kiln.

Glazed ridge tiles

Five pieces, of curved ridge tile patchily glazed green or olive-green. All are too small to decide if they are parts of crested ridge tiles. One piece found in the upper part of the ditch filling, below 350 mm from the surface and probably thirteenth/fourteenth century, the others from made-up soil or lime kiln area. All likely to be residual medieval.

Crested ridge tiles (Fig. 16)

5. Fragment with one crest remaining. Striations each side of crest show knife-cutting. From Area F, made-up soil, a late sixteenth/seventeenth-century deposit including building rubble. Tile could be older.
6. Another piece with one knife-cut crest remaining with just a trace of dark glaze on the end. From the 1710 layer in Area E. Probably older.

Not illustrated. Five more pieces glazed either green or orange; from topsoil or made-up ground; one piece has knife slashes on underside; all probably later medieval.

7. One small piece, unglazed but with a trace of painted white slip decoration (see above). The crest is tiny and there are striation marks each side of it. From made-up soil in Area F, but probably fifteenth century.

Not illustrated. In 1966, there were sixteen crested ridge tiles still on the roof at the manor house. They were pink/red, unglazed and unpainted with five crests each. Since then the roof covering has been overhauled and the old ridge tiles discarded.

Clay pipes

Mr. D. R. A. Atkinson, F.S.A., kindly examined the clay pipe fragments. The following is based on his report:

A small number of broken stems and one bowl of types common from *c.* 1680-1720 and the first half of the eighteenth century. Most came from the topsoil, but one piece of bowl with a spur, dating *c.* 1700, was in the rubble of layer 11, Area E. Makers' names recovered are: William Artwell, died at Arundel, 1727; Thomas Harman, senior, Lewes, working 1720-50; John Drape, Brighton, 1832-67 and F. Sequin, Eastbourne, working 1862.

Stone objects

Caen Stone

A flake from the sill of the south window in the 'chapel' was examined by Mr. R. W. Sanderson of the Institute of Geological Sciences, London, his report being as follows:

'The stone is undoubtedly "Caen stone". It matches well a specimen of the stone in our collections from La Maladrerie Quarry, near Caen, which was quarried from a depth of 12.25 m from the surface.'

Several fragments were found in Area A and a rebated piece, possibly from a window surround, was in layer 11, Area E. This piece has 'claw-tool' marks where not intended to be exposed, which should be of the thirteenth century.[77] There are still pieces of masonry in the west wing of the manor house belonging apparently to medieval windows[78] and the replacement east window in the 'chapel' also dates about the thirteenth century.

Shelly limestone

One small piece resembling Quarr stone was in the rubble in Area E, deposited *c.* 1710.

Horsham stone

A number of fragments and small 'slates', some with a peg-hole, were found, especially in Area E, layer 11. This material still exists on parts of the manor house roof, and doubtless is connected with the alterations in the early eighteenth century.

Roofing slate

There were more fragments of slate than Horsham stone and tile put together, especially from the rubble deposits in Areas E and F. It occurred also in contexts dating from the thirteenth/fourteenth century and later; also a few tiny intrusive pieces in earlier layers. This is real roofing slate and many pieces resemble specimens found at other Sussex medieval sites and some match examples from quarries in South Devon.[79] The sizes and description given in my 1965 paper are so similar to good specimens from Erringham, there is no need to repeat them here. It is reasonably certain that a building, or buildings, at the site were roofed wholly or partially with slate at some time between the thirteenth and fifteenth centuries, none of which roof covering survived *in situ* after *c.* 1710, though there is no certainty that the slate in the rubble was taken down when various layers were deposited, for it could have been removed earlier. This so-called 'blue' slate is found, not only in South Devon, but also along the south coast of Cornwall (personal investigations).

Granite

A large water-rolled cobble, weighing *c.* 7 kg, 210 x 195 x 150 mm in size, was in the ditch filling on the west side of lime kiln 1. It is grey/pink and has not been examined petrographically. It is similar to specimens of Cornish granite seen by the writer and it is suggested that it found its way to Erringham in a ship-load of roofing slate from a quarry on the coast of Cornwall. It would have been buried *c.* 1450-1500 when the lime kiln went out of use and the area was filled in.

Sandstone querns

Eleven pieces of broken quern stones resembling Wealden sandstone as found locally in late Saxon and medieval excavations. There were no features to enable size and types to be determined. From various layers, including buried soil, the lime kiln and the 1710 deposit in Area E. One of the three pieces from the last had mortar on it.

Lava querns

Three fragments of basaltic lava imported from the Niedermendig or Mayen area of the Rhineland were in the ditch filling, Area D, layer 2. Such querns are common in Saxon/medieval contexts.

Whetstones

Thirteen pieces of whetstone, all fragments, none in important layers. Mostly post-medieval, all resemble Wealden stone examples and are of little archaeological importance. There were no mica-schist whetstones.

Coal

Small pieces of coal came from inside and outside lime kiln 1, and also there were stray pieces in the upper ditch filling and later layers. The coal seems to be connected with lime-burning and would have come to Erringham *c.* 1450-1500, by sea, through the port of Shoreham. Specimens from the kiln were submitted to the Divisional Laboratory, South-Eastern Division of the National Coal Board who have kindly submitted a full report which will be deposited with the site records at Lewes. Briefly, it is pointed out that the samples analysed are 'high volatile' coal, which type may be found in most British coalfields. The exact source of the coal is impossible to define, but a suggested source is the Northumberland/Durham region, from which it is known that coal was exported in medieval times.[80] The possibility of a source in South Wales, Forest of Dean, Bristol or Somerset coalfields cannot be ruled out.

Glass objects
Linen smoother (Fig. 16; Plate VA)
8. Part of a circular glass object, broken before burial, the other part lost, originally *c.* 72 mm in diameter, mottled blue/black, difficult to recognise as glass; concave and convex on opposite sides, rounded edge. Smoothers of glass (and also polished stone) are better known in Scandinavian countries where they are common in Viking times, but their use continued into the medieval period. They were used for rubbing linen, convex side downwards, for the same reason that we now use irons. Glass smoothers with a stalk, which makes them resemble a darning 'mushroom' were common in Britain in the eighteenth century before hot irons came into use. Those without a stalk are of medieval or earlier date. Two smoothers were found in thirteenth/fourteenth-century contexts at Hangleton, of about the same size *(S.A.C.,* 101 (1963), 163-5, Fig. 35, nos. 10-11). A twelfth-century date for the deposition of this object in the silting-up ditch is suggested.

The fragment of linen smoother (A.M. No. 640279) was examined by Mr. Gerald Shaw, Pilkington Research and Development Laboratories, Lathom, who has kindly provided the following report:
  'The specimen was examined as part of a general study of the mechanisms by which glass can weather underground. A preliminary note on this study has appeared[81] and the full results will be published elsewhere. A summary of the data as they specifically concern the object under discussion is given below.

Carefully polished sections showed a microstructure generally similar to that of the Hangleton specimen. A high proportion of the dark segregations rich in manganese (*c.* 15% Mn) lie on the outer surface of the weathered crust and are almost always more or less clearly associated with micro-cracks elsewhere. The thickness of the crust is greater than previously noted elsewhere and reaches a maximum of 10 mm. Some of the weathering bands are exceptionally clear and wide (20-30 microns); others are less clear, and some are very narrow (Plate VA). The outer surface would appear to be intact in the prepared sections and layer counts give a mean of 780. No evidence for physical separation of individual layers was seen, perhaps due to the polishing action. A very high degree of porosity associated with the weathered product was observed during the preparation of the specimen. This can perhaps be linked to the greater width of the banded structure.

Electron probe micro-analysis confirmed previous findings on other specimens: there is periodic variation in silicon and calcium counterfractions as the beam is scanned over several bands. The maximum silicon level is *c.* 55% (in the lighter band half) and is roughly halved between peaks. In the area examined the wavelength of silicon distribution is *c.* 18 microns. Estimates made of the number of layers using the observed silicon peaks agreed well with optically executed counts made over the same region. This confirms similar observations made with the Hangleton smoother linking the visual banded appearance with variation in chemical composition.

Chemical analysis (Table II) has shown the material to be a high potash-lime glass as would be expected from its condition, and remarkably similar in composition to the Hangleton specimen. No definitive explanation of the significance of chemical composition or environment in the weathering mechanism can yet be offered; it is even less clear why the process should show a *c.* one-year cycle. The problems have been discussed by Newton.[82] The particular form of weathering appears to be related to high contents of both potassium and calcium in the glass, and to proceed by a kind of Liesegang periodic diffusion. The fact remains that all linen smoothers, and some window glass, so far examined, carry crusts whose band counts agree well with archaeological estimates of duration of burial.

TABLE II. Chemical Analysis of Linen Smoother Fragment
(All figures are percentages)

	Unaltered glass	Altered product
SiO_2	46.0	58.6
CaO	21.3	10.7
Fe_2O_3	0.4	1.7
Al_2O_3	1.6	4.2
MgO	6.3	—
Mn_3O_4	1.7	2.1
TiO_2	Trace	0.1
BaO	Trace	—
P_2O_5	4.6	6.6
Na_2O	1.7	Trace
K_2O	16.2	0.5
SO_3	Trace	Trace
Loss at 550°C	0.4	10.2

Post-medieval glass
Not illustrated. Three fragments (unsuitable for drawing) were submitted to Dr. D. B. Harden who kindly provided a full report, which is filed with the records. A short description by Dr. Harden says: 'These fragments of latticinio glass are of Venetian style (so-called *façon de Venise*) and belong to the sixteenth or seventeenth century—more likely the latter. The spout comes from a jug or posset-pot; the other two pieces are from a stemmed or high-based goblet.' The pieces came from layer 11 in Area E, deposited *c.* 1710. It would appear that when the imported glass vessels were thrown away, the inhabitants of the manor house were people of a higher social standing than yeoman farmers.
Not illustrated. Fragments of post-medieval wine bottle glass were very few. The earliest were late seventeenth/eighteenth century.

Metal objects
Iron (Fig.16)
    Nails, or fragments thereof, were found in most layers, especially the post-medieval, less frequently in the earlier ones. Those from the earlier layers generally were too heavily corroded for drawing, but an attempt has been made to depict the nails found in Grave 1 (nos. 16 and 17). There was practically no difference in shapes between early and late, except that very large-head nails were confined to late layers.
9-14. These show some of the types present in most areas. All being hand-forged, they are very similar whether early or late in date (nineteenth/twentieth-century nails excluded), but lengths or size of head vary.
15. Another version of no. 16, but with a very large head. About a dozen were found, either in topsoil or in layer 11, Area E, the latter deposited *c.* 1710. Where not broken, these nails had been clenched and probably come from a heavy door. These nails are not dated by the layer as they could have been centuries old before being discarded.
18. Knife with remains of a pointed tang, possibly thirteenth/fourteenth century; from topsoil, Area A.
19. Part of a serrated sickle blade including a piece of the tang. The tooth-edged sickle is known from at least Norman times until comparatively recently. From topsoil, Area E.

Bronze (Copper alloy—not analysed) (Fig. 16)
20. A section of ornamental metalwork cut from sheet and forming part of a circle (in plan), having an internal diameter of *c.* 126 mm (5 in.), width 19/20 mm. The external edge is scalloped and the band of metal fret-cut, leaving triangular apertures. Both ends are broken, showing that the circle continued and there are remains of nail or rivet holes at either end for fastening to some other object. The strip was found folded in three and crushed, but has been drawn as if undamaged apart from the end fractures. The piece was X-rayed at the Ancient Monuments Laboratory, by Mr. L. Biek, who found that no decoration or other diagnostic feature was visible under the green patina. No parallels have been traced. It is suggested that the bronze strip might have served as a decorative feature, possibly mounted on a wooden chest. It was found in Feature 84, Area A, with thirteenth/fourteenth-century pottery and this date could well apply to the metalwork.

Coins
Roman A much-worn third century antoninianus, radiate head, probably a Tetricus or Gallienus, found in the field north of the manor house before 1957, by a farm worker, Mr. Swaine. The identification was kindly made by Mr. N. E. S. Norris, F.S.A.
Saxon A silver penny of Aethelred II, of the Canterbury mint, moneyer Leofstan. *Rev.* inscription: + LEOFSTAN MO CAENT, cf. Hildebrand, *Anglosachsiska Mynt,* p. 44, no. 215. Date of issue, A.D. 992-998. Identification by Mr. R. A. G. Carson. From buried soil, below the bank, Area B.
    Another silver penny of Aethelred II, mint of Lewes. *Obv.* Bust 1. + AEDELRED REX ANGLO *Rev.* Long cross. + AELF/GAR/MOL/AEPE. Date of issue, A.D. 997-1003. From buried soil below bank, Area C. These two Saxon coins were identified at the Department of Coins and Medals, British Museum. Both coins are in good condition. It is understood that at this period old money was exchanged for new at very frequent intervals; therefore both coins could have been dropped *c.* 1000.[83]
Post-medieval William III, 1694-1702, First issue farthing. This type was issued from 1695 to 1700 inclusive. Identified by the late H. Brazenor. The coin is worn. Found at the west end of Area A near a brick quoin, inside the building.

Napoleon III, 5-centime piece, dated 1856. From topsoil, Area C.

A tradesman's token of 1667, issued by IAMES MEAD—IN TENTARDEN *(sic)*—HIS HALF PENNY. Found by Mr. Swaine in the manor house garden.

Charcoal

Small quantities of charcoal found in layers 2 and 3 of Area B were kindly examined by Dr. P. Myerscough, the identifications being:

Oak *(Quercus* sp.)   Beech *(Fagus sylvatica)*
Hazel *(Corylus avellana)*   Birch *(Betula* sp.)
Ash *(Fraxinus excelsior)*   ? Blackthorn *(Prunus spinosa)*
Poplar *(Populus* sp.)

Further examples from the buried soil, several post holes and the disturbed ditch filling next to the lime kiln, in Areas C, D and E, were dealt with by Miss J. Sheldon, B.Sc., to whom thanks are due for the following identifications: oak, hazel, beech, birch and *Crataegus* (hawthorn) type.

Bone object (Fig. 16)
21.   A hollow piece of bone 61 mm long, tapering from 10 mm to 8.5 mm wide, nearly square in section. Probably a handle to fit over the tang of an iron knife. From above the lime kiln area, well down from the surface; fifteenth century.

Marine shells

Both early and late layers produced reasonably large numbers of oyster shells. There were fewer mussels, some winkles, and very few scallop and whelk. All seem to be the remains of meals, and would be available nearby in the tidal estuary.

Two perforated oysters were found, which turn up on local medieval sites in very small numbers, including one from the topsoil over the weaving hut at Erringham.[84]

Animal bones

Mrs. B. Westley, B.Sc., kindly examined and identified all bones except those from the small trench in Area D and all from Area E, which were identified by the writer. Detailed tables were provided by Mrs. Westley which have been filed with the site records. Statistically, little of value would emerge from complete tabulation as the majority of the bones are fragmentary, but the following Table enumerates bones from significant early layers.

TABLE OF ANIMAL BONES (fragments) from the bank, ditch and buried soil of ringwork.

Area	Cattle	Sheep/goat	Pig	Horse	Dog	Cat	Bird
B	15	52	12	2			1
C	36	109	6		2	1	
D	9	36	17		1		
	60	197	35	2	3	1	1

The salient points from Mrs. Westley's full report follow: The majority of the material suggests the remains of meals, there being signs of butchery, both cutting and sawing; also gnawing of bones by dogs. Sheep/goat bones could not be separated except for a sheep horncore from the bank in Area C (Saxo-Norman) which is of a small animal resembling a Soay sheep. In Area F, however, it was possible to separate sheep, there being no goat bones present and there was one horncore. There was one piece of tibia of fallow deer in F, bearing knife marks, presumably food remains.

The cattle are not small, so far as can be seen, but about the size of a modern breed. Sheep and pigs appear to have been killed at about the age of two years, much as they would be today; there was no evidence of killing in the first Autumn.

Bones from Area E were cattle, sheep/goat, pig and a few bird (E.W.H.).

Sheep horncores, but none from goats, were identified at the Saxon weaving hut and Mrs. Westley then suggested that all small ruminants were sheep.[85] It is possible that the same assumption may be applied to the Saxo-Norman and later site here being considered.

Human bones

Among the animal bones Mrs. B. Westley noted one unfused human metacarpal, from a child aged 9-12 years. This unusual find came from the made-up soil in Area F, but how it came to be there is a mystery.

Skeleton in Grave 1 (summary of report by Dr. H. B. A. Ratcliffe-Densham)

The skeleton is that of a woman who died in her early thirties possibly as a result of a blow on the back of the head. This could be due to a fall, not necessarily foul play. Her height was *c.* 1.6 m (5ft. 3in.); the face was extremely broad and flat; the bite was edge to edge, with considerable wear, which suggested grit in the diet. The vertebral column and each of its parts were normal in size and length in proportion to the height of the woman, *but it exhibited a very rare developmental anomaly.* The terminal vertebrae of the cervical, dorsal, lumbar, sacral and coccygeal portions were each intermediate in shape between the type above and the type below; this occurred in such a way that one side of the affected vertebrae resembled the type above and the other side the type below.

The vertebral arteries followed an abnormal course at the atlas. The tenth ribs were both floating. The thoracic spine exhibited a marked kyphosis and a complex, triple scoliosis. The chest was somewhat spherical and rotated to the left, the right side being more prominent anteriorly and larger than the left. This may have been due to an injury to the middle, left ribs in childhood.

The spinal anomaly resulted in a sacrum with six apparent parts, the first of which was only attached to the ilium on the left (Plate VB), and was typically lumbar on the right, while the sixth was the separate first part of the coccyx fused with the caudal end of the sacrum. Sacrum and coccyx were fused and bent to the left.

Skeleton in Grave 2

The late Dr. H. B. A. Ratcliffe-Densham is believed to have written a report on this skeleton, but unfortunately it was not found among his papers. Some weeks after he had the bones for examination, he informed the writer that the skeleton was male and that it exhibited certain anomalies, though much less pronounced than with skeleton 1, which suggested to him that the two persons buried were related. According to measurements made on the site by the writer, skeleton 2 would be about 50 mm taller than the female skeleton.

ACKNOWLEDGEMENTS

Author: Eric Holden, 5 Tudor Close, Hove.

REFERENCES
[1] Part 1, 'A Saxon weaving hut', *Sussex Archaeological Collections* (hereafter *S.A.C.*), 114 (1976), 306-21.
[2] H. Cheal, *The story of Shoreham*, (Hove, 1921), 57, 60. Grimm's drawing dated 1787 (B.M. Dept. of Mss., add. ms. 5673, f. 82) depicts the *east* front (not the west as on the drawing) of the manor house. This shows a two-storey porch projecting near the southern end and a wing going east at the north end, both now removed.
[3] I am grateful to Mr. K. W. E. Gravett, F.S.A., for advice on the manor house and cottage.
[4] The bank surmounted by a fence is depicted on the first edition of the 25-inch Ordnance Survey map of 1875. This and subsequent maps, until recently, showed the site of the *Chapel (remains of)* in Area H incorrectly (Fig. 12). Remains of the barn in that area must have been visible in the mid-nineteenth century and were confused with the real 'chapel'. Recent editions of O.S. maps have been corrected.
[5] E. W. Holden, 'Salt works at Botolphs', *Sussex Notes and Queries* (hereafter *S.N.Q.*), 15 (1958-62), 304-6.
[6] Cheal (1921), 61-2.
[7] I am grateful to Dr. R. G. Thurrell for advice on the geology of the site.
[8] Packham's original drawings are in the Marlipins Museum at Shoreham. My measurements differ from his by negligible amounts.
[9] J. McNeil Dodgson, 'Place-names in Sussex: the material for a new look', in *The South Saxons*, ed. P. Brandon (Chichester, 1978), 54-88, see 80, 82.
[10] Chronicon Monasterii de Bello, p. 35, *Impensis Societatis* (1846).
[11] Pipe Rolls, 2 Rich. I, *Pipe Roll Society*, 2, n.s. (1926), 129.
[12] Details of this area and many other aspects of its history can be found in papers about the manor of Wiston in *S.A.C.*, 53 (1910), 143-82 and *S.A.C.*, 54 (1911), 130-82.
[13] L. F. Salzman (ed.), *The Chartulary of the Priory of St. Peter at Sele* (Cambridge, 1923), 81, no. 144.
[14] ibid., 80, no. 143.
[15] *Feet of Fines for the county of Sussex*, Sussex Record Society (hereafter S.R.S.), 7 (1907), 164, no. 1096.
[16] *Calendar of Inquisitions*, 11, 142-3.
[17] Public Record Office, *Lay Subsidies*, 2 Rich. II, E.179/189/42.
[18] *Feet of Fines for the County of Sussex*, S.R.S., 23 (1916), 225, no. 2811.
[19] The exact situation of the various pieces of land known as Erringham Walstead and Erringham Braiose is unknown, though Cheal (1921), equates 'Old' Erringham with Walstead *(Sussex County Magazine*, 23 (1949), 338). On the ground, only one area of medieval settlement has been recognised (Fig. 1, stippled and hatched areas, inset), which may represent the sites of dwellings and crofts of those who worked the land of Walstead and Braiose.
[20] W. Hudson, 'On a series of Rolls of the manor of Wiston', *S.A.C.*, 53 (1910), 181.
[21] There were ten taxpayers at Erringham in 1296 and 1327, and eight in 1332. S.R.S., 10 (1909), 58, 163 and 278.
[22] P.R.O., *Schedule of Abatements*, 12 Hen. VI, E.179/189/80. Details of the abatement were kindly provided by Mr. Gilbert Burleigh.

[23] ibid., 24 Hen. VI, E.179/189/88.
[24] ibid., 31 Hen. VI, E.179/189/92.
[25] *Calendar of the Patent Rolls*, Hen. VII, 1485-1494.
[26] *Calendar of Inquisitions Post Mortem*, 1, no. 641.
[27] Cheal (1921), 52-5.
[28] S.R.S., 56 (1956-7), 72.
[29] Cheal (1921), 51.
[30] ibid., 53.
[31] *Post Mortem Inquisitions*, 1-25 Elizabeth, S.R.S., 3 (1904), 113, no. 83.
[32] Cheal (1921), 60.
[33] The information about this scratch dial was given to F. T. Barrett and included in his paper, 'Scratch Dials in East Sussex', *S.A.C.*, 100 (1962), 152-5, though I no longer necessarily subscribe to the views there expressed as to the original use of the building. The Erringham dial resembles, except for the exact positions of the three rays, the Alciston church dial, *S.A.C.*, 100 (1962), Plate I (centre), facing p. 152.
[34] R. T. Mason, *Framed Buildings of the Weald* (1964), 57-61, Fig. 9.
[35] Saxon walls should not be more than 2ft. 6in. (762 mm) thick according to E. A. Fisher, *Saxon churches of Sussex* (Newton Abbot, 1970), 14.
[36] Fisher (1970), 157-8.
[37] H. Poole, 'The Domesday Book churches of Sussex', *S.A.C.*, 87 (1948), 30-1, and see his comments on the difficulties of dating.
[38] Fisher (1970), 156.
[39] Botolphs and Westhampnett are examples. At Balsdean, in Rottingdean parish, there is strong presumptive documentary evidence that a chapel was built after 1121 and before 1147. This building (now demolished) had a single-splayed slit window with stone dressings (probably Greensand) which, from a drawing *c*. 1775, resembles the Old Erringham windows in general appearance. *(S.A.C.*, 91 (1953), 55, Fig. 1).
[40] Fisher (1970), 114.
[41] ibid., 112-3. Similar differences of opinion between experts apply also to Botolphs church, not far from Erringham, on the west bank of the R. Adur; ibid., 63; and see H. M. and Joan Taylor, *Anglo-Saxon architecture* (1965), 84, on Botolphs, where they say that the nave seems to be late Saxon, and: 'The early surviving window in the south wall of the nave and of tall, narrow, single-splayed form, might equally well be Norman or Anglo-Saxon.'
[42] H. M. and Joan Taylor (1965), 9. Two slit windows at West Blatchington church are single-splayed and rebated externally for shutters. These are considered to be early Norman *(S.A.C.*, 71 (1930), 247).
[43] E. M. Jope, 'The Saxon building-stone industry in Southern and Midland England', *Medieval Archaeology*, 8 (1964), 91-118, see p. 112.
[44] R. A. Pelham, 'Studies in the historical geography of medieval Sussex,' *S.A.C.*, 72 (1931), 157-184, see 177-8.
[45] P. M. Johnston, 'Poling, and the Knights Hospitallers,' *S.A.C.*, 60 (1919), 67-91, see 72-4.
[46] Fisher (1970), 14.
[47] Taylor and Taylor (1965), 9.
[48] Fisher (1970), 13.
[49] ibid., 156.
[50] Securely dated to the 1914-18 war by the finding of a sauce-bottle stopper in the pit, with a printed metal top captioned: 'Ally Sloper's Relish'.
[51] Cheal (1921), 57.

[52] E. Craster, 'A medieval limekiln at Ogmore Castle, Glamorgan,' *Arch. Cambrensis*, 101 (1950), 72-76.

[53] F. J. North, *Limestones, their origins, distribution, and uses* (1961), 389.

[54] N. Davey, *A history of building materials* (1961), 99-100.

[55] K. J. Barton and E. W. Holden, 'Excavations at Bramber Castle 1966-7,' *Arch. Journ.*, 134 (1977), 39-40.

[56] E. W. Holden, 'Excavations at the deserted medieval village of Hangleton, Part I', *S.A.C.*, 101 (1963), 179.

[57] Not all experts are agreed about this; see *Archaeometry*, 13 (1971), 1-9.

[58] W. H. Godfrey, 'Sussex church plans, XV—St. Botolph (next Bramber),' *S.N.Q.*, 3 (1930-1), 218-9; dimensions scaled from plan. Fisher (1970), 63, gives the nave size as 55ft. 6in. by 17ft. 6in., but this seems to be an error as the Taylors (1965), 84, give 52ft. by 16ft.

[59] Fisher (1970), 14.

[60] ibid., 15, 140.

[61] Godfrey (1930-1), 218, plan.

[62] Fisher (1970), 63.

[63] *S.N.Q.*, 1 (1926-7), 187; Allington, *S.A.C.*, 15 (1863), 162, n. 21; Northeye, *S.A.C.*, 19 (1867), 2; Westbourne, *S.A.C.*, 22 (1870), 97; Balsdean, *S.A.C.*, 91 (1953), 53; Chilgrove, *S.A.C.*, 117 (1979), 109-24.

[64] M. A. Lower, 'Genealogical memoir of the family of Scrase,' *S.A.C.*, 8 (1856), 4, 13.

[65] D. J. Cathcart King and L. Alcock, 'Ringworks of England and Wales', *Chateau Gaillard*, 3 (1969), 90-127, see 96.

[66] G. Beresford, 'The excavation of the deserted medieval village of Goltho, Lincolnshire,' *Chateau Gaillard*, 8 (1976), 55.

[67] F. W. Maitland, *Domesday Book and beyond* (1907), 183-4.

[68] D. M. Wilson and D. G. Hurst (eds.), 'Medieval Britain in 1966: Part I, Pre-Conquest,' *Medieval Archaeology*, 11 (1967), 262.

[69] I am grateful to Mr. J. Holmes for examining this pottery.

[70] Holden (1976), 311.

[71] K. J. Barton, *Medieval Sussex Pottery* (Chichester, 1979), 78-9.

[72] J. G. Hurst, 'A sixteenth century Cologne jug from Newcastle,' *Archaeologia Aeliana*, 5th ser., 2 (1974), 281-3.

[73] *Volkskunst im Rheinland*, Fuhrer und Schriften des Rheinischen Freilichtmuseums in Kommern, IV (1968), nos. 167 and 170.

[74] J. G. Hurst, in *The Archaeology of the Anglo-Saxon period*, ed. D. M. Wilson (1976), 343.

[75] Chichester Excavations Committee, *Report for 1977*, 8.

[76] D. J. Freke, 'Further excavations in Lewes, 1975,' *S.A.C.*, 114 (1976), 179.

[77] L. F. Salzman, *Building in England* (Oxford, 1952), 334.

[78] Cheal (1921), 51, 57-9.

[79] E. W. Holden, 'Slate roofing in medieval Sussex,' *S.A.C.*, 103 (1965), 67-78, and see the following paper by J. W. Murray, 'The origin of some medieval roofing slates from Sussex', *S.A.C.*, 103 (1965), 79-82.

[80] L. F. Salzman, *English industries in the Middle Ages* (Oxford, 1923), 18-19. Coal was found in a thirteenth/fourteenth-century context at Hangleton, and other Sussex references are given in *S.A.C.*, 101 (1963), 179.

[81] G. Shaw, 'Weathered crusts on ancient glass,' *New Scientist*, 27 (1965), 290-1.

[82] R. G. Newton, *Glass Technology*, 7 (1966), 22-5; ibid., 13 (1972), 54-6.

[83] M. Dolley, *Anglo-Saxon Pennies* (1964), 25.

[84] *S.A.C.*, 114 (1976), 321; ibid., 101 (1963), 177, Fig. 39, nos. 5-8.

[85] Holden (1976), 320.

CHICHESTER CATHEDRAL, THE ORIGINAL EAST END: A REAPPRAISAL

by M. R. G. Andrew, M.A., M.Phil.

The debt that any student of Chichester Cathedral in Sussex owes to Robert Willis is incalculable and, although his essay on its architectural history was written in 1853, well over a century ago, nearly all subsequent work has served only to elaborate or confirm the theories he first propounded and to underline his remarkable gifts for structural analysis.[1] This is nowhere more evident than in his reconstruction of the original ground plan of the eastern arm of the church.[2] Most subsequent authorities have concurred in Willis' interpretation of the evidence as shewing that its east end was of the apse and ambulatory type with radiating chapels.[3]

The cathedral was commenced during the episcopate of Ralph Luffa (1091-1123) and in 1108 a dedication took place of the completed choir and part of the transepts.[4] The main body of the choir survives, consisting of three aisled bays east of the crossing, but the original east end was replaced by the present Retrochoir following a disastrous fire in 1187.[5] This gave the church a square east end built in the area between the east bay of the choir proper and the west bay of the present Lady Chapel which pre-dates the Retrochoir. I believe it is now possible to go further in analysing the evidence both above and below ground level than previously as recent excavations carried out between 1966 and 1968 by Margaret Rule uncovered the foundations of chapels radiating from the ambulatory.[6] This work allowed a more precise reconstruction of the ground plan and makes the re-examination of the physical evidence above ground a worthwhile proposition, scanty though it is.

At ground level virtually nothing survives of the apse arcade except on the north side where the walling and base plinth of the inner order towards the apse are to be seen in a pit in front of pier A1A (Fig. 1). The walling extends 180 mm east of the site of the cross-arch between choir and apse which will be dicussed below as shewn hatched on plan and a further 255 mm beyond for the base plinth of the outer order shaft. On the aisle side original walling projects 240 mm beyond the site of the aisle vault cross-arch respond behind pier A1A. On the south side of pier SAS1A original walling does not project beyond the aisle vault respond.

On the outside the ambulatory wall is intact for its full height on the south side, though with a later window to the aisle, and includes the gallery corbel table. This walling extends 2.75 m east of the buttress between bays SA and S1A. It shews no sign of curvature northward for 1.22 m, beyond which it curves in beneath the straightened later Retrochoir parapet (Plates 1 and 2). On the north side original ambulatory walling survives to main arcade sill level for 3 m and shews similar curvature 1.5 m east of the pilaster buttress between bays A and 1A. Above this level the walling has been cut back and refaced, although visible inside the gallery (Plate 3).

The evidence at gallery level is also important as it enables the arch dimensions of the apse arcade to be reconstructed (Plate 4). In bay 1A one block of an abacus remains below a certain amount of the spandrel of the arch itself, though lacking the voussoirs and part of the respond. On the south side in bay S1A an abacus block survives together with some walling which lacks the
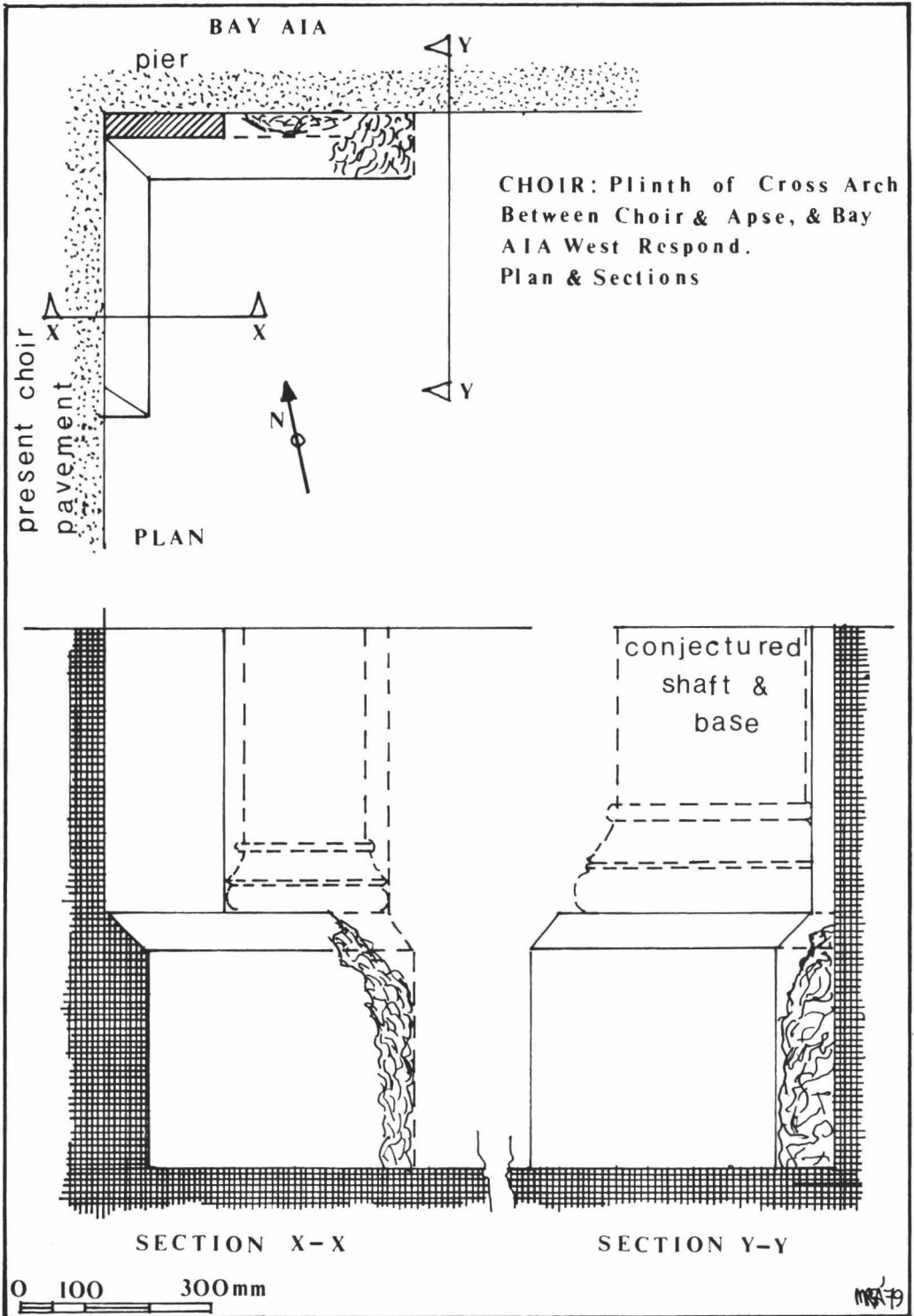
Fig. 1

shape of the arch. These abaci blocks are at a higher level than those in the main choir gallery, being 1 m above the latter (Plate 5). The arch in bay 1A survives sufficiently for one to be able to reconstruct its original dimension and this produces a diameter of 2.45 m less 250 mm voussoirs for the inner order. This reduces the arch span to 1.95 m and gives a crown to the outer order in the gallery at the same level as that in the choir main body. The precise implications of this will be discussed below. The outer or aisle walls of the gallery in bays 1A and S1A also survive for some of their length and include the west jambs and part of the arch of the gallery lights set much closer to the responds of the cross-arch between bays A and 1A than in the other choir bays; that is 585 mm as against 1.93 m in the normal choir bays. This indicates that the apse ambulatory bays are much narrower than in the rest of the choir and also that the elevation continued round the apse at this level.

The clerestory passage continued round the apse as it clearly went through piers A1A and SAS1A, for in these the original vault and passage survive until they meet the post-1187 Retrochoir work. This is corroborated by the fact that the clerestory outer wall of bay 1A continues 1.17 m beyond the wall passage through the pier. This rises 1 m above the clerestory sill. A hole through this walling gives a thickness of 840 mm for the clerestory outer wall. A similar amount survives in bay S1A. There is unfortunately no evidence of the precise position of the clerestory windows in these bays as the Retrochoir work involved rebuilding this area.

Further evidence of the ground plan of the great apse and its ambulatory is provided by two sources, namely the present Lady Chapel and recent excavations. The three west bays of the Lady Chapel predate the Retrochoir, having been completed probably only a few years prior to the 1187 fire, as mentioned above. The position of the west bay's diagonal vault rib springers gives some indication of the eastward limit of the outer wall of the ambulatory. This Lady Chapel replaced the original one which was probably apsidal for if it had a full bay between ambulatory and apse traces of earlier Anglo-Norman masonry would very likely be incorporated in the 1180s work. This is not the case and can be regarded as evidence that the original axial chapel soon proved inadequate. This chapel not only provides corroborative evidence for the position of the ambulatory wall but also proves the fact that the east end was of the apse and ambulatory type.

Excavations in 1966 and 1968 by Margaret Rule[7] on the north and south side of the choir revealed the foundations of the radiating chapels, thus conclusively demonstrating that the plan was of the apse and ambulatory form. Drawing out the plan of the excavations (Fig. 2), the external diameter of the radiating chapels is found to be 7.315 m and allowing for walls 1.22 m thick the internal diameter would be 4.875 m. Sufficient foundations were discovered to enable these external dimensions to be worked out. Willis was proved correct in his conclusion that the radiating chapels started halfway along the present Retrochoir west bay,[8] although they turned out to be somewhat smaller than he supposed. The excavations also revealed in section the southern foundations of the great apse arcade of sleeper wall type. This had already been identified by Willis in 1861 when the choir pavement had been removed.[9]

One other piece of evidence remains: the choir body seems to have been divided from the apse by the only vertical division present in the choir. In a pit in front of pier A1A is a plinth which could only be for the bases of shafts for a cross-arch as it is too far south of the pier and in the wrong position to be part of the arcade arch supports.[10] To the east is a stretch of original pier face and base for the west respond and shafts to the first bay of the apse (Fig. 1). The cross-arch appears to have been about 1 m across, a dimension based upon how far east the string course at gallery abacus level runs on the face of pier A1A. This does not necessarily mean that the arch was
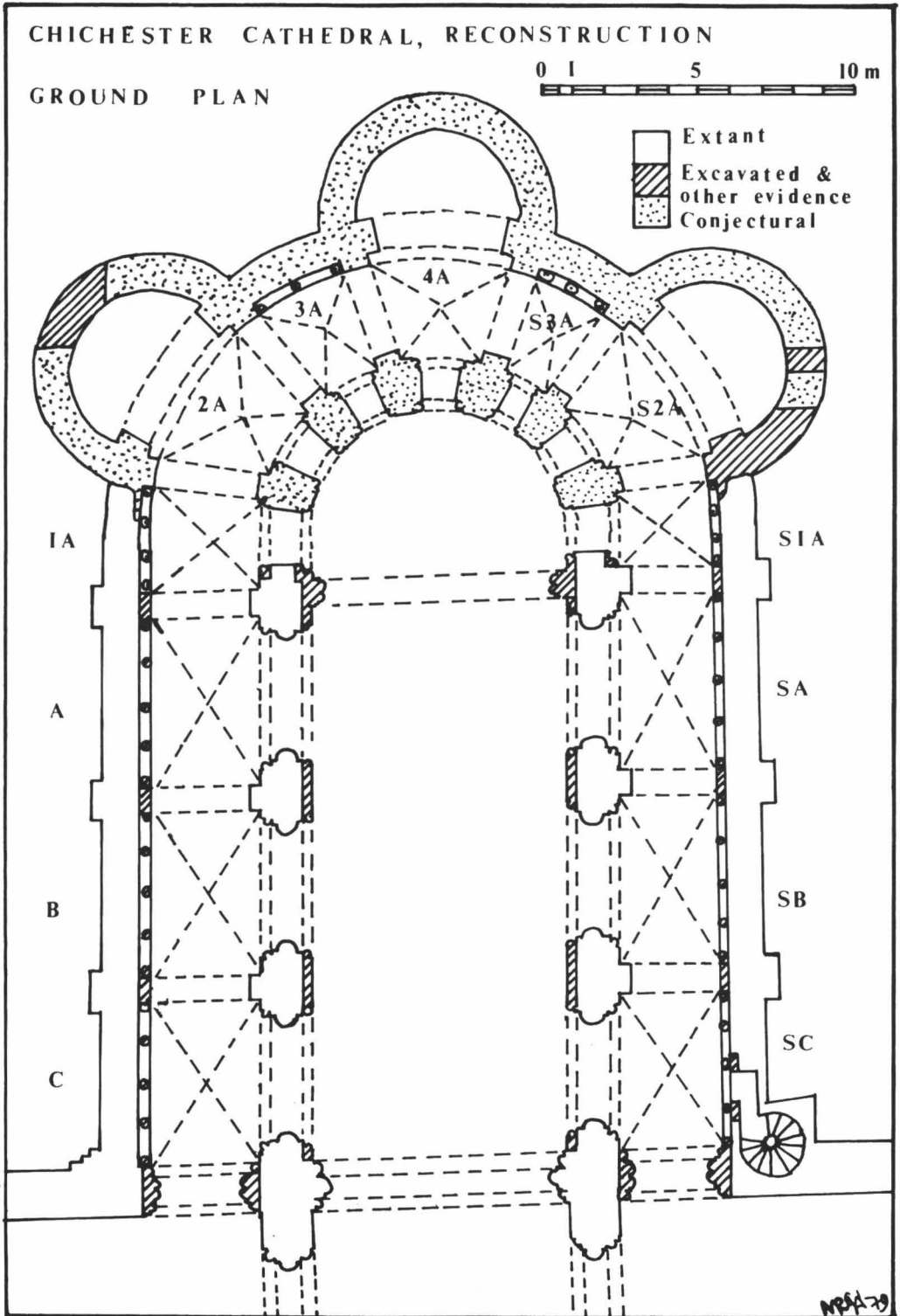
Fig. 2

actually thrown across between choir and apse but it seems to indicate quite clearly that it was at least provided for by shafting and probably by capitals. Whatever the case it was cut back and replaced by vaulting shafts slightly further west and the only trace is to be found in this pit.

Using the surviving physical evidence outlined above the outer wall of the ambulatory can be reconstructed on plan. This has a radius to the outer ambulatory wall face of between 10 m and 10.2 m, a variation produced by irregularities in setting out the east end. The centrepoint itself is 1.22 m east of the east face of the presumed cross-arch between choir and apse, producing a stilted apse plan, a position confirmed by the evidence outlined above.

The location of the apse arcade is found by projecting the choir arcades round and including the 1.22 m stilting. This gives an internal radius of 4.06 m. The ground plan of the apse and ambulatory walls can be reconstructed convincingly by using the physical evidence, but the problem is to ascertain the number of piers in the apse arcade. At gallery level it was shewn that the arch spans in bays 1A and S1A were 1.95 m.

In order to rationalise the location of the radiating and axial chapels to the pier system in the apse and also produce a structurally feasible vault system in the ambulatory, it must be posited that there were six piers, giving a seven bay apse. The choir aisles were groin vaulted, evidence surviving of the bases of the transverse arch responds behind the piers and of the lunettes behind the arcade arches, and it seems reasonable to assume that the same system of groin vaults continued round the ambulatory. This would produce seven vault bays with the transverse arches flanking each of the three chapel openings. The position of these chapels is very similar to those at St. Augustine's Abbey, Canterbury, started in the early 1070s, where there are six piers to the apse and seven bays to the ambulatory.[11] Bury St. Edmunds Abbey also had an identical system which was completed by 1095.[12] The Canterbury choir rebuilding, commenced about 1100, had a seven bay apse and it would appear that Chichester fits into this well established pattern which may well have reached England via north-east Normandy and Jumièges Abbey.

Given the dimension of the west bay of the great apse on each side of 1.95 m for the arch plus 0.5 m for the respond, a total of 2.45 m, and allowing for the east responds of bays 1A and S1A, the dimension of each bay can be calculated. The circumference of the apse arcade outer face is 19.8 m including the stilting. Divided by seven this gives a bay width from pier midpoint to midpoint of 2.84 m which fits in well with the reconstruction of bays 1A and S1A. Using the same technique on the inner face of the apse the bay width tapers to 2.16 m. These dimensions apply to the gallery arcade but must also apply equally at ground storey level.

These bays are corroborated to some extent by the fact that the transverse arches of the postulated ambulatory vaults radiate from the centrepoint of the great apse to points flanking the entrance arches to the chapels. On this basis a radius line passes through the middle of the apse piers in their assumed positions, as is indeed the situation at St. Augustine's Abbey, Canterbury. This is not the case, however, for the east piers of bays 1A and S1A where the stilting of the apse distorts these two bays and makes them more rectangular in plan. The evidence discussed above points to there having been a six pier, bay great apse at Chichester not a four pier, five bay one as suggested by Willis and shewn in the plan in 'Chichester Excavations'.

The precise form of the piers at main arcade level is now of course purely a matter for speculation. They could either have been cylindrical, tapering rectangles or plain rectangles. The west respond of bay 1A survives in part in the pit in front of pier A1A (Fig. 1) and shows that there was an outer order with almost certainly an engaged shaft as in the main body of the choir and presumably a similar inner order. Cylindrical apse piers would be beneficial in that they would allow

CHICHESTER CATHEDRAL CHOIR

LONGITUDINAL SECTION

0 1   5   10m
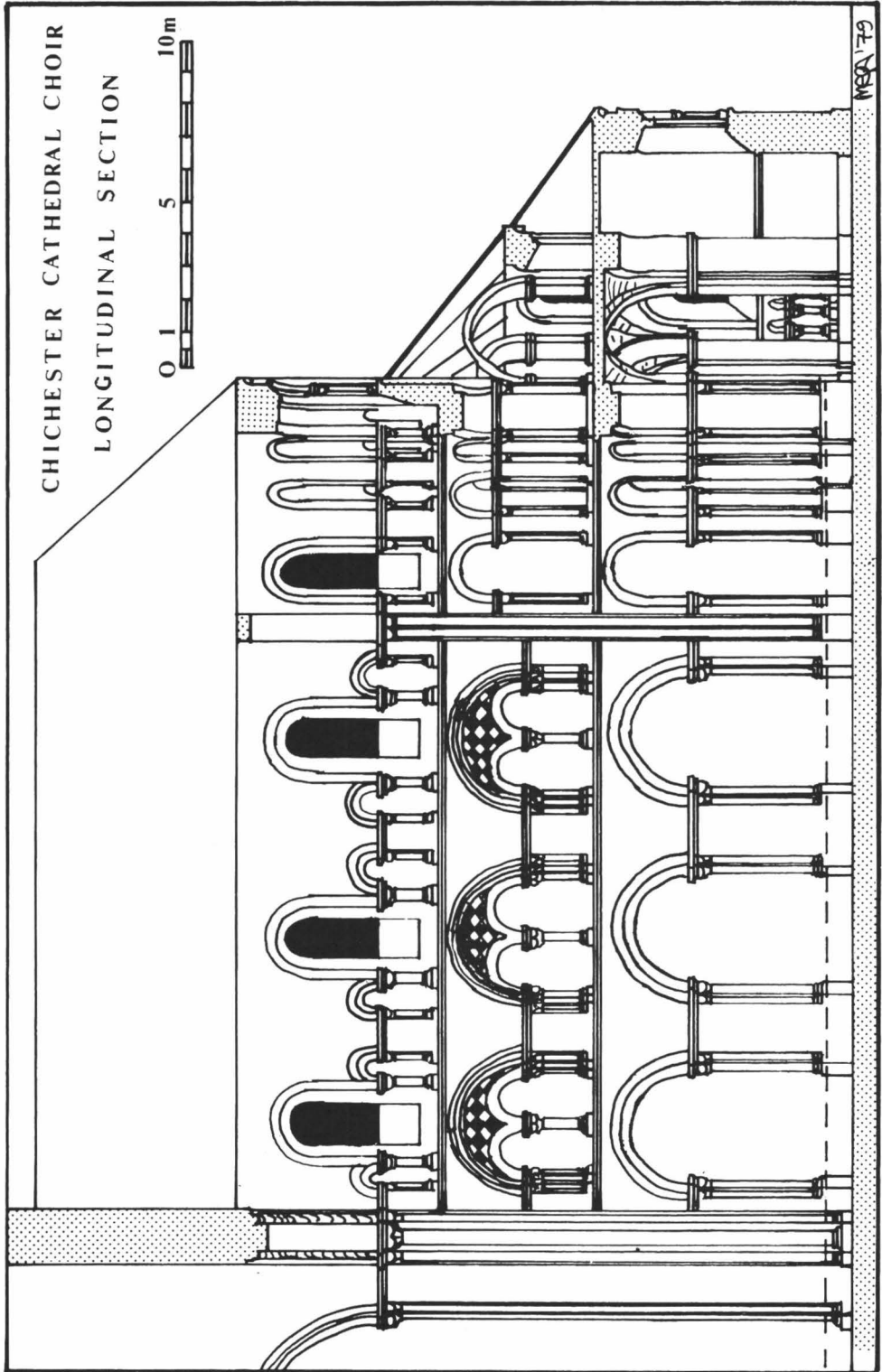
Fig. 3
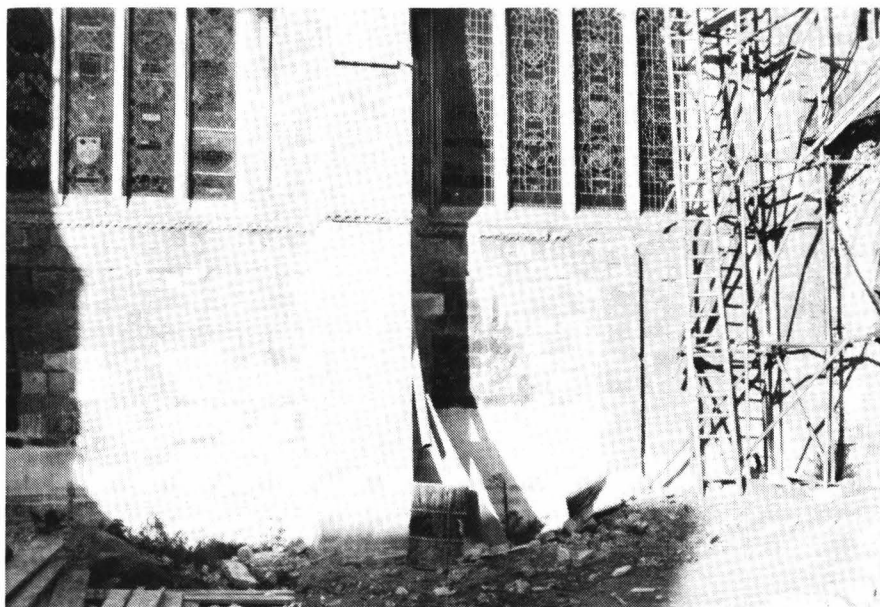
Plate 1:   Start of the Ambulatory, South side of Choir
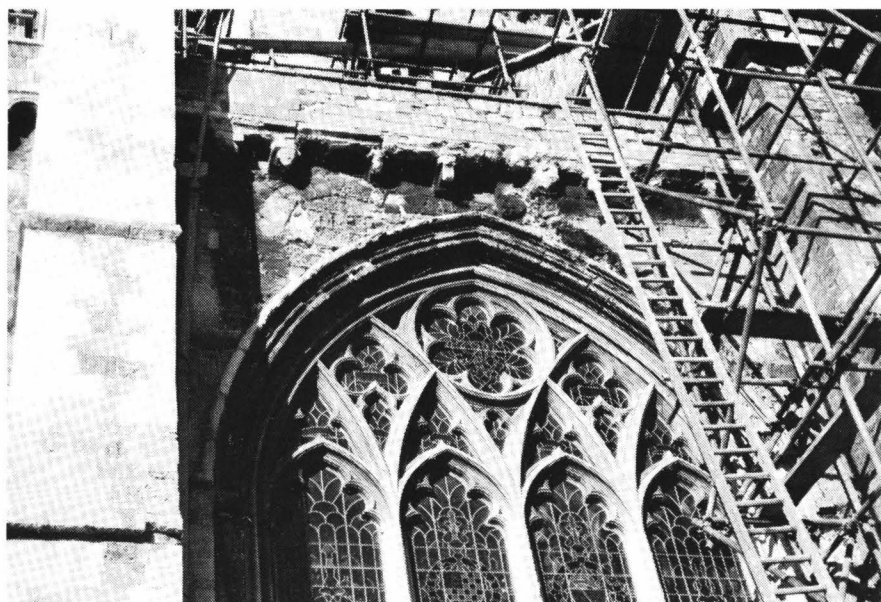
Plate 2:   Start of the Ambulatory, South side of the Choir, Gallery level

Plate 3:   Ambulatory Bay 1A from North-East
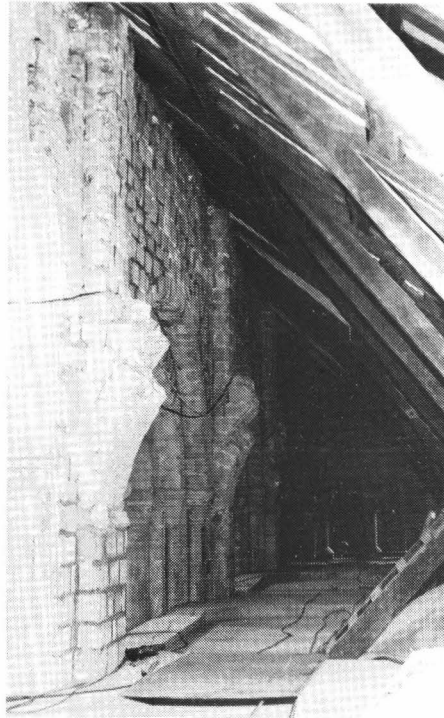
Plate 4:   North Gallery looking West
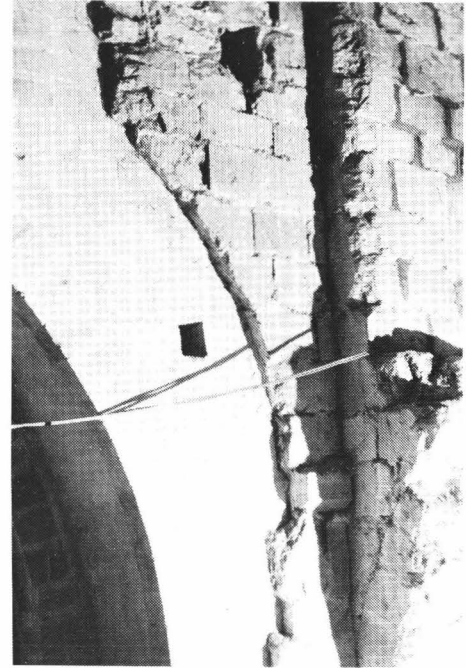
Plate 5:   Gallery pier A1A from North-East

more light into the apse from the ambulatory than would rectangular piers. More churches seem to have the former sort, though Norwich Cathedral and possibly St. Augustine's Abbey, Canterbury, did not use cylindrical piers. It is possible that Chichester fits in with these more than the others. The use of rectangular piers in the choir main body and the consequent predominance of walling in the elevational design would also seem to militate in favour of similar piers in the apse to maintain continuity between the two. There is of course the example of Lewes Priory, also in Sussex, which had rectangular choir piers but columns in the apse, although of course Chichester has a different plan in that there is no east crossing between choir and apse as at Lewes. The balance of probabilities may lean towards rectangular piers in the Chichester apse and they are shewn thus in the reconstruction plan for this reason (Fig. 2).

At gallery level similar arguments apply. It seems more likely that such relatively narrow bays were not subdivided in much the same way as at Peterborough where those of the choir tribune are subdivided but those in the apse are not. The clerestory also would probably not be the same as in the body of the choir due to the narrowness of the bays in the apse. It might well have been similar to that at Peterborough, which is of course later. This has a single opening, a passageway and a window to each bay, and as discussed above there was certainly a clerestory passage round the Chichester apse.

The arches, being narrower at both main arcade and gallery levels, have much higher responds with abaci at a level of 1 m above those in the main body of the choir. The arches are thus not stilted and this is corroboratory evidence for there having been a cross-arch between choir and apse as the abaci on either side would have been at very different levels, necessitating an awkward step up for the abacus string.

It is possible to reconstruct the outer ambulatory wall with somewhat more certainty as most of bay S1A survives. This had a gallery light (Plate 2), as in the rest of the choir, and presumably a main arcade window. In the bays between the chapels (bays 3A and S3A) there appears to have been sufficient width for similar bays to 1A and S1A with windows at both levels to light the ambulatory aisle and the gallery above. The radiating and axial chapels were obviously of one storey and could well have been of two on the analogy of those off the transepts. If this was the case the walls would rise to parapet level with a roof pitch flush with the gallery pent roof. This is of course purely speculative but there are surviving examples in England of the twostoreyed ambulatory apse, as at Norwich and Gloucester. Inside the gallery it seems a reasonable assumption that the cross-arches present in the choir main body at this level also continued round the apse. At main arcade level between the chapels and in bays 1A and S1A there was probably a wall arcade as in the main body of the choir. The evidence for the choir aisles will be discussed later but it seems obvious that this blind arcade would continue round the ambulatory (Figs. 3 and 4).

There was originally blind arcading below the main arcade window splays in the choir aisles. There is evidence that this continued in the nave aisles as there is one arch and its left capital surviving in the west bay of the nave adjacent to the north-west tower. In the choir the evidence is found in bays SA and SB where the wall was not refaced below the window splays as in all other bays. The fact that nearly all the bays were refaced from about 2 m above the pavement to the splays is in itself evidence for the wall arcade, as cutting the arcade back necessitated this refacing in the first place (Fig. 5).

In bays SA and SB are clear traces of cut-back arches of 0.915 m diameter springing at a level 1.93 m above the aisle pavement. There are also traces of cut-back blocks for abaci and capitals as well as clear traces of their bases on the wall plinth or bench seat below. The untouched walling

CHICHESTER CATHEDRAL CHOIR
RECONSTRUCTION, EXTERIOR

0 1   5   10m
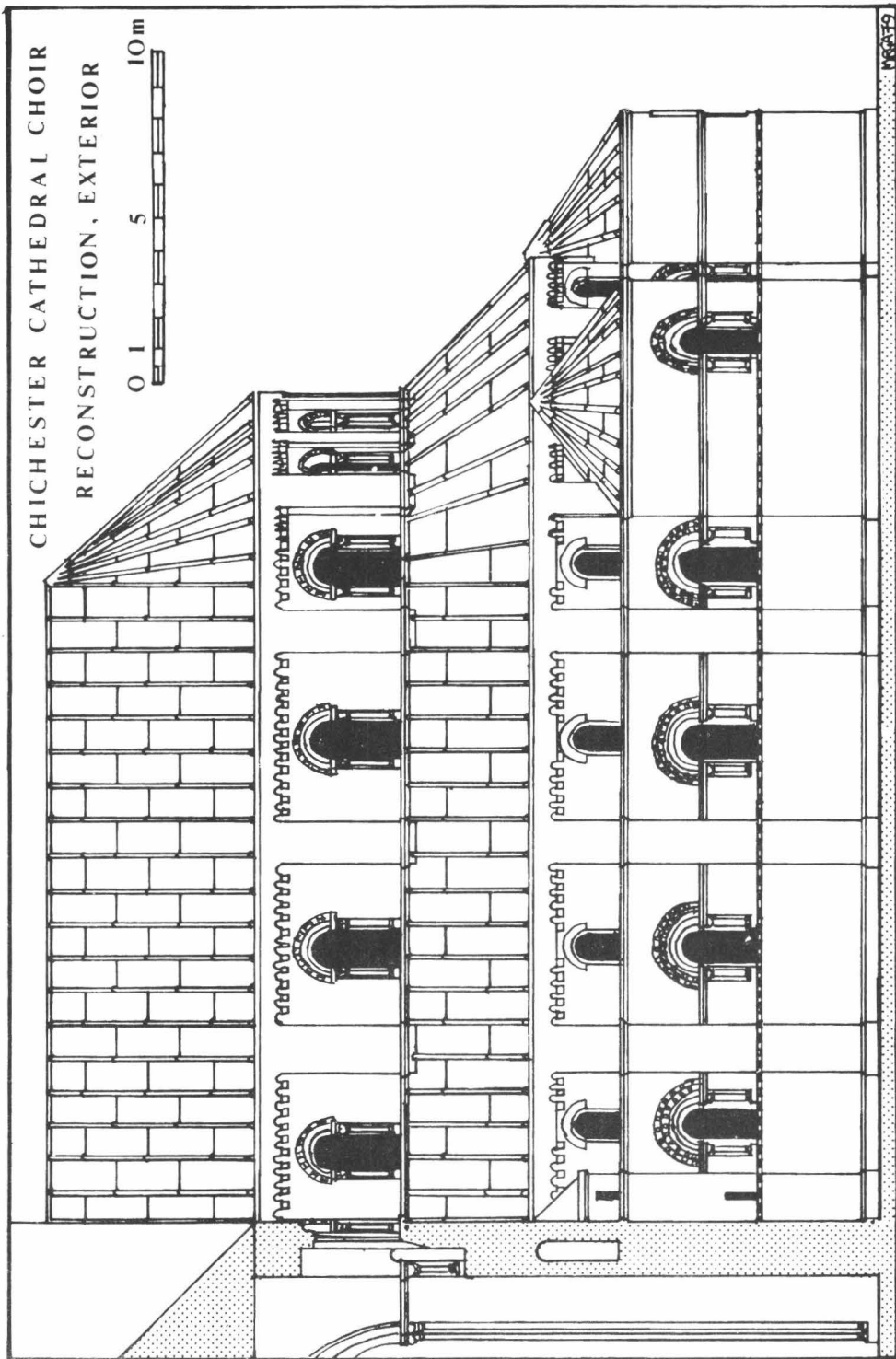
Fig. 4

between plinth and capital is due to there having been free-standing shafts which are now of course long gone, as in the nave north-west aisle bay. The dimensions give four bays of wall arcade to each bay of the choir aisle and this is shewn on the reconstruction plan thus.

Using the available evidence, above and below ground, it is possible to reconstruct the apse and ambulatory in some detail, although considerable gaps must remain that can only be filled by speculation. The reconstruction drawings are thus to be taken as correct in general but conjectural as to details.

Having done so Chichester obviously belongs in the apse and ambulatory plan group, which however had no distinct regional distribution among Anglo-Norman great churches. Chichester however is included in a sub-group within this type: the six pier, seven bay apse plan, a plan produced by positioning the radiating chapels east of the apse centrepoint. The models as far as England is concerned are the great churches of eastern Normandy: Rouen Cathedral, La Trinite Abbey, Fecamp and Jumièges Abbey, this last having a seven bay apse. In England those churches with surviving evidence of a seven bay apse commenced prior to Chichester are Worcester Cathedral, Bury St. Edmunds Abbey and St. Augustine's Abbey, Canterbury. Building around 1100 was Canterbury Cathedral's new choir where the apse plan remains in the present crypt, while commenced long after was St. Bartholemew's Priory, Smithfield. It is of course noticeable that all these with the exception of Worcester are in the south-east but beyond this one cannot proceed with regard to an explanation for the adoption of this variant of the apse and ambulatory plan.

The most significant example is that of Canterbury Cathedral where the great Durham theme of stone rib-vaulting was ignored in the rebuilding of the choir and a timber roofed church produced. It is of some significance that the metropolitan church of the archdiocese in which Chichester lay should adopt this apse form, a plan rarely used in England subsequently and one which was by 1100 rising from the foundations at Chichester.

Author: M. R. G. Andrew, 23 Long Furlong, Haddenham, Bucks.

FOOTNOTES AND REFERENCES

[1] R. Willis, *The Architectural History of Chichester Cathedral,* Chichester 1861.

[2] ibid., 7-9

[3] e.g. A. W. Clapham, *English Romanesque Architecture After the Conquest,* Oxford 1934, p.34; ed. L.F. Salzman, *Victoria County History,* Sussex iii, 1935, pp.106-107 in W. H. Godfrey and J. W. Bloe's Historical Survey of the Cathedral; and W. D. Peckham, Some Notes on Chichester Cathedral, *Sussex Archaeological Collections* 111, 1973, 21.

[4] The dating evidence for the choir is discussed in my unpublished University of London M.Phil. Thesis, The Architectural History of the Romanesque Cathedral at Chichester, Sussex (1976), 46-75.

[5] ibid. p.18

[6] A. Down and M. Rule, *Chichester Excavations I,* Chichester 1971. Excavations in Chichester Cathedral, by M. Rule, 127-141.

[7] ibid. pp.134, 135. The plan on p.128 reconstructs the dimensions of the radiating chapels inaccurately, making them too large in relation to the excavated evidence, particularly on the north side.

[8] Willis, op.cit. 8-9.

[9] ibid. Addendum to p. 9.

[10] *VCH* iii, p.116. This describes the walling in the pit as part of the apse springing but there is no curvature visible and this supports the stilted apse thesis.

[11] A. W. Clapham. *S. Augustine's Abbey, Canterbury,* HMSO 1955, p. 4 and ground plan at end.

[12] A. B. Whittingham, *Bury St. Edmund's Abbey,* HMSO 1971, p. 5 and plan at end.

AISLE WALL ARCADE EVIDENCE, CHOIR BAYS SA & SB

0   1   2m

cut-back arch voussoir blocks
abacus & capital blocks cut back & refaced, bases surviving in plan
obscured

aisle
vault
cross-
arch
respond

Sherborne tomb

Chichester relief

wall-bench

BAY SA

BAY SB
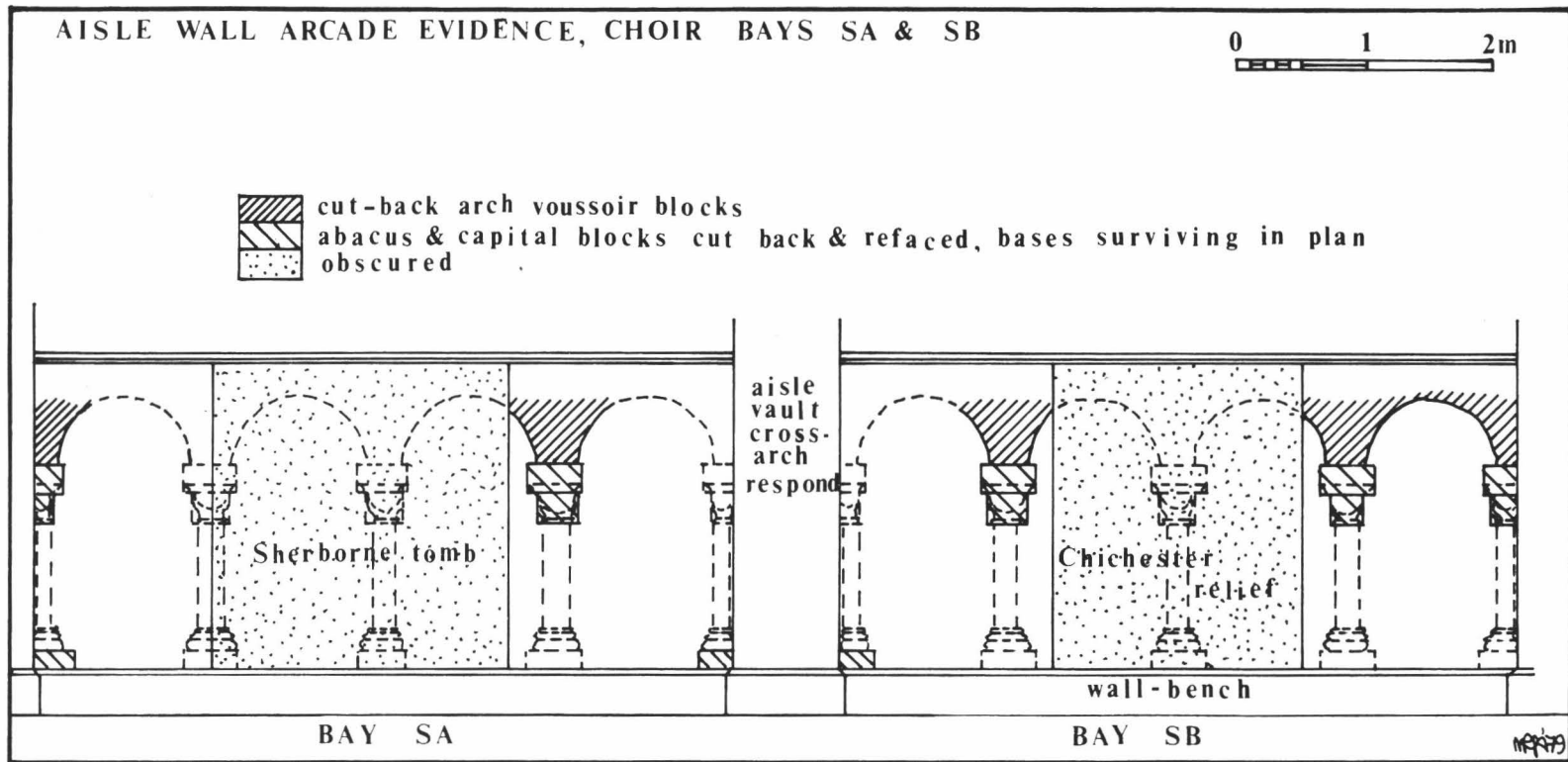
Fig. 5

STUDIES AND OBSERVATIONS ON SUSSEX PLACE-NAMES

by Richard Coates

This article seeks to explore the origins of certain placenames not covered in the Placenames of Sussex *volumes of the English Place Name Society, to correct some others covered by those volumes and other writers, and to offer a few alternative suggestions in cases of doubt. Occasionally a newly-found earliest form is offered.*

These notes follow the organisation used in the standard reference work, the English Place Name Society volumes 6 and 7. This will be cited where appropriate as MSG followed by a page number (see list of references at end of article). In the main the article consists of notes and analyses of names not covered by MSG or the recent work Glover (1975). There are some reanalyses and some inconclusive alternative analyses. These are supplemented by some straightforward citations of interesting hitherto unnoticed forms, and new 'earliest' forms.

Accordingly, we begin with river names, go on to hill names, and then habitation names in the parish order laid down in MSG. Historical documents are abbreviated as is conventional, and a list of abbreviations may be found at the end of the article. Parish names are prefixed by an asterisk, and hundred names by a square.

River names
Arun

> 1592 Aron (lease)
> 1610 Aroam (map)
>> See Leconfield 1954. *Aroam* is perhaps fancifully based on *Arom* in 1 Esdras 5:1.

Adur

Drayton, in the Poly-Olbion (1612), alleges that an old name for the Adur at Bramber is *Weald-ditch*. No place-name scholars have hitherto lighted on this titbit. This name in fact refers to the creek debouching into the Adur at Shoreham from the Lancing direction, as Budgen's map of 1724 makes clear.

Hill names
The Harrows

Various *hearg-* locations, or heathen religious sites, have been suspected for Sussex, cf. the discussion, rather inconclusive, at MSG 165 and SAC 82:44. I now list, for the first time exhaustively, the various possible names. I emphasize that the conclusion reached is tentative pending the discovery of early forms.

1. *Harrow Hill* (Angmering/Patching) (Vulgo *Harry Hill* SAC 63:29)
     See MSG 165, SAC 110:127.
   Harrowways, an old name for the A27 between Fox Inn, Patching, and Hammerpot, below
     Harrow Hill itself (SAC 63:30, n. 62)

2. *The Harrows* (OS 2½″), (Harting). Not in MSG and apparently not noticed before. There are no recognised ancient forms, except for the inference to be made below. There is no help from Hampshire, on whose borders it lies, in the absence of EPNS published volumes for that county, though the name *The Harris* appears in adjacent Buriton (Ha.) and *Harris Lane* in Chalton (Ha.).

3. *Mount Harry* (Hamsey) (etymology first suggested by L. F. Salzman, cf. MSG vol. 2:v).
    Mountharry 1610

4. *Mount Harry,* adjacent to Surrenden Road, Brighton.
    The Inquisitiones post mortem of temp. Henry III (MSG 562) give the forms:
    .*Chusehar, chisharwe, cheseharegh*
    Despite phonological difficulties with the first element, I take these to derive from OE *ceos* 'gravel', and associate them not with the harrow no. 1, which is well known for its ancient flint workings (cf. Brandon 1974: 46-8, 53); but with no. 2, adjacent to patches of Clay-with-flints having tertiary debris. Cf. *Chiseldown* in East Dean (West Sussex).
    The Subsidy Roll for 1332 gives personal names in Stedham and Ringmer of the form *Harewedon* ('Harrow Down'). The Stedham one is to be associated with 2, the Ringmer one with 3.
    A possible fifth case is the following (cf. MSG 267; SAC 61:41, n. 9):

5. *Harradines,* Little London Lane, Cuckfield. The form is manorial or pseudomanorial, to be associated with the following in the Parish Register for 1608 et seqq.:
    Harraden, Hariden, Haradine, Harrowden (cf. also Harraden (Balcombe 1617, (SAC 58:17))).)
    These personal names appear to be further Harrow Downs. Compare (also MSG 267, unassociated with Harradines in that volume)
    Harry's Wood, Cuckfield (SAC 61:46) *(Harriswood* 1629).

If appropriate, association with harrow no. 3 seems to be called for. A place called Harrow Down in Cuckfield itself seems a priori unlikely because of the normal distribution of harrows on the chalk downs. Perhaps the family whose name appears here is linked with the later Itchingfield group, recorded from 1797 (SAC 41:142), as these appear to be complementary in time. The Itchingfield people appear as *Harrowden.*

The problem of the location of potential harrow sites is however not entirely clear cut. The Feet of Fines (1203) have *Haregedon* (SRS 2:72), in a context which suggests, ambiguously, that the name by that time had become applied to a place of habitation proper rather than a hill:
        de tribus virgatis terre in Haregedon
Perhaps this is 5; cf. also Johannes de Harewdon in 30 EdI (SRS 7:1138, FF) and the Stedham and Ringmer cases already referred to for confirmation of its placename application. Even if the FF form is 5, the question of ultimate origin can still be resolved in the manner suggested above, viz. by associating it with 3 in Hamsey.

The origin of no. 4 is quite unclear; I have only found it on OS 6″. Is it a late name commemorating 3? It is a hillock of sorts.

The Caburn (officially *Mount Caburn*)

Since the story of a Celtic origin of this name, originally put forward by W de St Croix, has recently reemerged (Glover 1975), I include this note to remind readers of the convincing chain of forms discovered by Revill (1958-62, 43ff.) in the Glynde MSS:

    1296   Richard de Caldeburgh (SR, Lullington)
    c.14   Caldeburg
    1347-8   Caldeburgh
    1513/4   Calborrowe
    1515   Calbroughhill
    1552   Calboroughhyll

It is thus OE *ceald, burh* 'cold earthwork', with Anglian *a* and lack of palatalisation, cf. *Calcot* (MSG 237) for the same development. Thus probably a relatively late reformation of a form which would have yielded Chaldburgh. Where the final *n* came from is an entirely open question. It was there by 1755, the year of the death of William Hay of Glynde, who wrote a poem whose title was our name in its modern spelling. The only suggestion I can offer is:

    Calbroughhill ⇒ Calbrill ⇒ (by dissimilation) Calbrin
                   ⇒ [kɔ:brən] ⇒ [kɔ:brn][1]

but a number of *burh* names have *burn* occasionally e.g. Braceborough in Lincs. with occasional *Brasingburn* forms. Cf. also my note on *Saxonbury* (below).

Pen Hill

This hill in Elsted appears to contain one of the very few authentic Celtic names in the county. British **penno-* 'hill'? Without early forms, such an assumption is rash. But it gains a certain cogency from the apparent survival of Celtic hill-names in the same general area of West Sussex. Cf. *Torburi* (*c.* 1250) in Harting, where *torr* is at very least an ancient borrowing from Celtic; *la Torre* (1275) in North Stoke; *Muned* (p.), assessed in Chilgrove and Singleton (1296, SR) seems to represent late British **moniðo-* (Welsh *mynydd* 'mountain'), see Löfvenberg (1942, 136). None of these places is more than 5 miles from Elsted. It is not easy to evaluate the co-occurrence of these forms.

*Fernhurst

Oeborne Copse (MSG 21)

    963 (c.12) of woburnan (Barker 1949, 89, 91) (cf. also PN Wilts, xxxvi)
    1640 Obernes   (SRS 14:155)
         Oeburne   (L. F. Salzman personally to E. E. Barker as the modern form)
    Compare:
    Awborneland in Hurstpierpoint, thus in 1617 (SAC 58:17)
    Howbourne Farm in Hadlow Down:
         1592 Owborne al. Woburne
         1701 Houghborne   (MSG 395, auct. SRS 20:335)

All these are probably *woh, burna* 'winding stream', as MSG surmise for the Hadlow Down example and Barker for the Fernhurst one. The forms and distributions are of interest in that they highlight a multiple origin for the characteristic Sussex surname *Oborne* et simil.

*Westbourne

Slipper Mill (MSG 57)

    To be associated with
        1332 Laurencius Slyper (SR Rumboldswhyke)?
    For the surname see Reaney (1976, 332).
    The name is relevant even if the person is not. The earliest forms quoted by MSG are of 1640, but 'its origin must be well back in early medieval time' (Scott 1949, 38).

Notice that there exists a (or more than one) place in Westbourne called *Slippers Bushes* (SRS 61:73). The name was clearly 'native' to the area. Further, I am informed by Eric Holden of the term *salt slipes* applied to two places adjacent to the marsh in Pagham Harbour. It is implausible to associate this with the common fieldname *slip* "narrow piece of land", on topographical grounds. Related to OE *slipa/slypa* 'slime' = "marsh"? The relation of this term to *Slipper* is unclear, but perhaps *Slyper* represents a characteristic *Bridger*-type surname derived from it.

*Bosham
Bethwine's Farm
Pseudo-manorial *s* on the base of Sussex dialect *bethwine* 'Clematis vitalba' (Parish, 1875). Note that relatives of *bethwine* usually mean 'Convolvulus spp.' or still other plants in adjacent counties (Orton, Sanderson and Widdowson 1978, L11a).

*Lurgashall
Megrams
Cf. Richard *Meygrom* (SR Tillington 1296).

Northreadings
For the general sense see under *Bullreadings* in Northchapel, below. North from Upperton.

White's Green
MSG cite John *White* (1716); it can be traced with certainty to Thomas *White* (1610) (Leconfield 1954, 64), and possibly even to Robert and William *le Wyte* (SR Petworth 1296).

*Northchapel
Bullreadings (lost)
Probably 'clearings (Kentish OE *reden)* where bulls were pastured', or singular with pseudo-manorial *s*. The Bullreadings copyholds became Nithurst Farm and Copse, and Upper Copse. *Nithurst*, in view of the late application of the name, is probably secondary and personal from *Nuthurst*, with the curious *u* > *i* found, relevantly, also in *Tillington<Tulla*. Cf. also *Lyminster<Lulla*, and the frequent Sussex surname variation *Tulley/Tilley*.

Chafold Copse (OS 1")
    1557 Chawfold Wood (Survey referred to in Leconfield 1954, 46)
cealf, falod 'calf-fold', with expected southern *ch*. This, or a similar one,[2] doubtless gave its name to the Peter de *Chaffolde* (1279 AssR) whose name survives in *Chaffields Farm* in Warnham (MSG 239).
For the alternation of *fold* and *field*, cf. from the maps in Leconfield 1954 the forms *Benifold/Benifield* in Lurgashall (the *Benefold* of MSG 111).

Colehook (MSG 114)
Colehook *Common* was earlier:
        c. 12>1557 Middlekorne Wood
            1610 Middlecarr Common (cleared in the meantime)
A metanalysed form of *Middlecornwood*, i.e. Middle-Cranes'-Wood with common Sussex *carn*, *corn* for OE *cran* 'crane, heron' as in *Cornes*, in Battle, *Cornhill* in Frant and *Cansiron* in Forest

Row. Why *Middle* is not clear. Possibly central between the Outwood or Raffling Wood and Colehook Wood, as viewed from Petworth House.

Crabstock (now part of Stilland Farm)
ME *crabbe* (apple), OE *stocc,* thus 'enclosed crab orchard', in a ME formation. Just possibly 'stockade of appletree wood'.

Fisherstreet (MSG 114)
Compare also *Fisherlane Wood,* just over the Surrey border in Chiddingfold. See Addendum in PN of Devon I, liv, where it is said to occur on old maps as *Jack Fisher Street, Jack Fisher* = 'heron'. See SNQ 3:89.

Fruens (now part of Stilland Farm)
From an owner named *Frewen* (OE *Freowine)?* The land had separate identity till 1500 at least. The surname was common in Dumpford Hundred in the fourteenth century. It was well known in the east of the county, especially at Northiam, *c.* 1650, and more recently at Brede.

Graunts
Compare Nicholas le *Graunt* (1296 Petworth SR).

Kechners (now part of Colehook Farm)
Thus in 1610 (Petworth Estate map), John *Kitchener* acquired the right to build a dam at Colehook in 1370 (Leconfield 1954, 109) and this presumably commemorates his family.

Padbroke (See Potland Farm below)
Though on topographical grounds it could be *paδ, broc* 'watermeadow with a path through it', nevertheless a range of early forms suggests otherwise. Löfvenberg (1942, 148) shows examples of the compound *Pattebrok* et sim. from the twelfth century onwards in Suffolk Pipe Rolls and from data in *Place Names of Northamptonshire.* The element **pat(t)e* recurs in Lancs., Somerset and Worcs. Citing a similar Swedish form, he concludes an OE **pat(t)e* 'bog, quagmire' related to the sense of 'butter-*pat'.* For our form we have

      1296, 1327 Pattebrok (p.)   (SR Petworth)
      1332   Patbrok (p.)   (SR Petworth)

It is without doubt not from ME *padde* 'toad' like *Padbrook* (Kent). Probably therefore,'boggy watermeadow'.

Potlane Farm
On the side of Padbroke (see above). The lane clearly led to the quarry pits mentioned in the 1610 Petworth Terrier.
At Northchapel in 1610 William Brockas (Brockhurst) held *Potland,* again 'pitted land', ME *potte.*
Cf. *Potlands* in Goring (MSG 169), to which *Pot Lane* leads.

Shonks
If the analogy of Plonk Barn (Lullington)<*plank* is to be trusted (cf. PN Northants, lxviii), this is from some occupant *Shanks.* See also *Slonk Hill* (Shoreham), below.

Tillies (lost)
The surname *Tilley (Tylye)* is found in 1296 (Washington SR) and is a common Sussex surname. Compare the note on *Bullreadings* above.
For the surname see Reaney (1976, 349).

Vering
This in 1586, 1610. Secondary from *Ferring?* Shows Sussex *f>v.*

*Petworth
Colecruch (lost)
Thus in 1610 (Petworth Estate map). It is at the junction of the London Way and the path by the stream towards Guntersbridge, thus probably Middle English *crouche* 'cross' or 'crossroads'. If it is genuinely ancient (no other forms found), see the personal name *Cola* which underlies *Colehook* as the first element.

The Conyngar
Variously *Conygre, Coney Park, Conyngere.* 'Rabbit-warren'.

Cookes al. Peparams (lost)
      1582 the land of Robert Badger called Cookes or Peparams
Close to the nucleus of the present Frog Farm. *Peparams* is from the surname *Piperham* (Richard de Piperham SR **Treue** 1327; John Piperham SR Tillington 1332), in its turn a place name from the surname *Piper* with ancient vowel shortening in the trisyllable, as in *Pepperscoomb* (Steyning). Piper was also a Petworth surname, cf. William *Pyper* (SR Duncton 1296), and the Edward *Piper* who gave his name to *Piper's Cottages* and *Copse* (a copyholder in 1635, Leconfield 1954, 64). *Cookes* is not so clear, but cf. John *Cocus* (SR Sutton 1332).

Cradlers (also in Northchapel in c. 17)
Cf. Richard atte *Cradele* (SR Petworth 1296) and also Löfvenberg (1942, 47). A southeastern *-er* delocative from ME *cradel* in a topographical sense: 'enclosure made of hurdles'?

Crosole (lost)
Close to the nucleus of the present Frog Farm. Thus in 1654 (Leconfield 1954, 29). In a minor wrinkle of the 150' contour line, therefore *holh.* Just this spelling is recorded for *Crows Hall* in Binderton in 1696 (MSG 46), thus *crawe, holh* 'crows' hollow', in a Middle English formation because of *s.*

Inholmes (now part of Frog Farm)
      1571 (/96) Inholmes (closes) (Leconfield 1954, 16, (111))
Yet another *innam* or *innom* 'intake'; this time it seems a genuine plural in view of Leconfield's note 1 on p. 16.

Keyfox
The 1823 spelling Guyvaux, and comparison with the traditional pronunciations of *Keymer* [ḵaimə] and *Keynor* in Sidlesham [kainə], suggest that the first element is OE *cy* genitive singular of 'cow'. The rest is obscure.

Osiers (OS 1")

Cf. John *Osschudde* (SR Ebernoe 1327), i.e. 'ox-shed'. Before 1700 the name was *Ossettes* or *Osserts*. The modern name is a deliberate deformation.

Sibbs and *Little Sibs*

Cf. John Sibbesone (SR Sutton 1332)? Possibly manorial, ultimately from *Sibb,* petform for *Sibyl.*

Streels Lane Gate

There is no *Streel* now in the district that I know of, but the word occurs in Sussex meaning a long, narrow strip of land (MSG 155).

*Findon

Cissbury

The implied *Sith(m)esteburh* of Saxon coinage, 'the last built *burh'*. Every association of the original name with Cissa the son of Ælle is fanciful.

  1477 the old byry (Sele Charter 160)

  1586 Sieberie hille (map)

  { 1586 Sizbury (par. Reg. (Findon)) }

  { 1590 Cis(s)bury (Camden) }   (which are in an Addendum in PN Devon I, lv.)

  {   Sissasbury (Norden) }

  1610 Sissabury (Speed)

  1724 Cissbury (Budgen)

  1732 Cissibury (Morden)

  1774 Sizebury (Gough's Camden)

However, MSG's assumption that the sixteenth century and later forms have to reflect antiquarian association with Cissa is unfounded. The thematic syllables in the 1610 and 1732 forms seem to rest on an ancient form rather than on the fabrication implied by the 1590 form. We should therefore reject Glover's suggestion that it was originally just called *Bury,* despite the 1477 form; this form is after all a definite description and not a name. Rather, we follow the arguments of Dolley and Elmore Jones (1955, 277ff.), Curwen (1958, 134) in Stewart (1978, 100) in identifying Cissbury with the coinage name.

Burbeach Hundred

Undoubtedly, with MSG, *burh, bece* 'beechtrees by the earthwork'. They do not resolve which earthwork. Truleigh Hill in that hundred has an Iron Age/Romano-British earthwork (Curwen (1929); cf. also SNQ 13:165). The hill takes its name from Truleigh down below; this is *treow, leah* 'clearing marked by prominent or isolated trees' (and not, I think, from *þruh* 'drain' as suggested by Dodgson (1978), which is topographically unsuitable). It is hard to avoid the conclusion that the 'borough beeches' were the selfsame trees that marked the clearing, though regrettably historical evidence for the site of the hundred court, which would clinch the matter, is still lacking.

This spot would be by no means central for the hundred, but observe that Upper Beeding parish was truncated by 10 hides in its eastern boundary when Bramber Rape was formed (Haselgrove 1978, 214). This would make Truleigh somewhat more central under the ancient administration,

perhaps the more so since there was land dependent on Upper Beeding away to the east in Hurstpierpoint.

*Old Shoreham

Thundersbarrow

> 1801 Thunder Borough (Edward: *Companion from London to Brighthelmstone*, plate 8; SNQ 2:130)

No early forms. Scarcely a modern fabrication, and thus *þunor, beorg* 'barrow dedicated to the thunder-god' or 'barrow of someone called *þunor'*. The Celtic field system on the east slope is traditionally called *Thunder's Steps* (Gurd and Jacobs 1924, 85). The co-occurrence of these two names hardly admits an interpretation of Thunder from a later personal name, though a Thunder lived in Chiddingly in the sixteenth century (Glover 1975, 166) and the name occurred as a surname also in Brighton in the nineteenth century. I should emphasize that no certainty is possible till early forms are found.

*Shoreham-by-Sea

Slonk Hill

> c.16   le Sloncke (SRS 27:36)

Related to Old High German *slank* 'slim', thus 'narrow hill'. It may be easily ascertained that Slonk Hill is a spur. For *a > o*, cf. *Shonks* in Northchapel (this article), *Plonk Barn* in Litlington (MSG 417) and *Todham* (MSG 18). The proposed meaning is clearly evidenced in Holland's Camden (1610) 1.715: "There runneth forth into the sea a certaine shelfe or slang, like unto an outthrust tongue." *Slang* occurs in OED as a long narrow strip of land, and has a derivative *slanket* with the devoicing which we observe in this name.

The change *a > o* is doubtless to be understood in terms of confusion between Middle English *a* and *au* before nasal (Dobson 1968, 555-8). Shortening of *au*, written *o*, is attested (Dobson, 501). The form here is not *slonk* 'swallowhole', which is only northern, and of Scandinavian origin.

*Balcombe

Hanginglids (OS 6″)

Cf. *Hanging Hill* (Jevington, MSG 424). The last element is clearly *hliþ* 'slope'.
The simple present participle, tautologously 'sloping', is the probable solution to the first element.

*Slaugham

Handcross

MSG 278 explain this as a location marked with a one-armed signpost. However Handcross is a notorious fiveways, which surely constitutes a sufficient explanation of the name.

*Brighton

The earliest use of the abbreviated name that I have discovered is 1686 (Trory 1953, 9). MSG quote Lower as saying the abbreviation is found temp. Chas. I: Lower actually says Charles II, so it looks as though the short form arose in the late seventeenth century when most peculiar things were happening to the long form. For these see MSG 291, and compare these with

$\left\{\begin{array}{l}\text{Bristalneston} \\ \text{Brightstealmestun} \\ \text{Brightholmested}\end{array}\right\}$ (Norden, 1595 Hatton copy)

Broadhampton (SNQ 7:30)

$\left\{\begin{array}{l}\text{Breadhams(t)on} \\ \text{Bredhampton} \\ \text{Brithamton}\end{array}\right\}$ (SNQ 10:108)

Bridhemson (Trory, op. cit.)

(all seventeenth century forms).

Harrison and North (1974, 7) give 1660 as the first appearance date for the short form (undocumented) and from 1669 in the parish registers. There is also a report (Jordan/Crook 1974, 144) of a form *Bruyton* in 1335; again undocumented, which is most regrettable.

Hollingbury

Toms (1914, 12) says that this earthwork is called *Hollin(g)sbury* "on early maps". Possibly *holh, -ing, burh* 'earthwork of the dwellers in the hollow', or, in view of *s*, 'earthwork of (the person called) *Holling* (of ultimately similar origin?)'. Early forms are essential for certainty. The hollow is doubtless the western extremity of Moulsecoomb Wild Park. For the manner of formation cf. *Hollington* (MSG 503). *Hollingdean* is probably recent and analogical on other Brighton *deans*. In any event it is not the *holh*.

Islingword

1673 Is(s)lingword furlong (Brighthelmston Tarriat (Cobby) (SNQ 3:17))

Preserved in Islingword Place, Street and Road. Although there are no ancient records of the name, and although it was not a manor, the name looks unquestionably ancient. Perhaps thus the *worð* 'enclosure' of *Isel* or *Gisel* (as in *Gislhere* etc.) with typical Sussex [ð]→[d].

The Lanes
The Laines

MSG 310 seem to take these names as identical. But the *Lanes* are the narrow alleys of old Brighthelmston, the *Laines* the remnants of the common fields around the town. The *Lanes* are OE *lane*, the *Laines* from the past participle of *lie*. The latter is the normal word for a selion in Alfriston and East Blatchington (Gray 1915, 33, in Tate 1949, 132), i.e. land left unploughed as a marker—it is left to lie. Hence *lain(e)* as a Sussex term for rotational strips of land; in the 3-lain system the strip lies unsown for two years. Thus *lains* were fields in which this rotational system was practised. In the north midlands, to *lay* is to 'put down land for grass' and a *laid* a 'field of grass put down for hay' (EDD 3:544). Not therefore directly from Middle English *leyne* 'layer', but the nominalised participle in a different sense, recorded in names from the thirteenth century. There is a phonological and semantic coincidence between this and Sussex *lay* (Parish, 1875; and still in use, cf. *Evening Argus* 10/1/79, p. 7) meaning 'pasture, untilled land', from the same root, cf. *lea²* in OED. Compare also Wallenberg (1934, 354) on *Rolvenden Layne* (Kent).

Scabes Castle (lost)

1840s Scabes Castle (Sleath's map)
1882 Cabes Castle (OS 1″ old series, 9 (electrotype))

(On alternations with and without *s*, see MSG 401.) To be considered with:

> Scabes Castle (Fulking/Poynings boundary, OS 2½″)
>
> Scabs Island (Westdean near Seaford) (Island is here apparently the tongue of land jutting out towards Exceat)
>
> Scabby Brow (St Ann Without, Lewes)

Probably late insulting names, cf. *Slab Castle* as a name for an unprepossessing house roofed with Horsham stone. *Scabby Brow* probably relates to land quality, the others conceivably to the owners.

Old Steine

Further to the detailed and convincing topographical discussion at MSG 292, let us note that the zone outside the central area of Brighton, delimiting a postal boundary, was in the mid nineteenth century referred to as 'off the stones', cf. Dale (1976, 58). This was beyond Charlotte St., Cannon Place and Sussex St.

Tongdean

> 1795/1806 Tonguedean (for the source see under Rottingdean below)

Presumably takes its name from the long spur or tongue of land on which Dyke Road runs, immediately west of the valley *(dean)* in which the name was first applied. Cf. *Tong's Farm* in Chislehurst (Kent), (Wallenberg 1934, 18). Whether the first element is ultimately *tunga* or *tang* is uncertain till early forms are found.

*Hove

All current published views relating to Hove refer it to OE *hufe* 'covering, cap' or the like, applied to a building (MSG 293; Ekwall 1960) or a hill (Smith 1956; Nicolaisen *et. al.* 1970). The latter is topographically implausible, as the nucleus of the parish was down on a rather featureless coastal plain and at the wrong end of the parish to refer to the celebrated amber cup tumulus. The suggested origin of the name in *hufe* is backed by Old Swedish and Old High German parallels. *hufe* should yield Modern English [hu:v], with the change of [u:] to [au] blocked, regularly, by the following labial consonant (Luick 1914, 568-9). [hu:v] is of course the traditional pronunciation, and the usual modern pronunciation rests on the spelling with common *o* for *u* adjacent to minim letters such as *n, v*.

This fits pretty well linguistically, and as Gelling (1960) affirms, the linguistic evidence is paramount over the topographical. What follows is a topographical suggestion with some plausibility, but the explanation is not preferred to the one given above.

Consider the dialect verb *hove* 'take shelter', found in Cheshire. There is also in Middle English a rare noun *hofe* apparently meaning 'anchorage', *c.* 1400:

> Held hem on hofe in the hegh sea *(Destr. Troy* 12699)

with a specifically maritime connection ('they remained at anchor on the high sea'). There is also a verb *hove* [hu:v] 'tarry; hover' (from OE *hofian; hover* appears to be a frequentative of it) and a well-attested Kent and Sussex word *hoveller* [hʌvələ] 'boat for landing passengers or goods; pilot boat', which appears relevant to the sense: the boat would meet ships at anchor (which had *hove-to;* but this word is unrelated).

I take Hove, then, to be possibly 'anchorage', perhaps with reference to some eroded coastline

feature as nothing on the existing shore qualifies Hove for the name. This would be compatible with the use of the definite article in the 1288 form:

<div align="center">la Houne (i.e. Houve) in vill. de Preston</div>

Furthermore Middle English *hove* would correctly yield [hu:v], the dialect form. The modern pronunciation is thus, as above, from the spelling.

The above theory makes sense on one condition, namely that a spread of vowel spellings such as those actually found *(o, u, ou)* can all represent Middle English [o:] in the thirteenth and fourteenth centuries, because all three are found in those centuries for Hove.

It is normally considered unlikely by Anglicists, but I refer the reader to the thirteenth century and fourteenth century forms for *Cooden* (MSG 491), which beyond dispute has Middle English [o:]

Codynges	1303 and most c.13 forms
Couding	1311 and most c.14 forms
Cuden	c.14 and unique

u for [o:] is indeed exceptional (see under *Footland,* MSG 525-6, where, however, the same phenomenon is observed), cf. Luick (1914, 558); and usually northern.

The suggestion is a bit of a long shot, but worth considering.

*Chailey

Canister Cottages

'Said to be so called from their shape', MSG 299. This seems a bit feeble and folksy. Possibly to be associated with the Councister family, variously holding land in Balcombe and Cuckfield, eleventh to sixteenth century. They are *de Councister* originally, this being the name of a holding in the Balcombe area.

Cūciest'e	} 1444		
Cumsiettre	} (c. 1095)	Chart., SRS38:22	
Cumcistr'	}		
Cumciestre	} 1444		In Chart. forms,
Cumsiechtre	} (c. 1140)	Chart., SRS38:20	original dates
Concistr'	}		on the last line
Consistre	}		of each brace.
Comcistr'	} 1444		All transcripts
Cumciechetr'	} (c. 1170)	Chart., SRS40:60/1	1444.
Cumcistra (p.)	} 1444		
Cumcistre (p.)	} (c. 1170)	Chart., SRS40:60/1	
Comistr'/e (p.)	}		
Cumbsyghtre (p.)	}		
Compsistr' (p.)	} 1265/6 CtR (RoL)	SRS44	
Cumbcistr' (p.)	}		
Cunicistre (p.)	1250, c. 1296	SRS40:60/1, SRS38:95	
Comsistre (p.)	1304	SNQ2:219	
Comcistre (p.)	1296, 1327	SR(Shoreham), SRS10	
Councister (p.)	1537	SAC64:197, SAC92:33	

It is clearly derived from Old English *cumb, seohtre* 'ditch in or for a valley'. This is guaranteed by the form *Cumbsyghtre* in SRS44. The *s* before the *t* in so many forms is an Anglo-Normanism, as is the loss of the same *s* in alternative Court Rolls forms. Interestingly, *Sefter* in West Sussex, from the same element, shows the form *Sester* even in the seventeenth century (MSG 95).

Cumbseohtre seems to have been adjacent to land held by Henry of Denecombe in 1304 (SNQ2:219) and is described as 'in Balecumbe' (SRS40:60/1). This is difficult, as Dencombe (OS 1″, Slaugham parish) is bounded on the south, the direction given in SNQ2:219, by Cuckfield parish, though it would be scarcely two miles west of Balcombe. The *seohtre* must be the arm of the upper Ouse rising at Handcross.[3]

I have found no evidence for the name in Chailey. (Canister Cottages are now, since the East Sussex Review Order (1934), in East Chiltington parish.) A very tenuous link may be provided by SRS44:46:

> Walterus de Kattesty et Willelmus Winkpirie, super placito transgressionis concordantur, ita quod vad' et dat Hugoni de Chaggel' [Chailey, RC] xxs solvendos (date) per plegia (.....)... de Cumcistr'.

It is very little to build on. But perhaps the distance to known incidences of the name at Cuckfield and the monastic establishment at Lewes are not too great, and the Subsidy Roll forms at Shoreham are evidence for dispersal at a very early date.

Perhaps, then, *Canister* dimly reflects *Cumbseohtre*.[4]

Eels Ash Wood (OS 6″)

Eels is known as a surname in the area in the forms *Eales, Eeles, Eells, Eels*. They seem to nucleate on the Crawley area if the Brighton Area telephone directory is any guide.

Frick Wood (OS 6″)

Clearly *fyrhþ* 'wood'.

*Falmer

Balmer Huff (OS 6″)
Clearly *hoh* 'height, spur'. Cf. Holleyman (1935, 448) for its archaeology.

Hill Cottage (MSG 310)

Later *Cambridgeshire Farm,* now demolished. It is hard to avoid the conclusion that the later name is related to that of Newmarket Farm (MSG 310), just over the watershed in Kingston parish. Also compare *Ladies' Mile Road* in Patcham.

The Cambridgeshire Stakes is an end of season race run at Newmarket racecourse, and the Ladies' Mile is part of the same racecourse. The naming rationale is beyond that unclear; Brighton racecourse is adjacent, and Lewes was, and the names may be somehow commemorative.

Mary Farm

Occasionally raised, without authority, to sainthood, cf. OS 1″. Cf. *St. Anthony's Hill* (Eastbourne), for *Antaneg* 'Anta's Island'.

Shambledean Bottom

OE *sceamol* 'stool', perhaps in some topographical sense, *denu* 'valley'. *sceamol* is also found in

Shamwell Hundred (Kent) and in *Shalmsford Street* in Chartham (Kent), Wallenberg (1934, 107, 271). There is an exact parallel to our name in a 1463-4 form of the lost *Schamele (Archaeologia cantiana 43,* Wallenberg 1934, 266) viz.:

Shamelisdane.

Wallenberg believes either that *sceamol* is a shelf of land, or that it is a place of (ritual? heathen?) slaughter (cf. the origin of the ordinary word Shambles). Löfvenberg suggests (1942, 183) a sense 'benches of the hundred court', but this will not do here, as Younsmere Hundred met at the pit of that name in Rottingdean.

*Kingston by Lewes

Jugg's Road

MSG 311 cite *Jug* as an early nickname for a Brightonian. This is without doubt the nearer origin, but we should note that in *c.* 1230 (SRS 40:30) *John Jugge* witnessed a deed of sale in (?) Ditchling. The further origin may therefore be a personal name. Baker (1977, 130) says that the *Juggs Arms* at Kingston "commemorates a Brighton fisherman ... who for many years walked along the hilltop on his way to sell fish at Lewes". This shows how quickly a species becomes an individual in folk history.

Kate's Cottage

An old toll-cottage. On Kate herself, see Evening Argus 5/12/78, p. 4. She seems to have been a tramp well known in the 1930s.

*Ovingdean

Greenway Bottom

> 1724 Green Way (Budgen's map)

On the line of an ancient thoroughfare continuing to Rottingdean as *The Sheep Walk.*

*Rottingdean

Saltdean

Thus in 1724 on Budgen's map. Referred to by the Deputy Lieutenant of Sussex in 1587 by that name, according to Bryson-White (1978, 111). The document, in Brighton Library, actually says *Salt deane.*

Woodingdean

Not in MSG though recorded since 1789(?)

> 1789/1805 Woodendean (attributed date on xeroxed copy of an unidentified map in the Geography Laboratory at the University of Sussex).
>
> 1847-63 Woodingdean (John Dudeney's diary)

The original nucleus of Woodingdean was, as Dudeney's diary makes plain, at the southern end of the present suburb, in Ovingdean Road. The farm there was called Woodingdean Farm. VCH I : 234 confirms that the name is 'from the house'.

The name itself is very difficult in view of the total absence of early references. I take this absence to be historically genuine, and I assume that the name is an eighteenth-century fabrication on the model of the adjacent *Ovingdean, Rottingdean.* The farm is adjacent to one of the few patches of woodland in the valley. Woodingdean has now swallowed up *Wick Farm* (MSG 312)

*Stanmer

Coldean

> *late c.8 (c.*1300) on dæni (Barker (1947, 86))
> 1924 Colddean Wood, Belt (OS $2\frac{1}{2}''$)

Evidently, 'cold valley'. Perhaps most remarkable for having spawned *Warmdene* in the next valley westward.

*Lewes

Usually derived from the plural of OE *hlæw* 'hill; artificial mound'. There are a number of odd things about the name, though, even if the standard handbook assumption is true. For instance, why does it lose the *h* so early, for it shows up in no written forms of any period? Why is the modern form pronounced with two syllables instead of one, an oddity which appears to have struck no-one before? How is the name related to the form *Laquis,* an oblique case form of the name in various entries in the Norfolk Domesday and in Orderic's *Ecclesiastical history?* How is it related to the derived adjective used to refer to the Cluniac priory *Latisaquensis?* (These last two points have been discussed before by Salzman (1922, 166ff.); Allcroft (1922, 174ff.); MSG 319 note 1.) No account that I know of takes all these points in. I propose to return in this note to the Laquis question discussed by Salzman in the 1920s, to relate it to the question of *h*-lessness, and to finish with a reflection on the number of syllables and on the name of the River Ouse.

The *qu-* forms found in the Norfolk Domesday and Orderic are, I assume, scribal attempts to render Old English into the Latin alphabet. I take it, despite Allcroft's objections, that *Laquis* indeed refers to Lewes. I do not think that is controversial. Now *qu-* is sporadically used by Latin writers of the Middle English period in the South to render the presently obsolescent *wh-*[ʍ] sound as in *when.*[5] There is no *wh-* sound in the name of Lewes; but if the origin outlined above is the correct one, there should have been a voiceless *ll* sound [ɬ] at the beginning, not unlike the Welsh sound spelt *ll. (wh* is the voiceless version of *w.)*

I conjecture that scribes were confronted with a name containing voiceless ̥l and voiced *w,* and in trying to render the voiceless feature into the spelling somehow, they did it with the aid of the familiar spelling device *qu* and did it in the wrong place. This yielded a written form with voiced *l* and voiceless *wh.* That is to say, *Hlaewes* was written *Laehwes.* These actual spellings are recorded on Saxon coins:

> *Laehwea, Laehwge* (Stewart 1978, 100)

and moreover it would have been perfectly regular to record such a pronunciation in the form *Laquis,* the precise oblique case form found in the Norfolk Domesday and in Orderic. This would give it a close resemblance to the Latin ablative case form *aquis* 'waters', whence the watery associations referred to by Salzman. Those associations are also reflected in the apparently crazy variety of alternative readings for the name. As well as *Laquis* from *Laquae* as if from L-aquae, we find *Lewiorum* from *Lewiae* as if from *L-ewiae* 'pools', and, in the Rouen chronicler, *Leaux* as if *L-eaux* 'waters' in French. Whatever else we can or cannot say about the name, we must agree with Salzman that it was clearly understood as having watery associations. It is a short step from that point to the coining of the etymologically counterfeit adjective *Latisaquensis* ('by the broad waters' or 'next to (=Old French *lez* from *latis)* the waters'.

This view gives us an alternative perspective on the curious river name *Ouse,* which replaces the older form *Midwyn.* It is curious, because all the other Ouses in England have demonstrably ancient names, cf. Ekwall 1960, whilst the Sussex Ouse is not recorded before 1612 in Drayton's

Poly-Olbion (cf. *Adur* above). You will notice that Ouse is exactly the expected pronunciation of the name for a place regularly derived from *Hlaewes,* minus the initial *l,* as in the above analysis. It is, as it were, *L-ewes.* If, as has been conventionally assumed, the detached *l* is treated as the French definite article, the name *Lewes* pronounced regularly with one syllable (cf. the first paragraph) could be heard as *L'Ouse.* It is simple to conjecture, then, that the river name is a back-formation from the town name. There is even evidence for this view provided by the names alternative to Midwyn in the Middle Ages, where the town name is explicitly used in the river name:

  c. 1260 aqua de lewes
   1400 river of Lewes
      (full references at MSG 6).

This, so far, is the argument put forward by MSG, who do not, however, justify the assumption of a form with one syllable.

 Drayton op. cit. records the change of names as being recent:

  ". . . now the *Ouse,* a Nymph of very scornfull grace,

  So touchy waxt therewith, and was so squeamish growne,

  That her old name she scorn'd should publiquely be knowne".

  (XVII, 434-6)

Now the identification of Lewes as L'Ouse cannot have taken place before the loss of vowels in unstressed syllables, perhaps in the mid-sixteenth century in southern England (cf. Strang 1970, 180). This date is in keeping with Drayton's (admittedly rather oblique) implication.

My analysis relies, though, on an etymologically expected pronunciation of Lewes with one syllable, otherwise it could never have been heard as containing the common river name. There is no acknowledged Sussex evidence for such a pronunciation, but we are fortunate in having evidence (Holgate 1936, 83) that the Norfolk place name *Walton Lewes,* named after our town, was pronounced with one syllable before the name was replaced by the now-current *West Walton.*

There are two possible shreds of Sussex evidence, however. Very tentatively I mention the innocuous-looking valley called *Loose Bottom* in Falmer. Its transparency may be deceptive; topographically, its axis points straight down in the direction of the coombe road into Lewes, more or less parallel with the hillside track called Jugg's Road (q.v., p.321). *Loose* would then be for mono/syllabic *Lewes* with folk-etymological [s] for [z], (For a parallel name derived from the trend of a valley, cf., close by, *Wick Bottom* in Ovingdean, rising northwards towards Wick Farm.)

There is also a *Looes Barn* in Saltdean, directly on the only practicable route from the Saltdean Gap via the deep valley and Balsdean to Lewes. The spelling of this clearly suggests a pronunciation identical to the putative one-syllable pronunciation of Lewes. In this case, the alternative derivation from OE *hlose* 'sty' also springs to mind; but not from *hleowþ* 'shelter' as Copper (1971, 18) suggests.

I must conclude by saying that I have no idea why the Sussex Lewes should now preserve unexpectedly its Middle English two-syllable pronunciation.

*Newhaven
Chene Gap
  1724 Chin Gap (Budgen's map)
This is OE *cinu,* the 'chine' of (especially) Isle of Wight placenames, where the diphthong is from

a verbal form (Dobson 1968, 480). The undiphthongised form here is a direct descendant of the OE noun form with Middle English lowering and lengthening.

*Telscombe

Bannings Vale (a street in Saltdean)

Cf.:

1810 The Bannings (Inclosure map)

If ancient, from a personal name *Benna,* with vowel lowered before a nasal. If not, perhaps a reference to *ban* in the sense of boundary, since the Bannings is on the western extremity of Telscombe.

Porto Bello Steps

1810 Porto Bello Furlong (Inclosure map)

*Maresfield

Cackle Street (also in Brede and Brightling)

Probably from *cockle,* recorded from the seventeenth century, an oven for drying hops. Wright (EDD) records the word only from Kent and Sussex in this meaning. This type of oven reaches South Germany in the thirteenth century, replacing the ancient walled oven (Kluge 1963, 336). Cf. Middle High German and Middle Dutch *kacheloven* and German *Kachel* 'tile'. The word is clearly to be expected in English in the form *cackle,* but has in the language at large been folk-etymologised to *cockle.* It is a mystery why in its only three placename occurrences it should happen to be linked with the word *street.*

Fairwarp

1519 Fayre Wharpe ("Coorte holden at Notlye" on 10/10/1519, quoted by Christian (1967, 15)).

This probably settles it as East Sussex and Kentish dialect *warp* 'piece of land between two furrows (drains) consisting of 10 or 12 or more ridges' (EDD and Parish). It is thus by origin a field name with approbatory or ironic use of *fair.*

*West Firle

Males Burgh (a barrow)

MSG 362 give a 'safe' interpretation, that this "may contain the personal name of Godfrey le Merle" (Subsidy Roll, 1327). The loss of *r* is difficult to explain in Sussex, especially as the name Merle could be expected to yield a rhyme with the home parish name Firle—a strong potential analogical influence.

Less safe, but linguistically more motivable, is the interpretation from a relative of the OE personal name *Mægla,* which would regularly yield *Male.* This name recurs in *Malecomb,* East Dean, Westbourne Hundred. We are left with the suspicion that *Males Burgh* may contain the name of its occupant, or at least reflect a tradition of some historical *Mægel in the same way that *Queen Fridias' Barrow* does mythologically in Burpham (SAC 63:26-7); cf. the real historic instances below. A *Mægla* (weak form) was a son of Port, the expeditionary mentioned by the Anglo-Saxon Chronicle for the year 501; notice that this barrow is in the heart of the now-assumed nucleus of Saxon settlement. Oddly, *Mægel seems to be derived from a British *Maglo*-name.

There are a number of barrows apparently named after their inhabitants; classically we have the settlement at Taplow (Tappa's *hlaew,* Bucks.), and in Sussex Deneburgh's *(deneburge hleawe,* Barker 1949, 65). Compare also *uuadan hlaeu* in the bounds of Pagham, viz. Wada's barrow (Barker 1947, 57). We have added confirmation if the following Sussex names are actually barrow sites, which is questionable for some cases:

Whalesborrow *(Hwæl)* (MSG 329-30) (? barrow site, Glover 1975, 179)
Bilsborough *(Bil(l))* (MSG 220-1) (barrow site, Glover 1975, 17)
Crottebergh (lost) *(Crot(a))* (MSG 361) (? not)
Hawksborough *(Heafoc)* (MSG 460) (?)

Perhaps we should cautiously note that the element *burgh* looks ancient (OE *beorg)* but the barrow called *Four Lords' Burgh* in Falmer was quite recently *(c.* 1800) called *Four Lords' Dool,* enshrining a local name for a barrow that survives in no place name in the county, so far as I know. John Dudeney refers to it as such (SAC 2:254). A *dool* can also be a boundary-baulk or a simple boundary mark (Hall 1957, 32, sub *Dole*[2] and *Doole).* As an alternative origin for this name, consider the possibility that the barrow may have been surmounted once by a cross (OE *cristelmæl)* in an act of transsecration. But this seems vanishingly unlikely even on morphological grounds as the possessive *s* would be hard to account for. Compare though *le Malberew, le Melbergh* in MSG 562, a minor name ('speech-barrow') which the EPNS volume editors fail to localise. To argue from silence, they presumably think the *s* in *Males* forbids the identification of this name with the name under discussion.

*Rotherfield
Saxonbury
    1597 Sockburie
    1724 Socksbury Hill
    1775 Socksberry
    1842 Soxenbury (forms in MSG and Glover (1975); cf. also Pullein (1926, 97)
Not, with Glover, from OE *soca* 'bog' because of the persistent genitival construction. It looks like 'Socc's *burh'.* **Socc* is a (somewhat doubtful) strong form, of the **Socca* postulated for *Sockburn* (Durham) by Ekwall (1960, 431). (ONorse *Sokki* is attested.) Oddly, *Sockburn* is 'Socca's *burh'.* Maybe, in view of the ambiguity of the forms, this too commemorates a **Socca;* at all events the first element is a personal name. But the forms cannot be securely identified.

*Hellingly
Starnash
MSG 441-2 suggest, with great ingenuity and no plausibility, 'tern-haunted stubblefield'. The sense of *stearn* in this name is obviously 'starling', a possibility recorded by Kluge (1963, 740). 'Starling' is usually OE *star* (cf. dialectally the title of Yeats' poem "The stare's nest by my window"); but *stearn* in this meaning is attested, cf. Wright (1857, 29, 30), and Wright EDD under *starn*[4] for the Shetlands and for Somerset.

*Brightling
Cackle Street
See under Maresfield, above.

Great Worges

This is the manor of *Werthe* in Brightling (VCH 9:230).

    1176 Werthe   (VCH, loc. cit.)

    1523 Werde   (AddMS 5680 fol. 492)

    { c.16 Werd, Worde }

    { c.18 Weard   } (all VCH loc. cit.)

Ultimately from OE *worð* (cf. Islingword above, and especially the development in *Northiam* to [nɔ:rdʒəm]. Not a spelling form ʒ for ð as in Choller (MSG 144)). The erroneous *s* disappears on the latest OS maps. *Great* in contrast with *Little Worge*.

Note the characteristic suffixal derivative name *Worger*, found in Richard Worger in Brighton in 1673. The name survives today. This is 'person from Worth/Worge' or 'person occupying a *worð*'.

Gostrow hundred

The ancient name is recorded as

    Babinrerode   1086   DB

    Babirote   1130   Pipe Roll (31 Hen 1) (cf. SAC 92:118-9)

It is hitherto not satisfactorily explained, though Anscombe (1919) (SAC 60) has quite a good shot. The relevant element seems to recur in the high road called *Baboestrete* in Brede 1406 *Ct R* (Brede), VCH 9:164. There can be little doubt that the first *r* in the DB entry is in error; as it stands it is not interpretable as Old English. I take it that this is an error for *c*,[6] standing for *g*[7]; or that it is a simple anticipation error for the next *r*. It is thus *Babingerode*, i.e. *Babinge-rode*. The DB form is of ancient appearance, cf. MSG xvii, being a genitive plural of an *-ing* derivative of a personal name. That name is *Bæbbe* (f) or *Bæbbi* (m), inferrable from the Sussex placenames *Bepton (Babintone* DB, *Bebeton* SRS 60:76) and *Babsham* in Bersted, *(Babbesham* (680 (c. 10))), or *Babba,* see Ekwall (1960)s.n. *Babbington.* The creek or gut name *Babbingeflet* (1248, recorded by MSG; also SAC 53:42), wrongly glossed as '?Crooked ditch') seems to contain the actual form that I have postulated. The name is not the *Beoba* recorded in a charter of *c.* 700 (Cartularium Sax. 145), which could hardly yield *a* in the first syllable. (The surname *Bebesake,* presumably related to this last form on record in the mid-fifteenth century (SRS 67:110.) I take *Babirote* to be a typical alternative form in a reduced weak genitive (cf. the alternatives *Wylingden* and *Wyleden* (1271, 1281) for Willingdon. The Court Rolls form is late and difficult, and I have no further suggestions.

The second element *rode* is 'clearing', but its form is odd for Sussex where *rude* (usually West Sussex) or *rede* is to be expected (cf. PN Wiltshire xxxvi). There is authority for the form, though; it occurs persistently in the forms cited by MSG for *Shiprods* from 1271 to the present day. See also Road Wood (MSG 357) and Löfvenberg (1942, 167-8). They take *rode* as a spelling variant for the expected *rude* (cf. their note on *Inchreed,* p. 318). We do actually find Old English *rod* in this sense in *Rhodecourt* (Kent), which yields the *rode* that we seem to find in our hundred name. The linguistic relations between Kent and East Sussex are well known.

Rode very probably recurs in *Roadend* in Udimore, actually in Gostrow Hundred. It is *Rodehend* (1399), *Rudehend* (1419, Ct R). I assume, though, that the hundred met in Brede, as later. The hundred name is thus 'Bæbbi's (or Bæbbe's or Babba's) clearing', or possibly his or her people's clearing. Anscombe's 1919 attempt is thus basically sound on the first element, but the second is

not *rod* 'cross', which would be out of character with South Saxon hundred naming. Anyway, why should a cross be associated with a person? A wayside shrine seems unlikely.

*Brede

Cackle Street   See under Maresfield, above.

Conster (also Beckley and formerly Udimore)

Conster in Brede and Beckley dates from around 1350 (VCH 9:167)

> Conster in Brede and Beckley dates from around 1350 (VCH 9:167)
>
> Conster(ys)melle ('in Watcombe')   1418 (SRS 37:196)
>
> Consterf   1451 (? *Ct R,* cited by Austen 1946, 102-3)
>
> Couster ('in Beckley, Bread(e) and Udimer')
>
>   1653, 1690   (SRS 29:731/9)
>
>   (1664) 1667   (SAC 18:15)

> Conster
>
>   (same document at SAC 32:21 reproduces *Canster)*
>
>   (1664) 1667   (SAC 32:21)

This name was obscure even by the seventeenth century, as is suggested by the attempt in 1667 to elucidate it as *Constance.* I assume that Constance is indeed Conster, as the document situates it in the rota between Ashburnham and 'Bur' on the one hand, and 'Hoodsdall' and Bugsell on the other. The *u* in *Couster* is presumably a scribal error for *n,* though this would be more typical of a medieval script; perhaps transcriptional. Perhaps the name is manorial in view of the *-ys* in 1418, ultimately from *cumb, steorf* 'stiff land in the valley (of the Tillingham). It has the right situation for such a name, and there are a number of *steorf* names very close to it, cf. Coates 1979. We can be sure of the identification because of the 1451 form in *f.* The 'manor' was then held by Edward Londeneys.

Eorpeburnan (lost)

> c. 919   to eorpeburnan   (Burghal Hidage)
>
>   variant readings Heoreweburan (LibRub CCCC)
>
>   Heorepeburan (Cotton Claudius)

The variant forms are imcomprehensible, and the *h*-less form is probably the authentic one. *Eorpa, burna;* where *Eorpa* is a weak pet form for some such name as *Eorpwald,* and *burna* 'stream' in the dative plural (probably, in view of topography). Another *Eorp-* name can be located at *Arpinge,* but the fact that this is in Kent precludes its association with the Burghal Hidage name. Davison's suggestion that it is to be found at Castle Toll, Newenden is accepted. Although Newenden is in Kent, it is adjacent to the boundary with Sussex, and no-one can be sure of the early medieval boundary line through the present Rother levels. Cf. Hill (1969, 84 ff.); Davison (1972).

Author: Richard Coates, School of Social Sciences, University of Sussex

ABBREVIATIONS

AssR	Assize Rolls
BCS	Birch, W de G *Cartularium saxonicum*
BHA	*Brighton and Hove Archaeologist*
Chart	Chartulary
CtR	Court Rolls (italic: unpublished)
DB	*Domesday Book*
EDD	*English Dialect Dictionary*
EPNS	English Place Name Society
FF	Feet of Fines
Ipm	Inquisitions post mortem
LSR	Lay Subsidy Rolls
ME	Middle English
OE	Old English
OED	*Oxford English Dictionary*
OS	Ordnance Survey
(p.)	Place name appearing in the name of a person
PN	Place name
RoL	Rape of Lewes
SAC	*Sussex Archaeological Collections*
SNQ	*Sussex Notes and Queries*
SR	Subsidy Rolls
SRS	*Sussex Record Society*
VCH	*Victoria County History*

*   before a form means 'inferred', 'not attested'.

REFERENCES AND BIBLIOGRAPHY

Allcroft, A. H. 1922 S.A.C. **63** Reply to Salzman 1922.
Austen, E. 1946 *Brede: the story of a Sussex parish* Rye: Adams.
Baker, M. 1977 *Sussex villages* London: Hale.
Barker, E. E. 1947-9 *S.A.C.* **86-8** Sussex Anglo-Saxon Charters I-III.
Brandon, P. F. 1974 *The Sussex landscape* London: Hodder.
Brandon, P. F. (ed.) 1978 *The South Saxons* Chichester: Phillimore.
Bryson-White, I. 1978 *East Sussex* Bourne End: Spur.
Christian, G. 1967 *Ashdown Forest* Lewes: Farncombe.
Coates, R. A. 1979 *Beiträge zur Namenforschung* **14** 'OE *steorf* in Sussex placenames'.
Copper, B. 1971 *A Song for every season* London: Heinemann.
Curwen, E. C. 1929 *Prehistoric Sussex* London: Homeland Association.
Curwen, E. C. 1958 *S.N.Q.* **15** 'A Saxon mint at Cissbury?'
Dale, A. 1976 *Brighton town and Brighton people* Chichester: Phillimore.
Davison, B. 1972 *Med. Arch.* **16** 'The Burghal Hidage fort of Eorpeburnan: a suggested identification'.
Dobson, E. J. 1968 *English pronunciation 1500-1700* London: Oxford University Press.
Dodgson, J. McN. 1978 'Place-names in Sussex', in Brandon 1978.
Ekwall, E. 1928 *English river names* London: Oxford University Press.
Ekwall, E. 1960 *Dictionary of English placenames* London: Oxford University Press.
Fisher, J. L. 1968 *A medieval farming glossary* London: National Council for Social Service.
Gelling, M. 1960 *Namn och Bygd* **48** 'The element hamm in English placenames: a topographical investigation'.
Glover, J. 1975 *The place names of Sussex* London: Batsford.

Gover, J. E. B.; Mawer, A.; Stenton, F. and Bonner, A. 1934 *The place names of Surrey* Cambridge: University Press, EPNS vol. XI.

Gurd, R. and Jacobs, W. 1924 *B.H.A.2* 'Surveys of Thundersbarrow Camp and Thunder's Steps'.

Hall, H. 1957 Revision of Parish 1875.

Harrison, F. and North, J. S. 1974 *Old Brighton, Old Preston, Old Hove* Hassocks: Flare Books. Reprint of 1937 edition.

Haselgrove, D. 1978 'The Domesday record of Sussex', in Brandon 1978.

Hill, D. 1969 *Med. Arch.* **13** 'The Burghal Hidage: the establishment of a text'.

Holgate, M. S. 1936 *S.N.Q.* **6** 'Lewes Priory and West Walton, Norfolk'.

Holleyman, G. 1935 *Antiquity* **9** 'The Celtic Field system in South Britain: a survey of the Brighton district'.

Jordan, R. and Crook, E. J. 1974 *Handbook of Middle English grammar: Phonology* The Hague: Mouton.

Kluge, F. 1963 *Etymologisches Wörterbuch der deutschen Sprache* (19th edition) Berlin: de Gruyter.

Leconfield 1954 *Petworth manor in the seventeenth century* London: Oxford University Press

Löfvenberg, M. T. 1942 *Studies on Middle English local surnames* Lund: Gleerup.

Luick, K. 1914 *Historische Grammatik der englischen Sprache* Leipzig.

Mawer, A.; Stenton, F. and Gover, J. E. B. 1929/30 *The placenames of Sussex* I and II Cambridge: University Press, EPNS vols. VI and VII.

Nicolaisen, W. et. al. 1970 *The names of towns and cities in Britain* London: Batsford.

Orton, H., Sanderson, S. F. and Widdowson, J. 1978 *The Linguistic Atlas of England* London: Croom Helm/Humanities Press.

Parish, W. D. 1875 *A dictionary of the Sussex dialect* Lewes: Farncombe.

Pullein, C. 1926 *S.N.Q.* **1** 'Note on "Saxonbury" Camp, Rotherfield'.

Reaney, P. H. 1976 *A dictionary of English surnames* (rev. by R. Wilson). London: Routledge, Kegan Paul.

Revill, P. 1958-62 *S.N.Q.* **15**, 'An old name for the Caburn'.

Roskell, J. S. 1956 *Archaeologia cantiana* **70** 'Sir Arnold Savage of Bobbing'.

Salzman, L. F. 1922 *S.A.C.* **63** 'The castle of Lewes'.

Scott, H. 1949 *Secret Sussex* London: Batchworth.

Smith, A. H. 1956 *English place name elements*. I and II Cambridge: University Press, EPNS vols. XXIV and XXV.

Stewart, I. 1978 'The Sussex mints and their moneyers', in Brandon 1978.

Strang, B. 1970 *A history of English* London: Methuen.

Tate, W. 1949 *S.A.C.* **88** 'Sussex inclosure acts and awards'.

Trory, E. 1953 *A postal history of Brighton*, 1673-1783. Publ. by subscription.

Toms, H. S. 1914 *Brighton and Hove Archaeologist* **1** 'Notes on a survey of Hollingbury camp'.

Wallenberg, J. K. 1934 *The place names of Kent* Uppsala: Almqvist.

Ward, G. 1936 *Archaeologia cantiana* **48** 'The Wilmington charter of A.D. 700'.

Welch, M. G. 1978 'Early Anglo-Saxon Sussex from Civitas to shire', in Brandon 1978.

Wright, J. 1900 etc. *English dialect dictionary* London: Frowde.

Wright, T. 1857 *Old English vocabularies* Privately printed.

FOOTNOTES

*Some of the ideas in this paper received their first public airing on BBC Radio Brighton's 'Good Morning!' programme on 15-22 December 1978. Kenneth Cameron has given the paper much time and beneficial discussion. My thanks are also due to John Farrant, Richard Hogg, Eric Holden, Roger Lass and Veronica Smart for discussion of some points. Responsibility for the use of their views is mine, and they do not necessarily accept my conclusions.

[1] These indications of pronunciation follow the conventions of the International Phonetic Association.

[2] Possibly that in Newdigate (Surrey), cf. Gover, Mawer, Stenton and Bonner 1934, 84.

[3] There is a *Conset* (p.) in Falmer (LSR, SRS 56:91) in 1525, but the form is doubtful. If genuine it could be associated with the variant *Comcitre* mentioned above. There is a Sir | | Conceyte in *c.* 1531 in the Chichester Chapter Acts (SRS 52:210). We find Richard of Cunest in the Charters of the Register of Godstow Abbey in *c.* 1230 (SNQ 4:41); it is not clear whether these forms are related either to each other or to our 'Balcombe' *Cumbseohtre*. The loss of final *r* is hard to account for, especially in Sussex. SAC 15:20-1 gives a form *Comestre* (see also SAC 64:97) whose authority is doubtful. If all these are variants of the key name, we find authority for the loss of one or the other *s* as a first stage in getting towards *Canister*.

[4] Since writing this, I have discovered that the word *Canister* was used in Sussex in a sense connected with sheep-farming, but I have been unable to find out the exact sense. This would be a much simpler origin if it could be shown to be appropriate.

[5] cf. *Whitwell* (IoW) in Ekwall (1960); and under *warvagiaum* in Fisher (1968, 40).

[6] On this possible error, see Barker (1947, 77 n.18).

[7] On this substitution, cf. *Cæntinces treow* for *cæntinges treow* (BCS 81, Barker (1948, 116)).

BRIGHTON, 1580-1820: FROM TUDOR TOWN TO REGENCY RESORT

by Sue Farrant, B.A., Ph.D., and John H. Farrant, M.A.

Four phases in the economic and physical development of Brighton (East Sussex) are identified. (1) Between the later sixteenth and mid-seventeenth centuries, the town grew and prospered through fishing, particularly in the North Sea, with cargo carrying as a secondary employment. (2) In the later seventeenth century Brighton boats withdrew from North Sea fishing, in part because the town's foreshore was being eroded by the sea. Cargo carrying became of relatively greater importance, but could not prevent loss of population and falling material prosperity. (3) From the 1740s visitors to the town in search of cures for their illnesses and of recreation brought a reversal of fortunes. Much new employment in services was generated, and extensive rebuilding and infilling occurred within the town's long-established boundaries. (4) In the 1770s, the town broke these boundaries and suburban development began. Until the 1820s the form of this development was strongly influenced by the pattern of the existing open field system.

At the end of the eighteenth century Brighton was the premier health resort in Britain, basking in the patronage of the Prince of Wales and experiencing growth quite as startling in its rapidity as that of any contemporary manufacturing town. But the escapades of the Prince and his circle have dominated the literature on the town, and notwithstanding E. W. Gilbert's fine study, *Brighton, Old Ocean's Bauble* (1954), little attention has been given to the settlement before it emerged as a mature resort, or to its economic life. In this paper we therefore examine the town's economic and physical development, both in the era of Prince George's patronage and in the preceding two hundred years. The choice of starting date is determined by the poverty of materials available before the later sixteenth century. Necessarily the materials used differ from century to century, so a uniform approach cannot be adopted; furthermore space precludes either discussing the characteristics and limitations of those materials or drawing comparisons with other contemporary towns.

The paper is arranged chronologically around four phases of Brighton's history between the later sixteenth and the early nineteenth centuries. The first extends to the mid-seventeenth century, during which the town seems to have grown in population and prosperity; the second is the following hundred years which saw both decline; the third marks the first stage of recovery and in fact dates from the 1740s; and the fourth saw the more rapid population growth and physical expansion of the 1780s and later.

1. A flourishing seafaring town

The ancient parish of Brighton extended over some 1,600 acres on the dip slope of the South Downs, where the Downs reach the English Channel. It is orientated roughly east/west and is narrower at the west than at the east end. As the trend of the Downs is from north west to south east, the eastern parts of the parish are generally higher than the western and reach 450 feet above sea level (Fig. 1). The Downs are cut by a coombe, or valley, which now carries the Lewes road and

Fig. 1 BRIGHTON PARISH c1740
based on E.S.R.O., AMS 4106 &
4107, & Brighton Area Library
SB9 B76 (acc 74318)

To Ditchling
To Lewes
PRESTON PARISH
To Preston
PRESTON PARISH
To Steyning
Sheep Down
Sheep Down
HOVE PARISH
NORTH LAINE
HILLY LAINE
OVINGDEAN PARISH
To Shoreham
WEST LAINE
TOWN
STEINE
LITTLE LAINE
EAST LAINE
English Channel
To Rottingdean

N
0   880
yards

▬ ▬ PARISH BOUNDARY   •••••• BOUNDARY OF LAINES   ─── CONTOURS AT 50ft INTERVALS

which merges about a mile from the sea with another coombe, carrying the London road and lying in Preston parish. Now known as the Level at its north end and as the Steine further south, the coombe used to hold an intermittent stream fed by springs in Patcham and Falmer, and to slope down to the beach at the Pool. The chalk which is the sub-stratum over most of the parish is covered by Coombe Deposits in the bottom of the coombe and on the lower slopes of the Downs.

Until the later eighteenth century, the town, where all the parish's inhabitants lived, was bounded by the Steine, the rear of North and West Streets, and the high tide line; the parish church of St. Nicholas therefore lay outside the town's north west corner. In 1566 this settlement was reported to have 200 households, which probably represented a population well in excess of 1,000 because baptisms in the parish register averaged 54 a year between 1565 and 1575.[1] A birth rate as high as 45 per 1,000 alongside a marriage rate of 13 per 1,000, is plausible, especially if Brighton was badly hit by the influenza of the late 1550s and by the plague which was present in the town in 1563, and implies a population of around 1,200 in 1570.[2] The epidemics of 1587-88 and 1608-10 must have reduced the population: the parish registers are deficient, but the grants of probate and administration for Brighton residents' estates in those years in the archdeaconry court comprised 49 and 57 per cent. of the totals in their respective decades.[3] The overall trend, though, was steeply upwards. Between 1611 and 1640, recorded baptisms exceeded burials by 70 per cent., and a writer in the next century asserted that in about 1630 there were nearly 600 families. In 1657 the case for uniting the benefices of Brighton and Ovingdean was supported by the statement that Brighton consisted of about 4,000 souls. Though this estimate may have been deliberately generous, it is not inconsistent with the Compton Census of 1676 which gives 2,000 adults, equivalent to perhaps some 3,300 total population, for by 1676 the population may have been on the decline.[4]

Thus there is sound evidence that Brighton's population grew at least three fold between, say, 1570 and 1660. This rate of increase was far in excess of that for the county of Sussex (which surrounded Brighton for over 20 miles on its landward sides): Sussex seems to have had roughly 60,000 inhabitants in 1524-25 and 90,000 in both 1603 and 1676.[5] None of the other larger towns experienced more growth than the county as a whole: Chichester grew from 1,700 to 2,200 between 1524-25 and 1676, Lewes (excluding Cliffe) was fairly constant around 1,500, Hastings grew from 1,300 in 1565 to 1,800 in 1676.[6] Indeed, Brighton was the most populous settlement in Sussex by the mid-seventeenth century.

The economic basis for the growth in population was employment in seafaring activities and particularly in fishing. Between 1541 and 1640, 142 Brighton men left wills which were proved in the Lewes archdeaconry court and in which they stated their occupations.[7] Only 11 per cent. of the adult males whose burials are entered in the parish register between 1588 and 1640 were also among these testators, so the following analysis is based only on a small proportion of the population. As 95 per cent. of those in both records were described in the register as householders or parish officers, they were not a random sample, but as the established and skilled residents of the town they no doubt included the employers of the unskilled and reflected the main features of the town's economy. Nearly two thirds (64 per cent.) of the testators described themselves as fishermen, and a further $3\frac{1}{2}$ per cent. as mariners or sailors. The proportion fluctuates from decade to decade, mainly because after 1600 more testators were in agriculture as yeomen, husbandmen, and shepherds. But the actual number, let alone proportion, of inhabitants directly dependent on agriculture is unlikely to have increased, as the system and extent of cultivation, sheep-corn husbandry over 570 acres of open-field arable and 860 of pasture, seems to have been unchanged[8] and, on the analogy of neighbouring parishes, would have supported a population of less than 200.

The remaining 18 per cent. of testators were in a range of occupations which, with the exception of shipwrighting, could be expected in any southern English town: butcher, brewer, miller, maltster, tailor, shoemaker, weaver, carpenter, mason, cooper, blacksmith, innkeeper, mercer, and labourer. This limited range of crafts and trades all served the seafaring and farming families, and for more specialised services Brighton looked to Lewes, the seat of civil and ecclesiastical administration for the eastern parts of Sussex, whose testators between 1591 and 1640 included a goldsmith, vintner, barbers, sadlers, glassman, cutler and grocer.

Much information about the fisheries in which Brighton's boats and masters engaged is given in the 'Ancient Customs', set down in 1580 to resolve disputes about contributions towards the town's common expenses.[9] Eight fisheries or 'fares' were identified and Fig. 2 shows how they interlocked through the year in relation to both time and size of boat. Cock, drawnet, harbour and

D - Drawnet for mackerel
H - Harbour for conger
T - Tuckett for plaice
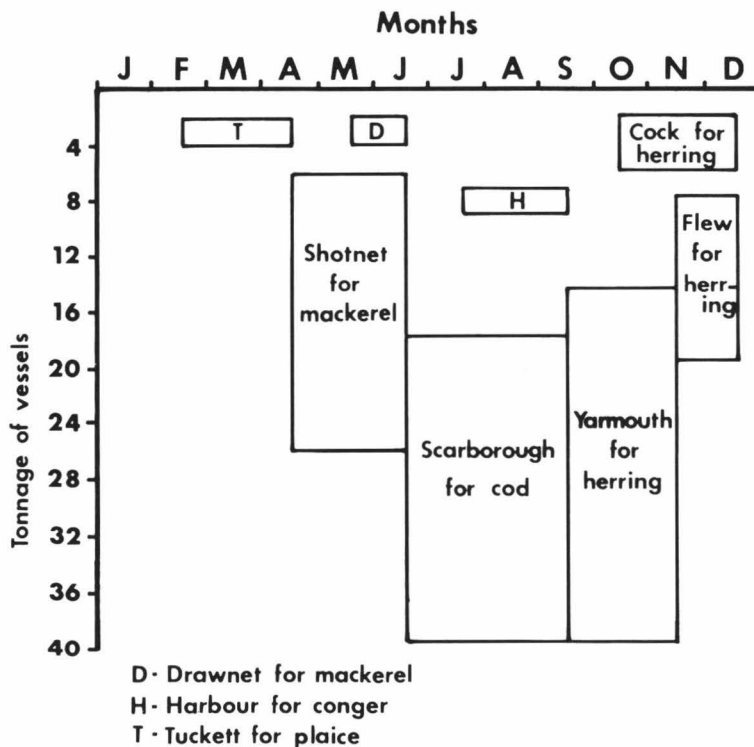
Fig 2 THE BRIGHTON FISHING 'FARES' BY TIME OF YEAR
AND SIZE OF VESSEL

tuckett fares were inshore; flew and shotnet were at a distance in the English Channel; Yarmouth and Scarborough fares were in the North Sea. Boats of the size for fishing inshore could be found at many coastal settlements in Sussex, and it was participation in the distant fisheries which distinguished Brighton from its neighbours. Among those Yarmouth fare was the most important, outpacing the others in size of boat, men employed and earnings. The sale of fish taken in it was called, in 1566, 'the chief gain that the fisherman hath here to maintain himself and his household throughout the whole year.'[10] These fares took a sizeable proportion of the men away for several

months: in 1570, 137 men, or perhaps a third of the adult males, were away at (the less important) Scarborough fare,[11] and the timing of marriages followed the fishing year rather than canon law, with precisely half the marriages recorded between 1561 and 1650 being performed in the three months of November, December and January, after the Yarmouth fare (in neighbouring agricultural parishes marriages peaked in July and October). As the catches, with the possible exception of the last one, were landed and sold on the East Coast, the North Sea fares did not generate specialist occupations at Brighton in preserving and distributing fish, at least on the evidence of the surviving records.

Brighton boats also carried cargo. In the last quarter of the sixteenth century, 40 and 20 per cent. of the cargoes entered in a sample of Port Books for New Shoreham (which included Brighton) and Newhaven respectively were carried in vessels belonging to Brighton.[12] These cargoes were mainly outwards and made up of corn, timber and iron destined for London and Kentish ports, though some went as far afield as Plymouth and King's Lynn. Only 13 of the 70 masters named can, even tentatively, be identified among the testators who stated their occupations, but in 11 cases these were 'fisherman', in one 'mariner' and in the last 'yeoman'. More cargoes were carried when fishing was (as shown in Fig. 2) at a low ebb. In the sample Port Books, 40 per cent. of cargoes in Brighton boats were entered in January to March; a second peak occurred in June and July (28 per cent.), suggesting that the Scarborough fare was relatively unimportant, but only two per cent. of the cargoes were entered in September and October, during the Yarmouth fare. This evidence points to boats which were primarily for fishing being used also for freight at other times of year, as does a survey for the Privy Council in 1582. This listed 36 vessels of 10 tons and larger belonging to Brighton.[13] The Port Books for 1588-89 (the nearest year for which they survive) record 32 different Brighton boats of similar size (and two other smaller ones) entering or clearing Shoreham or Newhaven.[14] That year was a busy one, so it may have been only in a good year that most boats of the size which joined the distant fisheries also found cargoes. But the inshore boats either were confined to fishing or carried cargoes exempted from entry in the Port Books.

When carrying cargo the boats needed smaller crews but there must have been work on shore during the winter repairing nets and making up new ones. Peaks of demand for labour nevertheless remained: residents of inland villages are occasionally found in the Yarmouth fishery, while Brighton fishermen helped with the harvest. Clement Brock, a journeyman shoemaker, left all his possessions to his master, William Feilder, because he often went to sea and when he returned he always took Feilder's home for his own.[15] But dual employment seems not to have extended to the masters. Small enclosures which could be farmed as a sideline were notably absent on the Downs, and only one Brighton fisherman bequeathed land which he farmed himself, probably less than four acres plus pasture for 15 or so sheep. Conversely none of the craftsmen, other than a shipwright, made specific bequests of shares in vessels or of nets, while these were mentioned in most fishermen's wills.[16]

'Barks' were usually owned in shares of a quarter, a third or a half and were presumably the vessels in the distant fisheries, while a small boat usually had a single owner. A few owners had shares in two barks. Ownership of nets was more widespread. The shipowners were not expected to equip the boat with a full complement of nets. Crewmen might bring their own nets, and land bound people, such as widows and minors, put nets to sea as a form of investment.[17] A boat of 20 tons in the Yarmouth fare carried some 80 nets, but bequests of one, two and three nets were common. The profits of a fare were divided up according to a refined system of shares, the number of shares

depending on the size of the boat, the number of crew and the number of nets, with one share divided between the vicar ($\frac{1}{2}$), the churchwardens ($\frac{1}{4}$) and the master ($\frac{1}{4}$).[18]

Why Brighton should have become a fishing settlement is readily explained by its site which is at the junction of three physical regions, the foreshore, the Downs and the Sussex coastal plain. The chalk cliffs made access to the foreshore further east difficult, but Brighton had easy access up onto the Downs for long distance travel to east and west, and through them to the north. To the west the coastal plain, at least in earlier times, had been ill-drained, so impeding movement between the shore and the Downs. The foreshore at Brighton provided adequate berthing for the boats, for it seems to have been protected from the main force of the waves by a shingle bar extending from the west side of the river Adur's mouth to east of Brighton.[19] The bar was probably submerged but a boat which could pass over it came into calm waters and could beach on a shore which had a gentle gradient and was not buried in steeply-shelving shingle. On the shore beneath the cliff, which was only some 25 feet high, there were in 1576 some 90 'shops' which served as the fishermen's stores for tackle and workplaces for repairs and processing locally caught fish, and nearly 50 'capstanplaces' which probably embraced the ground for both the capstans and the beached boats. Certainly in the 1660s, and no doubt earlier, there were also over 20 inhabited cottages on the shore.[20]

Why Brighton should have prospered as a fishing settlement around 1600 is less clear. The mid-sixteenth century may have been a lean time generally for fishermen, but a more rigorous enforcement of Lent combined with a rising population may have increased demand for fish later in the century.[21] Locally the silting of Rye's harbour and the decline in its fishing fleet from about 1565 may have given scope for expansion elsewhere. Though there is no evidence of emigration to Brighton, Brighton was particularly open to newcomers because manorial control was weak.[22] Most land within the limits of the town was copyhold, but with the largest manor in joint ownership, lordship was fragmented amongst up to ten families, of which only one, the Shirleys, lived locally.[23]

Indeed the fisheries' expansion cannot be traced accurately as to either date or scale. According to the Customs of 1580, Brighton had four score fishing boats, and the Privy Council's survey of two years later listed 36 vessels of ten tons or more, so roughly 40 may have been smaller. These are the only statements on the size of Brighton's fleet. How many went to Yarmouth fare is indicated by the number entered, with the names of their Yarmouth hosts, in the borough's records in the few years for which they survive; these numbers are minima because of possible evasion, but generally concur with other evidence.[24] In 1581, 44 were entered, and in 1593, 50, figures similar to the estimate of at least 40 going to Yarmouth made by the stewards of Brighton-Lewes manor in 1576. In both 1601 and 1623, as many as 66 were recorded, the largest Brighton fleet reported in any one fishery. A petition of 1626 gave the lower number of 28 to 30 barks in the Yarmouth fare in better times (compared with a mere eight that year); but the Yarmouth records give 31 for 1634, 27 for 1645, and 45 for 1650, the last being close to the 50 boats preparing to sail reported in a petition of 1653.[25] The apparent fall from a peak early in the century is reflected in fluctuations in the estimated total number of boats at Yarmouth: in all the years cited Brighton's fleet comprised between 10 and 15 per cent. of the total, except in 1623 when it reached 18.7 per cent. In the mackerel fishery, 35 barks with 400 men were ready to sail in one year in the early 1620s, while 30 boats in 1657 and 50 with more to come in 1659 were convoyed to the fishing grounds.[26]

Though the scale and chronology of the expanding population and fisheries cannot be precisely determined, their impact on the town can be indicated in three respects: the wealth of

Fig 3   BRIGHTON 1788

1 Brighton Square (Knab)
2 Brighton Place
3 Old Ship
4 Steine Street

(1) The Hempshares

0 ⊢————————————⊣ 220
yards

NORTH LAINE

CHURCH STREET

HILLY LAINE

NORTH STREET

WEST LAINE

Pavilion

NORTH PARADE

LITTLE LAINE

WEST STREET

SHIP ST

BLACK LION ST

Castle Inn

THE STEINE

SOUTH PARADE

CHARLES ST

GERMAN PL

Crawfords Library

Pool Valley

Baths

Dr Russells House

inhabitants at death, the physical growth of the town, and its government. Wealth is indicated by the valuations of chattels for probate. As the inventories on which they were based have not survived, their composition is not known, and interpretation of the valuations is also beset by problems of coverage. Nevertheless, if the valuations are inflated to 1631-40 prices and, for each decade, are ranked, the lower quartile, median and upper quartile values may be compared over time. In 1551-60, they were (to the nearest pound) £17, £32 and £78. In the next two decades they were lower, at £11, £15 and £37 in the 1570s, but were back to the earlier levels in the 1580s and 1590s, and over the next 40 years roughly doubled, standing at £31, £88 and £145 in 1630s.[27]

If the population grew three fold in a century, it is to be expected that the number of buildings increased also. But enough land within the earlier limits of the town was apparently available for building as to avoid the need for outward expansion. A comparison, unavoidably crude, of two rentals, from 1576 and 1665, for the copyhold tenements of the Manor of Brighton-Lewes within the town shows that the total rent charge went up by about 20 per cent., presumably by virtue of grants by the lords out of the manor's wasteland.[28] The increase was very unevenly distributed between different parts of the town (Fig. 3). In East Street, and the Knabb and Bartholomews on its west, there was none, unsurprisingly because East Street ran between the access to the foreshore at the Pool and the road northwards to Lewes, and because expansion in the immediate vicinity was restricted by the damp ground of the Steine on the east and the precincts of the former monastic cell on the west which (in part at least) the town bought in 1584 and was using as pasture in 1665.[29] Rents in West Street were up by 20 per cent., but in North Street and in the area of Middle Street by as much as 72 and 66 per cent. Certainly in the mid-seventeenth century on the north side of North Street were concentrated the malthouses and the crofts belonging to the yardlands, for it was the part of the town with readiest access to the fields. Maybe the cottage properties on the south side dated from the previous century. Counted with Middle Street in 1665 are tenements in the Hempshares which was 'a field in the middle of the town' in the early sixteenth century, and which a hundred years later was being built on with the beginnings of Black Lion and Ship Streets.[30]

Around 1580 the area bounded by Middle, North and East Streets must have been markedly bare of buildings when viewed from the cliff. On the cliff, though, were a few structures, principal among them the blockhouse, a circular building about 50 feet in diameter and 18 feet in height, built of flint in about 1560 to store powder and shot for the cannon in the gun garden on the seaward side. East of the blockhouse was the market, or town, house which presumably had the market place to its north. Many writers have alleged that a defensive wall stood on the cliff top, but there is no sound evidence other than for an arched gate across the slope up from the Pool to East Street, perhaps with retaining walls on each flank, such as may have also been built at the foot of the cliff facing the sea.[31]

The third indication of the impact of the town's growth is that a codification and, to an extent unclear, a restructuring of its administration were deemed necessary in 1580. Five years earlier, the fishermen had complained to the Privy Council that they alone bore the expense of maintaining the town's defences and its church. The commission to whom this petition was referred is not recorded as acting, and in 1580, probably after a second petition, the Council appointed another commission who caused the 'Ancient Customs' to be set down.[32] These Customs describe the organisation of the fisheries so as to state the basis for computing the quarter share in the profits paid to the churchwardens for the church's maintenance and other public charges. The commissioners ordered that 'the husbandmen and artificers' should be rated to raise half the amount raised from the fisheries; and they specified how the income was to be administered. Furthermore they appointed

twelve inhabitants as assistants to the constable in all matters but each was also charged with keeping good order in a part of the town. Vacancies were to be filled, as the constable was already appointed, by nominations to the steward at the view of frankpledge which belonged to the Barony of Lewes. The Earl of Arundel and Lord Buckhurst each held a quarter of the barony, were jointly the lords of the principal Brighton manor (Brighton-Lewes), and were two of the four commissioners, so the arrangements were presumably intended to confirm their authority over the town as exercised through the view. Nevertheless by 1613 it was customary for the constable to be appointed from among 'the Twelve' to whose ranks he returned at the end of his year of office. Furthermore, in the years 1613-21 the jury at the view averaged 21 members, eight of whom were of the Twelve most of whom were far more frequent in their attendance than other jurors.[33] We can infer that, within a generation of 1580 and despite a nominal subordination to the lords of the barony, the Twelve were in practice a 'civic oligarchy', also discharging with the vicar and (if they were not of the Twelve) the churchwardens and overseers of the poor the duties placed on the parish by parliamentary statute. Hence a characteristically urban form of internal government evolved to meet the changing condition of the town.

2. A depressed coastal town

It is from the 1650s that comes evidence of both the largest fishing fleet and, before the later eighteenth century, the greatest population, but the dearth of information may conceal a peak which had been passed earlier. What is clear is that within a generation of 1660 the town was in severe difficulties. The connection between cause and effect is inferred rather than proven, but just as expanding fisheries seem to have been the basis of Brighton's growth in the previous 100 years, so contraction in the fisheries is reflected by the town's depression.

Even in the 20 years from 1661 the occupations given by testators yield a significantly different pattern compared with the 20 years to 1640. The proportion of fishermen fell from 55 per cent. to 29; 20 per cent. called themselves 'mariners', a description rarely used before then; and the proportion in crafts and other services rose from 29 to 38 per cent. The title 'mariner' was no mere alternative for 'fisherman', to describe the same employment, for the proportion of wills mentioning nets dropped from 45 to 25 per cent. These trends continued to the extent that only two fishermen are to be found among the testators of 1701-50, half the male testators stating their occupations were mariners, only 6 per cent. of the wills proved in the 1690s specified nets as legacies and almost none after 1710. Nineteen per cent. of the surviving inventories from the following 30 years include nets but nearly always they were described as old or were found in garrets and backrooms with other lumber.[34]

Fishing as an employment for the town contracted by withdrawal from the more distant fares. Brighton ceased to send a fleet to the North Sea between 1680 and 1697: in the former year, 29 boats (11.8 per cent. of the total) appear in Great Yarmouth's records, and in the latter only three, or 2.5 per cent. (later records do not allow any Brighton boats to be identified). Fishing came to be confined to inshore with limited excursions up and down the Channel to meet the herring and mackerel shoals.[35] It ceased to be an enterprise which provided the livelihood of the town's men of substance who were the willmakers. To visitors in the first half of the eighteenth century it may have seemed the town's mainstay because of the activity it generated along the seafront, but we may guess that it was the poor man's employment.

Why fishing declined can be seen no more clearly than why it had expanded. A major recession in the European fisheries at the end of the seventeenth century has been detected by

historians, possibly associated with traditional fishing grounds becoming less productive.[36] More apparent to the Brighton fishermen were the reasons given by a writer in the 1720s, that the town's fishing had decayed since the beginning of the Civil War 'for want of a Free Fishery, and by very great Losses by Sea, their Shipping being often taken from them by the Enemy'. Yet other Sussex fishermen did not abandon the North Sea, for a fleet was still going to Yarmouth from Hastings in the 1740s.[37] At Brighton there was a localised reason, which was the erosion of the foreshore by the sea. The shingle bar was being driven landwards and the sea may have been encroaching on the fishermen's workspace by the 1640s and causing them to concentrate their activity immediately under the cliff. By 1700 ships could probably no longer be beached unless they came in on one tide and left on the next or unless they were small enough to be hauled onto the Steine. In the first half of the new century the cliff was being undermined at the rate of perhaps one foot a year, though thereafter the groynes first erected in 1723 succeeded in stabilising the beach.[38]

The diminished scale of fishing based at Brighton brought the other aspect of seafaring, cargo carrying, into greater prominence, as a primary rather than secondary employment. This was signified by 'mariners' supplanting 'fishermen'. John Warburton in the 1720s rightly noted that Brighton was mostly inhabited by men who found it convenient 'for their going on shore in their passing and repairing in the Coasting trade.' Even so, it was probably in the mouth of the river Adur, opposite Southwick and Kingston, some five miles to the west, that the larger Brighton boats were laid up, for they no longer needed to be near a netshop, and relatively few cargoes were destined for or originated at Brighton.[39] Indeed the town seems to have lost its resident Customs officer around 1690.[40] 'Bark' had been the usual description of the boats which went fishing in the North Sea, but from the 1670s 'ketch' was more common and from the 1710s 'pink'—these terms denote cargo vessels. As time passed the most frequently recorded size of shares owned in the vessels shrank. Before 1640, shares smaller than a quarter were rare; in the 1670s and '80s, eighths and sixteenths were normal, and in 1710-32 thirty-seconds. Owning shares in more than one vessel was more frequent and the dispersion of ownership may have been intended solely to spread the risk, but it may also represent the transfer of investment from fishing nets to boats and the need to draw on a larger proportion of the town to finance them.[41]

In the 1680s Brighton boats had a firmer hold on the local carrying trade than they had had a century before: in 1683, 87 per cent. of the cargoes through the Port of Shoreham were in Brighton boats, 37 per cent. through the Port of Newhaven. In 1700-1 the percentages were 43 and 29, but as many as 35 different boats were entered in Sussex's Port Books and, on the evidence of the cargoes carried, their average burden was 36 tons.[42] So the fleet of cargo carriers was as large as it had been in the 1580s, though the crews would have been smaller, perhaps only three or four, than for fishing voyages.[43] Hence a similar number of vessels provided less employment—and as the century progressed the number declined. In 1761 the town had only 11, and although 28 Brighton boats entered Littlehampton harbour between 1735 and 1744 their average tonnage was only 19.[44] It is scarcely surprising that a town without harbourage should not in the long term retain a freight trade.

Decline of fishing followed by decline of freight carrying removed the economic mainstays of the town and were not replaced until its rise as a watering place. From around 3,500 inhabitants in 1660, the population fell to perhaps 2,400 in 1724 and as low as 2,000 in about 1750.[45] Baptisms and births recorded in the Anglican register fell from 82 a year in the 1680s to 55 in the 1690s. The very sharp initial drop in 1690-94 may have been accentuated by rising adherence to the Presbyterian chapel, but even including baptisms entered only in its register, the annual averages in the first three decades of the next century were only 60, 59, and 53.[46]

The valuations in probate inventories also show a downward trend with the low point reached around 1700. As price levels were fairly steady throughout this period and were comparable to those immediately before the Civil War, the valuations need not be indexed. In general the quartile values of the 1670s (£20, £39, £106) were a third below those of the 1630s and fell by a quarter over the next 20 years, to £15, £28 and £78 in the 1690s. A recovery from the 1710s may be more apparent than real because of the diminishing proportion of the decedents for whom there were inventories.[47]

Greater hardship at the other end of the social scale is indicated by the town's difficulty in supporting its own poor. In 1690, the Justices in Quarter Sessions rated five neighbouring parishes at 6d. in the pound for the relief of Brighton, apparently to raise about £39 a year on a continuing basis. By 1703 the money was not being paid and the order was repeated for four of the parishes plus a fifth, but three were able to convince the Justices that they had sufficient poor of their own to support. Another eight parishes further away were therefore rated from 1704-5, and five more were brought within the net in 1706, but again several succeeded in pleading their own poverty. Newtimber parish failed in an application to Queen's Bench for the Justices' order to be quashed, and the Justices seemed to have taken this as a signal to abandon the attempt to rate neighbouring parishes regularly, and instead, in 1708, to levy a single $1\frac{1}{2}$d. rate throughout the eastern rapes of Sussex. As much as £800 may have been raised and, instead of going directly to Brighton's parish officers, was paid to a Justice as 'Receiver and Treasurer of the said charity' who presumably administered it as an endowment fund. Though this measure removed the subject from the Justices' immediate attention, the poor did not go away, for in 1744 as many as three quarters of householders were exempted from paying rates.[48]

One source of income to the town which was declining was the quarter share in the profits of the fisheries. As late as 1756 the vicar was still collecting his half share as tithe, to the total of £14; the town's share would have been £7 and was no longer collected, for it compared with over £250 levied as poor rates on lands and houses. The change may have come in 1699 when, reversing the roles of 1579, the farmers and land occupiers complained to Quarter Sessions that they bore almost the whole charge of the poor and that the seamen and trading men paid very little; a new rate book, assessing both land and stocks, was ordered. The form of government instituted in 1580 fell into disuse: no reference to 'the Society of Twelve' later than 1641 has been found, and in 1744 the town's affairs were in the hands of a vestry comprising the constable, four headboroughs, four overseers of the poor and perhaps some other parish officers.[49]

Although manor court books survive for most of the town from the later seventeenth century, they do not offer much indication of how economic decline affected landholding and topography, because comparison with the earlier era of prosperity is precluded. The erosion of the foreshore and cliff must account for the grants of waste for cottages on the south and west edge of the Steine around 1660 and for the Bartholomews property providing, from 1727, the sites of the poorhouse and probably also the market place.[50] The impressions of visitors to the town suggested that otherwise there was little new building: the Rev. John Burton in about 1730 saw 'here and there houses left desolate, and walls tumbling down', while John Whaley in 1735 succinctly described Brighton as 'the Ruins of a large Fishing Town' and John Warburton in the 1720s claimed that whole streets were deserted.[51]

3. A pioneer seaside resort

From this slough of despond Brighton was rescued by the adoption of the sea for a new purpose. Its development as a seaside resort has traditionally been associated with Dr. Richard

Russell of Lewes who, in 1750, published the results of his use of seawater to treat a wide range of ailments. But the earliest known reference to seabathing (and also sunbathing) at Brighton is from 1736, for pleasure rather than as a cure, and Russell, whose interest in seawater treatment dated from before 1730, was sending patients to Brighton before 1750.[52] Hence the origins of the town's development as a resort are close in time to those of Scarborough and Margate.[53] Russell's contribution to Brighton's development and to the success of seaside resorts in general was to establish firmly the use of seawater for medical purposes, securing the dual function which spas already had.

By 1750, Worthing, Hastings and Eastbourne on the Sussex coast were probably being visited for recreational seabathing; certainly, along with Seaford, they were by the mid 1750s.[54] Why then did Brighton become the foremost south coast resort? First, Brighton was the most accessible south coast town for Londoners, being within a day's travel in the 1750s. It was only eight miles from Lewes, the social centre for the gentry of eastern Sussex, and was quite close to the fashionable spa of Tunbridge Wells. Secondly, it was a sizeable settlement with established, if rudimentary, services, but the decline of fishing and later of cargo carrying must have left the reduced population under-employed and the housing stock under-utilised (and consequently cheap to purchase or to rent). No other new employment was competing for labour, space or capital. Thirdly, because Dr. Russell was a Lewes resident and due to long established links between the two towns, prosperous Lewes townsfolk were aware, and took advantage, of Brighton's new function. The people from Lewes and neighbourhood, who set up business in Brighton or, more commonly, lent money on mortgage to Brighton residents, played an important role in ensuring the early success of the resort.[55]

Brighton's site and existing land use determined the location of the early resort's facilities and strongly influenced the direction of the first suburban development. East Street had long been the most densely built part of the town, as it linked the easiest access to the foreshore, to the junction of the main road from Lewes (and London) with the east-west routeway which passed along North Street (Fig. 3). The resort facilities also needed access to the sea and to the main routeways; the land at the rear of East Street's east side faced both the sea and the open ground of the Steine; and it was owned in small blocks because much of it had been granted out of the waste. Other parts of the town with sea views lacked such advantages. Russell's house for his patients and Samuel Shergold's new Castle Inn were developed simultaneously in 1752-53 on the east side of East Street (Fig. 3), and both men purchased several copyhold tenements for their respective enterprises. The Castle was ideally sited for a coaching inn because it was easily visible as the coaches arrived from Lewes and along the coastal route. Russell's house was visible down the Steine and East Street but also had the advantage of some shelter by the town from the prevailing south westerly winds.[56] The Steine itself provided a level, sheltered promenade and served in place of a safe cliff top promenade.

Between 1750 and 1770 the town acquired the main requisites of a seaside resort and most of them were established in East Street or along the west side of the Steine. By 1754 there were bathing machines on the beach below Russell's house and an assembly room at the Castle Inn. In the late 1750s a bookseller opened a shop in East Street, and there was a library by 1760. In 1769 Awsiter's Baths were built at the bottom of East Street, attracted to the site by the proximity of the Steine and the gentle slope up which pipes were laid from the sea.[57] By 1770 several town houses had been erected on the east side of East Street, some of which certainly faced the Steine and one of which was built for a doctor. Other significant indications of the town's commitment to development as a resort between 1750 and 1770 include the establishment of regular coaches to London in 1756, assembly rooms at the Old Ship in 1761, the arrival of a Master of Ceremonies by 1767, and the

opening of private boarding schools which claimed the advantage of being by the sea. Visits by royalty and the compilation of visitor's lists between 1765 and 1770 suggest that the town was attracting a regular clientele and had become securely established as a resort.[58]

Although the first resort facilities were created by incomers such as Shergold and Russell, the town had to be refurbished and its services improved, in order to retain the visitor's interest. The wills and manorial records suggest that investment in development was first by craftsmen and professional people, from the late 1740s, and then by retailers, from the 1760s.[59] *Bailey's British directory* of 1784 listed the most prosperous townsfolk including an attorney, a fashionable cabinet maker, a ladies perfumier, a printer and bookseller, but there were many tradesmen who were omitted, both basic such as butchers and bakers, and specialist such as coalmerchants and a perukemaker, as well as representatives of all aspects of the building trade.[60] In the same decade the Land Tax suggests that a substantial group of townsfolk were proprietors of lodgings and lodging houses, and some probably derived all of their income from this source.[61]

Fishing and cargo carrying, the previous mainstays of the economy and of employment, rapidly declined in their relative significance for the town. No more men were employed in fishing in 1805 than 1761, namely around 300, and fewer in 1818, though they benefited from the improvement in the 1770s of road communications which widened the market for fish landed at Brighton. The trade was conducted by middlemen and not by the fishermen; fish was carried in special waggons as far as London, often using draught animals provided by local farmers.[62] As resort development gathered pace so the volume of coastal imports rose but ownership and management of the vessels by the townsfolk seem not to have revived. Most of the coal and tradesmen's orders were landed on the beach although, from the 1760s, attempts were made to improve Shoreham harbour.[63] Soon after 1800 building materials were certainly being landed and stored at Shoreham.[64]

The earliest general indicator of the dominance of the resort function within the town's economy and its influence is in Cobby's *Directory* of 1800. Over 770 individuals are listed and may represent over half of the 1,300 families resident in the town.[65] Forty per cent. of the people who were entered in the directory apparently derived their income entirely from letting lodgings or running lodging houses, boarding houses or inns. Twenty per cent. were craftsmen, another fifth were retailers and nine per cent. were in the professions which included music teaching and the law. A very high proportion of the town's inhabitants are listed in the directory but two large and important occupational groups are excluded, domestic servants and semi- or unskilled labourers both of whom were vitally important to the resort. The number and proportion of residents on private incomes cannot be assessed, but they must not be disregarded because of their role as generators of employment. Certainly by 1822 they were a large group, as shown by Baxter's directory.[66] This directory excluded nearly all accommodation except inns but comparison with 1800 which allows for these differences shows that the distribution between the major employment sectors (service, manufacturing, professions, transport, agriculture) was almost the same in 1822. As yet there is little evidence about the relative importance of letting accommodation in *c*.1820 or whether there had been changes in the type which was provided. Compared with Cobby's *Directory*, entries in Baxter's are more widely distributed through the town which indicates that by 1820 new shopping centres and manufacturing areas had been established in the suburbs, the St. James's Street-Edward Street area being especially important. Conversely some streets in the old town had declined in importance for commerce, but North Street remained the core of the business centre.

Fig 4   BRIGHTON   1822

Between c.1750 and 1780 the town's population grew from about 2000 to some 3400, close to the previous peak which had been achieved in the 1640s. The demand for additional space for all forms of urban land use, including seasonal accommodation, shops, workshops, mews and larger town houses, was mainly met within the old town where the predominance of copyhold tenure did not inhibit development. Indeed the court books record a great increase in the number of changes in ownership, beginning in the 1750s.[67]

Most of the development was apparently by Brighton residents who invested their profits from the town's burgeoning resort function and borrowed from the prosperous sheep/corn farmers in the downland region as well as from Lewes. The character of the old town changed between 1750 and 1780 as it became densely built up and as the proportion of recent building and refacings rose. By 1780 a distinct pattern of social areas was emerging, influenced by the resort role. The east side of East Street facing the Steine was lined with large town houses (which maintained their high value until 1820). East Street, Castle Square, the eastern end of North Street and the west side of the Steine comprised the fashionable lodging and shopping area. Slums were developing on the Knabb between East, North and Black Lion Streets, and on other large plots behind buildings on the main streets, such as the north west corner of North Street and the west side of West Street.

In the 1770s there was pressure to expand outwards and there were three responses, two of which were building developments. The earliest development on the fields, North Buildings, was started in North Laine in 1772 north of the town and facing the Steine, but it was premature and progress was slow. The row consisted mainly of service buildings and an inn, the King and Queen, which became a centre for agricultural business. Late in the decade building on the large crofts to the north of North Street (Fig. 4) began and Bond and King Streets were laid along their length connecting with Church Street. The type of houses, workshops and mews built in both streets suggests that the development of lodging houses and more exclusive shops on the main streets and the cliff top was pushing services and lower cost housing northwards. From the 1790s these crofts clearly evolved as a service area.[68]

The third response to the pressure of urban development was administrative. By 1770 the increasing density of urban development and the expectations of visitors, who would regard the cleaning and paving of main streets and an adequate market as the normal accoutrements of a resort town, placed demands on the vestry for which it appears to have been inadequate. In 1773 and, perhaps by coincidence, soon after the first building on the open fields, town commissioners were appointed by an act of Parliament with the usual responsibilities of such bodies (paving, lighting, cleansing and the removal of nuisances and obstructions from the streets, and the administration of the town market) along with power to levy a town rate and market tolls.[69] Brighton's commissioners also maintained the groynes which secured the beach for vessels unloading coal and other cargoes. A duty levied on all coal which entered the parish had to be spent on the sea defences. This aspect of the commissioners' work was important for both the protection of buildings in the old town and, from the 1780s, for the new suburbs on the cliff.

The 1773 act gave the town commissioners very limited powers and in such a rapidly growing town regulation of the construction of buildings and control of the width of roads, including the alignments of buildings along them, was necessary, partly in order that the commissioners could carry out their sanitary and paving responsibilities reasonably effectively and cheaply. In 1810 a new act granted wider powers to a larger, reformulated body of commissioners.[70] Some clauses of the act had a direct influence on urban development and were at least partially implemented, including building regulations, power to purchase property in order to widen roads, and greater

penalties for failing to comply with regulations, for example by building excessively protuberant bow fronted houses.

The commissioners attempted to improve the town's sanitary state from 1773 but their efforts were especially concerned with the resort areas as shown by the expenditure on lighting, paving, and complaints against miscreants. They also provided drains for street runoff. Brighton's commissioners were unexceptional in their failure to devise an adequate system of cleansing and drainage for a rapidly growing town, but they did influence street facades and widths and controlled obstructions of the thoroughfares.

4. Building on the farmland 1780-1820

From the 1780s the old town's role changed as it became the centre of a series of suburbs which spread out at different speeds over the surrounding arable land. By 1800 the suburbs housed a substantial proportion of the town's 7,300 inhabitants and most of the resort accommodation, and the old town was becoming a business centre; solicitors were congregating in Ship Street, coach offices in Castle Square, repositories and similar upper class shops in North Street.[71] The old town's compact, irregular and densely built-up area contrasted with the linear and more planned appearances of the new suburbs (Fig. 4). A similar contrast between the old core and the new terraces on the outskirts is still discernible in spa towns such as Bath and seaside resorts such as Hastings in Sussex and Weymouth in Dorset.

By 1780 almost all of the land which was suitable for resort development in the old town was built on and the price of land was rising sharply.[72] The continuing popularity and prosperity of the town resulted in sustained building on the farmland from 1782. At that date virtually all of the land within the parish, but outside the town, was farmland. Five open fields called Laines surrounded the town on its landward sides, four of which, Little, Hilly, North and West had boundaries impinging on the Steine or the old town. Only in West Laine did some enclosure precede building (Fig. 1). In the other laines all of the land was still owned as strips when it was built on and they left their imprint on the process of development and on the street pattern (Fig. 4).

Only a few English towns, such as Portsmouth in Hampshire, had a similar extent of fossilised open fields surrounding them when they expanded.[73] Brighton's growth is of particular interest because of the way in which the demand for resort housing beside the sea or the resort facilities on the Steine influenced the growth of the suburbs. Land with the advantages of both attractions on the eastern side of the town was built on first and attracted the more expensive housing. The system of landholding dictated the actual layout of the streets.

The five laines were sub-divided into furlongs which were separated from one another by access paths called leakways, which usually became important east-west roads such as St. James's Street or Western Road (Fig. 4). Each furlong was divided into strips locally called paulpieces which were owned in units called yardlands, each of which in 1780 consisted of about 10 acres held as specific paulpieces and a stint for livestock on the pasture. The 84 yardlands were held by only 11 people, as a result of a process of consolidation extending over at least a century.[74] Although enclosure of all the laines was considered during the 1770s, it did not take place and land was sold or let for building on long lease in strips which were often long but too narrow to build on. For instance, an auction in 1798 included a plot in Little Laine, Upper Furlong, 25 feet wide and 600 feet long, and another in North Laine, Second Furlong, the same width and 459 feet long.[75] A developer normally purchased several adjacent strips from their owners.

The first laine to be developed was Little Laine whose western boundary was close to the core of the resort (Fig. 1). The laine was divided into two furlongs, Cliff and Upper, and terraces of houses were being built on their western fringes overlooking the Old Steine and the eventual site of the Royal Pavilion when the Prince of Wales made his first visit in 1783. In the mid-1780s German House and Place (now Madeira Place), Steine Street, Charles Street and Broad Street were being built in Cliff Furlong along the cliff top between the Old Steine and what became Rock Gardens on the south side of St. James's Street which was previously the leakway separating Cliff from Upper Furlong. All of the streets were built at right angles to the cliff top, following the orientation of the paulpieces (and extended the full width of the furlong). A developer could buy several paulpieces, lay out a road between the cliff top and St. James's Street, divide the land along one or both sides of it into building plots, build one or two houses and sell the rest of the plot to builders or townsfolk who would then build the rest of the row, sometimes taking many years to do so. Houses were let to visitors, to residents, or used for private occupation.[76]

The interest in sea air and the social activities on the Steine area was reflected in the value of the property which surrounded it especially on Little Laine. The most exclusive lodging houses were in Marine Parade along the cliff top and along the eastern side of the Old Steine (Fig. 4). The second most expensive lodging houses were in the most spacious streets in Cliff Furlong: New Steine, German Place and Broad Street. By contrast with the rapid development of upper class lodging houses on Cliff Furlong in Little Laine, Upper Furlong in the same laine but between St. James's Street and Edward Street was developed more slowly. So important was a location by the sea or the Steine that most of the streets in Upper Furlong which lacked these advantages failed as resort development and were developed as artisan housing and workshops by 1800. The Health Reports of the 1840s described several of them as most unsalubrious.[77]

The importance of a location beside the sea or the Old Steine, and the orientation of the paulpieces is also illustrated by development on the other laines. Both North and Hilly Laines had the Old Steine as a boundary but neither was by the sea. (Fig. 1). Their paulpieces were orientated north-south and consequently building houses which faced the sea was not easily achieved. Upper class housing spread along the Old Steine to the north of the junction of the Lewes and London roads (Fig. 4), but was not established on the remainder of these laines. Land close to the town in both laines was used for market gardening and for paddocks for horses and dairy cattle until displaced by predominantly artisan housing and service buildings.[78]

The pattern of development in West Laine was different because over most of it ownership was much less fragmented than in the other laines. The reason for progress being slow as compared with Little Laine was probably that, despite its coastal location, West Laine was distant from the resort facilities. In the 1780s and 90s, the three furlongs which were close to the town and which were also those in fragmented ownership, were built on. Due to its shallow depth back from the cliff, one of these, Cliff Butts, was used for short terraces and detached villas facing the sea which produced a layout contrasting with the development on the cliff east of the town (Fig. 4). In the early 1790s one of the three owners of the remaining furlongs made purchases from, or exchanges with, the other two, to give him sole ownership of them. He was then able to lease or sell blocks of land which offered greater flexibility of layout for development than did strips. Large scale building on West Laine began after 1800 when most of Cliff Furlong in Little Laine had been developed and the accelerating growth of the town stimulated interest in the previously epicentral western side as an alternative to extending the town further east into East Laine. Hence most of the rows of villas and terraces along the cliff top were soon displaced by squares such as Regency and Bedford Squares

and by access roads between the sea and inland developments such as Cannon Place and Russell Square. Compared with East Laine, on which there was little activity until after 1820, West Laine had the advantage of access to the old town where most of the services were located.[79]

By 1801 at least a third of Brighton's houses stood in the suburbs on the open fields, but two thirds of them were either let as lodging houses or used as lodgings and most of the town's 7,339 inhabitants lived within the old town. Between 1801 and 1811, the town's population increased to 12,000, an increase of 63 per cent. and the number of houses rose from 1,420 to 2,380, or by 61 per cent., and as 80 houses were also being built in 1811, the rate of building was about commensurate with the increase in population. By 1811 the suburbs contained over half the town's housing. Between 1811 and 1821 Brighton's population increased by 67 per cent., which was the highest growth rate of any English town in the decade, and reached 24,400. The rate of building also dramatically accelerated, many streets which had been started before 1800 were completed, and when the census was conducted 360 houses were being built.[80]

By 1811 the town was roughly triangular in outline with its base along the coast and its apex at North Steine and, by 1820 building on West Laine had accentuated the shape.[81] In 1820 most of Brighton's buildings were under 30 years old. East Street and the south-western side of the Old Steine were rapidly losing their importance within the resort and facilities such as baths and libraries were available within the suburbs.[82] By 1820 the size of the clientele of large seaside resorts was too unwieldy for the old spa routine centred on one area and the visitors were no longer interested in it. From about 1820 the development of estates of villas and large terraced houses, such as Kemp Town to the east of Brighton, Brunswick Town (Hove), and St. Leonards (Hastings) which were intended to provide space for entertaining in the home, signalled the start of developments which recognised the changing attitudes of the wealthy towards seaside resorts and a new stage in Brighton's development.[83]

ACKNOWLEDGEMENTS

Authors: Sue and John Farrant, 36 Brangwyn Drive, Patcham, Brighton BN1 8XD.

REFERENCES

[1] Public Record Office (abbreviated hereafter to P.R.O.), SP 12/39/11. H. D. Roberts (ed.), *The parish register of Brighton in the County of Sussex* (Brighton, 1932).

[2] C. E. Brent, 'Devastating epidemic in the countryside of eastern Sussex between the harvest years 1558 and 1640', *Local Population Studies,* 14 (1975), 47.

[3] W. H. Hall, *Wills and administrations in the archdeaconry of Lewes,* British Record Society, Index Library, 24 (1901).

[4] Mr. Haylor in T. Cox, *Magna Britannia et Hibernia,* 5 (1730), 511. C. E. Welch, 'Commonwealth unions of benefices in Sussex', *Sussex Notes and Queries* (abbreviated hereafter to *S.N.Q.),* 15 (1958-62), 118. J. H. Cooper, 'A religious census of Sussex in 1676', *Sussex Archaeological Collections* (abbreviated hereafter to *S.A.C.),* 45 (1902), 144.

[5] J. Cornwall, 'English population in the early sixteenth century', *Econ. Hist. Rev.,* 2nd s., 23 (1970), 38. T. H. Hollingsworth, *Historical demography* (1969), 83. Cooper, 147-8.

[6]   J. C. K. Cornwall, 'English country towns in the fifteen twenties', *Econ. Hist. Rev.*, 2nd s., 15 (1962), 60. P.R.O., SP 12/38/28. Cooper, 143-5.

[7]   Hall.

[8]   As reflected in the terrier of the laines, 1739/1792, of which there are several copies, e.g., Brighton Area Library (abbreviated hereafter to B.A.L.), SB9 B76 (acc. no. 74318).

[9]   C. Webb and A. E. Wilson‑(eds), *Elizabethan Brighton, the Ancient Customs of Brighthelmston 1580* (Brighton, 1952).

[10] P.R.O., SP 12/39/11.

[11] P.R.O., SP 12/71/76.

[12] P.R.O., E 190/741/1, 41, 44; 742/15; 744/21, 22; 745/12, 13; 746/1, 12, 20, 25; 748/21, 32, 33; 749/1, 5, 9; 750/5. For fuller identification, see P.R.O., *Descriptive list of Exchequer, Queen's Remembrancer, Port Books 1565 to 1700* (1960). We are most grateful to Dr. Colin Brent for the loan of his abstracts of these Port Books.

[13] P.R.O., SP 12/156/45.

[14] P.R.O., E 190/745/12, 13.

[15] C. E. Brent, 'Rural employment and population in Sussex between 1550 and 1640', *S.A.C.*, 114 (1976), 32. East Sussex Record Office (abbreviated hereafter to E.S.R.O.), W/U 1/424.

[16] E.S.R.O., W/A 19, ff. 119, 144.

[17] These general statements are based on Brighton wills, 1581-1640, in E.S.R.O., W/A 7-26. Wills were usually made shortly before death, and statistics based on them here and elsewhere relate to date of proving. Lists of boats and owners, probably both of 1570: P.R.O., SP 12/71/76, and Surrey Record Office (Guildford), LM 1795/4.

[18] Webb and Wilson, 15-20.

[19] H. C. Brookfield, 'The estuary of the Adur', *S.A.C.*, 90 (1952), 160.

[20] Kent Archives Office (abbreviated hereafter to K.A.O.), U 269/M44/2. P.R.O., E 179/258/15.

[21] A. R. Michell, 'The European fisheries in early modern history', in E. E. Rich and C. H. Wilson (eds), *The Cambridge economic history of Europe*, 5 (Cambridge, 1977), 176.

[22] A. J. F. Dulley, 'The early history of the Rye fishing industry', *S.A.C.*, 107 (1969), 58, cannot be substantiated with regard to emigration to Brighton. C. E. Brent 'Urban employment and population in Sussex between 1550 and 1660', *S.A.C.*, 113 (1975), 39, 41-43.

[23] *Victoria county history of Sussex*, 7 (1940), 253-9.

[24] Norfolk Record Office, Great Yarmouth Borough MSS, C 27. These figures were kindly supplied by Dr. A. R. Michell, University of Hull.

[25] K.A.O., U 269/M44/1. P.R.O., SP 16/32/90. *Calendar of State Papers, Domestic, 1653-4* (1879), 62-3.

[26] B.L., Hart M.S. 6838, f. 221. *Calendar of State Papers, Domestic, 1656-7* (1883), 352; *1658-9* (1885), 560.

[27] Valuations: E.S.R.O., W/A 3-5, W/B 1-7. Price index: (index for industrial products x 0.75) + (index for faggots x 0.25), from E. H. Phelps Brown and S. V. Hopkins, 'Wage-rates and prices: evidence for population pressure in the sixteenth century', *Economica*, n.s., 24 (1957), 301, 306, and P. Bowden, 'Statistical appendix', in J. Thirsk (ed.), *The agrarian history of England and Wales, IV, 1500-1640* (Cambridge, 1967), 862. For fuller figures and discussion, see S. and J. Farrant, 'Brighton 1600-1820: the antecedents and early development of a seaside resort', in P. Riden (ed.), *The*

post-medieval town in Britain, Cardiff papers in local history, 2 (Dept. of Extra-mural Studies, University College, Cardiff, forthcoming).

[28] K.A.O., U 269/M44/2. B.A.L., SB9 G63 (acc. no. 79097), typescript of Charles Goodwyn's rental of 1665; in this calculation tenements described as 'late waste' have been omitted, as the grants related to a later phase in the town's history.

[29] W. C. Wallis, 'Brighthelmston church and the chapel of St. Bartholomew', *Brighton and Hove Archaeologist*, 3 (1926), 118-27; J. S. North, 'The Bartholomews property, Brighthelmston, 1547-1592', *ibid.*, 81-104.

[30] British Library (abbreviated hereafter to B.L.), Cotton MS. Aug. 1(i) 18. Building on the Hempshares is also apparent in the manor of Atlingworth: W. H. Godfrey (ed.), *The book of John Rowe*, Sussex Record Society, 34 (1928), 214-15, in a rental of c. 1633/4, and Sussex Archaeological Society muniments (hereafter abbreviated to S.A.S.), DN 191, rent account 1692-1701.

[31] Cox, 510-11. For full references, see J. and S. Farrant, *Aspects of Brighton, 1650-1800*, Univ of Sussex Centre for Continuing Education Occasional Papers no. 8 (Brighton, 1978), 41-2, 88.

[32] *Acts of the Privy Council 1575-1577* (1894), 37. The appointment of the second commission is not recorded in the Acts. Webb and Wilson, 12.

[33] S.A.S., uncat., views of frankpledge, barony of Lewes, 1613-21. Mr. Christopher Whittick kindly transcribed the relevant sections.

[34] Hall. E.S.R.O., W/A 18-58; W/INV 20-2747.

[35] Norfolk Record Office, Great Yarmouth Borough MSS, C 27. A. Relhan, *A short history of Brighthelmston* (1761), 16-17. B.L., Add. MS. 33058, f.455.

[36] Michell, 182-3.

[37] Cox, 511. B.L., Add. MS. 15776, f.208, Jeremiah Milles's journal, 1743.

[38] For full references, see Farrant (1978), 42-3.

[39] B.L., Lansdowne MS. 918 ff. 90, 91, which are tentatively dated, from the notebook in which they are inserted, to 1723.

[40] J. H. Andrews, 'The Customs Ports of Sussex 1680-1730', *S.N.Q.*, 14 (1954-7), 2.

[41] E.S.R.O., W/A, W/INV for relevant dates.

[42] J. H. Andrews, 'The trade and shipping of Brighton in the second half of the seventeenth century', *S.N.Q.*, 14 (1954-7), 47. P.R.O., E 190/796/17, 30, 35, 37, 38, 39; 797/8, 14. Andrews gives evidence for much larger numbers of Brighton boats, but 77 averaging 54 tons each are so many as to be questionable.

[43] T. S. Willan, *The English coasting trade 1600-1750* (Manchester, 1938), 16-17.

[44] Relhan, 17. West Sussex Record Office, MF 36. No coastal Port Books survive for Sussex after 1714.

[45] West Sussex Record Office, Ep I/26/3, Bishop Bower's visitation, 1724. J. G. Bishop, *A peep into the past: Brighton in 1744-61* (Brighton, 1895), 21, 67. Relhan, 33.

[46] Roberts. M. J. Burchall (ed.), *Brighton Presbyterian registers 1700-1837* (Brighton, 1979).

[47] E.S.R.O., W/B 8-17.

[48] E.S.R.O., QO/EW 9, July 1689; EW 12, April 1704-April 1708, passim. [P. Dunvan], *Ancient and modern history of Lewes and Brighthelmstone* (Lewes, 1795), 482-3. No account of payments survives. Bishop (1895), table opp. p.12.

[49]   F. Harrison, *The story of Brighton, Hove and neighbourhood* (Brighton, 1931), 62. Cox, 511. E.S.R.O., QO/EW 11, April, Oct. 1699; W/U1/341. Bishop (1895), 36.

[50]   Farrant (1978), 84-85, for a list of the court books. More intensive analysis of them may yield results. J. A. Erredge, *History of Brighthelmston* (Brighton, 1862), 53. A. Dale, *Brighton town and Brighton people* (Chichester, 1976), pl. 1.

[51]   B.L., Add. MS. 11571. V. J. Torr, 'A tour through Sussex in 1735', *Sussex County Mag.*, 19 (1945), 257. B.L. Lansdowne MS. 918, f.91.

[52]   R. Russell, *A dissertation on the use of seawater in the diseases of the glands*, translated by an eminent physician (1753; first pub. in Latin, 1750), 69-74, 118-19, 121-3. For a social history of the town, including the health cure, from 1750, see E. W. Gilbert, *Brighton, old Ocean's bauble* (1954).

[53]   J. A. R. Pimlott, *The Englishman's holiday* (1947), pl. 4. J. Whyman, 'A Hanoverian watering place: Margate before the railway', in A. Everitt (ed.), *Perspectives in English urban history* (1973), 139.

[54]   Worthing: E. Cartwright, *History of the Western Division of the County of Sussex*, 2, pt. 2 (1830), 33n. Hastings: C. L. Sayer (ed.), 'Collier papers relating to Custom-House matters' (unpub. TS. in Hastings Area Lib.), 17, 22 May 1740. Eastbourne: B.L., Add. MS. 15776, ff. 213-4. Seaford: Yale Univ. Lib., Thomas Turner Coll., II/17, pp. 224-5.

[55]   Farrant (1978), 48-52.

[56]   Farrant (1978), 52-3.

[57]   J. J. Cartwright (ed.), *The travels through England of Dr. Richard Pocock*, 2 (1889), 104. J. G. Bishop, *A peep into the past: Brighton in the olden time*, People's (i.e., 2nd) ed. (Brighton, 1892), 16, 113. *Sussex Weekly Advertiser* (abbreviated hereafter to *S.W.A.*), 10 Oct. 1769.

[58]   Bishop (1892), 243, 29, 31. B.A.L., SB9 B76 (acc. no. 34693), for newspaper cutting on a school, dated to 1753; *S.W.A.*, 30 Jan. 1769. Bishop (1892), 113-14. Brighton Museum & Art Gallery has a 1769 visitors' list in MS.

[59]   Farrant (1978), 20-23, 49, 59.

[60]   *Bailey's British directory, 4, Eastern division* (1784), 788-9.

[61]   E.S.R.O., QDE/2/1/21.

[62]   Relhan, 17. J. V. Button, *The Brighton and Lewes guide* (1805), 21. C. Wright, *The Brighton ambulator* (1818), 95. *S.W.A.*, 15 June 1772. T. Pennant, *A journey from London to the Isle of Wight* (in 1793), 2 (1801), 69-71. E.S.R.O., AMS 5575/27/5, Ph. Mighell's day book, 1776-8.

[63]   J. H. Farrant, *The harbours of Sussex 1700-1914* (Brighton, 1976), 10-11.

[64]   P.R.O., C 217/69/2, Th. Budgen's carriage ledger, 1808.

[65]   E. Cobby, *Brighthelmstone directory for 1800* (Brighton, 1800).

[66]   *The stranger in Brighton and Baxter's new Brighton directory* (Brighton, 1822).

[67]   Population estimated from W. A. Barron, 'Brighton and the smallpox', *Sussex County Mag.*, 26 (1952), 605-6. Farrant (1978), 47, 58.

[68]   Farrant (1978), 9, 37-38, 51-55, 57-61, 64-67, and further research on the court books listed on pp. 84-85.

[69]   13 Geo. Iii c. 34.

[70]   50 Geo. III c. xxxviii. Dale (1976), 107-12.

[71]   Cobby.

[72]   Farrant, 44-61, passim.

[73]   C. Chalklin, *The provincial towns of Georgian England, a study of the building process 1740-1820* (1974), 113-39, 245-6.

[74]   Farrant (1978), 74-79.

[75]   *S.W.A.*, April 1798 issues.

[76]   Court books listed in Farrant (1978), 84-85. *S.W.A.*, Oct. 1789 issues.

[77]   e.g., G. S. Jenks, 'On the sanitary state of the town of Brighton . . .' (1840), in British Parliamentary Papers (Lords), 1842, XXVI.

[78]   B.A.L., SB352.1 B76 (acc. no. R 65919), re-rating survey, 1814.

[79]   Farrant (1978), 73-78. E.S.R.O., deeds transferred from Hove Area Lib. *Attree's topography of Brighton* (1809).

[80]   Cobby. Decennial censuses, 1801, 1811, 1821.

[81]   S. P. Farrant, 'Building on Brighton's West Laine c. 1779-c. 1830', *Brighton Polytechnic Review* (Summer 1979), 8-11.

[82]   Gilbert, 67-71.

[83]   A. Dale, *Fashionable Brighton*, 2nd ed. (Newcastle, 1967), 70-148.

Sources for the figures:
Fig. 1 E.S.R.O., AMS 4106, and B.A.L., SB9 B76 (acc. no. 74318), map and book of reference giving the ownership of the laines in 1792 and, in the book, in 1738/9. The sheepdown ploughed up between the two dates is shown as down. The groynes in front of the town are from C. Lemprière, 'South view of Brighton in the year 1743' (sketch in Brighton Museum & Art Gallery).

Fig. 2 Webb and Wilson

Fig. 3 T. Budgen, *A new and correct plan of Brighthelmstone* (Brighton, Sept. 1788). The only known original copy is B.L., K.42.16.

Fig. 4 'Brighthelmston, 1822', map in *The stranger in Brighton & Baxter's new Brighton directory* (Brighton, 1822).

UTOPIA RECONSIDERED: EDMOND HOLMES, HARRIET JOHNSON AND THE SCHOOL AT SOMPTING

by M. H. Hyndman

Published in 1911, Edmond Holmes' influential book What Is and What Might Be *contained much adverse criticism of the quality of teaching in English elementary education. Holmes, who for some years had been His Majesty's Chief Inspector of Schools, maintained that the principal hope for the future lay in the teaching methods of Harriet Johnson, whose school at Sompting (West Sussex) he took as the subject of the latter half of his book.*

Harriet Johnson was headmistress at Sompting from 1897 until 1910; her career and life were in many ways unexceptional. This article attempts to re-examine the circumstances under which she developed her individual approach to children's education during the early years of the present century.

Two main features distinguish Harriet Johnson's methods from those of most of her contemporaries: her treatment of the subject of Nature Study (which in many ways constituted the core of her curriculum) and the way in which she and her pupils dramatised lessons whenever possible. To a large extent she anticipated the trend towards child-centred education which was to culminate in the Plowden Report of 1967. But at the same time she was evidently at pains to avoid the dangers of inadequate preparation in the 3 Rs which have sometimes been attendant upon progressive approaches to teaching.

In 1911 Edmond Holmes published *What Is and What Might Be*. The book contained a bitter, sustained and wide-ranging attack upon the curricular ethics of English elementary schools. Holmes himself had until a short time previously been Chief Inspector of Schools, so he presumably wrote with some authority. In his preface to the book Holmes was at pains to emphasise that his strictures were intended for the system alone; teachers, he maintained, were no more than

> ... the victims of a vicious conception of education which has behind it twenty centuries of tradition and prescription and the malign influence of which was intensified in their case by thirty years or more of Code despotism and 'payment by results'.[1]

But Holmes' protestations of goodwill towards elementary teachers were largely foredoomed. The previous year he had been at the centre of a major controversy which for some months had convulsed a large section of the educational world. The focal point of this had been a scathing memorandum which he had prepared on the subject of local school inspectors and their shortcomings. Although the Holmes memorandum had been a confidential document, its contents had leaked out and incurred the wrath of the National Union of Teachers. The resultant acrimony ensured that the reception given to Holmes' book was something less than unreservedly enthusiastic. Holmes' style, at once both florid and polemical, was not likely to conciliate doubters; even his choice of the word 'vicious' to describe traditional attitudes towards teaching was unfortunate: it had appeared twice in perhaps the most controversial paragraph of his memorandum. As the reviewer in *The Schoolmaster* acidly remarked: 'The reformative value of

What Is and What Might Be will be discounted largely by the teachers' natural mistrust of the man who penned E. Memorandum 21 . . .'[2]

In 1911, then, it may be assumed, anyone who had Holmes as a friend needed no enemies—at least among the elementary teaching profession. This was particularly unfortunate for the figure who had unequivocally emerged as the heroine of the 'What Might Be' section of Holmes' book: Harriet Johnson, the headmistress of the elementary school at Sompting in Sussex, to whom, in his own words, he owed in large measure 'whatever modicum of wisdom in matters educational I may happen to possess'.[3]

What Is and What Might Be is, as the title implies, a two-part book. The first half, sub-headed 'The Path of Mechanical Obedience', contains Holmes' critique of what he considered to be the perverted assumptions and criteria of western civilisation and, more to the point, their manifestation in the system of payment by results which, he asserted, 'seems to have been devised for the express purpose of arresting growth and strangling life, which bound us all, myself included, with links of iron, and which had many zealous agents, of whom, I, alas! was one.'[4]

Holmes attributed his subsequent enlightenment to the visits which he paid to the school at Sompting (which he refers to throughout his book as 'Utopia'), where Harriet Johnson worked among her pupils as 'the very symbol and embodiment of love, the centre whence all happy, harmonious, life-giving, peace-diffusing influences radiate'.[5] His description of life within the school, indeed, rates as a seminal piece of twentieth century progressive educational writing:

> . . . the activity of the Utopian child is his own activity. It is a fountain which springs up in himself. Unlike the ordinary schoolchild, he can do things on his own account. He does not wait in the helplessness of passive obedience, for his teacher to tell him what he is to do and how he is to do it. He does not even wait, in the bewilderment of self-distrust, for his teacher to give him a lead. If a new situation arises, he deals with it with promptitude and decision. His solution of the problem which it involves may be incorrect, but at any rate it will be a solution. He will have faced a difficulty and grappled with it, instead of having waited inertly for something to turn up. His initiative has evidently been developed *pari passu* with his intelligence; and the result of this is that he can think things out for himself, that he can devise ways and means, that he can purpose, that he can plan.[6]

The teaching at Sompting school evidently had a profound influence upon Holmes. To what extent was his enthusiasm justified? Holmes himself ultimately became aware that the credulity of some of his readers had been strained by his description of the school. In his sequel to *What Is and What Might Be* he was to admit that 'Some of my readers happened to know that I was of Irish birth, and had published some volumes of verse. They naturally jumped to the conclusion that I was a wild enthusiast, with no sense of measure, either in praise or blame, and that my picture of the Utopian school, if not largely imaginative, was, to say the least, extravagantly over-coloured.'[7]

Any re-evaluation of Harriet Johnson's work at Sompting inevitably depends upon the information available. The principal documentary sources (apart, that is, from Holmes' books) are to be found in Harriet Johnson's own *The Dramatic Method of Teaching,* in her surviving papers and in the relevant log books of Sompting Mixed Elementary School. These sources are supplemented by descriptions of life at the school which have subsequently been given by a small number of her ex-pupils.[8]

Harriet Johnson was born in 1871; she passed her Certificate Examinations in 1892 and received the certificate itself two years later. She had neither been a pupil teacher nor had she attended a training college. It is possible that she and her sister Emily were compelled to enter teaching by financial pressure following the accidental death of their father, a master-builder. While

working for her certificate examinations—in her own words 'teaching by day . . . and studying by night for five days a week, and attending classes on Saturday mornings'—Harriet was employed at St. Mary's School at Willesden. After eight years there and a short spell under the Tottenham School Board she obtained the post of Headmistress at Sompting in 1897, her sister being appointed simultaneously to the infants' class at the school. Harriet and Emily Johnson remained at Sompting school until 1910, when they both resigned in order to get married. Harriet herself never subsequently returned to full-time teaching, helping instead her husband (the village wheelwright and carpenter) in his family business and remaining in the Sompting area until her death in 1956.

How, then, did a teacher whose career apparently followed so unexceptional a pattern come to attract first the notice and subsequently the unstinting praise of His Majesty's Chief Inspector? The prosaic truth seems to be that Harriet, a determined publicist of her school's achievements, had already attracted a certain degree of local notice and renown before being 'discovered' by Holmes.[9]

According to the log book, the latter's first visit took place on 26 November 1907. He was accompanied—significantly—by Edward Burrows, the local H.M.I., who had himself first visited the school in April 1904 with the then H.M.C.I. Cyril Jackson. In her own book, Harriet Johnson paid tribute to the support her ideas had received from both Burrows and Holmes, reserving warm words for both: '. . . none of the Sompting scholars will ever forget Mr. Burrows—their friend more than their inspector' she wrote; and continued, 'There is a long list of His Majesty's Inspectors to whom we owe more than we can repay, and the list is headed by the name of one who would fain give childhood its proper space to grow, develop, breathe, and *really* live—our late Chief Inspector.'[10]

When the two Johnson sisters were appointed to the school at Sompting in 1897 there were rather more than a hundred children on the register. 'The scholars are well-behaved and their instruction is commendably efficient' stated the inspector's report for the previous year. For the first two years the school log books contain little evidence of curricular innovation—in July 1899, for example, the older boys began for the first time to use brushes and water-colours in art at the suggestion of E. G. Baker, a sub-inspector who had recently visited the school. It was, in fact, not until 1900 that Harriet Johnson appears to have begun to establish herself as a teacher of originality and initiative: on 10 February of that year the local paper *The Worthing Gazette* reported that she had initiated a scheme by which the senior scholars at Sompting would regularly exchange letters with children of similar age in Canadian schools. This letter writing was supplemented by a lantern-slide lecture given by Harriet Johnson for the older children and villagers on the evening of 8 March—the first evidence of her growing concern to involve parents as well as children in the work of the school. Replies began to arrive from Canada towards the end of the month: 'much interest evinced and information received' she noted, recording a few weeks later that there had been a great improvement in the Composition of the upper classes. Meanwhile one of the pupils had written to Lord Roberts (the commander of the British forces in South Africa) and received back an autographed letter. This also received mention in the local press, as did the part played by the school and its headmistress in the celebrations which marked the relief of Mafeking in May 1900. At the end of May school work was suspended for a short while so that the surrender of Pretoria could be discussed and later in the year an ex-pupil of the school who had served in the Boer War came to talk about his experiences to the children.

By mid-1900, therefore, it would appear that Harriet Johnson was running her school along imaginative lines but ones which were still fairly firmly within the framework of conventional teaching. But in July of that year a note of decisive variation first became apparent: on the 19th the first class were taken on an out-of-school expedition to a fig-garden and grape-houses in the

neighbourhood; this was followed up by project work which took the form of letters written by the children to *The Worthing Gazette*. Some of these were subsequently published[11] on the paper's syndicated children's page; 'my only regret' remarked the editor 'is that I cannot print them all and produce the admirable handwriting of our correspondents.' On the following day the boys of the first class began drawing from nature in a nearby field, while on 26 July the whole of Standard 3 were taken for a ramble to a chalk-pit, collecting specimens of flowers *en route*. Drawing and Nature Study were to become subjects in which the pupils of Sompting School excelled. Harriet herself was later to write of her determination to teach Nature Study by direct observation '. . . it must not be Nature filtered through pictorial illustration, text-book, dried specimen, and scientific terms, finally dribbled into passive children's minds minus the joy of assimilation'. So during 1901 and 1902 out-of-classroom activities became an established feature of the curriculum. Nature walks took place in the Summer and Autumn terms while the boys dug up part of the school grounds to grow vegetables and the girls did cookery on the stove of the school house. In 1901, for example, the outside activities took the form of a visit by Standards IV and V to the beehives belonging to the vicar (who gave a practical demonstration in beekeeping), an object lesson ramble by Standard II 'to learn about hills and valleys, brooks and rivers', while the upper standards made expeditions first into the country and then down to the sea shore. Cookery was started on 18 September 1901 when the girls of the top class baked scones; in November they graduated to apple-pie and early in 1902 they attempted plum cake (a 'great success' noted Harriet). In the same period the boys began the cultivation of a school garden: lettuces, radishes and potatoes were planted in the course of the autumn and winter. Both cooking and gardening became notable and popular features of the Sompting curriculum: in 1904 the *West Sussex Gazette,* reporting a lecture given to a conference of local teachers and managers by Harriet Johnson on the subject of Nature Study, added that

> great laughter greeted the statement that young scholars who had no other means of cultivating their own little patches attached to their cottages, were annexing miniature allotments by the roadside.[12]

Perhaps it was significant that Edward Burrows, H.M.I., was another speaker on this occasion.

In the first years of the twentieth century, then, Harriet Johnson managed to establish a considerable local reputation for herself and for her school. This was acknowledged in 1903 by her appointment to the educational Advisory Committee of the West Sussex County Council. There can be little doubt that she had something of a flair for advertising her ideas, sending samples of her pupils' work and news concerning fresh ventures to the local papers. Her own scrapbook of cuttings contains extracts from no fewer than twelve articles mentioning activities at the Sompting school during the years 1900-3. These range from patriotic fund-raising for the widows and orphans of British soldiers killed in the Boer War to May Day festivities: as an ex-pupil of the school recalled:

> The 1st of May was a great day at Sompting School each year. We all met in the playground in the morning preparatory to parading around the Village. The May Queen and her two Maids of Honour were conveyed in a Donkey Chaise—decorated and complete with a canopy of greenery arranged by the gardeners of Sompting Abbots (this was the Squire's residence). Most of the children carried garlands and wore necklaces of flowers—all home made. We stopped at various houses *en route*—to perform Maypole and Country Dancing—until midday. In the afternoon we reassembled and walked up to Sompting Abbots for games, followed by tea on the lawn.[13]

Competition entries from the school repeatedly won mention and praise from the editor of the Children's Page who was eventually moved to comment that 'There must be something in the air of Sompting that is good for spelling. When I want to write a new dictionary I shall go and stay there until my task is done'.[14]

This evidence of high attainment in literacy is corroborated by Edmond Holmes himself. In one section of *In Defence of What Might Be* (the sequel to his 1911 book) he took some trouble to rebuff various attacks which, he alleged, had been made upon the professional ability of Harriet Johnson (to whom he refers as 'Egeria'):

> ... I am told that the written work of the Utopians was so unsatisfactory, that they wrote, spelt, and 'composed' so badly, that Egeria thought it desirable to 'fake' their exercise books. The answer to this ridiculous slander—for it is nothing else—is in my hands. During one of my visits to the school I asked all the children in the main room—Egeria's own pupils—to write compositions for me, each selecting his (or her) own subject. There were forty-six children in the room, ranging in age from eight to fourteen ... I stayed in the room while they were writing; and I can answer for it that Egeria never went near them nor said a word to any of them. I have kept all the compositions. ... The spelling is not immaculate, but in only six cases is it noticeably bad. I have gone carefully through the exercises. I find that in the First Class (twenty-one children present) the average number of words in each exercise is 336, and the average number of mistakes in spelling, four; and that in the Second Class (twenty-five children present) the average number of words is 150, and the average number of mistakes, five.[15]

To the whole-hearted support of the H.M.I.'s Holmes and Burrows must be added that of the local West Sussex C.C. inspector, F. Witcomb: his 1906 report on Sompting School commented at some length upon the brightness and attentiveness of the children, and upon the 'very intelligent interest' which they showed towards all their work.[16]

The most detailed accounts of Harriet Johnson's methodological beliefs as they stood at the end of her teaching career is to be found in her book *The Dramatic Method of Teaching*. As the title itself suggests, the dramatisation of lessons had become by then the most prominent feature of her approach: History, Geography, English and even Arithmetic and Nature Study were dealt with in this way.[17] In the later years of her work at Sompting drama appears increasingly to have eclipsed Art and even Nature Study as the focus of her attention.

From what she wrote in her book it would seem that her ideas on teaching were based more upon commonsense pragmatism than upon theory. Though she appears to have freely adapted Froebel's kindergarten methods for use in her school, her own account implies that her approach to teaching was an intensely personal one which she had perfected by a down-to-earth process of trial and error at her own school. This practical approach placed her within the mainstream of an unco-ordinated but nevertheless influential British progressive movement within education. Stretching back at least as far as David Williams and Maria Edgeworth in the late eighteenth and early nineteenth centuries, this tradition included such later figures as Robert Owen and Richard Dawes and was eventually, with the support of a section of Her Majesty's Inspectorate, to have a profound and controversial effect upon educational practice during the mid-twentieth century. The Plowden Report of 1967 regarded it as the most significant contributory factor to the progressivism which it claimed (possibly erroneously) to discern as 'a general and quickening trend' within English primary schools.[18] Harriet Johnson herself was at some pains to stress the non-theoretical nature of her teaching. As she put it:

> ... we (even the most thoughtful of us) may lose sight of the *child* in our hunt for the *method*. It was my endeavour to treat with children rather than with methods and theories which led me to throw more and more of the initial effort on to the children themselves.[19]

A child-centred approach such as this meant that relationships within the school had to be adjusted, in Harriet's own words, 'to a condition in which the inmates had really lost and *forgotten the relationships of teacher and scholar,* by substituting those of fellow-workers, friends and playmates

. . .'[20] On to this relatively standard informalism she grafted her more idiosyncratic ideas concerning the use of drama in teaching. History was the first topic taught in this way, mainly because Harriet found it incompatible with her original core subject of Nature Study. 'Children', she observed, 'are generally sincere and love to deal with a story that really is true.' By dramatizing historical events (such as the Peasants' Revolt and the trial and execution of Charles I) and by transferring much of the work out of the classroom, Harriet claimed to enhance the involvement of both teacher and scholars.

One important result of the outward-looking nature of the teaching at Sompting was the way in which the children acquired a practical outlook. Cooking and gardening have already been mentioned; the pupils also constructed a shed (as part of a project on prehistory), a raft (inspired by a reading of Richard Jefferies' *Bevis),* fenced their vegetables and flower plots in the school playground, made props for the various plays enacted in school and, of course, did a great deal of painting and drawing.[21] Evidence of the imaginative and open-ended yet down-to-earth spirit which permeated the school can be seen in the following description of one of the schemes for teaching arithmetic:

> Land-measuring with a real chain made a good game for the elder boys, who actually by this means measured up and made a 'wheat field' (to scale) in the playground. After watching it grow they had a real harvest (one boy brought a tame rabbit and hid in the cornfield, so that, when the corn was cut, a real rabbit might be found!) and got a neighbouring farmer to have their wheat threshed with his. The grain which he sent back they measured up, and then worked by proportion the amount which might have come off an ordinary-sized wheat-field, prices, profits, etc. Further, they sent the bag of grain to the miller's to be ground, and the girls baked a loaf out of the resulting flour. Could boyish enterprise do more? And, remember, the wheat-field was planted on what had previously been hard, flinty playground—beaten down by generations of little scholars with sturdy legs and good strong boots! The young pioneers removed about two tons of flints and marl, with which they repaired the lane leading to the school, and filled the space with road-drift and leaf mould of their own collecting.[22]

It goes almost without saying that Harriet Johnson's interests transcended the education of children *qua* children. Like Richard Dawes fifty years earlier and like, too, the Plowden Committee half a century later, she had a strong commitment to community involvement. She organized a drama, folk-song, music and Morris dance group among the mothers of her pupils and supervised an elaborate village production of Shakespeare's *Julius Caesar.* It was during the rehearsals of this play that Harriet came to know George Weller, the local wheelwright, who was assigned the title role. Their friendship and subsequent marriage ensured that she would settle permanently in the Sompting area: 'really it seemed we had reached the ideal state of village life' she later wrote 'and had made one or two steps towards reintroducing "Merrie England"'.[23]

Harriet Johnson left her post in 1910 in order to marry George Weller. She was replaced at Sompting School—apparently to the disgust of many of her pupils—by an altogether more conventional school teacher. At about the same time, her most influential supporter at the Board of Education, Edmond Holmes, resigned under a cloud of controversy. During the decades which followed the contribution to advanced methods of instruction made by Harriet Johnson and teachers like her tended to be overlooked by educationalists (a fickle group at the best of times) in favour of the better publicised and allegedly more objective works of such social scientists as T. Percy Nunn, Susan Isaacs and Jean Piaget. But, more recently, Holmes' description of Harriet Johnson's school at Sompting has re-emerged to become widely regarded as a commentary of primary importance upon the evolving pattern of teaching in the early years of the twentieth century.

NOTES

[1] E. G. A. Holmes, *What Is and What Might Be* (London, 1911), vi.

[2] *The Schoolmaster,* 1 July 1911, 28.

[3] E. G. A. Holmes (1911), 154.

[4] Ibid., vii.

[5] Ibid., 210.

[6] Ibid., 155-6.

[7] E. G. A. Holmes, *In Defence of What Might Be* (London, 1914), 333.

[8] The papers of Harriet Johnson remain with her family and the log books of her school are deposited at White Styles Middle School, Sompting. The present writer would like to express his thanks to Miss E. M. Weller and to the Headmaster and Managers of White Styles Middle School for the great help which they accorded him while he was preparing this article. An extended essay by A. T. Ternent, *Ahead of Her Time* (1971), contains a certain amount of reminiscence material relating to Harriet Johnson; a copy is held by the West Sussex Record Office.

[9] E. G. A. Holmes (1911), 154.

[10] H. Finlay Johnson, *The Dramatic Method of Teaching,* 14.

[11] *The Worthing Gazette,* 3 October 1900.

[12] *West Sussex Gazette,* 14 December 1904.

[13] Reminiscence of Miss Elsie Weller, 1975.

[14] *The Worthing Gazette,* probably 1901.

[15] E. G. A. Holmes (1914), 339-340.

[16] Harriet Johnson papers.

[17] The dramatisation of lessons—and its possible consequences—improbably formed the plot of one of Saki's short stories *(The Schartz-Metterklume Method)* which was published in 1914. At least 3 books reviewed in *The Schoolmaster* between 1911 and 1914 dealt with the use of drama in teaching.

[18] *Children and Their Primary Schools* (HMSO, 1967), paragraph 550.

[19] H. Finlay Johnson, 15.

[20] Ibid., 20-22 passim.

[21] In late 1907 Edward Burrows came to Sompting with H.M.I. H. Tunaley and together they inspected the art. It was probably as a consequence of this visit that the informal report quoted by Holmes (1911, 178-9) was submitted: 'In this school the teaching of Drawing reaches the highest educational level I have hitherto met with in our elementary schools, and the results are the genuine expression of the children's own thoughts.'

[22] H. Finlay Johnson, 232-3.

[23] Ibid., 255-6.

Author: M. H. Hyndman, Westminster College, Oxford, OX2 9AT.

OBITUARY

FRANCIS WILLIAM STEER,
M.A., D.Litt., F.S.A., F.R.Hist.S., Maltravers Herald Extraordinary
1912–1978

Francis Steer who died at Chichester on 23 September 1978 was born at Ashington, Essex on 10 August 1912. The only child of elderly parents, his childhood was solitary and this no doubt fostered his scholarly habits and love of books. To his lasting regret he did not go on from Southend High School to the University, and it was only in 1946, at the age of 34, after a spell in the City, that he found his true vocation when he returned to Essex as Assistant Archivist in the County Record Office. He was fortunate in that his native County had been one of the first to recognise the importance of preserving historic documents. Francis Steer, with his wide knowledge and his exceptionally high standard of scholarship was able to add to its already established reputation.

In 1953 he became County Archivist to West and East Sussex and Canon Lancelot Mason recalls the reactions of the selection committee to the man who was their unanimous choice. They thought Francis Steer looked more like a secret agent than an archivist and that if dressed up in an opera hat with a black cloak and a wand he would make a wonderful pantomime wizard! In fact he had something of both in his makeup. No secret agent could have been more successful and persistent in ferreting out historical secrets, no wizard more skilled in conjuring up grants for his schemes. His county-wide post was only possible because the two Record Offices were in their infancy. His predecessor, Campbell Cooke, appointed in 1946 was the first County Archivist and he had died before he had had time to make more than a start. Steer did not drive a car and, ever conscious of the responsibility of using public funds frugally, seldom hired one. After a few years the growing work and the strain of train journeys across Sussex led him to resign East Sussex on grounds of health and from 1959 he concentrated on the Chichester office. Bishop Bell had already set up a Diocesan Record Office attached to the County Office and under Francis Steer both collections grew apace. He proved as gifted in handling people as documents. Francis cloaked his determination to get his own way with an old world courtesy that was very persuasive in the right quarters and influential allies agreed to join the Record Committee. Thus it was that he got the Records moved from their original home in the cellars of County Hall, where the various working and storage spaces were connected by tunnel-like passages under pipes, below which the researcher had to duck. In spite of strong opposition he secured for the Records the gracious setting of the fine eighteenth century 'Wren' house in West Street, which he insisted should be given henceforth its correct name of John Eade's House.

Francis Steer did not restrict his activities to sorting and cataloguing and arranging for the repair of documents already in his care. He made forages into the county, tracking down archival collections and getting the owners' consent to their deposit in the Chichester Office, while either he himself or his assistants catalogued the great estate archives at Arundel, Petworth and Goodwood. Under his leadership a series of printed catalogues were published.

His capacity for work, in spite of indifferent health, was prodigious. His daily post often

brought over thirty letters, many of them requiring research before he could answer them. Blessed with an excellent wife he would return after a long day's work to a good supper and the hours from 7 till 9 p.m. were his 'sacred hours' when he hoped people would refrain from telephoning to him: after 9 he would answer calls until 11 p.m., taking endless trouble to supply his friends with advice and information. He had a wonderful memory and could often give an exact reference, not only to a book but to a page. When he came to Chichester there was no county archaeologist, no museum curator, no one to whom one could turn with confidence on questions of local history. Francis Steer, with his wide knowledge and interest filled the gap and became the leader in anything concerning the history of the district. He took a leading part in the establishment and direction of the City (now District) Museum. In 1955 he initiated and became the editor of a series of Chichester papers. More than 50 admirable monographs were published by the City, half of which were written by himself or in association with other scholars. In close touch with the Dean and Chapter, he contributed a number of articles to the Cathedral Journal and later became honorary archivist and Librarian, planning the complete restoration of the Cathedral Library, which entailed personally removing the books while structural work was carried out, and bringing them back into the Triforium when new bookcases were ready. He was an enthusiastic supporter of the Chichester branch of the Historical Association, the Civic Society and the Sussex Historic Churches Trust. If he agreed to join a committee he was always an active member. For example, in connection with the Churches Trust he wrote guides for many of the churches, prepared an illustrated brochure to advertise the work of the Trust, took a major part in organising an exhibition of works of art in private hands to raise money and latterly became chairman of the Executive Committee and did a major task in reorganising the Trust's official records and correspondence files.

His retirement as County Archivist in 1969 opened up new fields and for the rest of his life Chichester became a base from which he travelled near and far. He now held official posts as archivist to New College, Oxford, archivist and librarian to the Duke of Norfolk (entailing work on the Duke's Yorkshire estates as well as at Arundel), and cataloguer of the manuscripts of the College of Arms. These three new posts, together with that of Cathedral Librarian, gave him great pleasure. In them he was brought into close association with institutions rooted in history. Although he lived simply at home he enjoyed ceremony and ritual. He was happy with a picnic when on some expedition to visit a church or ancient building, but he also delighted in good food and wine. He greatly appreciated the privilege accorded him of a set of rooms in New College together with the fellowship and conversation of the High Table and the great College feasts. Amidst all his other ploys he produced in 1974 a weighty catalogue of the College archives. He had a bed also in the College of Arms and was pleased to belong to the City fraternity of Parish Clerks, representing St. Benet, Paul's Wharf, opposite the college. He was a Citizen and Scrivener of London and in 1968 published a commentary on the Scriveners "Common Paper" 1357-1628. He loved to tell of the hospitality he enjoyed when invited to the Halls of other City Companies. At Arundel too he had a *pied à terre*. The Duke set aside a room for him with fire laid and bed made up. Francis enjoyed moving in these elevated circles: his own income was modest and spent largely on books, but he was a generous man and would have enjoyed being a wealthy patron of scholars. He was able to fill this role vicariously when he became Secretary to the Trust founded by his friend, Marc Fitch to promote scholarship.

In 1973, through his close friendship with the Duke of Norfolk, Francis Steer was made Maltravers Herald Extraordinary, a rare honour for which the occasion was the Queen's Silver Jubilee. By then his lack of academic qualifications had been removed by the award of a Lambeth
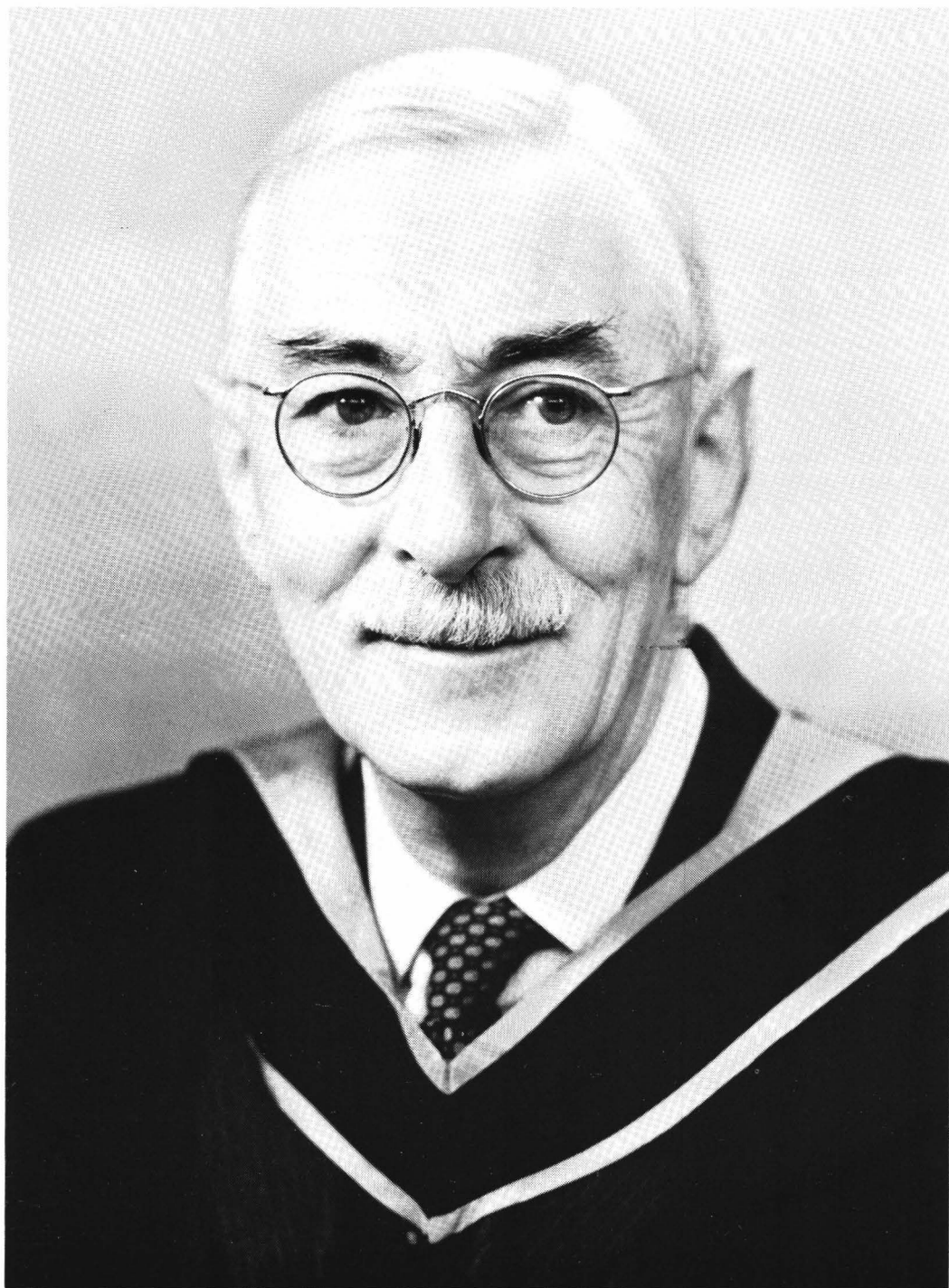
F. W. Steer

degree of M.A. conferred by the Archbishop of Canterbury and secured for him on the initiative of·
Bishop Bell and this was followed in 1974 by an Honorary D.Litt. of Sussex University. Francis
liked wearing academic robes, but the Garter service at Windsor and the state opening of
Parliament when he wore the Herald's outfit were the greatest moments of his life. He derived
enormous pleasure from dressing up in the medieval costume, from the velvet cap and rich tabard to
the buckled shoes which he 'broke in' by wearing them after dark walking round the walls of
Chichester. Members of the Archaeological Society will remember the delightful lecture he gave on
the College of Arms at the Autumn meeting, 1974.

Francis Steer's association with the Society and with the Record Society began as soon as he
came to Sussex and he was a member of Council from 1954 and contributor of a number of articles
to the Collections. It was characteristic of his thoroughness that as a member of Council Francis
made it his business—and pleasure—to arrange a tour of all the Society's properties so that he
could speak of them from personal knowledge. He served on the committees of Fishbourne in the
West and Michelham in the East—where his memory will live in the copper beech tree he presented
and planted. In 1959 he succeeded his old friend Dr. Salzman as editor. It was sad that his term of
office coincided with a time of financial stringency. Costs of printing were rising and the Society
was not in a position to increase the allocation to the Editor. Francis was meticulous in money
matters as in all else. If a figure was fixed in the budget he saw that it was not exceeded. Hence the
volumes he edited became slimmer each year and with limited space he could only print the articles
submitted to him and dared not invite contributions for which he would have no room. But if the
contents were restricted, the standard of editing was exemplary: he had exacting standards and
would not tolerate slipshod careless work. He always wrote his papers by hand—an exceedingly
neat small hand—saying that this would ensure that the printer would employ a good compositor
and not leave the work to a novice only capable of dealing with typescript.

It was a fitting recognition of the many hours he had given to the Society's business that he
was elected President for four successive years, 1973-6.

Francis Steer did not suffer fools gladly and never forgave rudeness, but he was the kindest of
friends and did not spare himself in helping those in whom he found integrity and a genuine quest
for knowledge. His sense of humour and his fund of anecdotes made him the most delightful host
and companion. With his impressive knowledge as an enthusiastic amateur (in the true sense) of
archaeology, architecture and history Francis Steer seems the last of the great amateurs who did so
much to establish the reputation of the Sussex Archaeological Society and to extend knowledge of
the County's history, but at the same time his expertise as an archivist links him to the modern
generation of specialists. By any standard he must rank as one of the most distinguished of our
former members.

K. M. E. Murray

ARCHAEOLOGICAL NOTES

This section of the *Collections* is devoted to short notes on recent archaeological discoveries, reports on small finds, definitive reports on small-scale excavations, etc. Material for inclusion should be sent to Mr. Alec Barr-Hamilton, 226 Hangleton Road, Hove. Those without previous experience in writing up such material for publication should not be deterred from contributing for Mr. Barr-Hamilton will be happy to assist in the preparation of reports and illustrations.

Ancient Monuments in Sussex

The following monuments have been scheduled since publication of the last list in *S.A.C.* 117 (1979).

County

Number	Parish	*East Sussex*
430	Newhaven	Newhaven military fort (added to lunette battery).
459	Brighton	Round barrow in Pudding Bag Wood.
460	Falmer	Medieval enclosure W. of Newmarket Plantation.
467	Litlington	Long (oval) barrow 640 yds. SSE. of Manure Barn.
472	Westfield	Late medieval kiln site E. of Park Wood.
476	Playden	Ring ditch and enclosure SE. of Mockbeggar.
480	Isfield	Buckham Hill, deserted medieval village.

		West Sussex
125	Coldwaltham	Hardham Roman camp north of railway line (additional area)
448	Boxgrove	Hillfort on Halnaker Hill and windmill.
464	Hurstpierpoint	Randolph's Farm Roman villa.
466	Harting	Torberry hillfort.
471	Worth	Warren Furnace.
473	East Lavington	Two round barrows near Barnett's Farm.

A Flint Handaxe from Botolphs

The handaxe shown in Fig. 1 has been brought to my notice. It was found several years ago by workmen digging a trench at Botolphs on the west side of the River Adur. The exact site is uncertain, but it is probable that the findspot was in the region of TQ 187 096, at a height above Ordnance Datum of *c.* 23m (75ft.). The depth of the trench is believed to have been about 0.6m (2ft.) and consisted of chalky soil. The implement is now in the possession of Mr. O. Duke of Steyning who has kindly allowed it to be drawn and published. I am indebted to Dr. A. Woodcock, who is making a special study of the Palaeolithic in Sussex, for providing the following report.

E. W. Holden, F.S.A.

The implement is a fine example of a Lower Palaeolithic Acheulian handaxe. Its maximum existing dimensions are: length 194mm, breadth 109mm, thickness 46mm, and its weight 775g.

The general shape of the handaxe is that of a 'ficron', the long edges being slightly concave, and the point of maximum breadth low down towards the butt. It has been carefully trimmed to produce an elongated point and a cutting edge which extends all round the implement, except for one small area of cortex which remains on the butt at its point of maximum breadth. Although the extreme tip of the implement is missing, having been broken in antiquity, there is no indication that the tip was ever twisted, a deliberate feature found on some implements of this type.
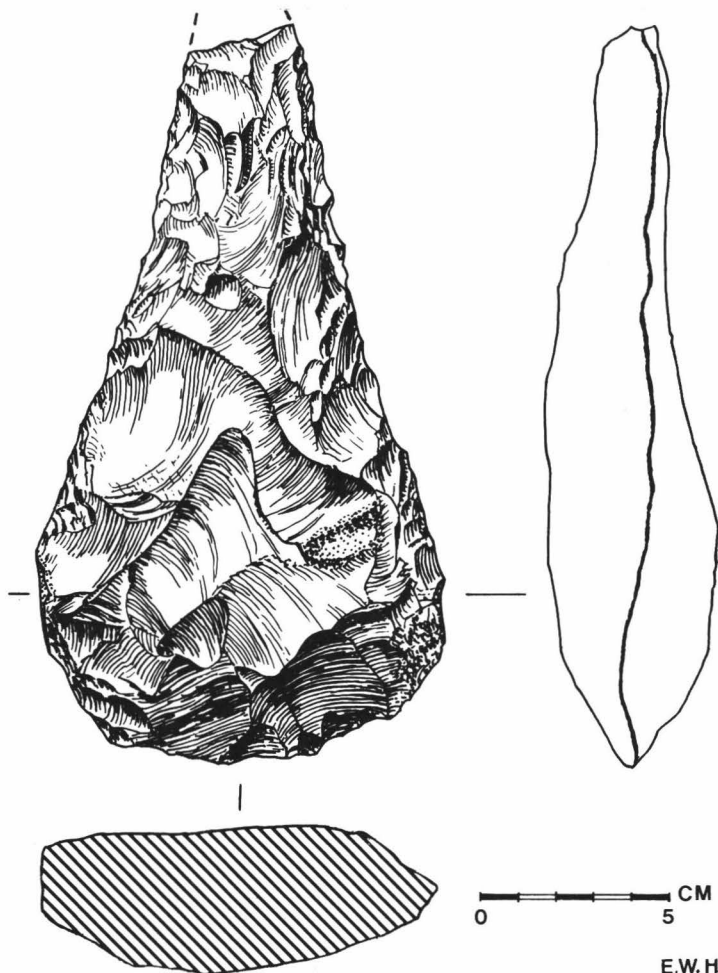
Fig. 1.
Flint handaxe from Botolphs.

E.W. H.

The handaxe has been manufactured from a nodule of light grey flint with cherty inclusions. Patches of the cortex survive on one surface and along part of one edge. The implement has become patinated to a light, speckled ochreous colour which is of equal intensity over both surfaces. It is only slightly abraded in its condition although some recent damage has occurred to the edges. One surface shows small areas of pitting, caused by weathering and consequent deterioration of the flint surface.

Handaxes of the 'ficron' type are rare in Sussex and this must be the best example so far discovered in the county. Whether this paucity reflects an actual situation, or rather the lack of exploitation of suitable implementiferous deposits, is not clear. This form is a common one, for example, in many of the Hampshire gravels, as within the well-known Warsash deposits (Burkitt *et al.* 1939).

Neither the position, nor the circumstances of discovery, is helpful in providing a clue as to date, for the condition of the implement suggests that it may have travelled some distance from its original point of deposition. The form itself is not one that can be dated with precision. Such a hand axe is most likely to fall within Group 1 of the handaxe groups defined by Roe (1968), which spanned the late Hoxnian to Wolstonian periods and it is quite probable that this implement falls within this time-span also.

A. G. Woodcock

Burkitt, M., Paterson, T. T. and Mogridge, C. J. 1939 'The Lower Palaeolithic Industries near Warsash, Hampshire', *Proc. Prehist. Soc.* **5,** 39-50.
Roe, D. A. 1968 'British Lower and Middle Palaeolithic Handaxe Groups', *Proc. Prehist. Soc.* **34,** 1-82.

An Unusual Flint Implement from Blackdown

On Christmas Day, 1978, we came upon a flint implement, of distinctive shape, lying by the side of the main north-south path on the top of Blackdown (SU 920 295). The path had recently been cleared by bulldozer in order to facilitate forestry operations. About twelve unworked flint flakes were found scattered at intervals along the same section of path within 100 m or so of the implement. The Mesolithic site, excavated by Allen Chandler in 1903, lies about 0.8 km to the north of where the implement was found. There is no evidence of Neolithic or Bronze Age occupation on the summit of Blackdown.

The implement (Fig. 2) measures 65 mm long, 30 mm wide, and 18 mm deep along the thick convex edge. It has the general shape of an asymmetrical crescent, one end of which tapers almost to a point. The concave edge is thinner, and coarsely serrated. There is a well-marked narrow band of 'corn gloss' along the serrated edge but none elsewhere.

The general shape and appearance of the implement suggest that it had been used as a sickle. According to E. C. Curwen,[1] the flint sickles of Northern Europe usually consist of a single piece of flint, as opposed to the composite implements found in countries bordering the Mediterranean. Single-piece sickles may be hafted in one of two ways: (1) by setting the whole length of the convex edge in a groove cut in the concavity of a curved stick; or (2) by inserting the tapered end of the flint blade in a hole made in a straight wooden handle. The first method was used for hafting the crescentic sickles described by Steensberg in Denmark.[2] In these elegant implements, both faces and both edges have been carefully worked and the thin convex edge is clearly intended to fit into a narrow groove in the concavity of a curved stick. The very thick convex edge of the implement described here would be quite unsuitable for this type of fitting. On the other hand, its tapered end could well be a tang intended to slot into a hole in a wooden handle. It therefore seems probable that our implement was hafted in Curwen's second mode.

The presence of a well-marked 'corn gloss' would seem to support the idea that the implement had been used as a sickle. However, experiments by Curwen[3] showed that the same type of gloss can be produced by sawing wood, as by cutting straw. There was, though, a difference in the distribution of the gloss:
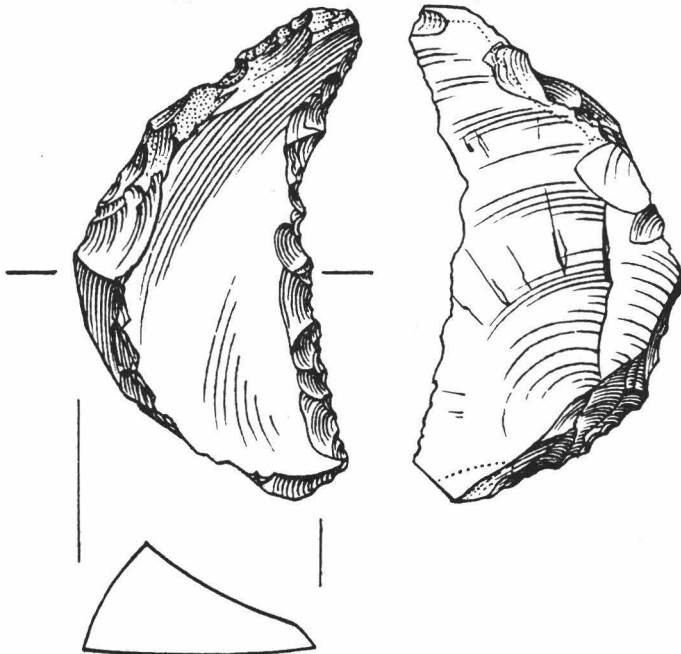
MARTINGELL '79.

Fig. 2.   Flint implement from Blackdown, drawn by Hazel Martingell (1:1).

when cutting straw, it was spread widely over the surface of the blade, whereas when wood was sawn it was confined to the serrated edge; this difference is explained by the fact that Curwen's flint saw, although it cut 'as easily as a ·sharp steel saw', did not penetrate the wood to a greater depth than $\frac{1}{8}$ inch. Since the gloss on our implement is confined to the serrated edge, these observations by Curwen would favour the idea that it had been mainly used as a saw. The same conclusion is supported by Steensberg's[2] experiments, which showed that serrated flint sickles were on the whole less efficient at cutting straw than those with a plain edge, suggesting that the toothed implements had more probably been used as saws or leaf-knives.

Although serrated flakes have mostly been found in a Neolithic context, Curwen[4] also found a number at the Mesolithic site at Selmeston; three of these showed 'a thin band of lustre.' One of the serrated implements illustrated in Curwen's paper (No. 95) has the same general configuration as our implement. If the latter is considered to be a saw, it would be possible to relate it to the known Mesolithic settlement on Blackdown. If on the other hand it is to be regarded as a sickle it can only be recorded as an isolated find, unconnected with any known Neolithic site. (Note that Blackdown is situated on the Lower Greensand, 11 km from the nearest Chalk).

W. R. & E. B. Trotter

[1] E. C. Curwen, 'The early development of agriculture in Britain', *Proc. Prehist. Soc.*, 4 (1938), 27-51.
[2] A. Steensberg, *Ancient Harvesting Implements* (Copenhagen, 1943).
[3] E. C. Curwen, 'Prehistoric sickles', *Antiquity*, 4 (1930), 179-186.
[4] E. C. Curwen, 'A late Mesolithic settlement site at Selmeston, Sussex', *Antiquaries Journal*, 14 (1934), 134-158.

Field Walking near Lewes

In the article on field walking, published in *S.A.C.* 116, I referred to work in progress in the Balmer area west of Lewes. This project is now completed and the following notes outline the results from four selected areas. These lie on the Downland forming the west, east and south sides of Buckland Hole, already known for its Romano-British cemetery and extensive field system. The project began in 1973 and finished in 1978, by which time the whole

Downland had been through the grass/crop cycle at least once. A minimum of two complete sweeps was made on all sites except Balmer Down, where only a single quick inspection was possible. The pottery sherds recovered indicated a chronological range from ? late Bronze Age to Romano-British on all sites, except Housedean Farm which produced, in addition, a predominantly medieval assemblage.

1. *Balmer Huff.* (TQ 3615 1070). The area investigated was confined to the north end of Balmer Huff lying between the triangulation point 566 and the junction of the converging tracks from Balmer Farm and Waterpit Hill, with an extension over the west fence to a narrow terrace above Moustone Bottom. The pottery sherds (1,630) were unevenly distributed over the site; where they were most numerous they were also found in several small concentrations.

2. *Buckland Bank.* (TQ 3710 1105). This site overlaps the area marked "settlement" on the 1" O.S. map. Work started on a small rectangular area of plough in the grassland lying on the east side of the South Downs Way; subsequent ploughing allowed the site to be extended southwards and also westwards across the track on to a narrow terrace in Buckland Hole. The pottery (1,770 sherds) from Buckland Bank proved the most interesting owing to the quantity of early Iron Age material recovered, particularly some 100 sherds of a late B.A./early I.A. vessel, 40 of which were first found in a single pile on the edge of a deep furrow. The circumstances of their appearance in the plough suggested the presence of a ditch or pit in the near vicinity. In order to test this hypothesis, members of the Lewes Archaeological Group, directed by Dr. L. Allen, stripped and sieved the plough down to natural over a 10' x 10' square centred on the original find spot. This produced an additional 255 sherds, about half of which, found in compacted soil on the chalk, clearly belonged to the vessel recovered earlier and were probably the immediate source of the surface finds. Unfortunately they were not associated with any feature, since the two post holes close to which they lay were sterile. It seems that more than half the vessel is still to be found. Buckland Bank is also notable for the quantity of Roman tiles (530 pieces) and fire-cracked flints associated with the

maximum spread of sherds which stretched across the South Downs Way into Buckland Hole.

3. *Balmer Down.* (TQ 367 104). This broad spur of the Downs forms the southern bastion of Buckland Hole. My first visit to the area was made after the crop (under-sown with grass) was just appearing. It was therefore only possible to make one quick broad traverse of the whole area. Nevertheless, the 1,350 sherds recovered augur well for future fieldwork both from the point of view of quantity and variety.

4. *Housedean Farm 'A'.* (TQ 367 101). This long narrow field lies immediately south of and 100ft. higher than Balmer Down; it stretches in a north-westerly direction from Bunkershill Plantation. The chief interest of this site lies in the fact that 75% of the 2,325 sherds recovered are medieval, predominantly 12th-14th century. This is the first site, of those investigated, to produce substantial evidence of the proximity of the Deserted Medieval Village at Balmer Farm.

The sherds and other artefacts collected from the above four areas indicate prolonged occupation of these Downs. They seem, however, to suggest, by variations in quantity, a differing chronological emphasis from site to site: in addition, one gets the impression that the same types of vessels within any one period are not uniformly displayed throughout, but in a field-walking context these impressions, even if justified are probably not significant. Other finds common to all the sites, but in varying quantities, include Roman tiles and brick, utilised stone, silcrete, fire cracked flints, and, of course, flint artefacts. The artefacts range from the crude nodular material from Balmer Huff to the more usual Downland assemblages, but cannot be compared with the quantity and variety of flintwork from Houndean/Ashcombe. On the other hand the bulk of the pottery from Houndean/Ashcombe is much less sophisticated than that from the Balmer area.

All finds and the detailed reports from Balmer and Houndean/Ashcombe have been deposited in the Barbican House Museum, Lewes.

J. T. M. Biggar
(Lewes Archaeological Group)

An Early Bronze Age Barrow in Ewhurst Parish

A barrow which is possibly of the Early Bronze Age has been found in Lordship Wood, Ewhurst parish, TQ 757 231, by the field survey group of the Robertsbridge and District Archaeological Society.

The mound measures 13 m across and is 2 m high. There is good evidence of a former ditch to the north-west of the mound. To the east the ditch could not fully be traced with accuracy. A roughly rectangular hole just over 2 m long on its longest side, 1 m wide and 0.5 m deep has been cut into the top at some time during the present century (Fig. 3).

The barrow stands on Ashdown Sand at about OD 38 m on ground which rises steadily to this point—rising away from the river Rother to the north and from a rivulet to the west. Both stream and river carry the boundary which separates Ewhurst and Salehurst parishes.

The woodland in which the barrow stands is given over to larch plantation. Six serried ranks of trees were planted across the mound but, surprisingly, did not obliterate it. Between these ranks old chestnut coppice stools are still visible. The land was until the Dissolution part of the demesne of Robertsbridge Abbey and may well have been under woodland for centuries.

We thank the managers of the land, Economic Forestry Group for their ready permission to survey the barrow and to continue the search for other sites which may lie on their land.

Gwen Jones

Suspected Roman road linking the London-Lewes road (Margary 14) with trans-Wealden track VII

In 1964, when I was excavating the Roman iron-working site at Minepit Wood, Rotherfield (TQ 523 338),[1] I noticed the suggestive parish boundary which runs almost dead straight for $3\frac{1}{2}$ miles from point 508 300 in the south-west part of Crowborough to point 530 353, one mile north-west of Eridge Station. I discussed it with the late Ivan Margary, who said that he had considered it as the line of a possible Roman road but had not enquired further. We examined parts of this alignment and came to the conclusion that the
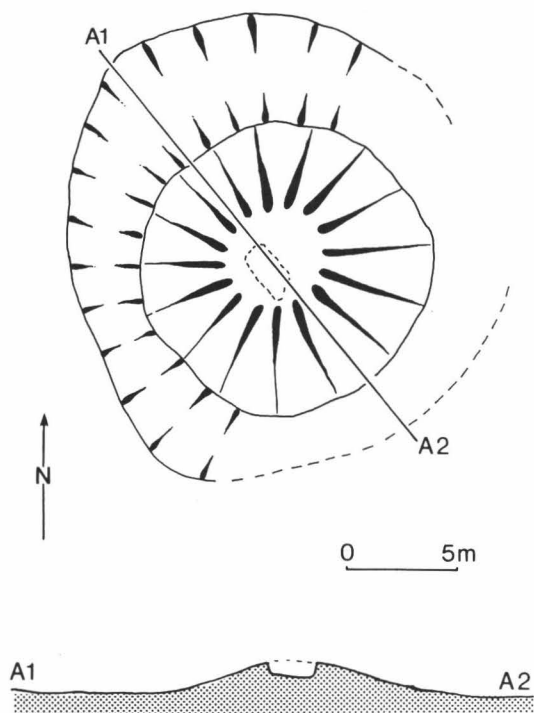
many lengths of bank and hedgerow which were on it were promising indicators. Since then I have discovered other features further north and come to the conclusion that, judging from surface indications alone, there are strong grounds for suspecting the existence of a minor Roman road running from the main London-Lewes road (Margary Route 14)[2] at Camp Hill (471 288 approx.) to point 582 418 in Southborough, where it meets Margary's trans-Wealden Route VII[3] (Oldbury - Shipbourne - Tonbridge - Southborough - Tunbridge Wells - Frant - Cross-in-Hand), now, roughly speaking, A227/A26/A267.

This note describes the route in broad terms. After further investigation I intend to publish a detailed description, with maps to illustrate its course and character.

From Camp Hill (471 288 approx.) on Ashdown Forest, the route probably ran more or less along the course of the modern road, through Poundgate (494 288) and north-east into Crowborough along the A26, which is followed by the parish boundary from 498 291 to 508 300. Here the route leaves the modern road and on a new alignment runs almost dead straight north-north-east for $3\frac{1}{2}$ miles—over Beacon Hill (50 30), through Rough Wood (51 32), past Gillridge Farm (517 329), through Minepit Wood (52 33) and past Leyswood (527 351). Along much of this alignment there are significant stretches of bank and hedgerow; and the route passes within 200 yards of the Roman iron-working site at 523 338.[4] Having descended the hillside, below Leyswood it reaches the modern road, turns sharply south-east and, still followed by parish boundary and modern tracks, negotiates the valley and opposite slope in a dog-leg through Forge Farm (533 353) and proceeds by short alignments round the side of the hill to Pinstraw Farm (538 357). Then it runs almost straight for $\frac{3}{4}$ mile via Park Corner (539 361), a short stretch of modern road with broad verges, via Birchden Farm (541 565) and across country to Quarry Farm (542 370). Here the alignment turns north-east to take the road along the hillside to the stream-crossing at 550 381. Then it goes north across the valley and ascends the opposite hill along a gradual and well-engineered terrace, 15-18 ft. wide, which is now a bridle-way. Emerging from the wood to meet the modern road at 549 388 and following it northwards the route

Barrow   *TQ 757 231*

Fig. 3.

crosses the A264 at 550 392 and proceeds to 554 403, where it leaves the modern road and enters woodland as a terrace and bridle-way of similar character and dimensions. It runs through Sproud's Wood (55 40) and Shadwell Wood (55 41) and descends to the modern road at 558 414 and stream-crossing 50 yards beyond. From here the course is not certain. The most likely route is south of the crest of the hill and along the line of the modern road, via Blowers Hill (560 416) and Broom Hill (568 417), to meet the A26 (Margary's trans-Wealden Route VII) in Southborough at 582 418. Points in favour of this last sector of the route are traces of a substantial bank beside the modern road up Blowers Hill, the name 'Bankside' (1868 map) at 563 417 and parish boundary on the final stretch from 573 417 to 582 418.

J. H. Money

FOOTNOTES
[1] J. H. Money, *Journal of the Historical Metallurgy Society*, 8, No. 1, 1-20.
[2] I. D. Margary, *Roman Roads in Britain* (London 1973), 37 and 59-62.
[3] I. D. Margary, *Roman Ways in the Weald* (London 1949), 264-5.
[4] J. H. Money, *op.cit.*

Fishbones from Excavations at Tanyard Lane, Steyning 1977

Fishbones from medieval contexts (listed in Freke 1979) were identified using the reference collections at the British Museum (Nat. Hist.). Only four species were represented; *Anguilla vulgaris* (eel), *Pleuronectes flesus* (flounder), *Scomber scomber* (mackerel) and *Pleuronectes platessa* (plaice). The first two predominate, and are typical of what might be expected in a town situated on a tidal estuary. The author is grateful to Mr. A. Wheeler for his help with these identifications.

Layer 104 in feature 44 (possible Saxo-Norman pit)

Eel	35 vertebrae
Flounder	9 vertebrae
Mackerel	3 vertebrae
Plaice	1 vertebrae

Feature 49 (medieval pit)

Eel	1 vertebrae
Flounder	1 vertebrae

Layer 130 in feature 66 (medieval pit)

Eel	6 vertebrae
Flounder	1 vertebrae

Owen Bedwin

Freke, D. J. 1979 'Excavations in Tanyard Lane, Steyning 1977', *Sussex Archaeol. Collect.* **117**, 135-150.

German Street, Winchelsea

Three short notes are included here as appendices to the report on the site excavated in 1974.[1]

1. Conversations with J. T. Smith have led me to consider the Period I building as a two-storey structure, due to the thickness of the walls, probably a first-floor hall with an undercroft. This would be similar to the cellar-under-living-room pattern common to many Winchelsea houses but, in this case, the lower room was not put below ground level.

2. The famous first rental of New Winchelsea of 1292 has two copies, PRO SC II 673 and 674. Each entry lists the tenant and the area held. For Henry Bron, whose land was partly excavated in 1974, copy 673 allocates him, in quarter 19, entry 12, a quarter of an acre and $37\frac{1}{4}$ virgates or square rods, while 674 gives the same entry as a quarter of an acre and half a quarter and $17\frac{1}{4}$ virgates. In other words, there are 20 virgates in $\frac{1}{8}$ acre or 160 to the acre. This conforms with the decree of Edward I that 40 rods in length by 4 in breadth make an acre. However, this decree, which introduced the new standards, is dated 1305,[2] some fifteen years after the surveying of the town in *c.* 1290. The surveyors then, were using the royal measurements and this may have been a medieval experiment before the official enactment of the decree.

3. The green slates referred to in the report have been thin-sectioned by the Institute of Geological Sciences but cannot be paralleled in any British deposit. However, it is probable that they came from an unknown or worked-out source in the South-West peninsula, although a Belgian provenance cannot, at present, be ruled out.

Anthony King

[1] A. King, 'A medieval town house in German Street, Winchelsea', *Sussex Archaeological Collections*, **113** (1974), 124-5.
[2] F. G. Skinner, *Weights and Measures*, HMSO 1967, 94.

Further Finds from Lewes Excavations, 1974-1976

From 1974 to 1976 a series of excavations was carried out by D. J. Freke on behalf of the Sussex Archaeological Field Unit in an attempt to establish the extent of the Saxon and medieval occupation of the northern limit of the town.[1] Two of these sites have been

recently developed by the building owners and observation was kept during building operations by members of the Lewes Archaeological Group. Further finds of considerable interest have been recovered.

NORTH STREET, LEWES

Two areas had been excavated on this site by D. J. Freke in 1975[2] and the builder's construction trenches cut into these areas, but mechanical excavation prevented accurate recording in some cases.

In Freke's Trench A 29 miscellaneous body sherds from the thirteenth to the fifteenth centuries were recovered but as stratigraphy could not be established they have not been recorded here. Three pipe bowls, two fluted and with floral decorations and one with floral decorations on the front only *c.* A.D. 1850[3] and a bone spoon handle of indeterminate age were found at a depth of approximately 1.5 m in the centre of the site.

A series of five irregular shaped pits were exposed at an approximate depth of 1.5 m below existing ground level 15 m to the south of Trench A. Two of these pits were examined to a further depth of 1.25 m and the finds are recorded below.

In Freke's Trench B, Pit 33 had been bisected by the line of the baulk and it was possible to examine the lower level of this pit. Pot sherds, a chalk cresset and lava stone fragments were recovered from the brown clay and black ash layer.

A drain trench excavated to the east of Trench A exposed a collection of smashed chamber pots dating from *c.* A.D. 1800 to 1850 which gives an interesting typology for the so-called Sussex ware of the period. It is possible that this collection could have resulted from the conversion of the house of correction on the west side of North Street, built in A.D. 1792 into the naval prison in A.D. 1850. There is no evidence of their having been used as paint kettles[4] and were probably utilized for their primary intention.

The finds

The position of all finds has been recorded on a copy of the architect's plan of the site, upon which the position of the archaeologist's trenches and the relevant features have been superimposed.

Pit 1A (author's numbering)

Fig. 4   No. 2   Cooking pot rim, one sherd of grey/brown core with medium flint tempering, grey inside and out, thumbed decoration to top edge of rim.

No. 3   Cooking pot. Five rim, eleven body and seven base sherds (approximately one third of whole pot) recovered. Grey core with medium to fine flint tempering. Dark grey inside and out.

Pit 1B (author's numbering)

Fig. 4   No. 1   Cooking pot rim, one sherd with beaded rim on almost vertical neck and three body sherds. Grey core with coarse flint tempering. Medium grey inside and out. Probably hand made.

Trench B
Pit 33 Layer 69

Seven body sherds (not illustrated) with pink/grey core with medium flint tempering. Grey internal, pink external face.
Four fragments of Neidermendig lava quern (not illustrated).

Fig. 4   No. 9   Chalk object, probably a cresset of twelfth to thirteenth century. Whilst no similar examples appear to have been published from this area stone examples from this period are recorded[5,6] but all have a deeper bowl and some form of stop mould to receive the bracket, which is the probable reason for the tapered sides of this example.

Modern drain trench

Fig. 4   No. 5   Chamber pot, complete and reconstructed. Pink Sussex ware. Fine sandy ware with fine chalk tempering. Pink face and rim, brown/orange lead glazing internally up to the bottom of rim. Double incised rim, typical but not exclusive to Sussex. Strap handle with pair of thumb pressings.

FURTHER FINDS FROM LEWES EXCAVATIONS

Nos. 1 to 9 North Street
Nos. 10 to 12 Friars Walk
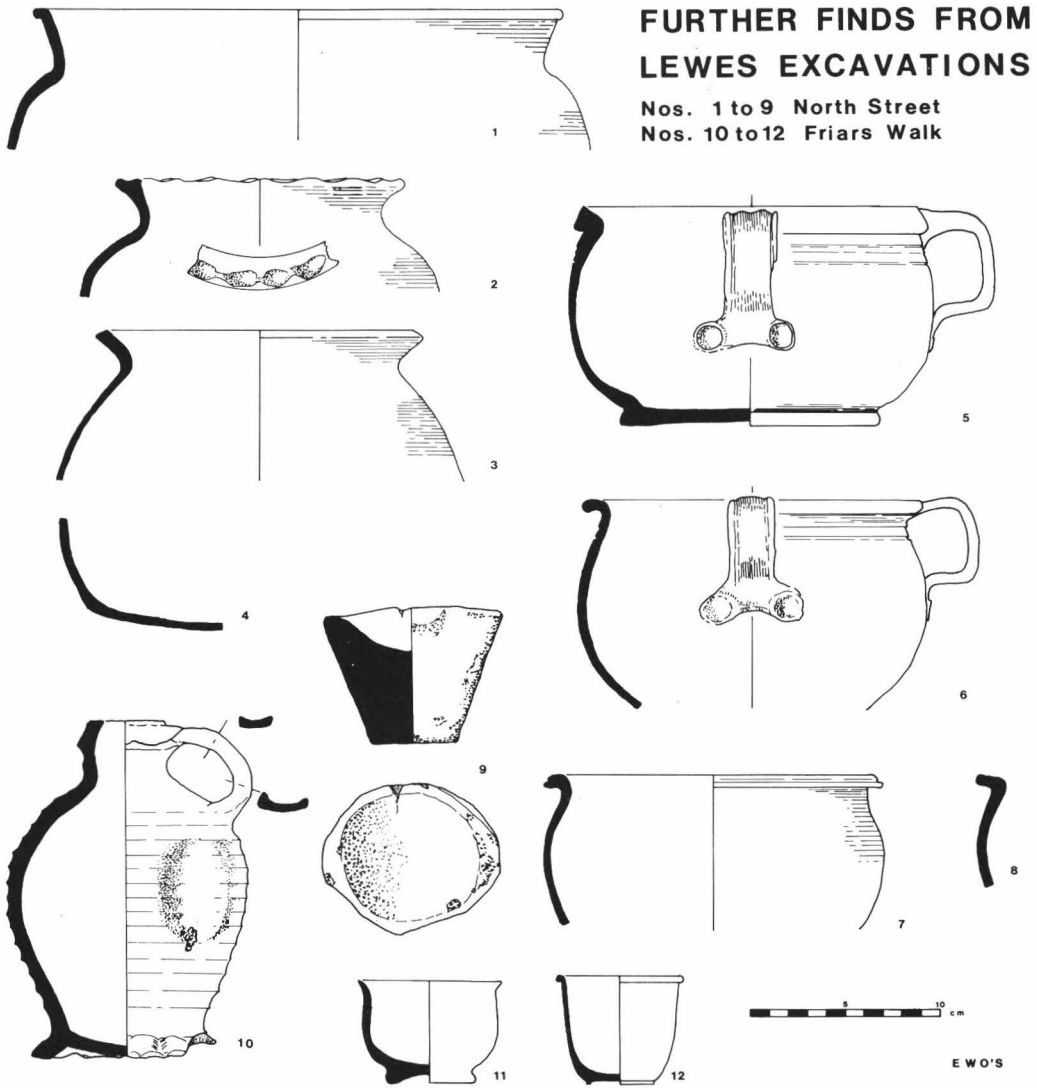
Fig. 4   Principal finds for North Street and Friars Walk,
Lewes. ($\frac{1}{4}$)

Fig. 4   No. 6   Four rim sections of chamber pot, one complete with handle and one body sherd. Roll-over rim with rounded edge. Strap handle identical to No. 5 above and double incised grooving. Pink fine sandy core and dark brown lead glaze overall.

Fig. 4   No. 7   Five rim and nine body sherds. Rounded and beaded rim and double incised grooving. Pink grey sandy core, orange/brown lead glaze overall with faint galena streaking.

Fig. 4   No. 8   Two rim and two body sherds, with flanged and rounded rim and single incised grooving. Pink/grey sandy core with heavy brown/green glaze overall. An interesting feature of the glaze is the irregular spotting where granules of unmelted lead are clearly visible.

A further group of sherds (not illustrated) from another chamber pot comprising two rim and two body sherds is similar in section to No. 8 above, but with the core and glaze identical to No. 7 was recovered from the same spot. We therefore have a complete progression from five pots over a probable period of twenty-five years.

FRIARS WALK, LEWES

The site of Nos. 40 and 41 Friars Walk is being developed as a new Head Office block by the Sussex County Building Society. The southern end of the site was excavated in 1976 by D. J. Freke on behalf of the Sussex Archaeological Field Unit.[7] Excavation of the basement, covering almost the whole of the site was carried out by mechanical excavators and it was therefore impractical to examine in detail and no further features than those recorded by Freke were recognisable. Two further finds of considerable interest were however recovered by the contractor's site manager.

From a pit about 18 m to the north of Freke's Trench B, in the north-west corner of the new basement a Rhenish wine jug was found in the bottom of a pit approximately 2.5 m below the existing ground level. Unfortunately no other artefacts were recognised by the site manager but piling operations close by gave little opportunity for closer inspection.

In a brick well approximately 3 m to the south-west of Freke's Trench C a collection of white glazed hospital ware was recovered from a depth of approximately 3 m. Part of the site was occupied by the Lewes Hospital for about fifty years from A.D. 1825 and it is reasonable to assume that this pottery originated from this source.

The finds

Fig. 4   No. 10   Rhenish wine jug, 13 cm diameter overall the body and 18 cm high. The body is bulbous with medium vertical neck and inturned parallel-sided rim, collared with single cordon. The body is completely rilled up to the lower intersection of the handle with no rilling to the neck. The foot-ring is frilled. The core is dense stoneware, light grey in colour, well fused with no visible tempering and with low porosity. The jug is covered externally with a fairly even brown/green lead glaze, with some of the glaze lost by abrasion. An interesting feature of the jug is the two large depressions formed in the body asymmetrical to the handle caused through handling at the leather stage together with pre-glazing body flaws. A percentage of second quality ware must have been acceptable for utilitarian purposes rather than table ware.

In the opinion of Mr. J. G. Hurst, the jug would have come from Langerwehe or Raeren and is probably of fifteenth or early sixteenth century dating. Mr. Hurst adds that the pot is of

considerable interest as he believes it to be the first one of this particular kind found in this country and is all the more valuable as, whilst Rhenish pots are not rare, they are seldom complete, the only damage being that half of the foot ring is missing.

Fig. 4 No. 11 Drug or ointment jar. Stoneware light cream fabric tin glazed overall. The rim is almost vertical tapering to a very sharp top edge and with a complete heavy rounded foot ring. About a third of the rim and body is missing. The terminal date for this type of ware is c. A.D. 1750.

Fig. 4 No. 12 Two complete and undamaged identical drug jars of similar body shape to No. 11 above but with applied foot ring of square section and turned over rim. Whilst these jars are wheel turned neither is truly circular and the rims could not have accommodated a fitting cover; it must be assumed that a tied on fabric or skin cover was used. The core and glaze is early porcelain of mid eighteenth century manufacture.

The base of a dish and of a cylindrical vessel of tin-glazed stoneware were recovered from the same spot.

CONCLUSIONS

None of the finds contradict or add to the conclusions arrived at by Mr. Freke but have been recorded in some detail as they are unique to Lewes. Whilst thirteenth to fifteenth century pottery is difficult to distinguish, all of the sherds come within the earlier range, but none correspond with the typical Ringmer ware of that period.

I would like to thank the Lewes District Council Planning Officer and R. B. W. Keir Ltd. for permission to investigate on their North Street site, and the Sussex County Building Society and their contractors, James

Longley & Co. Ltd. for their co-operation and friendly interest at Friars Walk. My sincere thanks to Mr. J. G. Hurst for his interpretation of the Rhenish jug and to Councillor John Houghton for his help on the historical background. Miss Joyce Biggar restored the chamber pot and Mr. C. E. Knight-Farr kept observation on the sites.

The Rhenish pot will be on permanent display in the entrance hall of the new Head Office of the Sussex County Building Society and will be available for study and the rest of the finds will be deposited at Barbican House, Lewes, together with a distribution map of both sites.

E. W. O'Shea

REFERENCES
[1] D. J. Freke, 'Excavations in Lewes, 1974', *Sussex Archaeological Collections,* (abbreviated hereafter to *S.A.C.)* 113 (1975), 66.
[2] D. J. Freke, 'Further excavations in Lewes, 1975', *S.A.C.* 114 (1976), 176-193.
[3] D. R. Atkinson, *Sussex Clay Tobacco Pipes and the Makers,* Crane Services, Eastbourne, undated, 53-56.
[4] P. Amis, 'Some Domestic Vessels of Southern Britain, A Social and Technical Analysis', *Journal of Ceramics History* 1 (1968).
[5] J. Knight, 'A Twelfth Century Stone Lamp from Llangwm Ochaf', *Medieval Archaeology* 16 (1972), 130.
[6] *Medieval Catalogue,* Museum of London H.M.S.O. London (1967), 174-6.
[7] D. J. Freke, 'Excavations in Friars Walk, 1976', *S.A.C.* 116 (1978), 179-197.

Petworth House and the Formal Gardens

The area between the house and the present lake has been the subject of a considerable number of alterations during the past four hundred years but, although much has been written about these changes, no attempt appears, previously, to have been made to produce reconstructed drawings of the various layouts. One reason for this is that the contemporary cartographical representations of the layouts are of dubious quality and accuracy; but the discovery of the former location of several features, by aerial photography (Plate I) and fieldwork in the summer of 1976, has allowed the writer to make the following reconstructions (see Figs. 5, 6).

Medieval to 1610

The remains of the medieval manor-house, which was fortified in 1309,[1] include the chapel and the hall undercroft which are
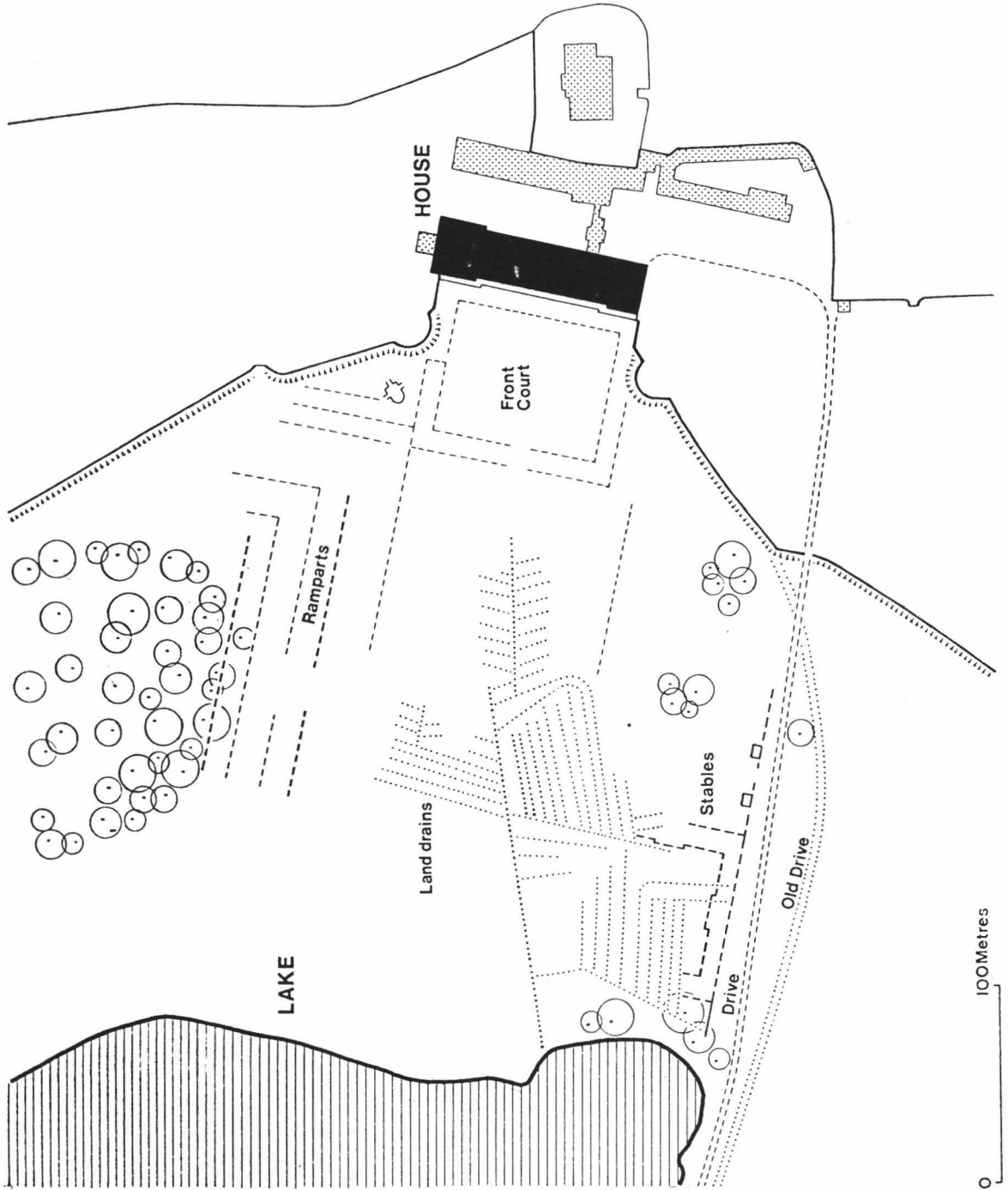
Fig. 5   Plan of the formal gardens traced from the aerial
photograph, Plate I.
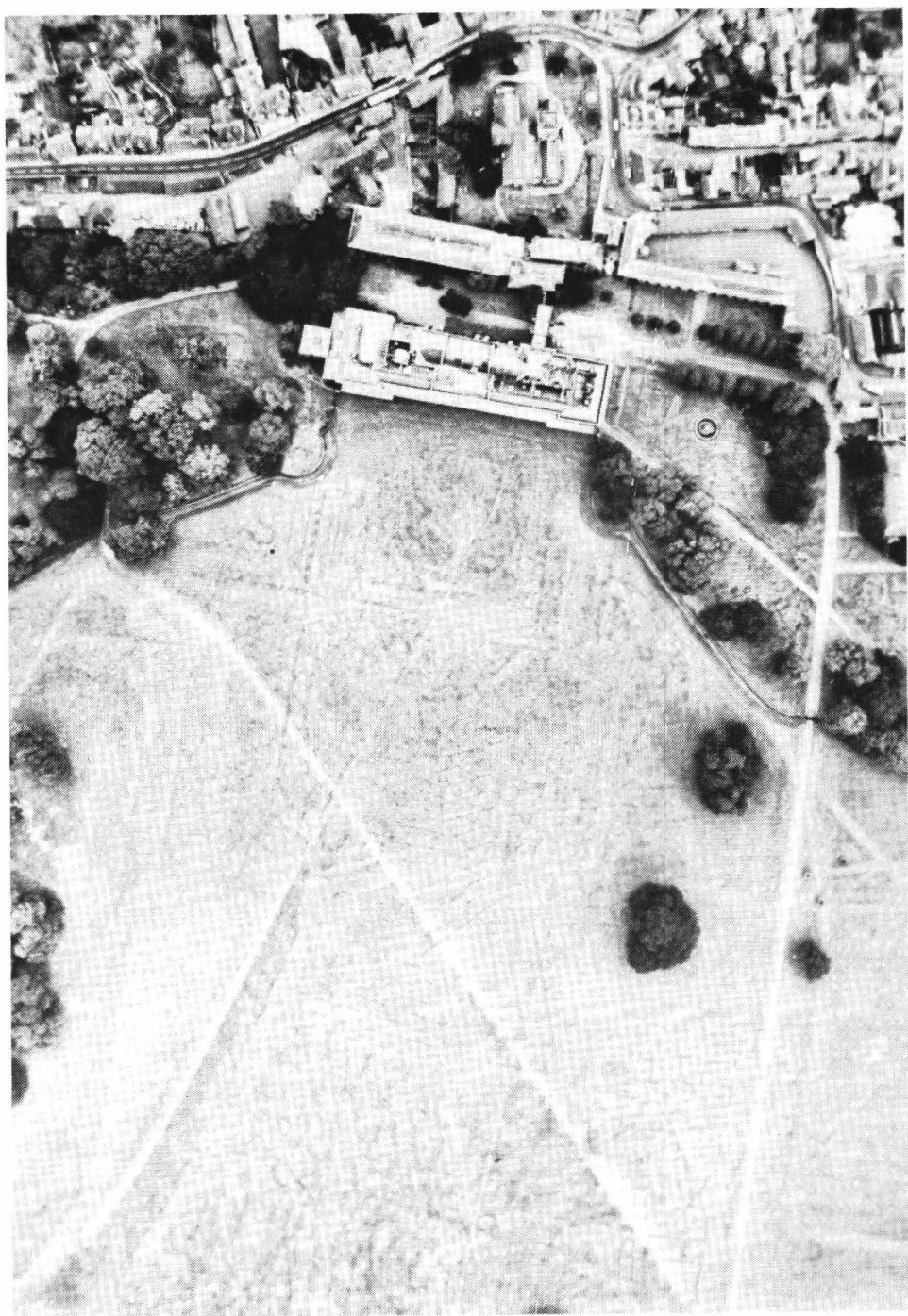
Plate I   Aerial photograph of Petworth House and gardens.

incorporated into the present house. The medieval house was enlarged between 1576 and 1582 by the addition of a west wing, which is shown on Raphe Treswell's map of 1610. The foundations of this extension were seen as parch marks on the lawn to the west of the north end of the present house in 1976. Treswell's map also shows that the area to the south-west of the house was occupied by private houses and that formal gardens, which included a rose garden, a 'hoppe' garden, a nursery and a plantation of 'scicomer' trees, had been laid out.

The sixteenth-century house and town obtained its water supply from a conduit which commenced some 900 m to the west of the house in a surviving underground cistern and is still fed in the direction of the house by a four-inch lead pipe. A conduit house stood near the church and another probably stood in the Market Square. The system was replaced in about 1750 by pumping water from Coultershaw, a few miles south of the town.

1610—1680

A large stable block was built to the west of the house between 1621 and 1625 and this is shown both on a map 'attributed to Robert Norton circa 1625'[2] and on a painting of about 1680 which is now in Syon House.[3] The latter also shows that the house had been extended southwards and the land between the house and stables re-planned to include two large enclosed gardens and a series of terraces which were reached by two converging flights of steps. Most of this work can be attributed to the period 1615 to 1632. The terraces appear not to have been on the same alignment as those attributed to London and Wise and their outline can be seen on aerial photographs. The former position of the stables can be traced, to the south-west of the lake, as a series of depressions representing the remains of robber-trenches.

1680—1755

Following the wholesale rebuilding of the house between 1688 and 1696, which incorporated the medieval remains, the gardens were laid out on very formal lines, in the French style, by George London and Henry Wise between 1702 and 1710, some of the proposals being shown on a map of 1706.[4] Correspondence, now in the Petworth House Archives, shows that the properties which formerly lay to the west of the house were being acquired for demolition in 1702—4 and the tenants were re-housed elsewhere, prior to the laying out of the formal gardens.

A plan of 1751, in Petworth House, showing the house, stables, formal gardens, an avenue and terraces, was once thought to be a proposed scheme but many of the features shown on this plan are clearly visible on aerial photographs. The plan is almost certainly one made for Brown and shows the existing situation immediately before he commenced his alterations.

1755—1765

It is these early eighteenth-century formal gardens that Lancelot 'Capability' Brown cleared between 1755 and 1765 to produce a parkscape in which the main features were natural, grass-covered, curving slopes, a lake and tree clumps. His park is that shown on a map of 1779 in Petworth House and also on the first edition of the Ordnance Survey Twenty-Five Inch Map of 1875. Much of his correspondence, including estimates for the removal of the pre-existing features, also survives.

1766—1977

Modifications appear to have been made to Brown's plan, between 1875 and 1897, when the present ha-ha, with rounded 'bastions' was made to the north and south of the present west facade of the house, possibly by Anthony Salvin who also modified the layout of the grounds to the south of the house and the line of the drive to the lake.

I am most grateful to Lord Egremont for allowing me to inspect documents in the Petworth House Archives and to Mrs. Alison McCann of the West Sussex Record Office, for her assistance and advice.

Since this article was prepared in 1977, Mr. J. R. Armstrong has drawn my attention to Daniel Defoe's tour through England and Wales, undertaken between 1719 and 1724, which refers to the old stables and park at Petworth—

The duke's house [Charles Seymour, 6th Duke of Somerset 1662-1748] at Petworth, is certainly a compleat building in its self, and the apartments are very noble, well contriv'd, and richly furnish'd; but it cannot be said, that the situation of the house is equally design'd, or with equal judgement as

PETWORTH HOUSE AND THE FORMAL GARDENS
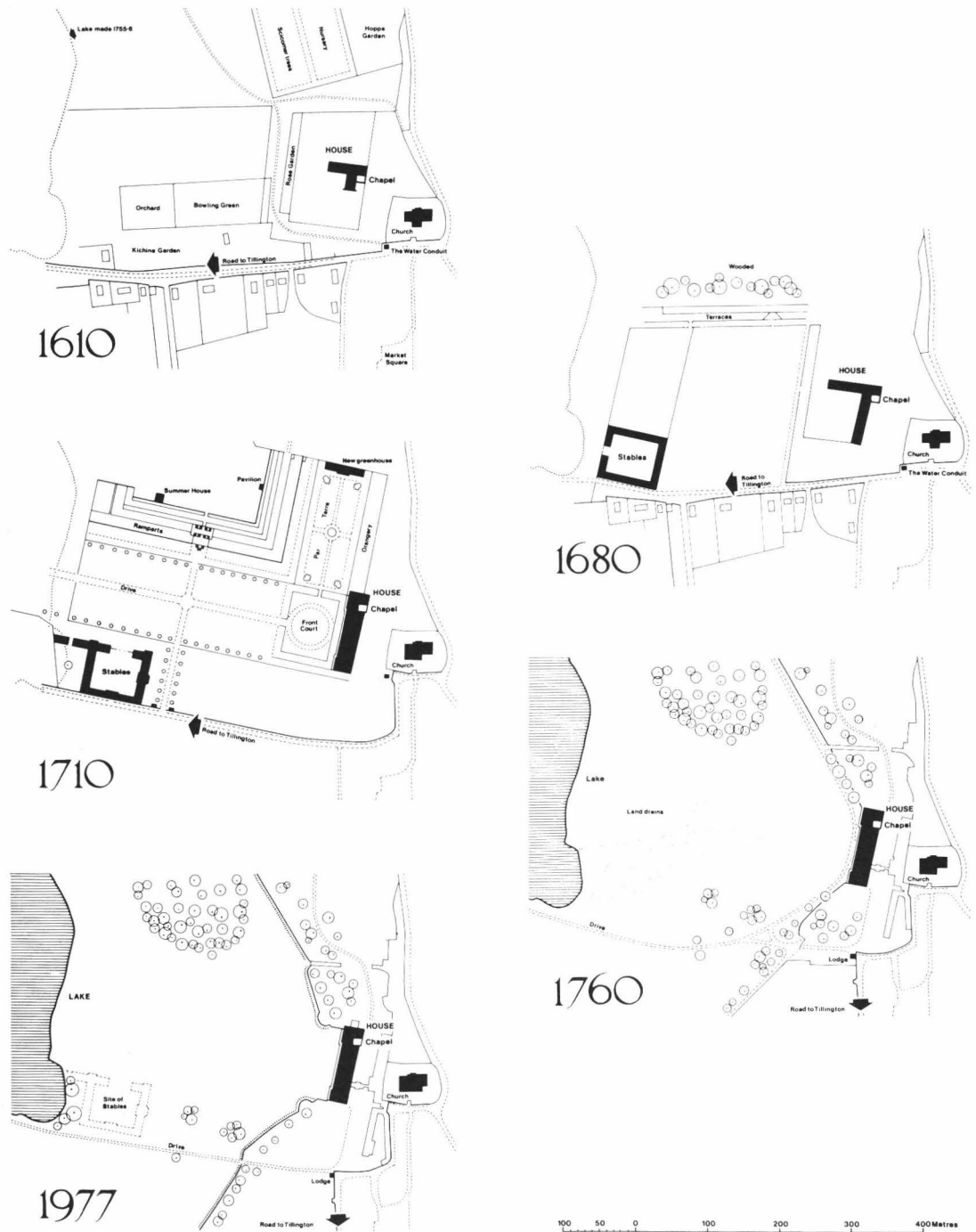
Fig. 6   The development of the formal gardens.

the rest; the avenues to the front want space, the house stands as it were with its elbow to the town, its front has no visto answerable, and the west front look'd not to the parks or fine gardens, but to the old stables.

To rectify this, when it was too late to order it any other way, the duke was oblig'd to pull down those noble buildings; I mean the mews, or stables, the finest of their kind in all the south of England, and equal to some noblemens whole houses, and yet even the demolishing the pile has done more than open'd a prospect over the country, whereas had the house been set on the rising ground, on the side of the park, over against the north wing of the house, and a little more to the westward, the front had been south to the town, the back front to the parks, which were capable of fountains, canals, vistos, and all the most exquisite pieces of art, that sets out the finest gardens, whereas all now lyes on one angle, or opposite to one wing of the house. But with all these disadvantages, the house it self is a noble pile of building, and by far the finest in all this part of Britain.

This appears to suggest that the old stables, built between 1610 and 1625, had been taken down by 1724, and Defoe makes no specific reference to new stables in the layout of London and Wise which must have been completed by the time of his visit. It seems surprising that the stables should have been rebuilt on virtually the same site, though probably a little further south than previously, but in view of this evidence of Defoe it must be assumed that the stable plan visible on the aerial photographs is that of the building constructed for London and Wise and not that of the stable block built between 1610 and 1625.

Reference

A Tour through England and Wales by Daniel Defoe |1719-1724| (Everyman's Library 1928) Vol. 1 pp. 132-133.

F.G.A. June 1980

F. G. Aldsworth

[1] W. H. Blaauw, 'Royal licenses to fortify towns and houses in Sussex', *Sussex Archaeological Collections* (hereafter *S.A.C.*), **13** (1861), 104-117.
[2] G. Batho, 'The Percies at Petworth, 1574-1632', *S.A.C.*, **95** (1957), 1-27.
[3] G. Jackson-Stops, 'The building of Petworth', *Apollo Magazine,* May 1977, 324-333.
[4] G. Batho, (1957), 1-27.

Castle Field, Hartfield (TQ 481 361)

Castle Field, Hartfield, contains a mound on which an excavation was done by Dr. L. F. Salzman in 1912.[1] Salzman states that the mound is circular or oval and about 180-200ft. in diameter and stands 7-8ft. above the general field level. It presumably gave the field its name. His trenches across the mound revealed no sign of occupation and produced nothing but what he describes as a few sherds of late medieval pottery. He could find no ditch and concluded that no structure had ever existed on it.

In 1975, site development for council houses was started on Castle Field, by Wealden Rural District Council, but the mound, a Scheduled Ancient Monument, was avoided. However, one sewer trench was planned to pass within 13ft. of the base of the mound on its south-west side. This trench was 2ft. wide and averaged $4\frac{1}{2}$ft. in depth. It was dug mechanically and the operation was closely watched.

Away from the mound, the vertical section of the trench showed, below the topsoil, about $1\frac{1}{2}$ft. of soft grey silty sub-soil, with loose sandstone lumps, all probably eroded sandstone. Below this, to the bottom of the trench was hard yellowish-brown bedded sandstone. As the trench approached the mound, the soft grey filling suddenly dipped to the bottom of the trench, and its base was not reached. These conditions continued past the nearest point to the mound for 93ft., when the original section, with hard sandstone, was again encountered.

Although this silty filling appeared to be sterile, from it, $2\frac{1}{2}$ft. below the field surface, came three medieval pottery sherds; two probably of thirteenth/fourteenth century date and the other probably earlier.

The position of the trench, and the above described changes in it, were measured from the centre of the mound and planned. The points where the supposed ditch were struck were found to be consistent with a concentric circle around the mound. I am therefore inclined to conclude that the District Council trench cut through a portion of a deep ditch that had, at some time, been deliberately filled, probably using soil from the top of the mound that had originally come from the same ditch. If the mound, now a very low one for a motte, had thus been reduced in height, it would

account for Salzman finding nothing on it, and for the eradication of all signs of a ditch on the present surface. Only a section cut across the supposed ditch could conclusively prove if this theory is correct.

Over other parts of the field, soil was removed over large areas in the course of levelling and road-making. This revealed no sign of any earthworks outside the mound and no finds of early date except a few flint flakes and some bloomery iron slag.

The pottery sherds will be placed in the Barbican House Museum, Lewes. I should like to acknowledge the help and co-operation of the Wealden District Council staff and particularly Mr. J. Eastes; also Mr. L. E. A. Burd, A.A.Dipl., R.I.B.A., who helped me with the surveying.

C. F. Tebbutt, F.S.A.

[1] L. F. Salzman, 'Exploration of the "castle" mound at Hartfield', *Sussex Archaeological Collections*, **56** (1914), 201.

The Swanbourne Lake Island—an Artificial Construction

An investigation into the structure and surroundings of the island situated towards the south end of Swanbourne Lake, Arundel, indicates that it is of artificial origin. The probable date of construction, from the artefacts recovered, would be in the first decade of the eighteenth century.

The lake is of some antiquity, and has persisted in some variant of its present form since Domesday, when it was recorded together with the mill.[1] The mill was demolished in 1840[1] and there can be little doubt that the topography of the lake has changed considerably in the intervening period. Some degree of stabilisation of the southern boundary following the construction of the road which runs more or less parallel to the course of the Arun would be expected, however, and the road existed in some form as early as the fifteenth century. The earliest reference to the island is as late as 1834,[1] but this publication followed extensive improvements to the Castle amenities, and may only have served to highlight features which existed long before. Later illustrations predating the First World War indicate that the island at this time was considerably larger than is now the case.

At the present time the lake is *c.* 1 km in length along its NW/SE axis, and has an average breadth of about 100 m along most of its length. The island (Ref. TQ 018/079), is spindle shaped, and its dimensions are about 30 m by 15 m. The nearest approach to the lake side is about 20 m to the east, and it is 70 m due NW of the lodge at the park gates.

During the drought of 1976, the island was completely exposed for about eight weeks. A chance observation revealed the presence of a quantity of tile and sixteenth-seventeenth century wine bottle fragments, which were scattered over the surface of the area just beyond the north end of the island. The island was *c.* 2 m above the level of the lake bed proper, and was situated on a raised portion of the bed consisting of chalk and other aggregate.

Two possibilities could be advanced to account for the presence of the artefacts; either the island was the result of natural weathering of a structure which existed when this part of the lake was dry, or the island was an artificial construction. To distinguish between these possibilities, permission was obtained from the Estate Management to carry out trial excavation in the region of the raised part of the lake bed surrounding the island.

EXCAVATION DETAILS

The area surrounding the island was firm for about 3 m to the NW and about 2 m to the SE. A shallow surface layer of sediment covered a foundation of broken chalk, flint and other ballast, about 1 m in depth. The presence of rotted timber posts and stays at points H, J and I (Fig. 7), indicate that the island was considerably larger at the time of construction, and has been reduced to its present dimensions by the process of erosion. Estate records indicate that the level of the lake during the summer of 1976 was the lowest ever noted, including the occasion when the lake was drained in an attempt to reduce the growth of aquatic vegetation.

Beyond the original island boundary the lake was only surface dry, and the water table only a few centimetres below. Deep excavation was therefore difficult and had to be carried out rapidly.

Two shallow trenches (3 m x 2 m), 1 and 2, cut into the island foundation, revealed potsherds with a wide date range, clay pipe

SWANBOURNE LAKE ISLAND

Footpath

Refreshment Hut

Edge of Lake

A

Sunken Roadway

B

Water level, August 1976

C

H

D

E

3

Island 'Beach'

2

F

I

J

N

0   10m
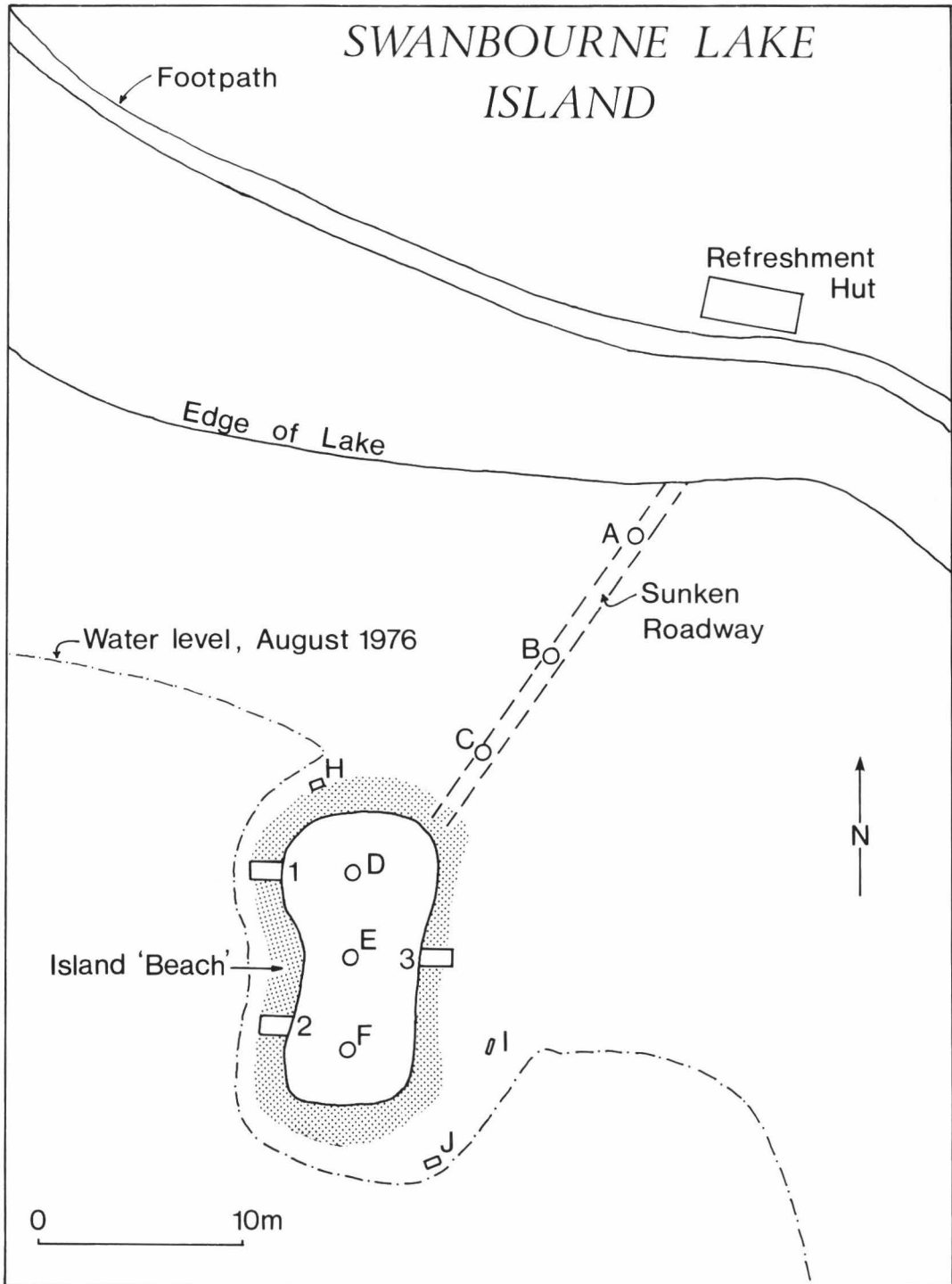
Fig. 7.

stems and a complete pipe bowl, further quantities of tile and some metal artefacts. Oyster shells and small quantities of animal bone were recovered from trench 3, but little else.

No evidence of structural foundation or any organised layering was detected other than the surface finds referred to previously. The datable clay pipe bowl was 2 cm below the surface of trench 1. Test shafts at points D, E and F in the island likewise failed to show any organised structure beneath, and only small quantities of broken tile were recovered from F. More extensive investigation at these points was not possible since the Estate Management had indicated that the fabric of the island should be disturbed as little as possible.

From the lack of layering and organised construction encountered at the points referred to above, we conclude that the island is a wholly artificial construction, on a bed of chalk and other available building debris. Originally the island would have been capped with a layer of topsoil and bounded by a wooden palisade, to prevent or minimise the erosive action of the lake water.

During the course of the investigation, a series of shafts were sunk to establish the nature of the island environment. To the north, west and south, the bed of the lake consisted of a surface layer of a greenish coloured chalky sediment some 50 cm deep. Below this a deep layer of compressed vegetation persisted for as far as could be ascertained. To the east, a change in the sub-surface was noted and no vegetation layer was present. The chalk sediment layer continued for about 1.5 m and terminated in a layer of impacted flint (Shaft C), which proved to be a metalled road surface. The roadway was 2 m in width and ran from the lakeside to the island as indicated in the excavation plan. Evidence for its continuation was found at shafts A and B.

The road exhibited a slight gradient such that its depth was about 1 m at the edge of the lake by the present refreshment hut, but fell to about 1.5 m deep at Shaft B. The level of the road rose again as it approached the island. Soundings at the opposite side of the island failed to reveal its presence, and it was therefore assumed to terminate on the SE side of the island. Sections of tile were recovered from soundings A, B and C at the level of the road. The flint metalling was investigated at

point C which was the driest of the shafts. The metalling was at least 50 cm thick and showed evidence of compaction, some of the flint having been fractured in situ. No other debris was incorporated at the area examined.

ARTEFACTS RECOVERED
1. *Roof Tiles*
Thirty-two tile fragments were found at the surface and at all points excavated in the reinforced area. Generally they were of crude construction and of indeterminate period up to late Tudor, some of these appeared to contain an admixture of finely-crushed chalk.
2. *Glass*
All the glass fragments found (18) were surface finds—in the main they were residues of sixteenth-seventeenth century wine bottles of the commonly imported round bodied long neck type.
3. *Pottery*
Sherds were recovered from Trenches 1 and 2—much of that found was surface, stained with lake sediment, and in instances the nature of the fabric for this reason was difficult to establish. A few sherds were modern and could have arisen from lakeside deposition. Predominantly, however, the sherds are pre-1700 and in some instances much earlier. Sixty sherds were found in all, and are representative of the following pottery types:

1 *Shell Tempered Ware:* of the twelfth-thirteenth century—the dating of this type of ware has been discussed by Turner.[2]

2 *Hard Grey Ware:* produced from the thirteenth century onwards in the south of England. The style is representative of the mid-fifteenth century in most cases.

3 *Red Wares:* Probably of local manufacture—both glazed and unglazed sherds were found and attributed to the sixteenth-eighteenth century.

4 *White Tin-glazed Earthenware:* Probably not of local manufacture. Material of this nature was imported from the continent or manufactured at the Lambeth kiln 1680-1750.

5 *Slipped Wares:* Coloured slip wares were manufactured in Sussex in the seventeenth-eighteenth centuries.

6 *'Beige' Wares:* We are unable to place the fragments of the buff-coloured wares which do not seem to accord with the

description of locally produced pottery. This may be due to surface deterioration as a consequence of prolonged immersion. In other respects there is a similarity to off-white wares of the fifteenth century.

4. *Organic Refuse and Other Artefacts*

1 Eleven oyster shells and a split section from a long bone were recovered from Trench 3.

2 A number of clay pipe stems of varying type and diameter were recovered from Trench 1, all were undecorated. A single pipe bowl was recognised as an early version of a common eighteenth-century type, and is identical to an exhibit in the reserve collection at Worthing museum from the South Lancing pipemaker, who operated between 1700-1710.

3 A fragment of an ox or horse shoe of a fifteenth-sixteenth century type with rectangular perforations was recovered from Trench 2. In association with this were three square drawn nails. The best preserved of these was some 8 cm in length, the head of which fitted well into the shoe perforation.

CONCLUSIONS AND DISCUSSION

The datable artefacts point to a period of around 1700 when the area surrounding the present island was last disturbed. Such few fragments of pottery as may postdate this period could have arisen by subsequent deposition from visitors to the Lake. All the pottery with the later exceptions were recovered from Trenches 1 and 2. The glass fragments were free lying on the surface of the raised area surrounding the island, as were most of the tiles. A few tiles were found still embedded in the fabric of the island itself.

From the evidence of the residual posts once forming part of the island reinforcement and now situated to the edge of the present 'beach', and from the lack of evidence of any organised structure, it is concluded that the island is wholly artificial. Illustrations of the island from postcards which certainly predate the First World War, indicate the island to be larger than at present and an area approximating to that suggested by the size of the surrounding raised area would not be inappropriate.

Consequent erosion of the island which on this hypothesis has mainly occurred within the last 70-80 years, would account for the presence of exposed artefacts of modern and seventeenth century origin on the raised beach area. Since the surface area:volume ratio of the island exposed to the Lake action will presumably increase as the erosion continues, it is unlikely that it will survive much into the twenty-first century, unless appropriate steps are taken to reinforce the existing structure.

The presence of the metalled roadway some metre below the present Lake bed is rather enigmatic in that its firm metalling is suggestive of permanence rather than a temporary structure to merely facilitate the construction of an island. The history of Swanbourne Lake over the period of the Middle Ages to the eighteenth century is not well defined, and there is a danger in attempting to overemphasise present day views on its geography.[3]

The extensive addition of chalk ballast presumably from the cliff face behind the lodge, at a number of points where the lakeside might be faced with erosion, and for the island foundation, is still very evident. A great deal of chalk rubble has been deposited in the area between island and lakeside, but whether this was to raise the lake surface or for reinforcement, we are unable to say. The presence of the roadway can only imply that at the time of its construction, this region of the present lake was dry land. The presence of tile fragments at all three soundings taken along its length confirm that the road was involved with the construction of the island.

It is known that the lake was drained during the Civil War to bring about the capitulation of the Castle, by depriving the defenders of their water supply. Exactly how this was brought about cannot at this time be established, but the fact that this region of the park was the scene of a skirmish is attested. In a letter to the House of Lords in 1643 General Waller stated:

'We did scour a weedy hill in the park on the west side of the Castle with our pieces that we made it too hot for them.'[1]

An entrenchment from the mill to the town gate was subsequently overthrown in an assault following the bombardment. The exact location of the 'pieces' is not evident, and Waller may have confused his compass bearings, for there is no substantial hill to the west side of the Castle within cannon shot. It is

tempting therefore to conjecture that the roadway may have had some military significance in this or some other contemporary action. It is also recorded that the Castle garrison of 1000 men was forced to surrender as a consequence of the water supply from Swanbourne Lake being denied to them.

The sole record of works being carried out at the Castle in the early eighteenth-century refers to the 29th Earl who in 1711 initiated some repairs to the ravages of the Civil War, to render the Castle habitable, but there is no mention of work in the grounds.[1] It is not until 1785 that any record of work to improve the amenities is mentioned, and this date would be out of the context of president evidence.

Thanks are due to Mr. Orr-Ewing, the Estate Manager, for permission to conduct this investigation, and to the late Dr. Francis Steer for general encouragement. All artefacts recovered during the excavation are now in the custody of the archivist to His Grace the Duke of Norfolk.

I. Martin and D. Whyberd

[1] M. A. Tierney, *History and Antiquities of the Castle and Town of Arundel*, p. 725.
[2] Excavations Near Merton Priory, *Surrey Archaeological Collections*, LXIV 35-70.
[3] A. Hadrian Allcroft, *Sussex Archaeological Collections, LXIII, p. 54 et seq.*

The West End of Coombes Church

The small flint church of Coombes comprises its original early Norman nave, and chancel widened in the thirteenth or fourteenth century, and contains notable Romanesque and later wall paintings. Some architectural features at the exterior of the west end (Plate IIa) still require satisfactory explanation. First, the nave north wall continues beyond the present west wall—projecting some 4 ft (1.22 m) at ground-level, though tapering sharply into the west wall above—while on the south side, on the other hand, there is a neat brick quoin at the junction of the south and west walls; second, there are two lines of quoins built into the west wall, at about $2\frac{1}{2}$ ft (0.76 m) from either end, that on the north being at the angle formed by the projecting north wall; and, third, in the centre of the west wall is an unusual, large round-headed window, its sill only inches above ground-level. Two nineteenth-century writers might seem to throw some light on this state of affairs at the

west end: Cartwright (1832) records that the church was 'formerly rather longer than it is at present, being reduced to its present size in 1724';[1] and Lower (1870) also states that the church was 'reduced in size' in 1724.[2] More modern writers have varied widely in their interpretation of the features at the west end: Godfrey (1936) again stated that the church had been reduced in size, and also suggested that it 'probably had originally a west tower';[3] Poole (1948) argued from the two lines of quoins in the west wall that an original Saxon nave had been widened by about $2\frac{1}{2}$ ft on both sides in the early Norman period;[4] Steer (1966) considered that it 'would seem reasonable to suggest' that the nave had been 'widened or entirely rebuilt', but proposed that the west wall was of fifteenth-century date, and stated that there was 'no proof' that the church had been shortened in 1724;[5] Fisher (1970) rejected the theory that the church had been widened, but accepted that it was shortened in 1724, 'evidently due to the pressure of the rising ground outside', and that the west wall was rebuilt then.[6]

It can now be stated with certainty that the church was indeed shortened in 1724, or soon thereafter, and also that Godfrey was right in proposing that it once had a west tower. The evidence for this is of two kinds. First, an estate plan of Coombes, by Robert Whitpaine, dated 1677, now in the possession of Mr. Dick Passmore of Church Farm, Coombes, and which has only become known in recent years, includes a small perspective drawing of the church, showing it with a square west tower with a pyramidal roof (Plate IIb).[7] The reliability of this evidence for the existence of a tower can hardly be doubted; the remainder of the church, as shown in the drawing, is recognisably that which we still see today, with its east end towards the village, an unbroken roof-line over nave and chancel, the south porch in its correct position, and perhaps even with one of the large Perpendicular windows in the chancel south wall. Confirming the evidence of the drawing is an entry in the inspection book of Chichester diocese of 1602, and another entry in the inspection book of 1724 ('Bishop Bowers' Visitation').[8] The 1602 entry reads: 'the steeple is a littell faltie in one place of the healing';[9] and the 1724 entry: 'Tower and part of the Church lately falln to be contracted by Leave (as reported) from
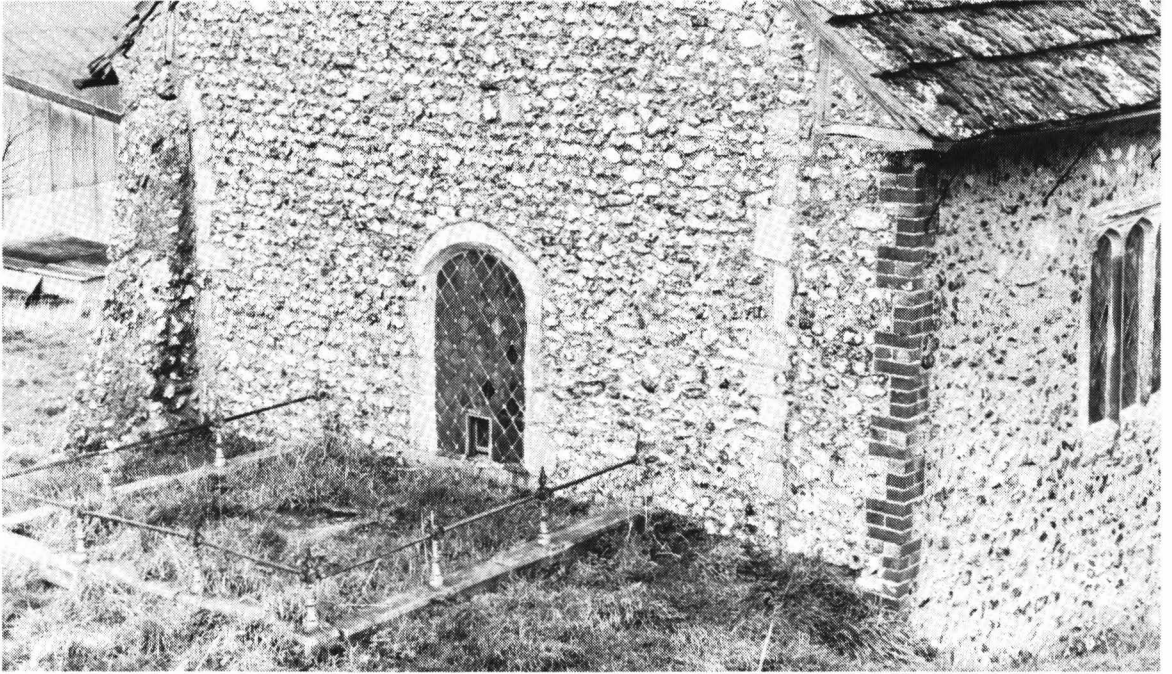
Plate IIa.   Coombes Church: west end, from south-west.

Plate IIb.   Coombes Church: detail of 1677 estate plan.

Plate III   Church of Sir Richard de Wych, Ashdown Park

your Lordship [i.e., the bishop], but when so lessen'd, sufficient to contain more than the Inhabitants, the remaining part in good repair.'[10] Thus, given that the church was shortened *c.* 1724, it would seem reasonable to date at least part of the present west end—most probably the large central window, and indeed perhaps the entire west wall—to that time. The fragment of north wall which still protrudes must have belonged to the earlier west end, otherwise demolished. Mr. Passmore informs me that earlier this century this wall still protruded some 8-10 ft, and that the greater part of it was demolished from the top, giving the remainder its present tapering shape. A very short section of wall also extended from the south-west angle, but this was completely demolished, and the present brick quoin inserted. Neither the drawing nor the inspection book entries provide sufficient evidence to date the west tower accurately; however, its appearance in the drawing gives no grounds to suppose that it could not have been medieval, and it may be significant that it bears a general resemblance to the west tower with pyramidal roof which was added in the thirteenth or fourteenth century to the small eleventh-century church in the neighbouring village of Botolphs.

W. D. Park

[1] J. Dalloway, with E. Cartwright, *A History of the Western Division of the County of Sussex,* II, ii, *The Parochial Topography of the Rape of Bramber,* London, 1830, 112.

[2] R. H. Nibbs, *The Churches of Sussex,* reissued with history and architectural descriptions by M. A. Lower, Brighton, 1972.

[3] W. H. Godfrey, at a meeting of the Sussex Archeological Society in the Adur Valley, *Sussex Notes and Queries,* VI, 1936, 113.

[4] H. M. Poole, 'The Domesday Churches of Sussex,' *Sussex Archaeological Collections,* LXXXVII, 1948, 45.

[5] F. W. Steer, *Guide to the Church of Coombes (Sussex Churches, No. 36),* Chichester, 1966, 1.

[6] E. A. Fisher, *The Saxon Churches of Sussex,* Newton Abbot, 1970, 94f.

[7] I would like to thank Mr. Passmore for allowing me to photograph the plan, and also for discussing the west end of the church with me. The plan has previously been published in *Deserted Medieval Villages,* ed. M. W. Beresford and J. G. Hurst, London, 1971, 47, pls. 3b and 4.

[8] I am very grateful to Mr. Timothy Hudson, of the Victoria County History, for pointing out these entries to me, and for providing transcripts of them. I would also like to thank him for commenting on a draft of this paper.

[9] W.S.R.O., Ep. I/26/1, fol. 1 verso.

[10] W.S.R.O., Ep. I/26/3. fol. 12.

HISTORICAL NOTES

This section of the *Collections* is devoted to short notes on aspects of local history. Material for inclusion should be sent to Mr. Alec Barr-Hamilton, 226 Hangleton Road, Hove. Those without previous experience in writing up such material for publication should not be deterred from contributing for Mr. Barr-Hamilton will be happy to assist in the preparation of reports and illustrations.

Newlands: a Templar Holding in Horsham Identified[1]

King John made a grant to the Knights Templar in 1213 which may be translated as follows:

We grant and confirm ... to the military brothers of the Temple the land of *Niweland* with appurtenances which W. de Braus held from them at farm and which was taken into our hands with the other land which W. held ....[2].

This has traditionally been regarded as the foundation charter for the preceptory of Newland, near Wakefield.[3] However, Newland preceptory was held by the Knights Hospitaller from the mid-thirteenth century at the latest[4] and if this identification were to be accepted it would be necessary to postulate that the Templars transferred a preceptory, which had been granted to themselves, to the Hospitallers—an unlikely event. An additional difficulty is presented in that the grant was by the king. Newland preceptory lay either in the manor of Wakefield, which was held in 1213 by William earl de Warenne, or in the honour of Pontefract, held in 1213 by John de Lacy, constable of Chester. These difficulties are resolved if *Niweland* is re-identified as Newlands in the parish of Horsham, a place referred to as *Newland* in 1532.[5] The family of Braose, lords of the rape of Bramber, made extensive gifts to the Templars in Sussex[6] which were administered from the preceptory of Shipley.[7] Newlands was probably an assart in the adjacent parish of Horsham; Templar holdings in Horsham have not been previously identified, but there was a dispute in 1247 between the brothers at Shipley and the nuns of Rusper over the boundary between Shipley and Horsham.[8] It is likely that Newlands was an outlying holding of Shipley preceptory which had been leased back by the Templars to William de Braose, the major landholder in

the area. William's lands escheated to the king,[9] who thereupon granted Newlands back to the Knights.

D. J. H. Michelmore

[1] The material in this note resulted from research for the archaeological survey of West Yorkshire carried out for the West Yorkshire Metropolitan County Council.
[2] Thomas Duffus Hardy, *Rotuli Chartarum,* 1, part 1, Commissioners on the Public Records (1837), 193.
[3] E. W. Crossley, 'The preceptory of Newland, co. York', *Yorkshire Archaeol. Soc. Record Series.* 61 (1920), 2.
[4] It is referred to as a Hospitaller holding in a bond dated *c.* 1240-50; see William H. Turner, *Calendar of the Charters and Rolls Preserved in the Bodleian Library,* (Oxford, 1878), 613.
[5] A. Mawer and F. M. Stenton, *The Place-Names of Sussex,* part 1, English Place-Name Society 6 (1929), 230.
[6] Beatrice A. Lees, *Records of the Templars in England in the Twelfth Century,* British Academy, Records of the Social and Economic History of England and Wales 9 (1935), cxlvii-cxlix.
[7] For an account of this preceptory. see William Page, *The Victoria History of the County of Sussex,* 2 (1907), 92-3.
[8] W. H. Blaauw, 'Sadelscombe and Shipley: the preceptories of the Knights Templars in Sussex', *Sussex Archaeological Collections,* 9 (1857), 249.
[9] Charles Merrik Burrell, 'Documents relating to Knepp Castle', *Sussex Archaeological Collections,* 3 (1850), 1.

The Dedication of Singleton Church

The purpose of this note is to set out the evidence for the history of the dedication of Singleton church, a history which has been bedevilled by a series of textual errors over the last 120 years.

The first and indeed the only known reference to the medieval dedication of the church occurs in a document dated 1306. This document is an agreement recorded in the *De Banco Rolls,*[1] the relevant part of which reads, 'Iuratum inter Gervasium filium Willelmi de Cherleton' et Willelmum fratrem ejusdem Gervasii querentes et Magistrum Thomam de

Burne et Thomam personam ecclesie Beate Marie de Sengelton' de placito attachiamenti prohibicionis ...'. There is no doubt that the reference is to Singleton near Chichester, for the document is cited under the heading *Sussex;* moreoever it may be noted that Charlton is a hamlet in the parish of Singleton.

The reference to 'Thomas parson of the church of St. Mary of Singleton' gives a clear indication of the dedication of the church in the early fourteenth century. The Thomas who was incumbent in 1306 is probably the same as the Thomas recorded by Hennessy[2] as rector in 1288; unfortunately Hennessy did not quote his source, which has not yet been traced.

Some additional evidence is also provided by two late medieval wills. The will of Richard Heberden,[3] dated 20 October 1479, contains bequests to the lights of St. Katherine, St. Nicholas and Our Lady, the largest amount being to the light of Our Lady ('Lumini Beate Marie vi d.'). The will of Peter Mawtalye,[4] dated 4 June 1532, contains a bequest to the 'fraternitati beate marie de Syngleton, xii d.'. Unfortunately the bequest has twice been misquoted as giving evidence for the dedication of the church, first by Gibbon in 1860[5] who rendered it as 'nostræ Beatæ Mariae de Singleton, 12d.', and secondly by Garraway Rice in 1940-41,[6] who quoted it as reading 'Nostre beate marie de Singleton'. Garraway Rice confused matters further by printing a correct reading of the bequest under a different heading. Peter Mawtalye's will contains an additional bequest to the 'fraternitati domine katerine ibidem viii d.', though it is perhaps worth noting that the amount of the bequest to the brotherhood of St. Mary is a little larger than the bequest to the brotherhood of St. Katherine. In summary it may therefore be stated that the medieval wills provide useful corroborative evidence for the continuation of the cult of St. Mary at Singleton. It should however be stressed that in themselves the wills provide no firm evidence for the dedication of the church.

After the Reformation the dedication of the church appears to have been lost. All references which have been noted by the present writers between the Reformation and the late nineteenth century refer to the building simply as the parish church, without any dedication.

In 1860 Gibbon published in these *Collections* his study of the dedications of West Sussex churches.[7] As noted above he mis-read the bequest in the will of Peter Mawtalye. He also included in his article a reference to the will of Harry Russell,[8] priest, dated 8 March 1543-4, from which he cited a reference 'Item, to St. John, of Syngleton, 6s. 8d.'. In fact Gibbon also seriously mis-read this bequest. The bequest actually reads 'To Sir John of Syngylton vi s. viii d.', and refers to Sir John Maret, a witness to the will. This bequest is correctly rendered by Garraway Rice.

Later in the nineteenth century the church became known as St. John the Evangelist Singleton. The introduction of this dedication is to be ascribed to the Revd. F. A. Bowles, rector of Singleton from 1849 to 1894. The earliest reference to the dedication of the church to St. John is found in the Parish Log Book kept by Bowles.[9] In January 1877 he refers to the installation of a small window in the porch representing 'St. John at Patmos', and he states that the window 'answers a double or twofold purpose—in that it defines the Patron Saint to whom the Church is dedicated—& it is also a Memorial ...'. Gibbon's article on West Sussex dedications would have been known to Bowles, for he was a member of the Sussex Archaeological Society from 1848 until his death in 1894. Indeed in 1864 Bowles contributed a short paper to the Society's *Collections*.[10]

From the late nineteenth century until 1979 the church was generally known as St. John the Evangelist Singleton. However during the 1970s the facts outlined above emerged in the course of researches by one of the present writers (Michael Hare). It became evident that Singleton church owed its modern dedication to a palaeographical error on the part of a nineteenth-century historian. The facts were made known to the then rector (Revd. John Bishop), and the issue was discussed at a meeting of the Parochial Church Council on 8 January 1979. A decision was made in principle to revert to the medieval dedication.

The documentary evidence was then submitted to the County Archivist, Mrs. Patricia Gill, who confirmed the conclusions set out above. Subsequently permission to revert to the medieval dedication was sought from the Bishop of Chichester, and this

permission was granted in a letter of 26 February 1979 to the rector. The formal change was made on Lady Day Sunday 25 March 1979 at a Parish Communion celebrated by the Rt. Revd. W. W. Hunt, formerly Bishop of Repton. The title of the building is now the Church of the Blessed Virgin Mary Singleton.

In order to commemorate the return to the medieval dedication, a cartouche of the Mother and Child in stained glass designed by John Hayward has been installed in the east window of the north aisle of the church. This cartouche was dedicated by the Bishop of Chichester, the Rt. Revd. Eric Kemp, on 16 December 1979.

We are indebted to the County Archivist and to the staff of the West Sussex Record Office for their assistance in the preparation of this note.

Michael Hare and John Bishop

[1]   Public Record Office, *De Banco Rolls* (CP 40/161 rot. 258). This reference is noted in Dunkin's manuscript collection in the British Library, Add. MS. 39366, f. 122v.
[2]   G. L. Hennessy, *Chichester Diocese Clergy Lists* (1900), 136.
[3]   West Sussex Record Office (hereafter W.S.R.O.), STC1/1 f. 11; see also R. Garraway Rice, *Transcripts of Sussex Wills, 4, Racton to Yapton*, Sussex Record Society, 46 (1940-41), 131.
[4]   W.S.R.O., STC1/1 f. 24b.
[5]   C. Gibbon, 'Dedications of Churches and Chapels in West Sussex', *Sussex Archaeological Collections* (hereafter *S.A.C.*), 12 (1860), 77-8.
[6]   Garraway Rice, 128-132. The incorrect reading is given on p. 129 under the heading *Dedication* and is cross-referenced on p. 130 under the heading *Stocks and Funds;* the correct reading is given on p. 131 under the heading *Brotherhoods.*
[7]   Gibbon.
[8]   W.S.R.O., STC1/5 f. 7; Garraway Rice, 131.
[9]   W.S.R.O., Par/174/7/1, f. 82.
[10]   For Bowles' membership of the Society see the membership lists in the relevant volumes of *S.A.C.;* his published note concerned a 'Small brass or copper Implement found at Singleton', *S.A.C.*, 16 (1864), 300-1.

Port's Road

John McNeil Dodgson in *The South Saxons* (Chichester, 1978), p. 54, says: 'In the years since publication, the English Place-Names Society's Sussex volumes have been overtaken by new thinking ... (The) volumes on Sussex represent the state of knowledge in 1930. This work (PNSx) is a dangerous tool, unless handled carefully with up-to-date annotations.' Similar warnings appear in Margaret Gelling's *Signposts to the Past:*

Place-names and the history of England (London, 1978), e.g. on pp. 15 and 106. Had either of these books appeared before the note about Port's Road was written[1] and assuming that they had been read, there would not have been the acceptance of the first element of the place-name Portslade as a personal name. Dr. Gelling's book and Mr. Dodgson's chapter offer salutary lessons to those of us who, untrained in place-name studies, have accepted PNSx as the final authority.

Portslade is interpreted by Dr. Gelling as meaning: *crossing place of the harbour.*

The first Honorary Secretary of the Sussex Archaeological Society, W. H. Blaauw, at a meeting held in 1846, suggested a policy to be followed by the Society with regard to archaeology. He pointed out in what direction and by what means the Society could best exert its energies. Most of his views are still appropriate today and one sentence, referring to the study of place-names, bears repeating:- 'It may be permitted here to caution antiquaries from drawing too hasty conclusions from the similarity of names'.[2]

E. W. Holden, F.S.A.

[1]   E. W. Holden, 'Port's Road, the ancient road of Portslade', *Sussex Archaeological Collections* (hereafter *S.A.C.*), 114 (1976), 323-4.
[2]   W. H. Blaauw, 'On Sussex Archaeology', *S.A.C.*, 1 (1846), 6.

An account roll of the cellarer of Battle Abbey

Among the estate papers of Magdalen College, Oxford, there is an account roll of the cellarer of Battle Abbey.[1] The roll is made up of four papers sewn Chancery fashion. The top paper is damaged and most of the heading is missing. The dorse is headed 'anno h. sexti xxxvij' which dates the document to 1458-9. As the accounting periods of the cellarer varied from year to year[2] it is not possible to give exact dates to the roll although it probably contained the account of Richard Aleyn, cellarer from February 1459 until March 1463.[3] The general form of the document is similar to that of the published rolls for the 1440s and 1460s but the precise order of the paragraphs does differ. Not all the sections have been totalled and there is no grand total of receipts. On the dorse there are accounts for corn and stock.

The account is written in one hand throughout but on the dorse, below the stock

account, two different hands have written a genealogy of Brut in English and Latin. The first hand gives the descent of kings from Brut and the second hand has appended the descent of Brut from Adam and augmented the earlier list by adding other kings of Brut's lineage. The genealogies may have been abstracted from a contemporary copy of the 'Brut' known to have been at Battle[4] or from another manuscript of the text which pays more than usual attention to the abbey.[5] This completely different use of part of the roll and the lack of totals would suggest that the account is not in its final form. Paper draft accounts with a later, formal, parchment engrossment are known from the fifteenth century. The comparative rarity of cellarer's account rolls on paper might be the result of the use of the medium for documents in a transitional form, less important than the final parchment copy.[6]

A connection between Battle Abbey and Magdalen College, Oxford, appears in Richard Aleyn, the cellarer of Battle, who was elected prior of Sele, a small house close to Bramber, in 1463. He promptly sold the office to Ralph Aleyn who then acted as prior. The bishop ejected Ralph in 1466 and Richard Aleyn was reappointed to the office he was to hold until 1474. During this time the priory fell grievously in debt. It has been suggested that the prior used the revenues for his own benefit and that he may never have visited the house. Sele Priory was failing in its spiritual functions. It came to the attention of its patron, William Waynflete, Bishop of Winchester, who found an alternative candidate for the endowments of Sele in his new college in Oxford. Although Waynflete was able to secure the deposition of Aleyn in 1474, Magdalen College did not acquire the property until 1480, as Richard Grigge, the sole remaining monk, maintained his position as de facto prior.[7]

The presence of the cellarer's roll at Magdalen might suggest that Richard Aleyn had more contact with Sele than has hitherto been accepted. There are a number of other documents at Magdalen which relate to Battle Abbey[8] and to its cell at Brecon[9] which could conceivably have come via the same source and thus may serve to strengthen the argument.

C. M. Woolgar

[1] Present reference: Magdalen College, Oxford, Estate Paper 91/9.

[2] E. Searle and B. Ross, eds., *Accounts of the cellarers of Battle Abbey 1275-1513* (Sydney 1967; also published as Sussex Record Society, 65), pp. 132-6: 6 May to 6 May; pp. 136-41: Easter to Easter.
[3] ibid. p. 164; vide infra for the connection between Aleyn and Magdalen.
[4] N. K. Ker, *Medieval libraries of Great Britain* (1941) p. 5, University of Chicago 254.
[5] British Library, Harleian MS. 53: relevant extracts are printed in F. W. D. Brie, *The Brut of the Chronicles of England* (part ii), Early English Text Society, Original Series, 136 (1908) pp. 534-7.
[6] Searle and Ross op. cit. p. 65 n 1: the 1371-2 account is on paper but the material does not occur again until the sixteenth century.
[7] L. F. Salzman, *The Chartulary of the Priory of St. Peter at Sele* (1923) p. xvi.
[8] W. D. Macray, *Catalogue of the Muniments of Magdalen College, Oxford (c.* 1860-80) (typescript at Magdalen) Miscellanea: (Sussex) 337-43. 339 contains two inventories of plate in the refectory of Battle Abbey, the earlier of which is published in W. D. Macray, *Notes from the muniments of St. Mary Magdalen College, Oxford* (1882) pp. 11-13.
[9] Macray Catalogue, Misc. (Sussex) 341-2, published in R. W. Banks, *Cartularium Prioratus de Brecon* (1884) pp. 140-1.

Quarter Sessions in Elizabethan Sussex

What is known of the arrangements for Quarter Sessions in Sussex from 1594 onwards, as recorded in the surviving Sessions Rolls, is discussed in *A descriptive report on the Quarter Sessions, other official, and ecclesiastical records in the custody of the County Councils of West and East Sussex* (Chichester and Lewes, 1954), 1-5. Additional information from sources in the Public Record Office is adduced by B. C. Redwood in the introduction to his edition of the *Quarter Sessions Order Book, 1642-49*, Sussex Record Society, 54 (1954), xix-xxi.

The recently published *Calendar of Assize records, Sussex indictments, Elizabeth I*, ed. J. S. Cockburn (1975), contains enough references to cases sent to the Assizes from Quarter Sessions to enable us to build up a comprehensive picture of the arrangements in the whole Elizabethan period.

The first conclusion to emerge is that, in all the years in which they are mentioned,[1] joint Midsummer Sessions (as opposed to the separate Sessions for East and West Sussex held at the other three times of the year) were the regular custom throughout the reign, with the sole exception of 1572 when the Western division met at Arundel on 7 July and the Eastern at Lewes on 10 July.[2]

Thus the suggestion in the *Descriptive report*, 2, that the letter from the Privy Council

dated 24 May 1584 which it reproduces as Appendix A (p. 198) may have originated the custom of the joint Midsummer Session cannot be sustained. It, and the reply printed as Appendix B (p. 199), must both refer to the possibility of holding joint Sessions on the other three occasions, a proposal which the justices' opposition clearly defeated in favour of the procedure 'vsed tyme owte of mynde'.

The second conclusion is that the joint Midsummer Sessions were held, undoubtedly for obvious reasons of convenience, in the Assize town a day or two before the Assizes. Thus only two of those mentioned were held at Lewes, seven at Horsham and 20 at East Grinstead. The only exceptional years are 1577, when the Assizes were held at Horsham on 8 July and the Sessions at Horsham on 10 July,[3] and 1572 when, as already noted above, there were separate July Sessions, but in that year the Assizes were not held until 5 September (at East Grinstead) so perhaps it was thought that separate Midsummer Sessions were more convenient if there were no immediately following Assizes. It does not seem unreasonable to assume that in the years in which the Midsummer Quarter Sessions are not mentioned they would have been held in the Assize town before the Assizes as in the years when they are mentioned.

Unfortunately we cannot say if this custom continued in the reign of James I as the published Sussex Indictments for that reign[4] contain no mentions of Midsummer Sessions at all (and only five of those at other times) and there are only three years in it for which any Rolls for the joint Midsummer Sessions survive.[5] However, of the years 1594-1686 for which Rolls do survive, Lewes was the regular meeting place for the joint Midsummer Sessions, with only four at East Grinstead and two at Horsham,[6] although during that period the Sussex Assizes were invariably at East Grinstead or (rather less frequently) at Horsham and apparently never at Lewes. So the custom of holding the joint Midsummer Sessions in the Assize town just before the Assizes does not seem to have lasted long beyond the reign of Elizabeth.

The timing of the other three Sessions seems to have been on the same pattern as noted by Redwood[7] for 1642-49, the Eastern division meeting three days after the Western, with the exception of 1559 (both Easter Sessions on 24 March) and 1560 (Western Easter Session on 22 April, Eastern on 19 April).

Finally, the information in the Elizabethan indictments enables us to give earlier dates for Quarter Sessions in several towns than those given on p. 3 of the *Descriptive report*. Thus in the Eastern division East Grinstead was the meeting place of the joint Midsummer Sessions in 1561 and 19 other years,[8] Lewes for two joint Midsummer Sessions (1565 and 1580) and the divisional Sessions at the three other times, from Epiphany 1559, together with an anomalous additional one on 31 May 1577.[9] In the Western division Chichester was the usual place, from Michaelmas 1558, but the joint Midsummer Sessions met at Horsham in 1559 and 6 other years and also the Epiphany Sessions in 1598. Arundel was the meeting place at Easter 1564 and Midsummer (Western division only) 1572 and[10] Steyning on 5 May 1572.

It is hoped to compile a table of all the dates and meeting places of Quarter Sessions in Sussex that are mentioned in the Elizabethan Indictments and to place copies in the East and West Sussex Record Offices and the library of the Sussex Archaeological Society.

M. J. Leppard

[1]   29 years, as opposed to 14 in which they are not (for 3 of which no Summer Assize records survive and for 5 of which the surviving records are fragmentary) and 1 (1572) which is an exception.
[2]   Already noted by Redwood, xx, who also notes a joint Midsummer Session at East Grinstead in 1557, two years before Elizabeth.
[3]   On the evidence of Elizabethan Indictments, p. 132, entry 674, part of the record of the July Assizes. Has something been misrecorded here or did the two courts sit concurrently?
[4]   *Calendar of Assize Records, Sussex indictments, James I*, ed. J. S. Cockburn (1977).
[5]   1614, 1615, 1617 *(Descriptive report, 8)*.
[6]   *Descriptive report*, 2.
[7]   p. xiii.
[8]   As also, before Elizabeth, in 1557: see note 2 above.
[9]   p. 132, entry 674.
[10]   According to Redwood, xx.

The Church of Sir Richard de Wych and the Thompson Family of Ashdown Park, Hartfield

In 1974/75 the unconsecrated church in Ashdown Park (at TQ43633199), dedicated to Sir Richard de Wych, Bishop of Chichester, was pulled down after its sale to stone quarry owners at West Hoathly. It had been built in 1886 by Thomas Charles Thompson of

Ashdown Park, in whose grounds it then stood, in memory of his two sons who both died young. Traditionally the stone was quarried between the present Ashdown Park House and the main road. Pevsner says of it 'The architect seems unrecorded. It is quite a substantial job, with a crossing tower and an apse, perpendicular in style. The crossing and apse space is all rib vaulted, with tiercerons and foliage bosses'.[1] Local tradition is strong that it is a copy, or model, of a church in Durham, homeland of the Thompsons (Plate III).

Besides having strong ties with the Church of England, T. C. Thompson was a large employer of labour and he felt that the four mile walk to Hartfield parish church was too far for his servants and others living in this remote part of the parish. In addition to building a church and paying the stipend of a curate he also provided a caretaker and built a cottage for him nearby.[2] For the needs of the children he built a schoolroom, with attached schoolhouse, on the main road and engaged a teacher.[3] A lame Miss Abraham was remembered by his granddaughter as the teacher, and others recall his provision of midday lunch for poor children who had to walk to school from remote farms. The school was finally closed about 1943, having been staffed latterly by nuns from the Novitiate at Ashdown Park.

After the death in 1917 of Captain C. K. T. Fisher, to whom the property had descended from his grandfather T. C. Thompson, the estate was broken up and sold with the exception of the church which was given to the Church of England. By this time however its decline had already set in, particularly since the building of a church at Colemans Hatch in 1912. It had, of course, never been used for burials but christenings often took place there, as people in the immediate locality were very attached to it, and services continued for many years on a monthly basis. This attachment seems to have stemmed partly from its romantic setting in beautiful woodland and partly from affection and respect for the Thompson family by their neighbours and employees. There was a genuine feeling of grief and loss by those who had attended services there, sung in its choir, or had been taught at the school, when its demolition was announced.

One occasion particularly remembered was the crowded memorial service following the death of Captain Fisher. On this occasion buglers from Hobbs Barracks, East Grinstead, arrived too late to sound the Last Post and were met by the large congregation emerging from the service. They claimed to have lost their way in the woods, but were strongly suspected of dallying to gather chestnuts! Infrequent services ceased about 1939 and the building was eventually acquired by Mr. Alick McLaren of the nearby High Beeches who owned the surrounding land. He removed the bells but kept the buildings in watertight condition as did his relatives Mr. and Mrs. E. T. Maddox who succeeded him. However after they sold part of their property, which included the church, to the Hon. Simon Stuart in 1970 vandals broke in, doing much damage, and lead from the roof and most of the Thompson memorials in the chancel were stolen. Fortunately I had copied them before this happened.

A brief account of the Thompson family is perhaps worth recording as an example of the trend of wealthy Victorian north-country families to migrate south near to London and the south coast. Here they could become country squires and live near the centres of culture and art.

Ashdown Park was part of the large area of Ashdown Forest enclosed under the Decree of 1693, and over the following century passed through the hands of several land speculators. The first mansion house known here was built either by Thomas Bradford, who had Ashdown Park in 1815, or by Rear Admiral Major Henniker (1780-1843) when, after a distinguished naval career, he retired and married Anne Elizabeth Henniker (probably his cousin) of the East Anglican branch of the family in 1829. He died in 1843 and his fine memorial tablet is in Hartfield church.[4] The estate was then said to comprise 3563 acres and probably included the present Pippingford Park, Old Lodge, and the army training ground. In 1855 his widow was living at Old Lodge (she died in 1860). In 1867 Edward Henniker (probably a son) was at Old Lodge and a Joseph Ranger occupied Ashdown Park House.

It was in this year that Thomas Charles Thompson bought the estate. He also owned and presumably retained his Sherburn Hall

estate in Durham, his father then living at Monks Wearmouth in the same county. He himself was a Member of Parliament for Durham City from 1880-1885.

After his acquisition of the property he seems to have immediately demolished the Henniker mansion (except possibly the cellars) and built the present stone house with material from the quarry mentioned above. The grounds surrounding the house were then laid out and some fine specimen trees planted. Some recently felled were found to be about 100 years old. The stream that originates near Wych Cross was dammed in several places to make ponds and (perhaps unfortunately) wild rhododendrons were introduced. T. C. Thompson died in 1892 leaving in his will a black suit to each of his male employees in which to attend his funeral. His cherished plans for founding a Thompson family seat for future generations of their children were sadly frustrated. Of their two sons Harold, the younger, died when only one year old in 1863 and Thomas Moore died of typhoid fever in Paris in 1873 aged 18. A daughter, Mary Penelope Gwendoline, married Rev. George Carnac Fisher, Vicar of Forest Row (1874-79) and lived in a house on the estate at Wych Cross, now the Roebuck Hotel. He later became Suffragan Bishop of Southampton (1896) and of Ipswich (1899). It was their son C. K. T. Fisher (born 1879) who inherited the estate and was stated to be an artist of real promise. He was killed at Gaza, Palestine, in 1917.

The death of Capt. Fisher heralded the break-up of the Ashdown Park estate in 1918 after its purchase by a Mr. Anderson, of a firm of timber merchants, who lived at Pippingford Park and felled most of the mature trees. Capt. Fisher had already vacated the house by 1914 and for the period of the war 1914-18 it was taken by Lady Brassey who turned it, together with her own house at Chapelwood Manor, Chelwood Gate, into a hospital and convalescent home for Belgian army officers. The house was then bought in 1920, by the Institute of the Sisters of Notre Dame de Namur for use by a teaching order, the Novitiate of Ashdown. Although offered the church they felt it was too far away and built instead their own church attached to the mansion, in addition to other extensions. When the house and adjoining grounds were given up the nuns they were acquired in 1971 by a branch of the United States International University of California, and in 1976 by Barclays Bank as a staff training centre.

Articles relevant to the church and the Thompson family appeared in the East Grinstead Courier of January 10th, 24th, and February 7th 1974.

C. F. Tebbutt, F.S.A.

[1]   *The Buildings of England* Sussex (1965) 506.

[2]   The present Church Cottage at TQ437322.

[3]   At TQ43133231. The schoolroom was pulled down in 1976. The house remaining.

[4]   His sword is on permanent loan to Barclays Bank for exhibition at Ashdown Park.

[5]   A full copy of the Thompson memorials and family coat of arms has been deposited in the library at Barbican House.

Pedigree of the Thompsons of Ashdown Park from memorials (now lost) in the Church of Sir Richard de Wych.[5]

```
                                              Richard Pemberton
                                                     |
                                       Thos. Thompson=Elizabeth
                                        1777-1836      1785-1861
         _____|_____
        |                              |                                                 |
Thos. Chas. MP=Marianne Moore   Penelope=Ed. Chas. Bolville      Eleanor Margaret=Cotsford Burden
  1821-1892                      1819-1852                         1826-1876
        |_____
        |                     |                      |
   Thos. Moore            Harold           Mary Penelope=Geo. Carnac Fisher
   1858-1873            1862-1863
                                   _____|_____
                                  |                        |                      |
                         Capt. G. K. T. Fisher    Penelope Eleanor Thompson      and
                             1879-1917                   1883-1946            6 others
```

INDEX