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May 1988

ABBREVIATIONS

used in References and Notes in this volume

Add. MS.	Additional Manuscript
<i>Antiq.</i>	<i>Antiquarian, Antiquaries, Antiquities</i>
<i>Arch.</i>	<i>Archaeologia, Archaeological, Archaeology</i>
<i>Assoc.</i>	<i>Association</i>
B.A.R.	British Archaeological Reports
<i>Coll.</i>	<i>Collections</i>
<i>Edn.</i>	<i>Edition</i>
<i>Geog.</i>	<i>Geographical, Geography</i>
<i>Hist.</i>	<i>Historical, History</i>
<i>Inst.</i>	<i>Institute</i>
<i>Jnl.</i>	<i>Journal</i>
<i>Mag.</i>	<i>Magazine</i>
NGR	National Grid Reference
<i>N. & Q.</i>	<i>Notes and Queries</i>
O.S.	Ordnance Survey
<i>Prehist.</i>	<i>Prehistoric</i>
<i>Proc.</i>	<i>Proceedings</i>
<i>Rec.</i>	<i>Record</i>
<i>Repr.</i>	<i>Reprinted</i>
<i>Sci.</i>	<i>Science</i>
<i>Ser.</i>	<i>Series</i>
<i>Soc.</i>	<i>Social, Society</i>
<i>Suss.</i>	<i>Sussex</i>
Univ.	University
<i>V.C.H. Sussex</i>	<i>Victoria County History of Sussex</i>
Vol.	Volume

MID- TO LATE-HOLOCENE FOREST COMPOSITION AND THE EFFECTS OF CLEARANCES IN THE COMBE HAVEN VALLEY, EAST SUSSEX

by *Christine Smyth and Simon Jennings*

Forest composition stages for the past 6000 years have been identified for a small catchment in East Sussex. Palynological analysis supported by radiocarbon measurements of two sites within the valley has been undertaken in order to examine the relationship between changes in forest composition, including clearance phases, and valley sedimentation. A variety of causes exist for alterations to the forest, ranging from natural edaphic changes on the valley floor to widespread anthropogenic clearance, the latter predominant from the Iron Age. Archaeological investigations have shown that the Combe Haven valley was a centre for the early iron industry. Anthropogenic forest clearance from approximately 2900 b.p. was responsible for the formation of the present floodplain when biogenic sediments were replaced by minerogenic deposits as a result of slope wash. A major decline in arboreal pollen frequencies on both pollen diagrams corresponds closely with the deposition of minerogenic sediments in the valley bottom. However, the initiation of forest clearance and slope wash appears to be diachronous within the valley.

INTRODUCTION

The Weald of southeast England contains many valleys and low lying coastal areas (Levels) which have accumulated considerable depths of sediments over the last 10,000 years (Holocene), reaching a maximum at the coast of 33 metres (Jennings 1985, Jennings & Smyth 1985, Jennings & Smyth 1987). The sediments have proved problematical in attempts to reconstruct vegetational change through pollen analysis. Hiatuses in the valley infills (Scaife & Burren 1983) and estuarine minerogenic sequences resulting from marine incursions (Jennings & Smyth 1987) restrict the terrestrial pollen record. At coastal sites, locally derived saltmarsh pollen and considerable quantities of reworked pollen hinder the reconstruction of Holocene forest history (Jennings 1985). Nonetheless, the reconstruction of the Holocene vegetation record has been achieved by Moffat (1984) for the eastern Pevensey Levels (Fig. 1), while a more complete Holocene record has been obtained for valley sites adjacent to Pett Level

(Waller 1987) and for the Vale of the Brooks, Ouse valley (Thorley 1981).

The Combe Haven valley has received detailed investigation. Extensive deposits of *in situ* peat capped by approximately 1 metre of silty clay have provided a reliable record of vegetational history from the mid-Holocene. Smyth (1986) has discussed the sequence of vegetational change, and it is the aim of this paper to focus attention specifically upon the forest history of the valley. In particular the relationship between changes in the composition and extent of the forest and valley infill have been investigated. One important objective of the work has been to examine the cause of a major episode of forest depletion in the Iron Age, and to assess the effect on valley sedimentation. Since one possible explanation is anthropogenic forest clearance, assimilating archaeological information with pollen and sedimentological data has been an important approach in this study.

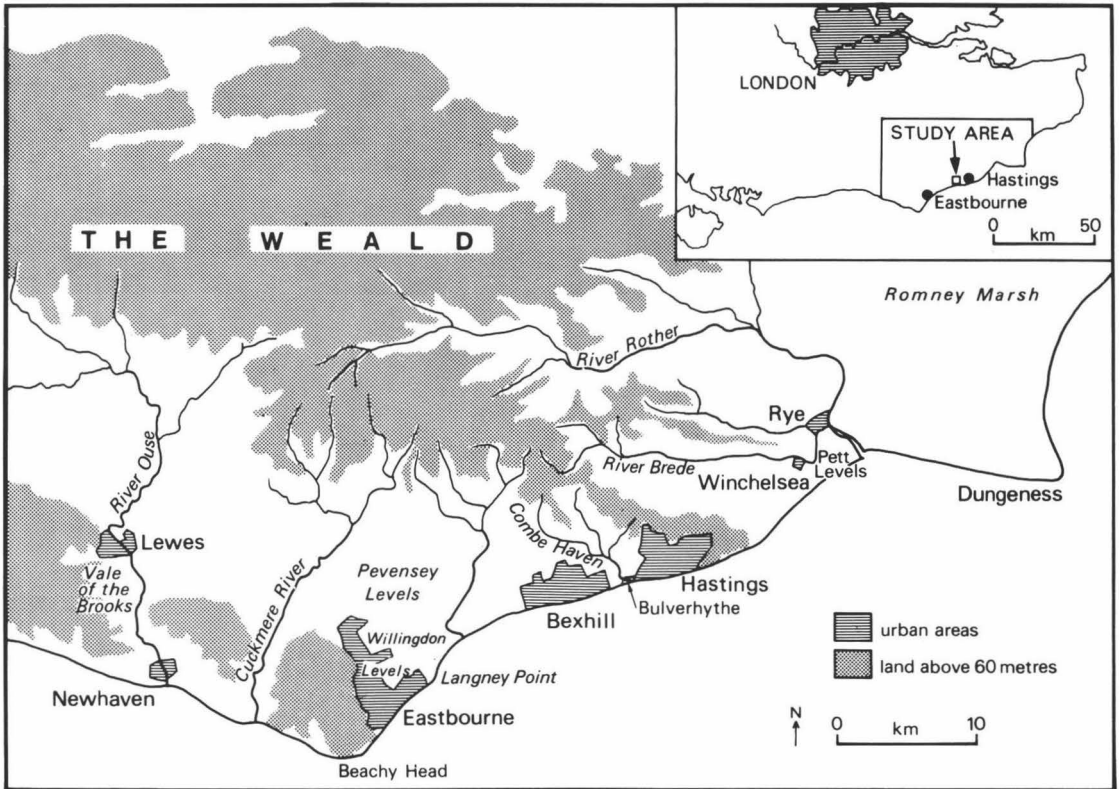


Fig. 1. Location map of South East England showing the study area of the Combe Haven valley, East Sussex.

SITE DESCRIPTION

The catchment covers an area of approximately 52 km.² (Fig. 2), the geology consisting of Ashdown Sand, Wadhurst Clay and Tunbridge Wells Sand, members of the Hastings Beds (Gallois 1978). The Combe Haven is an underfit stream on a floodplain that lies for the most part at only +1 to +2 metres O.D., well below Mean High Water Spring Tides. A coastal gravel barrier and a sluice prevent flooding by the sea.

FIELDWORK TECHNIQUES

Hand augering every 200 metres (Fig. 2) using a gouge auger, and borehole records supplied by East Sussex County Council (Site Investigation Unit), Southern Water Authority

and the British Geological Survey were used to establish the lithostratigraphic units of the valley (given below).

A reliable reconstruction of vegetational history requires well-preserved and stratigraphically undisturbed pollen samples. These conditions are usually best found in peat deposits. A mid-valley site (CH. 1), where the hand auger encountered the maximum recorded depth of peat, was therefore selected for pollen analysis. A down-valley site (CH. 2) was also investigated. Here the peat is interdigitated by estuarine, minerogenic deposits which have yielded data on sea-level tendencies. The examination of these two sites (located on Fig. 2) has given an important spatial dimension to the reconstruction of vegetational history. The auger provided a complete record of the sediments to

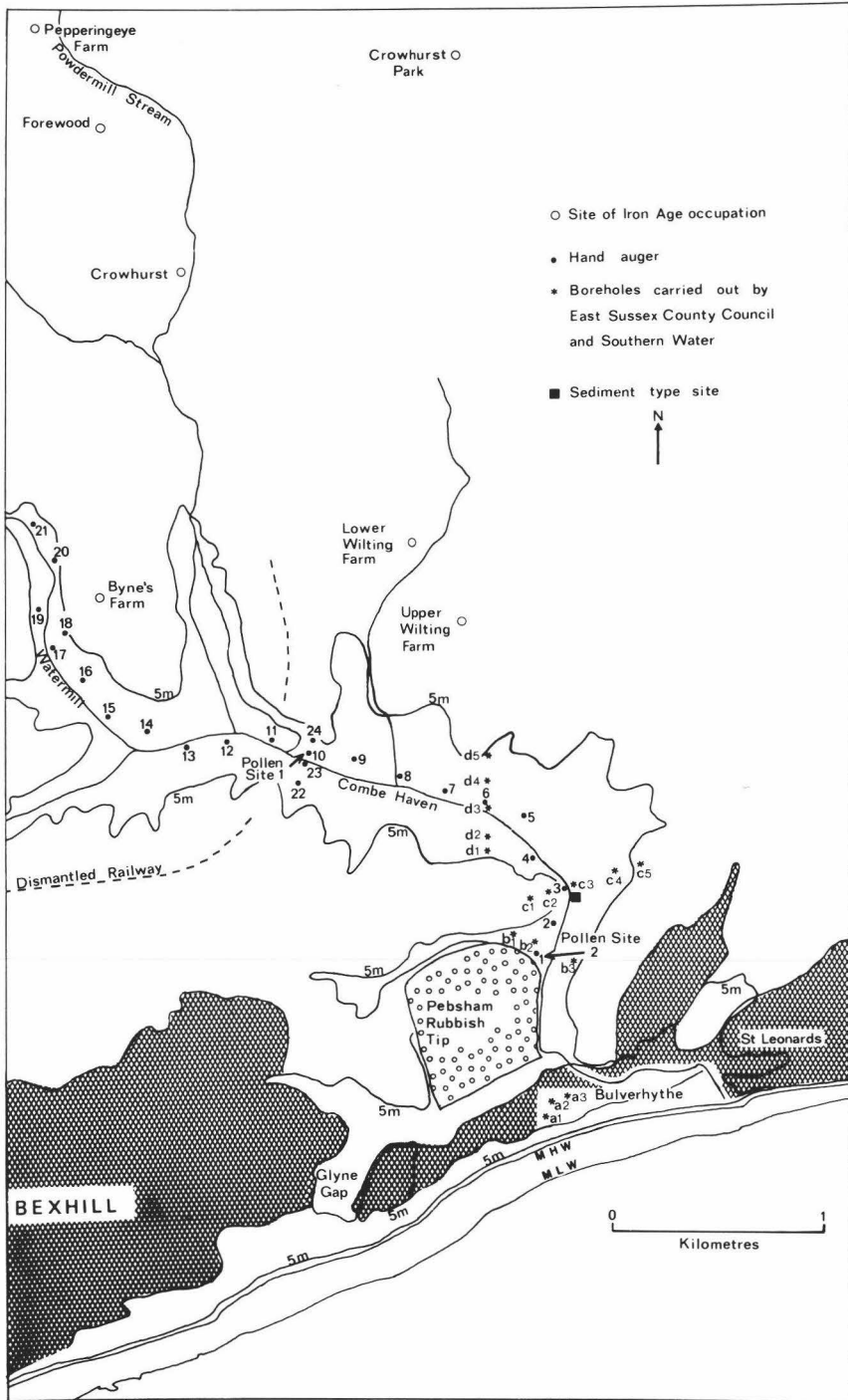


Fig. 2. Location of the augerhole and borehole sites used to construct the lithostratigraphic long- and cross-profiles for the Combe Haven valley. Pollen sites are indicated. For cross-profile data see Jennings and Smyth (1987).

the limit of penetration. No erosion surfaces have been found within the lithostratigraphy.

THE LITHOSTRATIGRAPHIC UNITS OF THE VALLEY

The unconsolidated sediments fill the valley to a maximum recorded depth of 24 metres and are composed of basal gravels, clays, silts, sands and peat. Four lithostratigraphic units are recognised (Figs. 3 & 4)

Unit 1—River Gravels. Their presence has been established from borehole data. They appear to form a basal deposit.

Unit 2—Lower Silty Clay. This extensive deposit is predominantly silty clay in texture (Fig. 4), but up-valley there is an increase in sand. This unit is generally blue to blue-grey in colour, and the minerogenic layer that separates the two peat layers at the seaward end of the valley (Fig. 3) belongs to this unit. Here fossils of the mollusc *Scrobicularia plana* (da Costa) and of the diatoms *Navicula hungarica* Grunow, *Bacillaria paradoxa* Gmelin, *Cymatosima beligica* Grunow and *Nitzschia navicularis* (De Brébisson) Grunow indicate a brackish water depositional environment.

Unit 3—Combe Haven Peat. This unit consists of *in situ* *Phragmites* (reed) peat with macrofossils of *Alnus* (alder) and can be traced throughout the valley. The peat is approximately 4 metres thick, although it is thinner in the upper part of the valley. At the seaward end there are two distinct peat layers separated by an intercalation of Lower Silty Clay which wedges out in an up-valley direction. Within the Combe Haven Peat are thin lenses of clay. The Combe Haven Peat may be represented on the foreshore by a submerged forest bed, although radiocarbon dating is required to confirm this. Borehole logs indicate deeper peat layers, including a basal peat (Fig. 3).

Unit 4—Upper Silty Clay. This upper unit is found throughout the valley except at the coast where it is replaced by marine gravel (Fig. 3). The Upper Silty Clay extends to a depth of around

80 cm., is stiff to very stiff and is highly oxidised as indicated by orange mottling. A shallow surface loam of approximately 10 cm. forms the present surface of the valley. Despite its homogenous appearance, the Upper Silty Clay is composed of estuarine and freshwater facies.

RESULTS OF THE RADIOCARBON ANALYSIS

Six lithostratigraphic boundaries have been dated. Their locations are shown on Fig. 3 and the results given in Table 1. Careful sampling for the radiocarbon analysis was undertaken to ensure that comparable horizons were used. No bulk sampling was employed and the deeper samples (SRR-2681, SRR-2682, SRR-2683 SRR-2685) were recovered by a large gouge auger from a single augerhole at both sites. The shallower samples (SRR-2680 and SRR-2684), to which particular reference is made in this paper, were taken from open pits constructed especially for the sampling. In this way contamination was avoided. Therefore, it is considered that the age difference between SRR-2680 and SRR-2684 is real, and this implies a diachronous onset to Upper Silty Clay deposition. The radiocarbon dated samples provide a chronostratigraphic framework for the study of sea-level tendencies within the valley, a subject which is more fully discussed in Jennings & Smyth (1987).

RESULTS OF THE POLLEN ANALYSIS

Representation of the data

The standard technique for the isolation of pollen and spores was followed (Moore & Webb 1978). Two relative pollen diagrams are presented. The CH. 1 diagram (Figs. 5 & 6) covers the entire Combe Haven Peat and Upper Silty Clay sequence. For CH. 2 (Figs. 7 & 8) pollen has been analysed from the Upper Silty Clay and from the top levels of the Combe Haven Peat. On both diagrams the pollen sum is 300 dry

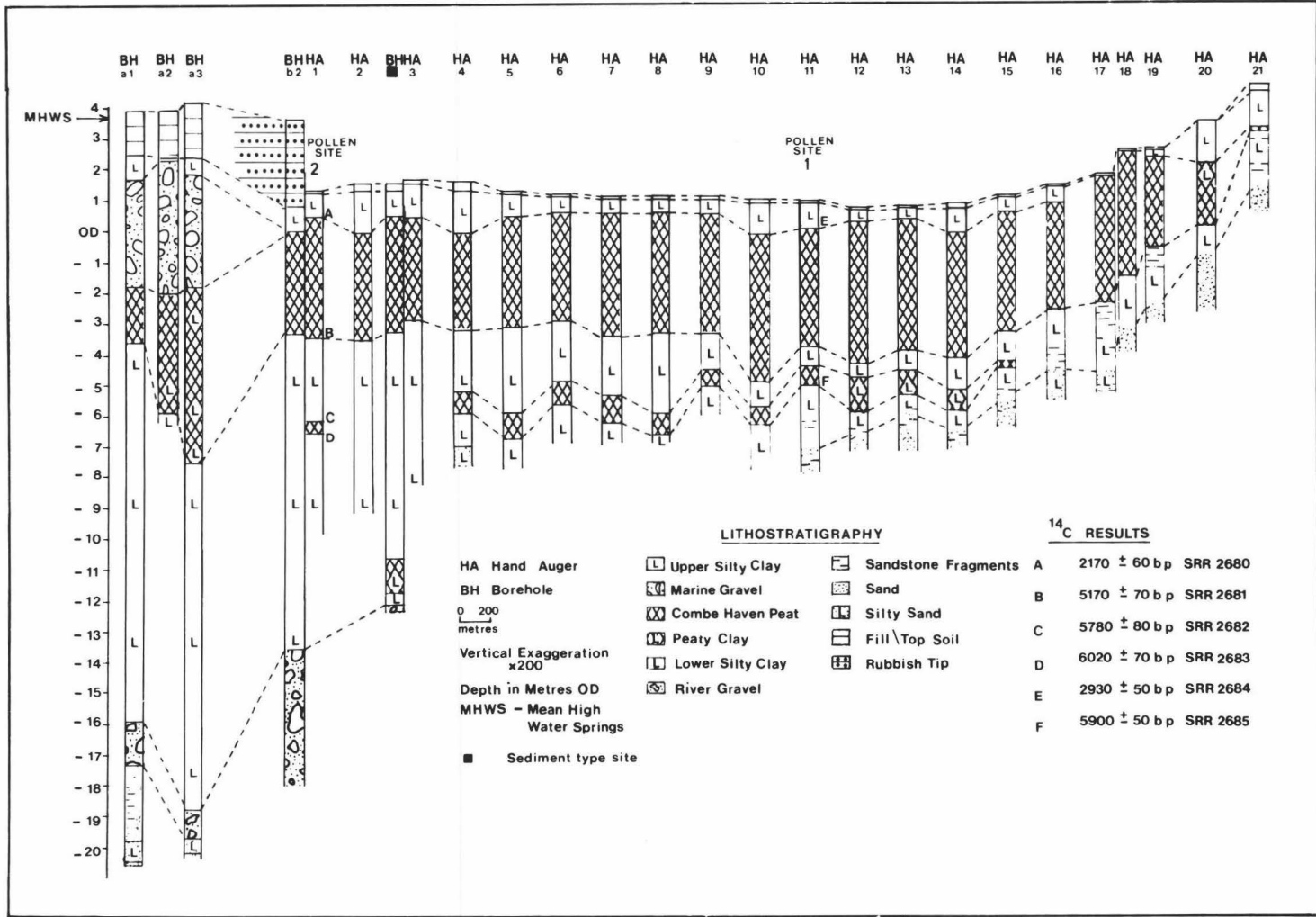


Fig. 3. The long-profile of the Combe Haven valley including lithostratigraphic units and radiocarbon results. The pollen sites are indicated.

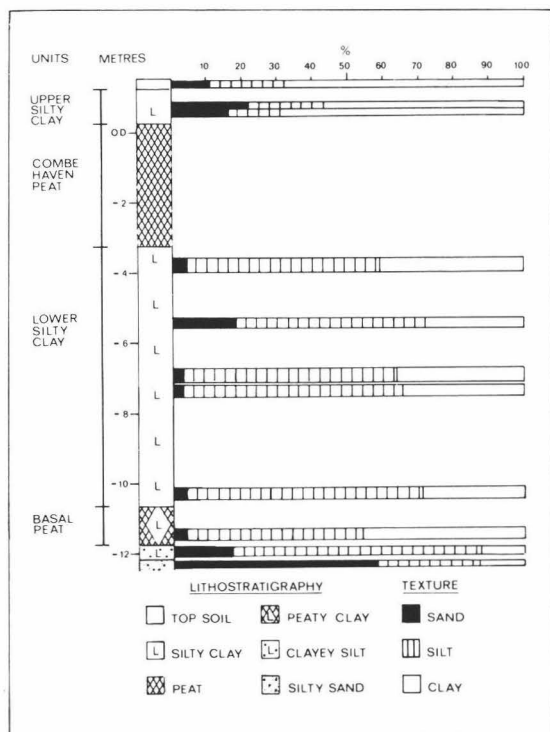


Fig. 4. Sediment type site for the Combe Haven valley including particle size analysis and lithostratigraphic units.

TABLE 1

Summary of the radiocarbon analysis from Combe Haven 1, and Combe Haven 2.

Results of the radiocarbon analysis— mid-valley site (CH. 1).		
Laboratory No.	Age yr. b.p.	Depth (metres O.D.)
SRR-2684	2930 ± 50	+0.31
SRR-2685	5900 ± 50	-5.02
Results of the radiocarbon analysis— down-valley site (CH. 2).		
Laboratory No.	Age yr. b.p.	Depth (metres O.D.)
SRR-2680	2170 ± 60	+0.43
SRR-2681	5170 ± 70	-3.45
SRR-2682	5780 ± 80	-6.15
SRR-2683	6020 ± 70	-6.56

land and marsh pollen excluding *Alnus* (because of overrepresentation), aquatics and spores. The frequency of pre-Quaternary pollen and spores and of *Hystriochospheres* was also recorded. All depths on the pollen diagrams refer to below ground surface. Local forest composition zones (LFCZ) are annotated on these diagrams. They represent episodes of changing forest history in the valley. Each LFCZ is based upon significant changes in the arboreal pollen (AP) record, and as such is distinct from the more conventional local pollen assemblage zones which are also annotated on the diagrams and are discussed in Smyth (1986). The LFCZs for both sites are summarized in Table 2.

A composite diagram has been constructed for both pollen sites (Figs. 9 & 10) showing the percentage of AP excluding *Alnus*, which is shown separately, and the percentage of non arboreal pollen (NAP), excluding aquatics and spores. The number of deteriorated and indeterminate grains are also presented on these diagrams. Corrected frequencies for *Tilia* (lime) are provided for CH.1 to allow for the

TABLE 2

Summary of the Combe Haven Local Forest Composition Zones (LFCZ).

Combe Haven 1.		
Depth (cm.)	LFCZ	Description
50- 0	6	Deforestation
110- 50	5	<i>Alnus-Salix-Corylus-Quercus</i>
140-110	4	<i>Salix</i>
200-140	3	<i>Alnus-Salix-Quercus-Tilia-Corylus</i>
500-200	2	<i>Alnus-Tilia-Salix-Quercus-Corylus</i>
620-500	1	<i>Tilia-Alnus-Quercus-Corylus</i>
Combe Haven 2.		
Depth (cm.)	LFCZ	Description
75- 0	2	Deforestation
95- 75	1	<i>Alnus-Salix-Corylus-Quercus</i>

underrepresentation of this taxon on pollen diagrams due to its relatively limited pollen productivity and dispersal. The method outlined in Greig (1982) was used to calculate the corrected values. A corrected diagram for most AP types at this site is presented in Smyth (1986).

PROBLEMS OF INTERPRETATION

The under- and overrepresentation of taxa as a result of differences in pollen productivity and dispersal rates is a major consideration when interpreting pollen diagrams. Equally important is an understanding of the provenance of the pollen recorded at the site under investigation. At well-forested sites pollen dispersal tends to be local, but with decreasing forest cover the source area of pollen increases (Jacobson & Bradshaw 1981). This is important for the interpretation of pollen data that show forest clearance because, as a result of a wider provenance, a greater diversity of pollen types is likely to be found as frequencies of AP decrease. As forest cover diminishes pollen is recorded from plant communities located further from the site under investigation. Applying these considerations to the Combe Haven valley pollen data suggests that for LFCZs which indicate a well forested landscape, the source for most of the pollen was the floodplain and lower slopes local to the site, probably within 20 to 30 metres (Jacobson & Bradshaw 1981). During periods of decreased forest cover, pollen was recorded from a wider domain which included upper slopes and a greater area of the floodplain.

An intriguing interpretative problem, salient to the study, is the relationship between sedimentation and the pollen record. At both Combe Haven pollen sites significant changes in the pollen data correlate with transitions between biogenic and minerogenic sedimentation. The cause of this correlation may be two-fold. First, an edaphic change on the valley floor could alter the sedimentary environment and the vegetation. For example, a marine incursion onto a freshwater marsh would

result in a switch from biogenic to minerogenic deposition, with a concurrent replacement of freshwater taxa (for example, *Alnus*) by salt tolerant plants (for example some species of *Chenopodiaceae* (Goosefoot)). Second, anthropogenic forest clearance on valley sides could initiate soil erosion. This would be recorded on the valley floor by a decrease in AP simultaneous with a change from biogenic to minerogenic sedimentation. Distinguishing between these two causes requires a careful appraisal of both the pollen record and the lithostratigraphy.

FOREST HISTORY

LFCZ 1 (620–500 cm.) *Tilia-Alnus-Quercus-Corylus*

The sediments of this LFCZ consist of thin, interbedded peat, peaty clay and clay that began to form between 6020 ± 70 b.p. (SRR-2683) and 5900 ± 50 b.p. (SRR-2685). This was a time of environmental flux with dramatic changes to both the vegetation and sediments of the Combe Haven valley. The lack of NAP (Figs 6 & 9) suggests a closed canopy, and therefore local pollen dispersal 20 to 30 metres from the site (Jacobson & Bradshaw 1981). *Quercus* (oak), *Ulmus* (elm), *Tilia* and some of the *Corylus* (hazel) were probably growing on the valley sides close to the site of CH. 1. The high *Alnus* pollen frequencies and presence of macrofossils indicates that it was dominant in the valley bottom. Fig. 9 emphasises the status of *Tilia* which attains corrected pollen frequencies as high as 72 per cent. This suggests that *Tilia* dominated the forest vegetation of the valley close to the site during LFCZ 1. It is generally accepted that this genus favours well drained soils and higher slopes (Godwin 1975), but Manaut *et al* (in Godwin 1975) have indicated that *Tilia* could be locally abundant at the foot of slopes, near but not on the valley bottoms. However, the high pollen frequencies of *Tilia* in LFCZ 1 suggest that *Tilia* had colonised the lower slopes and may even have become

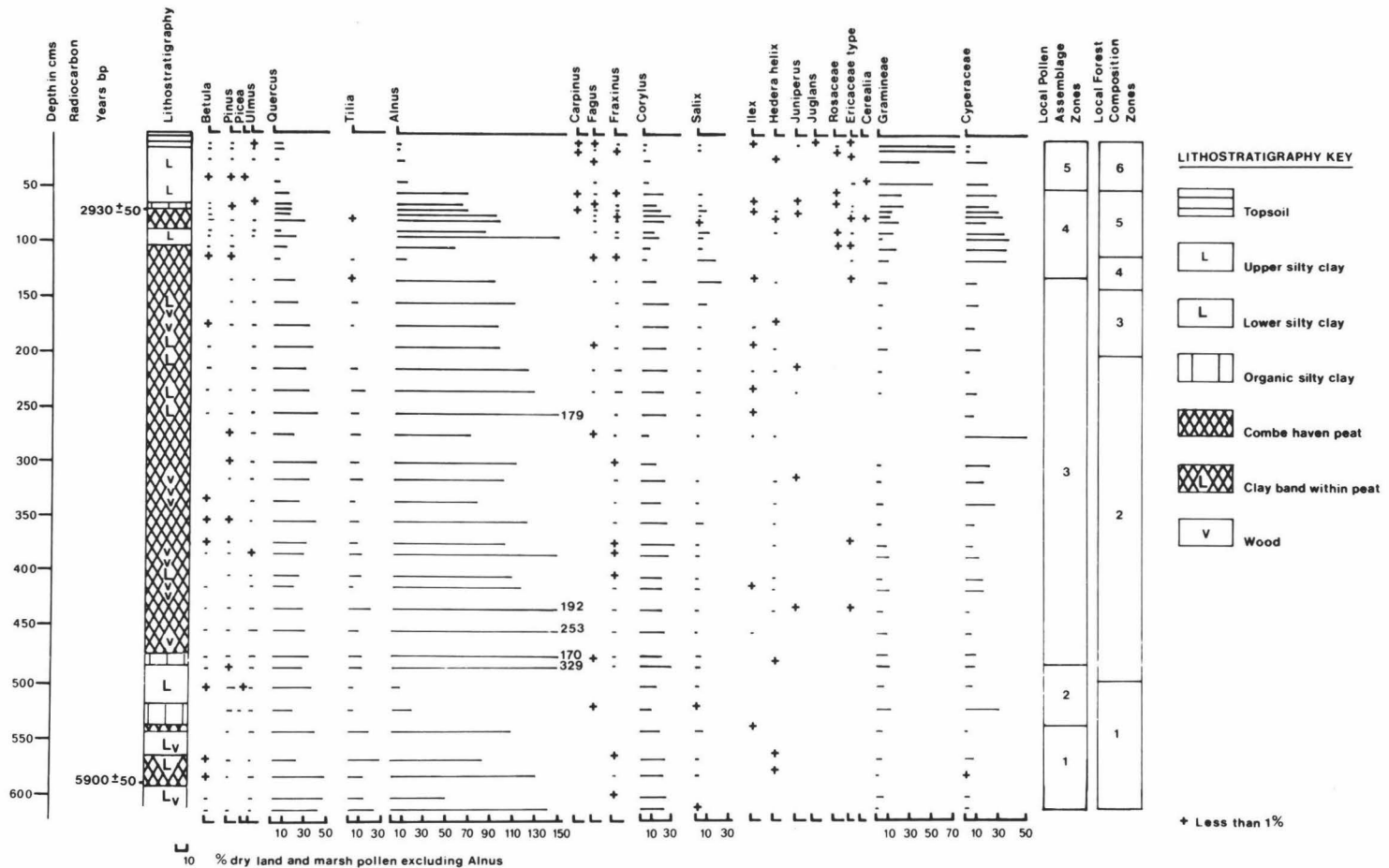


Fig. 5. Radiocarbon dated stratigraphic sequence and relative pollen diagram from Combe Haven 1: arboreal types, Gramineae, Cerealia and Cyperaceae.

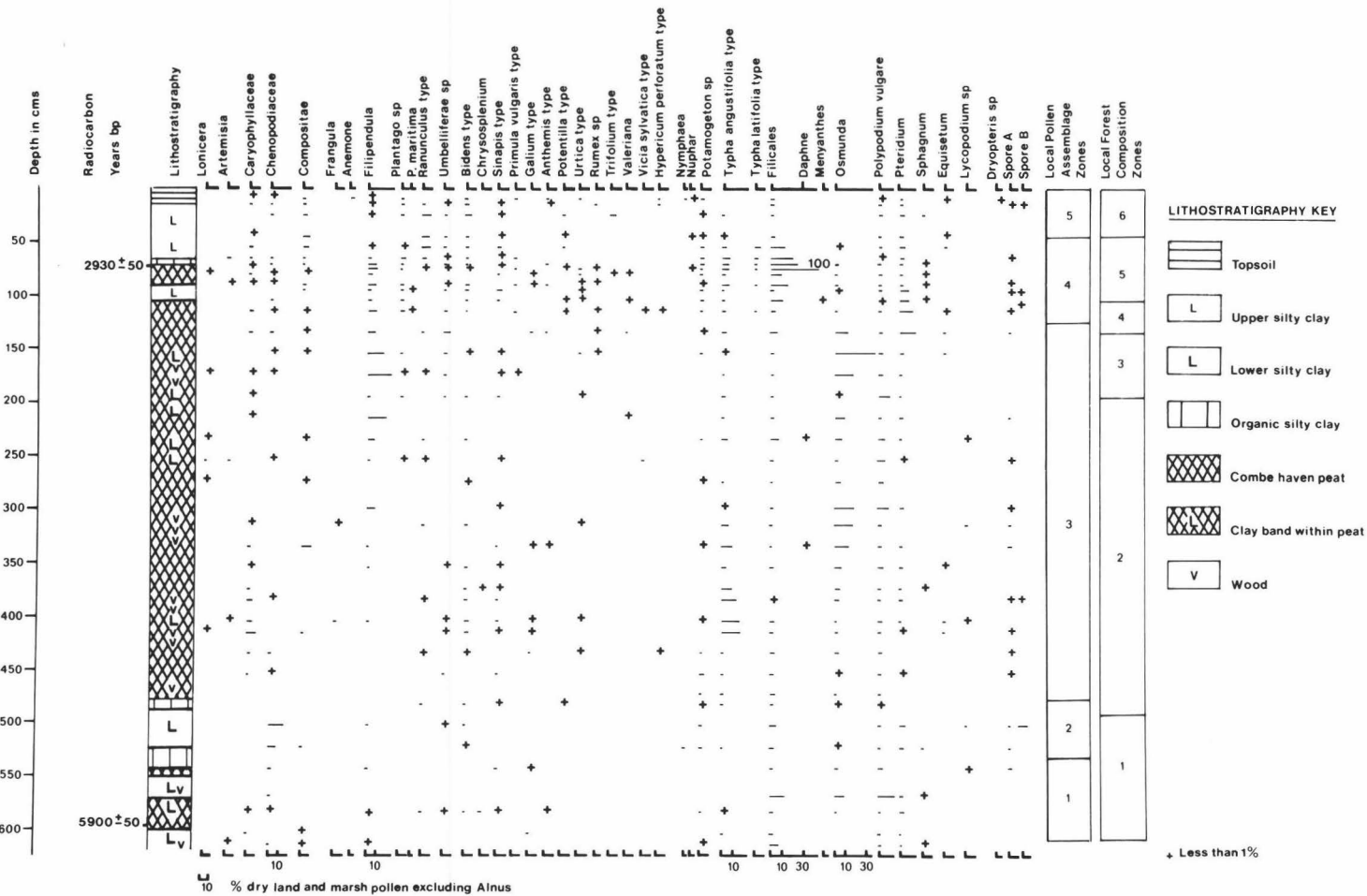


Fig. 6. Radiocarbon dated stratigraphic sequence and relative pollen diagram from Combe Haven 1: herbaceous and aquatic pollen and spores.

established on the valley bottom within 20 to 30 metres of CH. 1. These high values for *Tilia* support the opinion that this genus was an important, if not a dominant member of the indigenous forest over much of south and east England during the mid-Holocene (Turner 1962, Moore 1977, Baker *et al* 1978, Greig 1982).

These *Tilia* values are not thought to indicate selective preservation due to the pollen's high resistance to deterioration. Instead they are believed to be a true reflection of the vegetation because the pollen of this genus attains high frequencies where pollen preservation is good (Fig. 9). Moreover, the frequency of *Tilia* pollen declines in some of the minerogenic horizons in which deterioration is greater.

Changes in the pollen spectra in this LFCZ correlate with lithostratigraphic changes. The organic layers contain high AP counts but dramatic declines in most tree genera accompany the silty clay deposits. These variations in the sedimentary and pollen records may denote an initial rise in the water-table consequent upon the valley being flooded by the sea. Chenopodiaceae pollen within the silty clay layers indicate the proximity of the sea to CH. 1 and are accompanied by increases in Gramineae (grass) and Cyperaceae (sedge) pollen suggesting the establishment of a salt marsh community. Furthermore, the most extensive layer of silty clay can be traced down-valley to CH. 2 (Fig. 3) where the diatom assemblage described earlier indicates a brackish water environment. The frequency of *Pinus* (pine) pollen increases and *Picea* (spruce) pollen is recorded at the point where other AP decline in the silty clay layers. This may also be evidence for the establishment of estuarine conditions. It is possible that *Pinus* may have been growing on the drier valley sides as suggested by its almost continuous presence throughout the diagram. However, there are two possible explanations for the increase in *Pinus* and the appearance of *Picea* pollen. First, as observed by Stanley (1969), long distance transportation of buoyant, winged conifer pollen can result in their overrepresentation in estuarine

and marine sediments. This characteristic has been noted at a number of British sites (for example Godwin 1975, Devoy 1979, Jennings 1985). Second, reworking of pre-Holocene sediments under postglacial estuarine conditions may explain the presence of exotic *Picea* pollen, and increases in *Pinus* pollen, in Holocene estuarine sediments (Jennings & Smyth 1987). This uncertainty in the pollen record precludes the use of *Pinus* and *Picea* pollen as reliable indicators of vegetational history during this phase.

The increase in salinity associated with the estuarine environment discussed above had a devastating effect on the valley floor vegetation, notably on *Alnus*, *Corylus*, and *Salix* (willow) which decline to low values. The decline in *Tilia* from 27 per cent to 5 per cent (Figs. 5 & 9) is further evidence for this genus growing on the valley bottom. There is little evidence to suggest that anthropogenic factors have influenced LFCZ 1. There is an absence of ruderal pollen normally associated with anthropogenic clearance. The evidence suggests edaphically induced responses by the vegetation as a result of a marine incursion.

LFCZ 2 (500–200 cm.) *Alnus-Tilia-Salix-Quercus-Corylus*.

A reduction of the marine influence in the valley is indicated in LFCZ 2 by a recovery of most tree genera that had dramatically declined in the previous LFCZ. A succession on the valley bottom from salt marsh to fen carr dominated by *Alnus* is depicted on the pollen diagram (Fig. 5).

A significant feature of LFCZ 2 is the recognition of several temporary clearance phases, including the 'Elm Decline'. Fig. 9 shows a decline in AP at 412 cm. which is associated with a lithostratigraphic change from peat to peaty clay. The decline in *Tilia* and *Ulmus* values with a corresponding increase in NAP, notably Gramineae, *Artemisia* (mugwort/wormwood) and Caryophyllaceae (Campion) indicate an anthropogenic clearance at the 412 cm. level. The exposure of woodland soils by such

temporary clearances could have initiated local colluviation into the valley bottom. Godwin and Vishnu-Mittre (1975) interpreted similar bands of clay as colluviation following selective clearances of *Tilia* at sites in eastern England.

On the pollen diagram (Fig. 5) the temporary disappearance of *Ulmus* is marked by the fall in frequencies from 8 per cent at 452 cm. to less than 1 per cent at 382 cm. and the disappearance at 372 cm. Although this may seem slight as a basis for delimiting the 'Elm Decline', it is nevertheless consistent with *Ulmus* pollen values from other parts of southeast England (Devoy 1979, Thorley 1981). This point on the Combe Haven valley pollen diagram has not been dated, but the beginning of peat formation at CH. 1 has been radiocarbon dated to 5900 ± 50 b.p. (SRR-2685). From its stratigraphic position, it is likely that the *Ulmus* decline corresponds with a c. 5000 b.p. date. Pollen of *Plantago* sp. (plantain) appear for the first time, and there is an increase in other NAP in a greater variety than before. Therefore, this 'Elm Decline' probably had an anthropogenic cause, although disease, killing elms and creating cleared areas, would have had a similar effect on the pollen record.

The reduction of cleared areas after the decline in *Ulmus* is shown by the decrease and disappearance of many of the herbaceous pollen types that had expanded during the clearance phases. However, the upsurge in pollen of a more local nature, notably Cyperaceae, *Typha angustifolia* type (reedmace), *Filipendula* (meadowsweet) and spores of *Osmunda* (royal fern), suggests that the environment remained moist, at least on the valley floor in the vicinity of CH. 1. *Quercus*, *Alnus*, and *Tilia* pollen decline slightly at the 332 cm. and 272 cm. levels and the lack of ruderal pollen associated with anthropogenic influences suggests the cause was a rise in the water table. Additionally, at 252 cm. and 232 cm., peaty clay layers do not correspond with any decrease in AP, and probably represent meandering channels that had little effect on the vegetation.

LFCZ 3 (200–140 cm.) *Alnus-Salix-Quercus-Tilia-Corylus*

A complex lithostratigraphy of peat and peaty clay lenses is found in LFCZ 3. The peaty clay layer at 192 cm. is concurrent with a major decline in *Tilia* pollen (Fig. 9). *Fagus* (beech) pollen is present in low frequencies as *Tilia* declines and later, in LFCZ 5 becomes established when *Tilia* pollen dies out. Thorley (1981) found the same pattern in the Ouse valley (East Sussex) where the appearance of *Fagus* pollen accompanied the decline of *Tilia*. Van Zeist (1964) argues that *Fagus* expanded following Bronze Age and Iron Age clearances. If so, the appearance of *Fagus* may also be a facet of an increased source area of pollen dispersal due to a reduction in the forest cover.

The decline in AP in LFCZ 3 indicates the onset of more substantial clearance. *Polypodium* (polypody) declines, probably due to a loss in tree cover (Moore P.D., pers. comm. 1986). There is also a slight increase in herbaceous pollen that indicates anthropogenic clearance, namely *Plantago* sp., *Rumex* sp. (dock) and Caryophyllaceae.

LFCZ 4 (140–110 cm.) *Salix*

The forest component dramatically changes within this zone. All AP except *Salix* decrease sharply, especially *Quercus*, which until this zone had remained relatively unchanged on the pollen diagram. This reduction in AP indicates the first major anthropogenic clearance of large areas of the forest as opposed to selective or temporary clearances. These larger scale clearances were probably associated with the iron industry. The Combe Haven valley contains the basic materials required for iron working. The best ore is found in the lower levels of the Wadhurst Clay which overlies the Ashdown Sand. The sandstone may have been used for furnace construction. The Combe Haven catchment contains several iron working sites; Pepperingeye, Byne's Farm, Forewood and Crowhurst Park (Fig. 2). Straker and Lucas (1938) and Cleere (1978) have provided evidence for the latter site being a major

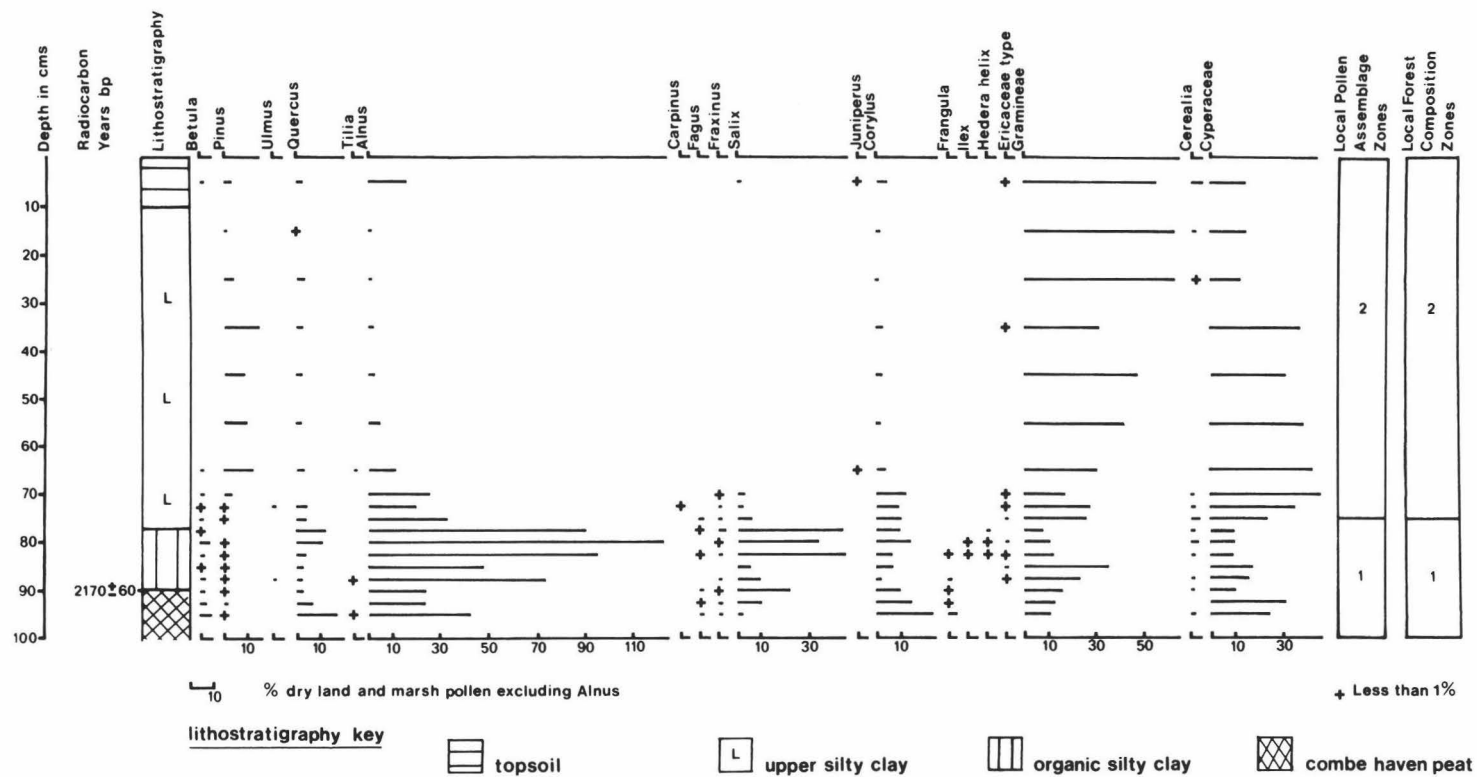


Fig. 7. Radiocarbon dated stratigraphic sequence and relative pollen diagram from Combe Haven 2: arboreal types, Gramineae, Cerealia, and Cyperaceae.

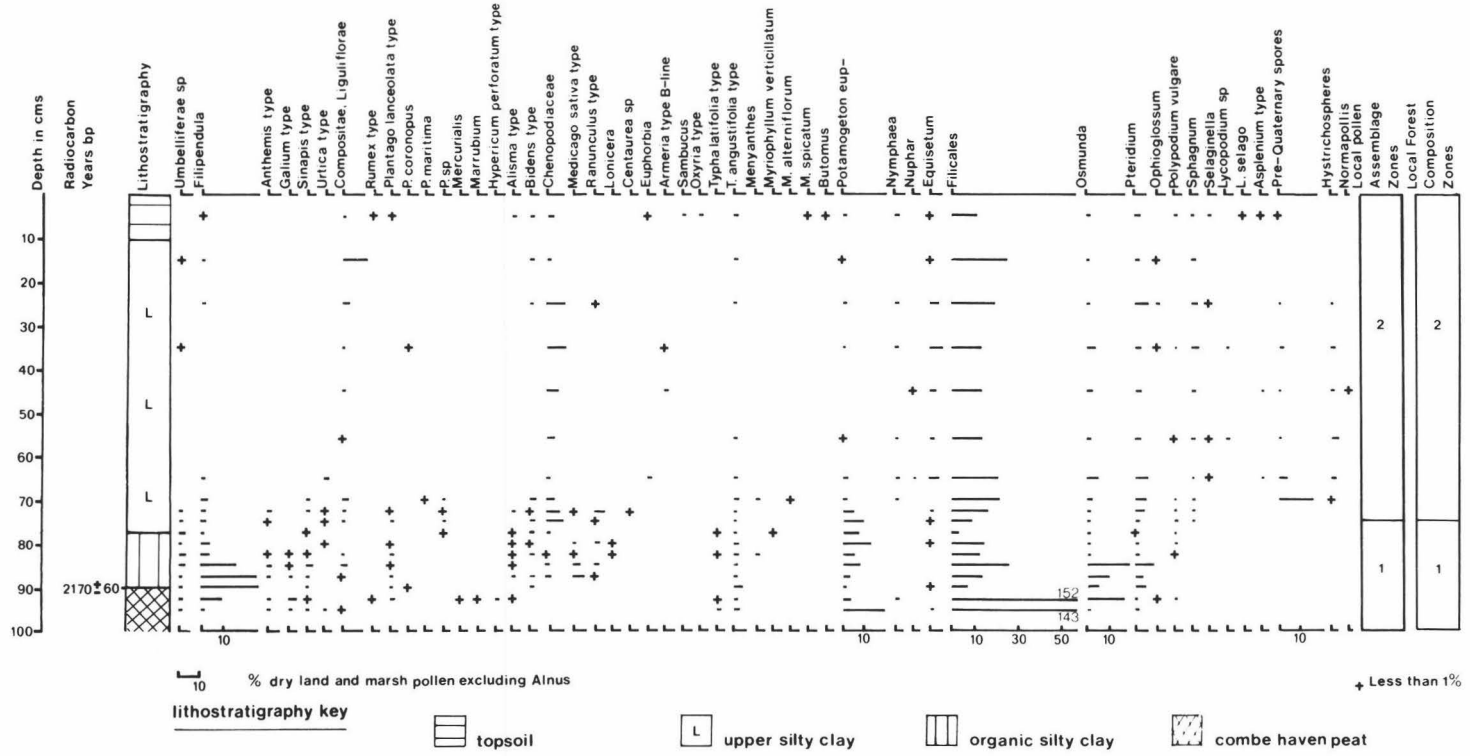


Fig. 8. Radiocarbon dated stratigraphic sequence and relative pollen diagram from Combe Haven 2: herbaceous and aquatic pollen and spores.

centre for pre-Roman iron working.

Quercus could have been used as a source of fuel. Alternatively, large areas of woodland may have been cleared for more extensive agriculture, possibly to serve the growing iron industry. Evidence for agricultural activity is the slight increase in the frequencies of Gramineae and the greater range of herbaceous pollen. *Salix* values increase within LFCZ 4 and may be explained either by a rising water-table, as indicated by the concurrent increase in *Filipendula*, Cyperaceae and *Osmunda*, or by the greater availability of light following the clearances.

The clearances which had begun in LFCZ 3 continued and intensified during LFCZ 4. However, it should be noted that there is little minerogenic sediment in the lithostratigraphy of this zone. An explanation for such an anomaly lies in the location of the cleared areas. It is argued later in this paper that colluvium was not extensively reworked by the river and remained *in situ*. Therefore, unless the clearances were on the slopes adjacent to the pollen site, there may be no lithostratigraphic evidence for them. Thus, a lag between the pollen and lithostratigraphic records would result. Only if clearances were local to the pollen site would they be recorded by both the lithostratigraphy and biostratigraphy.

LFCZ 5 (110–50 cm. at CH. 1) *Alnus-Salix-Corylus-Quercus*

LFCZ 1 (95–75 cm. at CH. 2) *Alnus-Salix-Corylus-Quercus*

The recovery of AP in LFCZ 5 may indicate a regenerative phase. The exception is *Tilia* pollen which disappears from both diagrams. At CH. 1 the demise of *Tilia* corresponds with a silty clay deposit. *Ulmus* has a low and rather sporadic occurrence, but *Fagus* is by now continuously present, and *Carpinus* (hornbeam) is first recorded. Thus a secondary succession of trees is indicated on the valley slopes and floor. The latter situation is well illustrated by the substantial recovery of *Alnus* frequencies at both sites, and of *Salix* at CH. 2 (Figs. 5,7,9,10). *Betula* (birch) is present in higher values at both

sites and it may have re-colonised some of the cleared areas.

A number of plant communities associated with anthropogenic influences are suggested by the pollen data. The development of a heathland habitat is indicated by an increase or appearance of Ericaceae and other acid-loving plants such as Cyperaceae, *Osmunda*, and *Sphagnum*. Meadow and arable pollen increase, especially Cerealia (cereals), *Plantago* sp., *Artemisia*, *Galium* sp. (bedstraw/cleavers) and *Filipendula*. Additionally, at both sites there is a further decline in *Quercus* values, for example at the 83 cm. level on the CH. 1 diagram, and is probably a consequence of anthropogenic activity. On the CH. 2 diagram the sediments become more minerogenic during this phase, but this is not evident at CH. 1.

Despite a secondary succession of woodland, anthropogenic influence upon the vegetation in LFCZ 5 is considerable and usually associated with a change in valley sedimentation. Organic deposits are replaced finally by minerogenic sediments of the Upper Silty Clay when all trees have declined to very low values in the upper part of the forest composition zone (Figs. 9 & 10). In their place an abundant and diverse herbaceous vegetation flourished. Such an association suggests that the effects of major anthropogenic clearances in the Combe Haven valley resulted in the erosion of the soils and the colluviation of material onto the valley bottom. Similar results from other valleys in Britain have been obtained by Shotton (1978), Bell (1982), Brown (1982), Robinson and Lambrick (1984) and Brown and Barber (1985).

LFCZ 6 (50–0 cm. at CH. 1) Deforestation

LFCZ 2 (75–0 cm. at CH. 2) Deforestation

The formation of a minerogenic floodplain at both sites correlates with the dramatic decline and subsequent destruction of the forest, as shown by the AP/NAP ratio on Figs. 9 & 10. At CH. 1 there is a decline in AP from 40 per cent to 13 per cent. Concurrent with this is pollen representative of a greater diversity of meadow herbs and an increase in Gramineae and

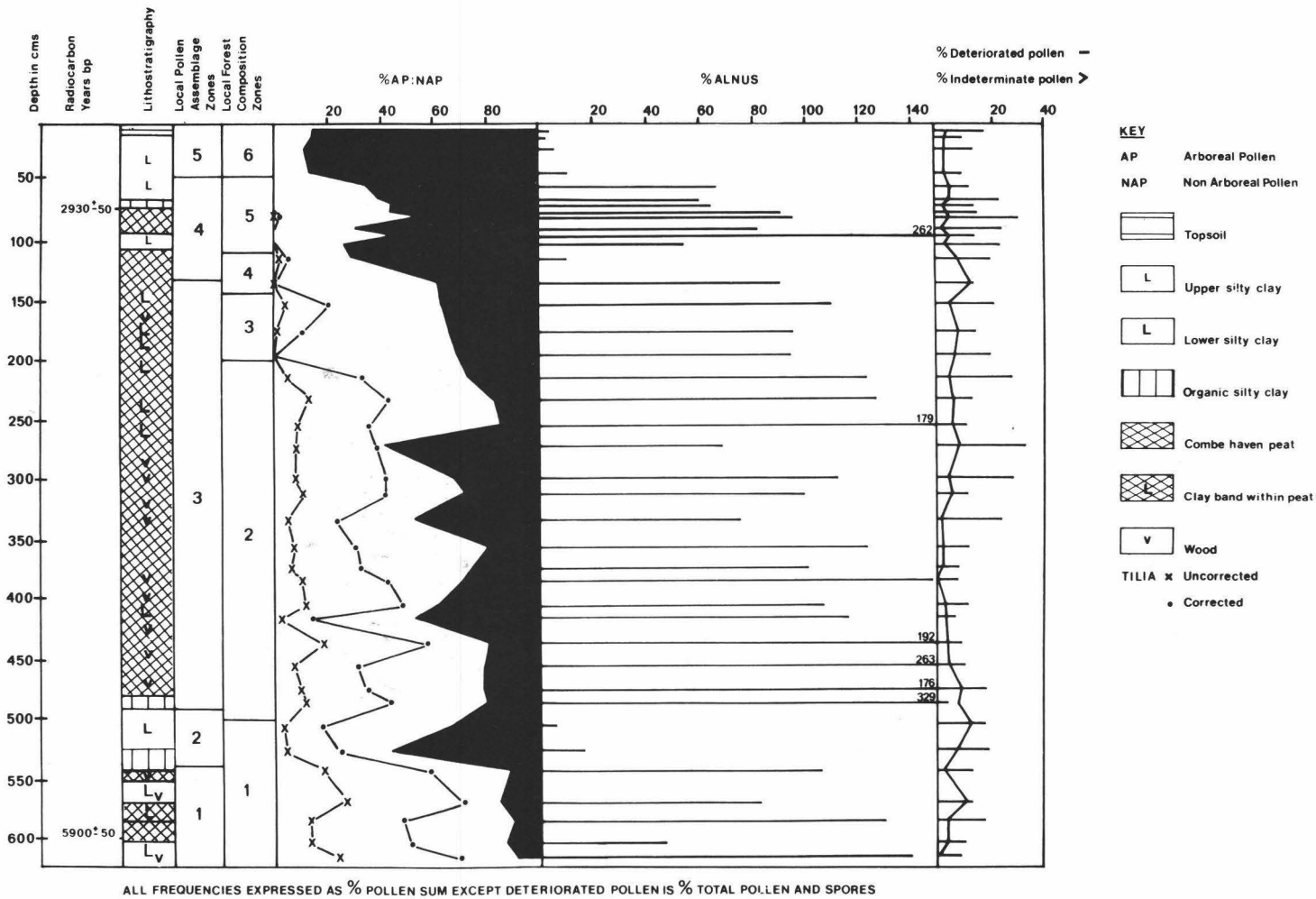


Fig. 9. Composite/summary pollen diagram for Combe Haven 1. Radiocarbon dates and the percentage deterioration and indeterminate are indicated.

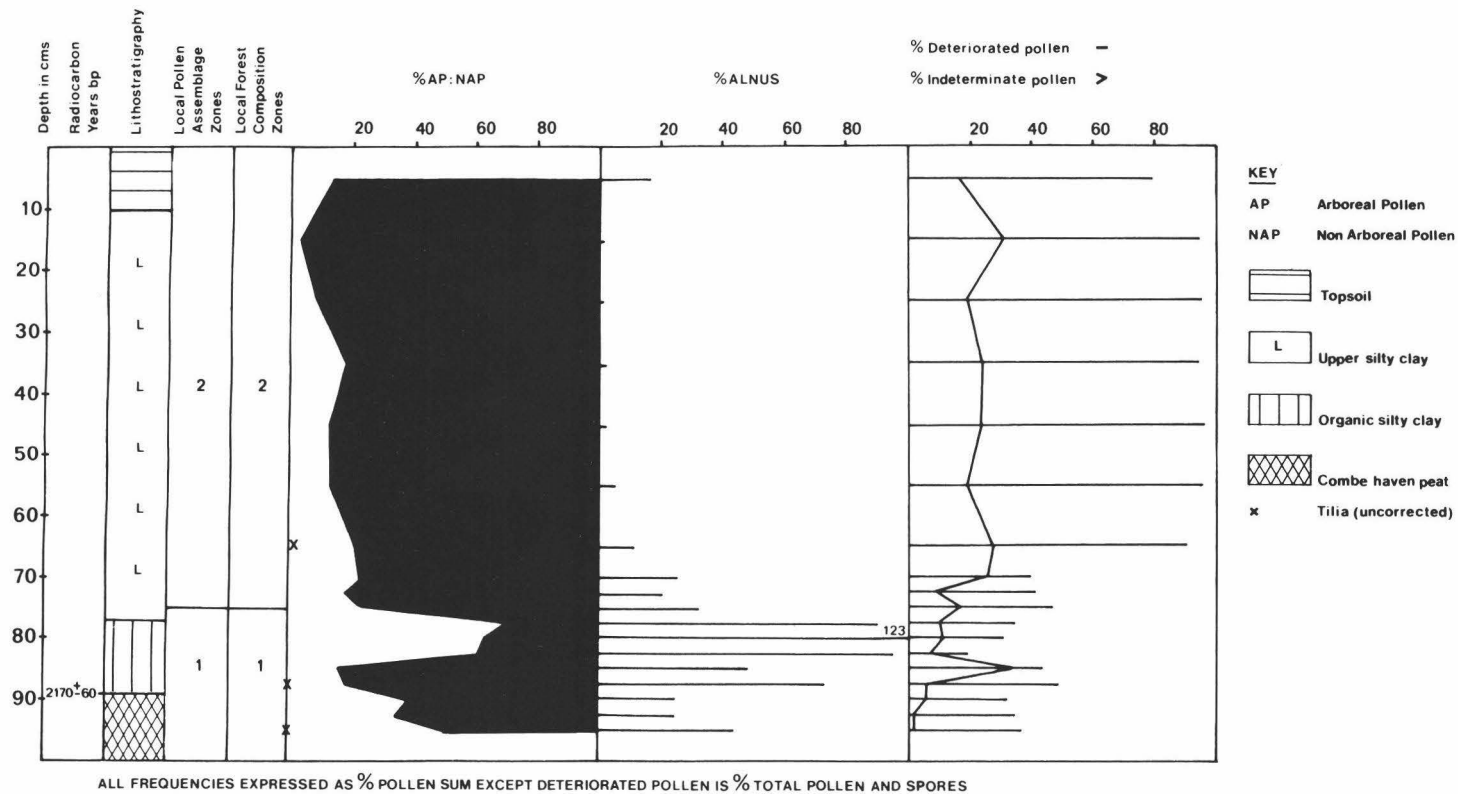


Fig. 10. Composite/summary pollen diagram for Combe Haven 2. Radiocarbon date and the percentage deterioration and indeterminate are indicated.

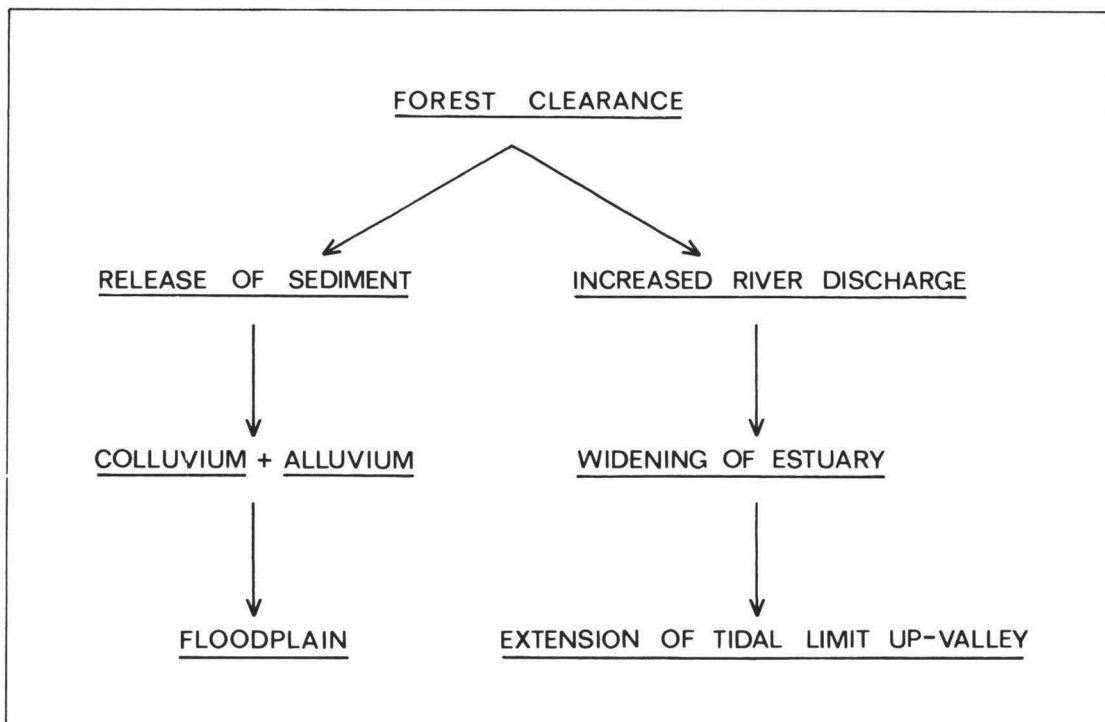


Fig. 11. A model depicting the consequences of major forest clearance in the Combe Haven valley.

Cerealia, which may reflect a wider source area of pollen dispersal. Significantly, *Polypodium*, an epiphyte especially on *Quercus* sp. (Moore, P. D., pers. comm. 1986) declines to low values now that the tree cover is greatly reduced. At CH. 1 the organic-minerogenic boundary has been radiocarbon dated to 2930 ± 50 b.p. (SRR-2684), while down-valley at CH. 2 the same boundary with a similar vegetational history has been dated to 2170 ± 60 b.p. (SRR-2680).

The CH. 2 composite pollen diagram (Fig. 10) mirrors the dramatic decline in AP frequencies (from 72 per cent to 4 per cent), but the occurrence of Chenopodiaceae and Gramineae in the pollen record is evidence for an estuarine environment from the 75 cm. to 25 cm. levels. The assemblage of pre-Quaternary spores, Hystrichospheres and higher *Pinus* values also indicate estuarine conditions (Jennings 1985). The further decline in *Alnus* to very low

percentages may also be explained by an increase in salinity. At these depths the sediments contain *Scrobicularia plana* and *Hydrobia* sp. Unfortunately, due to poor preservation, diatom analysis has provided only limited supportive evidence for a marine incursion. The presence, at the 85 cm. level, of *Nitzschia scalaris* (Ehrenberg) W. Smith and *Amphora ovalis* Kutzing var. *libyca* (Ehrenberg) Cleve suggests a brackish to freshwater environment.

At CH. 2 a removal of saline conditions is identified at the 25 cm. level by significant changes in the pollen record. There is no alteration to the lithostratigraphy but the pollen record indicates a decline in the salt marsh taxa. The decrease in Chenopodiaceae and *Pinus* pollen, pre-Quaternary spores and Hystrichospheres and the appearance of Gramineae, Compositae (Daisy) and Cerealia pollen suggests that the estuarine environment

had been replaced by a freshwater habitat.

FLOODPLAIN DEVELOPMENT

The Upper Silty Clay unit of the Combe Haven valley represents a switch from a biogenic to a minerogenic floodplain and registers a major palaeoenvironmental change. As already discussed, the change from biogenic to freshwater, minerogenic sedimentation was a direct consequence of anthropogenic forest clearance. Although more complex, the formation of the estuarine facies is also believed to have been due to forest clearance. The model illustrated by Fig. 11 summarises the 'chain of events' that may follow major forest clearance. In the following discussion this model will be applied to the Combe Haven valley.

A feature of the radiocarbon results is the diachronous onset of minerogenic sedimentation associated with the Upper Silty Clay. While the minerogenic floodplain was developing at the mid-valley site (CH. 1), down-valley (CH. 2) peat continued to form for approximately another 760 years. Additionally, at the seaward end of the valley, the Upper Silty Clay is estuarine in nature. This pattern may be explained by the limited distance sediments released by clearance on the valley side were transported. Clearances in mid-valley would have resulted in the movement of material downslope and onto the floodplain, as suggested by the pollen record. In the absence of reworking by the river, this colluvium would have remained in a mid-valley location. It was not until the forest had been cleared down-valley that sediments were colluviated into that area. By this time the extra discharge available to the Combe Haven river, through the reduction in evapotranspiration and greater runoff, may have resulted in a widening of the river mouth allowing the tidal limit to penetrate the lower reaches of the valley.

This idea of a 'patchwork' formation of the Upper Silty Clay unit is supported by a number of lines of evidence. First, the composite pollen

diagram for CH. 2 (Fig. 10) shows that forest clearance was again concurrent with the change in sedimentation. Therefore the development of the Upper Silty Clay occurred at different times in different parts of the valley. The second line of evidence hinges on the potential of the Combe Haven river to erode its floodplain and transport its load downstream. A horizontal contact between the Combe Haven Peat and the Upper Silty Clay along most of the valley is illustrated in Fig. 3. There is no evidence for an erosion surface at the top of the peat as both the biostratigraphy and the lithostratigraphy exhibit a transitional sequence from peat to silty clay. It is apparent that the Combe Haven valley had a low gradient, as it does today, with reduced river energy. As a result only restricted reworking and transportation of colluvial material has taken place. In addition, the colonisation of the Upper Silty Clay by Gramineae and Cyperaceae (Figs. 5 & 7) may have stabilised the floodplain and further reduced erosion. Trimble (1983) found that fine textured stream banks and floodplains can be highly resistant to erosion especially if protected by vegetation.

In the U.S.A., Costa (1975) and Trimble (1983) have shown that material removed from the valley sides can accumulate locally rather than being removed by the river to the estuary. Costa found that only approximately one-third of material eroded from slopes was removed from the watershed, the bulk of the material was deposited on lower slopes and floodplains. Trimble calculated that less than 7 per cent of sediment released by human activity from the slopes of the Coon Creek basin has been lost from the catchment. The floodplain has acted as a major sediment store. Additional evidence for a local provenance of floodplain sediments is provided by Moffat (1984). He studied the late-Holocene history of the eastern Pevensy Levels in southern England (Fig. 1), immediately to the west of the Combe Haven valley. By mineralogical analysis he established that the sediment which comprises the surface deposits has been derived from local mass movement.

The development of the Upper Silty Clay floodplain of the Combe Haven valley therefore appears to be a result of anthropogenic forest clearance, but the movement of sediment downslope following the removal of the trees may have been assisted by the climate prevailing during the Iron Age. Gribbin and Lamb (1978) have argued for increasing wetness during this period. Indeed Barber (1982), using evidence from peat bogs, maintains that there was 'A catastrophic decline to a cooler and/or wetter climate around 2850 to 2550 b.p. . . . and some evidence for further decline around 2050 b.p.' (p. 110). The coincidence of forest clearance with a period of climatic wetness would have accelerated colluviation and further increased stream discharge.

CONCLUSION

Detailed biostratigraphic analyses of biogenic and minerogenic sediments, supported by radiocarbon analysis, have been used to study palaeoenvironmental change in the Combe Haven valley since the mid-Holocene. A complex relationship between vegetational change, sedimentation and anthropogenic influence has been revealed by this study. It has also been shown that declines in AP frequencies have a variety of causes and a close inspection of the relationship between pollen frequencies and the lithostratigraphy is necessary in order to identify them.

From these analyses it appears that the major changes to the vegetation of the Combe Haven valley over the last 6000 years are related to anthropogenic factors, but marine incursions have also been influential. The major decline in AP frequencies on both diagrams corresponds so

well with the onset of Upper Silty Clay sedimentation that a cause and effect relationship is strongly suggested. Iron Age forest clearance is considered to be the linking mechanism in this relationship, with climatic deterioration encouraging slopewash following removal of the trees. This reinforces the assertion by Bell (1982, 139) that patterns of valley sedimentation in lowland Britain have been principally determined by land-use and that this has tended 'to swamp and mask underlying climatic trends.' If the conclusions regarding anthropogenic forest clearance are correct, then clearly the area around the Combe Haven valley has the potential for stimulating archaeological investigations.

The examination of the Combe Haven valley pollen record is a local study. Accurate regional palaeoenvironmental reconstruction is not possible without prior knowledge of small areas in great detail.

Acknowledgements

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References

- Baker, C. A., Moxey, P. A. & Oxford, P. M. 1978 'Woodland Continuity and Change in Epping Forest', *Field Studies*, **4**, 645–69.
- Barber, K. E. 1982 'Peat-bog Stratigraphy as a Proxy Climate Record', in *Climatic Change in Later Prehistory*, (ed. A. Harding), Edinburgh University Press, 103–13.
- Bell, M. 1982 'The Effects of Land-use and Climate on Valley Sedimentation', in *Climatic Change in Later Prehistory* (ed. A. Harding), Edinburgh University Press, 127–42.
- Brown, A. G. 1982 'Human Impact on the Former Floodplains of the Severn', in *Archaeological Aspects of Woodland Ecology*, (eds. M. Bell & S. Limbrey), B.A.R., **146**, 93–104.
- Brown, A. G. & Barber, K. E. 1985 'Late Holocene Paleocology and Sedimentary History of a Small Lowland Catchment in Central England', *Quat. Res.*, **24**, 87–102.
- Cleere, H. 1978 'Roman Sussex—the Weald', in *Archaeology in Sussex to A.D. 1500*, (ed. P. L. Drewett), C.B.A. Res. Rep., **29**, 59–63.
- Costa, J. E. 1975 'Effects of Agriculture on Erosion and Sedimentation in Piedmont Province, Maryland', *Geol. Soc. Amer. Bull.*, **86**, 1281–86.
- Devoy, R. J. N. 1979 'Flandrian Sea-Level Changes and Vegetational History of the Lower Thames Estuary', *Phil. Trans. R. Soc.*, **B**, **285**, 355–407.
- Gallois, R. W. 1978 'The Wealden District', 4th edn., *Mem. Geol. Surv. U.K.*
- Godwin, H. 1975 *History of the British Flora*, 2nd edn., Cambridge University Press.
- Godwin, H. & Vishnu-Mittre 1975 'Studies of the Post-Glacial History of British Vegetation XVI: Flandrian Deposits of the Fenland Margin at Holme Fen and Whittlesey Mere, Hunts.', *Phil. Trans. R. Soc.*, **B**, **270**, 561–608.
- Greig, J. 1982 'Past and Present Lime Woods of Europe', in *Archaeological Aspects of Woodland Ecology*, (eds. M. Bell & S. Limbrey), B.A.R., **146**, 23–56.
- Gribbin, J. & Lamb, H. H. 1978 'Climatic Change in Historical Times', in *Climatic Change*, (ed. J. Gribbin), Cambridge University Press, 68–82.
- Jacobson, G. L. & Bradshaw, R. H. W. 1981 'The Selection of Sites for Paleovegetational Studies', *Quat. Res.*, **16**, 80–96.
- Jennings, S. 1985 'Late-Quaternary Environmental Change at Eastbourne, East Sussex', Ph.D. Thesis, (C.N.A.A.), Polytechnic of North London, (unpublished).
- Jennings, S. & Smyth, C. 1985 'The Origin and Development of Langney Point: a Study of Flandrian Coastal and Sea-Level Change', *Quat. Newsl.*, **45**, 12–22.
- Jennings, S. & Smyth, C. (1987) 'Coastal Sedimentation in East Sussex During the Holocene', *Progr. Oceanogr.*, **18**, 205–41.
- Moffat, B. 1984 'An Evaluatory Study of the Methods Used in the Reconstruction of Historical Vegetation and Land-Use with Reference to Part of East Sussex, England', Ph.D. Thesis, (C.N.A.A.), Polytechnic of North London, (unpublished).
- Moore, P. D. 1977 'Ancient Distribution of Lime Trees in Britain', *Nature*, **268**, 13–14.
- Moore, P. D. & Webb, J. A. 1978 *An Illustrated Guide to Pollen Analysis*, 1st. Edn., Hodder & Stoughton.
- Robinson, M. A. & Lambrick, G. H. 1984 'Holocene Alluviation and Hydrology in the Upper Thames Basin', *Nature*, **308**, 809–14.
- Scaife, R. G. & Burren, P. J. 1983 'Floodplain Development in and Vegetation of the Sussex High Weald and Some Archaeological Implications', *Suss. Arch. Coll.*, **121**, 1–10.
- Shotton, F. W. 1978 'Archaeological Inferences from the Study of Alluvium in the Lower Severn-Avon valleys', in *The Effects of Man on the Landscape: the Lowland Zone*, (eds. S. Limbrey & J. G. Evans), C.B.A. Res. Rep., **21**, 27–32.
- Smyth, C. 1986 'A Palaeoenvironmental Investigation of Flandrian Valley Deposits from the Combe Haven Valley, East Sussex', *Quat. Studies*, **2**, 22–33.
- Stanley, E. A. 1969 'Marine Palynology', *Oceanogr. Mar. Biol. Ann. Rev.*, **7**, 277–92.
- Straker, E. & Lucas, B. H. 1938 'A Romano-British Bloomery in East Sussex', *Suss. Arch. Coll.*, **79**, 224–29.
- Thorley, A. 1981 'Pollen Analytical Evidence Relating to the Vegetation History of the Chalk', *Jnl. Biogeogr.*, **8**, 93–106.
- Trimble, S. W. 1983 'A Sediment Budget for Coon Creek Basin in the Driftless Area, Wisconsin, 1853–1977', *Amer. Jnl. Sci.*, **283**, 454–74.
- Turner, J. 1962 'The *Tilia* Decline: an Anthropogenic Interpretation', *New Phytol.*, **161**, 328–41.
- Waller, M. 1987 'The Vegetational History and Environmental Development of the Brede and Pannel Valleys, East Sussex', Ph.D. Thesis, (C.N.A.A.), Polytechnic of North London, (unpublished).
- Zeist, W. van 1964 'A Palaeobotanical Study of Some Bogs in Western Brittany (Finistere), France', *Palaeohist.*, **10**, 157–80.

FURTHER INVESTIGATIONS AT THE LATER NEOLITHIC DOMESTIC SITE AND NAPOLEONIC 'CAMP' AT BULLOCK DOWN, NEAR EASTBOURNE, EAST SUSSEX

by Robin Holgate

with contributions by Caroline Cartwright, Roger Grace, Dennis Britton, Peter Northover, David Atkinson, Phil Carstairs, Gloria Polizzotti Greis and David Rudling

Excavation and surface collection in advance of construction work by the Ministry of Defence produced a later Neolithic domestic assemblage, including Peterborough ware, beaker pottery and flintwork. Pottery, clay pipes, faunal remains, gun flints, musket shot, coins, buttons and other metalwork of mainly 18th- and 19th-century date were also recovered, some of which relate to activity during the Napoleonic War.

INTRODUCTION

The Bullock Down later Neolithic domestic site (settlement site C: TV 968591) was located by surface collection survey, carried out as part of the Bullock Down Project undertaken by the Field Archaeology Unit (then known as the Sussex Archaeological Field Unit) in 1976–80 (Drewett 1982a, 47–57) (Fig. 1). Sample excavations in 1976–77 established that an horizon of flintwork and pottery survived in a relatively undisturbed condition on the surface of the Clay-with-Flints subsoil, despite ploughing in recent years (*ibid.*, 49: Fig. 1C). Further surface collection by the tenant farmer, Mr E. Williams, produced a considerable quantity of post-medieval material, some of which relates to the use of this area during the Napoleonic War (Fig. 2). For three weeks in June–July 1985, the Field Archaeology Unit carried out a second programme of sample excavations in advance of the installation of an electronic navigation system for the Royal Navy (Fig. 2); a watching brief during construction work in April and November 1986 was also

undertaken. Both the 1985 excavations and the post-excavation work were funded by the Historic Buildings and Monuments Commission as part of the Unit's Neolithic and Bronze Age Settlement Project.

THE LATER NEOLITHIC DOMESTIC SITE

The fieldwork carried out in 1976–80 defined an area of Neolithic domestic activity covering just under 0.5 km.², represented by a dense scatter of humanly-struck flints (Figs. 1B and C). The 1976–77 excavations produced further flintwork and sherds of Peterborough ware, including both Mortlake and Fengate style vessels, from the surface of the Clay-with-Flints subsoil (Drewett 1982a, 49–53). The excavations in 1985 consisted of thirteen trenches: three in the field where the 1976–77 excavations took place, and ten in the adjacent field to the north (Fig. 2). The topsoil in trenches A, L and N in the southern field was *c.* 0.25 metre deep, resting directly on Clay-with-Flints; eight flint flakes were recovered. The subsoil encountered in

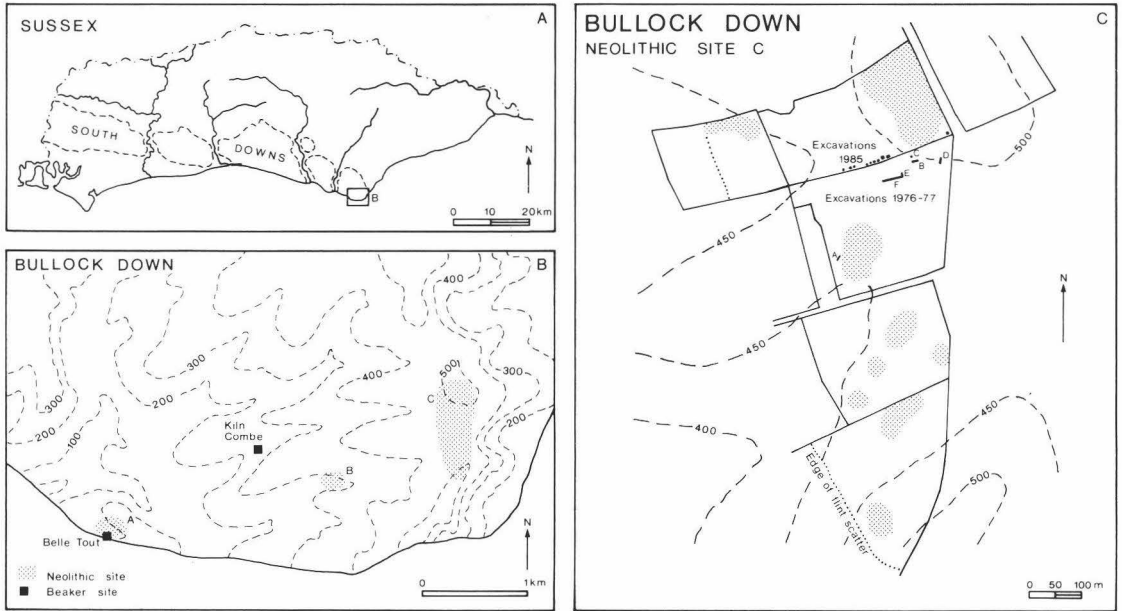


Fig. 1. Location maps of Bullock Down Neolithic site C. Contours in metres above O.D. The stipling in C represents areas of flint flake density of over one flake per 10 m^2 .

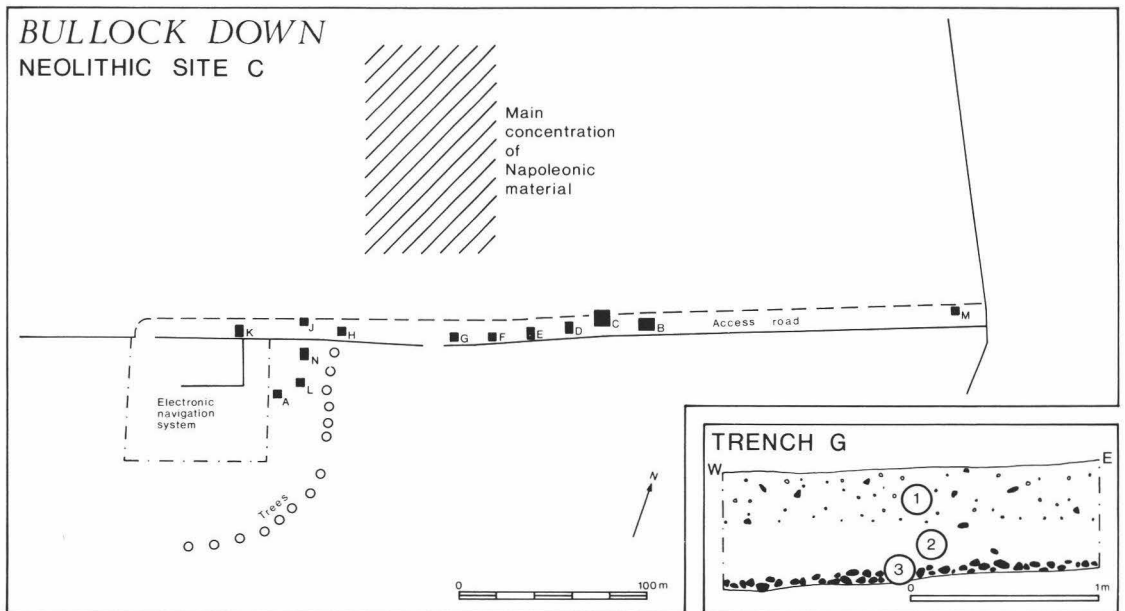


Fig. 2. Plan of the 1985 excavations and south-facing section of trench G: 1. brown ploughsoil; 2. light orange brown stone-free horizon; 3. light orange brown stony horizon.

trenches B-K and M in the northern field differed from that revealed in the southern field. Here, a c. 0.3 metre depth of ploughsoil rested on a relatively stone-free clay-loam which had been worm-sorted (Context 2); a stony horizon (Context 3) lay at a depth of c. 0.2 metre below the surface of the subsoil (Fig. 2). Marling has taken place in this field, resulting in the defloculation of the ploughsoil and upper portion of the Clay-with-Flints subsoil. Consequently this has encouraged earthworm activity to a much greater degree than in the southern field. Substantial quantities of later Neolithic pottery, flintwork and geological material were retrieved from the base of the worm-sorted horizon (Context 2) and the stony horizon (Context 3); in addition, Mr E. Williams found a bronze object in the ploughsoil between Trenches F and G.

Prehistoric pottery

The excavation yielded 72 pieces of prehistoric pottery (see 6-8 on microfiche for context details). The surfaces on

most sherds are badly eroded. The pottery can be divided into five groups.

Group 1: Peterborough wares (18 sherds). Coarse to fine flint-tempered ware with, on occasion, fine sand and pieces of grog; oxidised exterior surface and reduced interior surface and core. Body-sherds sections up to 1 cm. thick. The main form represented is the Mortlake style round-based bowl (Smith 1974, 112). At least eight pieces have finger-tip (e.g. Fig. 3, nos. 1 and 2) or possibly twisted cord 'maggot' impressions (e.g. Fig. 3, no. 3). Similar pottery fragments were recovered during the 1976 excavations in the field immediately to the south (e.g. sherds 11 and 13; Drewett 1982a, 49-50). One rimsherd has internal cord impressions (Fig. 3, no. 4) and is similar to sherd 2200 from Kiln Combe (Bell 1983, 123 and 128). These pieces were all recovered from trenches B and C (see 2 and 3 on microfiche).

Date range: late 3rd millennium b.c.

Group 2: domestic Beaker wares (3 sherds). Grog-tempered ware with coarse to fine flint inclusions; oxidised exterior surface and reduced interior surface and core. Body-sherds sections up to 1 cm. thick. Rusticated decoration is present on two sherds (Fig. 3, nos. 5 and 6). All three sherds were recovered from trench B (see 2 on microfiche).

Date range: early 2nd millennium b.c.

Group 3: Beaker finewares (37 sherds). Grog-tempered ware with medium to fine flint inclusions and, on occasion, fine sand; oxidised exterior surface and reduced interior surface and core. Body-sherds sections up to 6 mm. thick. Decoration, consisting of horizontal bands of either twisted cord (e.g. Fig. 3, no. 10) or comb impressions (e.g. Fig. 3, nos. 7 and 9), is discernible on nine sherds. This material is comparable



Fig. 3. Peterborough ware (nos. 1-4), domestic Beaker ware (nos. 5-6), Beaker fine ware (nos. 7-10) and copper-alloy ?axe (no. 11).

with the decorated Beaker finewares from Belle Tout (Bradley 1970, 335–44) and Kiln Combe (Bell 1983, 123 and 127–8). All pieces were recovered from trenches B–F (see 2–5 microfiche).

Date range: early 2nd millennium b.c.

Group 4: Pre-Roman Iron Age (4 sherds). Fabric with numerous iron oxide inclusions in pisolithic form and medium abundant fine and medium-sized flint grits. Body sherd sections up to 6 mm. thick. Elsewhere in East Sussex the use of iron oxide-rich clays appears to relate to the Iron Age, e.g. Hollingbury (Hamilton 1984, 55). All four sherds came from trenches C–E.

Group 5: fired clay (10 pieces). Oxidised clay body with no obvious inclusions, recovered from trenches C, E, F and J.

Ceramic thin-sectioning (by Caroline Cartwright)

Five sherds were thin-sectioned.

Peterborough ware. One sherd was thin-sectioned (P.37 from context C/2c: see 6 on microfiche), revealing moderately frequent large angular flint inclusions and small sub-rounded quartz grains. The occasional large iron mineral inclusion was also present in the clay matrix.

Beaker fineware. Three sherds were thin-sectioned. The first (P.61 from context D/3: Fig. 3, no. 10) proved difficult to section, because of the unconsolidated nature of the clay matrix. After impregnation, sectioning revealed much grog and a regular scatter of small and medium-sized quartz grains. Some medium and small angular flint inclusions and a few iron minerals were also present. The second (P.51 from D/3: see 7 on microfiche) and third (P.60 from context D/3: Fig. 3, no. 7) sherds revealed fabrics closely similar to that of P.61. *Domestic beaker ware.* Thin-sectioning of one sherd (P.5 from context B/3: Fig. 3, no. 6) revealed a fabric closely similar to, but more consolidated than the beaker fineware sherds described above.

The clays used to produce these wares were probably obtained locally.

Flint

A total of 1,387 prehistoric flints was recovered during the excavations; these are summarised in Table 1. Nearly three-quarters of the flint assemblage was recovered from trenches C–E (see 9–10 on microfiche for further context details).

Raw material. This comprises nodules of grey or brown flint with cream cherty patches derived either from Clay-with-Flints deposits, the beach or from chalk exposures, possibly cliff-slumps along the coast. Sixty-six pieces had a blue-white patination. A study of the cortex, colour and quality of the flints suggests that just under half of the flint came from Clay-with-Flints deposits, while the remainder consists of beach pebbles and a small quantity of fresh chalk flint.

Technology. Five bladelets with minimal butts, detached from carefully-prepared blade cores using a soft hammer, were recovered from trenches C, K and M. These probably date to the Mesolithic period and are thus residual to the main period of prehistoric activity represented on the site. The remainder of the flint was flaked to produce either core tools or flakes which could be used as blanks for making implements.

TABLE 1
The Flint assemblage

Flakes/blades	656
Mesolithic bladelets	5
Biface-thinning flakes/blades	545
Flake cores	15
Hammerstones	3
Roughout fragments	2
Flakes off ground flint implements	3
Scrapers	51
Piercers	3
Knives	13
Cutting flakes/blades	32
Semi-abruptly retouched implement	1
Denticulate	1
Combination tools	2
Notched flakes	4
Fabricator	1
<i>Petit tranchet</i> arrowheads	3
Oblique arrowhead fragment	1
Triangular arrowhead fragment	1
Miscellaneous retouched flakes	15
Fire-fractured flints	30
Total	1,387

The flints associated with core tool production included 545 biface-thinning and finishing flakes, part of an axe roughout (Fig. 4, no. 3), a possible pick or chisel roughout fragment (Fig. 4, no. 2) and three flakes off ground flint implements (Table 1), one of which was definitely detached from a flaked and ground axe. Virtually all of these flints were grey with few flaws; these had been obtained as nodules from either the beach or chalk exposures, although at least three biface-thinning flakes had unabraded cortex compatible with nodules from Clay-with-Flints deposits. The majority of the biface-thinning flakes had been detached using soft hammers and less than 4 per cent had ended in hinge fractures. Thirteen of the larger flakes had been retouched into implements: five into scrapers, one into a piercer and seven into cutting flakes.

The remainder of the assemblage had been flaked using a different core reduction strategy, involving the use of stone hammers to detach mainly flakes from flint nodules without making any attempt to prepare either the striking platform or the flaked surface prior to removing each flake. The three hammerstones (Table 1) are flint pebbles from the beach. In addition, one of the cores showed signs of use as a hammerstone, and three flakes had also come off beach pebble hammerstones. The majority of cores had two platforms at right angles to one another, although a rough, multiplatform core and a discoidal core were also recovered. One core consisted of beach pebble flint; the remainder were nodules from Clay-with-Flints deposits. Most flakes had wide butts, while just over 15 per cent had ended in hinge fractures.

The Implements. A variety of tool types is present (Table 1). Scrapers, the most abundant tool type, include both end (Fig. 4, nos. 4, 6–7; Fig. 5, nos. 15–17) and side (Fig. 4, no. 5) scrapers, along with a scraper/knife and a scraper/piercer

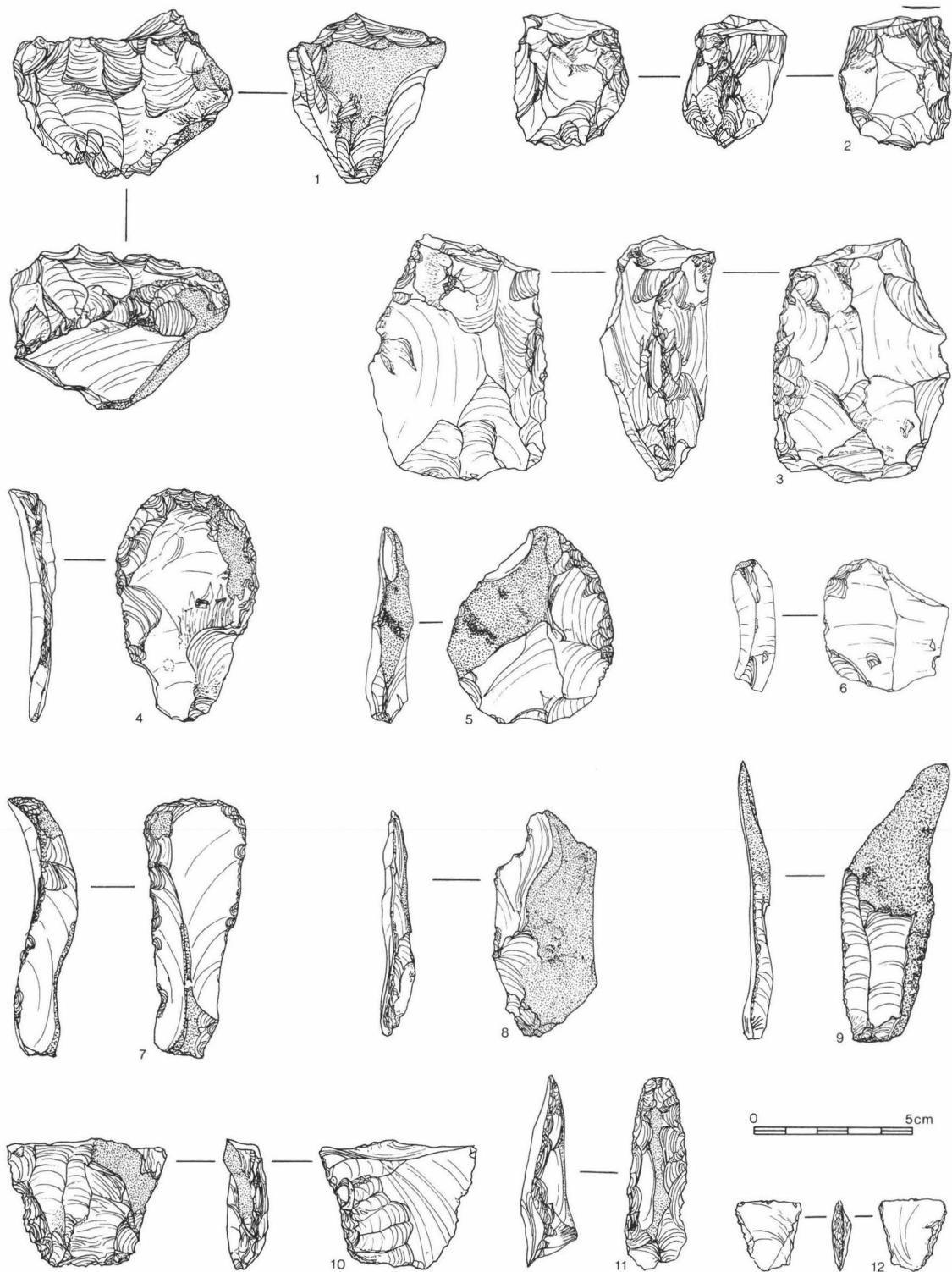


Fig. 4. Flintwork. 1. two platform flake core; 2-3. roughout fragments; 4-7. scrapers; 8-9. cutting blades; 10. scraper fragment, retouched on ventral surface to facilitate hafting; 11. semi-abruptly retouched implement; 12. *petit tranchet* arrowhead.

(Fig. 5, no 19) combination tools. The proximal end of one scraper and another broken scraper (Fig. 4, no. 10) were invasively retouched along one or both lateral edges on the ventral surface, probably to facilitate hafting in an organic handle. Most scrapers were abruptly or semi-abruptly retouched, although six end scrapers (Fig. 5, no. 16) had invasive retouch. Traces of probable use wear were detected on five scrapers (see below), while another end scraper was fire-fractured. The assemblage also included a semi-abruptly retouched implement (Fig. 4, no. 11) of unknown function; it could have been used either as a chisel or as an end scraper, but no wear traces were discernible (see below).

The knives are flakes or blades with invasive retouch along one or both lateral edges (Fig. 5, no. 14); one knife had bifacial retouch on one edge (Fig. 5, no. 18). Six knives were backed, i.e. had invasive retouch along one edge and abrupt retouch on the other. It is possible that one or two scrapers were originally knives, before being resharpened into scrapers (e.g. Fig. 5, no. 15). A number of flakes and blades (Fig. 4, nos. 8–9) with edge damage through use (see below) were also recovered and are classified as cutting flakes/blades (Table 1).

The arrowheads (Table 1; Fig. 4, no. 12) are all later

Neolithic forms. One of the *petit tranchet* arrowheads (Fig. 4, no. 12) has fractures along the transverse edge consistent with impact fractures, but the extent of post-depositional surface modification prevents further analysis of the use wear traces on this piece (see below).

Use wear analysis (by Roger Grace)

Ten of the flint implements were examined microscopically for polishes and striations resulting from use (see 11 on microfiche for further details). Observations are only really possible on blackish, fine-grained flint. The presence of post-depositional polish makes it difficult to say more than that an edge was used. The implements having most wear traces are the end scrapers. This is probably because these 'formal tools' would have the most extensive use, so that use wear polish would be more developed on these tools and thus more likely to resist the post-depositional effects. Consequently, any further use wear analysis on this material should be concentrated on 'formal tools'.

Bronze object (by Dennis Britton)

Description. Two conjoining pieces of a bronze artefact came

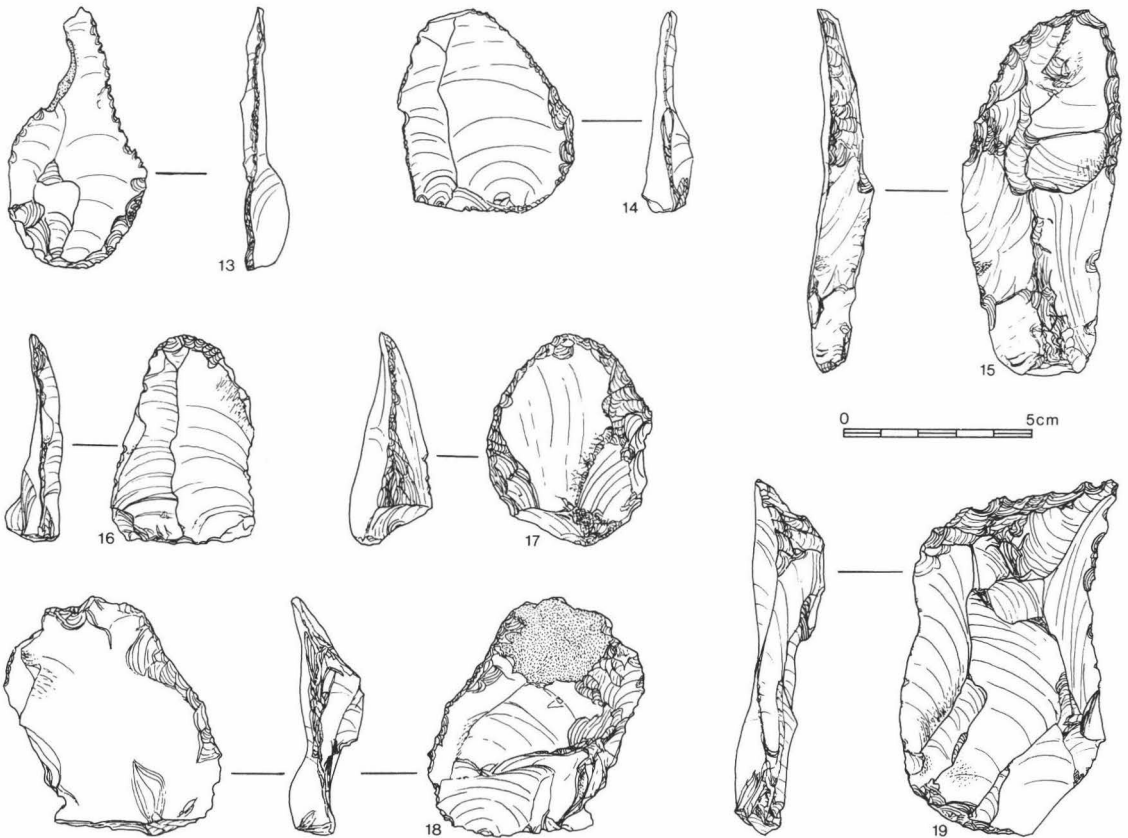


Fig. 5. Flintwork. 13. denticulate; 14. Knife; 15–17. scrapers; 18. knife; 19. piercer/scraper combination tool.

from the plough soil between trenches F and G (Fig. 3, no. 11). All the surfaces are corroded. The broken edges, although corroded, still fit together quite well. In its present state the object has two parallel faces, which are very roughly triangular. In side view the middle portion is seen to be thicker and the object becomes gradually thinner towards the apex and towards the opposite end of the triangle. Length now *c.* 65 mm. Maximum thickness now *c.* 8 mm.

Metallurgical examination. The object has been analysed by Dr. Peter Northover (Department of Metallurgy and Materials Science, University of Oxford). The material is a tin bronze, and in addition to copper the analysis is as follows:

tin:	13.79%	silver:	0.03%
arsenic	0.05%	gold:	trace
lead:	0.05%	zinc:	trace
nickel:	0.04%	bismuth:	0.03%
iron:	trace		

Antimony and cobalt were sought but not detected above 0.01%.

Dr. Northover comments:

'If the object is Bronze Age the analysis would tend to place it in the Early Bronze Age. On the other hand I have seen similar results in the Iron Age; from the limited quantity of results available it is unlikely to be Roman.'

Comment. Because of the degree of corrosion, the details of the original shape and size must be rather conjectural. The present appearance might perhaps suggest a small axe blade of simple design: with flattish faces and a fairly narrow body, which tapers from the cutting-edge towards the butt. Bronze axe blades of this general form are known from the Early Bronze Age in Britain, and specifically from the earlier part of that period. Most of them are much larger than this object, but smaller versions sometimes occur. They may have been lighter cutting tools which could have been used for various purposes.

Geological material (by Caroline Cartwright)

A total of 13 beach pebbles and four fragments of Greensand were recovered from trenches C, E, F and K (see 12 on microfiche for further context details).

DISCUSSION

The excavations did not produce any structural features or pits. However, a dense concentration of pottery and flints was located in trenches B–F. The fact that later Neolithic pottery has survived suggests that this material has not moved far from its place of deposition. Use wear analysis of some of the flint implements shows that a number of pieces have traces of post-depositional surface modification, but this could result from downward movement caused by worm activity as opposed to horizontal displacement. This material could be interpreted

as the remains of a midden.

The concentration of pottery and flintwork does not constitute a sealed archaeological context; thus the Peterborough ware and the Beaker pottery were not necessarily deposited at the same time. The flintwork is typical of a later Neolithic domestic assemblage, but a large proportion of the assemblage would not be out of place on a purely Beaker site, e.g. Kiln Combe (Bell 1983: see Fig. 6). A date range of *c.* 2500–*c.* 1500 b.c. can be put on this material, but it is impossible to be more precise. It is also possible that the bronze object was originally associated with this material.

The site occupies a large area along a north-south running ridge. It is likely that a small farmstead existed here, which was probably permanently occupied and surrounded by cultivated fields and activity areas. The farmstead itself probably shifted location slightly during the later Neolithic period, as buildings fell into decay and new structures were built (cf. the later Bronze Age farmstead at Black Patch, East Sussex: Drewett 1982b). The material in trenches B–F could relate to either a house or an activity area situated nearby.

A number of later Neolithic and Beaker domestic sites in East Sussex have been investigated recently (Fig. 6). On the Downs, these occur either in dry valleys, e.g. Belle Tout, or along ridges. It is not yet clear if these were all equal status sites fulfilling similar functions, or whether different activities were practised at particular sites. Future fieldwork should concentrate on locating further sites of this date and excavating well-preserved sites which are capable of providing absolute dating, economic and environmental information.

POST-MEDIEVAL MATERIAL

Post-medieval material recovered during the excavations from the ploughsoil and worm-sorted horizon (context 2) in trenches A–D, F–H, K and L includes 19th- and early 20th-century pottery, a 19th-century clay pipe stem, three

late-18th or 19th-century buttons, a gunflint, lead shot and faunal remains; surface collection by Mr E. Williams produced further pottery, clay pipe stems, buttons, gunflints and lead shot, as well as 57 coins, nine tokens, a medal, miscellaneous metal objects and a whetstone fragment.

Pottery

The pottery includes red-bodied, lead glazed earthenware, underglazed transfer-printed earthenware and stoneware (see 13 on microfiche for context details). It is possible that the red-bodied earthenware and some of the stoneware dates to the 18th century; the remainder is mostly of mid- to late-19th century and early-20th century date.

Clay pipe fragments (by David Atkinson)

Fragments of clay pipe stems were collected from the field surface; the excavations produced a further fragment from the ploughsoil in trench B. Datewise, they can broadly be placed in the 1800–1900 bracket which could perhaps be diminished to *c.* 1820–80. The absence of any identifying features makes closer dating impossible.

Buttons (by Phil Carstairs)

A total of 101 buttons was recovered: three were found

during excavation and 98 on the field surface. A detailed inventory is included with the site archive.

The decorated buttons. Thirteen buttons of the Royal Ordnance Corps. (three cannons and three cannon balls set within a shield) were found, one of which came from ploughsoil in trench D. A variety of sizes and forms are represented; they date from 1790–1830. At the time of the Napoleonic wars, the R.O.C. was in charge of garrisons and forts; a similar group of R.O.C. buttons was found at Portchester Castle, a garrison and prisoner-of-war camp (Carstairs, forthcoming). Four buttons of one of the Sussex regiments are present, dating from 1800–20. Six other military buttons were retrieved; they date to 1800 or later. One decorated button not marked with military insignia dates from the mid- to late-18th century.

The plain buttons. Eighteen zinc alloy 'tombac' buttons with cone shanks, some with lathe-turned backs, occur in a variety of sizes. They date from the second half of the 18th century to the 19th century. One of these buttons was found during the excavations (context B/2). A group of five similar cone-shanked and 14 loop-shanked buttons, made of pewter, are contemporary. The majority of the other plain buttons date from the late 18th or early 19th century; they are machine stamped and have machine-made loop shanks. Some are 'gilt', a common early 19th-century button with a thin gold wash. One four-hole sew-through button is 20th-century. Another two-hole linen-covered button found in the excavations (context L/1) is post-1841.

Conclusion. The assemblage is slightly later in date than that from Portchester Castle. However, unlike at Portchester,

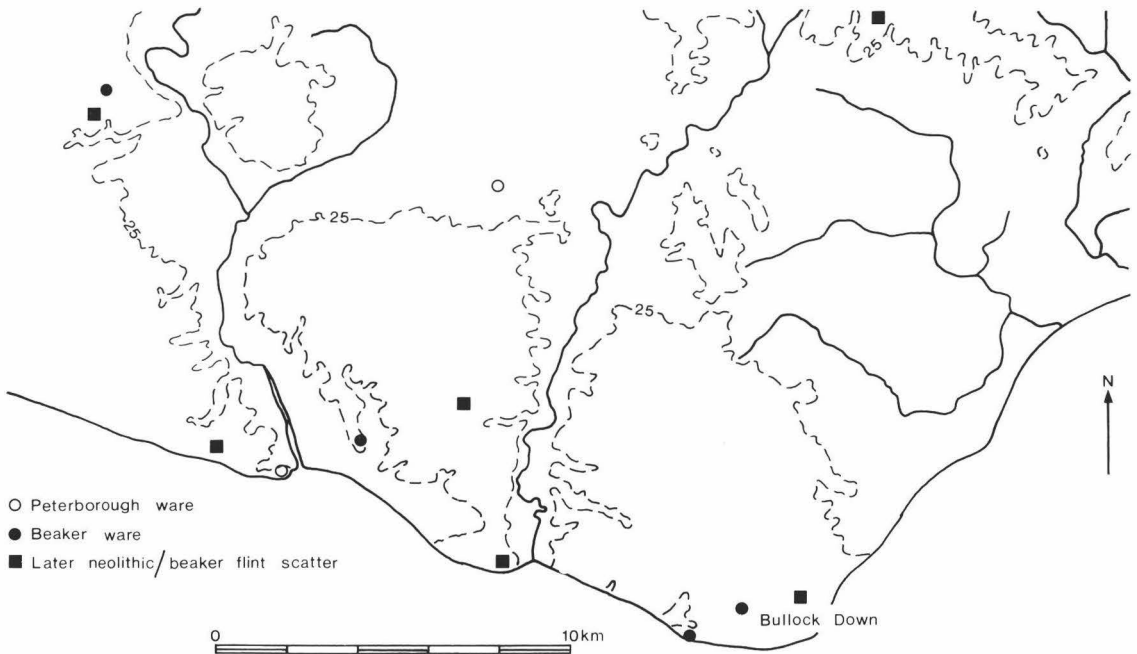


Fig. 6. Later Neolithic and Beaker sites around Bullock Down.

there are no foreign buttons present. The assemblage dates mainly from 1750–1830, perhaps between 1780 and 1810. The assemblage is evidence for British military occupation of the site during the Napoleonic wars, but this does not suggest the presence of a prisoner-of-war camp.

Gunflints

Nine gunflints, including one with a piece of lead 'casing' wrapped around it, were recovered, one of which came from the ploughsoil in trench C. The flint is dark grey-brown in colour and would be consistent with the flint used by the Brandon gunflint knappers in Norfolk.

Lead shot

A total of 73 lead shot was retrieved, including one from the excavations (context G/2a). Most of the shot weighs between 25 and 30 g.

Faunal remains (by Gloria Polizzotti Greis)

Nine animal bone fragments were recovered during the excavations from contexts C/2b and E/2b. Eight could be identified as sheep/goat (see 14 on microfiche for further details).

Coins and tokens (by David Rudling)

The surface finds from the site include: 57 coins; seven copper token halfpennies; two lead tokens; and one medal. They range in date from a coin of Tetricus I (A.D. 270–3) to a halfpenny of George V (for full details see 15–16 on microfiche). There are two finds of Tudor coinage (the only ones so far discovered on Bullock Down): a Henry VIII halfgroat (see Rudling 1982, 163) and a sixpence of Elizabeth I (dated: 1567). Of particular interest, however, is the large number of coins and tokens of the late 18th century, and this assemblage offers an interesting insight into the problems of low denomination currency at this period. Most of the coins are extremely worn and illegible, and include a high proportion of contemporary imitations. The seven token halfpennies, which date c. 1794–5, are generally in much better condition. It is interesting to note that at least three of the tokens were issued fairly locally, with two of the tokens

being of Sussex towns (Hastings and Chichester) and one from Portsmouth, Hampshire.

Metal objects

A number of miscellaneous iron objects, mostly nails or unidentifiable fragments, was collected from the field surface. A few pieces of lead, including two possible bullets, were also recovered. The only object of interest is a lead negro head (Fig. 7) of unknown date.

Whetstone (by Caroline Cartwright)

The surface collection produced a fragment of a fine-grained quartz-sandstone whetstone, weighing 35 g.

DISCUSSION

Amongst the post-medieval material are numerous items datable to the late 18th and early 19th centuries: coins, tokens, military buttons and probably gunflints and lead shot. This material suggests British military occupation of the site sometime during the Napoleonic War (Fig. 2). There is, however, no documentary evidence for a fort or other defensive works on Bullock Down; moreover, the steep cliffs here would have made this quite unnecessary (Ann Hudson, pers. comm.). The presence of a prisoner-of-war camp is also unlikely, as no foreign artefacts have been recovered (see Carstairs above). What could be represented is a military training area or camp in use at some stage during the Napoleonic War (Ann Hudson, pers. comm.).

Contents of microfiche

Distribution of later Neolithic pottery and flintwork in trenches B–F (pages 1–5)

Prehistoric pottery (pages 6–8)

Flint (pages 9–10)

Use wear analysis of ten flint implements (by Roger Grace) (page 11)

Geological material (by Caroline Cartwright) (page 12)

Post-medieval pottery (page 13)

Faunal remains (by Gloria Polizzotti Greis) (page 14)

Catalogue of coins, tokens and medals (by David Rudling) (pages 15–16)

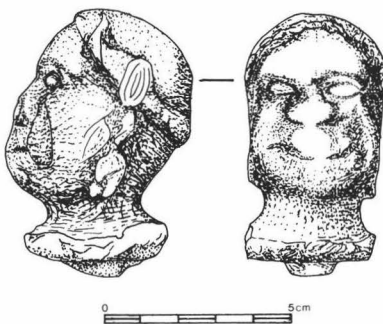


Fig. 7. Lead negro's head.

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Note: The finds and site archive have been deposited at Eastbourne Museum.

References

- Bell, M. 1983 'Valley Sediments as Evidence of Prehistoric Land-Use on the South Downs', *Proc. Prehist. Soc.* **49**, 119–50.
- Bradley, R. 1970 'The Excavation of a Beaker Settlement at Belle Tout, East Sussex, England', *Proc. Prehist. Soc.* **36**, 312–79.
- Carstairs, P. forthcoming. 'The Buttons', in B. W. Cunliffe, *Portchester Castle V: the Post-Medieval Period*.
- Drewett, P. 1982a 'The Neolithic Settlement of Bullock Down 4000–2500 B.C.', in *The Archaeology of Bullock Down, Eastbourne, East Sussex: The Development of a Landscape* (ed. P. Drewett), 45–57. Suss. Arch. Soc. Monograph **1**.
- Drewett, P. 1982b 'Later Bronze Age Downland Economy and Excavations at Black Patch, East Sussex', *Proc. Prehist. Soc.* **48**, 321–400.
- Hamilton, S. 1984 'Earlier First Millennium Pottery from the Excavations at Hollingbury Camp, Sussex, 1967–8', *Suss. Arch. Coll.* **122**, 55–61.
- Rudling, D. R. 1982 'Coins and Jettons', in *The Archaeology of Bullock Down, Eastbourne, East Sussex: The Development of a Landscape* (ed P. Drewett), 162–3. Suss. Arch. Coll. Monograph **1**.
- Smith, I. F. 1974 'The neolithic', in *British Prehistory: a new outline* (ed. C. Renfrew), 100–36. London: Duckworth.

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EARLY ANGLO-SAXON BURIALS FROM STAFFORD ROAD, BRIGHTON, EAST SUSSEX

by Paul S. Smith

with a report on the human skeletal remains by Dr. Phillip L. Armitage

Traces of three Anglo-Saxon inhumation burials were found during a rescue excavation in 1985 at Stafford Road, Brighton. One largely in situ male burial contained a knife and buckle of 7th-century date, while another male grave, badly disturbed by builders, appears to be of the 6th century. Skeletal evidence from this burial shows that the man died from a severe head wound, probably inflicted by a sword blow, but had survived a previous traumatic head wound which had partially healed. Two button brooches and other objects indicate that the third burial was a woman's grave of the 6th century.

INTRODUCTION

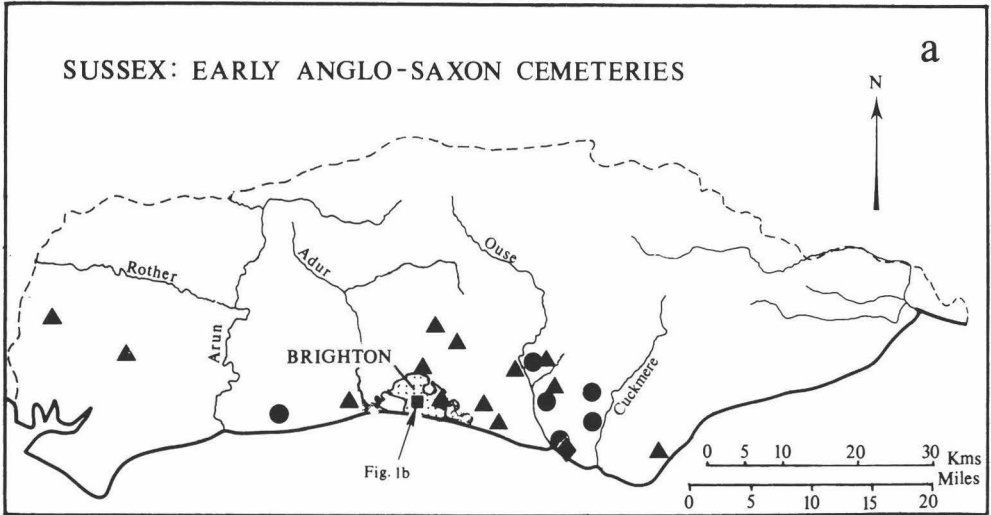
Between 1883 and 1893 a number of Anglo-Saxon inhumations were discovered during the construction of new roads and buildings in the Upper Hamilton Road, Exeter Road and Stafford Road areas of Brighton (Fig. 1b). During 1883–4 at least two finds of skeletal remains were disturbed (Friend 1885), and in April 1884 two *in situ* burials were recorded (*Brighton Herald* 1884; Friend 1885; Griffiths 1886), and the grave goods presented to Brighton Museum. In 1893 three shield bosses, described as being found in Stafford Road with a sword, were accessioned by Brighton Museum, but these are not mentioned in any contemporary publications.

The location of the burials found in 1884 is wrongly recorded on O.S. map (TQ 3005NE) as Stanford Road Primary School. Contemporary accounts, especially the *Brighton Herald* entry, show that these discoveries were in fact made during the construction of St. Luke's Church School (now the church hall) in Exeter Street (Fig. 1b). The cemetery area should therefore be centred on TQ 20400565.

This cemetery has been mentioned in several subsequent publications (Brown 1915; Meany

1964; Smith 1905; Swanton 1973 & 1974) while Dr M. Welch has recently made a reassessment of the surviving artefacts (1983, 433–5 and Fig. 76), and suggests a 6th-century date for most of the finds. The siting of this cemetery on the gently sloping ground of a chalk spur, between 65 and 66 metres O.D., is a typical one for 'flat' Pagan cemeteries in Sussex, while its location, less than 14 km (9 miles) west of the River Ouse, makes it an important site in the issues surrounding our understanding of 5th and 6th century settlement in East Sussex.

It has been claimed that the area between the Ouse and Cuckmere Rivers was a controlled settlement zone for Saxon mercenaries in the 5th century, and that expansion westward did not occur until the 6th century. Welch (1978 & 1983) supports this claim by pointing out that of the six cemeteries containing 5th-century burials in Sussex as a whole, five are concentrated between these two rivers; Highdown, west of the Adur, being the sixth. He maintains that the other dateable cemeteries (including Stafford Road) and isolated burials west of the Ouse appears to be no earlier than the 6th century (Fig. 1a). Some conflict of opinion has, however, occurred over the earliest date for the Stafford Road finds, for



KEY: ● 5th. Cent. ▲ 6th. Cent. ◆ 5th. Cent. Settlement



■ Area in Fig. 2a. ◆ O.S. location of 1884 graves
 ● Probable area of 1883 finds ▲ Probable location of 1884 graves

Fig. 1. Stafford Road, Brighton. Location maps showing a) distribution of Early Anglo-Saxon cemeteries in Sussex; b) location of site and probable locations of earlier Saxon finds from Stafford Road cemetery.

Swanton (1973, 40–5) has proposed a 5th-century date for the surviving spearhead found in 1884. Welch, however, has pointed to 7th-century parallels for this spearhead with midribbed leaf-shaped blades and with both welded and open split sockets (Welch 1983, 127).

THE 1985 EXCAVATIONS

The grave goods from Grave three were initially taken into Brighton Museum on 22 August 1985 by Mr R. Farmer and Mr I. Maker, who were carrying out construction work at a private house in Stafford Road, Brighton. They had discovered the objects about 1 metre below the surface during trench digging in the back garden of the building. These items were recognised as early Anglo-Saxon by the then acting Keeper of Archaeology, Ms J. E. Bellam.

After visiting the site the following day, Ms Bellam contacted the writer (then Supervisor of the East Sussex Archaeology Project, an East Sussex County Council Community Programme scheme based in Brighton) who provided immediate emergency rescue facilities. The rescue operation took place over the Bank Holiday period from 23–27 August, and because of the extremely restricted work area, was conducted by three people only: Ms J. Bellam (Brighton Museum), Mr K. Heard (E.S.A.P. Archaeologist), and the author.

The site consisted of a three-sided trench about 0.5 metre wide (Fig. 2a) which had been manually excavated down to the chalk to a depth of about 1 metre. The bottom of the trench was obscured by a thick layer of trampled soil. There were two spoil heaps produced by material from the trench, the larger lying immediately above and to the west of the trench, and a smaller one some distance away to the north (Fig. 2b; A and B respectively).

Initial work concentrated on cleaning down the sides of the trench in order to obtain clear sections, and these revealed the cuts and fills of three graves (Fig. 3, sections 1–5). Section 6 was obstructed and could not be examined. The chalk

bedrock was overlain by a layer of clayey loam-with-flint about 30 cm. deep. Parts of this layer appear to have been truncated, and levelled up with a lense of rich reddish clay, probably during the 19th-century building operations. Sometime after the construction of the house, a layer up to 20 cm. thick, of reddish clay mixed with loam, sand and fine gravel, was deposited over the whole garden area, and this was in turn covered by highly organic, black topsoil. At the time of these excavations the whole back yard area was concreted over.

Section one contained a surviving fragment of the south-eastern end of Grave one. This feature continued back into the section for about 14 cm., and the spearhead (Fig. 4d) was found protruding from it. Section two also contained part of the cut and fill of Grave one, while Section three contained portions of all three graves, and a substantial longitudinal profile of Grave two proved that it had been cut into Grave one. Section four also showed all three graves: another corner of the south-eastern end of Grave one was preserved for some 11 cm. back into the section, while at the northern end of the trench, a good transverse profile of Grave three was visible. The south-eastern corner of Grave two was preserved, and this extended back into the section for *c.* 20 cm. All three graves were of a similar depth, and the bottoms of the graves could never have been more than 60–70 cm. below the original ground surface.

The north-western end of Grave three extended for *c.* 25–30 cm. into section five, and the profile seems to suggest that this grave had a shallow depression cut into the bottom of it to receive the head. A pit which clearly dates to the 19th-century construction phase was also visible in this section; its primary fill contained many fragments of roofing slate, while the main backfilling of the pit contained brick and slate fragments as well as coarse building sand, gravel and soil. A thin spread of mortar lay over this pit, and this was in turn sealed by a thick levelling layer of clay and sand.

STAFFORD ROAD 1985

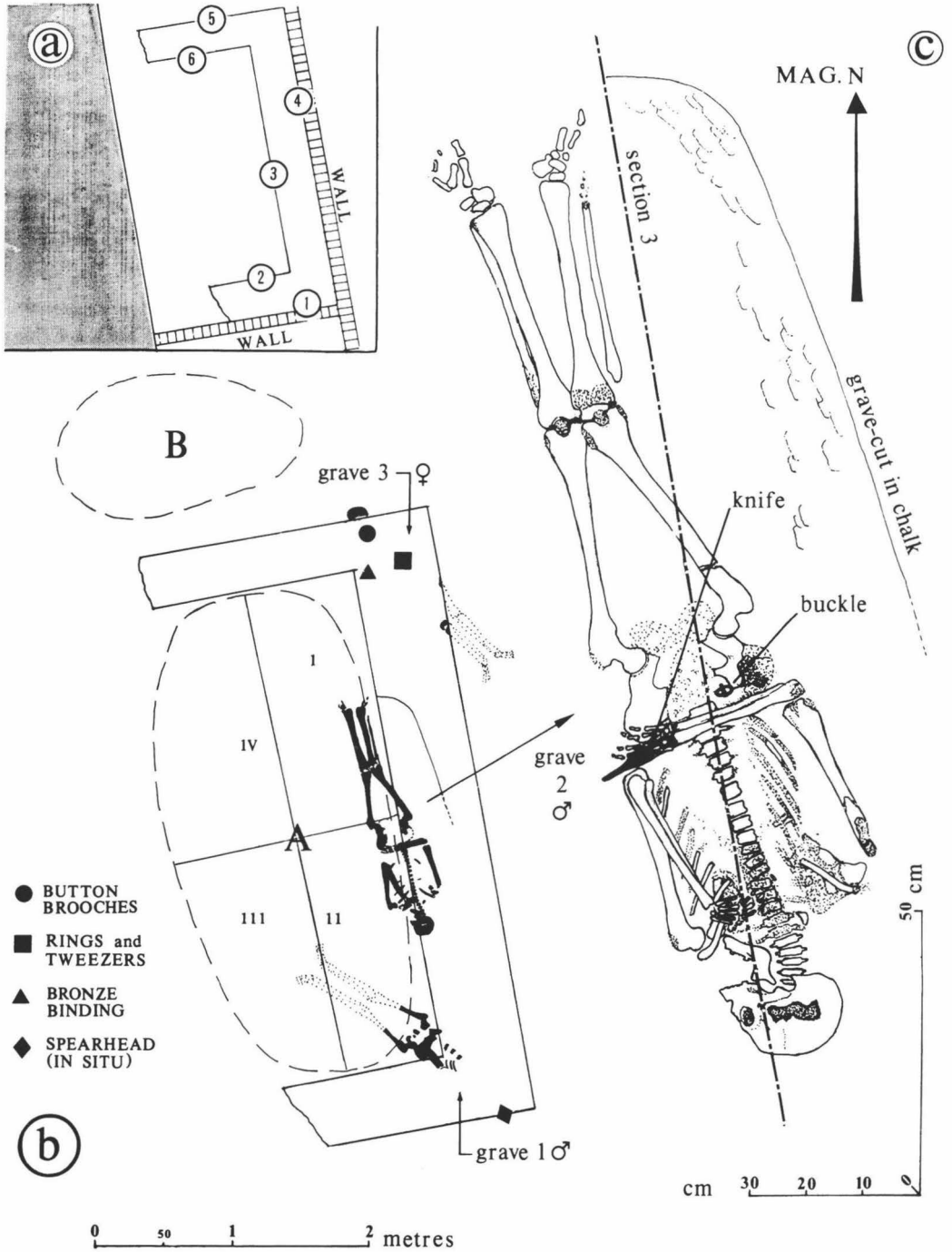
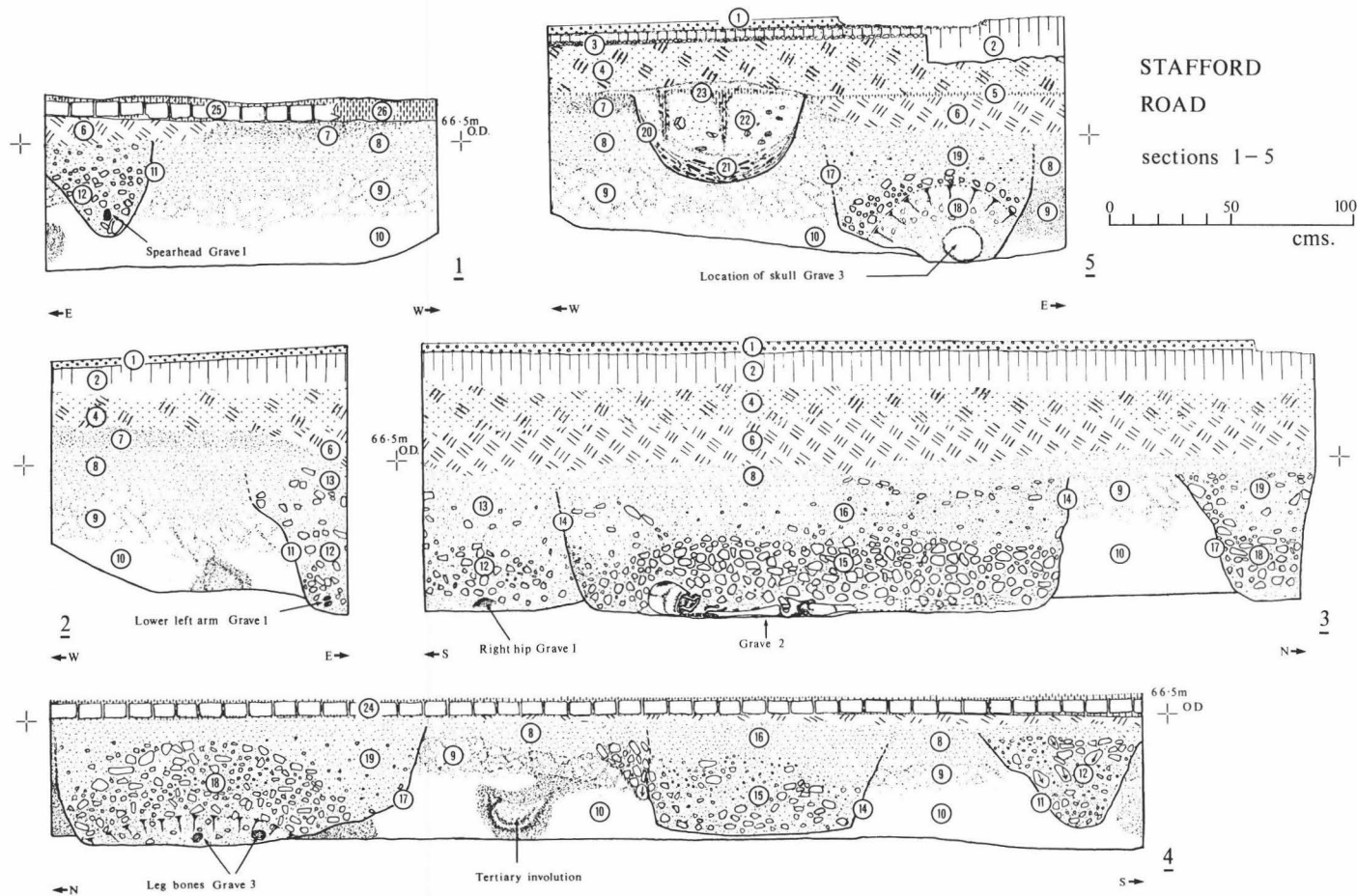
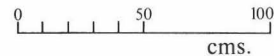


Fig. 2. Stafford Road, Brighton. Plans of builders' trench showing: a) Location of trench and section numbers mentioned in text; b) Spoil heap quadrants mentioned in text, and location of *in situ* human remains and disturbed finds; c) detailed plan of Grave 2.



STAFFORD
ROAD

sections 1-5



ANGLO-SAXON BURIALS, STAFFORD ROAD, BRIGHTON

Fig. 3. Stafford Road, Brighton. Archaeological sections. Key to contexts: 1, concrete yard surface; 2, garden soil; 3, crushed chalk; 4, reddish brown clay mixed with sand and gravel; 5, soft mortar; 6, rich reddish clay; 7, As 8, but darker and more organic (old ground surface); 8, reddish brown clayey loam with flints; 9, yellowish weathered chalk; 10, chalk; 11, cut, Grave 1; 12, chalk rubble fill, Grave 1; 13, red/brown clayey loam fill, Grave 1; 14, cut, Grave 2; 15, chalk rubble fill, Grave 2; 16, red/brown clayey loam fill, Grave 2; 17, cut, Grave 3; 18, chalk rubble fill, Grave 3; 19, red/brown clayey loam fill, Grave 3; 20, cut of pit; 21, slate fragments and sand; 22, soil, sand and brick fragments; 23, soft mortar and gravel; 24, foundations of eastern garden wall; 25, foundations of southern garden wall; 26, mortar facing.

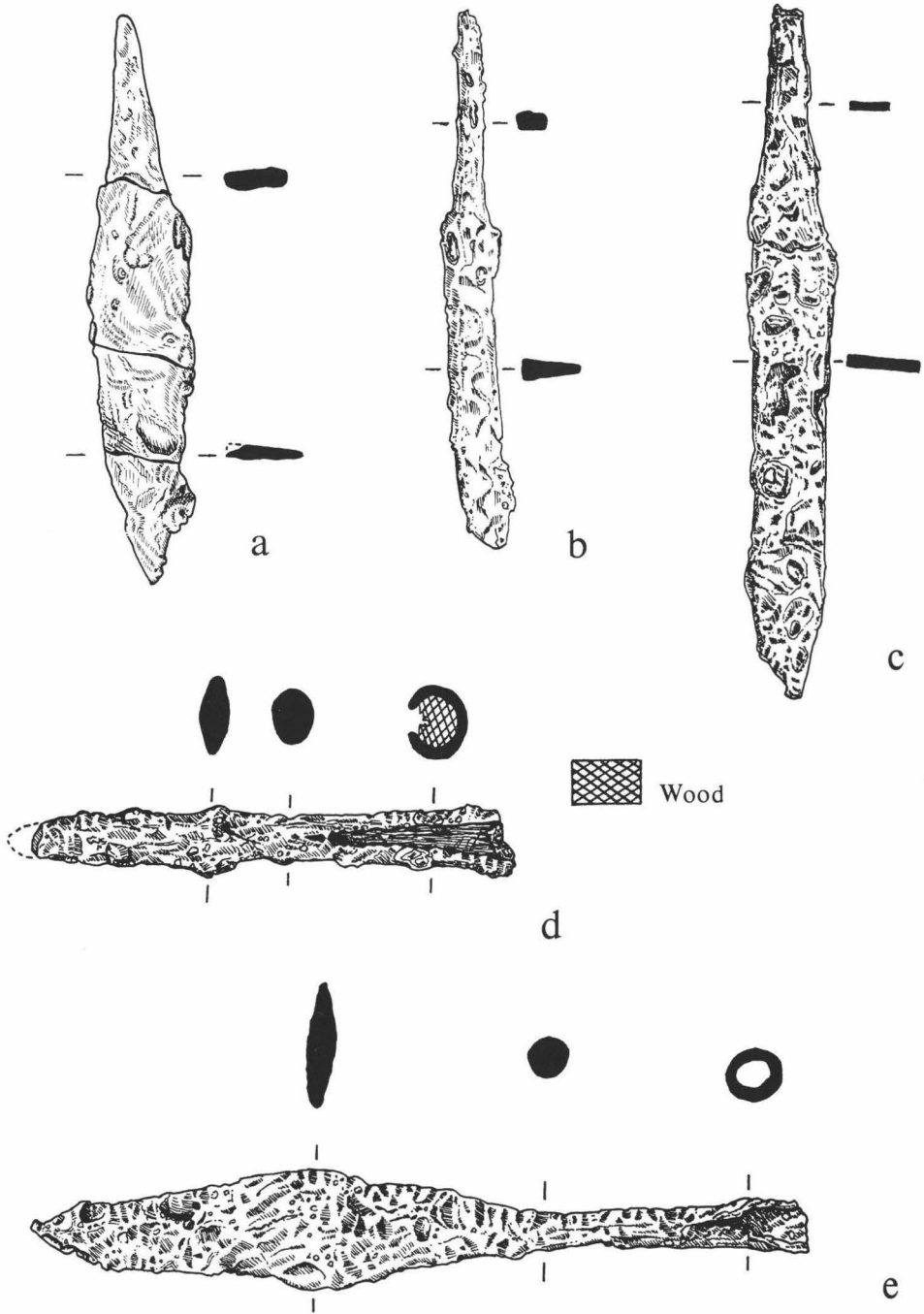


Fig. 4. Stafford Road, Brighton. Iron objects: knives and spearheads (all $\times \frac{1}{2}$).

THE GRAVE GROUPS

All three graves were disturbed during the digging of the trench. The torsos in Graves one and three were largely destroyed, and although the skeleton in Grave two was intact, the eastern side of the grave had been removed by the workmen, causing damage to the right shoulder of this skeleton. Vestiges of the cut of Grave two were visible in the chalk at the bottom of the trench (Fig. 2b & 2c). All the bones found *in situ* were in very poor condition and disintegrated badly during removal. The excavators also had purposely to fracture some long bones in order to retrieve them from trench sections which could not be further undermined.

Some artefacts were recovered from the spoil heaps by sieving, and their original locations obviously have to be conjectural. The builders were, however, carefully questioned as to where spoil had been thrown from various parts of the trench, and the main spoil heap (A) was divided into quadrants (Fig. 2b). This procedure (and the fact that finds were not too widely dispersed from their points of origin) allows most unstratified finds to be related to individual graves with a reasonable degree of certainty. Many of the loose bones recovered from the quadrants were positively linked to their individual skeletons by Dr Armitage, and this information was also used to detect the most probable source of artefacts from similar quadrants. The probable association of unstratified finds with certain graves, as proposed below, should however be considered with these problems in mind.

GRAVE 1

Skeleton: Male. Only badly fragmented ribs (left side), fragments of left ulna and radius, the damaged pelvis, and both legs were found *in situ*. It was only possible to recover the upper portions of the left and right femurs because the legs ran deep into the unexcavated area (see Fig. 2b). Both femur heads were articulated with the pelvis. The position of these bones indicate that the skeleton was extended and lying on its back.

Other bones were recovered from spoil heap A, mostly from quadrant III, less from quadrant II, and only one small fragment of pelvis from quadrant I. Orientation SE by E to NW by W with head at SE by E i.e. 124 degrees.

Associations: *small iron spearhead* (Fig. 4d) found *in situ* at the head end of the grave. The only surviving portions of the grave at this end were the two corners visible in sections one and four (Fig. 3). The spearhead was protruding, socketed end outwards, from the grave fill in section one, at an angle of about 20 degrees, 15 cms. above the bottom of the surviving grave cut. This suggests that the spear lay along the left side of the skeleton, with the spearhead itself to the left of the skull, and slightly above it. The spearhead has an angular blade which has a slight strickening above the angle. The blade has a lentoid section and the socket is cleft, with traces of the wooden shaft surviving within it. The tip of the blade has been broken off. Surviving length 137 mm. Swanton type H.1.

Possible Associations: The following finds were recovered from quadrants II and III of spoil heap A: parts of one iron shield boss (Fig. 5a) and *shield grip* (Fig. 5b) in 13 heavily corroded fragments. To save space, only matching or identifiable fragments are shown in this report, while a full list of all the fragments recovered is given in the archive report held by Brighton Museum.

Joins were found in three rim fragments, providing almost 50 per cent of the rim area. The central stud which topped the cone was also retrieved still attached to a fragment of cone. The reconstructed fragments produce a boss which has straight walls, and a convex dome. The rim has an approximate width of 28 mm. and the boss has a diameter of approximately 180 mm. An intact rivet (Fig. 5c), presumably from the rim or the grip, shows that the shield itself must have been some 5–7 mm. thick. The boss belongs to Dickinson's Group 3.

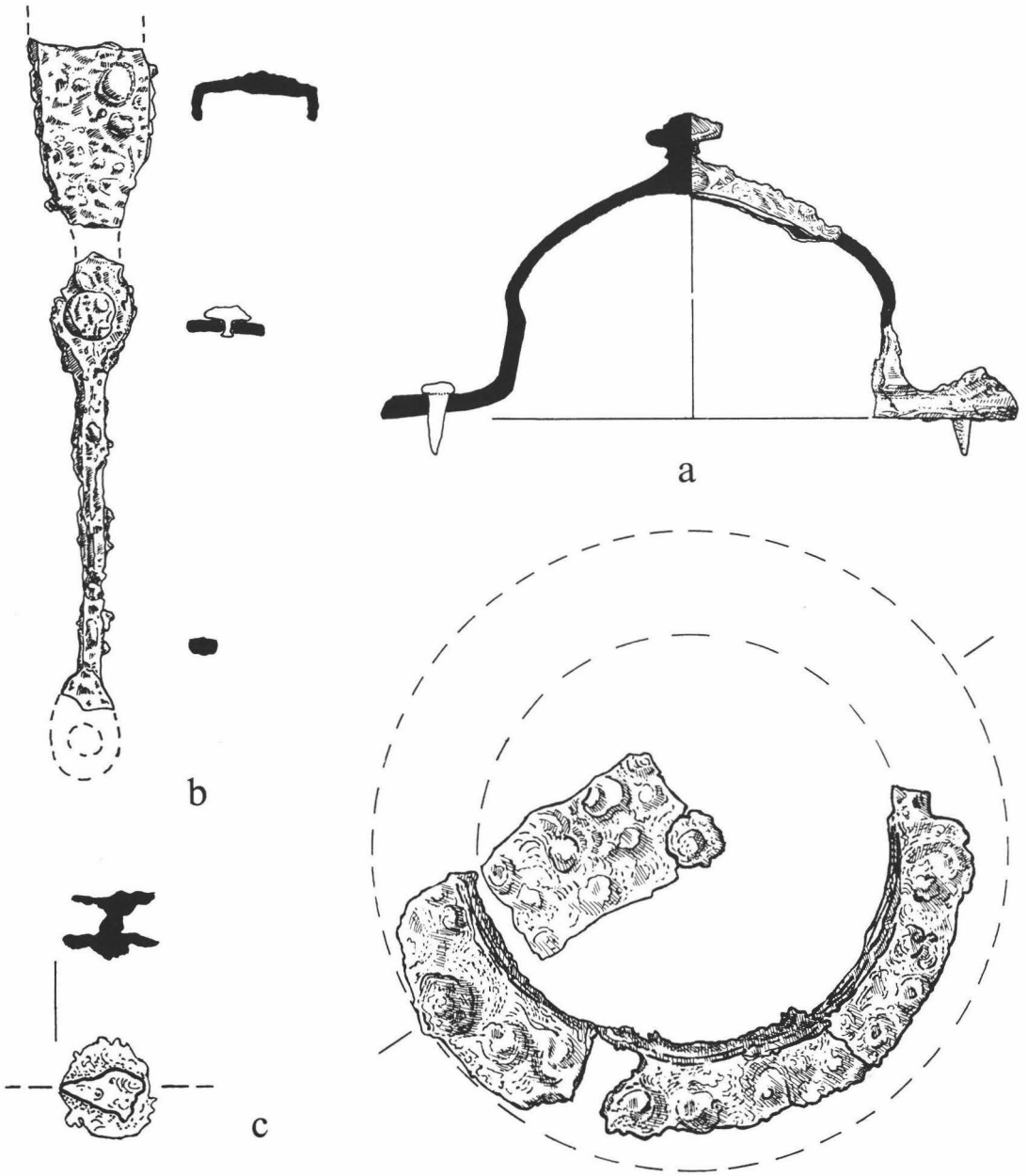


Fig. 5. Stafford Road, Brighton. Iron objects: a) reconstructed fragments of shield boss; b) fragments of shield grip; c) complete rivet, probably from shield grip (all $\times \frac{1}{2}$).

The three identifiable fragments of shield grip partially join to produce an extended grip almost identical to that found with a Dickinson Group 1:1 boss in Grave 48 at Alfriston (Welch 1983, Fig. 24b). The surviving length of the Stafford Road grip is 185 mm. and the full length of the grip must have been at least 420 mm. This is again very close to the Alfriston grip which was 384 mm. long.

D-shaped iron buckle without tongue (Fig. 7a). Length 32 mm. Badly corroded. *Iron knife* (Fig. 4a) in four fragments and badly corroded. The blade is triangular in section and both the back and cutting edge have convex curves. Surviving length 155 mm. This is most probably an example of Evison's Type I. *Iron knife* (Fig. 4c). The badly corroded blade is triangular in section, and the tapering blade would again suggest Evison's Type I. Surviving length 185 mm. It is possible that one of these knives may belong to Grave 3.

GRAVE 2

Skeleton: Male, found *in situ*. Extended and lying on back, the right arm bent at elbow and lying across the body with hand resting on an iron knife. One upper phalange bone was found adhering to the underside of the knife blade. The left arm was fully flexed upwards at the elbow with the radius and ulna lying along the humerus, and the hand, bent at the wrist, lay across the collapsed rib cage and thoracic vertebrae. The skull was lying on its left side facing WSW, with the lower jaw gaping. The right side of the cranium was slightly damaged during cleaning of the trench bottom. Orientation SSE to NNW with head at SSE. i.e. 159 degrees (Fig. 2c).

Associations: *iron knife* (Fig. 4b) with convex back and concave cutting edge, triangular in section. Surviving length 145 mm. This is probably a worn example of Professor Evison's Type IV, although Hirst (1985, 88) has suggested that a similar knife from Sewerby Grave 35, might represent a hypothetical Type VII. Found

lying across the lumbar vertebrae at the waist, the tang of the knife was pointing towards the WSW, the blade end to the ENE. *Small copper alloy buckle with tongue* (Fig. 7b), found *in situ* lying on the fragmented wing of the right ilium (see Fig. 2c). Length of loop 19 mm.

Possible Associations: *iron spearhead* (Fig. 4e). A leaf-shaped blade, lentoid in section, with the broadest span well below the mid-point of the blade. It has a short, solid neck joining the blade to the open socket. Lower part of the socket has been broken off. Surviving length 220 mm. Swanton type C.2. Found in spoil heap A, quadrant II/III. There is a considerable degree of certainty that this item was dug out from the right (eastern) side of this grave by the builders.

GRAVE 3

Skeleton: Female. The badly damaged cranium was found *in situ*, but this was disturbed by the builders who removed it from section five. The skull was lying on its right side when found, and the lower jaw was missing, having already been removed with spoil. All the torso bones had been totally removed or destroyed by the builders during digging of the trench. Much of the upper and lower bones of the left leg, and the lower bones of the right leg, remained *in situ* but could not be recovered as they ran acutely into section four, and under the brick boundary wall of garden (see Fig. 2a/b). It is not possible to be certain of the position of this skeleton, but the distance between the skull, and leg bones in section four, suggests this was an extended burial lying on its back or side. Other bone fragments were retrieved from spoil heap A; most from quadrant I, less from quadrant II, and only one fragment of left femur head from quadrant III. Orientation NW to SE with head at NW i.e. 312 degrees.

Associations: *two cast copper alloy button brooches* (Fig. 6a & b) with traces of mercury gilding on them. They are each decorated with a stylized face which has a pointed helmet, downward curving eyebrows and narrow angular

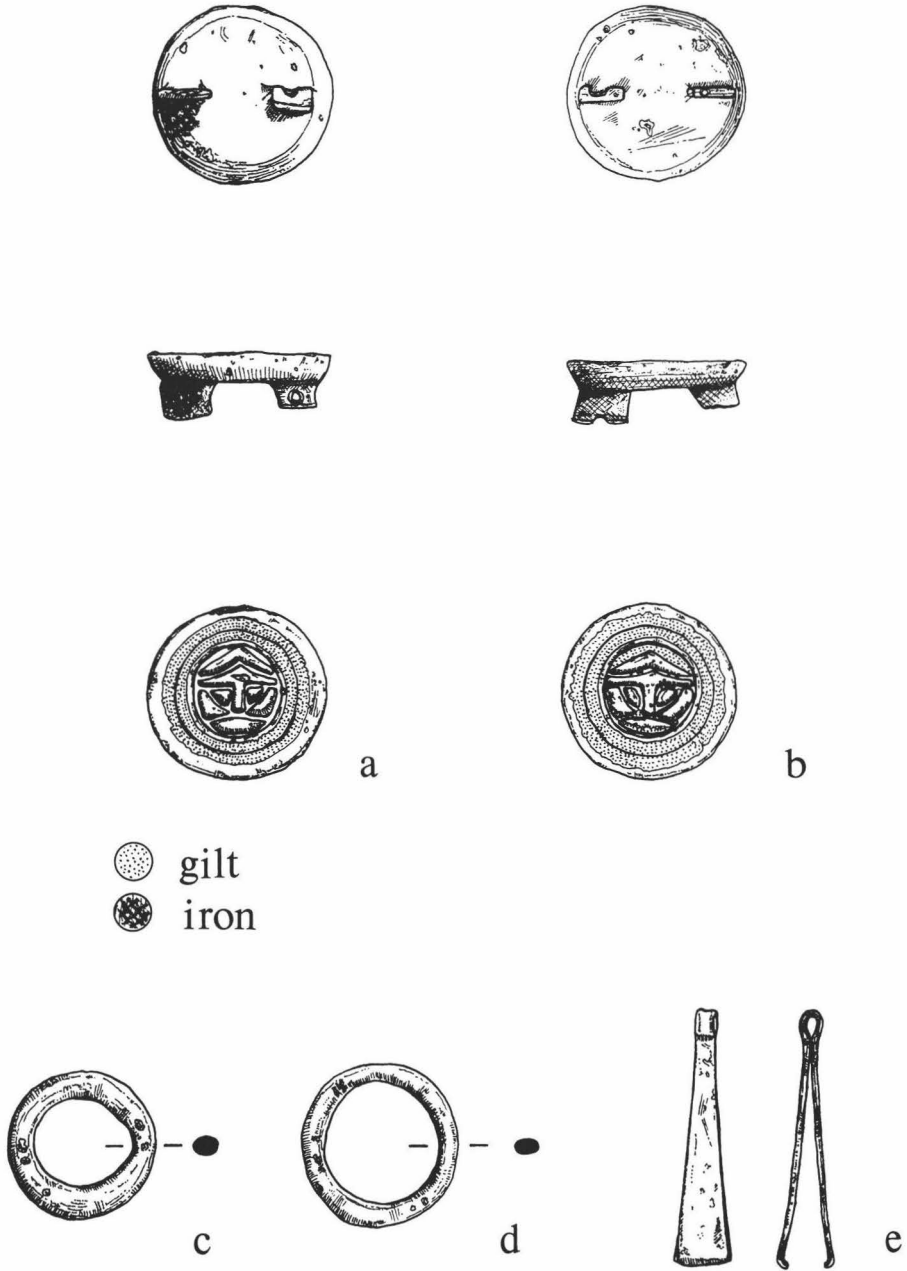


Fig. 6. Stafford Road, Brighton. Copper alloy objects: a) & b) button brooches 1 & 2 ($\times 1/1$); c) & d) rings 1 & 2 ($\times 1/2$); e) tweezers ($\times 1/2$).

eyes. The straight nose is moulded in one piece with the eyebrows, the cheeks are separate bars, and the mouth is also a separate, almond-shaped bar: good examples of Avent and Evison's class Bii (1982, 82).

The brooches are very similar and were probably made as a pair, but not from the same mould. Both have a diameter of 23 mm. and their rim angle is *c.* 60 degrees. The depth of the rim is 3.5 mm. on brooch one (Fig. 6a) and 3 mm. on brooch two (Fig. 6b). The brooches each weigh 7 g. The main differences between them are that brooch one has carefully moulded, well spaced out features, while the face on brooch two has a cramped appearance and its separate elements are less well defined. The downward curve of the eyebrows is slightly flattened and the eyes are more lozenge-shaped than in brooch one.

Brooch one also has its catchplate on the right hand side (i.e. 90 degrees) when looking at the brooch frontally with the face correctly oriented, while brooch two has the catchplate on the left hand side (i.e. 270 degrees) when viewed from the same angle. The gilding on both brooches is in poor condition and missing from around the edge of the rims and from the raised surfaces of the faces. The outer edge of the rims of both brooches show traces of wear which has occurred in antiquity, as well as slight chips resulting from their excavation in 1985.

Traces of iron corrosion, presumably from a fragment of hinge spring, in crust the hinge lug of brooch one. The catchplate of both brooches has been perforated, presumably to enable each brooch to be sewn on to a garment after its hinge spring or brooch pin had broken.

Two cast copper alloy rings (Fig. 6c & 6d). Little is known about such rings, and they may have a practical (cf Myers 1978) or amuletic function (cf Brown 1977). Similar rings, both iron and copper alloy, have been found in other Sussex cemeteries e.g. Alfriston, Highdown, Saltdean, Saxonbury and South Malling. Ring one (Fig. 6c) has a circular outside edge. The inner edge is more oval with a marked 'pinching'

at one point which seems to be in the casting, as no wear lesions are visible on the surface of the ring around the area of the pinching. Outer diameter 38 mm., weight 23 g. Ring two (Fig. 6d) is almost circular with an outer diameter 41 mm. × 43 mm. and also has a slight constriction. Weight 15 g.

A pair of copper alloy tweezers (Fig. 6e) which have a classic tweezer shape with well inturned pincer ends. No decoration is visible, but there are many extremely fine scratches and striations on both outer faces of the tweezer arms. These are most pronounced on one face where fine diagonal striations are accompanied by slightly deeper, more horizontal scratches. These could have conceivably been produced by the tweezers moving against rough material or other objects; what one would expect if they were kept on a girdle hanger or in a purse. Length 67 mm. Weight 10 g.

Six small fragments of copper alloy strip, three of which exhibit right angled bends. Those pieces which could be successfully joined produce an incomplete rectangular band 26 mm. long and 18 mm. wide (Fig. 7c).

All these items (except for the fragments of bronze strip) were found by the builders and removed by them. Careful questioning showed that both brooches were found close together as a pair, and came from an area a few centimetres south of where they later found the skull. It would seem that these brooches must have come from the upper torso, probably from the region of the neck or breast rather than the shoulders.

The tweezers and rings were found close together further down the torso region, and may have been lying at the waist or pelvis, probably in a bag. The fragments of bronze strip binding were found by the archaeologists, lying in trampled soil, about 45 cm. to the south of the brooch find spots (Fig. 2b). Although these fragments had clearly been disturbed, it is fairly certain that they are associated with this grave, and may not have moved far from their original position.

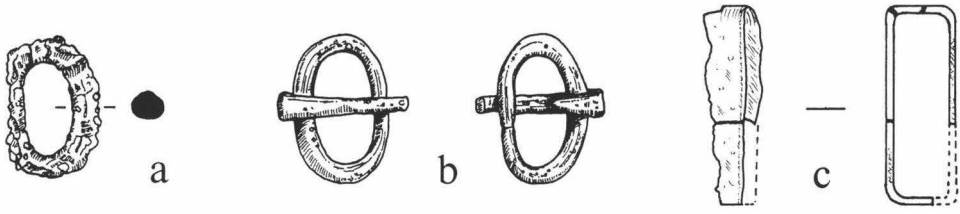


Fig. 7. Stafford Road, Brighton. a) Iron buckle ($\times \frac{1}{2}$); b) copper alloy buckle (1/1); c) copper alloy binding (1/1).

DISCUSSION

Although some of the material is unstratified, the determination of reasonably certain grave groups by controlled recovery, plus the intact stratigraphical evidence, makes these finds the most valuable diagnostic assemblages so far obtained from this cemetery.

The spearhead found in Grave one is of the type dated by Swanton (1973, 103–7 & Fig. 37) as beginning in the middle of the 5th century and dying out in the second half of the 6th century, while the shield boss is an example of the most common form found in Sussex (Welch 1983, 137) and can be dated with certainty to the 6th century (Dickinson 1976). The style of the accompanying shield grip reinforces this 6th-century date, for the almost identical grip found with a Group 1 shield boss at Alfriston, was associated with a 6th-century shield-on-tongue buckle (Welch *ibid*). The type 1 knives have a broad date range from the 5th to the 7th centuries.

The stratigraphic evidence shows that Grave two is later than Grave one, for it cuts into that grave, and also has a markedly different alignment to Graves one and three. The *in situ* assemblage from Grave two affirms the stratigraphical evidence, for, although the probable Type IV knife may appear as early as the first half of the 6th century in Grave 35 at Sewerby, Yorkshire (Hirst 1985, 88–9), it is most common in the 7th century. At Polehill cemetery, Kent (Philp 1973, 210, Fig. 57) a knife of this type was found in a middle 7th-century context accompanied by a typically small, 7th-century

bronze buckle. The buckle found *in situ* in Grave two at Stafford Road, is very similar to the Polehill example, and also belongs in the 7th century, and these two objects provide the earliest date for this burial. The type C2 spearhead which must come from this grave, is the most common type of leaf-shaped blade and spans the 5th to the 7th centuries, but peaks in the 7th century (Swanton 1973, 51–55).

A mid-5th century to early-6th century date has been proposed for Bii class button brooches (Avent and Evison 1982, 99), but this early (mid-5th century) date for button brooches in general is contested by Welch (1985, 142–5) who does not see the button brooch appearing in England before the late 5th century. The evidence that the Stafford Road brooches were sewn on to a garment suggests that they must have been worn for a considerable time before burial, and even if Evison's earlier date is accepted, the first half of the 6th century would seem the earliest likely period for their deposition.

These two brooches increase the total number recorded in class Bii to nine, of which seven have been found in Sussex. The addition of Brighton to the distribution pattern of class Bii button brooches (Avent and Evison 1982, Fig. 4) produces an overwhelming concentration of them in East Sussex, with five of the nine recorded examples coming from the Alfriston and Brighton cemeteries. This weighting strongly implies that a location in East Sussex must be the core area for the Bii workshop.

While tweezers can only be dated broadly to the 5th and 6th centuries, two pairs, of the same size and shape as those from Stafford Road, were found in Grave 19 at Highdown; with them was a pair of silver gilt bird brooches which can be dated to the 6th century (Welch 1983, 108 & Fig. 96). The copper alloy rings seem to occur mainly in 5th- to 7th-century graves.

There is nothing in the evidence from Graves one and three to suggest a date of burial earlier than the first half of the 6th century, while Grave two certainly belongs to the 7th century. This puts the spearhead, dated by Swanton (1973, 40–5, Fig. 7c) to the 5th century, in an even more isolated position as a diagnostic artefact, and reinforces the view that this cemetery does not begin until the 6th century. While this dating evidence supports the claim that westward expansion across the River Ouse did not occur until the 6th century, future evidence for or against this hypothesis, may come as much from the Roman period as the Saxon.

Welch has suggested that the lack of villas in East Sussex, especially in the block of downland between the Ouse and the Cuckmere, is one of the reasons for the early Saxon colonisation of this region (Welch 1983, 221). The discovery of a substantial villa near Beddingham, during the summer of 1986, could undermine this tenet if evidence is found of late 4th- or early 5th-century occupation. As yet, no dating evidence later than the 3rd century has been found on this site (Rudling 1988), but further excavations could change this situation. If one villa has remained undetected in this area, there may be others awaiting discovery, and this timely development underlines the problems involved in interpreting negative evidence from fieldwork.

The human skeletal remains (by Philip L. Armitage)

Introduction

All the human skeletal remains from Stafford Road were sent to the nearby Booth Museum of Natural History in order that they could be cleaned, conserved and studied.

Two of the burials (1 & 3) had been considerably

disturbed by the trench-digging activity and their skeletons had therefore to be reconstructed from the many broken bits of skulls and limb bones collected on site by the archaeologists from the builders' trench and associated spoil heaps (Fig. 2b). Although the archaeologists had been able properly to excavate skeleton 2 (burial 2) immediately following its discovery *in situ* at the bottom of the builders' trench, many of the skeletal elements nevertheless were submitted in a freshly broken condition and needed some attention ('repair') before they could be studied and measured.

The somewhat brittle nature of the bones of this and the other two skeletons indicated that conservation treatment would be required in order to prevent deterioration during subsequent storage at Brighton Museum. Accordingly, it was decided to impregnate the bones with Polyvinyl acetate (*except* for the ribs which have been left untreated in case they should be required in the future for Carbon 14 dating and/or chemical analysis).

Laboratory analysis

Identification of the material was carried out using the modern comparative osteological collections at The Booth Museum of Natural History, Brighton. Reference was also made to Schäfer and Thane (1890), Anderson (1975) and Brothwell (1972 and 1981).

Sexing the skeletons —

Diagnostic features of the skull and pelvis (where present) determined the sex of each skeleton using standard criteria described by Anderson (1975, 141–3), Phenice (1969) and Brothwell (1972, 52).

Age estimation —

The age-at-death was based on the degree of dental attrition in each skeleton using the system of Brothwell (1972, 69). It should be noted that more recent research has suggested that the age ranges derived from Brothwell's classification system may underestimate the 'true' age of an individual by between 5–10 years (Molleson, pers. comm.) and the ages of the Stafford Road skeletons have therefore been adjusted accordingly. In order to verify the accuracy of the revised estimates, two independent methods of determining age-at-death were also employed: 1) the degree of ectocranial suture fusion (method of Meindl and Lovejoy 1985); and 2) the X-radiographic appearance of the clavicle and proximal femur (method of Walker and Lovejoy 1985). In the first of these methods, it was found necessary to exclude from the assessment the unfused metopic suture present in the skull of the 30 year old male (burial 1) as this would have given a 'false' indication of the age-at-death of this particular individual. Apart from this one anomalous feature, there was general concordance with the results of the three methods used in the study.

Stature estimation —

The height of the older male (burial 2) was estimated from the lengths of the major long bones using the regression formulae of Trotter and Gleser 1958 (see Anderson, 1975, 125–7 and Brothwell, 1972, 102).

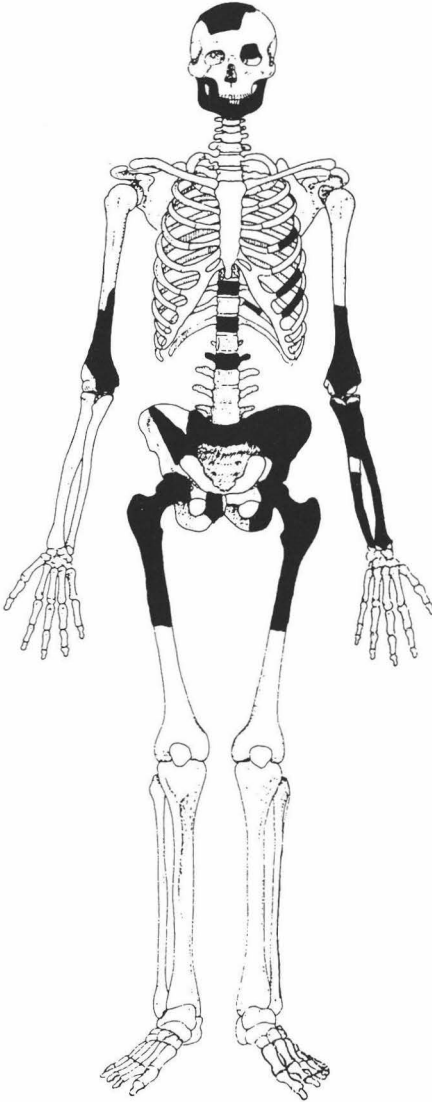


Fig. 8. Early Anglo-Saxon inhumation burials from Stafford Road, Brighton 1985. Burial 1: adult male aged about 30 years. Reference skeleton showing the bone elements recovered (in black).

In the other two skeletons (burials 1 & 3) the long bones were not sufficiently complete (i.e. were recently broken) to enable measurement of their lengths.

Results of the analysis

For the purposes of this level IV report, a brief synopsis only is presented of the three inhumations. A detailed

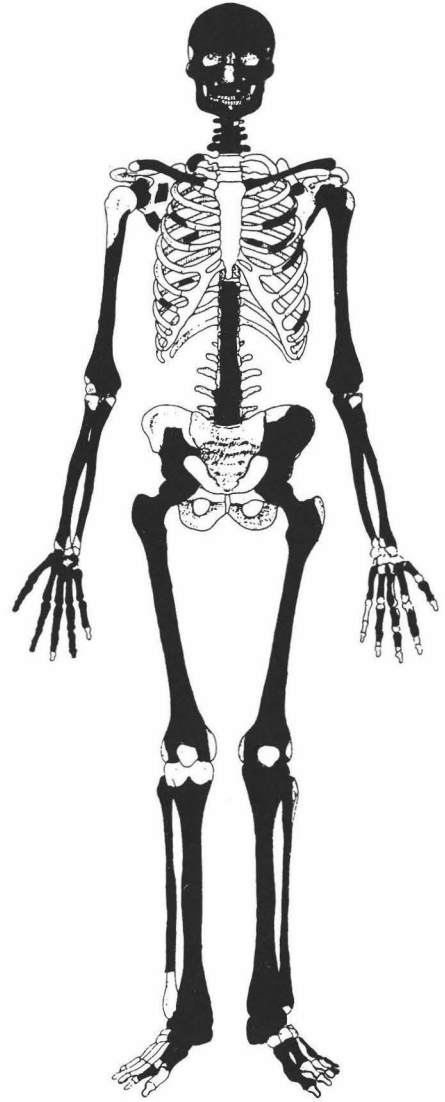


Fig. 9. Early Anglo-Saxon inhumation burials from Stafford Road, Brighton 1985. Burial 2: adult male aged 35-40 years. Reference skeleton showing the bone elements recovered (in black).

catalogue of the skeletal material from Stafford Road (which includes the registration numbers of the individual bone elements collected) is available for inspection at The Booth Museum of Natural History, Brighton.

Burial 1 (Fig. 8)

An incomplete (recently broken) skeleton of an adult

male aged about 30 years.

The surviving portion of the cranium (vault form: ellipsoidal) has the metopic suture present and shows evidence of two traumatic injuries, probably caused by sword cuts to the head: (a) a healed wound located slightly below the lambda and to the left of the sagittal line (as viewed from the back of the skull), and (b) an unhealed wound on the left side of the skull involving portions of both the frontal and parietal bones (Fig. 12).

Dentition:

R	87654321	12345678	L
	87654321	12345678	
	/	///	

/ tooth missing (lost post-mortem) but socket present
 – area missing (recently broken)

Overall dental health appears to have been good. Most of the *in situ* teeth have only slight calculus except for those on the lower left side which have small localised patches of medium calculus deposits on the lingual (inner) surface at the junction of the crown and root. There is slight/medium resorption of the alveolar bone.

Using the classification system of Brothwell (1981, 72) the wear stages for the individual molar teeth are identified as follows:

RM¹ 3+; RM² 2+; RM³ 2; RM₁ 3+; RM₂ 3; RM₃ 2; LM₁ 3+; LM₂ 2+; LM₃ 2.

Measurements (in mm.) taken of the skull, lower jawbone, and right and left femora are given in Table 1. Indices of platymeria calculated for the femora were — right 77.2 — left 79.9.

Burial 2 (Fig. 9)

Skeleton (about two-thirds complete; recently broken) of an adult male aged between 35–40 years.

Vault shape in the skull may be described as ellipsoidal but appears somewhat broader (relative to length) and more ovoid than the previous skull (burial 1).

Dentition:

R	// // // //	--/RRX /	L
	87654321	12345678	
	87654321	12345678	
	X// //	////XC/	
		A	

/ tooth missing (lost post-mortem) but socket present

X tooth lost ante-mortem

R root only remains

– area missing (recently broken)

C caries cavity

A root abscess

This individual had poor dental health. The lower left second molar has been affected by tooth decay and exhibits an advanced interproximal caries. This same tooth also had a chronic abscess in the region of the apex of the posterior root, with the cavity-opening on the buccal side. In addition, three teeth had been lost ante-mortem: the upper left first molar; and both the right and left lower first molars. According to Firth (pers. comm.) loss of the lower first molar had taken

place before the person was 12 years of age (i.e. before the second molar erupted) as evidenced by the closing-up of the cheektooth row and upright position of the second molar tooth. These features may be compared with the right side where there is still a clearly defined 'gap' (= closed alveolus) marking the former position of the lost first molar, and the second molar is inclined forwards—indicating that the loss of the tooth had been later (after the person had reached 14 years of age).

The degree of calculus formation is moderate on the lingual (inner) side of the right lower third molar and slight on the other *in situ* teeth. Resorption of the alveolar bone is however medium/severe in both the upper and lower toothrows.

Using the classification system of Brothwell (1981, 72) the wear stages for the individual molar teeth are identified as follows:

RM¹ 5+; LM² 5+; RM₂ 4+/5; RM₃ 2; LM₂ 5+

In the lower jawbone, the dental protuberance is square and projects well forward producing a moderate degree of progenesis (this condition is perhaps better known as the so-called 'Hapsburg chin'); there is *no* associated increase in the gonial angle in this example (Fig. 11).

The left femur is noticeably stouter and more robust than the right femur and displays bony changes resulting from prolonged muscular exertion—the gluteal ridge is roughened while towards the distal end of the shaft there is a very marked (large) bony flange projecting from the linea aspera in the region of the arterial foramen. The lower part of this bony outgrowth extends into the apex formed by the lips of the linea aspera when they diverge to produce the internal and external supracondylar lines. Above this prominent bony flange, and at irregular intervals, there are smaller outgrowths along the length of the internal lip of the linea aspera.

Measurements (in mm.) taken of the skull, lower jawbone, left humerus, right and left femora, right and left tibiae and left fibula are given in Table 1. From these data, the following indices were calculated:

cephalic index (skull)	71.5 (= dolichocephalic)
index of platymeria (femur)	right 76.9, left 74.7
index of platycnemia (tibia)	right 68.9, left 74.3

It is interesting to note that although this individual is certainly a male, the vault thickness in the skull compares with that recorded in the female skeleton from Stafford Road (burial 3, below). However, the thickness towards the basal area of the skull, as measured between *protuberantia occipitalis externa* and *eminentia cruciata*, does fall within the upper range established for males (see Gejvall 1971, 474).

From the lengths of the major limb bones, the stature is estimated at about 1.78 m. (5 ft. 10 in.). However, this calculated value may underestimate the original ('true') height as direct comparison of the femora with the upper leg—lengths of the male staff at The Booth Museum would seem to suggest that the Saxon buried in grave 2 would have been nearer to 1.80 m. (5 ft. 11 in.) when alive!

Burial 3 (Fig. 10)

An incomplete (recently broken) skeleton of an adult female aged 40–45 years.

TABLE 1:
Early Anglo-Saxon inhumation burials from Stafford Road, Brighton, 1985. Summary of measurements

Skeletal element	Point of measurement	Designation as in Brothwell (1981)	Values (mm.)						
			skeleton 1 male c. 30 yrs		skeleton 2 male 35-40 yrs		skeleton 3 female 40-45 yrs		
SKULL:	max. cranial length	L	—		191.5		—		
	max. breadth	B	—		137.0		129.2		
	upper facial height	G' H	—		71.1		—		
	bimaxillary breadth	GB	—		101.6		—		
	bizygomatic breadth	J	—		134.0e		—		
	nasal height	NH'	—		52.8		—		
	nasal breadth	NB	—		25.2		—		
	orbital breadth	O ₁	—		40.9		—		
	orbital height	O ₂	—		38.5		—		
	palatal breadth	G ₂	—		44.4e		—		
	max. thickness of cranial vault	—	6.9	—		5.2		5.3	
	max. thickness of skull at base (protuberantia occipitalis externa-eminentia cruciata)	—	—	—		21.0		14.4	
	MANDIBLE:	min. ramus breadth	RB'	33.6		31.3		—	
symphyseal height		H ₁	32.6		31.2e		—		
max. projective length		ML	118.3		113.3		—		
coronoid height		CrH	—		76.3		—		
intercondylar width		W ₁	—		115.6		—		
HUMERUS:	max. length	HuL ₁	R	L	R	L	R	L	
	max. diameter of shaft	HuD ₁	—	—	—	357.0	—	—	
	min. diameter of shaft	HuD ₂	—	—	—	27.7	—	—	
FEMUR:	max. length	FeL ₁	R	L	R	L	R	L	
	oblique length	FeL ₂	—	—	479.0	479.0	—	—	
	min. antero-posterior diameter of shaft	FeD ₁	26.4	27.4	28.0	29.2	—	—	
	transverse diameter of shaft	FeD ₂	34.2	34.3	36.4	39.1	—	—	
	total length	TiL ₁	—	—	—	395.0	—	—	
TIBIA:	max. antero-posterior diameter of shaft	TiD ₁	—	—	37.9	39.7	—	—	
	projective transverse diameter of shaft	TiD ₂	—	—	26.1	29.5	—	—	
	max. length	FiL ₁	R	L	R	L	R	L	
FIBULA:	max. length	FiL ₁	—	—	—	358.0e	—	—	

The vault shape of the skull is ovoid/almost spheroid.

Dentition:

R 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 L

// X // // // // // // // // X /

/ tooth missing (lost post-mortem) but socket present

X tooth lost ante-mortem

- area missing (recently broken)

Owing to the virtual absence of teeth it is not possible to ascertain the dental health of this individual. Examination of the one *in situ* tooth (lower left second molar) however suggests that this was probably poor: the tooth has an interproximal (mesial) neck caries in addition to medium calculus deposits. Both the right and left lower first molar teeth had been lost ante-mortem leaving gaps (= closed alveoli) marking their former positions.

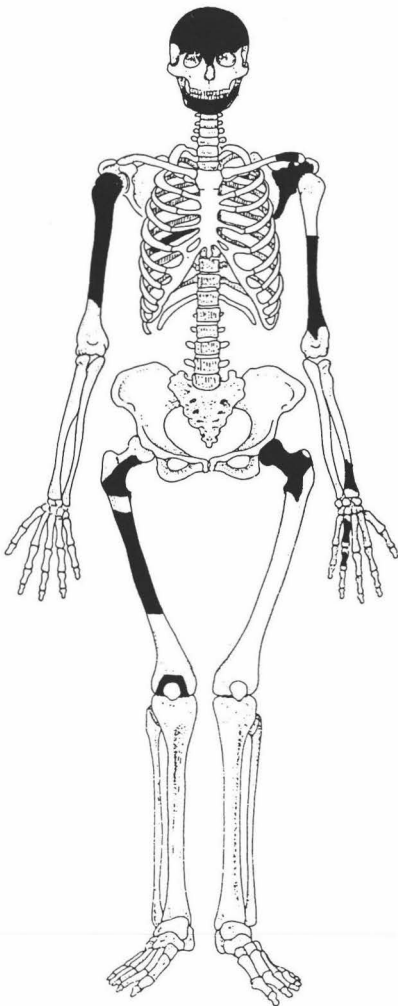


Fig. 10. Early Anglo-Saxon inhumation burials from Stafford Road, Brighton, 1985. Burial 3: adult female aged 40–45 years. Reference skeleton showing the bone elements recovered (in black).

Interpretation and discussion

Interpretation of the skeletal material is best considered under two headings, as follows:

1) General physical appearance of the Anglo-Saxons from Stafford Road

With an estimated height of between 1.78 m.–1.80 m. (5 ft. 10 in.–5 ft. 11 in.), the adult male from the 7th century (burial 2) would have been well above average for Saxon times (see Table 2); he was tall, of slender build but with well-developed leg muscles.

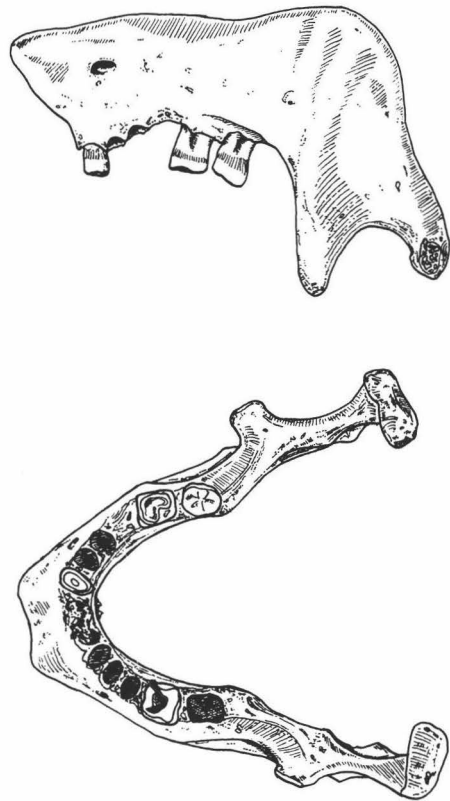


Fig. 11. Early Anglo-Saxon inhumation burials from Stafford Road, Brighton 1985. Drawing of the lower jawbone of the 7th-century adult male (burial 2) showing the so-called 'Hapsburg chin': A) dorsal view; B) right lateral view.

This same individual was distinguished by a prominent (projecting) chin. This progenie was also recorded by Dr Ratcliffe-Densham F.S.A. in the Anglo-Saxon skeleton from Ditchling Beacon, near Brighton, and ascribed by him to the Friesian race (Ratcliffe-Densham 1962 & 1963). In support of this interpretation, Ratcliffe-Densham cites Virchow (1877) commenting that this author 'found . . . this condition was relatively *common* among the Friesians' [my italics]. Enquiries made by me to Dr Trinetta Constandse-Westermann at The Institute of Human Biology, Rijksuniversiteit Utrecht, revealed that the evidence referred to by Ratcliffe-Densham is not so definite. Dr Constandse-Westermann very kindly checked the relevant sections of Virchow's book for me and reports that 'he described there only two pronounced and one moderate case of progeny, one from the island of Marken, one from Warga, which is in the

Dutch province of Friesland and one . . . from the German area of East Friesland . . . Thus the trait is not all that frequent, which I would not expect anyway in such a widespread population', she further points out that it is important to realise that Virchow does not take into account the dating of the crania he describes.

In conclusion, it would appear that Ratcliffe-Densham's claim of a firm link between the progenie in the Ditchling Beacon cranium and the Dutch Friesian population of the 6th and later centuries is tenuous and must be discounted on the current available evidence.

However, there still remains the problem of how to account for the apparently relatively high incidence of this trait among the early Anglo-Saxon settlers of southern Britain (Table 3). Perhaps the answer lies in another observation made by Dr. Constandse-Westermann (pers. comm.) who says that while the trait is not widespread throughout Europe it is 'a genetic characteristic with some similarity to a dominant trait (although not completely so)' and may therefore 'occur with a certain frequency in a specific family, like the Hapsburg family, or with a small, endogamous community where the individuals are genetically more similar than elsewhere'.

If this is indeed the case, then perhaps this trait could be used as a tool in conjunction with other non metrical attributes for studying the degree of family/kin relationships of the various groups of early Anglo-Saxon settlers in

southern Britain (and elsewhere in the country where inhumation material of this date may be available).

One further observation on this matter. Unless this form of progenie is sex-linked, and from modern studies there is no reason to believe that this is so, its apparent preponderance in Anglo-Saxon males in southern England merits investigation, as it may provide evidence to substantiate the model proposed by Stuckert (1982 & forthcoming) of the cultural transition from Roman to Pagan Saxon life in Britain between the 4th and 7th centuries, where 'large-scale political' change is imposed on an essentially unaltered native group by a small, *predominantly male*, group of newcomers operating in a context of increasing internal instability and disorganisation'.

2) Life and death in 6th and 7th century Brighton

Research into the three human skeletons from Stafford Road has yielded valuable insight into the health and life-style of the people who lived in the Brighton area some 1,400 years ago.

Life for these early Anglo-Saxon settlers would have been brutal and often short; with many of them destined to die before they were fully adult (few could probably expect to live beyond 35 years of age). In particular, there was a high infant mortality and a high death rate for women during childbirth. Lack of fresh foods over the winter months resulted in vitamin deficiencies and an increased

TABLE 2
Stature in early Anglo-Saxon groups from Sussex, Oxfordshire and Hampshire compared with the adult male from 7th-century Brighton (Stafford Road; burial 2)

Site name/location	Date	Reference	Stature estimation ^a		
			sex	N	
Stafford Road Brighton E. Sussex	7th century	Armitage	male	1 1.78 m. (5 ft. 10 in.) probably nearer to 1.80 m. (5 ft. 11 in.)	
Ditchling Beacon nr. Brighton E. Sussex	Anglo-Saxon	Ratcliffe-Densham (1963)	male	1 1.72 m. (5 ft. 8 in.)	
Bishopstone E. Sussex	5th-early 6th century	Concannon (unpublished)	male	1 1.76 m. (c. 5 ft. 9½ in.)	
Alfriston E. Sussex	7th or 8th century	O'Connor (1976)	male	2 1.75 m. (5 ft. 9 in.) & 1.83 m. (c. 6 ft.)	
Barton Court Farm Oxfordshire	mid-6th century	Harman (1984)	male female	1 1.71 m. (5 ft. 7½ in.) 2 1.58 m. (5 ft. 2 in.) & 1.62 m. (5 ft. 3½ in.)	
Droxford Hampshire	late 5th- 6th century	Toomey (1979)	male	12 1.72 m (5 ft. 8 in.)	M Range SD 1.58-1.80 m. (5 ft. 2 in.-5 ft. 11 in.) 0.07 m.
			female	17 1.61 m. (5 ft. 3 in.)	

a) statistics reported; N number of individuals; M average; SD standard deviation

TABLE 3:

Incidence of progenie ('Hapsburg chin') in early Anglo-Saxon human skeletal remains from Sussex held in the collections of Brighton, Lewes and Worthing museums

<i>Site/location</i>	<i>Date</i>	<i>Total no. jawbones examined</i>	<i>No. showing progenie (%/total)</i>	<i>Notes</i>	<i>Published reference</i>
Ditchling Beacon nr. Brighton E. Sussex	Anglo-Saxon	1	1	adult male	Ratcliffe-Densham (1963)
Bishopstone E. Sussex	5th-early 6th century	11	4 (36.4%)	not sexed but those jawbones with progenie are probably all males; there are some specimens with sharply pointed chins (?females) but this feature probably does not represent the true 'Hapsburg' condition(?)	—
Highdown W. Sussex	5th-early 7th century	4	0 (0%)	one jawbone (? female) has a pointed chin and increased gonial angle	—
Stafford Road Brighton E. Sussex	early 6th century	2	0 (0%)	the adult male (burial 1) does have a slightly protruding chin	—
	7th century	1	1	adult male	
Crane Down, Jevington E. Sussex	late 7th century	4	0 (0%)	two jawbones, both adult females, do exhibit pointed chins	Ratcliffe-Densham (1962)
Alfriston E. Sussex	7th or 8th century	1	0	adult male	O'Connor (1976)

susceptibility to septic infections of the skin (e.g. boils). Their lamentably low standards of personal hygiene also meant that ectoparasites (body lice and human fleas) and endoparasites (roundworms and tapeworms) must have been rife.

An often inadequate diet and an insanitary environment made the early Anglo-Saxon settlers vulnerable to the common diseases endemic in Britain during this period: dysentery, typhus, smallpox, malaria and tuberculosis. From the 7th century onwards, people were also subjected to outbreaks of bubonic plague, spread by the bites of the rat-flea. As if this was not enough, the same period also saw the first incidence of leprosy in Britain (Howe 1972, 84 & 85).

In view of the very many hazards to life and the overall low life expectancy in the Anglo-Saxon period, it is indeed remarkable that two of the individuals from Stafford Road, a man (burial 2), and a woman (burial 3), lived as long as they did (35-40 and 40-45 years respectively), though both of them had poor dental health (see above). The third individual, a man in his early thirties (burial 1), however, had clearly met a premature death from a severe injury to the head caused by a sword cut. This traumatic injury well exemplifies

the often violent deaths experienced by many of the early Anglo-Saxon settlers in Britain. The injury to this individual was perhaps sustained during a local dispute with a neighbour or in fighting off an invading band of rival Saxon settlers. It is remarkable that he apparently survived an earlier head wound although this came perilously close to extinguishing his life (see above). Similar healed wounds made by a sharp implement such as a sword have been recorded in three skulls, all men, from medieval York (Dawes 1977, 4).

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Fig. 12. Skull of a young man of the 6th century from Stafford Road (burial 1) showing evidence of two serious head injuries (arrowed). Injury A: an old healed wound probably caused by a glancing blow from a sword (or similarly sharp-edged implement/weapon) to the back of the head, exposing the brain. This person was indeed extremely fortunate for had this injury been a fraction of an inch further to the right (as viewed from the back of the skull) he would have met almost certain death from severance of the superior longitudinal sinus, a major cranial blood vessel. Injury B: a fresh (unhealed) wound caused by a sword cut which sliced through and removed a large portion of the left frontal bone and underlying brain tissue. This would have been a fatal injury. [Photo: John Barrow]

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References

- Anderson, J. E. 1975 *The Human Skeleton: A Manual for Archaeologists*, 4th edn Ottawa: The National Museums of Canada.
- Avent, R. & Evison, V. I. 1982 'Anglo-Saxon Button Brooches', *Archaeologia* **107**, 77–130.
- Brighton Herald*. 19 April 1884. 'Discovery of Saxon Remains in Brighton'.
- Brothwell, D. R. 1972 *Digging up Bones*, 2nd edn. London: British Museum (Natural History).
- Brothwell, D. R. 1981 *Digging up Bones*, 3rd edition. Oxford: University Press.
- Brown, G. Baldwin 1915 *The Arts in Early England*, **3 & 4**.
- Brown, D. 1977 'The significance of the Londesborough ring brooch', *Antiq. Jnl.*, **57**, 95–9.
- Craddock, J. 1979 'The Anglo-Saxon Cemetery at Saxonbury, Lewes, East Sussex', *Suss. Arch. Coll.* **117**, 85–102.
- Dawes, J. D. 1977 'The way of all flesh', *Bulletin of the York Archaeological Trust*, **5** (No. 1), 5–12.
- Dickinson, T. M. 1976 'The Anglo-Saxon Burial Sites of the Upper Thames Region, and their Bearing on the History of Wessex circa A.D. 400–700', unpub. D. Phil. Thesis. Univ. of Oxford (3 vols).
- Friend, D. B. 1885 'Archaeological Discoveries', *The Brighton Almanack, Clerical, Medical, and Law Directory*, 166–8.
- Gejvall, N. G. 1971 'Cremations', in *Science in Archaeology* (eds. D. Brothwell and E. Higgs), 3rd edn, 468–79, London: Thames and Hudson.
- Griffith, H. 1886 'Archaeological discoveries at Prestonville, Brighton' *Suss. Arch. Coll.* **34**, 263.
- Harman, M. and Miles, D. 1984 'The Saxon burials', in *Archaeology at Barton Court Farm, Abingdon, Oxon.* (ed. D. Miles), CBA Research Report **50** (Fiche 4: D3).
- Hirst, S. M. 1985 *An Anglo-Saxon Inhumation Cemetery at Sewerby, East Yorkshire*. York.
- Howe, G. M. 1972 *Man, Environment and Disease in Britain: A Medical Geography of Britain through the Ages*. Newton Abbot: David & Charles (Publishers) Ltd.
- Meaney, A. 1964 *A gazetteer of early Anglo-Saxon burial sites*, London: George Allen & Unwin, 247–8.
- Meindl, R. S. and Lovejoy, C. O. 1985 'Ectocranial suture closure: a revised method for the determination of skeletal age at death based on the lateral-anterior sutures', *American Jnl. of Physical Anthropology*, **68** (No. 1), 57–66.
- Myres, J. N. L. 1978 'Amulets or small change?' *Antiq. Jnl.*, **58**, 352.
- O'Connor, T. P. 1976 'The excavation of a round barrow and cross-ridge dyke at Alfriston, East Sussex, 1975', *Suss. Arch. Coll.*, **14**, 151–63.
- Phenice, T. W. 1969 'A newly developed visual method of sexing the os pubis', *American Jnl. of Physical Anthropology*, **30**, 297–302.
- Philp, B. 1973 'The Anglo-Saxon Cemetery at Polehill, Denton Green', *Excavations in West Kent 1960–1970*, Kent Archaeological Rescue Unit.
- Ratcliffe-Densham, H. B. A. 1962 'Notes on a Saxon Inhumation', Archival report (unpublished), Lewes Museum.
- Ratcliffe-Densham, H. B. A. 1963 'Saxon burial near Ditchling Beacon', *Suss. N & Q*, **XVI** (No. 1), 26–7.
- Ratcliffe-Densham, H. B. A. 1969 'The human remains', in E. W. Holden 'Anglo-Saxon burials at Crane Down, Jevington', *Suss. Arch. Coll.*, **107**, 132–4.
- Rudling, D. 1988 'Excavations at Beddingham Roman Villa' *Suss. Arch. Soc. Newsletter*, **53**, 4.
- Schafer, E. A. and Thane, G. D. 1890 *Quain's Elements of Anatomy*, 10th edn. London: Longmans, Green, and Co. 3 vols.
- Smith, R. A. 1905 'Anglo-Saxon Remains', *Victoria County History of Sussex*, **1**, 333–49.
- Stuckert, C. M. 1982 'History, archaeology, and skeletons: a case study in culture change', Paper presented to the Society for historical Archaeology meeting 1982, Philadelphia, U.S.A. (unpublished).
- Swanton, M. J. 1973 *The Spearheads of the Anglo-Saxon Settlements*, Royal Archaeological Institute.
- Swanton, M. J. 1974 *A Corpus of Pagan Anglo-Saxon Spear Types*, B.A.R., **7**.
- Toomey, C. 1979 in F. Aldsworth 'Droxford Anglo-Saxon cemetery, Soberton, Hampshire', *Proc. of the Hampshire Field Club & Arch. Soc.*, **35**, 93–182.
- Virchow, R. 1877 *Beitrag zur Physischen Anthropologie der Deutschen, mit besonderer Berücksichtigung der Friesen*. Berlin: Harrwitz and Gossmann.
- Walker, R. A. and Lovejoy, C. O. 1985 'Radiographic changes in the clavicle and proximal femur and their use in the determination of skeletal age at death', *American Jnl. of Physical Anthropology*, **68**, (No. 1), 67–8.
- Welch, M. G. 1978 'Early Anglo-Saxon Sussex: from Civitas to Shire', in *The South Saxons* (ed. P. Brandon), 13–35, Chichester, Phillimore.
- Welch, M. G. 1983 *Early Anglo-Saxon Sussex*: B.A.R., **112** (i) and (ii).
- Welch, M. G. 1985 'Button brooches, clasp buttons and face masks', *Medieval Arch.*, **29**, 142–5.

EXCAVATIONS AT TESTERS, WHITE HORSE SQUARE, STEYNING, 1985

by Mark Gardiner

with contributions by Caroline Cartwright, Sue Hamilton, Robin Holgate and Simon Parfitt

In advance of building work an area of open land at Testers, White Horse Square, was excavated. The site was crossed by two prehistoric ditches dated on the evidence of the pottery to the 9th century B.C. and to the latest pre-Roman Iron Age. A small number of Early Anglo-Saxon sherds were found at the top of the later ditch. A ditch with Saxo-Norman pottery may be a tenement boundary dating from the relocation of Steyning during the Medieval period. The area of excavation during the later 13th and 14th centuries was initially occupied by a cistern. Later, rubbish and cess-pits were dug. The contents of the rubbish pits had been first deposited in middens before final disposal in pits. Evidence from the excavation confirms ideas on the development of the town of Steyning.

In 1976 when the Origin of Sussex Towns project was initiated, Steyning was selected as one of the places worthy of particular attention. Worthing Museum had already conducted two excavations near the church and located Late Anglo-Saxon and medieval activity (Barton 1986; Evans 1986). A site in Tanyard Lane was excavated by the Field Unit in 1977 and material of a similar date was found (Freke 1979). Recently, the documentary evidence for the town has been reviewed and the origins of Steyning have been discussed (Hudson 1980a; 1980b).

It has been suggested that the town moved from its location in the Late Anglo-Saxon period near to the church and the probable site of the port of St. Cuthman, southwards towards its present centre along the High Street. This has been connected with the construction of a crossing over the Adur at Bramber which diverted traffic away from the earlier site of the town (Hudson 1980b, 221). A chance to examine this change of position arose in 1985 when it was proposed to construct buildings on open land at the corner of Sheep Pen Lane and Charlton Street (TQ 1758 1112). This land lies diametrically opposite the suggested position of

the Anglo-Saxon settlement and on the edge of the medieval town. It adjoins an early road, the Portway which led into Steyning from the south. A second intention of the excavation was to recover evidence for the economy of medieval Steyning. Previous work at Tanyard Lane had produced animal bones with butchery marks, fish bones, and carbonized seeds and charcoal giving evidence of the environment.

DOCUMENTARY EVIDENCE

Cox sought to identify the land at the corner of Charlton Street and Sheep Pen Lane (White Horse Lane) with the site of the manor house of Testers. In 1820 when this land was held by the governors of Steyning Grammar School it was referred to as Testers barn and farmyard.¹ The school had been endowed at its foundation with the demesne of the manor of Testers by William Holland, though he had specifically reserved to himself the site of the former manor house (Breach 1910, 74). Unless subsequently added to the endowment by his heirs, the manor house site cannot have been included in the land described in the 19th century as Testers farmyard.

The manor of Testers appears to take its name from the Testard family who were among the larger taxpayers in Steyning in the late 13th century (Hudson 1910, 66). By 1462 Testers was in the hands of members of the Farnfold family who held the land for the next 150 years.² The land of Testers is found in the early 17th century associated with the White Horse Inn: Sir Edward Bellingham purchased the two from Anthony Farnfold in 1611 (Breach 1910, 72–3). They were subsequently conveyed to William Holland who granted them to endow the grammar school in 1614. By this date the manor house itself was no longer standing, for the site is referred to as a toft (Breach 1910, 74).

Steyning declined in the 15th and 16th centuries (Hudson 1980b, 220–1), and if Sheep Pen Street had once been built up, it was certainly then no longer lined by buildings. Documents

refer to gardens and gates adjacent to the road.³ It is shown in this state when a map was drawn of the town in 1817.⁴

THE EXCAVATION

Two areas were opened up using a JCB 3c mechanical excavator to strip the humic topsoil, which, from the finds, appeared to have been deposited in the 19th and present centuries, down to the underlying Melbourne Rock. Beneath this soil in the main area, which extended back from the stone wall surrounding the site and faced on to White Horse Square (Fig. 1b), was found a cobbled floor and foundations (5) of a post-medieval out-building. The base of a wall (10) which had marked the former frontage of the property was also noted. The surface of the site was then cleaned by hand and the positions of all

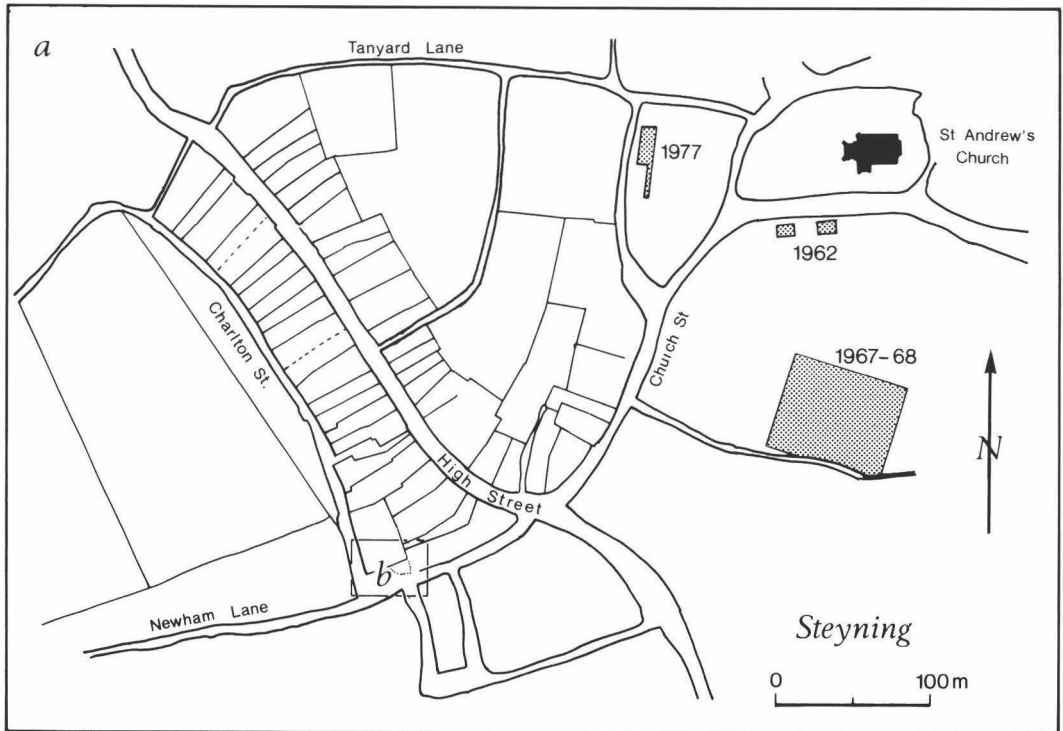


Fig. 1a. Steyning. The positions of previous excavations and the boundaries of tenements from 1st edn. 25-inch Ordnance Survey map.

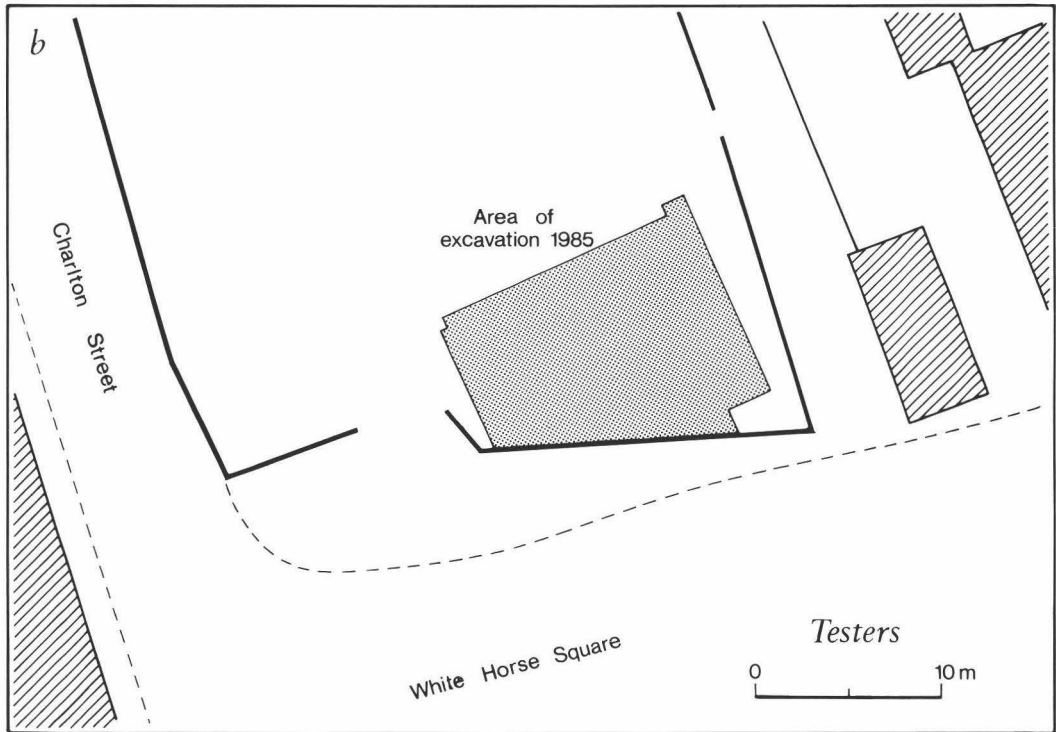


Fig. 1b. Testers, Steyning. The area of excavation.

stones planned to determine if traces of foundation walls of structures could be identified (Fig. 2).

A second, smaller area was cleared to the north on land which had been levelled to make a tennis court. Very considerable modern disturbance was found here and this trench was not further examined.

Prehistoric Features

The main area was crossed by three ditches of which the earliest (33) could be dated to around the 9th century B.C. This was initially excavated as a single context (34), although in subsequent sections three distinct layers could be distinguished (145–147) and these were dug stratigraphically. This ditch contained pottery, a small quantity of worked flint and burnt flint suggesting the proximity of a Late Bronze Age

site. Though three fills were isolated, it is suggested below on the basis of the pottery that the finds are derived from contemporary settlement debris and indicate the rapid or deliberate filling of this ditch. This conclusion is reinforced by the section which does not suggest gradual silting (Fig. 3).

A second ditch (2) does show evidence of gradual infilling (9), later clearance (8) and of a final filling (3). Conjoining sherds were found in this feature lying adjacent and the prehistoric pottery came exclusively from the top of context 8 and the base of the final fill (3). This pottery dates only the end of the use of the ditch, but not the point at which it was first cut. These later fills belong to the mid-1st century A.D., but the presence of three Early Anglo-Saxon sherds in the uppermost fill argues that this ditch remained a slight depression in the ground for some time.

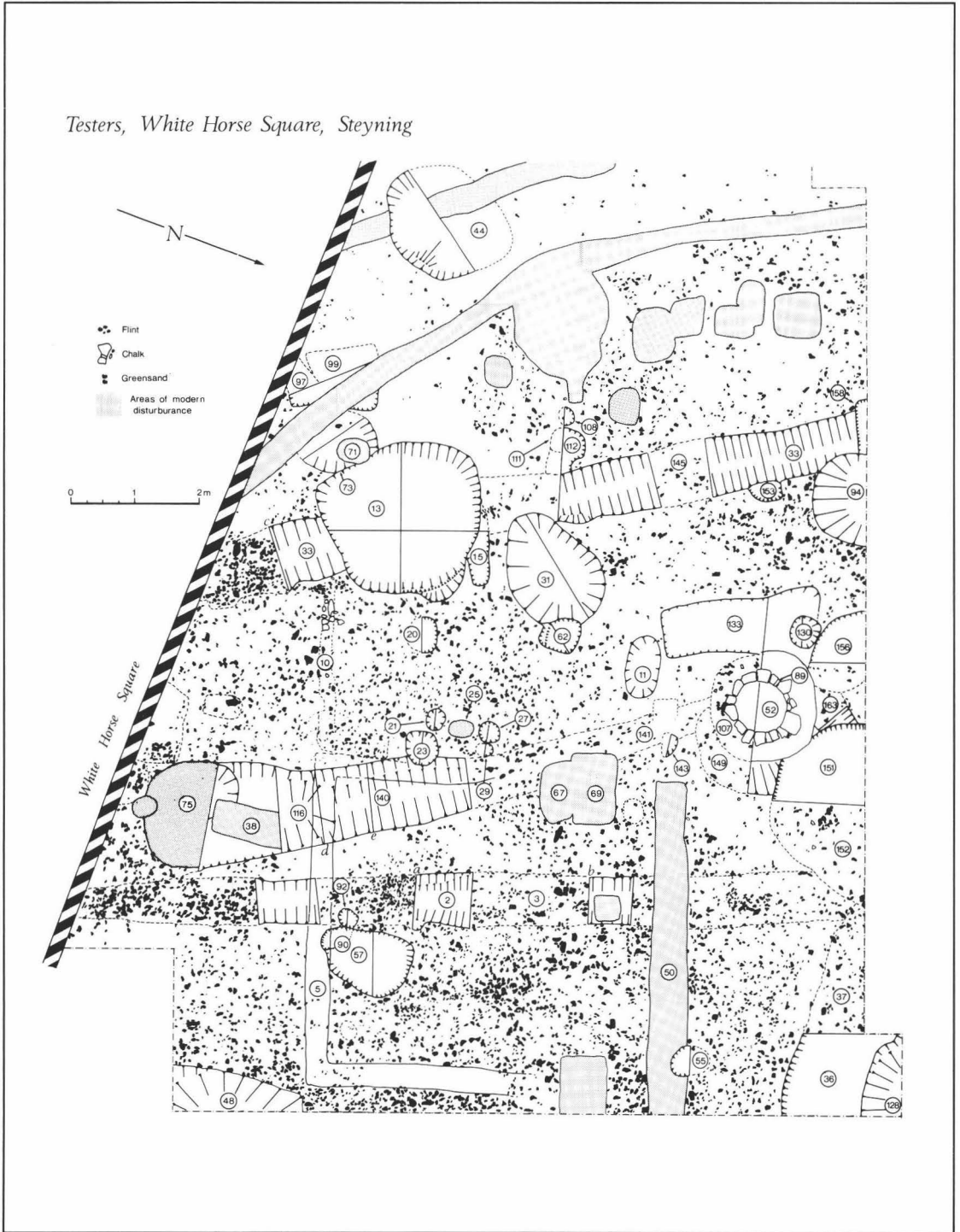


Fig. 2. Testers, Steyning, Site Plan.

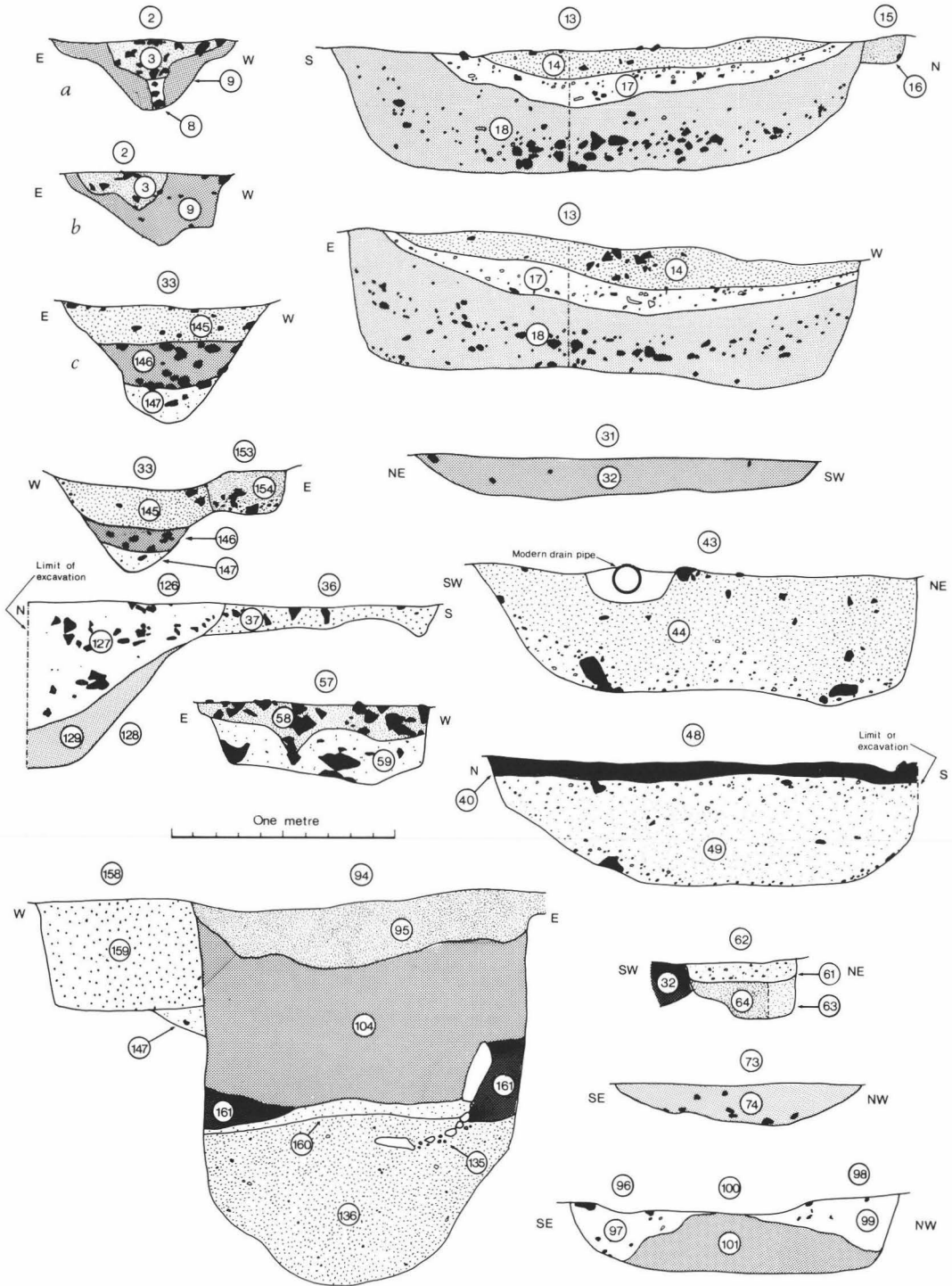


Fig. 3. Testers, Steyning. Sections.

Both these ditches must have been apparent in the medieval period for they were sealed by a coarse cobbling of broken flint, particularly on the south side, nearest White Horse Square. This must have been done before pit 13 was dug in the late 13th or 14th century, for it cut through the already-laid cobbling. Likewise, the southerly extension of ditch 140 also appears to cut through the cobbling overlying ditch 2.

Medieval Features

This third ditch (140) was 13th or 14th century in date and ran into a large pit (116) which had been extensively disturbed by recent holes dug to place a telegraph pole (75) and its stay (38). The fills of the pit were various grey and light-grey chalky silts which appeared to have been washed into the feature, not from the sides, which were fairly sharp and uneroded, but from along the ditch. The fills of the ditch and upper part of the pit were probably contemporary and could not be distinguished from one another. The sequence of events suggested by the section (Fig. 4) is of a gradual silting which filled the pit until water from the ditch was finally confined to a small channel (123) running across the top of the silts.

A small length of a further ditch (36) was recorded in the north-east corner of the site, but a modern disturbance (126) cut into this and had obscured the relationship between the ditch and an adjacent pit (128). Both the pit and ditch contained Saxo-Norman pottery and were the earliest medieval features recorded.

The majority of the features in the area examined were from the second half of the 13th and from the 14th century. Across the whole site were found medieval pits. They may be divided into two types. Those to the south and centre of the excavation were rarely more than 0.6 m. deep and typically were filled with considerable quantities of bone and pottery. These were rubbish pits progressively filled with debris. In pit 13 chalky bands were noted, dividing layers in the fill. The angles of these bands show that they could not have been weathered material derived

from the sides of the pit, but may have been from chalk thrown in to seal the decaying mass of rubbish. Another pit (48) had been sealed at the top by a thick layer of flint pebbles (40) which were distinguishable from the general flint rubble in the south-east corner of the site. Pit 151 had a similar, though less thick layer of cobbling (150). Six major rubbish pits (13, 44, 48, 100, 148, 151) and three shallower pits (31, 73, 133) belong to this group. Samples were taken from various pits and were wet-sieved through a screen with a mesh size of 1.25 mm. In the remaining fraction only small quantities of charcoal were found; no small bones were recovered.

The second type of pit, which was somewhat deeper, comprised pit 94 and probably 156, though the latter was not fully excavated. Both had upper fills with considerable quantities of rubbish, but finds decreased with depth. These were dug as cess-pits and the lower fill of 94 had vivid green mottles which characterize cess-derived material. The chalk blocks (135) in this pit were used to seal the contents and in both pits the top fills capped the cess-pits.

A number of post-holes of medieval date were excavated. They form no recognisable pattern and their purpose is uncertain.

The final phase of activity on the site is represented by the post-medieval out-building (5), wall (10) and a well (52) which though undated, is stratigraphically later than the adjacent medieval features. The upper portion of the well cut fill (107) was excavated, and the ashy and probably fairly recent fill (53) of the well was removed down to below the steining of Upper Greensand (89).

DISCUSSION

The prehistoric ditches found at Testers are a further addition to the growing list of archaeological finds of this date made in and around Steyning. The most significant find from the later prehistory of the area is the Late Bronze Age hoard found at the edge of the Adur flood plain in Bramber in 1981 (Aldsworth 1981). The

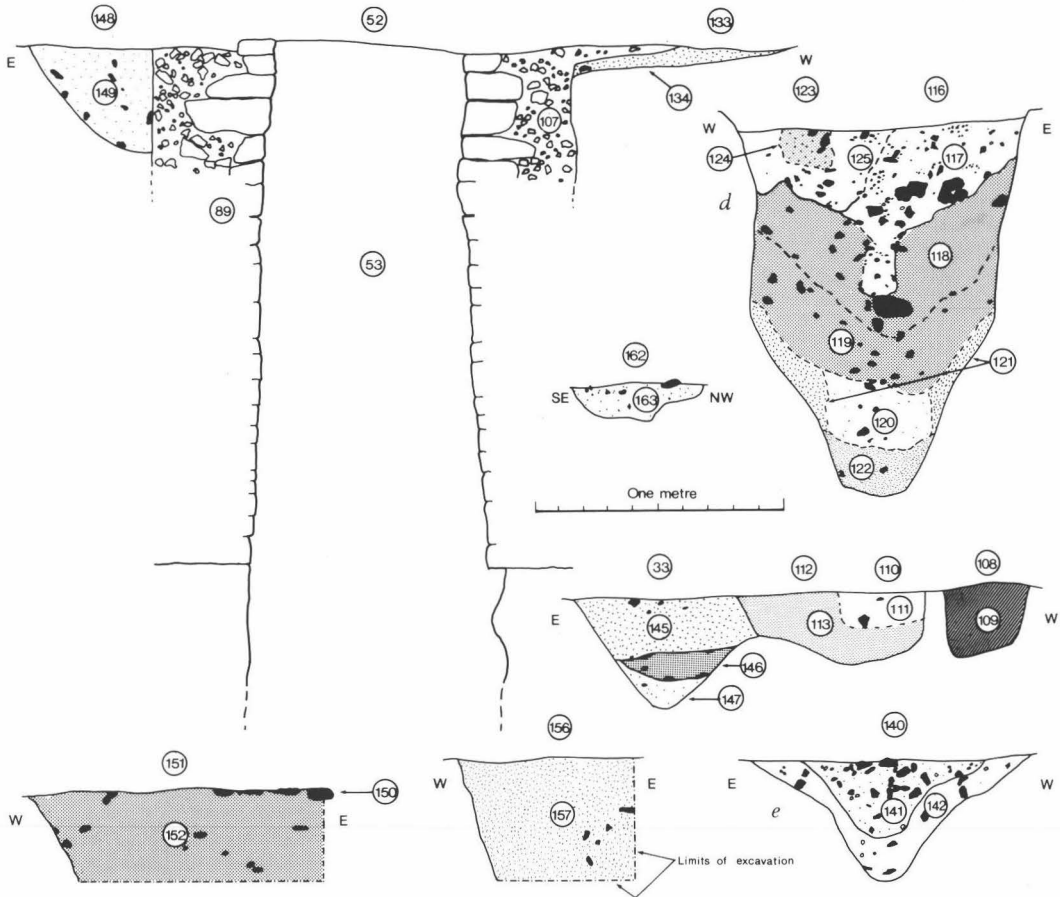


Fig. 4. Testers, Steyning. Sections.

Steyning area, like other parts of the Lower Chalk and Upper Greensand which runs along at the base of the scarp slope of the South Downs, gives rise to a band of fertile soils. This band was intensively farmed in the Roman period as the number of villas located here suggests.

After the Roman period continuing activity is attested in the area by the Early Anglo-Saxon

pottery. This is the first pottery of this date to have been found within the town, though burials near to the church and on the Downs to the south have been attributed to this period (Holden 1985; Welch 1983, 457–8). The quantity of pottery is small, but finds of Early Anglo-Saxon ceramics are infrequent and generally made close to a settlement site or cemetery. No such site is

known in the immediate area, but a settlement here could have been the precursor of the Middle Saxon royal vill and ultimately of the Late Saxon town and port.

The Late Anglo-Saxon pottery was only found at Testers in residual contexts and confirms the probable absence of settlement in this area of Steyning before the Norman period. The first evidence of later activity on the site is a pit and ditch containing Saxo-Norman sherds. The ditch (36) appears to be aligned to the tenement boundaries which must have been established when the town moved towards the High Street from its former centre around the church. The boundaries can still be distinguished on 19th-century plans of the town (Fig. 1a) and the excavated ditch may either have been dug to mark the property division, or have been aligned with such a boundary. The ditch (36) and pit (128) can be dated to the 12th or early 13th centuries for although they contained exclusively fabrics 11 and 12 (see below), there were no reduced or decorated sherds. Groove- and dot-decorated sherds unlikely to be much later than the early 12th century were all found in residual contexts.

In the second, and more intensive phase of post-Conquest activity, this ditch was filled in and the back portions of some of the tenements were amalgamated to create a new holding running in length alongside Charlton Street: pit 151 cuts across the line of the boundary ditch. For a number of reasons the earliest features of this phase are likely to have been the ditch (140) and pit (116). This phase must begin around the middle of the 13th century and the lower fills of the pit contained proportionally fewer sherds from glazed jugs than the rubbish pits. These rubbish pits are likely to be later and a number of them cut the fill of the ditch. Finally, the purpose of the ditch and pit must be considered. This ditch clearly fed into the pit, which is likely to have been a cistern for collecting water. Though not a common feature on urban sites, similar cisterns have been excavated on village sites at Barton Blount and Goltho in the east Midlands,

where they were up to three metres deep (Beresford 1975). As at Testers, they often had ditches leading both in and out. The collection of water, especially if it were for drinking, would have been less likely if the rubbish- and cess-pits were already in use.

The majority of features in the area excavated were from the second half of the 13th and 14th centuries and attest an upsurge in activity in that period. The two prehistoric ditches (2, 33) had already been sealed with a layer of flints, part of a general layer of crude metallurgy which is particularly evident on the south and east sides of the excavation. The rubbish pits of this date were similar to those found in 1977 at Tanyard Lane in Steyning (Freke 1979). Both sites lay near the edge of the town, but instead of using the rubbish as manure and spreading it on the adjacent fields, the urban practice of rubbish disposal in pits was followed.

The finds from the pits indicate that the rubbish was not dumped directly, but had been collected first in middens. Many of the bones had been gnawed, there was evidence of weathering, and it is suggested that the small size of bone fragments is partly attributable to trampling. The condition of the pottery is confirmatory. Very few joins were achieved in the pottery from the rubbish pits and the sherds were small in size and some were abraded. Evidently the rubbish had been exposed before final deposition. The capping layers of the cess-pits, interestingly, were different in nature. The sherd size from these was larger and there was a greater degree of conjunction.

The house, whose occupants were using the pottery, eating the animals, and creating the rubbish, was not identified in the excavation. It may be significant that the flint rubble is greater on the eastern side of the site and dies away markedly to the west. Freke (1979, 136) also noted flint rubble in Tanyard Lane on the side of his excavation closest to where he presumed the position of the dwelling to be.

The pottery does not indicate that activity continued much beyond 1400. A late medieval

contraction of the town has been inferred from the documentary evidence. This reflects both the general 15th-century urban contraction and the relative decline of Steyning in relationship to other towns (Hudson 1980b, 220–21). Peripheral areas such as Testers were subsequently used as yards or gardens.

The finds from the excavations at Testers were broadly similar to those from Tanyard Lane. The pottery from the two sites included few or no imported vessels, in contrast to the finds from other Sussex towns nearer the coast. The bone assemblages from the two Steyning sites were also comparable. Cattle provided the greatest quantity of meat, though sheep bones were also represented. It is interesting that animals of the chase were present on both sites, even though they were a very minor component.

CONCLUSIONS

The few finds of Late Anglo-Saxon and Saxo-Norman pottery are consistent with the evidence that the area of the excavation lay away from the centre of early urban activity around the church. The pattern of tenement boundaries implies that a new centre for Steyning was planned on either side of what is now the High Street, so that traffic passing over Bramber bridge would travel through the town. Similar shifts in settlement have been noted in many other places. New Alresford in Hampshire, for example, founded by the bishop of Winchester in c. 1200 on a major route rapidly superseded the nearby settlement of Old Alresford (Beresford 1959, 190–93). If ditch 36 may be accepted as a tenement boundary, then it would date from the new foundation of Steyning.

The difference between the new tenements on the south-west side of the High Street which ran back to Charlton Street, a back lane, and those on the north-east which have an irregular rear boundary may be significant (Fig. 1a). It is likely to reflect the unrestricted foundation of a new area of the town in the former area and the constraints caused by the earlier settlement

nearer the church.

As the town expanded a new tenement was formed at Testers and lying on a main road into Steyning, but set some distance from the centre of the town, it was a suitable position for a minor manor house. With the contraction of the town the land was no longer occupied. The excavated site reflects therefore the medieval growth and decline of Steyning.

The finds and site archive are deposited in Worthing Museum, accession number 1985/4.

THE FINDS

Latest Bronze Age and Latest Pre-Conquest Pottery (by Sue Hamilton)

Introduction

A limited number of later Bronze Age and pre-Roman Iron Age sherds was recovered from Testers, some 252 sherds. Two well contexted groups of material could be isolated. One group was from the fill of feature 33 and is dated to the earliest first millennium B.C. The other group is from the fill of feature 2 and is dated to around the time of the Claudian conquest. There is effectively no evidence of occupation on the site between these two phases. Although the number of sherds is quite small the isolation of two 'closed' groups of material is of value since a good data base of closed groups is still lacking in Sussex for the periods under discussion.

Analysis

The sherds were grouped for each context by their fabric characteristics using a $\times 10$ lens. These fabric groups were confirmed for a selected number of sherds using a method of detailed microscope analysis already used on several assemblages of prehistoric pottery from Sussex (Hamilton 1982, 82). In Figs. 5 and 6 the relative number of fabric inclusions and fragments of temper in one gram samples of selected sherds are expressed visually as proportions of pie charts (see Hamilton 1977, 85 for further discussion of such representation).

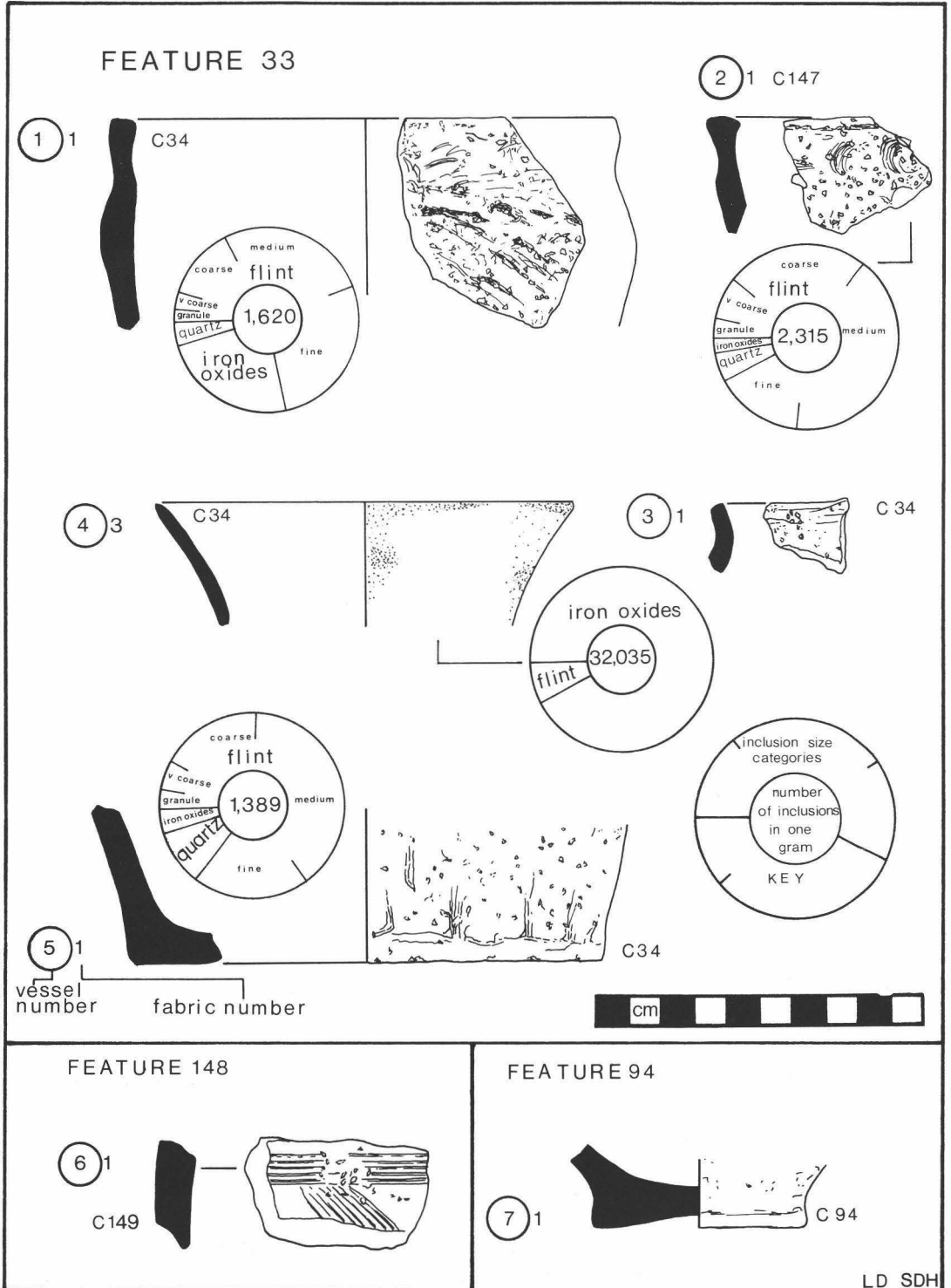


Fig. 5. Testers, Steyning. Prehistoric pottery ($\times \frac{1}{2}$).

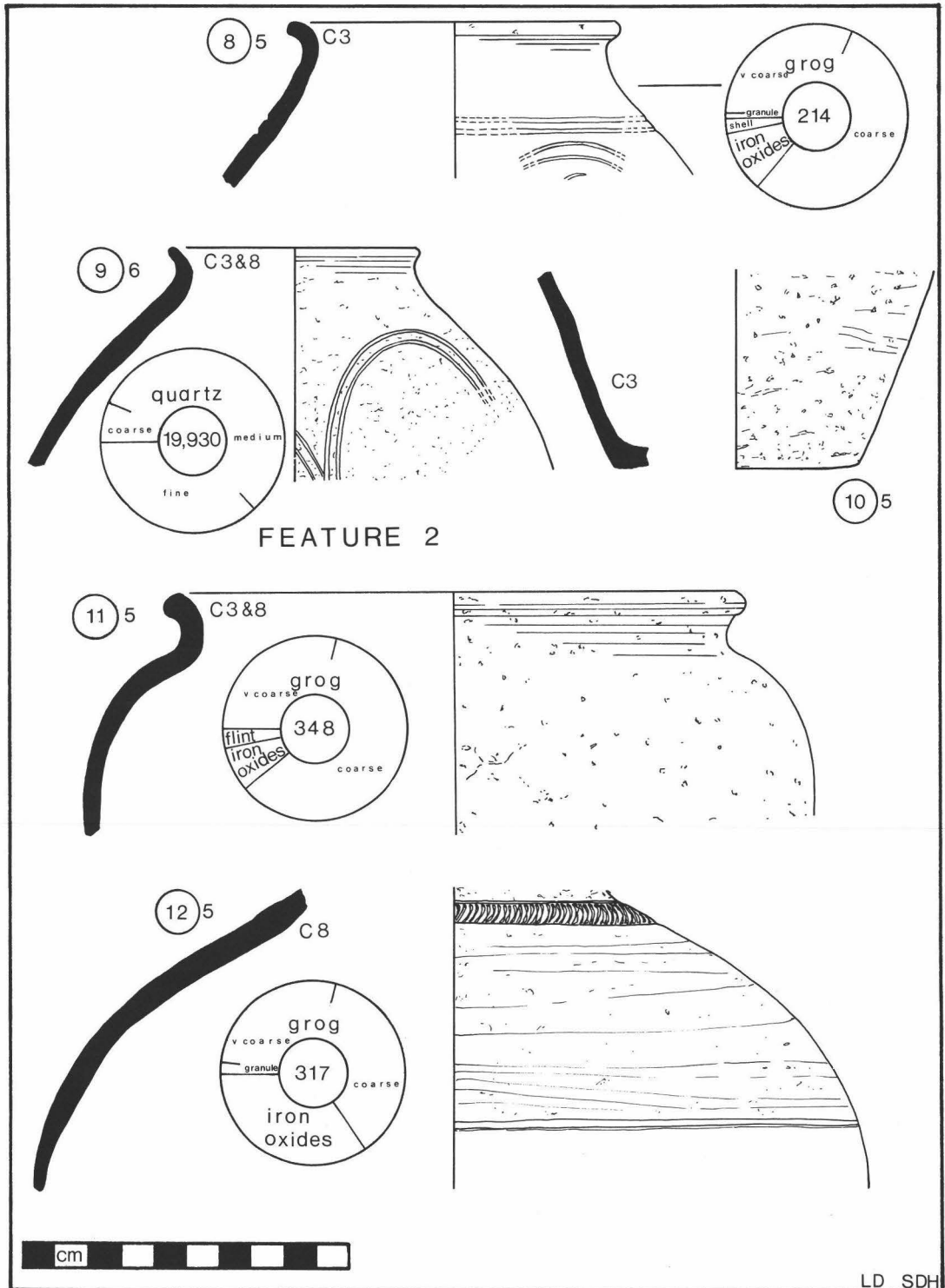


Fig. 6. Testers, Steyning. Prehistoric pottery ($\times \frac{1}{2}$).

Characteristics of ceramic form, decoration and technology were studied for each fabric group.

Fabric Categories

An earlier group and a later group of fabrics can be isolated. Further details of their dating are given in the sections on Context (see below).

Later Bronze Age fabrics

Fabric 1: Flint tempered

Medium abundant medium-coarse flint tempering with a scattered quartz fine and medium sand backing. The flint tempering ranges from 7 mm. to 2 mm. when measured along their longest axes. The quartz sand size categories given here and below are according to the Wentworth size classification (Krumbein and Pettijohn 1938, 30). Sherd surfaces are variably oxidised and reduced but the cores are invariably reduced. There are signs of surface finish prior to firing by wiping, and some possible evidence of a slab building technology. Sections measure 9–10 mm. across.

The fabric is comparable to Chanctonbury Fabric 1 (Hamilton 1980, 197) and Yapton Fabric 2 (Hamilton 1987, 57–8).

Fabric 2: Quartz sand and some flint

Medium abundant medium and fine size grade quartz and a scattered presence of finer flint measuring up to 2 mm. Both the flint and the quartz appear to be tempering. The sherds are generally evenly reduced throughout and the surfaces evenly burnished. Sections measure 6 mm. across.

Comparisons can be made with a variant of Bishopstone Fabric 3c (Vessels 38 and 45, Hamilton 1977, 90 and 108, Fig. 45 and 110, Fig. 47).

Fabric 3: Iron oxides, quartz sand and flint

This is a distinct fabric which has been isolated at a number of Late Bronze Age/Early Iron Age Sussex sites, mostly in East Sussex (Hamilton 1980, 203). Sherds are bespeckled throughout with abundant pisolithic iron oxides with a small quantity of fine flint generally measuring 22 mm. across. Surfaces have been

burnished at the leather-hard stage and are brown or reduced black. Cores are reduced. Sections measure 8 mm. across. (See Chanctonbury Fabric 3 (Hamilton 1980, 200); Bishopstone Fabric 3b, 90 and Hollingbury Fabric 4 (Hamilton 1984, 57) for further discussion).

Fabric 4: Eocene fossil shell

Only one sherd in this fabric was recovered. It is likely non local and compares with fossil shell wares at Thundersbarrow (Hamilton forthcoming) and Bishopstone Fabric 2a (Hamilton 1977, 89) with a major clay source isolated at Castle Hill, Newhaven (Hamilton 1977, 92).

Latest pre-Roman Iron Age fabrics

Fabric 5: Grog inclusions

Tempering of grog or other baked clay in some abundance up to 2 mm. diameter. Red, brown or grey to black 'grog' fragments occur in a matrix where macroscopically visible quartz and mica are very rare indeed although quartz of 0.05 mm. and less and some mica have a scattered presence. External surfaces are frequently dark grey but some sherds are partially or wholly oxidised to orange. Cores are often reduced. There is evidence of surface burnishing and sections average 6 mm. across.

This fabric is common on East Sussex sites relating to the time of the Conquest but has only received detailed study at Bishopstone (Fabric 5, Hamilton 1977, 91). Its production continues little changed into a post-conquest context and is discussed in some detail by Green under the terminology of 'East Sussex Ware' (Green 1980) or 'Cooking Jar Fabric' (Green 1977).

Fabric 6: Quartz sand tempering

Abundant medium and coarse size grade quartz sand tempering. Surfaces are generally grey/brown and cores are grey. There is some evidence of surface burnishing. Sections average 6 mm. across.

A similar fabric has been defined for the latest pre-Roman Iron Age at Oving, West Sussex (Oving Fabric 3, Hamilton 1985, 222).

The latter is wheel-thrown. It is hard to ascertain whether the Testers examples are.

Fabric 7: Quartz sand and fine flint

Fine size grade quartz sand with occasional fine flint inclusions measuring up to 2 mm. across. Some sherds have buff coloured surfaces, others have surfaces oxidised orange. Cores are reduced. Sections measure 8 mm. across.

Wares with finer flint such as this have been shown to be associated with later pre-Roman Iron Age contexts such as at Oving (Oving, Fabric 5, Hamilton 1985, microfiche).

Fabric 8: Terra Rubra

See Rigby 1973 for definition and distribution (Rigby 1973, fig. 9).

Stratigraphic Sequence, Context and Dating

Feature 33: Latest Bronze Age ceramic group

The pottery in feature 33 was more fragmentary than that of feature 2, discussed below. Separate fills were not always distinguishable, and as a result some of the material has only a general (context 34) context. The material is dominated by one fabric (Fabric 1) irrespective of its fill allocation (Table 2 in microfiche). This and the similarity of the diagnostic forms and decorated sherds throughout suggests that the ceramics from feature 33 can be treated as a 'related group' derived from contemporary settlement debris and suggestive of rapid or deliberate complete infill of the feature. The lack of prolific conjoins or reasonably whole vessels suggests that the material was in quite a fragmentary state and possibly another rubbish context prior to its placement in the ditch. It therefore probably represents a generally contemporary group of material but not necessarily a closed group in the precise meaning of the term (Collis 1977, 30; Hodson 1962, 148). Since however the latter are hard to isolate in Sussex for the latest Bronze Age, the fact that this small group of material can be treated as related is indeed useful.

Forms and dating

Table 2, in microfiche, demonstrates the virtually exclusive range of fabrics associated with feature 33. The presence of these fabrics elsewhere suggests consistently a Late Bronze/Early Iron Age date range (see 'Fabric Categories' section above).

The technology of vessels in Fabric 1 is typical of post Deverel-Rimbury traditions. Several of the body sherds show evidence of wet wiping and finger-smearing. Evidence of this often occurs on latest Bronze Age ceramics (Barrett 1975, 105; Elsdon 1982, 129). The diagonal smearing across the shoulder of the jar illustrated in Fig. 5, 1 can be characteristic of a slab building technique which recurs on other shouldered forms from Sussex attributed to the early first millennium B.C. (e.g. Yapton and Kingston Buci,

Hamilton 1987; Barrett 1975, 104). Splayed bases such as Fig. 5, 5 with vertical smearing/thumbing where the vessel walls contact the base have also been related to a tradition of slab construction post Deverel-Rimbury (Elsdon 1982, 129; Adkins and Needham 1985, 29).

The vessels in Fabric 1 comprising plain shouldered forms with upright or out-turned rims flattened (Fig. 5, 1 and 3) or slightly 'pie-crust' (Fig. 5, 2) on top are part of earliest post Deverel-Rimbury traditions with finger impressed and incised decoration becoming commoner from the 8th century B.C. onwards (Barrett 1980). In the Thames Valley the earliest post Deverel-Rimbury ceramics from Aldermaston Wharf and Knights Farm sub-sites 2 and 3 (Bradley *et al.* 1980) have these plain shouldered forms, some with 'pie-crust' rims, and a general chronology based on Carbon-14 dates which places the material at the end of the second or the beginning of the first millennium B.C. (Barrett 1980, 306). Some of this material therefore relates to as early as, say, the 11th century B.C.

Material relating to post Deverel-Rimbury ceramic traditions from Sussex lacks good associations or Carbon-14 dates. Dating without some recourse to other areas is therefore difficult. Plain shouldered forms in a fabric comparable to Testers Fabric 1 do however come from a secure stratigraphic context at Yapton, West Sussex and are associated with a Carbon-14 date from charcoal of 650 ± 70 b.c. (Hamilton 1987). This suggests a possible early- or mid-9th century B.C. calibrated date. Decorated shouldered bowls and jars from Chanctonbury Ring, West Sussex, in fabrics comparable with Testers Fabrics 1 and 3 were associated with a Carbon-14 date from animal bone of 370 b.c. which suggests a 5th century B.C. calibrated date and the pottery may possibly be a little earlier than this (Hamilton 1980, 201 and 220).

The flaring rim in Fabric 3 (Fig. 5, 3) falls within early post Deverel-Rimbury ceramic traditions also. It is often found in finer fabrics, as is the case at Testers (e.g. Aldermaston pottery type series Types 1 and 10, Bradley *et al.* 1980, 233 and 234).

There are no diagnostic sherds associated with Fabrics 2 and 7. Table 2 demonstrates their minor presence and existence only within the *upper* fill. The fabrics are paralleled elsewhere and on other sites have later associations than the Testers material discussed above (see also discussion of these fabrics in the section on 'Fabric Categories' above). The minor presence of Fabrics 3 and 5 in the upper fill of feature 33 may therefore represent slight accumulation of fill beyond the timespan of the bulk of the feature's filling.

Conclusion

Feature 33 provides a small related collection of early first millennium B.C. ceramics possibly dating to around the 9th century B.C.

Feature 2: latest pre-Conquest ceramic group

The absence of finds from the primary fill of feature 2 makes it impossible to date its earliest use. The presence of conjoining sherds within the secondary (context 8) and the tertiary (context 3) fills and the fact that parts of the same vessels occur in both these fills implies that the fills are immediately successive and come from the same source of

rubbish generation. Quite substantial parts of vessels are present and the sherds are unabraded, which suggests that the ceramics were placed directly in the ditch without remaining in a prior rubbish context first. The reasonably complete nature of the material, together with its unabraded nature and its presence right to the top of the feature also suggests deliberate dumping to 'close' the feature rather than gradual accumulation. The clear ceramic links between the two fills, their concurrent rubbish generation and their contemporaneous infill chronology therefore means that the pottery can be treated as a single ceramic group. The lack of residual or later material (see Table 2 in microfiche) elevates the pottery to a 'sealed group' or 'closed context'. This fact is important because closed groups of material relating to the latest pre-Roman Iron Age in Sussex are still few. This is discussed further below.

Forms and dating

Forms in Fabric 5: Grog tempering in East Sussex is distinctive of the latest pre-Roman Iron Age (Hamilton 1977, 94 and 99) and continues into the Roman period as a distinctive handmade tradition through the first century A.D. and beyond (Green 1977, 155). Pre-Roman Iron Age material in this fabric falls within Cunliffe's Eastern Atrebatian Tradition (Cunliffe 1974, 89 and 344), a tradition that was first recognised by Ward Perkins (1938). The tradition includes globular bodied jars with narrow necks and out-bent rims (Fig. 6, 8 and 11), some with flat bases (Fig. 6, 10) and others with foot rings. Another associated type is a jar form with a high shoulder and an upright or slightly everted rim (Fig. 6, 11).

Decoration of these East Sussex wares is horizontal relating to the neck and shoulder of vessels and is variously shallow tooled (such as the linear decoration on Fig. 6, 8), stamped (Elsdon 1975), painted (Hardy and Curwen 1937; Chown 1946), or rouletted (as in Fig. 6, 12). Tooled or painted standing arc designs are a particular feature of the earlier East Sussex material (Green 1980, 72). Eyebrow decoration is present on Fig. 6, 8 and is (interestingly) found on the vessel in Fabric 6 (Fig. 6, 9).

The earlier chronology of this grog tempered tradition is difficult and requires a finesse which Carbon-14 dating cannot supply. There is, furthermore, a shortage of imported metalwork, pottery and coinage associated with the material to provide associated dating. To add to this, the material in question is badly contexted. The only real exception is Bishopstone, East Sussex. Here the fabric has received detailed study (Hamilton 1977, 91) and has two secure pit context associations. Wide bellied, eyebrow decorated grog vessels in Pit 920 were associated with a 'Colchester' fibula of a type produced in the hundred years preceding the Conquest (Bell 1977, 130). In Bishopstone Pit 906 similar material was associated with a triangular loom weight and a Nauheim derivative brooch (Bell 1977, 130, 131) with a later 1st century B.C. to c. A.D. 70 date span (Harding 1974, 216–218).

Rouletted vessels (Fig. 6, 12) are likely to be earlier since they are not found on wholly Roman sites (Green 1980, 72). Subconical forms, which the Testers examples are not, appear to be later since they are known from Romano-British contexts (Green 1980, 72). Other 'early' associations of grog

wares are at West Blatchington where grog wares were found with Gallo-Belgic and an imitation Samian Form 37 (Norris and Burstow 1952, 221) and Horsted Keynes where grog jars with painted and rouletted eyebrow decoration were found in uncertain association with Gallo-Belgic pottery and a real Samian Form 27 (Hardy and Curwen 1937, 262). These are scarcely pre-Claudian associations but rather immediately post-Conquest. There is therefore nothing to suggest a start in the 2nd century B.C. as Cunliffe puts forward for some of this eyebrow decorated tradition (Cunliffe 1978, 52–3, 97–100, Fig. 7:2 and A:32, and disputed by Champion 1980, 52).

Fabric 8: Further contributing to the dating discussion of the Testers grog-tempered wares is the presence in the same context of a few small Terra Rubra sherds. Terra Rubra is not common in East Sussex and therefore lacks associations elsewhere with grog-tempered wares. In Britain it occurs in the immediately pre- and post-Conquest period. In Sussex there is a minor distribution of mainly mid 1st-century A.D. Terra Rubra on Downland sites, mainly from Roman contexts (Green 1980, 76; Rigby 1973, 23, Fig. 9).

Forms in Fabric 6: The wide-bodied jar with out-turned rim and incised eyebrow decoration (Fig. 6, 9) in this fabric had form and decorative affinities with Eastern Atrebatian traditions, although it should be noted that the rim is not typical. The medium coarse grade sand inclusions of Fabric 6 are more akin to the latest pre-Roman Iron Age fabrics of West Sussex as defined at Oving (Oving Fabric 3, Hamilton 1985, 222) and it is also present at North Bersted (Morris 1978, Fabrics 4 and 6) and Selsey (Class D wares, White 1934, 48). It should be noted that one possibly handmade version from Oving (the rest are wheel thrown) also has incised eyebrow decoration (Hamilton 1985, 224, Fig. 29).

Other fabrics present: There are no diagnostic sherds in Fabric 7 but it is probably contemporary with Fabrics 5, 6 and 8 (see above for further discussion). The minor quantity of sherds in Fabrics 1 and 3 represents residual early first millennium B.C. material.

Conclusions: The Coastal/Downland distribution of grog-tempered wares centres on East Sussex, reaching the river Adur, but rarely further West. The above group of material from feature 2 therefore reflects the geographic position of the site on the extremities of the distribution of grog wares and in part the developing tradition of quartz-tempered wares of further west.

On the basis of the presence of a few Terra Rubra sherds, the form and decoration comparisons of the grog wares, and the presence of eyebrow decoration, the group of pottery from feature 2 can be suggested to date to the mid-1st century A.D. and possibly just prior to the Roman Conquest. If so, it is a well contexted group and, as noted, this is the exception for material of this type relative to its ubiquity.

Other contexts

Table 2 (in microfiche) tabulates the presence of other sherds in fabrics relating to the chronological categories isolated above. In all cases these sherds were residual in medieval and later contexts. Two of these sherds merited drawing (Fig. 5, 6 and 7). The rest were undiagnostic body sherds. Fig. 5, 7 is another example of a finger splayed base,

as discussed for other examples from feature 33. Fig. 5, 6 has evidence of light combing, for which there are dispersed examples for its use as a Later Bronze Age finishing technique, although it appears to be more common in Eastern Britain (Hamilton, forthcoming).

Conclusions

The Testers ceramic material discussed above highlights the fact that relatively minor quantities of prehistoric pottery from urban sites can be of value. It emphasises that the contexts of such material should be considered carefully and sherd joins maximised in order to isolate the possible presence of originally associated material. Since the present number of Sussex closed contexts for first millennium B.C. and latest pre-Conquest ceramics is still small, compared to the large quantity of ceramics ascribed to the period, we should not ignore the possibilities offered by prehistoric material on urban sites.

The Anglo-Saxon and Medieval Pottery

A total of 1206 sherds of medieval pottery was found during the excavation. The vast majority of these came from rubbish pits: the largest of these, pit 13, alone contained 542 sherds or about 45 per cent of the total recovered. Most of the sherds were small and very few were conjoining. It was evident that some of the pits contained a certain number of residual sherds.

The pottery was sorted into fabrics on the basis of visual examination and using a hand lens where appropriate. There was considerable variation in pottery considered to be fabrics 11 and 12. Fabrics 13 and 14 were more homogeneous in character.

Central Sussex has been well covered by a number of major pottery reports, particularly those for Bramber Castle (Barton and Holden 1977), Hangleton (Smith and Hurst 1963; Hurst and Hurst 1964) and Old Erringham (Holden 1976; 1980). It was not found that any of these fabric groupings could be applied to the pottery from Testers. The pottery from the Bramber

Castle excavation was examined after the pottery from Testers had been sorted and a table of approximate concordance is given (Table 3 in microfiche).

Fabric Categories

Fabric 9: black external and dark-grey or red-grey internal faces. A hard fabric of fine quartz sand with occasional fine flint grains. This fabric is represented by three slightly abraded sherds, two of which join and were evidently broken during excavation. All come from context 3. They are decorated on the outside by lightly incised lines and one or more small oval stamps, possibly of Briscoe (1981) D4 design. Early Anglo-Saxon, comparable to sherds from the recently excavated site at Botolphs.

This fabric could be distinguished satisfactorily from the prehistoric ware. Not illustrated.

Fabric 10: dull red external and dull brown-grey internal faces with a black core. Hard fabric with a temper of chalk up to 1.5 mm. in diameter, occasional fine flint grains and a fine quartz sand temper giving a slightly smooth feel. The quartz sand grains catch the light when moved. This fabric is represented by a single sherd. Late Anglo-Saxon, comparable with sherds from Botolphs. Not illustrated.

Fabric 11: a hard fabric with a sharp, jagged fracture and tendency towards lamination. Tempered with slightly rounded, multi-coloured flint usually no larger than 1 mm., but occasionally up to 2 mm. in diameter, and by fine sand. Vessels are hand-made, often with finger-wipe marks on exterior and are up to 1 cm. thick. Both reduced and oxidised sherds were found. This fabric represents 5 per cent of the medieval total. Late Anglo-Saxon or Saxo-Norman in date.

13 (Fig. 7). Grey-core, black internal and external surfaces. Hand-made with a short spout similar to a vessel found at Chichester (Down 1978, Fig. 11.3, no. 58). Context 104.

Fabric 12: usually oxidised on exterior to red-

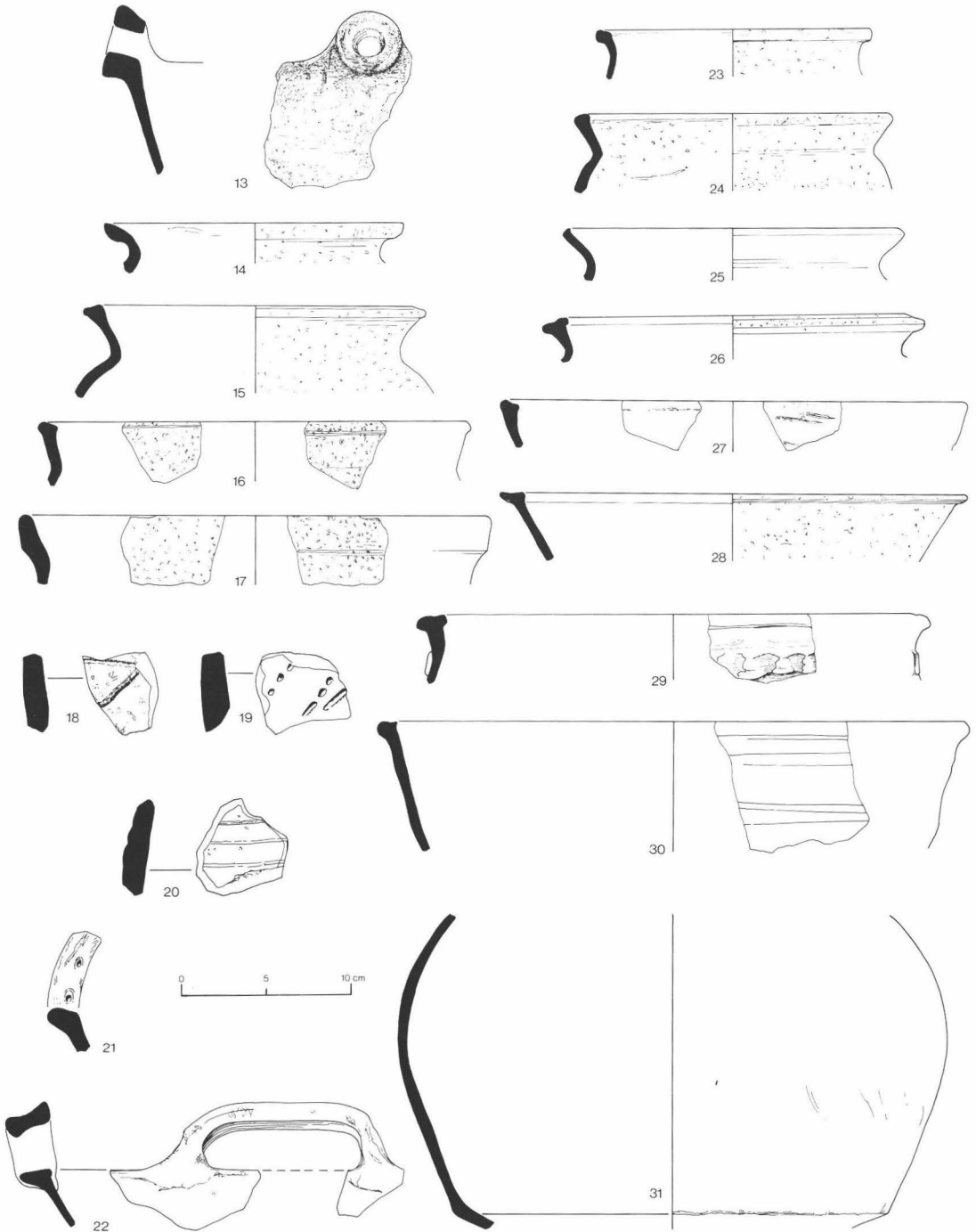


Fig. 7. Testers, Steyning. Post-Roman pottery ($\times \frac{1}{4}$, except 18-21 $\times \frac{1}{2}$).

orange and often with a light grey core and interior face. Water-rounded, fine, multi-coloured flint with occasional chalk and coarse sand quartz temper, but with occasional larger flint fragments of 1–2 mm. in diameter. Distinguishable from Fabric 11 by the smaller size and the lesser density of flint temper. Made or trued up on the wheel, but probably not wheel-thrown.

A recurrent form is that illustrated as no. 14. It appears on a number of vessels and is the most common rim type. Rims of a similar shape have been found at Bramber Castle (Barton and Holden 1977, 52, no. 83), Old Erringham (Holden 1980, 286, no. 60) and in East Sussex at Selmeaton (Barbican House Museum, Lewes, Acc. no. 38.33). These last are clearly coil-built and have been trued up on a wheel.

Vessels in this fabric are often decorated with broad applied bands 1.5–2 cm. in width. This fabric forms 16 per cent of the medieval assemblage. Flint-tempered sherds are thought to persist longer in eastern Sussex than in the west (Barton 1979, 7). At Steyning only a general terminal date of the late 13th century for this fabric may be given. Some sherds are clearly somewhat earlier and are Saxo-Norman, a conclusion reinforced by the decorated pieces.

14. Light grey core, dull-red faces. Slightly pimply surface, from cooking pot. Context 37.

15. Dark grey core, but otherwise similar to the above. Context 37.

16, 17. Mid-grey core, brown-grey faces. Fairly smooth to feel with slight pitting where the chalk temper has been partially dissolved out. Both from cooking pots. Context 104.

18–20. Decorated sherds showing the range of motifs used: inscribed lattice of lines, 'stick-end' decoration and parallel grooving. Similar devices occur on pottery from Old Erringham and Chichester. All context 104.

Fabric 13: usually reduced on exterior to dark black and occasionally on interior face too,

otherwise oxidised grey-red. Produces a sharp fracture. A hard fabric with medium sand and water-rounded grains sometimes up to 0.5 mm. diameter and occasional pieces of water-rounded flint. Some sherds feel slightly soapy. The exterior sometimes has a crude, wiped appearance and vessels are often rilled. Some sherds have a light olive green glaze on exterior and less frequently on the interior. Cooking pots in this fabric are decorated with applied bands rarely wider than 1 cm. and often have white, calcareous scale on the interior from boiling water. This fabric constitutes 49 per cent of the medieval sherds.

21. Brown-red faces with light grey core. Rim pricked on top to a depth of about 3 mm. Sherds similarly treated and of a similar fabric were found at Hangleton (Smith and Hurst 1963, 118 nos. 45, 46 etc.) and were dated there to c. 1250–1300. Context 117.

22. Surfaces vary between buff-red and black. A handle from a pan. Barton (1979, 58, nos. 6 and 7) shows similar vessels. Context 44.

23. Black surfaces and dark grey core. From cooking pot. Context 152.

24. Black external surface, buff-red internal face and dark grey core. Temper includes some chalk temper up to 2 mm. in diameter. From cooking vessel. Context 157.

25. Brown-red faces and mid-grey core with a fine sand temper. Cooking pot. Context 18.

26. Fabric similar to the above, but with slightly coarser sand temper. Context 104.

27. Light buff internal surface, black external surface and grey core. Exterior has smear marks which occur on a number of vessels in this fabric. Context 152.

28. Fabric similar to the above. The inside and top of rim is covered by a burnt deposit. From a bowl. Context 18.

29. Fabric similar to 23. Vessel with applied band below rim. Context 152.

30. Fabric similar to above, but with buff

internal face. From large bowl. Context 152.

31. Dull pink internal surface, black external face and light grey core. Coil-built cooking pot. Context 157.

Fabric 14: West Sussex ware has been described elsewhere (Barton and Holden 1977, 55; Cunliffe 1973, 45–6) and the term is used here not only for glazed jugs, the most familiar product in this fabric, but for any vessels in this ware. Most sherds were, however, glazed. The fabric constituted 26 per cent of the total number of sherds recovered.

32–34. (Fig. 8). Three decorated sherds from jugs, all glazed externally with an olive green glaze. No. 32 is decorated with a rouletted band coloured dark brown by the slip under glaze. This is probably from a bar across an applied buckle decoration (cf. Barton 1979, 105, no. 16). No. 33 has applied strips coloured similarly. No. 34 unusually has white slip around the top of the interior. All context 14.

35. Slightly coarser fabric than the above. Buff faces and light grey core. Inclusions of fine water-rounded flint. Context 14.

36. Similar fabric to no. 35 with brown-yellow faces. Context 14.

37. Characteristic West Sussex ware jug base with finger impressions produced when joining the body of the jug to the base. Traces of green glaze on exterior which have run from a contiguous jug before firing. Context 18.

38. Decorated sherd with slashing on the basal angle and lightly incised lattice decoration on base (cf. Barton and Holden 1977, 49, no. 40). Context 44.

Fabric 15: dull red or occasionally black faces and grey or red core. The fabric is hard and breaks to form sharp, jagged edges. The temper is of fine multi-coloured quartz sand with no flint. Where glazed it is sparingly applied and is nearly transparent or is orange-red. This fabric forms 4 per cent of the assemblage by sherd number.

39. Dull red faces and grey core. Rim from

cooking pot glazed on exterior and top of interior. Context 101.

40. Black on exterior face and dull red on interior and core. Context 152.

41. Handle and part of body of skillet fire blackened on exterior and sparsely glazed on lower part of interior (cf. Barton 1979, 54, no. 1). Context 1.

A limited number of sherds could not be attributed to any of the above fabric groups, nor was it possible to identify similar material from other sites. Three pieces are published here in hope of eliciting comparable material. They are more likely to be post-Roman than earlier.

42. Buff red external face and light grey core and internal face. A fairly hard fabric with chalk temper, fragments up to 1 mm. diameter. Faces smooth to feel. The exterior is decorated with many fine, shallowly rouletted lines. Chalk-tempered vessels are known from Chichester and elsewhere in the Saxo-Norman period (Down 1978, 345–7). Rouletted pottery has been found at Portchester, though the decoration is not as fine or as copious (e.g. Cunliffe 1975, 168, no. 487). Context 58.

43, 44. Light buff external face, light brown-grey core. A soft fabric tempered with grog, flint and chalk, though with no pieces larger than 1 mm. diameter, and so slightly soapy to feel. The decorated sherd, no. 44, has a deeply incised pattern, possibly made by a roller stamp. Context 1.

Discussion

The nature of the medieval pottery assemblage from Testers makes it unsusceptible to detailed analysis. Most of the pottery had been trampled and mixed before it was deposited in the pits and ditches, and few contexts could be termed closed groups. There were few stratigraphic relationships between features. Though much larger in terms of numbers of sherds, the medieval assemblage is therefore considerably less informative than the

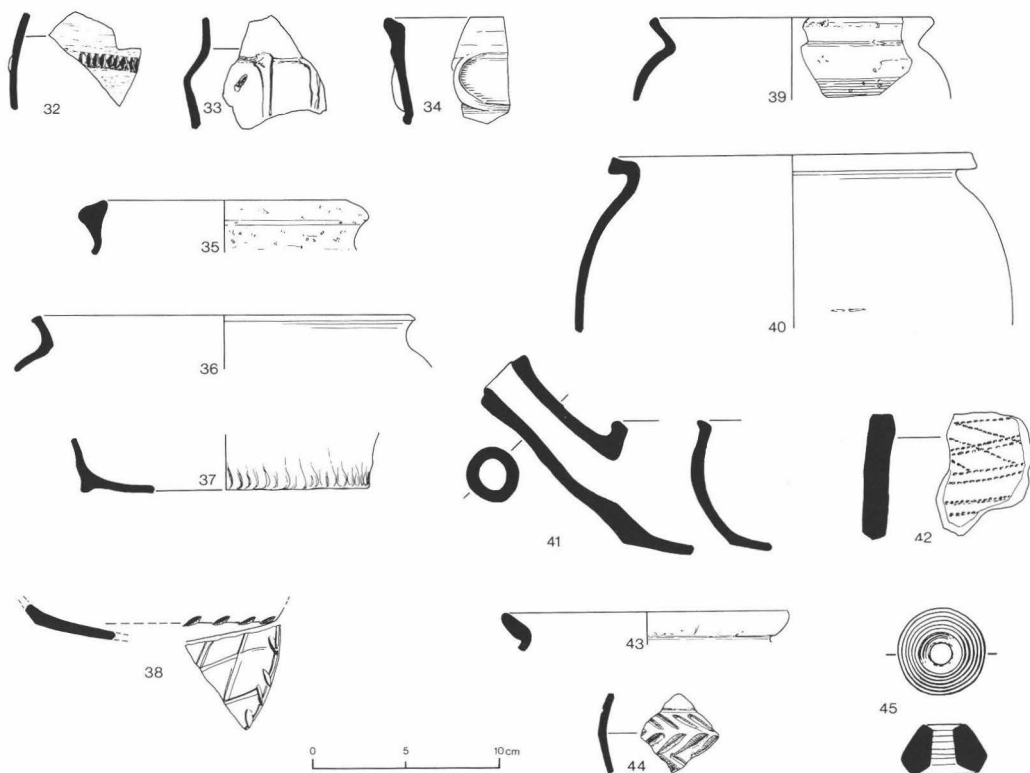


Fig. 8. Testers, Steyning. Post-Roman pottery ($\times \frac{1}{4}$, except 42 $\times \frac{1}{2}$) and worked stone (45, $\times \frac{1}{2}$).

prehistoric pottery.

Full details of the distribution of fabrics by context is given in the site archive.

THE ANIMAL BONES (by Simon Parfitt)

The animal bones recovered from the site may be divided into four phases:

1. Late Bronze/Early Iron Age 30 bones
2. *c.* 100 B.C.–*c.* 100 A.D. 40 bones
3. Early Medieval (12th/13th century)
75 bones
4. Later Medieval (13th/14th) 883 bones

A small sample of bones from recent and undated contexts appears to be mainly residual and is not included in this report. In total, 932 bones were identified, 186 bones were unidentifiable. Cattle, sheep and pig were all well

represented with a small number of horse, dog and cat. Further, non-domesticated animals are represented by fallow deer, bird, lagomorph, mole, fox and fish (Table 1 in text).

The fragmented nature of the assemblage has made it difficult to draw any conclusions about site economy from the bones, and the few measurements that could be taken mean that little can be said about the size and conformation of the domestic stock. Similarly, the small sample size has limited the amount of information on ageing and sexing skeletal representation.

Another problem in analysing the faunal assemblage is that manual excavation to recover bones results in a very biased sample of the original species and element composition. Limited sieving was undertaken at the Testers site and no bones were recovered from the sieved

TABLE 1
Species Represented.

<i>Phase</i>	<i>1 (LBA/EIA)</i> <i>n mni</i>	<i>2 (LIA/Rom)</i> <i>n mni</i>	<i>3 (E Med)</i> <i>n mni</i>	<i>4 (L Med)</i> <i>n mni</i>	<i>modern</i> <i>n</i>	<i>undated</i> <i>n</i>
Cow (<i>Bos taurus</i>)	16 (1)	5 (1)	24 (2)	186 (5)	25	9
LAR	6	21	31	148	16	
Sheep (<i>Ovis aries</i>)	3 (1)	4 (1)	7 (1)	112 (16)	7	2
SAR	2	7	8	78	8	2
Pig (<i>Sus domesticus</i>)	3 (1)	1 (1)	4 (1)	62 (4)	7	
Dog (<i>Canis familiaris</i>)		2 (2)		87 (4)		
Fox (<i>Vulpes vulpes</i>)				2		
Horse (<i>Equus caballus</i>)				19 (1)	1	
Fallow deer (<i>Dama dama</i>)				1		
Rabbit/hare (<i>Lagomorph</i> sp.)				1		
Cat (<i>Felis catus</i>)				8 (2)		
Mole (<i>Talpa europaea</i>)				1		
Bird			1	1		
Fish				2		
UNM/Indet.				175		
Total bones:	30	40	75	883	77	13
Grand total 1118						

Key. n = number of fragments
mni = minimum number of individuals

material. Consequently the smaller mammals, birds and fish are under-represented.

Although bone preservation was generally good, there is evidence of preburial weathering (e.g. cracked and eroded bone surfaces) and carnivore gnawing on many of the bones. The medieval sample probably represents secondary waste which accumulated over a long period of time rather than kitchen or butchery waste dumped as primary refuse deposits.

The following analysis concentrates on bones from pits and ditches of the later medieval period which produced the largest group of bones. Bones from individual contexts have been grouped in the analysis to increase the sample size. The individual contexts are assumed to be broadly contemporary.

Cattle

The abundance of cattle bones (334 cow and cow-sized fragments) indicates that beef was the main element in the meat diet of the site. Microfiche Table 4 summarises the representation of individual bones of cattle for phase 4. As all parts of the skeleton are present, it is possible that meat reached the site either as whole carcasses or that on-site slaughter and butchery of the animals took place. Another interesting point is that bones from good quality areas (limb girdles and upper hind and forelimbs) are present along with groups of bones which are often discarded as waste at an early stage of carcass dressing.

An analysis of the fragmentation of the cattle bones (Microfiche p. 29) shows the most

fragmented bones are those of the skull, rib, scapula and pelvis which are fragile, followed by the major limb bones. The fragmentary nature of these bones is probably due to a combination of butchery, carnivore gnawing and trampling as well as damage during excavation and cleaning. Least fragmented bones are the phalanges and tarsal/carpal bones which are compact; these bones also show little evidence of butchery. Further details for cattle bones are given on fiche pp. 28–30.

Sheep

No ovicaprid bones were identified as goat, although a number of the more complete bones were definitely from sheep (n=7). Remains of sheep are less numerous than cattle using fragment counts (Table 1), but more individuals are represented using minimum numbers of individuals. Sheep would have been of secondary importance to cattle as a source of meat due to the greater carcass weight of cattle.

As with the cattle, all bones are present and this suggests that the sheep were processed as whole carcasses at or near the site. The presence of poor quality joints and waste bones as well as the high meat-yielding joints suggests that the bones are derived from primary butchery waste as well as kitchen refuse if the meat was distributed on the bone.

Pig

Pigs were of minor importance, represented by 62 bone fragments. The majority of the bones were from juveniles or young adults (Microfiche Table 7). Butchery marks were recorded on the proximal end of two radius fragments and on the distal end of a humerus from the disjuncting of the elbow. The only other mark was a distal humerus fragment with a superficial chop on its posterior surface.

Dog

Most of the dog bones were from the lowest fill of pit 13, perhaps from a single dispersed burial. The animal was large (Microfiche

Table 9) and was probably a hunting or guard dog. The teeth were worn and degenerative joint disease on the vertebrae and sacrum also indicate this was an old individual. The upper left canine was fractured antemortem, and the upper right and lower left first premolars were both lost antemortem. The cranial articular surface of the sacrum was pitted and remodelled, the ventral surface had numerous 'knobbly' exostases. A thoracic vertebra had crescent-shaped eburnation on the cranial and caudal articulations.

Conclusions

The most common animal in the Testers sample is cattle, while sheep and pig are both of minor importance. The faunal assemblages from the later medieval contexts at Tanyards Lane (O'Connor in Freke 1979) and Fletcher's Croft, Steyning (Sharpe in Evans 1986) are both dominated by cattle and sheep with cattle being more numerous than sheep in the 14th-century levels at Fletcher's Croft. Differences in faunal composition between the three sites include the absence of deer remains and the relative abundance of domestic fowl at Fletcher's Croft, which are absent at Testers. The interpretation of these differences is problematic as the comparisons are between small samples with very different preburial histories. Both butchery and domestic waste are represented in the sample and the apparently secondary nature of the deposits and the small sample size have made detailed analysis difficult. There is an obvious reliance on domesticated animals in the meat diet of the site; fallow deer, represented by one metacarpal fragment, was the only hunted food mammal present. Only two fish bones were recovered, and fishing does not appear to have been an important source of animal protein. Further details of the cattle, sheep, pig and dog bones are provided on microfiche, pp. 28–40.

MARINE MOLLUSCS (by Caroline Cartwright)

A total of 318 marine molluscs (minimum number) was recovered from 21 contexts at Testers, Steyning, mostly from the fill of medieval rubbish pits and ditches. *Ostrea edulis* (oyster) accounts for 306 minimum number and *Mytilus edulis* (mussel) 12. It may be assumed that these represent food refuse, though the precise proportion of such marine molluscs in the daily diet remains difficult to determine. Both marine and estuarine localities seem likely sources for such material. Details are given on microfiche, Table 11.

FLINTS (by Robin Holgate)

A total of four flakes, one of which is broken, were recovered from context 34. The flint is dark brown with grey cherty mottles; two pieces have a blue-white patination. Each piece has suffered edge-damage of some description, but this could have resulted from post-depositional activity. While one of the patinated pieces could date back to the mesolithic period, the remainder are likely to be post-2nd millennium B.C. in date. All could have been used to perform simple cutting tasks some time during the later prehistoric period.

GEOLOGICAL MATERIAL (by Caroline Cartwright)

Geological material was recovered from nineteen contexts excavated at Testers, Steyning. Details are summarised in Table 12 on microfiche. Most of the material derives from geological deposits in the Wealden Series of Sussex, but there is one fragment of Mayen lava quernstone imported from Germany. The sandstone material ('Horsham' stone, greensand, ferruginous sandstone etc.) generally seems to represent building, roofing and hearthstone remnants, and there are also three fragments of quernstones.

45 (Fig. 8). Medieval Chalk spindle whorl

with inscribed lines. Context 32.

SLATE

Twenty small fragments of medieval roofing slate were recovered from the excavation, of which seventeen pieces came from various levels in pit 13. Two further pieces were from an adjacent pit, 74 and may be more correctly attributed to pit 13 since the distinction in fills was not very clear. This concentration suggests the great majority of slate fragments was deposited at a single period.

The colour of the slates is medium grey and they therefore probably come from the South Hams area of Devon. The discovery of slate here confirms the littoral and riverine distribution in Sussex (Holden 1965; Murray 1965).

CHARCOAL (by Caroline Cartwright)

A small quantity of charcoal was recovered. Details are given on microfiche p. 43, Table 13.

MORTAR ANALYSIS (by Caroline Cartwright)

Contexts 17 and 32 mortar comprises pinkish-grey calcareous matrix containing sparse large calcined flint fragments. Context 18 mortar has a greyish-white calcareous matrix with frequent medium-grained rounded quartz, occasional large rounded quartz and angular flint, and occasional small glauconite inclusions. Context 141 mortar has a grey calcareous matrix with large inclusions of mortar 'grog' (crushed mortar of a different 'mix'), calcined flint and crushed bone. Small charcoal flecks also occur and there is a sparse scattering of medium-grained rounded quartz.

It would appear that local, readily-available material has been used in the mortar 'mixes'. The extensive use of crushed bone and mortar 'grog' in mortar from context 141 only, poses interesting questions.

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Animal bones (by S. Parfitt)	(pp. 28–40)
Marine molluscs	
(by C. R. Cartwright)	(p. 41)
Geological material	
(by C. R. Cartwright)	(p. 42)
Charcoal (by C. R. Cartwright)	(p. 43)

Acknowledgements

I am grateful to Fred Aldsworth (West Sussex County Council) for drawing this site to our attention. The excavation and post-excavation work was funded by the Historic Buildings and Monuments Commission and was made possible by the co-operation of the site developers, Worthing Leasehold and Freehold Properties Ltd. who also made a mechanical excavator available. Thanks are particularly due to their Director, Mr R. M. Hill. Paul Garwood acted as supervisor and I am appreciative of his assistance. Dr T. P. Hudson very kindly made available notes taken for the Victoria County History.

Author: Mark Gardiner, Institute of Archaeology, University College London.

Notes:

¹ W(est) S(ussex) R(ecord) O(ffice), MP 150, f. 15 v.

² W.S.R.O., PHA 935, f. 37 v.

³ Public Record Office, SC2/206/43, mm. 6 r., 17 v.; SC6/HEN VIII/3481, m. 24 r.

⁴ W.S.R.O., PM 146.

References

- Adkins, L. and Needham, S. 1985 'New Research on a Late Bronze Age Enclosure at Queen Mary's Hospital, Carshalton', *Surrey Arch. Coll.* **76**, 11–50.
- Aldsworth, F. G. 1981 'Bronze Age Founder's Hoard, Bramber', *Suss. Arch. Soc. Newsletter* **35**, 251.
- Barrett, J. C. 1975 'The Later Pottery—Types, Affinities, Chronology and Significance', in R. Bradley and A. Ellison, *Rams Hill*. B.A.R., **19**.
- Barrett, J. C. 1980 'The Pottery of the Later Bronze Age in Lowland England', *Proc. Prehist. Soc.* **46**, 217–95.
- Barton, K. J. 1979 *Medieval Sussex Pottery*. Chichester.
- Barton, K. J. and Holden, E. W. 1977 'Excavations at Bramber Castle 1966–7', *Arch. Jnl.* **134**, 11–79.
- Barton, K. J. 1986 'Excavations at Cuthman's Field, Church Street, Steyning, 1962' *Suss. Arch. Coll.* **124**, 97–108.
- Bell, M. G. 1977 'Excavations at Bishopstone, Sussex', *Suss. Arch. Coll.* **115**.
- Beresford, G. 1975 *The Medieval Clay-Land Village: Excavations at Goltho and Barton Blount*. Soc. for Medieval Arch., Monograph Series **6**.
- Beresford, M. 1959 'The Six New Towns of the Bishops of Winchester, 1200–55', *Medieval Arch.* **3**, 187–215.
- Bradley, R., Lobb, S., Richards, J., and Robinson, M. 1980 'Two Late Bronze Age Settlements on the Kennet Gravels: Excavations at Aldermaston Wharf and Knight's Farm, Berkshire', *Proc. Prehist. Soc.* **46**, 217–295.

- Breach, W. P. 1910 'William Holland, Alderman of Chichester and Steyning Grammar School', *Suss. Arch. Coll.* **43**, 59–83.
- Briscoe, T. 1981 'Anglo-Saxon Pot Stamps', in *Anglo-Saxon Studies in Arch. and Hist.* **2** (ed. D. Brown, J. Campbell & S. C. Hawkes), 1–36. B.A.R. **92**.
- Champion, T. 1980 'Pottery in the First Millennium B.C.', *Suss. Arch. Coll.* **118**, 43–52.
- Chown, E. 1946 'Painted Iron Age Pottery from Sedlescombe', *Suss. N. & Q.* **11**, 148.
- Collis, J. 1977 'The Proper Study of Mankind is Pots', in *The Iron Age in Britain: A Review* (ed. J. Collis.), 29–31.
- Cunliffe, B. W. 1973 'Manor Farm, Chalton, Hants.', *Post-Medieval Arch.* **7**, 31–59.
- Cunliffe, B. W. 1974 *Iron Age Communities in Britain: An Account of England, Scotland and Wales from the Seventh Century B.C. until the Roman Conquest* (1st edition).
- Cunliffe, B. W. 1976 *excavations at Portchester Castle*, **2**, Saxon. Reports of Research Committee of Soc. of Antiq., London, **33**.
- Cunliffe, B. W. 1978 *Iron Age Communities in Britain* (2nd edition).
- Down, A. 1978 *Chichester Excavations*, **3**. Chichester.
- Elsdon, S. M. 1975 *Stamped Iron Age Pottery*. B.A.R. **10**.
- Elsdon, S. M. 1982 'Later Bronze Age Pottery from Farnham', *Surrey Arch. Coll.* **73**, 126–39.
- Evans, K. J. 1986 'Excavations in Fletcher's Croft, Steyning 1967–8', *Suss. Arch. Coll.* **124**, 79–95.
- Freke, D. J. 1979 'Excavations in Tanyard Lane, Steyning 1977', *Suss. Arch. Coll.* **124**, 135–50.
- Green, C. M. 1977 'The Roman Pottery', in M. G. Bell, 'Excavations at Bishopstone, Sussex', *Suss. Arch. Coll.* **115**, 152–78.
- Green, C. M. 1980 'Handmade Pottery and Society in Late Iron Age and Roman East Sussex', *Suss. Arch. Coll.* **118**, 69–86.

- Hamilton, S. 1977 'The Iron Age Pottery', in M. G. Bell 'Excavations at Bishopstone, Sussex', *Suss. Arch. Coll.* **118**, 83–117.
- Hamilton, S. 1980 'The Iron Age Pottery', in O. Bedwin 'Excavations at Chanctonbury Ring, Wiston, West Sussex, 1977', *Britannia* **11**, 196–203.
- Hamilton, S. 1982 'The Iron Age Pottery', in *The Archaeology of Bullock Down, Eastbourne, East Sussex*, (ed. P. L. Drewett), 81–88. *Suss. Arch. Soc. Monograph 1*.
- Hamilton, S. 1984 'Earlier First Millennium Pottery from Excavations at Hollingbury Camp, Sussex, 1967–69', *Suss. Arch. Coll.* **122**, 55–61.
- Hamilton, S. 1985 'Iron Age Pottery', in O. Bedwin and R. Holgate, 'Excavations at Copse Farm, Oving, West Sussex', *Proc. Prehist. Soc.* **51**, 220–28, 236 and 13–17 microfiche.
- Hamilton, S. 1987. 'Late Bronze Age Pottery' in D. Rudling, 'The Excavation of a Late Bronze Age Site at Yapton, West Sussex, 1984', *Suss. Arch. Coll.* **125**, 53–63.
- Harding, D. W. 1974. *The Iron Age in Lowland Britain*.
- Hardy, H. R. and Curwen, E. C. 1937 'An Iron Age Pottery Site near Horsted Keynes', *Suss. Arch. Coll.* **78**, 252–65.
- Hodson, F. R. 1962 'Pottery from Eastbourne, the 'Marnians' and the Pre-Roman Iron Age in Southern England', *Proc. Prehist. Soc.* **28**, 140–155.
- Holden, E. W. 1965 'Slate Roofing in Medieval Sussex', *Suss. Arch. Coll.* **103**, 67–78.
- Holden, E. W. 1976 'Excavations at Old Erringham, Shoreham: Part One, A Saxon Weaving Hut', *Suss. Arch. Coll.* **114**, 306–21.
- Holden, E. W. 1980 'Excavations at Old Erringham, Shoreham, West Sussex: Part Two, the 'Chapel' and 'Ringwork', *Suss. Arch. Coll.* **118**, 257–97.
- Holden, E. W. 1985 'Anglo-Saxon Burials on Steyning Round Hill', *Suss. Arch. Coll.* **123**, 259–61.
- Hudson, T. P. 1980a 'The Origins of Steyning and Bramber', *Southern Hist.* **2**, 11–29.
- Hudson, T. P. 1980b 'Steyning', in *Victoria County History, Sussex*, **6**,(1), 220–35.
- Hudson, W. 1910 'The Three Earliest Subsidies for the County of Sussex', *Suss. Rec. Soc.* **10**.
- Hurst, J. G. and Hurst, D. G. 1964. 'Excavations at the Deserted Medieval Village of Hangleton, Part II', *Suss. Arch. Coll.* **102**, 94–141.
- Krumbein, W. C. and Pettijohn, F. C. 1938 *Manual of Sedimentary Petrography*.
- Morris, S. 1978. 'The Iron Age Pottery', in O. Bedwin and M. W. Pitts, 'The Excavation of an Iron Age Settlement at North Bersted, Bognor Regis, West Sussex', *Suss. Arch. Coll.* **116**, 315–39.
- Murray, J. W. 1965 'The Origin of Some Medieval Roofing Slates from Sussex', *Suss. Arch. Coll.* **103**, 79–82.
- Norris, N. E. S. and Burstow, G. P. 1952 'A prehistoric site and Romano-British site at West Blatchington, Hove, part 2; the finds', *Suss. Arch. Coll.* **90**, 221–40.
- 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), 7–24. C.B.A. Res. Reports **10**.
- Smith, A. E. and Hurst, J. G. 1963 'Pottery', in E. W. Holden, 'Excavations at the Deserted Medieval Village of Hangleton, Part I', *Suss. Arch. Coll.* **101**, 112–44.
- Ward Perkins, J. B. 1938 'An Early Iron Age Site at Crayford, Kent', *Proc. Prehist. Soc.* **4**, 151–68.
- Welch, M. G. 1983 *Early Anglo-Saxon Sussex*. B.A.R. **112**.
- White, G. M. 1934 'Prehistoric Remains from Selsey Bill', *Antiq. Jnl.* **14**, 40–52.

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A SAXON CHURCH AT WEST BLATCHINGTON

by John Holmes

The church of St Peter, West Blatchington, restored from a ruin in 1890, has been shown by archaeological excavation and structural analysis to have been originally a pre-Conquest building. Ecclesiastical history and the history of the liturgy have been cited to show that the church belongs to a type being built in Sussex in the 10th century by local thegns on their estates. The Saxon estate has been identified from Domesday Book and on the ground. The building was re-modelled after the Conquest to become a Norman manorial church.

INTRODUCTION

The little medieval church of West Blatchington had been standing in ruins for many years when it was restored in 1890. At that time the population of the parish was only 95. In 1936 West Blatchington was sold by the Abergavenny Estate for building land. To meet the needs of a new population, the union of the living with Brighton was dissolved in 1940 and West Blatchington became a parish again in its own right. A new and larger church was built alongside the old church in 1960, incorporating the restored medieval church as a south aisle.

The church of a once prosperous manor began to suffer from neglect in the 16th century. The manor was enclosed about 1500 by Richard Scrase; his father, Richard Scrase of Hangleton, left to his son Richard the manor of Blatchington and 'such store of corne and graynes shepe oxen horses and such beests he nedyth to mayntene his housholdrye there'.¹ As a consequence, the number of parishioners was reduced to no more than the Scrase household with their servants and farmworkers. The value of the living was no longer enough to support a priest.² In 1541, the living was part of the Lewes Priory property settled on Anne of Cleves by Henry VIII; from then on the Rectors all held West Blatchington in plurality with some other parish. The last Rector known to have lived in the parish was Edward

Crakell, who was there in 1563.³ By 1596, when Richard Scrase (grandson of the first Richard Scrase of Blatchington) was summoned to the Archdeacon's Court in Lewes for refusing to perform the duty of churchwarden, he produced three of his employees as witnesses to testify that the church had not been used in living memory.⁴

An entry in the Act Books of the Archdeaconry Court of Lewes for 1636 states that, by then, the churchyard was not well fenced 'nor hath been tyme out of mind because it hath not been used for a buryall place'.⁵ The church, however, was still usable for family occasions: in 1637, 1639 and 1640, Henry Scrase had three of his sons baptized in the church and there was one Scrase marriage there in 1639, but there were no other baptisms or marriages nor any burials in these years.⁶ Henry Scrase's widow, Joan, and her four sons became members of the Society of Friends in the late 1650s and had no further interest in the church. In 1686, the Episcopal Commissioners reported that the church and chancel were 'utterly ruinate'.⁷

The several stages of decay of the building can be seen in pictures of the ruin which were made in the late 18th and 19th century. A drawing by James Lambert, in the Burrell Collection in the British Library, shows that some timbers of the chancel roof were still in position in 1782 but the nave roof had gone.⁸ A

watercolour by Henry Petrie, in the Sharpe Collection, shows that the roof had entirely gone by 1802 but the gable ends were still standing (Plate I). Two sketches made by M. A. Lower in 1856 show that the upper parts of the gables had tumbled by then.⁹ A 'Carte de Visite' photograph taken by G. Casinello, a Brighton photographer, some time before 1880, shows the walls crumbling, door and windows blocked up and the chancel gable gone (Plate II). This was the ruin which was restored in 1890 by the bequest of Miss Harriett Hodson, herself a descendant of the Scrase family; she had shared with the Rev. Henry Wagner, Vicar of Brighton and Rector of West Blatchington, the dream that it might be possible to bring the ruined church to life again.¹⁰

EXAMINATION OF THE RUIN

In 1889, before the church was restored, the architect, Somers Clarke, Jun., F.S.A., was called in to report on the condition of the ruin.¹¹ The interior of the building was cleared of fallen flints so that its original plan could be better made out. Most of the west wall was still standing; it had retained its two original early Norman windows. The south wall had in it towards the west end of the nave the only doorway, an insertion of the late 15th century. Somers Clarke could find no evidence of any older doorway; it was only when the flint work of the south wall was being examined in 1987 that the blocked opening which had once contained the round-headed Norman door was seen above the four-centred arch of the present doorway (Fig. 3). The evidence for a chancel arch was not easily seen but marks on the walls convinced Somers Clarke that there had once been a stout cross wall dividing nave from chancel. The ground here was examined and a hole was found which proved to be a grave. The grave had been filled in with moulded stones from the round-headed Norman chancel arch. It was evident that the arch and wall had been removed in the 13th or early 14th century when a new chancel had

been built which was open to the nave. The date was suggested by the east window, part of which had remained in position. The whole window can be seen on the Lambert drawing of 1782; it was a square-headed window of three lights in the Decorated style of the early years of the 14th century.

The grave was examined by Mr Shelmardine, who was at that time Clerk of the Works at the Parish Church, Brighton. Some bones were found in the grave and some rusted iron rings from the wooden coffin. This had been encased in coarse linen or canvas and then packed round with soft clay, which had retained the impress of the linen. The bones were replaced in the grave and must be there today under the floor of the chancel. The iron rings and some pieces of clay with the impress of the linen were kept, with the intention of placing them in Brighton Museum, but this was not done. The moulded arch stones with which the grave had been filled were built into the inner face of the north wall of the nave but they have since been lost. West Blatchington had been held as a manor by the Wayvill family since early in the 13th century; it must have been a Wayvill who was responsible for building the new chancel and was buried there when he died, in the place of honour at the foot of the chancel.

The ground heaped up round the outside of the church was cleared and lowered. The removal of earth beyond the west end of the church uncovered the lower courses of walls north, south and west, enclosing a square; at the west end was the threshold of a doorway with two jamb stones, one on either side of it. There was no evidence on the west wall of the church to suggest that walls had ever been carried up as a tower, nor that there had ever been a west doorway through to the church. No one could give a satisfactory explanation for this annexe but to preserve the foundations they were covered up with turves and an iron railing was placed round them.



Plate I. West Blatchington Church. Water-colour by Henry Petrie, 1802. Now in the Sharpe Collection at Michelham Priory.



Plate II. West Blatchington Church. 'Carte de Visite' photograph taken by G. Casinello, a Brighton photographer, 1862-80. Copy photograph taken by E. W. Holden.

THE RESTORED CHURCH OF 1890

A substantial part of the old church, as it was at the end of the 15th century, has been preserved embedded in the fabric of the restored church. The old walling, much patched up and repointed, is easily distinguishable from the 1890 repair work, mainly because the original walls were built with whole flints laid in courses, whereas the new walling has been built with knapped flints laid in random fashion. The south wall of the nave was in the best condition and needed no restoration, except to level up the top to take the roof; three buttresses were built against the wall to steady it and to take the thrust of the new roof. The north wall was more ruined; new walling was built on top of the old and three buttresses were set against it, as on the south side. This whole north wall of the restored church has now been made into an arcade wall, integrating the old church with the church built in 1960. The west wall of the nave was standing, with only the upper part of the gable broken away; this was completed and a three-light window was inserted at the level where the new walling begins. The east wall of the chancel had nearly all fallen but two stones of the sill of the 14th-century three-light east window were retained, incorporated into the Victorian Gothic window. The north wall of the chancel had survived only to a height of about 3 feet and had to be rebuilt. The south wall of the chancel was all gone and the vestry was therefore built on this side.

DISCOVERY OF THE SAXON CHURCH

The piece of ground enclosed by the foundations which Somers Clarke had uncovered to the west of the church was later used as a garden of remembrance. The walls of the annexe have remained undisturbed ever since, although the north wall is now buried under the 1960 church and is no longer visible. One of the jamb stones left in position by Somers Clarke had to be moved slightly to make room for a drain when the new church was built.

Ian C. Hannah who, as a boy, watched the

restoration of the church in 1890 and took notes, thought the foundations might have been intended for a western tower which was never built.¹² W. H. Godfrey, who drew the plan for the *Victoria County History of Sussex*, thought they were a western annexe of the 14th century.¹³ Alec Barr-Hamilton, in his book *In Saxon Sussex*, thought they must be the foundations of a Saxon church.¹⁴ Research in the field of Anglo-Saxon architecture has now provided new evidence which can be used to settle the question.

The most significant piece of evidence is that of the two jamb stones of the doorway. The stones are chamfered and must have been the plinth stones of an arch; they are not made of quarried stone but have been fashioned out of erratic boulders of sarsen stone, such as are commonly found locally in the clay which overlies the chalk; more significantly, they are through stones, that is, they are large stones which pass right through the thickness of the wall. These details at once suggest that the doorway was Saxon. Norman doorways were built with smaller stones to make an arch at the front and another, slightly larger, arch at the back, leaving a rebate in the thickness of the wall to take the door. A Saxon door was hinged flat against the wall on the inside and required a narrower arch without a rebate.

If the doorway were Saxon, then the foundations beneath the turf were unlikely to be those of an annexe to the Norman church but must surely be Saxon too. Moreover, the length of the through stones indicated that the walls on those foundations had been only about 2 feet 6 inches thick, too thin for a Norman church but normal for a Saxon church. All this was something that could be tested by a small archaeological excavation.

EXCAVATION OF THE SAXON CHURCH (1980)

A short length of the annexe wall was exposed at its junction with the south-west corner of the church (Fig. 1). Although, as the

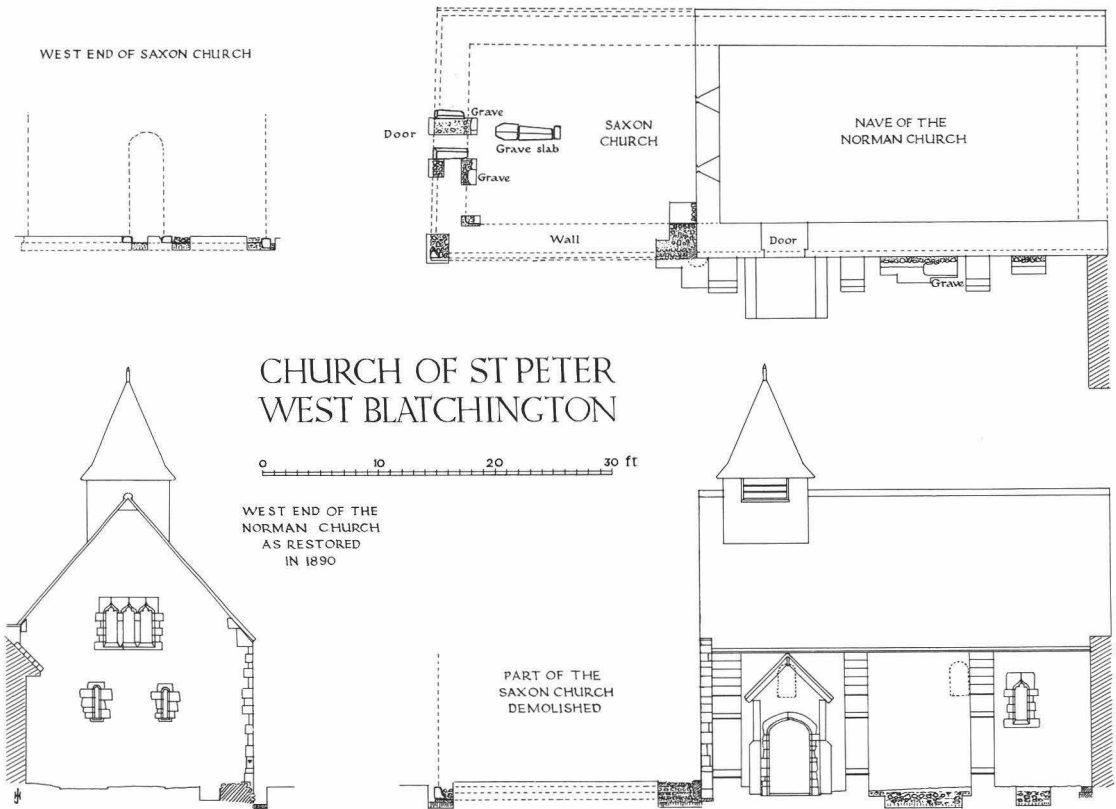


Fig. 1 Excavations at West Blatchington Church, 1980.

Casinello photograph shows, much of the quoin above ground had tumbled from the ruin, the lowest stones were buried and had not been disturbed since Norman times. The excavation showed that, in order to put in the quoin stones, the Norman builders had cut away part of the annexe wall, which must therefore have existed before the Norman church was built. This conclusion was confirmed by evidence from the inner side of the wall. The inner face had been coated with a smooth hard white plaster down to the original floor level; the floor itself was not found but was presumably of hard earth. The plastered wall could be seen quite clearly going under the corner of the Norman church, leaving no doubt that the annexe was the remains of a pre-Norman building.

More of the wall was excavated at the south-west corner of the annexe and around the doorway, in order to get an accurate plan. The wall had been built of whole flints, carefully laid in courses, to form its outer and inner faces; its interior was a concrete of flints embedded in hard mortar. The wall itself was 2 feet 6 inches thick but the bottom course projected a little on the outside to form a plinth. The plinth rested on a foundation consisting of two layers of flints on a layer of hardcore set in a trench dug into the natural ground. The plinth had a quoin stone at the corner, fashioned from a small sarsen boulder. The wall and its plinth were interrupted at the doorway but the foundation was continuous across it to form the threshold. The two jamb stones were in line with the plinth and

had formed part of it. It was apparent that the wall of the Saxon church continued under the nave of the Norman church. With permission from the architect, Mr J. B. Denman, two small holes were excavated at the base of the south wall of the nave in order to examine its foundations. They had every appearance of being the Saxon foundations, consisting of two layers of flints and a plinth course, continuing those excavated to the west of the church.

The material used for building the Saxon church was flint, which is abundant in the Upper Chalk on which West Blatchington is sited. The Saxon builders had not needed to quarry flints themselves, for they could obtain all they required from the ruins of the Roman villa 500 yards away on their land. That they did so is shown by the inclusion in the rubble of the flint walls of fragments of Roman tile, as well as lumps of other kinds of stone, all of which were to be found on the Roman site. Even the sarsens had been used at the villa in the furnace flues of the corn-drying kilns. Mr N. E. S. Norris, who had excavated the Roman villa site in 1948, visited the site of the church during the excavation. He identified all the various kinds of stone and recognized them as exactly similar to those which he had found on the Roman site.¹⁵ The Saxons were certainly quarrying stone for themselves for their later buildings but for their earlier churches they always made use of whatever building material was available on the nearest ruined Roman site.

After the excavations had been completed, a plan of the Saxon church was made (Fig. 1). The south and west walls were surveyed on the ground; the hidden north wall was included on the drawing by reference to the plan made by W. H. Godfrey for the *Victoria County History of Sussex* (Vol. VII, 1940, 243). The east wall of the Saxon church must have been that stout cross wall which later contained the Norman chancel arch; although this wall had been demolished in the early 14th century, Somers Clarke had been convinced of its former existence when he examined the ruin in 1889. That the chancel arch

was Norman and not Saxon is made certain by Somers Clarke's observation that the arch stones were moulded. Ian Hannah, who saw them after they had been built into the north wall of the restored church, noted that most of them displayed the roll mould with billeting. The surviving chancel arches on the Saxon churches of Sussex are not moulded in this way but are of a single square order. The Saxon church at Blatchington therefore did not have a chancel at the east end.

EXAMINATION OF THE STANDING STRUCTURE

The excavation of the ground plan of the Saxon church was followed by an examination of the standing remains of the medieval building. Measured elevation drawings were made of the west and south walls of the nave (Figs. 2 and 3). The modern roof and bell-cote have been drawn in by using the architect's drawings of the church which were made in 1949, before the new church was built. The flint work of the two nave walls was then examined in detail and an attempt made to show on the drawings every stone in approximately its correct size, shape and position. The drawings are reasonably correct in all important areas, such as around the windows, but the lower parts of the walls are shown as conventional rows of flints, ignoring places where the wall has been patched up.

The gable end of the Norman church can be seen embedded in the west wall; most of this wall is original but places where it has been repaired can be identified by comparing the drawing with the Casinello photograph. The wall still has its two original windows; they are narrow slits, only 6 inches wide and 2 feet 7 inches tall, but are widely splayed inside. The lintels are each formed from a single large stone with the round window head cut in the underside. The jambs are constructed with dressed stones. These windows may be compared with several which have survived on Domesday Book churches, for example, Ovingdean and Tangmere, and may be

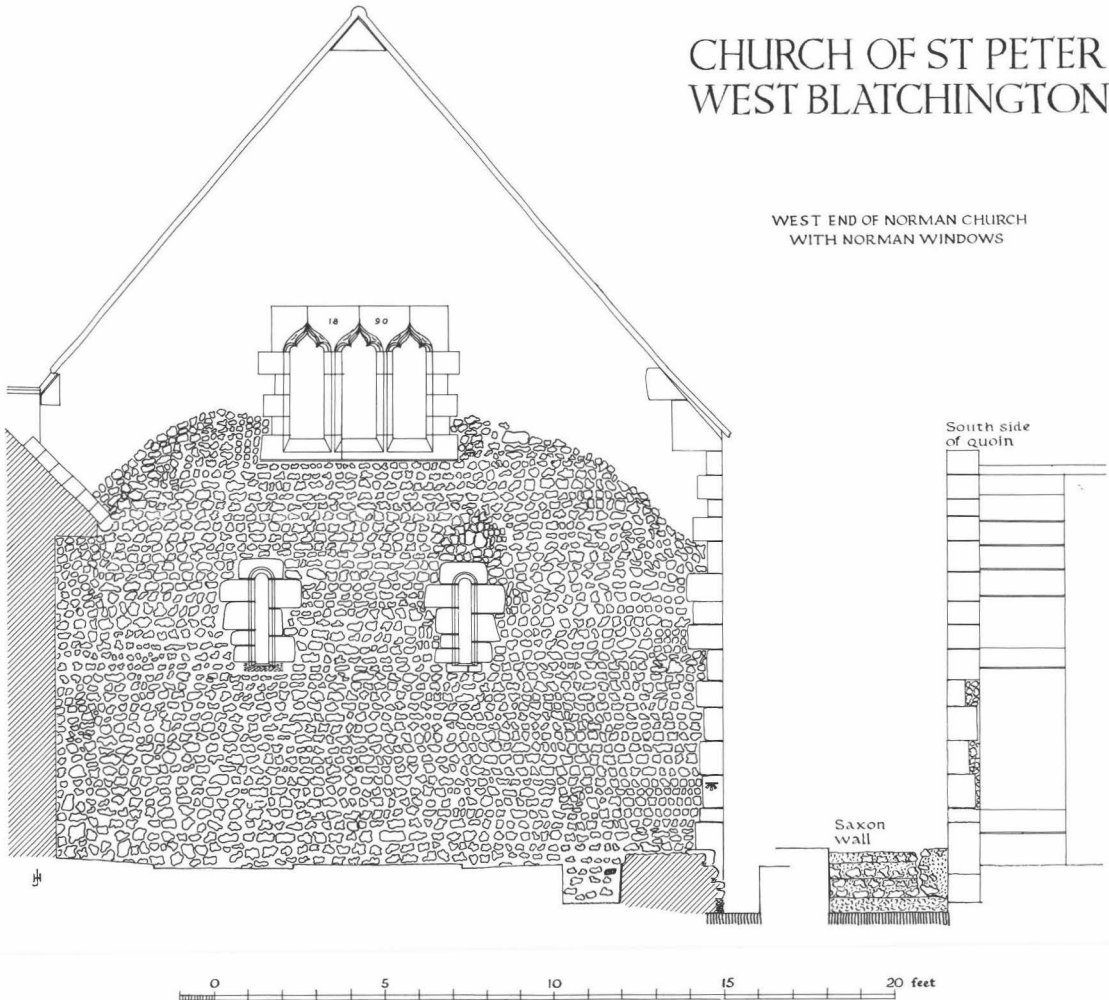
CHURCH OF ST PETER
WEST BLATCHINGTONWEST END OF NORMAN CHURCH
WITH NORMAN WINDOWS

Fig. 2. West Blatchington Church. West wall of the Norman church.

dated to not much later than 1100. These are the only surviving examples of windows in the west wall of a Sussex Norman church.

The nave of the Norman church was made by shortening the existing Saxon church. The western end of the Saxon building was demolished and a new cross-wall was built, which then became the west wall of the nave. The remaining Saxon walls became the north, south and east walls of the Norman nave. The east and

north walls have now gone but the south wall is still standing and was untouched in the restoration of 1890. Measurement at the door and through the window verified that this wall is now about 3 feet thick. The trenches excavated at its base showed that the outer face of the wall did not stand on the foundation; the flint courses stopped at ground level and overhung the foundation. A few flints had tumbled from the bottom of the wall face into a medieval grave

CHURCH OF ST PETER WEST BLATCHINGTON

SOUTH WALL OF NORMAN NAVE
WITH BLOCKED SAXON WINDOWS

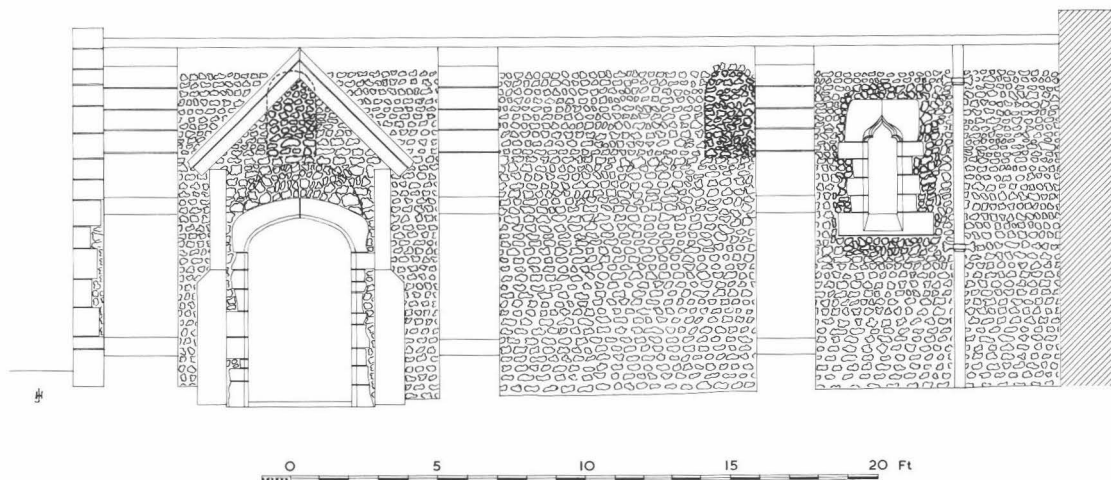


Fig. 3. West Blatchington Church. South wall of the church showing Saxon and Norman features.

which had been dug close to the wall, for there was nothing to support them. It was evident that the Norman builders had re-faced the Saxon wall by adding a layer of flints to the outside.

The nave wall appears to have had a tall narrow window towards the east end. It can be seen in all the old drawings and in the Casinello photograph, where it is blocked up. Every picture of it shows it as slightly pointed and it was evidently a 13th-century lancet replacing earlier windows. It was itself replaced in the restoration of 1890 by a smaller Victorian window but the outline of the older window can still be traced in the flint work above and below the modern window (Fig. 3).

The outlines of two earlier windows, now blocked, can be traced in the flint work high up in the south wall of the nave; one is just to the left of the eastern buttress, the other is above the doorway, inside the porch (Fig. 3). Both windows can just be made out on the Casinello photograph but they show up best on a colour photograph taken in a soft light. The one within

the porch is placed oddly in relation to the doorway, which suggests that the window was there first. The doorway must have been made originally when the Saxon west door was demolished and the Norman church was built; the window, therefore, belonged to the Saxon church. This is confirmed by the style of the two blocked windows. Their outlines seen on the outer face of the wall are identical; they are 20 inches wide and 35 inches tall, with round heads. Windows of this size must have been double-splayed windows, in which the narrow aperture is near to the centre of the wall and the opening then widens out towards both the outside and the inside; single-splayed windows (like those in the Norman west wall) would have had a much narrower opening in the wall face. H. M. Taylor states that it has long been a matter of common observation that double-splayed windows are wholly unknown in Norman churches in England; so these were Saxon windows. The window openings are formed in the same flint rubble as the walls, without any

facing of dressed stones; this again is characteristic of Saxon windows.¹⁶

The Saxon church, before it was shortened, would have had a set of three windows equally spaced along each side wall; the one now over the Norman door would have been the middle window. The third window would have been in that part of the Saxon church which was demolished. The two windows which remained must have continued in use to light the Norman church in its earlier years, for there is no evidence of any other windows before the 13th-century lancet.

THE SAXON CHURCH

By far the largest number of Anglo-Saxon churches were originally buildings with two distinct cells, an eastern chamber for altar and priest, linked to a larger chamber for the laity. The nave was tall and its length was about twice its width. The chancel was narrower than the nave and was divided from it by a cross-wall containing a small chancel arch. Most of the known Saxon churches of Sussex are of this type. At Chithurst, Hardham, Rumboldswyke, Selham, both nave and chancel have survived. At Bosham, Clayton, Elsted, Stopham, Westhampnett, the survival of the chancel arches provides a sufficient indication that the churches were originally of the two-cell type. At Arlington, Poling, Woolbeding, only the nave walls remain but the proportions of the nave are those for a two-cell church.¹⁷

By contrast, the remains of the Saxon church at West Blatchington indicate an entirely different type of church, consisting of a simple rectangular building about 53 feet long internally and 16 feet wide. The entrance was at the west end and there were three small windows high up along each side wall. The plan is irregular; the sides are not parallel and the ends are not at right angles to either side. There is no division into nave and chancel. Churches of this unitary plan are widespread in England, though examples are often fragmentary and not easily recognized.

Some have adjuncts, east, west, north or south, but always the main body of the church is about three times as long as its width. There are early examples in Northumbria and many of uncertain date throughout Mercia and Wessex. They constitute the surviving remnants of the earlier small Anglo-Saxon churches. West Blatchington church is therefore in no way unusual in having a unitary plan.

Three other churches of the same type are already known in Sussex. The most complete is Botolphs, once the church of the Saxon estate of Annington.¹⁸ It is very nearly the same size as West Blatchington, being 52 feet long internally and about 16 feet wide; its walls are 2 feet 6 inches thick. It has a chancel arch but the chancel could have been added in the 11th century, possibly by the Norman who held Annington just before the Conquest. The original church is more likely to have been built by the nobleman Eadmund, to whom King Eadwig gave the estate of Annington in 956.¹⁹ Bishopstone is a slightly larger church, 54 feet long internally and 16 feet 6 inches wide. The plan of Bishopstone as interpreted by W. H. Godfrey shows the Saxon nave as only 31 feet 6 inches long but he commented that 'we must not exclude the possibility that the compartment immediately east of the nave may have been a Saxon choir'.²⁰ A recent examination of the arch which separates the present choir from the nave suggests that the wall in which it is built was not the original east wall of the Saxon church but was inserted much later, for it covers the springing of the Norman arcades. The Saxon walls continued eastward in the same line as far as the east wall of the present choir, which has a better claim to have been originally the east wall of the Saxon church. The Bishop of Selsey held the estate from before 825, when it was confirmed to Bishop Coenred by King Beornwulf;²¹ the existing church could have been built at any time in the mid- or late-9th century. Lyminster was a minster founded on royal lands and its Saxon church was a large one, about 63 feet long and 21 feet wide.²² The minster was there certainly

before 930, when King Athelstan held court at Lullyngmynstre, and the church was built possibly at the end of the 9th century.²³

Several more Saxon churches of the same long rectangular type have been identified recently.²⁴ Coombes, in the Adur valley, was shortened in 1724 but was originally a long church, the exact twin of its neighbour, Botolphs.²⁵ Old Erringham, on the other side of the Adur valley, no longer exists above ground. Its foundations, excavated in 1957, indicated a building about 50 feet long internally and 17 feet wide.²⁶ Southease, in the Ouse valley, has all four walls of the Saxon church still standing almost to their full height, though they have been much cut about by the insertion of later windows, doors and arches. The original building was about 48 feet long and 16 feet wide.²⁷

THE LITURGICAL USE OF THE SAXON CHURCH

H. M. Taylor has pointed out that an important outcome of a study of church plans might be a closer understanding of the way in which changes in liturgical use have been reflected by changes in the buildings themselves.²⁸ We know from the history of the liturgy that throughout the early part of the Anglo-Saxon period the Mass was the celebration of the whole Christian community gathered together for worship. The priest (representing the bishop) presided over the liturgy and undertook the acts of consecrating and administering the sacraments, but it was intended that the people should be active participants; the prayers were said aloud. The altar was sited in a central position, allowing the celebrant to stand behind it facing the people.²⁹

The position of the altar in the earlier Anglo-Saxon churches reflects this liturgy. The principal altar stood at some distance from the east wall. At Reculver and Winchester, both very early churches, a foundation for an altar has been found at the east end of the nave rather than in the sanctuary. In other churches, the altar

seems to have been at or about the middle.³⁰ The long rectangular form of the smaller churches was to allow the altar to be free-standing towards the centre.

By about 1000, the idea had spread through the Gallic churches and eventually to Rome that the consecration was a sacred action which had to be performed with the greatest reverence and in silence. It became the rule in the whole Western Church to recite the Canon softly in a whisper. The celebration of the Mass became the exclusive concern of the priest and the people became passive onlookers. The practice of celebrating Mass with the priest's back to the people became the general rule. The many churches built in the 11th century, both before and after the Conquest, were all designed for this new liturgy. They were all built with a nave for the people and a chancel for the priest at the altar. There is probably a symbolic purpose in the use of a small chancel arch to separate the sacred part of the church from the part used by the people.³¹

West Blatchington church was not built with a nave and a chancel and was therefore built for the earlier liturgy. This enables us to date it, along with the other churches of the same plan, to before the change in the liturgy. These older churches were adapted sooner or later for the new rite; either a chancel was added (as at Botolphs) or some alteration was made to the east end so that it could be used as a sanctuary. We do not know what happened to West Blatchington church in the earlier part of the 11th century. We only know that by the end of the century it had been completely remodelled as a Norman two-cell church.

We are now in our own generation again seeing the effect of change in the liturgy on church architecture. Once more, new churches are being built without a chancel and older churches are being altered so that they can be adapted to the recent liturgical changes. Once more the altar is free-standing so that the priest takes the service of the Eucharist facing the people and the emphasis is again on the

whole community of the church celebrating it together.

THE SAXON CHURCH AND ITS ESTATE

For the first two hundred years after Wilfrid local churches did not exist in Sussex. Christianity was brought to the South Saxons through the minsters, which served as mission stations. A number of charters purporting to come from the 8th century refer to the foundation of minsters on royal estates, endowed with land given by the king.³² The original minsters did not survive the time of the Danish invasions and we know the sites of only three. The first was founded by Wilfrid in 680 at Selsey and afterwards became the seat of the bishops of the South Saxons.³³ Bishopstone certainly and Lyminster probably were founded before 750, although the churches which are there now cannot have been built until the end of the 9th century. It was not until the 10th century that land was given to lay thegns, who then became proprietors of their estates. Thengs who prospered built churches on their estates and appointed priests to serve them. The church of West Blatchington was of this kind.

An occasional charter has survived (Annington is an example) but our main source of knowledge about Saxon estates is Domesday Book, because for each entry it normally gives the name of the person who held the land before 1066. Blatchington is not mentioned in Domesday Book but the entry for the neighbouring manor of Hangleton explains what happened.³⁴ Hangleton was held by Azor in the time of King Edward and it then answered for 14 hides, but after 1066 it answered for 8½ hides. This is an example of an estate which, after the Conquest, was divided up into more than one manor. Before the Conquest, the Saxon estate had included the lands of both Hangleton and Blatchington and also the land called Esmerewic in Domesday Book, which later became known as Benfield manor. After the Conquest, the land of Hangleton was given to William de Watteville.

The land of Blatchington was taken by William de Warenne into his lands of Patcham which he held in lordship. The Domesday Book entry for Patcham records that he gave 7 hides of Patcham land to Richard the Archdeacon; we know that these 7 hides included land at Blatchington because they were later given to Lewes Priory. The gift was confirmed by William de Warenne, the second founder, in a charter of 1091–1098, as a hide at Blatchington, a hide at Kyngesford, a hide at Mulescumba, and 4 hides at Wistedena.³⁵

The bounds of the pre-Conquest estate were marked on the ground by banks, which still survive. On the east boundary of West Blatchington parish the bank is almost continuous from the northern tip of Hove Park (TQ 286068) to Patcham windmill (TQ 291086). On the west boundary of Hangleton parish there is a bank running north from the Old Shoreham Road (TQ 262058) along the west side of the golf course. On the north, the bounds were marked only by features which do not now exist, apart from the flattened remains of two tumuli. One tumulus marks the north west corner of Hangleton parish (TQ 258094); the other lies on the original northern boundary of West Blatchington parish (TQ 284088). The southern boundary was probably the Roman road, now represented approximately by the Old Shoreham Road (Fig. 4). The West Blatchington Roman villa lies at the centre of the Saxon estate and was surrounded, until recently, by Roman field systems which covered all the spurs and higher ground. The Saxon settlers had evidently occupied and cleared the land of a former Roman agricultural unit.³⁶

There is another bank, now destroyed in places by housing development, which divides Hangleton from West Blatchington; a short piece of this bank also survives along the southern boundary of West Blatchington. This boundary, known locally as the 'Long Hedge', must have been made after the Conquest when the lands of Blatchington were taken by William de Warenne into his own lands of Patcham. All these banks carry hedges along much of their length and it

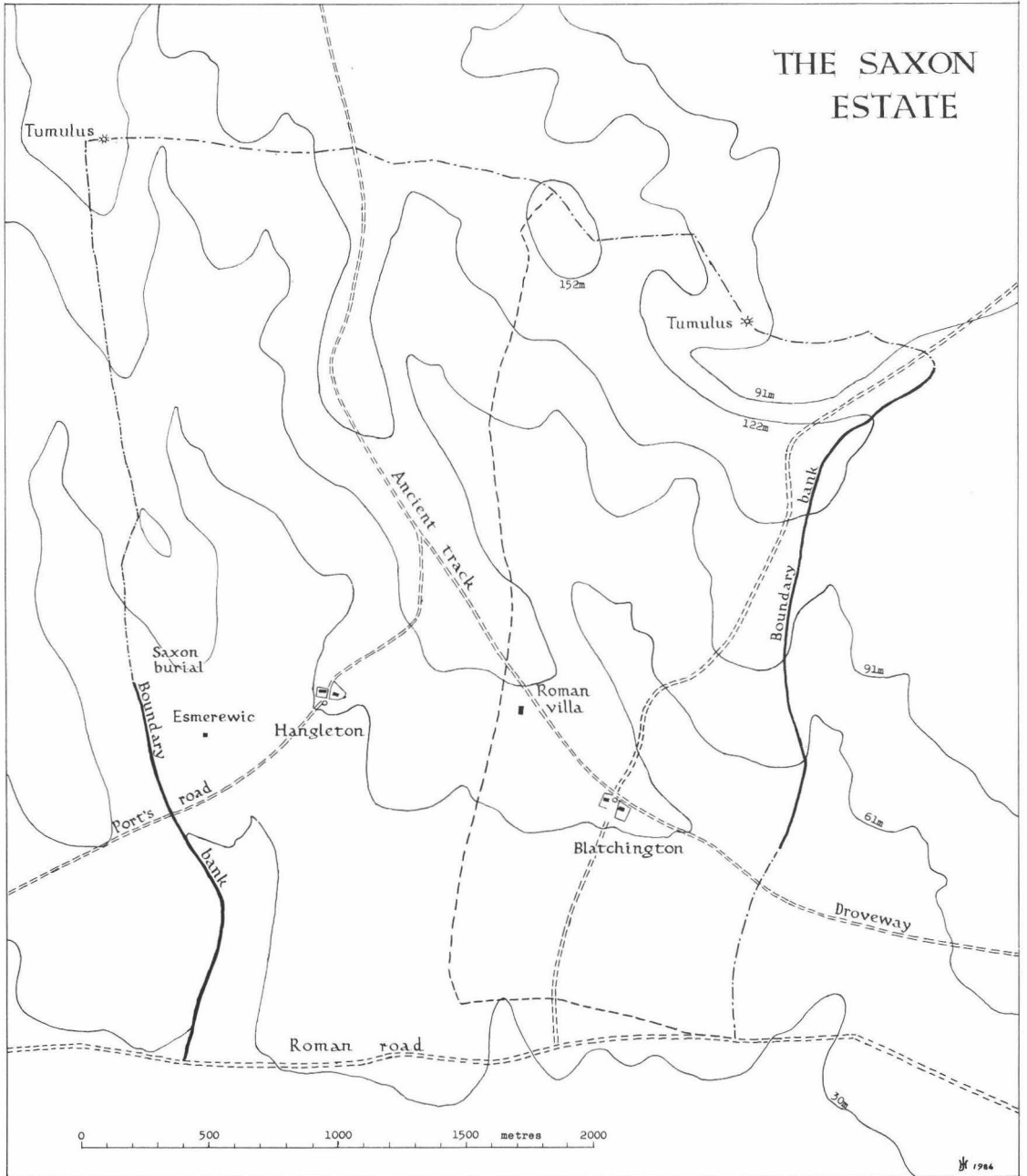


Fig. 4. The Saxon estate of Blatchington with Hangleton and Esmerewic.

was possible to check their approximate ages by a hedge count. The count gave a pre-Conquest date for the outer banks but suggested a post-

Conquest date for the 'Long Hedge' which separated Blatchington from Hangleton.³⁷

There were three Saxon settlements on the

pre-Conquest estate but only their names have survived to show this. The place names reflect the order of settlement. Blatchington was the original settlement of the folk, then Hangleton and finally the dairy farm at Esmerewic.³⁸ Nothing remains of the Saxon settlements but it can be inferred from the results of recent excavations elsewhere that each consisted of a group of small timber buildings scattered among the fields, with no definable plan.³⁹ Blatchington would have had the thegn's hall and in due course the thegn's church alongside it; by the 11th century, both hall and church might have been enclosed together within a ditch and a bank topped with a palisade. A ditch can still be traced along the west and south sides of the modern churchyard and may possibly be a remnant of such an enclosure.⁴⁰

CHURCHES AFTER THE CONQUEST

The Norman bishops were active in extending parish life within their dioceses and they encouraged the new Norman lords to establish a church on each one of their estates. The division of the Saxon estate after the Conquest meant that the new manor of Hangleton had no church and a church had to be built. The church is not mentioned in Domesday Book. It must have been built well before 1093 because it is included in a charter of that date by which Earl William de Warenne granted to Lewes Priory six of his churches; the six were those held by William de Watteville and his wife. This appears to be an early private charter confirming gifts which had previously been made to the Priory without any charter at all.⁴¹

The building consisted of a nave and a small chancel, with a chancel arch, all built of flint with dressings of Quarr stone from the Isle of Wight quarry. It still has its original north and south doors. The north door, which was blocked when W. H. Godfrey made his plan in 1940,⁴² has now been opened up again. The nave had originally four small single-splayed windows with narrow openings but these were blocked in the 13th

century and replaced by two wider lancets. Two of the small Norman windows have now been opened up again; this was done in 1970 when E. Clive Rouse was cleaning and preserving the early wall paintings which had been re-discovered in 1951. At least three periods of medieval wall paintings were proved to have existed, the earliest being part of the original decoration of the Norman church. Hangleton church is, therefore, a model of the small churches which were being built soon after the Conquest.

The Saxon church at Blatchington was taken, after 1066, into William de Warenne's large Patcham estate but it was not until some years later that it was remodelled to make it into a small Norman church. The Patcham estate was royal land before 1066 and Earl Harold held it, but it had no church. When the estate was given to William de Warenne after 1066, he did not at first build a church at Patcham. The church which is there now has been so over-restored that it is difficult to see what it was like originally. The only clue to the date when the church was built is the blocked doorway which has been preserved and is now re-inserted into the wall of the modern north aisle. It has a monolithic lintel surmounted by a round arch, with a plain tympanum; this is a design characteristic of the later Norman period, later than Domesday Book. Yet Domesday Book records a church on the lands of Patcham; it is an intriguing possibility that the church recorded was Blatchington church, which seems to have been the only one on the estate at that time. A church had been built at Patcham by the early years of the 12th century, for both Patcham and Blatchington churches are recorded in the grant of Ralph, Bishop of Chichester, in 1121, confirming the gift of the churches to Lewes Priory.⁴³

CONCLUSION

The excavations at West Blatchington produced evidence that the original church there was Saxon. The buried foundations of the

curious annexe to the west of the church, uncovered by Somers Clarke in 1889, had features which were characteristic of Anglo-Saxon architecture; the foundations continued under the Norman church to give the irregular plan of an early Saxon church. An unexpected result of the structural analysis of the surviving south wall of the shortened Norman nave was to find that, through all the vicissitudes of the Norman alterations, the years of decay and the 1890 restoration, so much of the Saxon wall has been preserved, including two of the Saxon windows. We owe much to Somers Clarke for the careful archaeological observations which he made when he examined the ruins and for his sensitive restoration of the church.

The design of the Saxon church, a long rectangular building with an entrance at the west end, was not at all like the arrangement of the better known Saxon churches in Sussex. When Poole was studying the Domesday Book churches of Sussex in the years before 1948, he was impressed by the apparent contrast between the variety in the type of church built during the Saxon period and the remarkable uniformity of the churches built between 1066 and 1086.⁴⁴ We can now see that the year 1066 does not mark any sudden change in the type of church being built. In the years immediately before 1066 the Saxon thegns had been building on their estates the same type of small church with nave, chancel and chancel arch as the new Norman lords built when they took over their lands. The change in the style of church belongs not to 1066 but to about the year 1000 when the new form of liturgy became widely adopted. West Blatchington is an example of the type of church that was being built in Sussex before about 1000.

There is now much evidence to show that the minster system of missionary churches staffed by small teams of priests was still normal as late as A.D. 950; one-priest churches were rare until the 10th century, when local thegns began to build churches on their estates. That West Blatchington was the church for a Saxon estate has been confirmed by a re-examination of the

local Domesday Book entries and by the good fortune that, because of the way in which the modern housing has been developed, so much of the boundary banks have survived. The geographical evidence, therefore, supports the liturgical and historical evidence in suggesting a mid-10th century date for the Saxon church at West Blatchington.

Acknowledgements

My thanks are due to the Rector, Rev. T. W. Thomas, and to the Parish Council, for allowing me to excavate the Saxon foundations of St Peter's Church, West Blatchington. I am grateful also to the Diocese of Chichester for granting the Faculty to excavate in consecrated ground. I am indebted to Eric Holden and to the late Alec Barr-Hamilton, who shared the cost of the Faculty.

The evidence used in this article is taken from the work of many people in various fields of study; their contributions are, I hope, all acknowledged either in the text or in the notes and references. I am particularly grateful for the help of Eric Holden, who supplied me with so much information about West Blatchington from his extensive local knowledge of the area. He helped also with the excavation and witnessed the crucial evidence of the relation between the old foundations and the Norman church. The recognition of the foundations as those of a Saxon church would not have been possible before Dr H. M. Taylor had published, in 1978, his third volume on Anglo-Saxon architecture. That work and Dr Taylor's personal encouragement inspired me to look again at my local parish church to discover its history. It would be ungracious if I did not acknowledge the constant help, encouragement, and criticism of my wife in the task of working out that history. I am sure that many of the ideas in this article have come from her and the history of West Blatchington is as much her work as mine.

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Notes and References

- ¹ Walter C. Renshaw, 'Notes Connected with the History of West Blatchington Church', *Suss. Arch. Coll.*, **49** (1906), 162–68 (p.162).
- ² Peter Heath, *English Parish Clergy on the Eve of the Reformation* (1969).
He reckoned that an income of £15 p.a. was 'desirable and reasonable'. The benefice of West Blatchington was valued at £6 4s 4d in the *Valor Ecclesiasticus* of 1535.
- ³ J. H. Torr, 'An Elizabethan Return of the State of the Diocese of Chichester' (1563), *Suss. Arch. Coll.*, **61** (1920), 114.
- ⁴ Renshaw, 163, quoting from the Act Books *ex officio mero* of the Archdeaconry Court of Lewes.
- ⁵ Renshaw, 164.
- ⁶ West Sussex Record Office, EpiscII/16/21. *Episcopal Transcripts*.
- ⁷ Renshaw, 167.
- ⁸ B.L., Add. MSS 5677, f.38. The drawing is reproduced in *Suss. Rec. Soc. Jubilee Volume* (1951).
- ⁹ M. A. Lower, 'Genealogical Memoir of the Family of Scrase', *Suss. Arch. Coll.*, **8** (1856), engravings on p.4 and p.13.
- ¹⁰ 'West Blatchington Parish. Restoration of the Church after Two Centuries Disuse', *Sussex Daily News*, 30 June 1891, 5.
- ¹¹ His report is quoted at length in *Sussex Daily News*, 30 June 1891, 5.
- ¹² Ian C. Hannah, 'West Blatchington Church', *Suss. Arch. Coll.*, **71** (1930), 246–51.
- ¹³ *VCH Sussex*, **VII** (1940), 243.
- ¹⁴ Alec Barr-Hamilton, *In Saxon Sussex* (Arundel Press, 1953), 103.
- ¹⁵ A catalogue of geological material found on the site of the Roman villa is given in *Suss. Arch. Coll.*, **89** (1950), 56.
- ¹⁶ The characteristics of Saxon windows are explained in H. M. Taylor, *Anglo-Saxon Architecture*, **III** (Cambridge, 1978), 836–7.
- ¹⁷ The churches mentioned are all described in H. M. Taylor and Joan Taylor, *Anglo-Saxon Architecture*, **I** and **II** (Cambridge, 1965).
- ¹⁸ W. H. Godfrey, 'Sussex Church Plans, XV, St Botolph next Bramber', *Suss. N.&Q.*, **3** (1930–31), 218 (with plan).
- ¹⁹ E. E. Barker, 'Sussex Anglo-Saxon Charters', *Suss. Arch. Coll.*, **88** (1949), 79–81.
- ²⁰ W. H. Godfrey, 'The Parish Church of St Andrew, Bishopstone', *Suss. Arch. Coll.*, **87** (1948), 164–83 (plan, Fig. 1).
- ²¹ E. E. Barker, 'Sussex Anglo-Saxon Charters', *Suss. Arch. Coll.*, **87** (1948), 128–31.
- ²² P. M. Johnston, 'The Church of Lyminster', *Suss. Arch. Coll.*, **46** (1903), 195–230 (plan on Plate 31).
- ²³ E. E. Barker, (1948), 139–45 (Lullyngmynstre, p.141).
- ²⁴ The excavation at West Blatchington church in 1980 was followed during the next seven years by a survey of other churches in Sussex to study their structure and identify Saxon and Norman remains.
- ²⁵ W. H. Godfrey, 'Sussex Church Plans, XCIII, Parish Church of Coombes', *Suss. N.&Q.*, **13** (1951), 126–27 (with plan). David Park, 'The West End of Coombes Church', *Suss. Arch. Coll.*, **118** (1980), 382–3.
- ²⁶ E. W. Holden, 'Excavations at Old Erringham', *Suss. Arch. Coll.*, **118** (1980), 257–97 (plan, Fig. 6).
- ²⁷ *VCH Sussex*, **VII** (1940), 74–5 (plan, p.74).
- ²⁸ H. M. Taylor, 968, 1021.
- ²⁹ The study of the liturgy of the Mass is a vast subject. A scholarly introduction is: Adrian Fortescue, *The Mass. A Study of the Roman Liturgy* (1912, eleventh impression 1955). A good modern study is: Theodor Klauser, *A Short History of the Western Liturgy*, (English translation, OUP 1969).
- ³⁰ H. M. Taylor, 'The Position of the Altar in Early Anglo-Saxon Churches', *Antiq. Jnl.*, **53** (1973), 52–8.
- ³¹ H. M. Taylor, 788.
- ³² F. M. Stenton, *Anglo-Saxon England* (1947), 147–9. Margaret Deanesley, *The Pre-Conquest Church in England* (1961), Chapter IX.
- ³³ Bede, *A History of the English Church and People* (Penguin Classics Translation, 1968), Book IV, Chapter 13, 227.
- ³⁴ *Domesday Book*, edited by John Morris (Chichester, 1976), **II**, Sussex, 12, 23.
- ³⁵ *Suss. Rec. Soc.*, **38** (1932), 'The Chartulary of the Priory of St Pancras of Lewes', 9–16 (p.13).
- ³⁶ Christopher Taylor, *Village and Farmstead* (1984), 120.
- ³⁷ I am indebted to Miss E. M. Turner, former Principal Lecturer in Biology, Brighton College of Education, for the hedge counts.
- ³⁸ J. M. Dodgson, 'Place Names in Sussex', in *The South Saxons*, (ed. Peter Brandon, Chichester 1978), 54–88. *Suss. Arch. Coll.*, **101** (1963), 61, footnote 1, quoting Ekwall, *Concise Oxford Dictionary of English Place Names*.
- ³⁹ Christopher Taylor, 112, 116.
- ⁴⁰ The significance and date of earthworks enclosing churches and halls is at present the subject of investigation.
- ⁴¹ *Suss. Rec. Soc.*, **38** (1932), 40.
- ⁴² *VCH Sussex*, **VII** (1940), 281.
- ⁴³ *Suss. Arch. Coll.*, **35** (1887), 193, Translation of the Confirmation Grant of Ralph, Bishop of Chichester, to Lewes Priory.
- ⁴⁴ H. Poole, 'The Domesday Book Churches of Sussex', *Suss. Arch. Coll.*, **87** (1948), 29–76 (p.32–5).

GREATHAM CHURCH: FABRIC, DATE, DIMENSIONS, IMPLICATIONS

by Robin Milner-Gulland

An aspect of the Sussex architectural heritage that has been too little investigated is the wealth of small churches—many still remote from considerable settlements, some not even on a road—whose fabric, though not easily datable in the absence of obvious ‘features’, is of very early character. Such buildings, often too humble to have attracted either the attentions of 19th-century restorers or the interest of antiquaries, constitute a significant item in the historical record of the 11th and 12th centuries, and both individually and collectively deserve more detailed study than they have usually received.

An interesting example is the church (dedication unknown) at Greatham, standing on a low gravelly ridge (whence its name, from OE *gréot*, cognate with modern ‘grit’)¹ just above the flood-plain of the Arun between Amberley and Pulborough (Fig. 1). Greatham Bridge has always had some significance as the only river crossing for many miles (there was a skirmish here during the Civil War), but there is no nucleated village and it is unlikely there was ever a sizeable population. As early as the 16th century the parish was amalgamated with its even smaller and remoter neighbour, Wiggonholt.² The church is extremely simple: an approximate rectangle³—we shall return subsequently to its dimensions—showing no structural distinction between nave and chancel, with roughly coursed, in places random, rubble walls—predominantly of ironstone, but with an admixture of less ferruginous Upper and Lower Greensand blocks, Chalk, flints, gravel-pebbles and (probably) Roman brick—and quoin-stones (some doubled) of yellow-grey Pulborough sandstone (Fig. 2). It is worth remarking that the

materials used in Sussex churches deserve closer attention than they have received: the best account is still that published by P. M. Johnston in 1907.⁴ It has become a commonplace to describe Sussex as poor in building-stone, and of course it lacks the easily-worked freestone of the Midland counties, but the range of usable materials to be found within two or three miles of the Downs is remarkably wide (from chalk ‘clunch’ to ‘Petworth marble’), and was supplemented, apparently as early as Saxon times, by imports from Quarr, Isle of Wight, and Caen in Normandy. So-called ‘Pulborough stone’ is a rough-textured usually yellowish sandstone, weathering grey, from the Sandgate beds underlying the Folkestone sands of the prominent Lower Greensand ridge on which Pulborough stands: rather narrow seams of hard, brittle, highly ferruginous ironstone (sometimes called ‘carstone’ or ‘firestone’) occur within the latter. Johnston remarks interestingly that Pulborough stone was ‘chiefly employed by 11th and 15th-century builders’, being replaced by imported stone between these dates.

There are three 19th-century features externally visible: a little spire crowning an earlier bell-turret (much damaged by the storm of 16 October 1987), the remodelled south doorway with its porch, and a tiled roof replacing earlier ‘Horsham slabs’. A piece of ‘Sussex marble’, fossiliferous ‘Paludina’ limestone from the Weald Clay, on the floor of the porch may be a former altar-table. Another apparently 19th-century addition to the church—a vestry built against the north wall—fell down c.1950, and I know of no pictorial record of it. Beneath its walls were found several uncoffined burials, considered to be of soldiers

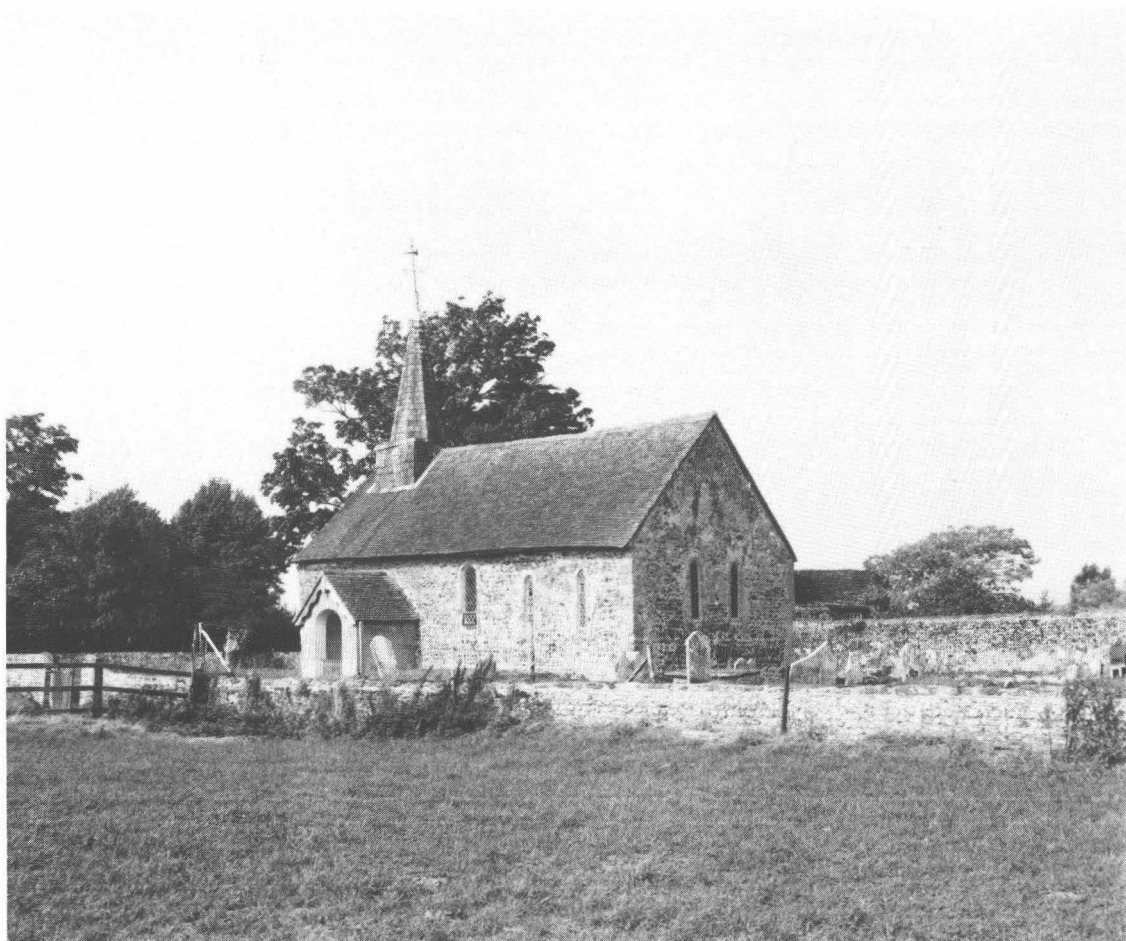


Fig. 1. Greatham Church, view from south-east (Photo R. Wilmshurst).

who fell in the skirmish at Greatham Bridge.⁵ The present windows are lancets of plain E.E. character, though one in the centre of the south wall, somewhat larger and round-headed, is obviously later.⁶ Inside, the church is notably unspoilt: there is a 'double-decker' pulpit and 17th-century communion rail; the walls are completely covered in whitewashed rendering; there is a simple, old though probably not original, kingpost roof.

Published comments on Greatham church are skimpy indeed. The Sussex volumes of the

Victoria County History do not cover the parish, and will probably not do so for some years to come. The only comments on Greatham church in *VCH II*, listing it as completely of the period c.1220–1260, are, I believe, mistaken, and have been the cause of further error.⁷ No plan seems to have been made of it (even by the industrious W. H. Godfrey). There is a drawing in the Sharpe collection of 1805,⁸ made from the south-west, valuable in showing the earlier (timbered) porch and belfry-turret without spire (both had been remodelled in their present form by the time of

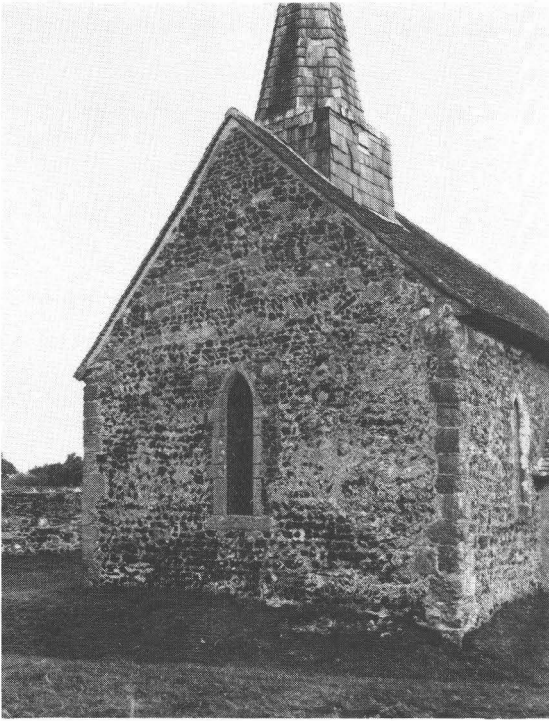


Fig. 2. Greatham Church: south-west corner (Photo R. Wilmshurst).

Quartermain's drawing, 1865);⁹ the visible fenestration in 1805 was evidently as now (Fig. 3). There is a perceptive, if very brief, comment in the Sussex volume of Nairn and Pevsner's *Buildings of England*.¹⁰ But the only known extensive commentary on the church is in the form of two pages of typescript preserved with some drafts in the library of the Sussex Archaeological Society in Lewes.¹¹ Its author was the late O. H. Leeney, F.R.S.A., whose unpublished notes on many Sussex churches are deposited with the S.A.S.; it is dated 1949 and written in a manner that seems to indicate that publication was intended. Leeney's short article on Greatham is of value, though speculative and at several points mistaken, and I shall return to it shortly: first though we need to look more closely at the building's fabric.

Even a cursory exterior examination shows that Johnston's assertion in *VCH* that the church is entirely of the 13th century¹² is untenable. The masonry is strikingly crude, with thick beds of lumpy, pinkish mortar, and only tentative coursing (at some points, e.g. the lower 30 inches or so of the south wall and much of the north wall, coursing is quite well achieved; elsewhere it disappears entirely). The quoin-stones are roughly cut and irregular in size and shape, with random tooling if any. Such workmanship suggests not the 13th nor even the 12th century, but the 11th. The lancet windows are an obvious later insertion (as at Clayton and many other such churches): this is demonstrated by the survival of what must be a blocked original window *in situ* in the middle of the east wall, now lit by a pair of lancets whose insertion luckily did not disturb it externally, though they must have destroyed its internal splays. This little window is constructed of only five stones, two to each jamb and one into which the roughly-semicircular head is cut: there is no sign of a sill. The aperture narrows towards the top—an early sign—though somewhat irregularly, giving it a 'bottle-shaped' outline; but until it is opened out it will remain hard to judge its original appearance. The top stone (in Leeney's words) "bears a rude ornament which antiquaries call 'the sunk star' . . .": this rather poetic expression here designates a pitting of the stone's surface, scarcely distinguishable in most lights from natural weathering, with at least eight groups of shallow triangular depressions, arranged rather like Maltese crosses, and determining a crude raised 'star' pattern¹³ (Fig. 4).

Leeney considered that this indicates the stone probably was 'originally a lintel from some other building', but there is no obvious reason why this should be so, nor does the arrangement of the shallow ornament suggest it was once part of a larger decorative scheme. Though he correctly recognised the earliness of most of the masonry, Leeney thought that the 'entire structure' was 'remodelled' in the 13th century, doing away incidentally with the original

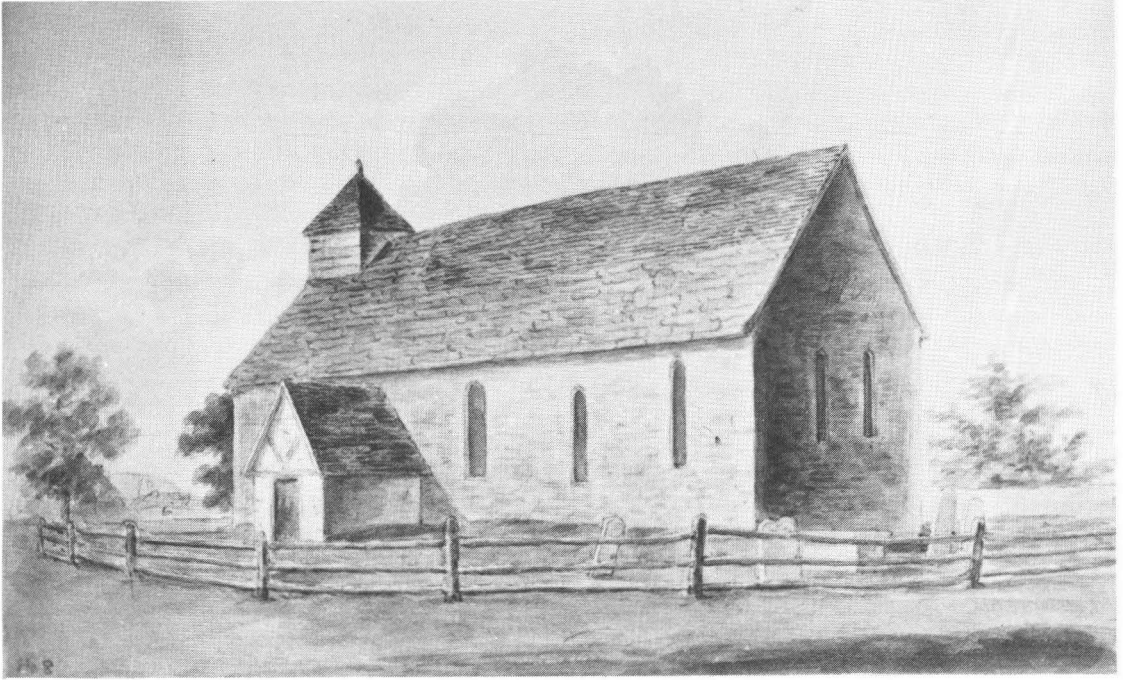


Fig. 3. Greatham, Sharpe collection No. 148, SE, 1805, water-colour Henry Petrie.

distinction between nave and chancel. This is highly unlikely: there are no signs of such a large reconstruction programme. Leeney buttressed this dubious case by asserting that the sixth stone from the ground in the north-west quoin carries scratched sundials on each of its visible faces, and must therefore have been moved from elsewhere. On examination these 'sundials' turn out to be simple incised consecration crosses, and traces of others are to be found on the north-east and south-west quoins at a similar height. Weathering may have destroyed any on the south-east. Leeney also considered that a 'Norman doorway' in the north wall survived the hypothetical reconstruction. Indeed there are two incomplete rows of jamb stones built into the exterior wall (only indistinct marks can be seen inside); but the head of the doorway has disappeared completely, and little more can be said about it, save to note that it must have been very narrow (28 inches or 29 inches—far less

than the average width even of Anglo-Saxon doorways): if the south door was of similar dimensions, it is not surprising it has been rebuilt in modern times (Fig. 5). However it should also be noted that in the eastern part of the south wall there are traces of disturbed mortar that probably represent another original window matching that in the east wall. It seems beyond doubt that Greatham was planned in single-cell form from the start, and that it is an unusually complete and little-restored example of the simplest type of early masonry church.¹⁴

How does Greatham relate to other 11th- and 12th-century Sussex village churches? There are several in the immediate vicinity of the Arun floodplain.¹⁵ Space does not permit an extensive comparison, but it is interesting to note that all save one are dissimilar to Greatham in aspects of their masonry or materials. Leeney relates



Fig. 4. Greatham Church: blocked window in east wall (Photo R. Wilmshurst).

Greatham closely to its neighbour at Wiggonholt, also a single-cell structure, though differently proportioned, but with no original doorways or windows surviving. There are indeed similarities, particularly in the mix of materials making up the rubble walls. Yet the quoin-stones at Wiggonholt are more standardised, carefully laid side-alternately, better-dressed and probably from another quarry (they have weathered differently); altogether Wiggonholt is a more polished structure, and this probably reflects a somewhat later date. The best comparison (surprisingly overlooked by commentators) is between Greatham and its neighbour across the Arun, the church of St. Botolph at Hardham. Greatham is humbler in all respects than Hardham, itself scarcely a grand building, but very similar in its principles of construction.¹⁶ The blocked early



Fig. 5. Greatham Church: north wall (Photo R. Wilmshurst).

window at Greatham would virtually have been interchangeable with the surviving three at Hardham. The rough coursing of the rubble walls at Hardham matches Greatham closely, even to the suggestion of 'herringbone' technique in certain parts.¹⁷ Above all the quoin-stones at Greatham look as if they could be throw-outs or leftovers from the quarrying operation that produced those at Hardham. To speculate further in the absence of petrological analysis as to where such stone came from is no doubt unwise (there are many small quarry-pits on the adjacent Lower Greensand), but it is hard to resist the idea that they could well have been floated on barges down the Arun to both churches from Stopham, where the river cuts through the Pulborough ridge. A few yards above Stopham bridge there are the remains of old quarries, so far as I know uninvestigated, that still have rather thick bands of ironstone exposed. The supposed early quarry at Greatham (that appears in the cumulative index to *Sussex Archaeological Collections*) is, incidentally, a myth arising from the false identification and confusion by H. Poole of the Domesday Book entry for Grittenham

(several miles away in the Rother valley between Midhurst and Petworth) with Greatham.¹⁸

My suggestion is that the similarity of the fabric of Greatham with Hardham, and its dissimilarity from other early-Romanesque churches in the vicinity, makes a similar date probable. But what that date might be is unfortunately a good deal less clear. The Taylors and E. A. Fisher¹⁹ include Hardham in the category of late Anglo-Saxon churches, though this does not preclude for them the immediately post-Conquest period. Richard Gem however has pointed out that Hardham is 'extremely simple in detail, but it contains no single feature that relates to a specifically Anglo-Saxon tradition of construction', and it can be 'dated little more precisely than late 11th- or early 12th-century.'²⁰ This is another way of saying that our present knowledge of the important period of transition from Anglo-Saxon to Norman building is still heavily dependent on discrete 'features' and our interpretation of their (undocumented) history. Anyhow we should not forget that in fact Hardham has a feature of startling importance: the most complete set of early wall-paintings in the country, now generally considered coeval with the fabric, constituting with those at Clayton and Coombes a phenomenon of international importance.²¹ Does Greatham, an essentially unrestored building of the same period, have remains of such wall paintings under its whitewash? Do any of the numerous other under-investigated early-Romanesque Sussex churches? We do not know, and no doubt it is time we did.²²

The structure and plan of Greatham church are, as we have seen,²³ simple even by the rough-hewn standards of pre-1150 parish church architecture (not, of course, that any 'architect' in the modern sense would have been involved, as such a building would have been planned in rule-of-thumb manner, without a blueprint, by the craftsmen who constructed it—among whom

the most skilled and demanding would doubtless have been the carpenters responsible for the roof-timbers).²⁴ We have here no more than a single oblong box, none of whose walls actually meet at a true right angle. The angles at the north-east and south-west corners are somewhat acute, those at the north-west and south-east obtuse. The dimensions of the building impress chiefly by their irregularity: the south wall is longer than the north, the west wall nearly a foot longer than the east, none are strictly parallel; even wall-thicknesses are not identical; the various wall-lengths look quite arbitrary (Fig. 6).

Such dimensions may seem to indicate little more than botched setting-out. Undoubtedly it was (as builders nowadays say) 'a country job'; again, this is no rarity in the Anglo-Saxon tradition (even in so comparatively grand a structure as Bosham). However, I believe that, somewhat astonishingly, we can deduce from these apparently haphazard dimensions the sequence of operations that produced the building's ground plan, and indeed make some points of wider application about Old English mensuration. First a brief account of the problems involved is necessary.

Only recently has scholarly attention focussed on the significance of the measurements of Anglo-Saxon and other early building: antiquaries of previous generations usually recorded dimensions without comment, save where they were strikingly out-of-line with expectations. Nor are such measurements invariably reliable: Rodwell, in the course of pointing out some notable examples of misalignment in Anglo-Saxon buildings, has drawn attention to 'the commoner faults in sketch plans . . . the assumption that walls meet at right angles and that wall thicknesses are generally constant'.²⁵ Grosser errors still are possible, as we shall see. Modern archaeological principles however have resulted not only in a more precise and comprehensive approach to mensuration, but in scholarly efforts to interpret, or at least make sense of, the measurements obtained. Studies along these lines—a very

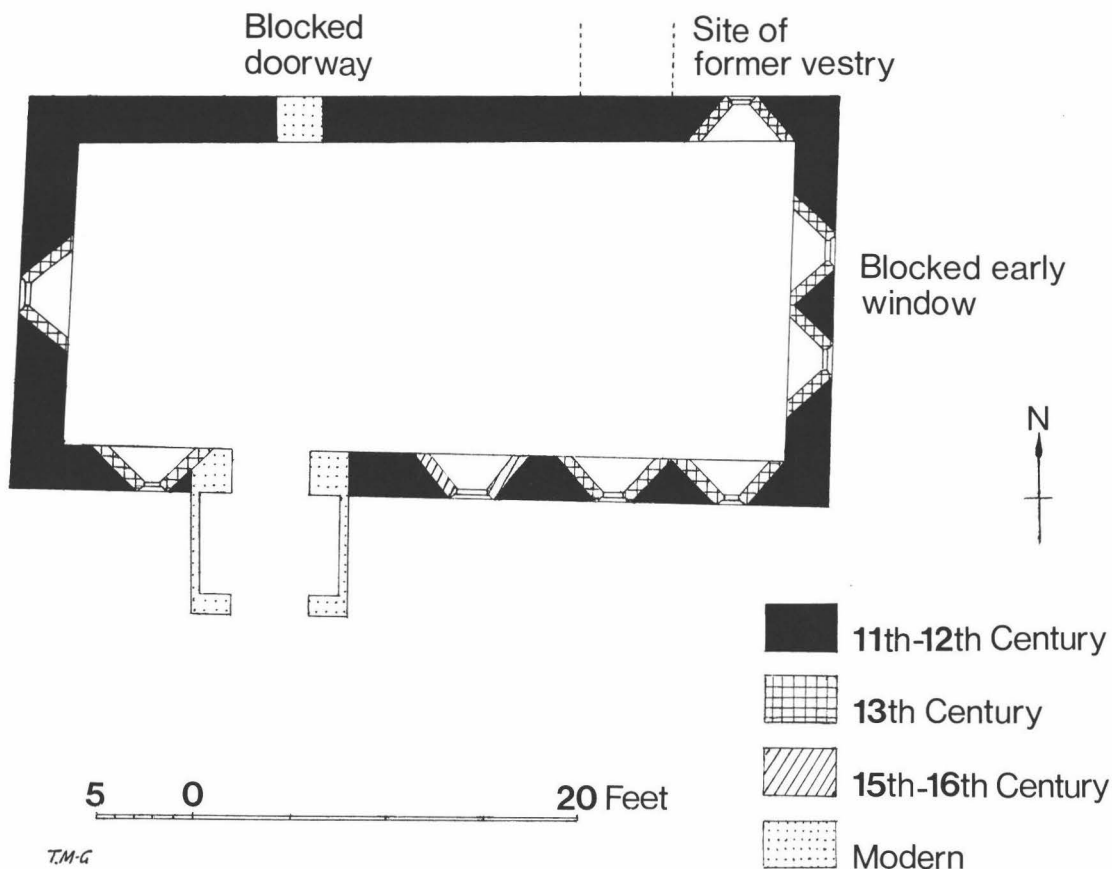


Fig. 6. Greatham Church: plan (T. Milner-Gulland).

recent development, largely of the last couple of decades—have conclusively shown that even humble and inexact set-out buildings may (indeed normally will) display a systematic rationale in their planning.

Such interpretation, however, remains beset with problems: not only are we in obvious difficulties if we attempt to enter into the thought-processes or motivation of past people, but it is far from certain how measurements expressed in modern terms relate to the Old English system or systems.²⁶ From the reign of Henry I we are on firmer ground: he introduced the modern yard of three feet as a standard unit. Before that, though feet, inches and many other

measurements are well attested, it is impossible (save in one instance, of which more later) to be sure how they related to modern units or to each other. The problem has been much complicated, indeed rendered something of a scholarly minefield, by the intrusion of the so-called 'Northern System' of measurements proposed more than fifty years ago by Flinders Petrie as a common heritage of the Germanic peoples. Its centrepiece is the supposed 'Drusian' (later 'Carolingian') foot of 33.3 cm. (= approx. 13 inches): however the sole testimony for its existence, a reference in a treatise by a 1st-century Roman land surveyor, cannot bear the weight of significance that Petrie and his

more uncritical followers attributed to it. Recent scholars, notably E. C. Fernie, have subjected the entire notion of a 'Northern System' to such effective criticism that, at least in an English context, it is best dismissed as fantastical.²⁷ Fernie's commonsense suggestion that the 'modern' foot pre-existed Henry I's yard, and was in fact the primary Old English measure, is reinforced by his investigation of the mid-11th century church of Great Paxton, where the English foot appears to be the basic constructional unit of measurement. Other units, including the inch and the most usual ell (of 18 inches), fall into place. Variant early feet, however, are possible, at least as local phenomena: for example the old Roman foot of approx. 11½ inches, and even an 'anatomically-based' foot of 10 inches.

There remains the single instance of an Old English measurement of length that is well-attested from early times, was very widely used and can be precisely defined in modern terms: the rod or perch of 5½ yards (16 feet 6 inches or 198 inches). It has indeed survived as a measurement into the modern period: however, in the later middle ages particularly a large number of variant 'perches'; for local or specific purposes arose, and it has been proposed that for convenience scholars should confine themselves to the term 'rod' to indicate the original and enduring measure of 5½ yards. This length is, of course, a distinctly strange one: it seems not to relate rationally to feet (Roman or English) or to yards; presumably it arose, and for centuries continued to exist, independently. Its origins have been ascribed to the width of a team of oxen, and of course it has always been well known as a land measure; but its ancient and continuing use as a constructional unit—particularly of width—leads one to suspect that it was found particularly appropriate as a standard length of timber for roofing purposes.²⁸

If we now return to the specific dimensions of Greatham, we find that only the height of the walls (approx. 12 feet) makes sense in terms of feet or 18-inch ells. Otherwise the dimensions

seem quite irregular, with one crucial exception: the interior east wall, the altar-wall, thus the most significant in the building. This is almost exactly a rod in length with the extra couple of inches partly accounted for by plaster. It must have been the first wall to have been set out. Thereafter the wall-thickness would have been determined, and a trench dug for the footings, producing the exterior length of the east wall. The latter was then precisely doubled to give the exterior north length, the angles being assessed by eye rather than set-square. Something evidently went wrong when the matching south wall was next set out—maybe no more than the overstretching of a length of twine—leading to a four-inch disparity. Finally the west wall was planned to thicker specifications, perhaps to strengthen it because of falling ground beyond, perhaps simply to make use of whatever quantity of building-material was still available, perhaps to support a bell-turret, as it does to this day. Though Rodwell has written that 'variations in wall thickness nearly always betray different constructional phases',²⁹ there is no obvious evidence of this at Greatham, and the west wall seems of a piece with the rest of the building. Such things are certainly known from other early churches: at St. Botolphs (near Bramber), for example, the west wall of the Saxon church is 5 cm. (2 inches) thicker than the south wall.³⁰ Only with the systematic collation of the thicknesses of all the walls in a broad sample of early churches will we be able to see how widespread such deviations may be, and perhaps to read patterns into them: but the requisite measurements have only in a few instances been recorded.

Wall-thickness is in fact a subject of some interest to which rather little attention has been devoted. The Greatham north, south and east measurements of 28–29 inches turn out, according to the Taylors' statistics, to be the most frequent Anglo-Saxon thickness.³¹ Certainly it seems characteristic of many early Sussex churches of 11th-century character (examples from different parts of the county can

be seen at Clayton, Coates, Poling, Southease), whether or not they come into the Taylors' survey. For Hardham, which earlier in this article was compared with Greatham in respect of its fabric, the Taylors give a figure of 2 feet 7 inches, Fisher of 2 feet 9 inches:³² but in fact, as can easily be confirmed, the walls are 29 inches (2 feet 5 inches) thick throughout the building (it is easy to see how 29 inches could turn into '2 feet 9 inches', but one wonders with alarm how often such errors may have crept into other measurements that we accept unquestioningly). So what, if anything, is the significance of this recurring dimension of 28–29 inches? It is singularly hard to reconcile it with the known Old English, or later, measurements. It comes close to three 'short' feet of 10 inches, but this does not seem significant; nor does the fact that it represents a seventh of the standard rod or perch. The angle-to-angle measurement from interior to exterior (i.e. $\sqrt{2} \times$ thickness, a proportion sometimes encountered in early buildings) is approximately 40 inches, again a measurement to which it is hard to attach special significance. As a 'mason's unit' unrelated to other systems of measurement, it could well have an 'anatomical' origin: my hypothesis is that it represents an arm's length, from armpit to outstretched finger-tips. Such a length will of course be rather inexact, varying in proportion to the mason's build: a tall man (6 feet) would reach about 30 inches, a short man of little over 5 feet in height would reach some 26 inches. It is of interest in this context that William of Malmesbury, reporting Henry I's introduction of the standard yard, specified that it was derived from the length of his arm (*brachii sui mensura*). This, if taken literally, would make Henry an improbable giant, at least 7 feet tall: but it is more likely to reflect the garbled memory of an arm's length measurement, current previously, that the new yard was to supersede. It would be interesting to examine early buildings and artefacts to see if this hypothetical arm's length measurement occurs with significant frequency: let us here note simply that it is found

again at Greatham as the width between the jambs of the blocked-up and partially dismantled north doorway.³³

In conclusion I should point out that these remarks are the fruit of no more than observation and (it is hoped) common sense. These may yield results, but they are ultimately no substitute for a systematic and rigorous survey, using scientific archaeological and statistical methods, of the distribution, construction, sources of materials, relative temporal sequence, comparative dimensions, ornamentation and so on of this whole group of early churches.³⁴ Even simple churches like Greatham may have much to tell us—but we may still be far from ready to interpret their messages.

Acknowledgements

In the preparation of this article I have been helped at several points by colleagues, friends and members of my family, to all of whom I am most grateful, and none of whom, of course, are responsible for any contentious or defective views I may have expressed. In particular I owe thanks to Mr Ludo Foster of Greatham Manor; to the staff of the Sussex Archaeological Society library at Barbican House, and especially to Mrs B. Giles for drawing my attention to the Leeny archive and to the Quartermain manuscript; to Mr Roland Harris of Steyning for letting me see relevant parts of his unpublished thesis for London University on St. Botolph's Church; to Tom Milner-Gulland for practical help and many suggestions; to Professor Eric Fernie for helpful comments and bibliographical information on metrology; to Dr Harold Taylor; and to Dr Brian Short, Editor of *Sussex Archaeological Collections*, for encouraging me to turn a brief first draft into an expanded article. I am especially grateful to Mr Roger Wilmshurst of Washington, W. Sussex, for photographs (Figs. 1, 2, 4 and 5) and to Tom Milner-Gulland for the plan (Fig. 6).

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Notes

- ¹ OE *gréot hamm*. 'gravelly water meadow': see J. Glover, *The Place Names of Sussex*, (1975) 65. Grittenham, with which Greatham has been confused (see below, and note 18) means 'at the great water meadow' (*ibid.*, 66).
- ² In the 19th century the recorded population of Greatham never rose above 79, that of Wiggonholt above 52: see *The Victoria history of the county of Sussex*, ii 1907; (hereafter referred to as V.C.H.) 218. In antiquity the district seems to have been more populous and important than during the middle ages: see K. J. Evans 'Excavations at a Romano-British Site, Wiggonholt' in *Suss. Arch. Coll.* **112**, 1974, 97–151.
- ³ The main dimensions of the church are as follows (inches are used, for reasons that will become apparent): Exterior east wall 253 ins., west wall 243 ins., north wall 506 ins., south wall 510 ins.; interior east 196 ins., west 186 ins. Wall thicknesses: east and south walls 28 ins., north wall 29 ins., west wall 32 ins. Height of walls (interior) approx. 144 ins. (= 12 ft.).
- ⁴ V.C.H., II, 333–8. Also useful is A. Clifton-Taylor *The Pattern of English Building* (1962), particularly ch. V. On the local geology, see R. W. Gallois *The Wealden District* (British Regional Geology, H.M.S.O., 4th edn., 1965), 32–4.
- ⁵ I am indebted to Mr L. Foster of Greatham Manor for this information, and for a helpful conversation about the church in general.
- ⁶ Donations towards the repair of the church are recorded in wills of 1430 and 1540: *Sussex Record Society*, **42** (*Wills*, II), 220, and such repairs could have involved widening the window.
- ⁷ V.C.H., II, chapter 'Ecclesiastical Architecture' by P. M. Johnston, 373.
- ⁸ The Sharpe collection is held at Michelham Priory; there are photographs of it in the Sussex Archaeological Society library. The drawing of Greatham is catalogued as no. 148.
- ⁹ W. T. Quartermain, *The Parish Churches of Sussex* (1865; bound MS in Suss. Arch. Soc. library, Lewes).
- ¹⁰ I. Nairn and N. Pevsner, *Sussex* (Harmondsworth 1965) 232; this part of the volume was written by Nairn.
- ¹¹ I am most grateful to Mrs B. Giles of the Suss. Arch. Soc. library for drawing my attention to this document, as also to the Quartermain volume (note 9).
- ¹² Johnston, VCH.
- ¹³ In its developed form the 'star pattern' is a characteristic Norman decorative motif, and is used by Baldwin Brown as a firm indication of dating (B. Brown, *The Arts in Early England*, VI part 2, 1937, 140–1): but until more is known of the 'prehistory' of such ornament, and whether or not the Greatham lintel was decorated at the time of construction, it would be as well to exercise caution in using it as incontrovertible evidence of date in the present case. A similar difficulty arises with the simple star-pattern that occurs at Dunham Magna (Norfolk), a church otherwise of consistently Anglo-Saxon character: this caused problems for Baldwin Brown (*ibid.* II, *Anglo-Saxon Architecture*, 301, 346). As Professor R. Cramp has written 'in all areas of Anglo-Saxon England one can find unspecific strips of decorative detail from friezes, string-courses and door-linings as well as decorated wall-slabs and imposts' (in L. Butler & R. Morris, eds., *The Anglo-Saxon Church*, CBA Research Report **60**, 1986, 101).
- ¹⁴ Single-cell churches are not, as Leeney supposed, a 13th-century innovation: H. M. and J. Taylor (*Anglo-Saxon Architecture*, 3 vols., Cambridge 1964–78) identify about 15 Anglo-Saxon examples, and there must be many more of Norman date.
- ¹⁵ Amberley, N. and S. Stoke, Bury, Coldwaltham, Hardham, Stopham, Wiggonholt, with several others (e.g. Coates, Burpham) only two or three miles away.
- ¹⁶ There are detailed descriptions of Hardham Church in H. M. Taylor and J. Taylor I, and E. A. Fisher, *The Saxon Churches of Sussex* (Newton Abbot 1970) 124–30; note also Nairn & Pevsner, 234–6, and P. M. Johnston, 'Hardham Church and its Early Paintings' in *Suss. Arch. Coll.* **44** (1901), 73–115.
- ¹⁷ It is unfortunately impossible to make an on-the-spot comparison between the rubble wall construction of Greatham and Hardham, since the latter, save for quoins and dressings, is covered in a coat of modern rendering. Just before this was applied precise measured drawings were made of the stonework of the walls and published by F. G. Aldsworth and J. Hadfield, *Suss. Arch. Coll.* **120** (1982), 22–8, and these are a most valuable means of comparison: alas, though, they do not indicate the proportion of ferruginous ironstone to other types of Lower Greensand blocks (certainly both were used, as at Greatham). At Greatham some traces of old—possibly original—external rendering survive.
- ¹⁸ H. Poole 'The Domesday Book Churches of Sussex' in *Suss. Arch. Coll.* **87** (1948), 58. The error may originate with the index to V.C.H. II, in which L. F. Salzman's reference to 'Greteham' (230) becomes 'Greatham' instead of 'Grittenham'.
- ¹⁹ H. M. and J. Taylor *op. cit.* E. A. Fisher *op. cit.*
- ²⁰ R. Gem 'The "Lewes Group" of Wall Paintings: Architectural Considerations', in *Anglo-Norman Studies VI*, ed. R. A. Brown (Woodbridge 1984), 236.
- ²¹ See Johnston *op. cit.*; D. Park 'The Lewes Group' of Wall Paintings in Sussex', in *Anglo-Norman Studies VI*, ed. R. A. Brown (Woodbridge 1984); R. Milner-Gulland 'The Problem of the Early Sussex Frescoes' in *Southern History*, **7** (1985), 25–54.
- ²² Cf. K. & W. Rodwell's comment 'It is clear from experience that many more churches than those which have been accredited with ancient wall-plaster and wall paintings do in fact contain them' (in P. Addyman & R. Morris, eds., *The Archaeological Study of Churches*, CBA Research Report **13**, 1976).
- ²³ See note 3 for the main dimensions of the church.

- ²⁴ The crucial role of carpenters in early building operations has recently been discussed in, e.g., W. Rodwell 'Anglo-Saxon Church Building: Aspects of Design and Construction', in Butler & Morris *op. cit.*
- ²⁵ W. Rodwell *The Archaeology of the English Church* (1981), 60–1.
- ²⁶ As E. C. Fernie concisely puts it: 'The fact of the matter is that we do not know which systems of lengths were in use in Anglo-Saxon England' ('Anglo-Saxon Lengths: The "Northern System", the Perch and the Foot', *Archaeological Journal*, **142**, (1985), 248).
- ²⁷ Fernie *op. cit.*; cf. also his 'Historical Metrology and Architectural History' in *Art History* **I:4** (1987), 383–99; and P. Grierson, *English Linear Measures* (1972).
- ²⁸ For further references and for a concise exposition of these points, see Fernie *op. cit.* The rod or perch as an ancient building unit is discussed here, and also e.g., in P. Huggins and K. & W. Rodwell 'Anglo-Saxon and Scandinavian Building Measurements' in *Structural Reconstruction*, ed. P. J. Drury, CBA Research Reports **110**, 1982. On variant local perches, see A. E. Nash 'Perch and Acre Sizes in Medieval Sussex' in *Suss. Arch. Coll.* **116** (1978), 57–68.
- ²⁹ W. Rodwell, 61.
- ³⁰ Measurements by Roland Harris, personal communication.
- ³¹ H. M. & J. Taylor **III**.
- ³² E. A. Fisher *loc. cit.*
- ³³ In support of the hypothesis that an 'arm's length' of c. 28 ins. is a deliberately chosen, even if somewhat imprecise, dimension, is the fact that for tens of millions of people in a different part of Europe this was a standard official unit of measurement for many centuries: it corresponds to the pre-Revolutionary Russian *arshin* (= 71 cm), probably introduced during the period of Tatar rule (1240–1480). Cognate words are found in the main Turkic languages, including modern Turkish (*arşin*). Though the latter is rendered in dictionaries as the 'Turkish yard' (rather a short one), it probably originated as an arm's length measure: Max Vasmer in *Russisches Etymologisches Wörterbuch I*, (Heidelberg 1953, 29) translates it as *Elle* (i.e. 'ell' or 'cubit'), and there is evidence that Turkish tailors used the outstretched arm to measure off an *arşin* of cloth, probably an ancient practice (I am indebted to Dr Michael Ursinus of Birmingham University for this information). There is a cognate Iranian word meaning 'elbow' (A. G. Preobrazhensky *Etymologicheskoy slovar russkogo yazyka*, **I**, Moscow 1959, 9). It goes without saying that no influence in either direction can be postulated between 11th-century English masons and the then still obscure Turks or Tartars: hence in each case an 'anatomical' origin is most likely.
- ³⁴ A similar plea, particularly drawing attention to the historical information unregarded early churches can provide, has been voiced by F. Aldsworth: 'Church Archaeology in Sussex', in P. L. Drewett ed. *Archaeology in Sussex*, CBA Research Report **29**, 1978, 78.

THE TOWER AND ‘RHENISH HELM’ SPIRE OF ST. MARY’S CHURCH, SOMPTING

by *F. G. Aldsworth B.A., F.S.A., M.I.F.A. and R. Harris M.A., A.A.Dip.*

A detailed study of the tower and spire in 1984, supported by documentary research and scientific dating evidence, has permitted a better understanding of the dates of their construction. The west end of an Anglo-Saxon church was heightened to form a tower at the end of the 11th century when a tower arch was inserted incorporating earlier decorated stones as impost. Various alternative reconstructions for the roof on the original tower are proposed but it seems most likely that the original roof was in the form of a helm spire, supported on either wooden or the present masonry gables. The present helm spire was built in the first quarter of the 14th century, possibly as a result of the church being taken over by the Knights Hospitaller. Later alterations and repairs are noted.

INTRODUCTION

The Church of St. Mary, Sompting, stands almost in isolation on the southern edge of the South Downs dominating the east end of the West Sussex coastal plain (NGR TQ 161056). Close by are a farm, and a school—the village which it formerly served having migrated about five hundred metres south before the beginning of the 19th century. As an *-ingas* place name it seems likely that Sompting was occupied during an early phase of Saxon settlement and in Domesday Book its church is referred to under the entry for the manor of Saltinges. Despite the considerable size of its tower and its dominant position Sompting was probably not the minster church of the Hundred of Brightford in which it was situated.

There has been much debate in the past about the date of the tower but most writers now agree that the lower part, with its plinth course, pilaster strips, and long and short quoins, dates to the Anglo-Saxon period (Taylor & Taylor 1965, 558–62; Fisher 1970, 175–82). The latest thought on the remainder of the tower is that it was probably added during the last two decades of the 11th century (Gem 1983) but there is still much controversy over the precise date of the

‘Rhenish helm’ spire which it supports. Cecil Hewett (1978 & 1980) is of the firm belief that the framework of the spire is Anglo-Saxon and that it dates to the period A.D. 950–1050 although Edmund Cartwright (Dallaway & Cartwright, 1830), writing in the first quarter of the 19th century, says that the spire was reduced in height by 25 feet in 1762.

There are no other surviving Anglo-Saxon ‘Rhenish helm’ spires in England though the form of roof probably existed at that time for it was used as a model for Anglo-Saxon censer covers found at Canterbury, London and Pershore (Wilson 1964, Nos. 9, 44 & 56) and there are indications that the tower of St. Benet’s Church, Cambridge, was in this form (Hewett 1978, 214–5). In the 19th century Sompting appears to have been the model for helm spires on a number of other English churches including Flixton, Suffolk, designed by Anthony Salvin in 1856, and Hawkey, Hampshire, by Teulon in 1865, but the question remains whether we have at Sompting the only surviving Anglo-Saxon ‘Rhenish helm’ spire in England.

The history of the remainder of the church is relatively straightforward and has been discussed elsewhere (Gem 1983 and *VCH* 6 1980,

63). All that needs to be noted here is the fact that the nave and chancel are known to have been rebuilt after the church was acquired by the Knights Templar in 1154 and on their suppression at the beginning of the 14th century it was taken over by the Knights Hospitaller.

In 1984 the opportunity was afforded by the architects, Carden, Godfrey, Macfadyen & Sturgis, for a much closer inspection of the fabric of the tower and the framing of the spire than had previously been possible when the tower was scaffolded and the spire re-shingled. The recording was undertaken by the authors who are most grateful to the incumbent, the Revd John Friars; the architects, Richard Andrews and Ian Stewart; and the builders for their help and for permitting the survey to be undertaken. Thanks are also due to Dr Richard Gem, Cecil Hewett, and Dr Harold Taylor, who contributed to site discussions, and to Dr Warwick Rodwell who made many valuable suggestions, especially concerning the original form of the tower, which are included in the text.

THE TOWER

Whilst scaffolding was in place the opportunity was taken to produce a series of drawings at a scale of 1 to 20 of the external and internal elevations of the four walls of the tower and these were used as a basis for a study of the fabric (Figs. 1–6). The tower is constructed of locally available flint, which is for the most part rendered externally, and stone dressings. Dr Martyn Owen, formerly of the Geological Survey, kindly identified the sources of the stone used in the structure (Figs. 3 and 4) and the distribution of types throws a little light on the phases of construction of the tower and together with mortar changes indicates where later alterations have been made. In general, however, the four principle types of stone used—Caen, Quarr, Binstead and a ferruginous sandstone—appear to have been used as supplies from different quarries became available, perhaps as cartloads or, since some derive from deposits in

France or on the Isle of Wight, as boat loads. The only exception is in the quoins immediately above the string course where small pieces of stone are used instead of large blocks (see below).

The windows and the tower arch were also recorded in some detail and, together with a photographic survey, this material will form a permanent architectural and archaeological record of the structure in the West Sussex Record Office in Chichester. A number of old drawings have also been consulted, including F. A. Crouch's survey of 1910, and notes made by the architect Emil Godfrey during repairs undertaken by him in 1951 & 1967.¹

The results of the survey support Richard Gem's suggestion that the tower was built in at least two phases, with the lowest level incorporating the west end of a pre-Conquest church whilst the tower, including the string course, was added towards the end of the 11th century. It is proposed to discuss the construction of the two distinct phases of the tower (Periods I & II) and external and internal alterations to it; next the spire (Period III) and its development; and finally to put forward a series of constructional phases as our interpretation of the evidence. The dates suggested by dendrochronological and radiocarbon analyses of the timbers of the spire are included as Appendices 1 & 2. The church has previously been described by many writers, in particular Rickman (1836), Baldwin Brown (1925), Taylor & Taylor (1965) and Fisher (1970), and discussion in this paper will concentrate in areas where the recent survey has added to or altered what has previously been said.

Period I: The pre-Conquest structure

The lowest level of the tower measures 5.85 metres north to south by 5.80 metres east to west and on the south side is 5.80 metres high from the top of the plinth to the bottom of the string course. It incorporates a plinth course, pilaster strips, and traces of long and short quoins at the south-west corner—all constructed in Anglo-Saxon style—together with a round-headed

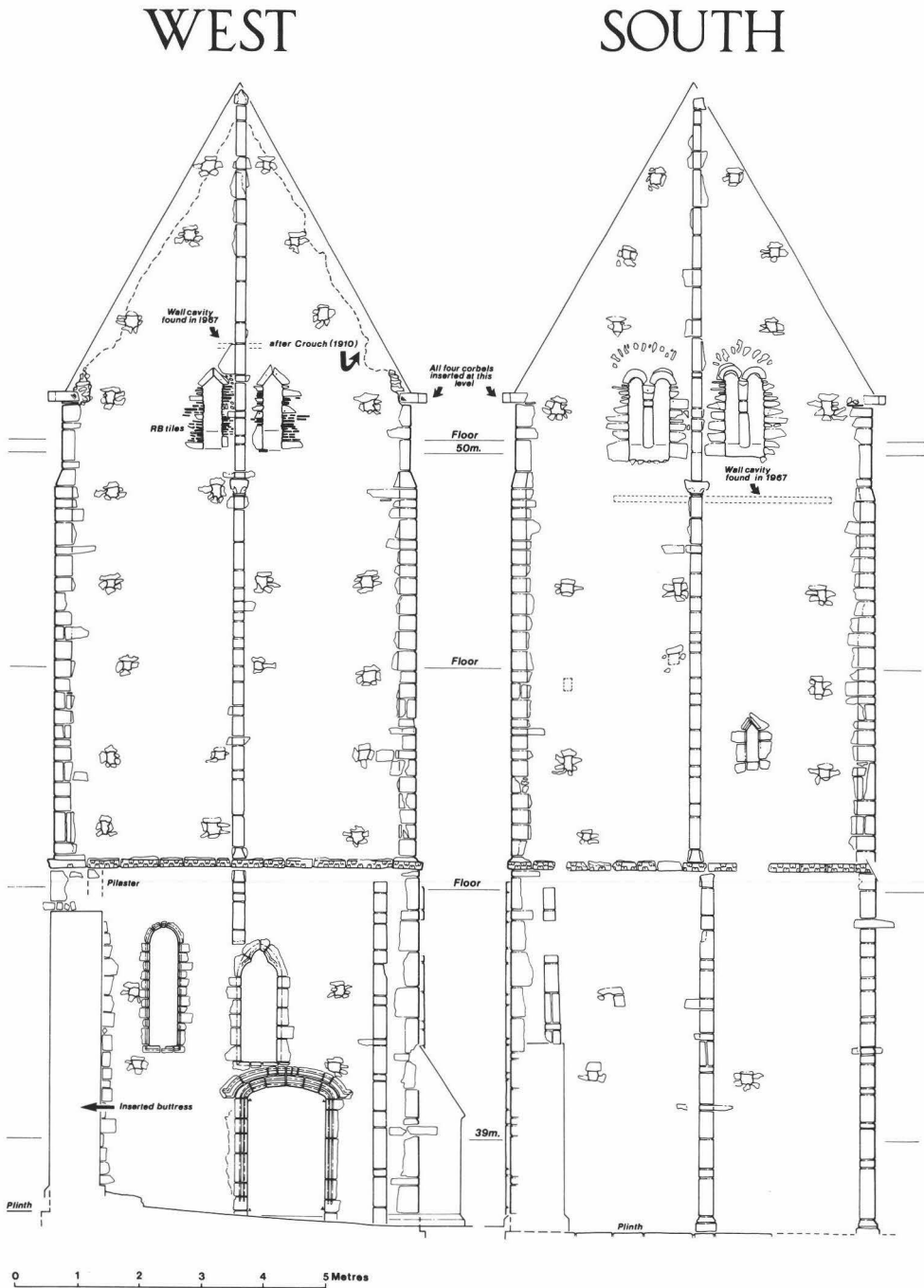


Fig. 1. External elevations of the tower (Based on site drawings at 1/20 by F. G. Aldsworth July 1984).

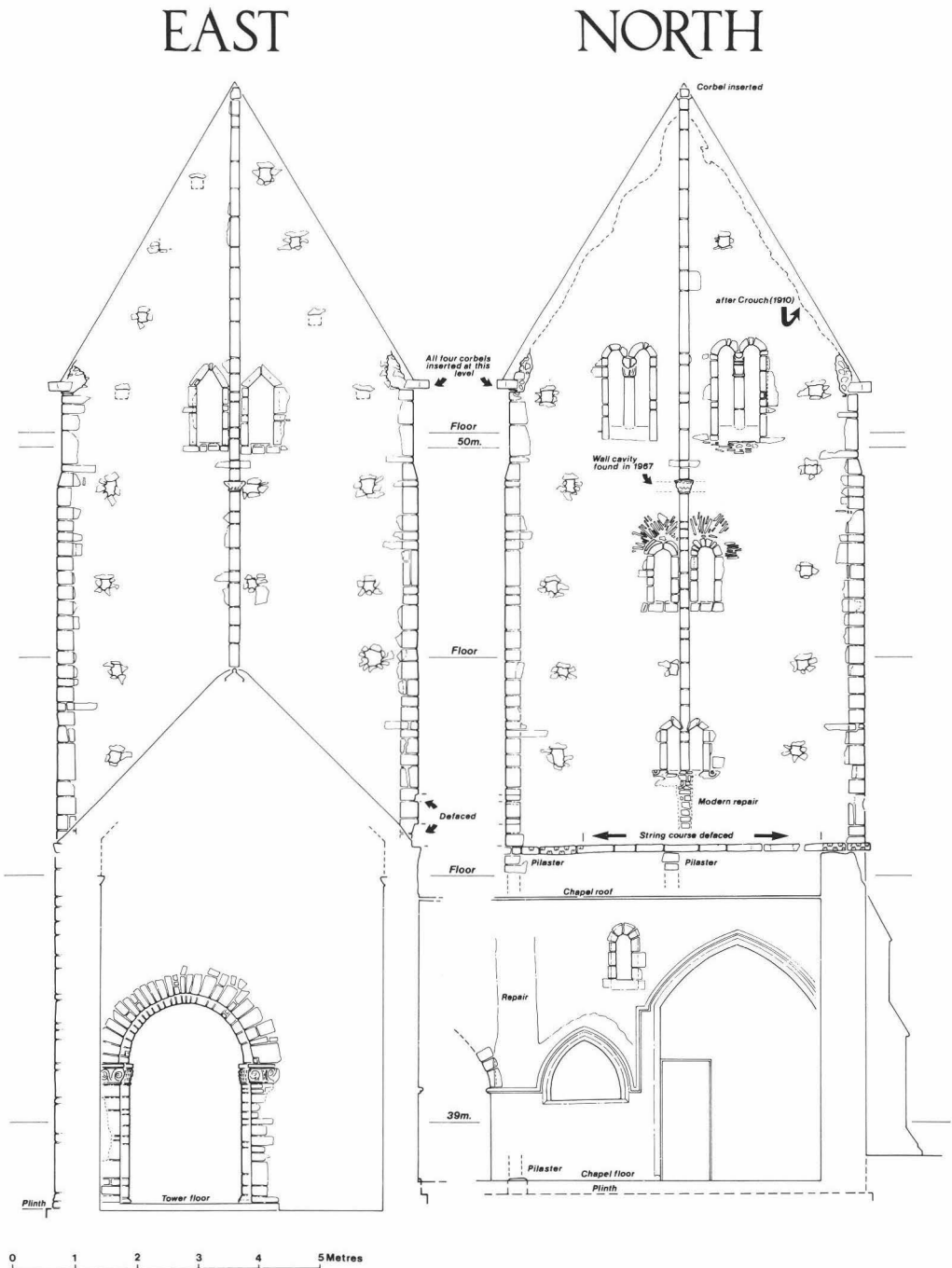


Fig. 2. External elevations of the tower (Based on site drawings at 1/20 by F. G. Aldsworth July 1984).

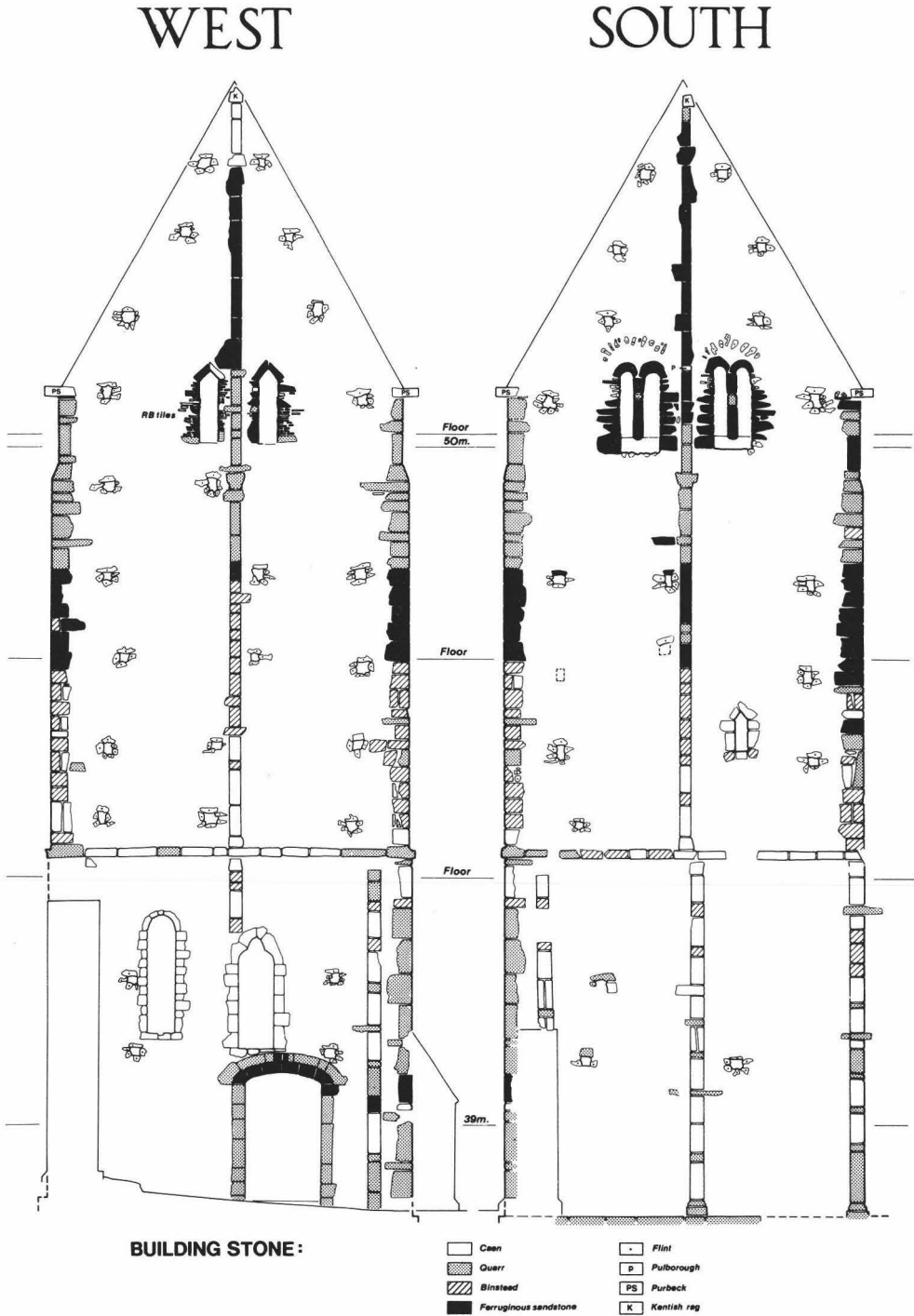


Fig. 3. External elevations of the tower showing the types of stone used (Based on identifications by Dr M. Owen).

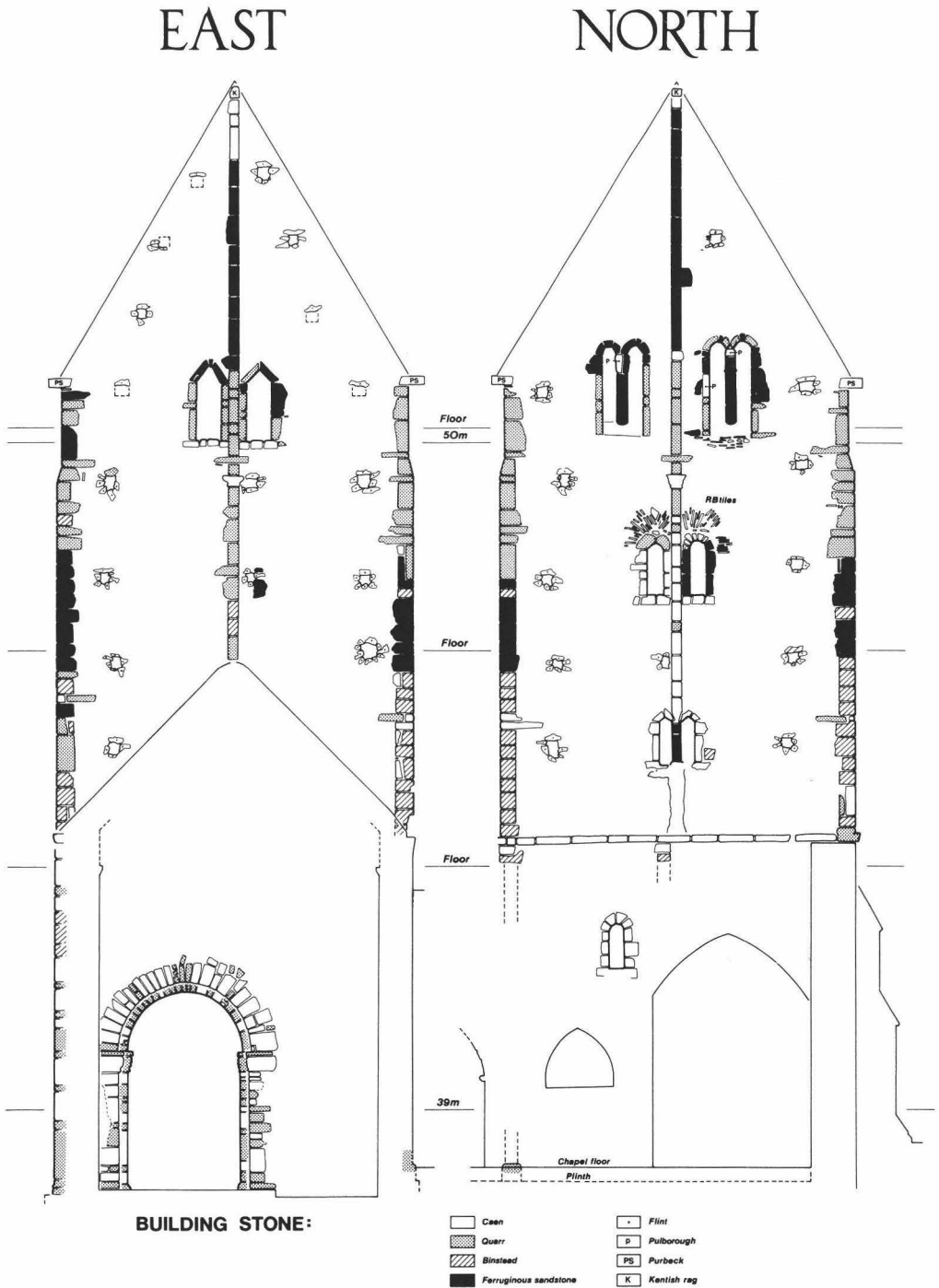


Fig. 4. External elevations of the tower showing the types of stone used (Based on identifications by Dr M. Owen).

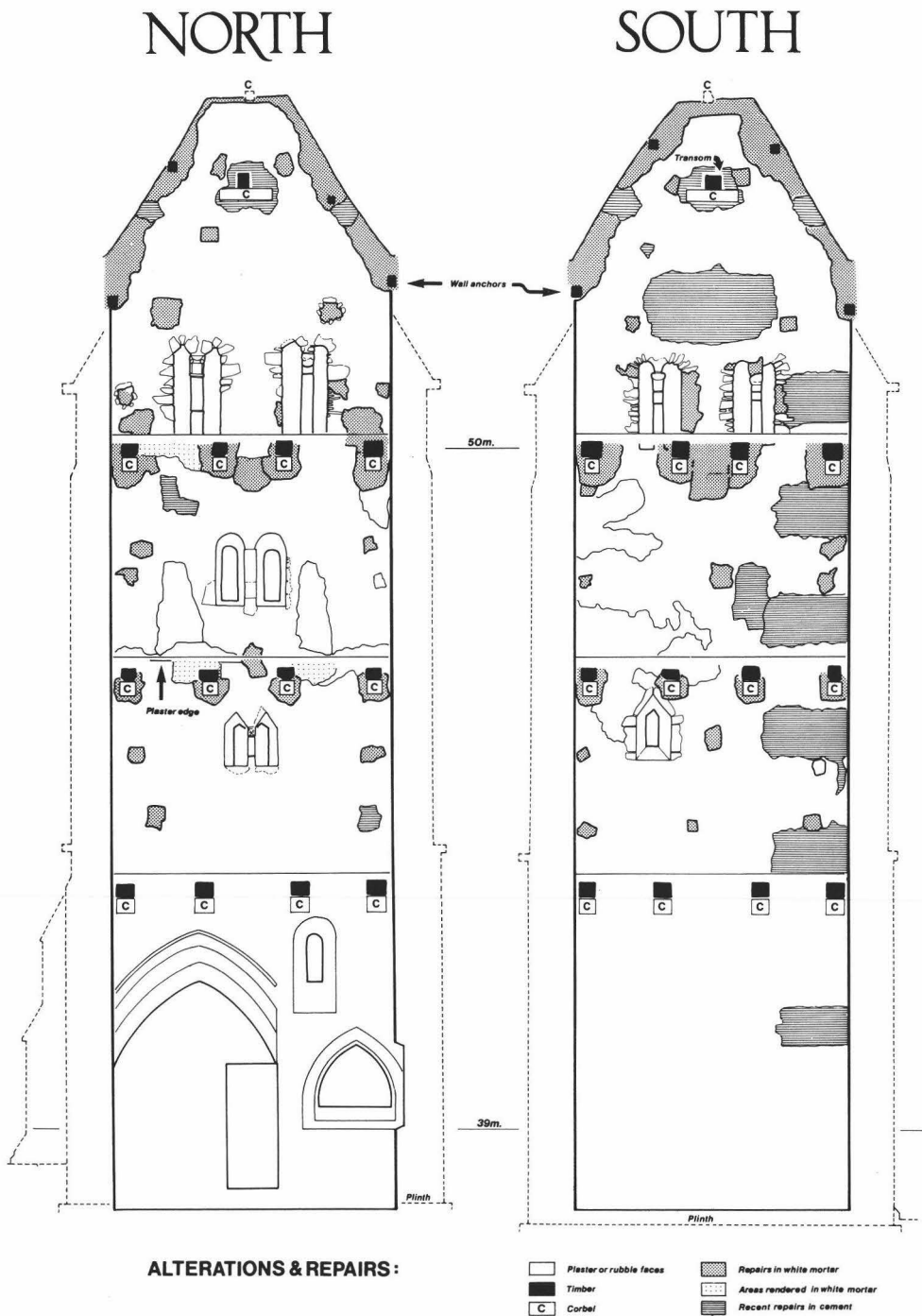


Fig. 5. Internal elevations of the tower, showing repairs and alterations (Based on site drawings at 1/20 by F. G. Aldsworth July 1984).

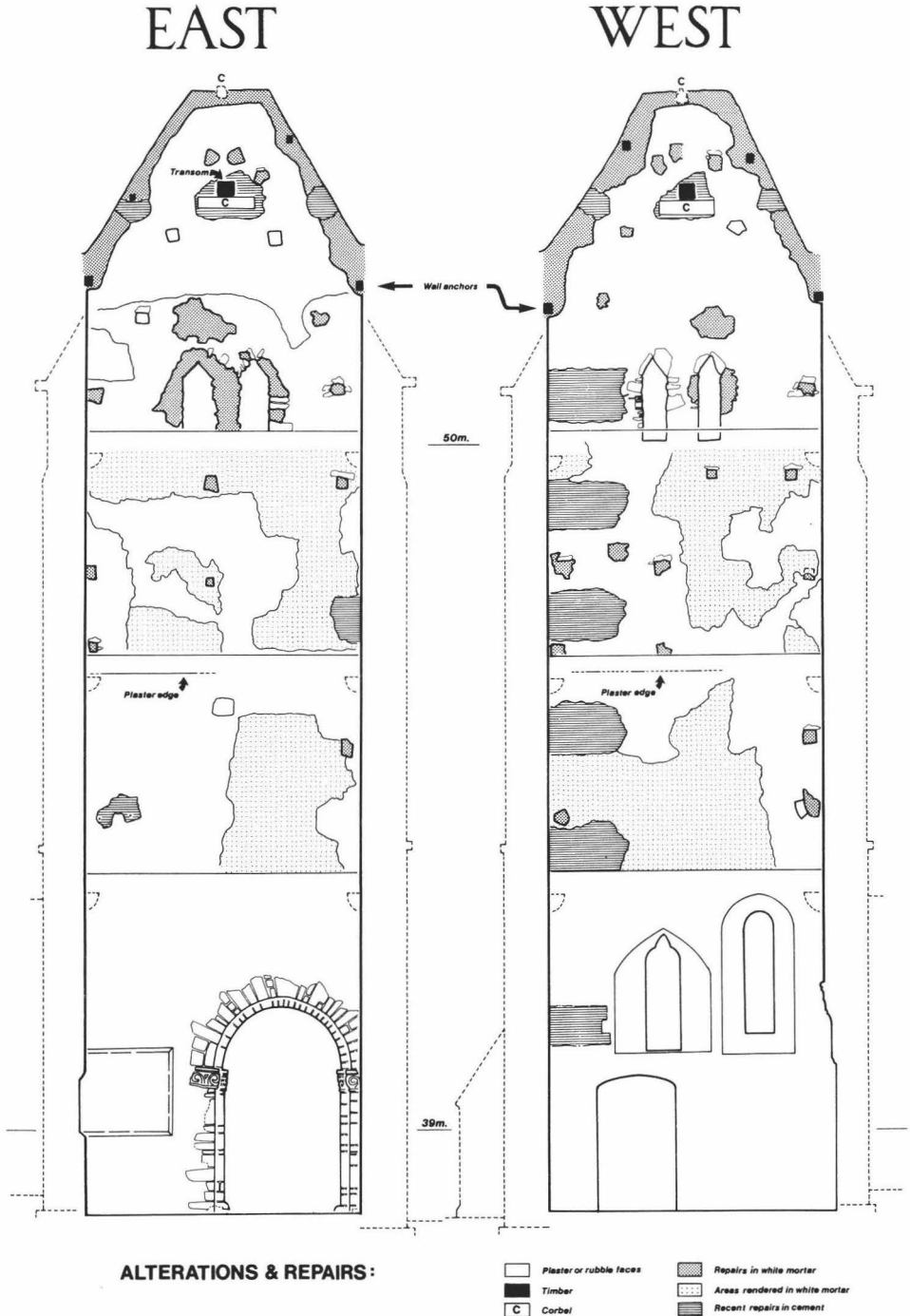


Fig. 6. Internal elevations of the tower, showing repairs and alterations (Based on site drawings at 1/20 by F. G. Aldsworth July 1984).

double-splayed window in the north wall which appears to be the only original opening. These features are almost entirely constructed of Caen and Quarr stone with a few pieces of Binstead stone used nearer the top. Later additions and insertions include external buttresses at the south-west and north-west corners, a doorway and two windows in the west wall, and two, now blocked, openings in the north wall which provided access and light into the 14th-century chapel, rebuilt as St. John's Chapel in 1971, now the Hospitallers' Room.

The *plinth course*, which indicates the original floor level, survives only on the south side and here it supports the chamfered bases of two square pilaster strips. The chamfered base of another pilaster strip was discovered by Emil Godfrey in 1951 near the north-east corner of the tower and part of this is exposed a little above the floor in the chapel (Figs. 2 & 4). If this is *in situ*, and judging by Emil Godfrey's notes there seems no reason to believe that it is not, then the plinth at the base of the north wall must have been about 25 cm. higher than that on the south side.

The remains of eight *pilaster strips*, built in long and short style and projecting about 4 cm. from the face of the rubble wall, can be traced whilst the site of a ninth can be deduced from the pattern of the others though its site is occupied by the west wall of St. John's Chapel.

The pilaster strip at the south-east corner is of particular interest because at least two of its horizontally laid stones extend eastward from the pilaster along the outer face of the wall of the nave. The upper one has not been tooled back to the face of the wall and may be a later insertion but the lower one appears to be an original feature. This is a clear indication that the south wall of the present tower, which is 82 cm. thick, originally continued eastwards before being rebuilt in the 12th century as the south wall of the nave. The plinth may also extend further east but it is not visible at present.

Where the pilaster strips survive to their original height they appear to have been chamfered into the face of the wall at the top and

were seemingly not intended to support the string course which for this and other reasons is assigned to Period II.

The lower eight courses of stone in the south-west *quoin* are constructed in true long and short style but above this they are side alternate.

The *round-headed window* in the north wall is entirely constructed of Caen stone and there is no indication to suggest that it has been inserted (Fig. 7). It is splayed both internally and externally and is the only surviving evidence for an opening into the original west end of the building. During the 19th century the window was blocked but it was re-opened shortly after 1918 (WSRO Par 177/4/8).

The *Norman window* towards the northern end of the west wall (Figs. 3 & 6) was presumably the central light for a tower-base chapel with its altar against the west face of the wall to the north of the tower arch (see below). Since there was a pre-existing window in the north wall the need for and the position of this second opening implies the presence of a full-height partition on the ground stage. The siting of a further, perhaps late-13th or early-14th century, window near the centre of the west wall, rather than in the centre of the southern bay to match the window in the north bay, implies the presence of a stair to first floor level in the south-west corner of the tower.

Other features worthy of note are the original *put-log* holes in the south and west elevations and the three-centred arch for the doorway into the west end which was probably inserted in the 15th century. It was placed off-centre to align with the Period II tower arch.

The remains of the Period I structure thus comprise the cube-shaped west end of a building which originally extended eastwards (Fig. 8a). It had a plinth course and three pilaster strips, 22 cm. wide, on each face, those at the south-west and north-west corners being offset 50 cm. from the corners. The only surviving quoin is built in both long and short and side-alternate ashlar work and the only opening is a double-splayed round-headed window in the north wall. Several alternative reconstructions of the original

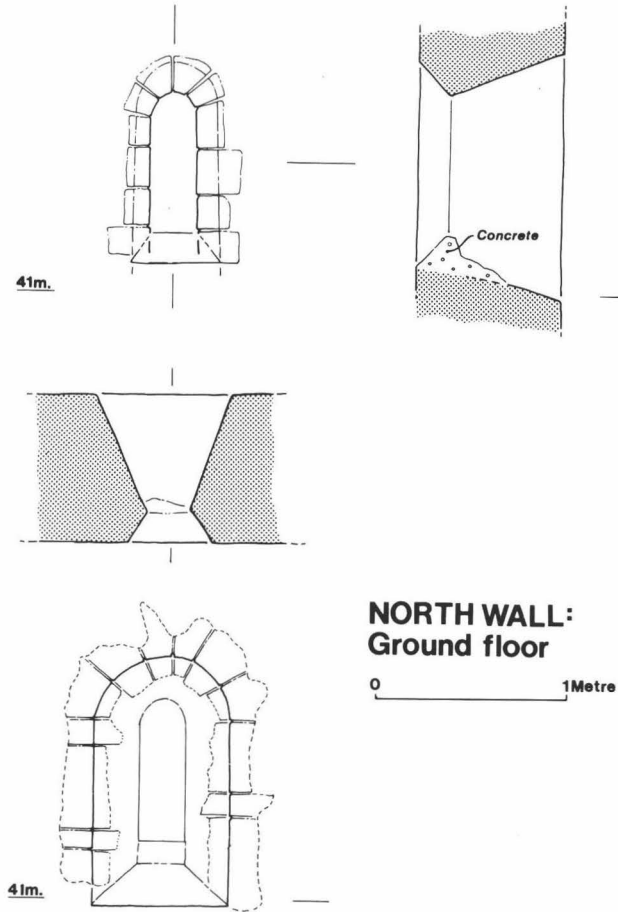


Fig. 7. The Period I (Anglo-Saxon) window in the north wall.

building are possible. The least likely interpretation is that the remains are of a free-standing tower—measuring 6.3 metres east-west by 5.85 metres north-south—with the east wall, which would have contained the only doorway, later removed. Free-standing towers are known in Anglo-Saxon contexts but the ground plan and the positioning of the pilasters suggest that it is unlikely that one existed at Sompting. It seems far more likely that what survives is either the west end of a nave, built in similar style to those at Woolbeding (Taylor & Taylor 1965, 684–5) and Corhampton (Taylor & Taylor 1965, 176–9)

(Fig. 8a), or a west porch, though the absence of a west door would seem to preclude the latter.

Period II: The 11th-century tower

Immediately above the remains of the Period I structure is a square *string course* which extends around all but the east side. It is decorated with pairs of vertical half-round channels cut alternately from the upper and lower edges, interpreted by Richard Gem as a form of upright leaf motif (Gem 1983, 123). Its form of execution is not dissimilar to the method used to produce the two superimposed rows of

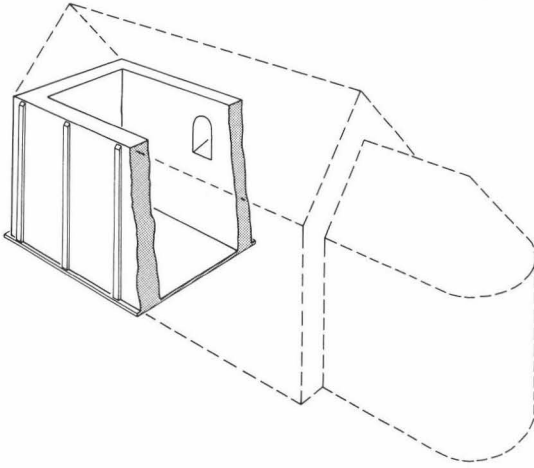
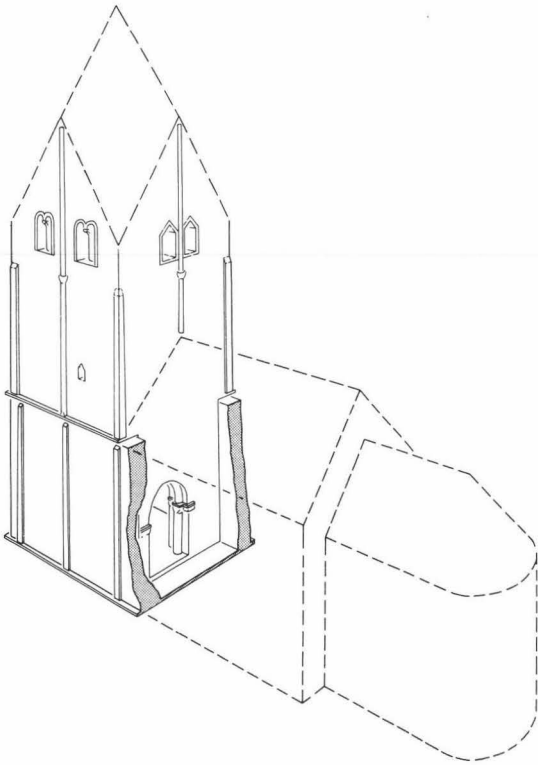


Fig. 8. a (above), the Period I (Anglo-Saxon) structure. b (below). The Period II (11th century) structure. The shape of the present roof is shown dotted.



upright leaves on the capital of the engaged half-columnar shaft on the north wall of the tower (Fig. 9). The string course has been partially defaced on the north side, probably when the 14th-century north chapel was added, and the form of this and the loss of the central pilaster and half-columnar shaft above, would be consistent with the chapel having had a north-south gable roof. There are also indications on the south and west faces, where the string course decoration does not run continuously, that some or all of the stones could have been re-used or re-set. On balance, however, this seems unlikely and the relationship between the string course and the architectural details above and below it suggests that in its present form the string course is probably contemporary with the upper part of the tower rather than the lower part.

Above the string course the four walls rise for a further 12.3 metres to terminate in gables with *corbels* both at apex and eaves level, but all of these have been inserted (see below). Extending from the apex down the centre of the face of each wall is an *engaged half-round columnar shaft* which originally descended on all but the east side to the string course—expanding slightly from 14 cm. in diameter at the top to 18 cm. at the bottom—where they terminated in a chamfered cubic. On the north face the lower courses of the shaft have been destroyed below the double window at first floor level and on the east face the shaft terminates at the gable of the nave. On the north and south faces the half-columnar shafts do not sit immediately above the pilaster strips of the Period I structure, as in the west elevation, but are displaced 20 cm. to the west so that all four shafts rise up the centre of each wall of the tower to the gables, interrupted only a little below belfry floor level on each elevation by a *decorated capital*. The capital on the north side is intact and ornamented with two superimposed rows of upright leaves and the one on the west side has long leaves which turn at the ends like volutes (Fig. 9). The other two are badly defaced by

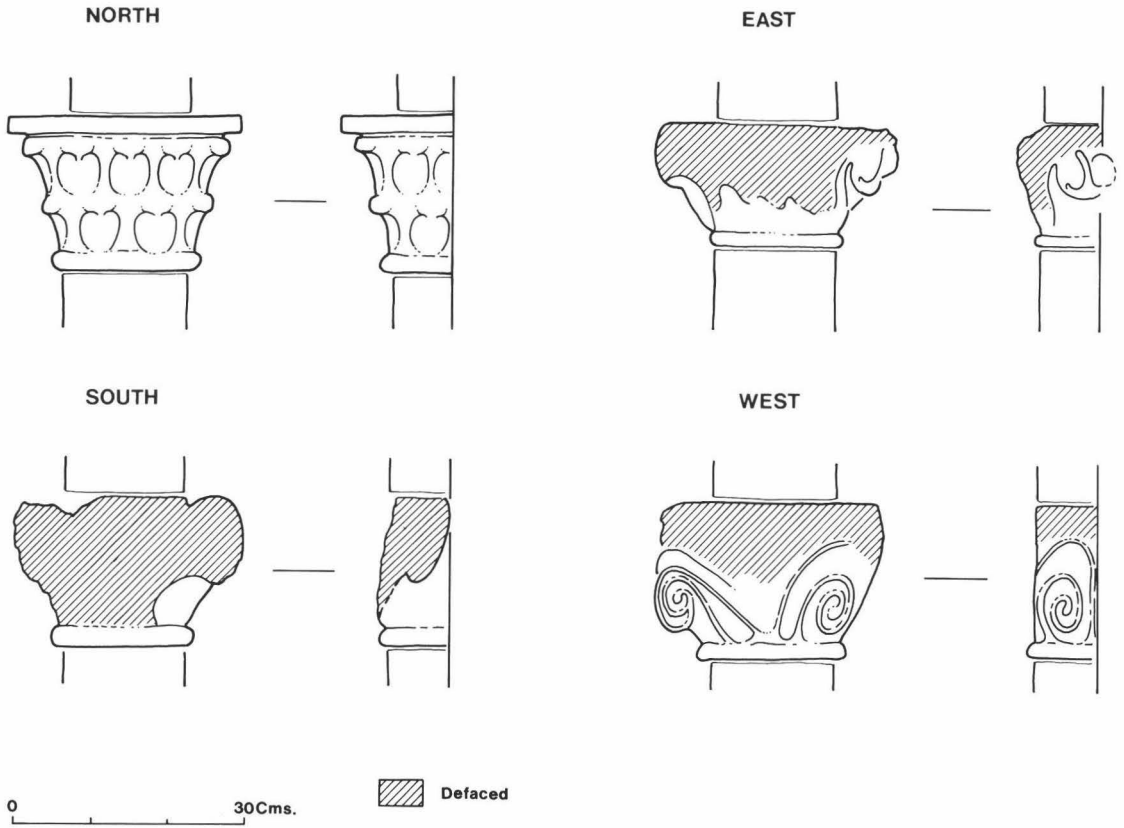


Fig. 9. The half-columnar shaft capitals. The diagonally hatched areas are defaced.

erosion but both may have been similar to that on the west side.

The *quoins* have been cut to form *raised square pilasters*, varying from 26 to 32 cm. wide and up to 4 cm. deep. These rise from the string course and terminate in a chamfered shoulder at the level of the capitals on the half-round columnar shafts.

The *sources of stone* for the ashlar work of the string course and the upper part of the tower require comment. The use of different types of stone seems to change with the different masonry lifts, as indicated by the putlog holes: i.e. the first two were of Binstead, the next one ferruginous sandstone, and the next two Quarr, although immediately above the string course as far as the

level of the second floor very small pieces of stone are used where larger pieces would normally have been employed. This would appear to indicate that stone was initially in short supply when the tower was added, the pieces used being either re-used from this or another structure or found lying around as waste from earlier works. The quantity of re-used stone and Roman brick, some with Romano-British mortar still adhering, would seem to imply the recycling of material from a nearby building. Above the second floor level more regular supplies of different types of stone appear to have become available and their pattern of use seems to reflect this rather than different phases of construction (Figs. 3 & 4).

The remains of eleven *windows* survive in the

upper part of the tower, two at first floor, one at second floor and eight at belfry level. All appear to be contemporary with the walls in which they are set though they differ slightly in detail.

At first floor level in the south wall is a *single-splayed triangular-headed window* constructed of Caen and Binstead stone (Fig. 10a). Externally it carries a hood mould and a shutter rebate. The jambs are not throughstones but are plastered. The fenestration of the tower was clearly designed to be seen from the north and this odd little window can be explained in one of two ways. Either it was to light an altar on the first floor, or, perhaps more likely, it lit the stair. During the 19th century the window was blocked but it was re-opened soon after 1918 (WSRO Par 177/4/8).

At first floor level in the north wall is a *double-triangular-headed window* which incorporates the half-columnar shaft as its central jamb (Fig. 10b). The openings are decorated on the external elevation with a roll moulding on the arris to match the half columnar shaft into which their heads are jointed. The sill terminates at either end in traces of weathered decoration which Richard Gem describes as volutes (Gem 1983, 128). The internal elevations were originally plastered except at the top of the central jamb where a stone is carved with the face of a bearded human figure (Fig. 10b & Plate I). There is no evidence to indicate that this stone has been inserted and it seems to be an original piece of sculpture which the edge of the plasterwork respects.

At second floor level in the north wall is a *pair of round-headed single-splayed windows* which incorporate the half-columnar shaft as part of their common central jamb (Fig. 10c). The openings are decorated on the external elevation with roll mouldings on the arrises and there are traces of a hood mould above and a sill below. On the internal elevation the jambs incorporate a number of re-used Romano-British tiles.

At belfry level there are eight windows—two double windows in each of the north and

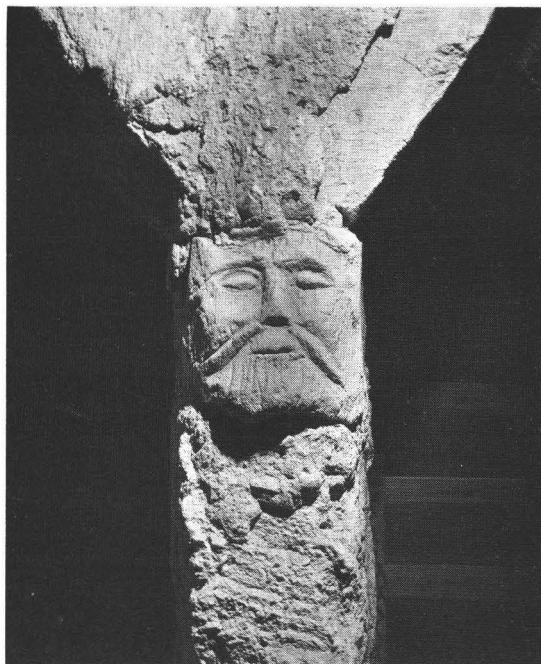


Plate I. The face on the internal jamb of the first floor window on the north elevation.

south walls and two single windows in each of the east and west walls. They have all been repaired or modified and their sills have been raised to a higher level using concrete, an alteration that probably took place in 1923 (see below). The *two double round-headed windows* in the north wall are a pair set equidistant on either side of the half-columnar shaft (Fig. 11a). Their round mid-wall shafts support capitals drawn out to the thickness of the wall, in the form of throughstone slabs, and these have been partly repaired with Pulborough stone. The capitals are both carved in relief with long leaves which are turned at the ends like volutes. The external jambs have roll mouldings on their arrises and the internal jambs incorporate re-used Romano-British tiles.

The *two double round-headed windows* in the south wall, which have relieving arches made of stone on edge, are similar to those in the north wall except that the capitals of the mid-wall shafts are plain and only the heads have roll

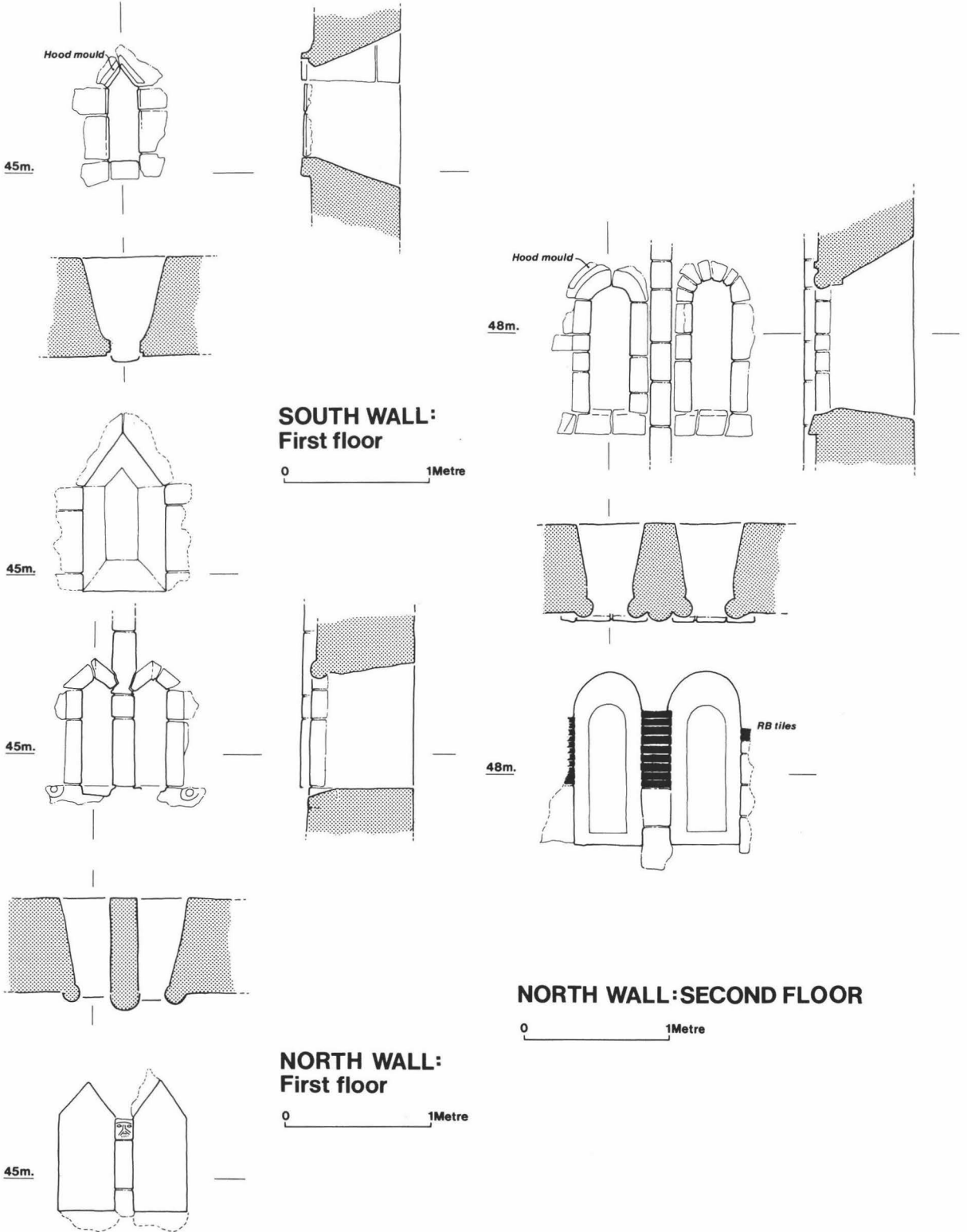


Fig. 10. Period II (11th century) windows. a (top left). South wall at first floor level. b (bottom left). North wall at first floor level. c (right). North wall at second floor level.

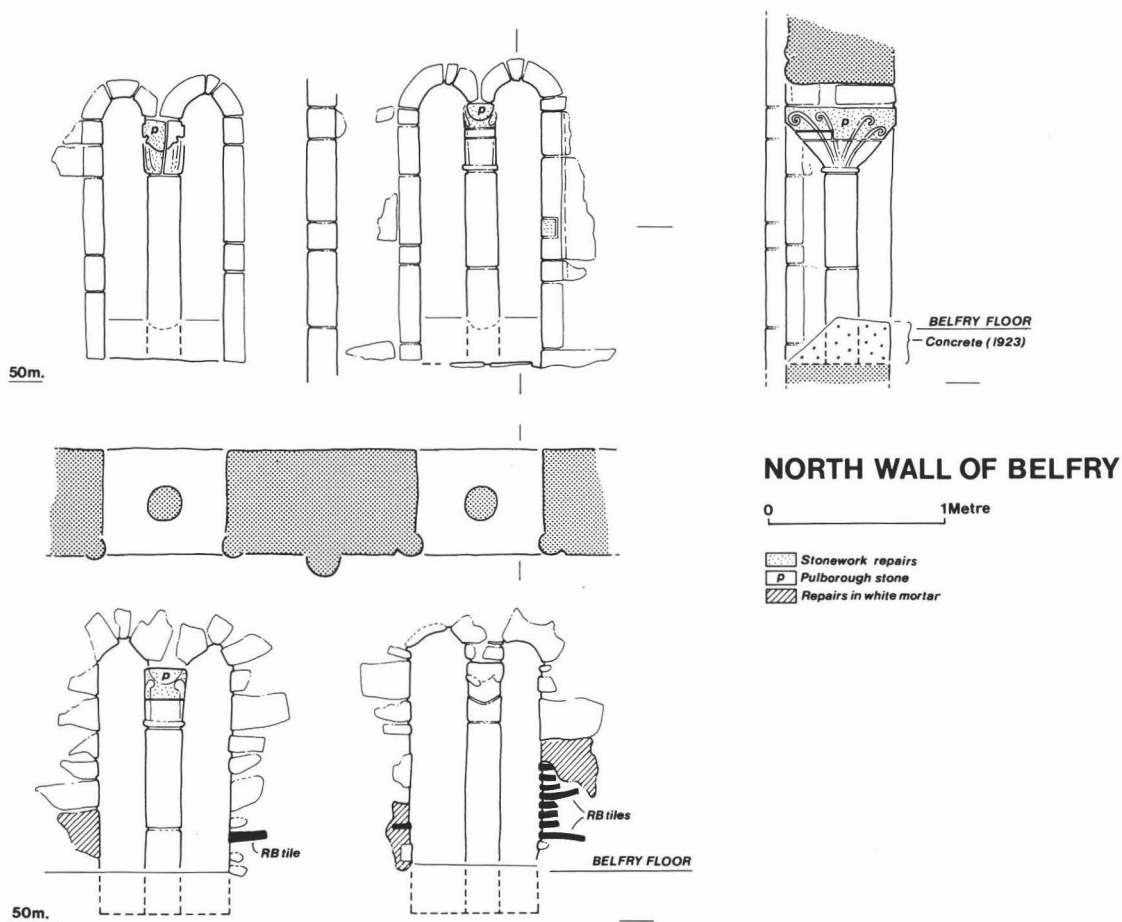


Fig. 11a. Period II (11th century) windows. North wall.

mouldings on the external elevation (Fig. 11b). The jambs are of rubble stone and internally these have been substantially repaired and replaced with some modern brick.

The *two triangular-headed windows* in the east wall form a pair and are set very close together on either side of the half-columnar shaft (Fig. 12a). The external jambs have roll mouldings on the arrises, cut back at a later date in the north window to accommodate a former bell frame, and a sill. The internal jambs have been rebuilt almost entirely.

The *two triangular-headed windows* in the

west wall form a pair though much simpler than those in the east wall (Fig. 12b). Only their heads have roll mouldings on the external elevation, the remainder of the jambs, both externally and internally, are built of rubble stone and a large number of Romano-British tiles. The internal jambs of the north window are repaired using modern bricks.

During his repairs to the tower in 1967 Emil Godfrey encountered at least three *longitudinal wall cavities* which probably carried timbers though no trace of wood survived. All three holes have subsequently been sealed and their former

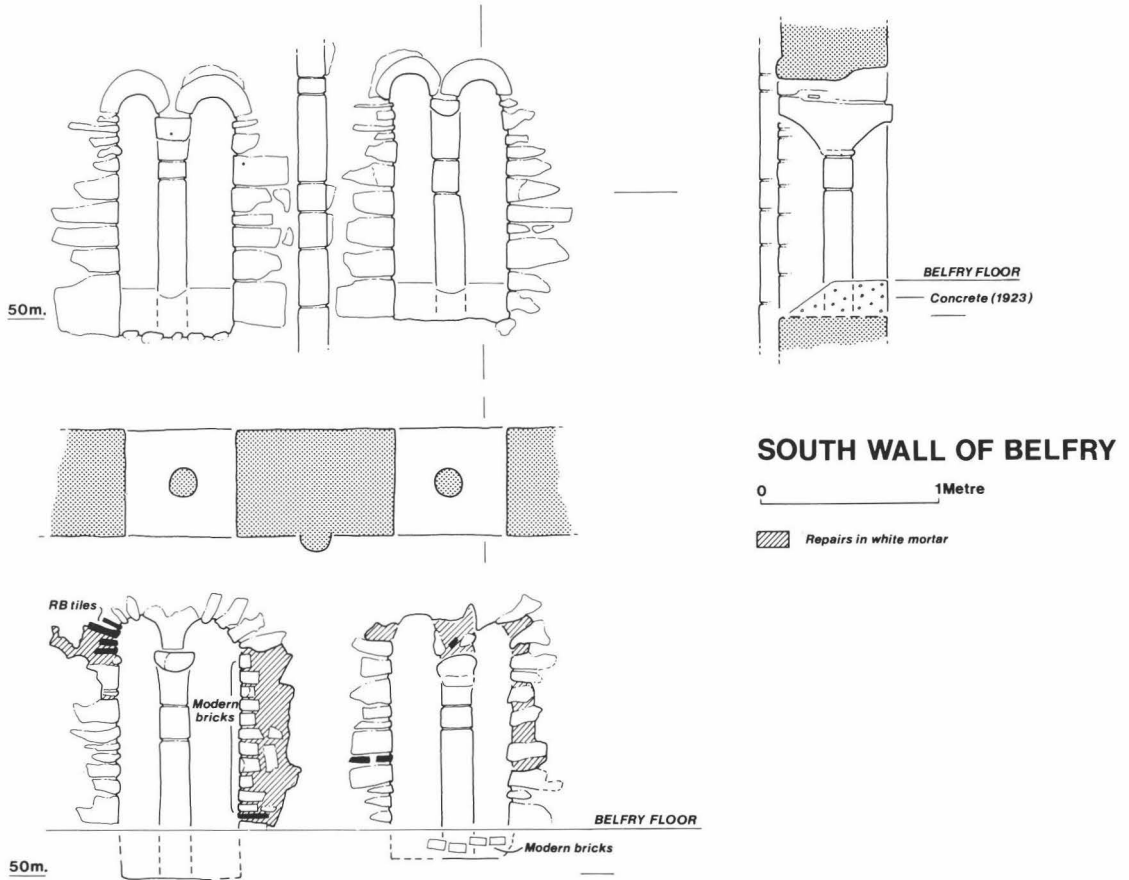


Fig. 11b. Period II (11th century) windows. South wall.

positions can only be deduced from Godfrey's brief notes and photographs (Figs. 1 & 2). The most extensively explored was the one set immediately below the level of the half-columnar shaft capital in the south wall. Here a timber measuring approximately 11 inches by 4 inches and at least 13 feet long was laid flat at a depth of 8 inches from the external face of the wall. Another was found immediately behind the capital in the north wall and a third, of similar dimensions to the first but set on edge, was found above the belfry windows in the west elevation. The void in the west elevation could either be timber lacing to strengthen the top of the tower

or be associated with the seating of an earlier spire and bell-hanging timbers. The voids in the north and south walls could also be timber lacing to strengthen the gables or part of a former base frame for a spire (see below).

A large number of original *put-log holes* survive in the external elevations and traces of some of these can also be seen internally (Figs. 1, 2, 5 & 6). They are mostly constructed of flint and have been preserved during successive phases of repair and restoration. The stages of scaffolding were set between 1.2 and 1.5 metres apart and up to the beginning of the gable each stage was supported from three put-log

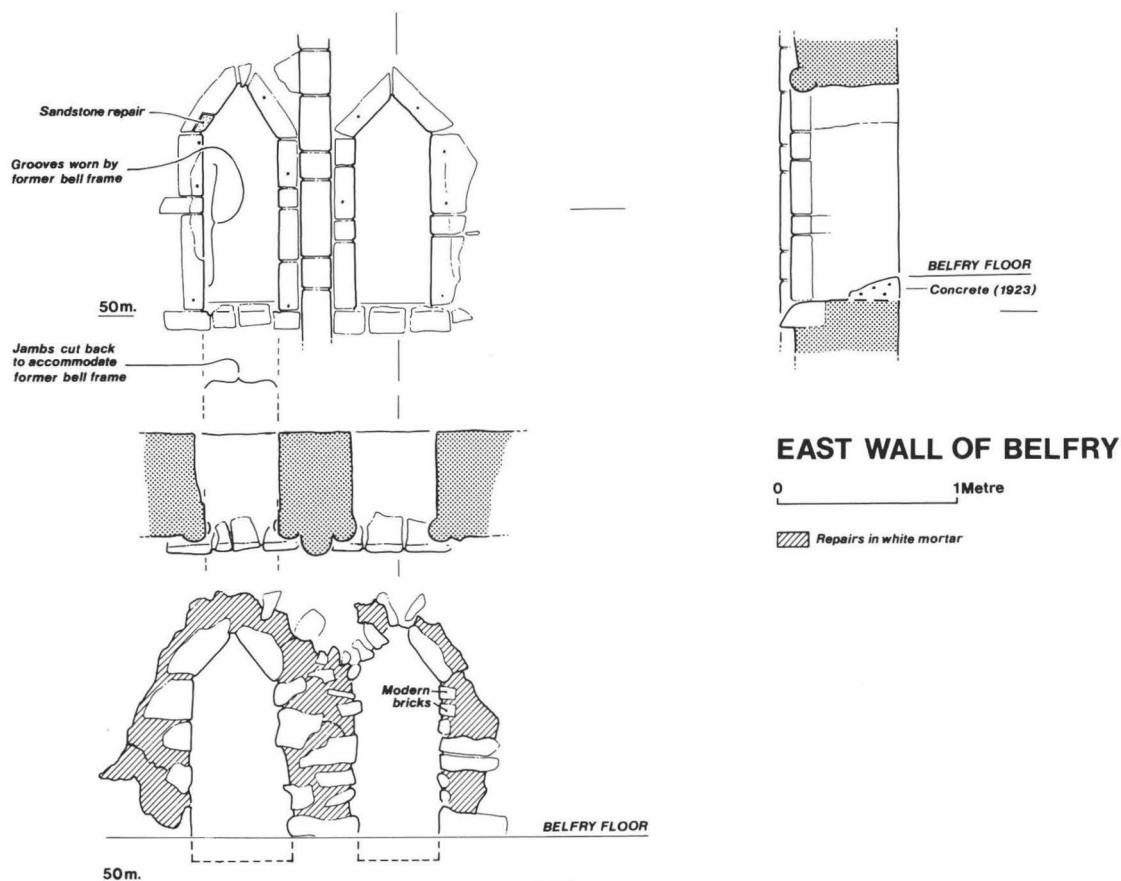


Fig. 12a. Period II (11th century) windows. East wall.

holes on each elevation. In the gables only two put-log holes were used to support each stage and as they near the apex they are set closer together, suggesting that the present shape of the gables has not been changed, or has been changed only slightly, from the original form.

The tower arch is not centrally placed in the east wall of the tower but it is offset to the south (Figs. 2 & 6). There is no evidence, as yet, to account for this, though, as some writers have suggested, it may have been to allow for an altar against the northern part of the wall. The round-headed arch is constructed entirely of Caen and Quarr stone except where repaired

during the 19th century having been reduced for a time to a small doorway, as shown on the plan by Edward Hide (1827), and then re-opened, as shown on the plan by William Blaker (1828). The attached half-columns carry a roll-moulding round the soffit of the arch, and have double-chamfered bases and capitals carved with three rows of upright leaves (Fig. 13). The four other stones that make up the imposts of the jambs, however, have more elaborate decoration in the form of thick volutes enclosing clusters of berries and separated by frond leaves, and these have the appearance of being a little older than the remainder of the tower arch (Fig. 14).² In their

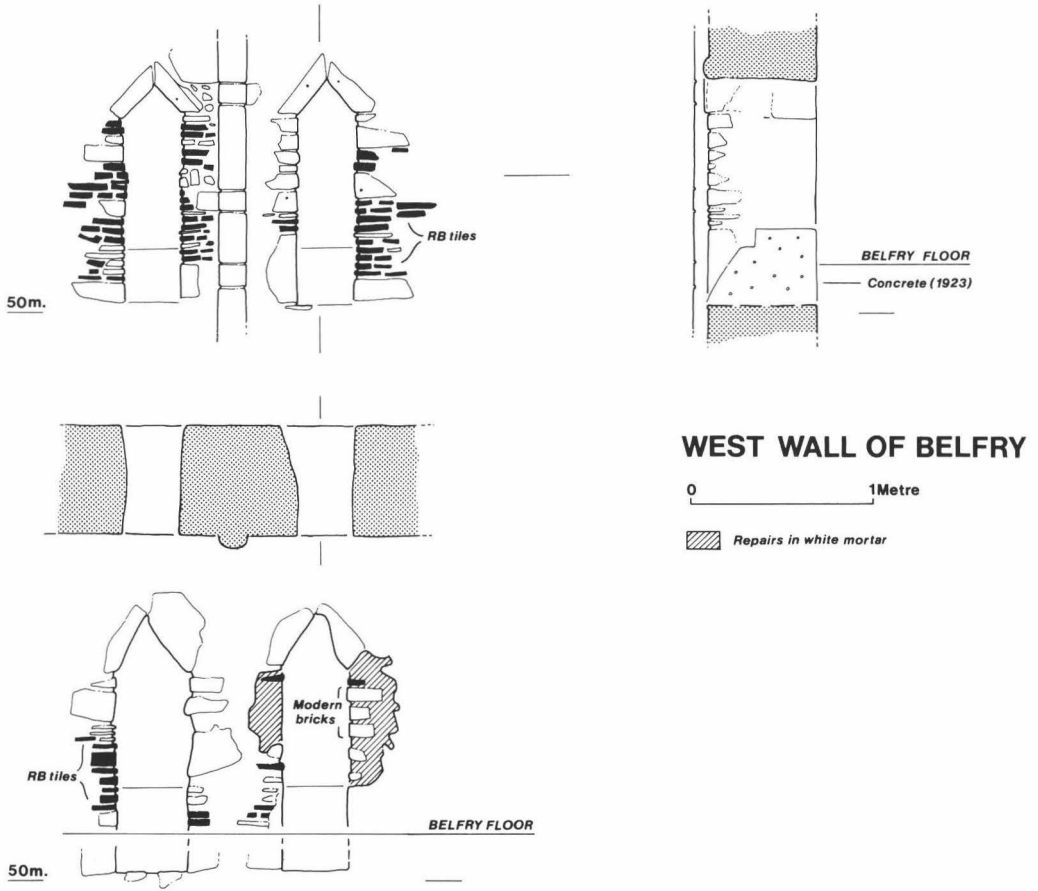


Fig. 12b. Period II (11th century) windows. West wall.

original form all four stones were probably 50 cm. long, 25 cm. high and 20 cm. deep but some have been modified. The one on the east face of the north impost has been partially re-tooled at its east end, whilst the two pieces on the south side have been cut back to fit their new positions and the decoration has been partially obscured by the adjoining walls of the nave. The decoration on the piece at the south-east side shows signs of having been partially defaced by erosion but the remainder are quite fresh. It seems likely, therefore, that these four pieces have been re-used from an earlier internal feature, perhaps a font or more likely a chancel

arch, on this site.

Similarities between the architectural style of the tower arch and the tower, especially the detail of the half-column capitals of the arch and at least one of the half-columnar capitals of the tower, suggest that they were constructed at about the same time. Richard Gem (1983) argues that both the tower and the tower arch belong to the latter part of the 11th century and were most likely to have been built in c.1080–1090.

The original spire

Since the existing spire has been shown by dendrochronology to date from the early 14th

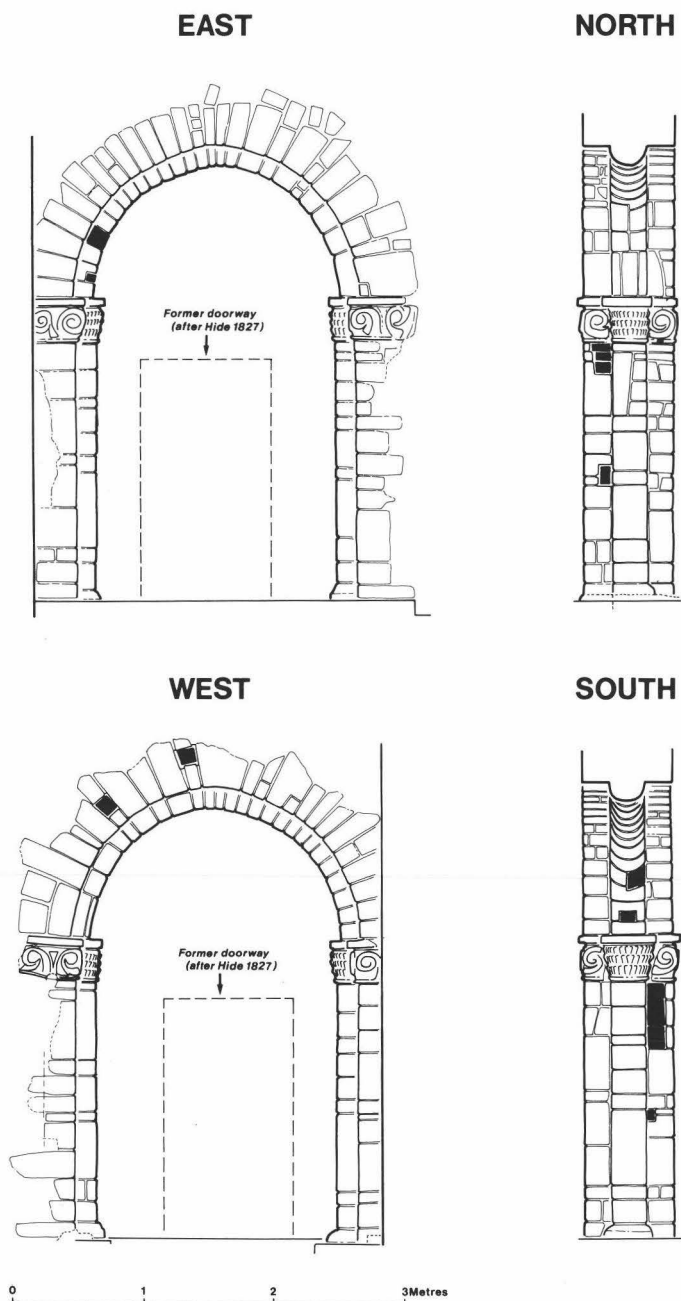


Fig. 13. The Tower Arch. The stones shown solid black are 19th-century repairs.

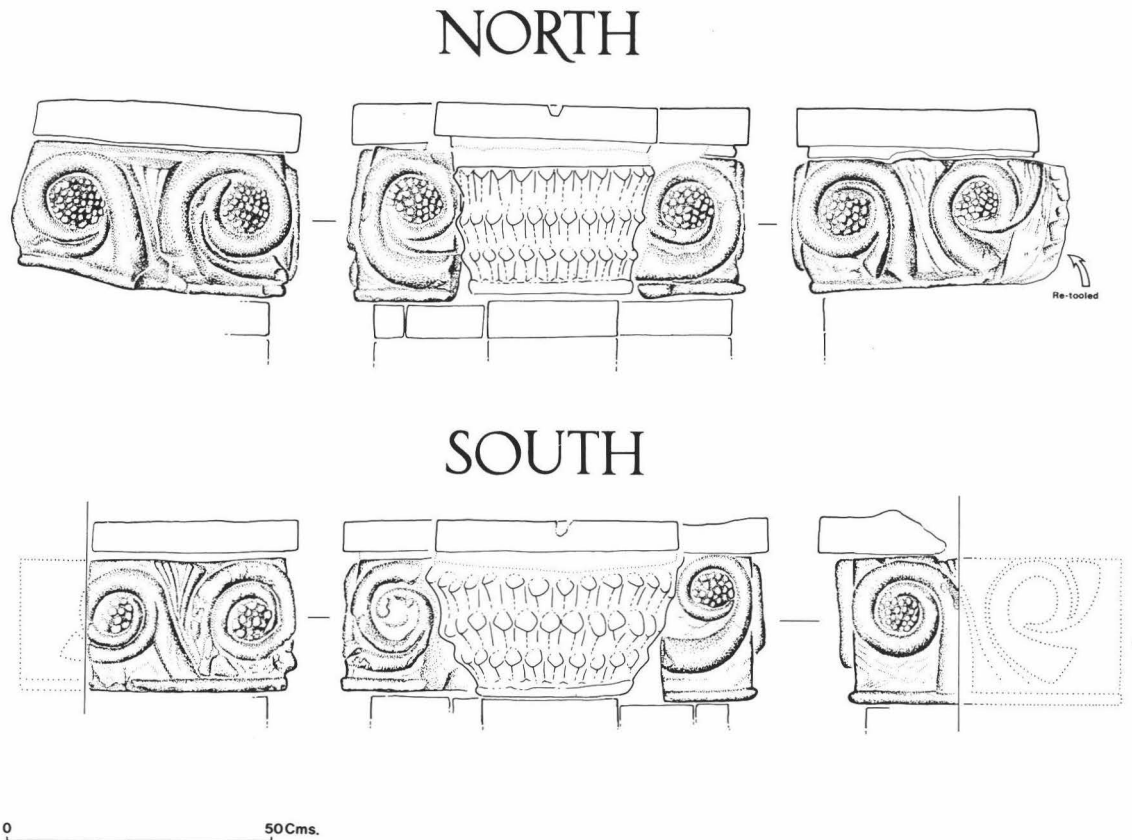


Fig. 14. The imposts on the jambs of the tower arch. The dotted lines are hypothetical reconstructions of the modified stones.

century (see below) it is necessary to look for evidence for the original form of the roof. When the Period I Anglo-Saxon church was modified to carry the tower, the part of the church adapted as its first level was in the form of a cube measuring approximately 5.8 metres in each direction. The string course was laid above this and then the tower was commenced. From the top of the string course to the belfry floor level the tower is again in the form of a cube, slightly smaller than the one beneath it. The original belfry floor level is marked by four 'events' in the structure: the capitals on the half-columnar shafts in the centre of each wall; the slight

necking in of the tower and the associated chamfered quoins; two of the longitudinal wall cavities discovered by Emil Godfrey; and filled voids on the inside of the north and south walls that probably originally took the ends of three beams spanning north-south across the tower at that level (Fig. 5).

A possible, and we believe likely, explanation is that the original masonry tower terminated at this level and was capped by timber gables supporting a spire of similar shape to the present one (Fig. 15a). The three beams would have formed the base frame for the spire. Such an arrangement, with gables hung with wooden



Plate II. The censer cover from Pershore. (Reproduced by courtesy of the Trustees of the British Museum).

shingles, is depicted on the Pershore censer cover (Wilson 1964, 157 No. 56 Plate XXVII and here as plate II), and has been suggested for Barton-on-Humber, where evidence for a base frame of three beams was also found (Rodwell 1986).

Another possibility is that the tower terminated in the form of a third cube in either masonry or timber, the whole tower measuring 18.2 metres in height and having a height to width ratio of 3 to 1 (Fig. 15b). This would make it similar in size and shape to a number of other Anglo-Saxon towers (Taylor 1978, 887–914 Fig. 698). The positions of the put-log holes and the existence of the half-columnar shafts render it extremely unlikely that the existing gables are the cut-down remnants of such a masonry storey, but its construction in timber is an intriguing possibility, for which unfortunately there are no surviving precedents.

Alternatively, since the east and west belfry windows differ in detail from those on the north

and south, there may have been masonry gables on the east and west walls only (Fig. 15c). However, there is no evidence for encased gables inside the structure and the half-columnar shafts and capitals on the north and south elevations would be superfluous to such an arrangement.

If, on the other hand, the masonry of the existing gables is contemporary with the tower beneath, and to accept this we must accept that the 'floating' capitals at belfry floor level had no structural function, then the only possibility is that there was originally a 'Rhenish helm' spire on the gables set at a higher level than the present one (Fig. 15d).

Of these alternatives we believe the most likely interpretation of the evidence is that the masonry of the original tower terminated at the level of the shaft capitals and was capped by timber gables with a helm roof. However, the existing gables and belfry windows are very similar in architectural style to the tower below indicating that they must have been added soon after the original construction of the tower.

Later alterations and repairs

Other than those already referred to, the principal modifications made to the outside of the tower can be seen in the gables. At each of the four lower corners of the roof, and inserted into the quoins at the eaves of the gables, are corbels. These are rectangular blocks of Purbeck stone, a type of stone not used elsewhere in the external elevations of the 11th-century tower, with diagonal tooling in a form which appears to indicate that they are of no great age. All four have been inserted into the quoins using a light coloured lime-based mortar which is quite distinct from the mortar used elsewhere in the quoins (Figs. 1 & 2).

At the apex of each gable is a further protruding stone or corbel which Taylor & Taylor refer to as a *prokrossos* (1965, 558). All four are of Kentish ragstone, a type of stone not used elsewhere in the external elevations of the 11th-century tower, and it is clear that all four

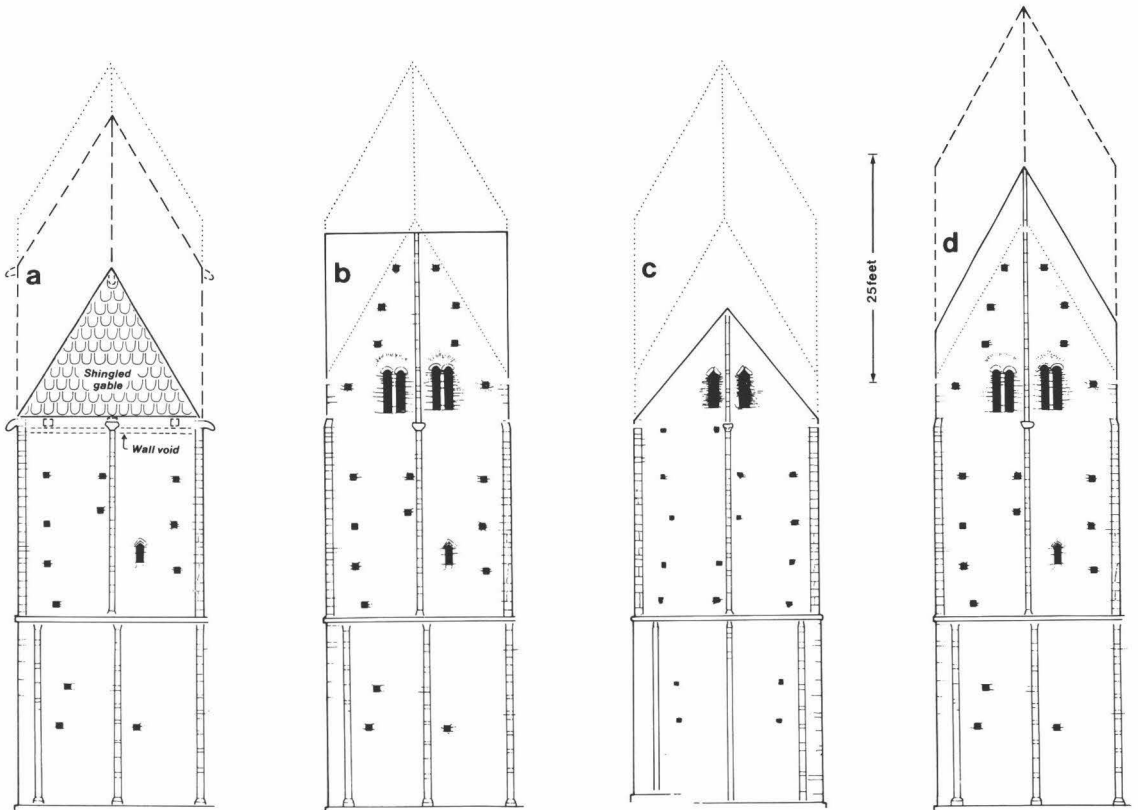


Fig. 15. Hypothetical reconstructions of the Period II (11th century) tower. The present roof line is shown by the dotted line. An addition of 25 ft., to allow for Cartwright's suggestion that the spire was lowered by about that amount, is shown for information.

are later insertions in the Period II tower (Figs. 5 & 6). These corbels have been chamfered at the back to carry a flat timber down the slope of the gable and on the south and west elevations the chamfers are pierced to take wooden pegs to secure the timber in position. Several mid 19th-century illustrations of the tower show a flat board running down the gables and this feature is most pronounced on the drawing by Edward Blore in the 1840s (B.L. Add. MS. 4200).

In his drawings of the north and west elevations F. A. Crouch (1910) indicates changes of fabric down the line of the gables and these can be seen on all four elevations, though now partly rendered over, as repairs made some time after the lower corbels were inserted (Figs. 1 & 2).

Internally the evidence for alterations and repairs made to the top of the tower is more extensive and there are also indications of changes made to the levels of both the second floor and the belfry floor (Figs. 5 & 6). All four internal elevations of the tower appear to have been plastered from ground level to the very tops of the walls and much of the original plaster survives today except where pierced by later additions or where it has been repaired.

At the tops of the walls the most obvious alterations are those which extend down the entire length of each gable using a very distinctive white, powdery, lime-based mortar, containing pebbly gravel. Where observed in 1984, these repairs pass through the thickness of the wall to

carry the upper corbels. The same mortar is in contact with the earlier, but not original, purlins in the lower roof slope and the wall anchors, but it is impossible to be certain whether this is later pointing or the original bedding mortar for these timbers.

The same, or a very similar, lime-based mortar was used elsewhere in the tower to repair the windows, fill re-used put-log holes, and to render areas where the original plaster must have fallen away (Figs. 5 & 6). In several places the repairs undertaken using this mortar incorporate comparatively modern bricks and the general impression gained is that some of these alterations and repairs were carried out comparatively recently, perhaps in the late 18th or 19th century.

The housings for the two base beams of the spire have been filled with modern cement and the beams underpinned with concrete corbels, so any possibility of discovering whether the beams, which date to the early 14th century, were placed in new sockets or old ones has been lost. However, the likelihood is that they were new sockets, principally because the original builders of the gables would almost certainly have arranged their put-log holes to coincide in level with main beams such as these whereas they are in each case as much as a metre above the modern corbel. Other insertions in cement include the later purlins in the lower roof slopes; the tile stitches at belfry level in the south wall and throughout the height of the tower in the southwest corner, work for which a specification was drawn up in January 1922 (WSRO Par 177/4/10); and the making good of the window sills in the tower in concrete in 1923 (WSRO Par 177/4/10).

The existing floors are not original. The present belfry floor is positioned about 28 cm. above the level of the original window sills, and immediately below it in the north and south walls are patches of repair mortar (Fig. 5) which suggest that originally there were three beams set about 60 cm. lower than present floor level. These beams probably formed the base for the

original wooden spire and gables, as mentioned above. We will refer to their level as the 'belfry floor', but they were not intended to support a floor, for at this period floors were normally carried on four or more modest beams, rather than three large ones.

All the beams of the three existing floors are supported on corbels which are of Portland stone and have clearly been inserted. The corbels are set in the distinctive lime-based white mortar that elsewhere in the tower seems to have been used in 18th- or 19th-century repairs, and the tooling and appearance of the stone confirms this date. The corbels of the first and second floors probably occupy the sockets of the original floor beams. On the north, east and west walls there are plaster edges a little below the present second-floor level indicating the highest point to which the room below had been plastered. These show that the floor level has been raised by a few centimetres, presumably as a result of the corbel stones occupying the sockets originally intended for the beams themselves.

The beams of the present floors are not of very high quality, having much waney edge. The floor joists are cogged across the beams as Hewett (1980, 20) correctly observes, but the tops of the joists are set well above the tops of the beams rather than level as shown in his drawing. Many of the joists are re-used timbers, and one of them, in the belfry floor, has what Hewett (1978, 226; 1980, 31; and 1985, 200) describes as a 'squinted lap joint that was carefully cut into a "nosing" such as was normally used to resist compression.' The two examples of this joint are shown in detail in Fig. 16. Close inspection has revealed that they are not empty lap matrices, but brace mortices cut in half when the timber that contained them was cut in half for re-use. The 'nose' is the result of the carpenter's shell auger having cut too deeply when the mortice was pre-drilled.

The first and second floors are, and probably always have been, supported on four beams spaced evenly between the walls. As to the beams of the present belfry floor, Hewett (1980)

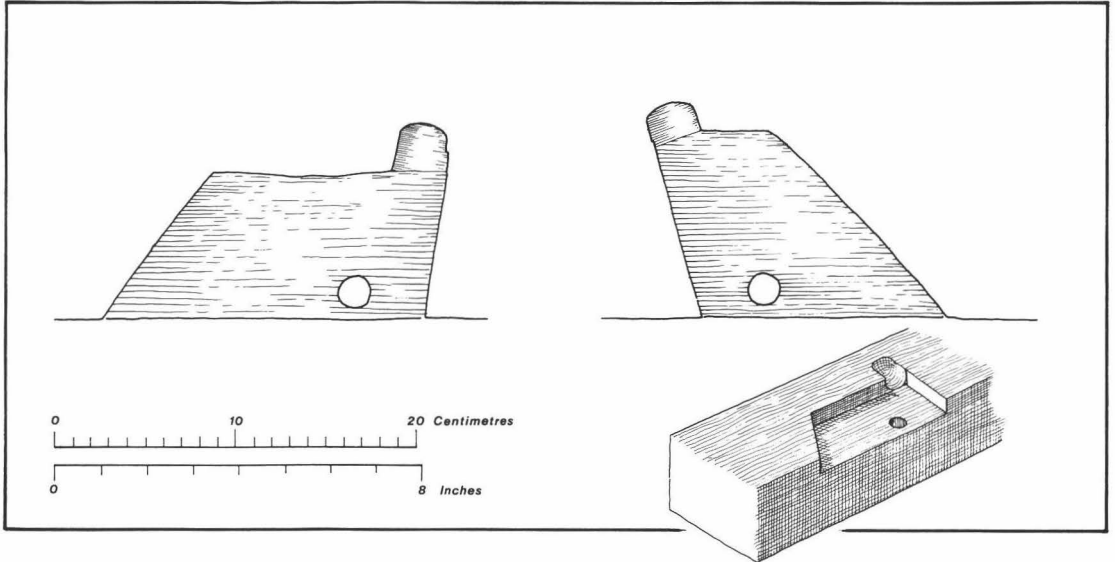


Fig. 16. Brace mortices cut in half in a re-used joist in the belfry floor. The 'noses' were formed by the auger used to pre-drill the mortices.

states that they were 'spaced in such a manner as to leave a central interstice equal to the diameter of the largest intended bell.' In fact the central interstice is too small for the present bell dated 1795² to pass through, but the side interstices are large enough. On the east side of the mast there is provision for a simple horizontal shaft which could have been used to hoist bells through the eastern interstice of the floor: there is a hole, 7.5 cm. in diameter, in the east face of the mast and a similar hole facing it in a loosely fixed upright under the eastern quarter brace (Fig. 22). The two central beams of the belfry floor lie under the side members of the bell frame and it may be this that determined their spacing.

There is very little documentary evidence to indicate precisely when the earlier repairs might have been undertaken but it is clear from old illustrations that neither the height of the tower nor the shape of the spire have been altered since 1789.

The earliest description of the tower is that by Edmund Cartwright (Dallaway &

Cartwright, 1830) who says: 'The spire is singularly shaped, each side of the square tower rising like a sharp pointed gable, from which the spire rises. It is covered with shingle. In 1762 it was reduced in height about twenty-five feet.' Cartwright must have visited the church some time after 1825, for this is the latest date on the mural monuments listed by him, but his comment concerning alterations to the tower in 1762 is not supported by any other written evidence.

The earliest surviving illustration of the spire is that by S. H. Grimm in 1789 (B. L. Add. MS. 5673, f.53) who seems at first glance to have drawn a spire rising from four gables. A closer inspection, however, shows that he evidently had some difficulty in drawing a helm spire and what was actually there in 1789 was precisely the same structure that is shown on at least twelve 19th-century illustrations dating from that by Petrie in 1804 to that by Adams in 1871 and it is this roof that survives today.

In a report in *The Builder* (Vol. XII No. 611,

541–2), published on Saturday 2 October 1854, there is a brief account of the restoration work then being undertaken on the whole church by the architect R. C. Carpenter, and it has been suggested by J. C. Allen (1985) that the spire might have been rebuilt at that time. The report says—‘The roofs have been taken off, and are being reinstated, but the walls are untouched, and, as we are told, will remain so’. It then continues ‘The architect has avoided disturbing the old work as much as possible; and beyond pointing up the masonry of the tower it will remain as hitherto, with its ancient plastering undisturbed. The spire is being recovered with oak shingles.’

The appeal prospectus for these proposed works, issued in 1853 and of which there is a copy in the library of the Sussex Archaeological Society in Lewes, includes a drawing of the tower from the north-east and refers to the fact that ‘It is proposed to repair and restore the roof throughout, the south transept of which by actual survey is pronounced even in a dangerous state, and the whole roof in a state of serious decay; the shingle of the tower, and the tower itself, where it is found to be decayed (but without changing in any way its original architecture) . . .’

The prospectus and the report in *The Builder* imply that the tower and spire were not substantially altered at this time, a view confirmed in documents supporting an Application for a Faculty made by Carpenter in 1854, and now in the Chichester Diocesan Registry, which is a: ‘Description of works proposed to be done in restoring, repairing, and reseating the parish church at Sompting.’ This document lists the actual works to be undertaken and these included:

To take down the old roofs and such parts of the walls as may be bulged or defective.

To frame new roofs of Baltic fir to be covered with stone slates or tiles.

To raise the walls of transept aisles for gables and to lower the wall of north transept to level of nave walls.

To repair or renew woodwork of porch also the floors of tower and timbers of spire and the bell frames.

The application was supported by detailed design drawings for the new roofs of nave and chancel but not for the tower or spire. It may well be that some of the alterations and repairs to the fabric of the tower were undertaken in 1854, and there is some similarity in the type of mortar used in repairs in the tower and the alterations to the north transept known to have been made by Carpenter, but there is no evidence to indicate that either the height of the tower or the form of the spire was altered at this time.

Period III: The early 14th-century helm spire

We propose to give first a brief summary of the original main structure of the spire, as shown in Fig. 17, and the dendrochronological dating. A more detailed discussion follows, together with a description of the rafters, hips, and triangular assemblies that lock the lower roof slopes onto the main walls. There are some significant differences between our analysis and those published by Cecil Hewett (1978 & 1980), on which we will comment in appropriate places.

The structure consists essentially of a braced mast standing on a pair of *crossed base beams* (Fig. 17). The base beams were cross-cogged, the north-south beam being uppermost, and their ends were built into the flint gable walls of the 11th-century tower. They are linked by four *horizontal braces* that tenon into the upper beam and lap onto the lower beam with a form of skew dovetail. These braces support four *raking struts* to the main plates. The *central mast* originally rose from a mortice in the centre of the upper beam. At the ends of the beams, where they enter the walls, are tenoned four *main posts* which stand flat against the insides of the gable walls. From mortices on the inside faces of these posts rise four inclined timbers, perhaps best christened ‘*quarter-braces*’. At the top these butt onto the four faces of the central mast; there is no joint, but the mast has an overhanging lip under

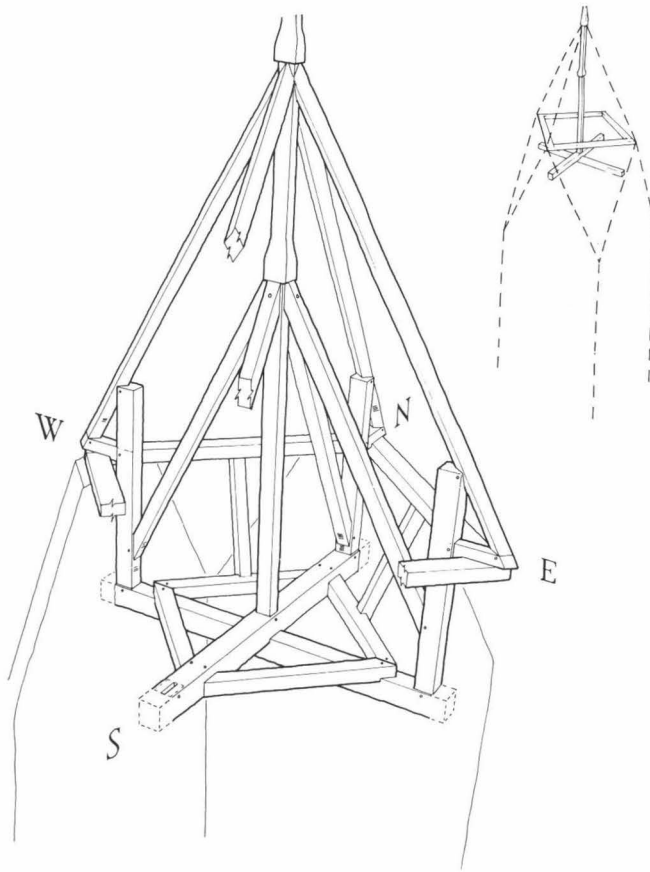


Fig. 17. General view of the main roof structure. Timbers in the foreground have been omitted for clarity. Inset shows the shape of the completed roof from the same angle.

which the quarter-braces sit and are face-pegged in place.

Four *plates* are joined to form a ring that locks the main structure together with mortice and tenon joints. They support the feet of the upper rafters and the tops of the lower rafters of each roof slope. Four short '*spur*' pieces are tenoned into the outside faces of the posts, and lap over the corners of the ring of four plates. The structure is completed by four *hips*. They rise from mortices in the ends of the spurs, pass through V-shaped trenches in the top-outside arrises of the posts, and end up butted against the

top of the mast in a similar way to the quarter-braces below, except that they are nailed rather than face-pegged.

The dendrochronological analysis of cores taken from the timbers (Appendix 1) shows that the thirteen timbers dated belong to the same construction phase; in other words, they are neither replacements nor re-used timbers. The same conclusion was drawn from examination of the timbers themselves. None of them show any signs of re-use, and the carpentry is entirely consistent throughout the spire. In particular, the carpenters' numbers, and the use of

centrelines (see below) show that the spire is the product of a single phase of building. These remarks apply only to the original main structure shown in Fig. 17. Our attempts to date the triangular locking assemblies and the later inserted timbers have failed.

The base beams, on which the stability of the whole structure depends, are substantial timbers, approximately 28 cm. square. Where they cross, the upper beam sits in 3.7 cm. square rebates cut in the upper arrises of the lower beam (Fig. 18). The soffits of the horizontal braces are level with the soffit of the upper beam, which allows the braces to have a 3.7 cm. deep lap onto the lower beam. They are reminiscent of the horizontal 'dragon ties' occasionally found in 13th- and early 14th-century buildings, which tenon into the tie beam and lap onto the wall or arcade plate, for example at Chennels Brook Farm, Horsham, and Old Court Cottage, Limpsfield (Mason 1964, 92-95); a barn at Littlebourne, Kent (Rigold 1966); and Barley Barn and Wheat Barn, Cressing Temple, Essex (Hewett 1980, 63 & 103).

The braces lap onto the lower beam with 'modified lap dovetails in pairs and addressed', as Hewett observes (1980, 15). Indeed, the shape of the dovetails is modified so much that they look more like notched-lap joints, with a very large notch, than the skew dovetails found in, for example, the cross-corner ties in much later hipped roofs (see Harris 1978, Fig. 45). Hewett himself says that the similar joints under the angle tie of the Cressing Barley barn 'must be the origin of the secret notched lap'. A single peg secures each joint.

Four raking struts, of which two survive, rose from the horizontal braces to the main plates (Fig. 19). They are birdsmouthed onto the top-outside arris of the horizontal braces, and fixed with a spike. At the top they are tenoned into the plates. The tenons are in line with the struts, the mortices being angled to take them. They are not pegged. The struts were presumably intended to lend support to the main plates, which otherwise span unsupported a distance of

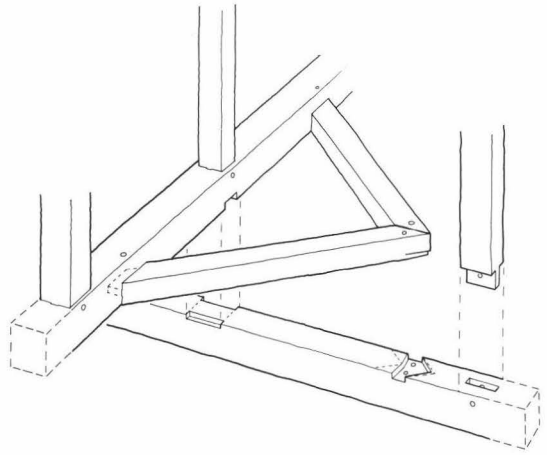


Fig. 18. Assembly detail of the base beams, horizontal braces and post.

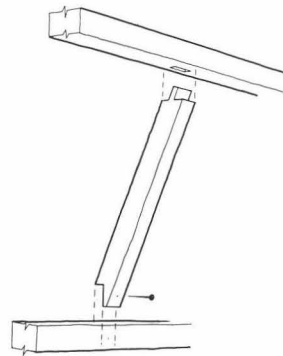


Fig. 19. Assembly detail of raking strut between horizontal brace and plate.

2.7 metres between the wall tops, carrying the full weight of the rafters.

The *central mast* presents some puzzles. The lower part has certainly been replaced, presumably after the original timber rotted or failed in some way. The replacement piece is of poor quality and is not tenoned into the original mortice in the beam, but is held in place by two short pieces of timber spiked to its sides and located in shallow additional mortices. It meets the original mast with a scarf joint which Hewett (1980, 263) describes as 'through-splayed with

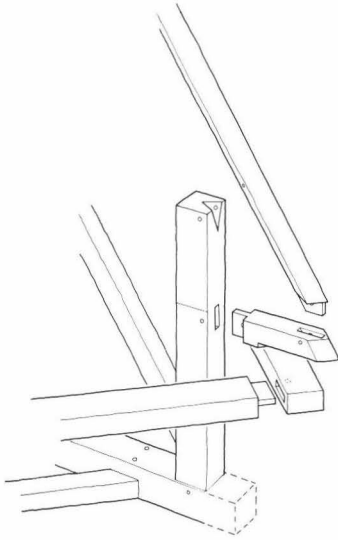


Fig. 20. Assembly detail of post, plates and hip. The joint between the plates is probably pegged but is concealed by the spur. The end of the base beam is shown in broken line where it enters the wall; its length is not known.

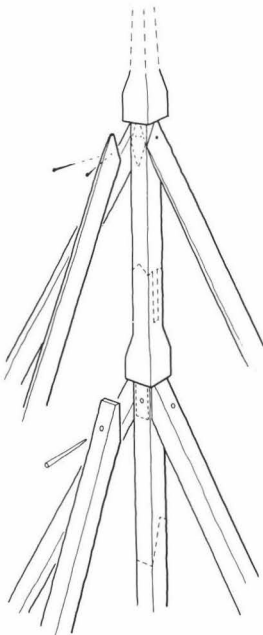


Fig. 21. Assembly detail of mast, hips and quarter braces. The positions of the later scarf joints are shown in broken line. Details of the pinnacle are not known.

one under-squinted abutment and one face peg'. In fact two holes were drilled for pegs, at skew angles, but only one was used. The lower end of the scarf is also fixed by three nails.

The mast is also scarfed above the abutment of the quarter braces (Fig. 21). Hewett (1980, 263) describes this as a 'scarf with straight bridling, diminished by a splayed edge, and with sallied butment shoulders'. This is, as he observes, a peculiar scarf, but being in a vertical timber it is in a peculiar situation—vertical timbers are not normally scarfed. It was presumably considered to be in compression and therefore was not pegged. The inclined shoulders are an effective device to centre and tighten a compression scarf. It has survived, so is evidently adequate for the task, at least in the absence of structural failure elsewhere in the roof. The question is, is it original, or is the upper part of the mast a later repair? The dendrochronological analysis of the core from the middle part of the mast (Appendix 1) shows that this section of the mast is original, but the upper part is too inaccessible to core, so a definitive answer cannot be given. The length of the mast from the top offset, over the abutment of the hips, to the base beam is about 6.5 metres, and to this must be added an uncertain length protruding through as a pinnacle. At say, 7.6 metres this would be a long timber, certainly, but not an exceptional one, and there are no other obvious aspects of the construction and assembly that would demand a scarfed mast. The scarf is poorly fitted, and adjacent to it on the north and west sides there is an obvious difference in surface texture between the heavily weathered middle section and the much cleaner upper section. No firm conclusion is possible, but on balance we believe that the scarf is probably not an original feature. Perhaps the heavy weathering on the mast and on the adjacent top surfaces of the quarter braces suggests that there may have been a period when the top of the roof had deteriorated so badly that the top of the mast had to be renewed. On the other hand the hips, which are original, show no signs of deterioration in the same area.

The four *main posts* are tenoned into the base beams just inside the flint walls (Fig. 20). The posts are not quite tight against the walls and in the gap, of approximately 1–2 cm., it is possible to see that the plastered surface of the walls continues behind the posts. It is hard to imagine how this can have happened during the construction of the original stone tower and timber spire; the walls would not have been plastered before the floors or the timber spire were installed and we have already commented on the survival of edges to the plaster indicating second floor level. This strongly suggests that the design and/or location of the timber structure of the present spire must be different from that of the original.

The posts are about 2.4 metres long. On the north and south posts there is a setting-out line scribed on the east side of them exactly level with the top of the short spur pieces, about 76 cm. from the top (Fig. 20).

The *quarter braces* rise from the posts to stabilise the mast. They are straight, except the eastern one which has a slight curve (Fig. 22). Each one is numbered at its lower end on its inside face, with a corresponding number below on the inside face of the post, the numbers starting with I in the east and proceeding clockwise to III in the north. The quarter-braces butt onto the mast below the 3.7 cm. overhang, and are pegged in place (Fig. 21). This butt joint was presumably intended to resist compression

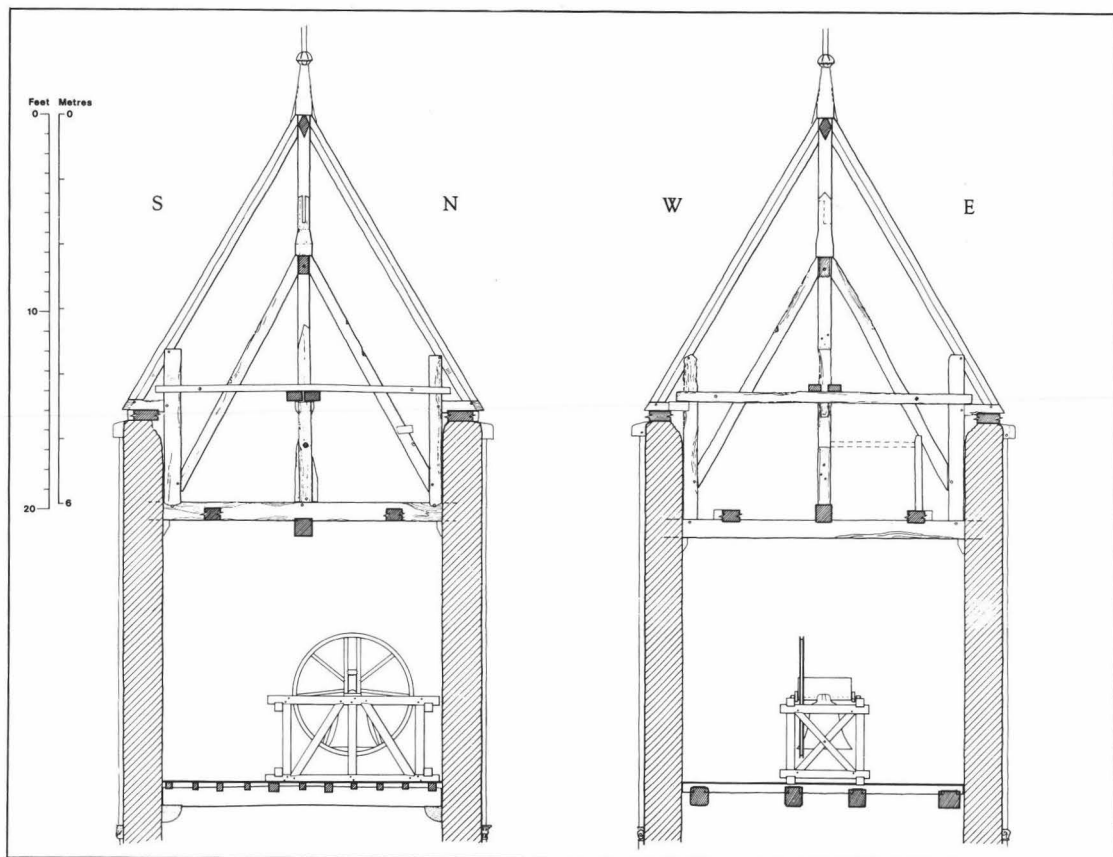


Fig. 22. North-south and east-west sections through the spire and belfry floor, as existing.

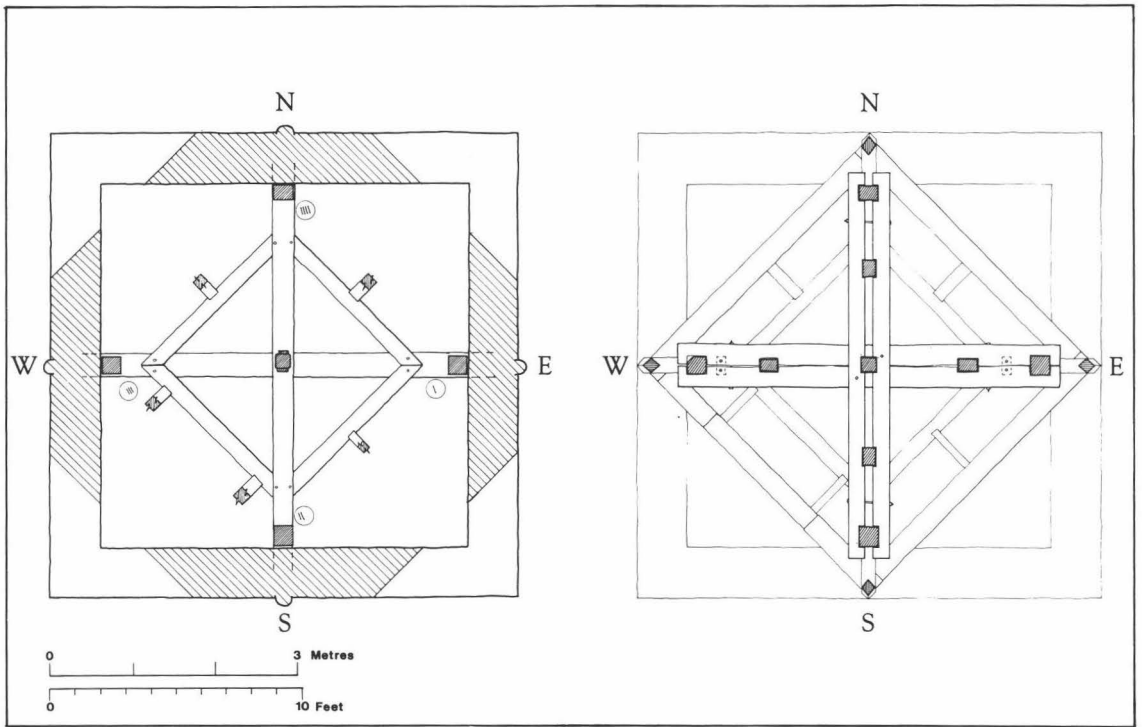


Fig. 23. Left, plan showing base beams and horizontal braces. Right, plan showing the inserted paired beams just above plate level.

due to wind load, and it has been remarkably successful.

The four plates are jointed together to form a ring, and are therefore level with each other (Fig. 20). Each plate has a mortice at one end and a tenon at the other. The mortices are held back a few centimetres from the ends of the plates to avoid breaking through the end grain, a common feature in medieval carpentry. The joints are presumably pegged, but the pegs are covered by the spur pieces and cannot be seen.

The *hips* are tenoned into the short spur pieces that are jointed into the outside of the posts, and the outward thrust of the hips is taken by the spur pieces locking against the inside corner at the intersection of the plates. The hips are also held by pegs where they pass through the V-shaped trenches in the top-outside arrises of

the posts, but this can give little extra strength. The hips are numbered following the same system as the quarter-braces.

Three of the *spurs*—west, south and east—were exposed externally for examination in 1984. The west spur is a replacement of the original piece. The south spur revealed that the tenon of the hip goes right through the spur and is visible underneath. The outside end of each spur is covered by the boards and shingles of the roof but geometry demands that the shape must follow the planes of the two adjoining roof slopes and be flush with the back of the hip (Figs. 17 & 20). On the eastern spur the end-grain appeared to have been shaped rather roughly and probably at a more recent date than the adjoining surfaces. This raises the possibility that the spur pieces originally projected outside the roof, above the

level of the present corbel stones that cap the half-round columnar shafts in the centre of each gable wall. The projection may have been a decorative feature or could have supported verge boards of some kind.

Some of the existing *rafters* can be confidently identified as original, others are clearly replacements, and some are uncertain (Fig. 24). In 1984 the south-west and south-east slopes were exposed externally at plate level, and the north-east slope was exposed for about 2.75 metres up from its lowest point.

The upper rafters that appear to be original were birdsmouthed onto the outside of the plate. The birdsmouth is arranged so that the outside arris of the plate is about 6 cm. from the outside of the rafter, and the rafter overhangs a short distance beyond the plate. The lower rafters were not birdsmouthed, but were simply reduced in thickness so that they would lie on the plate with their outside surfaces level with the upper rafters. Upper and lower rafters were pegged in place. In most cases the original upper and lower rafters had splayed sides to lie against one another.

The top ends of the upper rafters were butted and nailed directly to the hips—which, as already mentioned, are original. The lower ends of the lower rafters, where they were exposed for examination on the north-east slope, were butted and nailed against verge timbers that lie on the outside edge of the flint walls. These verge timbers appear to be relatively modern, probably 19th century, 9 × 7.5 cm. in section. They are bedded on the edge of the flint walls, and fixed at the top with angled metal straps. There are two *purlins* in the lower part of each roof slope, bedded in the flint walls, but they are all modern insertions.

In each of the central rafters in the upper roof slopes there is a peghole in one side of the rafter. They are on the same side of opposite rafters; on the north-east side of the north-west and south-east rafters, and on the south-east side of the north-east and south-west rafters. They do not go right through the rafters. One, the north-east, is empty, the other three have pegs in them.

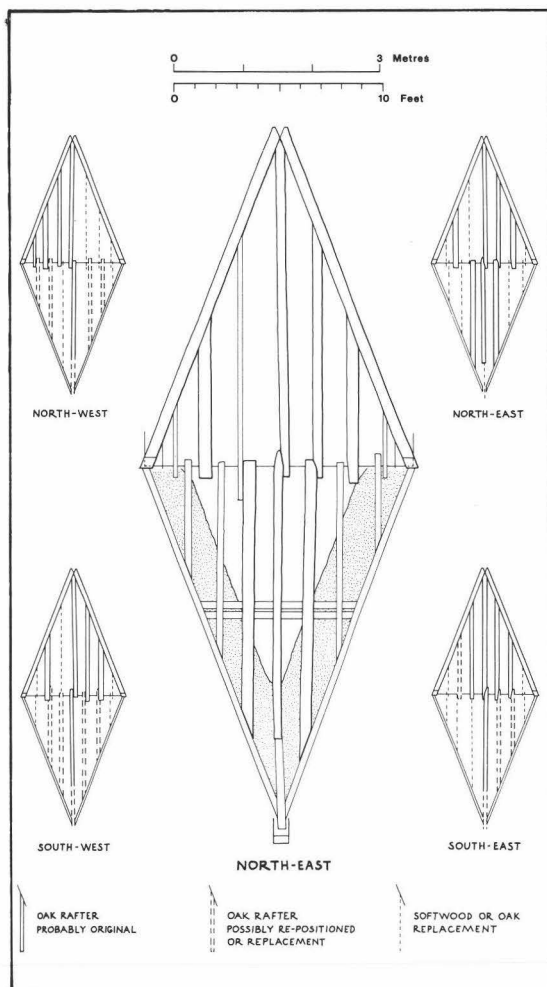


Fig. 24. Elevations of the roof slopes showing rafters and hips, drawn parallel to slope. Centre, the north-east slope as existing. The four smaller diagrams show the extent of survival of original rafters in the four roof slopes.

In each opposite pair the holes are a similar distance up from the plate, 95 and 89 cm. in the case of the south-east and north-west rafters, and 122 and 110 cm. in the north-east and south-west rafters, although the distances are difficult to measure exactly because of the poor condition of the plates. The south-east and north-west rafters both have a carpenter's number on the opposite side of the hole, II and III respectively. They are perhaps related to the 'rafter holes' found on

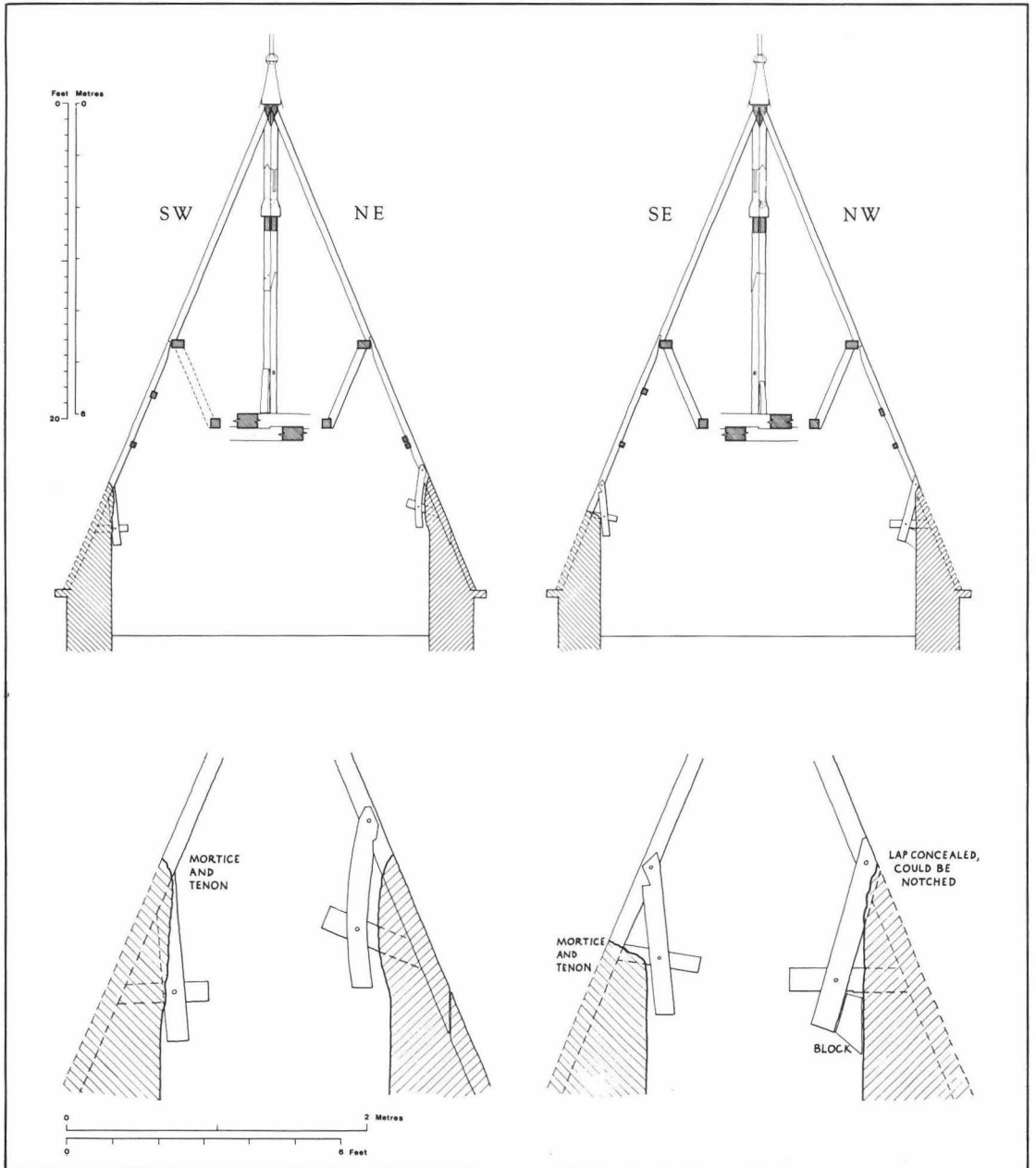


Fig. 25. Above, diagonal sections through the spire, south-west/north-east; and south-east/north-west. Below, details of the four triangular assemblies jointed to the central rafter in each roof slope.

pairs of coupled rafters in many medieval English buildings.

The central rafter in the lower part of each roof slope has a *triangular assembly* jointed to it just inside the internal corner of the flint walls. These assemblies appear to have been intended to lock each central rafter onto the stone wall to prevent it from slipping downwards. The other rafters are connected to the central rafter through the nailed-on boarding under the shingles, so the assemblies have a stabilising effect on the whole of each lower roof slope, but we cannot say whether this was originally intended.

The assemblies are very similar in conception but different in detail (Fig. 25). The vertical and horizontal members are set at a variety of angles. In three of the four cases the vertical member is lapped onto the rafter, whereas in one (south-west) it is tenoned. Two of these lap joints are notched, but their profiles are different; the third (north-west) may be notched but is hidden from view³. The shape of the north-east notched lap is very hard to establish accurately, but the south-east one is quite clear. In all four cases the vertical and horizontal members are halved across one another and pegged⁴. In the two cases that can be examined, the horizontal member appears to tenon into the rafter; in the south-east corner the joint can be seen from above, and in the north-east corner the rafter was examined from outside, but no halving was seen so a mortice and tenon is likely. One final difference is that in the north-west corner the vertical member is set at a steep angle, and the resulting gap between it and the corner of the wall is filled with a wooden block.⁵

The north-east assembly was exposed and viewed from the outside in 1984. The original rafter ends a short distance below its intersection with the horizontal member, and the distance from there to the corbel stone at the lower extremity of the roof is occupied by an extension piece which is almost certainly a later replacement or extension. Hewett's drawing (1980, Fig. 12) shows the verge rafters of the

corner slope coming together on top of the horizontal member of the triangular assemblies. This is incorrect, as the triangulations occur where the rafter meets the inside corner of the wall, well above the stone corbel at the lowest point of each roof slope.

In all four cases the wall surface behind the vertical member is plastered, in just the same way as the wall surfaces behind the main posts are plastered. This shows again that the gables of the tower must have had a previous roof of a different design, or in a different position, from the present one.

The differences between the four assemblies are hard to explain. The assemblies are not jointed in any way to the rest of the spire; they have no visible carpenters' marks; they are in a 'floating' context relative to the masonry, as they cover original plaster and have 'repair mortar' around them; and they cannot be dated by dendrochronology. The notched lap joints suggest that the south-east and north-east assemblies, at least, belong in the early 14th-century context of the original main structure, but why then are the profiles different? Was one of these assemblies re-used from an earlier construction? If the spire has been dismantled and re-positioned at some stage (see conclusions below) then perhaps the south-west assembly, with its mortice and tenon joint instead of a lap, may be a replacement. Unfortunately these must all remain open questions.

There are three kinds of *carpenters' marks* on the timbers. First, there are carpenters' numbers on the posts, quarter-braces and hips. These all follow the same pattern, working clockwise from I in the eastern position to IIII in the northern position. They were made with a race knife and vary between about 5 and 10 cm. in length, typical of medieval carpenters' marks.

Second, there are carpenters' numbers of a different kind, cut with a sharp knife rather than a race knife, on the central rafter in the south-east and north-west roof slopes, the numbers being II and IIII respectively.

Third, there are longitudinal centrelines

(thin scribed lines)) on the faces of all four posts and the mast, in addition to the normal lines marking out the mortices. On the posts the centrelines are on the inside face (the face towards the mast). On the mast the centrelines can be seen on all four faces in the area below the abutment of the quarter-brace; in other areas the surface has deteriorated so the lines are lost, but it appears likely that they were originally scribed down the length of all four faces of the mast. In addition there is a transverse centreline on the soffit of each plate, bisecting the shoulder of the mortice for the raking strut. The exact purpose of these lines is not yet understood. English buildings were normally set out with the face of the frame as the reference plane, but occasionally centrelines and centred joints are found, suggesting the possibility of different schools of carpentry.⁶

The timbers were examined for tool marks. Few can be seen, because of the deterioration in the timber surfaces, but where visible they accord with the normal pattern that the square balk is hewn from the log with an axe, after which the balk is either used whole (boxed heart) or sawn through the heart into two or four pieces (halved or quartered). Almost all the original timbers were converted retaining moderate amounts of sapwood. The following list gives the cross sections of the main timbers and their conversion where known from the dendrochronological cores.

Base beams: 28 cm. square (maximum). Boxed heart.

Mast (original): 19 cm. square; 26 cm. square above offset. Boxed heart.

Posts (E,S,W,N): 25 × 23.5 cm., 24 × 25.4 cm., 21.6 × 23 cm., 24 × 19 cm. (dimension facing mast given first).

Boxed heart.

Plates: 25.4 × 16.6 cm. (vertical dimension). Halved, heart upwards.

Quarter-braces: 17.8 × 16.5 cm (average). Conversion not known.

Horizontal braces: 19 cm. square. Quartered, heart at top outside arris.

Spurs: 20.3 × 17.8 cm. (vertical dimension). Conversion not known.

Hips: 15.9 cm. square. Boxed heart.

Later alterations and repairs to the spire

As already mentioned, the *lower part of the*

mast is certainly a replacement. As well as its poor quality and lack of a tenon to the base beam, it can be seen that the west face of the middle part of the mast was re-shaped with an axe to line up with the slightly smaller size of the lower part, and these tool marks cut cleanly through the 'weathered' original surface. We may conjecture that the bottom of the original mast deteriorated so badly that it was no longer possible to tie it securely to the base beam, and that the only solution was to replace it.

On the quarter braces there are a number of places where the edges have been chopped away as if to form rough horizontal ledges, and on the quarter braces, mast and posts there are several small pieces of wood nailed on to provide horizontal projections. If we are right that the upper part of the mast is a replacement, it may be that these are the remains of seatings inserted to allow a working platform to be built inside the top of the spire to facilitate such a difficult operation.

The other major alteration to the structure consists of the insertion of *two pairs of beams* running across the spire just above plate level (Figs. 22 & 23). Each pair is cut round the posts, quarter braces, and mast, and firmly fixed together. Hewett (1980, 15) calls these 'the paired straining timbers', and refers to them as original members of the structure.

The two pairs of beams are quite different. The upper pair are oak, probably 19th century in date, 20 × 9 cm. in section, and fixed together with bolts near each end. The saw marks on them are probably from a saw pit, but are extremely clean, in contrast to all the original timbers. The lower pair runs east-west and rests on top of the spurs tenoned into the backs of the posts. They are heavier than the upper pair, 26 × 16 cm. in section, and rather poor quality with much waney edge.⁷ They were held together with small (10 cm.), single-pegged slip-tenons near each end. At the west end the slip tenon has been sawn through, and bolts have been added at both ends.

Once again, the best evidence that these are not original timbers is that most of the timbers

that are clamped by both pairs of beams have been crudely trimmed back to fit them, and the tool marks are clearly more recent than the surrounding surface. The best explanation for the lower pair is probably that they were inserted to stabilise the mast when its lower end was replaced; they would do this very effectively, as well as tying the east and west sides of the spire together.

The modern upper pair could be a replacement of an older pair, but are more likely to have been inserted as a 'belt and braces' improvement to tie the mast together at a much more recent date. They are bolted to the lower pair where they cross at the mast. They are very similar in size and appearance to beams that have been bolted on top of the original plates of the south-east and south-west roof slopes, and may be of the same date.

Iron tie rods have been inserted to tie together the central rafters of the lower roof slopes. They may be associated with the inserted purlins in the lower roof slope, that are bolted to the rafters on either side of the centre. On the south-west side a section of the plate has been removed and a replacement piece jointed in. The original raking strut has been removed here and under the south-east plate.

The story told by these alterations is one of continuous maintenance over many centuries. The spire has not been allowed to fall into disrepair, but there has been a long series of interventions, some minor, some major, to remedy the effects of gradual deterioration of the timbers, many of which are deeply eroded by prolonged beetle attack.

CONCLUSIONS

The probable early development of the tower and spire may be summarised as follows: Period I. The lower part of the tower originates as the west end of a pre-Conquest church.

Period II. The upper part of the tower, up to the level of the capitals on the half-columnar shafts and the shouldered stones at the

corners, was added towards the end of the 11th century. We conjecture that the tower at this stage may have terminated in a helm spire, with shingled timber gables on timbers at the present belfry floor level (Fig. 15a) but accept that other interpretations are possible.

Period IIa. The masonry walls and gables above belfry floor level were probably added to replace the timber structure.

Up to this point the interpretation is reasonably straightforward, but next we need to reconcile five crucial pieces of physical evidence.

1. The masonry above belfry floor level has architectural details very similar to the tower below, so is likely to have been built at the same date or very soon after.

2. The put-log holes show that the gables have probably always been gable-shaped and are most unlikely to have been cut down from a previous higher stone tower. However, they may have been slightly reduced in pitch or height.

3. The timber structure of the existing spire dates from the early 14th century. It is all of one date, and appears to be undisturbed, but it is impossible to be certain that it has not been dismantled and re-set.

4. The junctions between the timber spire and the tower walls and gables are all composed of 'repair' mortars that are later than the original stonework and possibly associated with work of the late 18th or 19th century.

5. When the timber spire was installed in its present position on the tower, the timbers covered areas of wall that were already plastered and this confirms that the spire is later than the gables.

These observations all point clearly to the gables being earlier than the spire, but there are two possibilities for the spire at Period IIa: either it was the original one, dating from Period II, newly encased in masonry gables at Period IIa; or it was a new one. In either case it must have been constructed in such a way as to leave the gable walls clear to be plastered internally, but it must also have been of a similar shape to the present one. It would be unwise to attempt a

reconstruction on such slender evidence, but we are satisfied that such a spire is a structural possibility. We feel it is most likely that the original 11th-century spire was built in such a way that it could be left standing while its timber gables were replaced by masonry.

Finally in Period III the earlier spire was replaced by the present one. There are two rather weak pieces of evidence pointing to the possibility of a major reconstruction in 1762; Cartwright's statement that the tower was reduced in height by 25 feet, and the conjectural dating of 'repair' mortars to roughly the same period (see observation 4 above). This would require that we postulate that the spire was originally set at a higher level, and that the gables were higher. The plastered internal walls of the gables do not have any centrally-placed disturbed areas where the crossed base beams of the spire could originally have been placed, so the original position of the spire must have been at

least 1.8 metres higher than its present position; that is, the base beams must have been supported at a higher level than the present tops of the gables (Fig. 15d). However, observation 2 (above) implies that the gables cannot have been more than about 2 metres higher than they are at present.

Applying the rule that for the purposes of explanation, things not known to exist should not, unless it is absolutely necessary, be postulated as existing, all the physical evidence, except Cartwright's assertion and the conjectural dating of the mortars, can be satisfied by suggesting that in Period IIa the original spire was left in place, supported within the new masonry gables, and by adding a single Period III.

Period III. The spire was replaced by the present structure in its present position.

This, therefore is the development sequence that we propose.

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APPENDIX 1

Dendrochronological analysis of the spire (by Ian Tyers)

In 1984 cores were taken from the north-east plate and the north-south base beam for Carbon 14 analysis. The two results (see Appendix 2) agreed well with each other statistically, being within the 1 sigma error terms quoted. The results mean that the possible age range within which the true date of each core lies extends from the mid-12th to the late-14th centuries. As a closer date was required for the spire it was decided to attempt dendrochronological analysis.

Further cores were therefore taken in 1987, and a total of seventeen cores from fourteen timbers were measured and analysed in accordance with normal dendrochronological practice (Table 1). Ten of the cores were cross-matched by computer analysis using Cros73 (Baillie & Pilcher, 1973). A further six (the four plates and the two cores from the south post) were too short for reliable cross-matching by computer but were visually matched to the other sequences. One core, from the vertical member of the north-eastern triangular

assembly, could not be matched by either means. The relative positions of the sixteen dated cores are shown (Fig. 26).

The cores were then constructed into a mean sequence which was computer checked against a wide range of dated sequences from the British Isles and north-west Europe. The mean sequence is dated to AD 1182-1292 (Table 2) and fits comfortably into the expanding network of data from lowland English sites.

Thirteen of the cores end at their heartwood/sapwood boundary, at dates between 1274 and 1292, and in order to provide a felling date for the trees an allowance must be made for the missing sapwood rings. An estimate of 10-55 sapwood rings (Hillam, Morgan & Tyers 1987) suggests felling between about 1300 and 1330. The relative youth of most of the trees and the grouping of the heartwood/sapwood boundaries suggests the earlier part of this range, but this cannot be proved.

Most of the sapwood which remained on the timbers when they were originally converted has now disappeared, but some sapwood survives and on two beams is complete to the bark surface. It is too friable to take cores but an attempt

TABLE 1
Timber data, with external cross-dating of individual timbers

		Length	Sapwood	Dates	Cros73 t values:		Comments
					Reading (1160-1407)	Droitwich (1178-1415)	
E	E. Post	79	—	1182-1260	4.52	2.81	Two cores
EH	E. Hip	71	h/s b.	1222-1292	5.68	3.75	
EW	E.W. Base Beam	76	h/s b.	1199-1274	3.41	3.07	Two cores
M	Mast	80	—	1202-1281	4.58	4.25	20+ sapwood observed
N	N. Post	66	h/s b.	1221-1286	5.76	3.96	10-20 sapwood observed
NEP	N.E. Plate	46	h/s b.	1239-1284	3.99	2.71	Visual match
—	N.E. Triang. Vert.	81	—	undated			
NH	N. Hip	73	h/s b.	1217-1289	4.95	3.88	
NS	N.S. Base Beam	78	h/s b.	1197-1274	3.37	1.54	
NWP	N.W. Plate	46	h/s b.	1242-1287	2.49	2.82	Visual match
S	S. Post	37	h/s b. (?)	1243-1279	2.97	4.25	Two cores. Visual match
SEH	S. E. Horiz. Brace	55	h/s b.	1232-1286	5.16	2.99	17 (?) sapwood observed; bark present
SEP	S.E. Plate	46	h/s b.	1238-1283	1.73	1.01	Visual match
SWP	S.W. Plate	44	h/s b.	1239-1282	5.23	4.30	Visual match

(h/s b. = heartwood/sapwood boundary present)

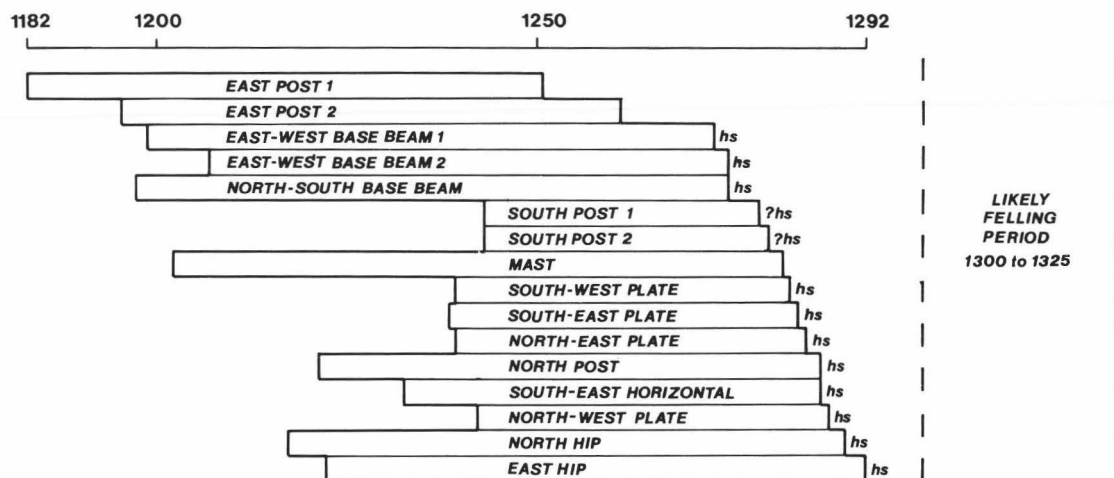


Fig. 26. Block diagram showing the relative positions of the sixteen ring sequence obtained from thirteen timbers. 'hs' indicates heartwood/sapwood boundary.

TABLE 2
External cross-dating of mean data (sixteen cores)

	<i>Cros73 t values</i>	<i>Dates</i>
East Midlands (Laxton Litton & Simpson unpubd.)	6.76	882–1981
Droitwich (Hillam unpubd.)	5.01	1178–1415
Reading (Hillam unpubd.)	8.24	1160–1407
Germany 5 masters mean (Tyers unpubd.)	4.73	BC 546–AD 1975
BRITIM (Pilcher & Baillie unpubd.)	4.78	401–1981
Lowland S. England (Tyers unpubd.)	6.71	404–1986
Lowland S. England except London (Tyers unpubd.)	8.44	404–1986

Note:

The first four data sets in this list are independent of each other. The last three are compiled from multiple sets of data and include the first three in this list, amongst others.

TABLE 3
Internal cross-dating data

<i>Cros73 t values</i>														
	<i>E</i>	<i>Group A</i>							<i>Group B</i>					
		<i>EW</i>	<i>NS</i>	<i>M</i>	<i>SEP</i>	<i>NEP</i>	<i>SWP</i>	<i>NWP</i>	<i>EH</i>	<i>NH</i>	<i>N</i>	<i>S</i>	<i>SEH</i>	
A	E	—												
	EW	2.84	—											
	NS	4.23	2.79	—										
	M	7.00	4.84	4.38	—									
B	SEP	0.62	2.68	3.64	2.88	—								
	NEP	0.62	3.20	2.94	3.09	4.13	—							
	SWP	1.74	2.02	2.04	2.61	1.05	3.18	—						
	NWP	0.26	1.42	2.81	2.63	2.27	1.91	3.80	—					
	EH	0.94	1.01	1.93	2.66	1.66	3.20	5.52	4.88	—				
	NH	1.53	0.84	2.65	2.74	2.58	4.57	5.10	2.72	7.25	—			
	N	2.68	2.54	2.22	3.08	1.16	3.71	5.42	2.22	3.18	4.91	—		
	S	0.31	1.43	1.55	1.95	3.10	4.33	3.66	2.68	4.12	4.62	3.05	—	
	SEH	1.91	1.09	2.12	2.74	1.41	3.25	4.65	2.13	5.11	7.59	6.50	2.52	—

was made to count surviving rings *in situ* (Table 1); the results are inconclusive but tend to confirm that 1305–1315 is the most likely felling period.

During analysis of the cores it became clear that they fall into two groups. Each group has a distinctive visual indicator pattern and has much higher cross-matches internally than with the cores of the other group. Table 3 gives the internal cross-dating data and has been arranged to show the two groups; the south-east plate (SEP) could belong to either group. It seems likely that the two groups represent two separate woodland units from which trees were felled to provide timber for the spire, but in the absence of other evidence it is unlikely to be possible to ascertain their precise origin.

Cores were also taken from the two inserted east-west strainer beams. The cores have 54 (north) and 66 (south) rings, and no sapwood. It was not possible to assign dates to them, and they do not cross-date with the original timbers or even with each other.

APPENDIX 2

Radiocarbon dating (by Jill Walker)

Two samples were analysed by Harwell Isotope Measurements laboratory in February 1985 and the results are given in the table below. The samples were cores taken from the north-east plate and the north-south base beam of the spire, and had 46 and 78 annual rings, respectively.

The technique used was the standard procedure of the laboratory: conversion of the sample to the organic liquid benzene followed by liquid scintillation counting (Olet & Warchal, 1978). Error terms quoted are estimates of the full replicate sample reproducibility (Olet, 1976) and take into account all possible sources of error not counting statistics alone. The raw radiocarbon ages have been calibrated using the curves of Stuiver and Pearson (1986) as recommended by the 13th International Radiocarbon Conference and a technique of Gaussian overlay developed by R. L. Olet has been used to produce a calibrated date for each sample. The

date for the heartwood/sapwood (H/S) boundary is calculated by adding half the total number of rings in the samples to the calibrated dates.

The weighted mean of the two 14C results, AD 1290 ± 50, is the best interpretation which can be made for the date of the H/S boundary, treating them on the assumption that they originated from timbers either of the same tree or of different trees felled contemporaneously.

From this a common felling date can be calculated by adding an allowance of rings for the sapwood and Hillam,

Morgan & Tyers (1987) suggest 10–55 rings as a suitable range. In approximate terms this is equivalent to a mean sapwood allowance of 33 ± 11 years (i.e. assuming the equivalent 1 sigma to be one quarter of the likely range). Combination of this value with the weighted mean result for the H/S boundary gives

$$(1290 + 33) \pm \sqrt{50^2 + 11^2} = 1323 \pm 51$$

which is in good agreement with the dendrochronologically deduced felling date of AD 1300 to AD 1330.

<i>Harwell Reference</i>	<i>Timber</i>	<i>Age BP (years)</i>	<i>Calibrated Date (cal AD)</i>	<i>H/S Boundary Date (AD) Individual Results</i>	<i>Weighted Mean</i>
HAR-6520	North-south base beam	660 ± 90	1195 ± 70	1234 ± 70	} 1290 ± 50
HAR-6532	North-east plate	820 ± 80	1310 ± 65	1333 ± 65	

Notes

¹The authors are grateful to Mr. Ian Stewart for making this information available to them.

²The inscription on the bell reads: 'Cast by Ino.Rudhall of Gloucester 1795'. Its base diameter is approximately 86 cm. The central interstice of the floor is 72 cm. wide.

³Hewett (1980, 20) states incorrectly that these are not notched lap joints.

⁴The halvings are all parallel; Hewett (1978, 226) states incorrectly that the south-west 'ashlar-piece' is given a spurred soffit-shoulder.

⁵Hewett's drawing (1980, Fig. 17) appears to be a conflation of the north-east corner, where the vertical member is slightly curved, and the north-west corner, which has this blocking piece.

⁶Research into these matters is in its infancy. R. Harris and P. McCurdy have recently been studying the great barn at Harmondsworth, dating from the early 15th century, which is set out on centrelines.

⁷The southern one may be a re-used timber; its soffit, the heart face, is hewn rather than sawn, which is almost never found in an original conversion, and the other faces are somewhat weathered.

References

- Allen, J. C. 1985 'Sompting Church' *Sussex Archaeological Society Newsletter* 47 December 1985, 460.
- Andre, J. L. 1898 'Sompting Church' *Suss. Arch. Coll.* 41, 7–24.
- Baillie, M. G. L. & Pilcher, J. R. 1973 'A simple crossdating program for tree-ring research' *Tree-Ring Bulletin* 33, 7–14.
- Baldwin Brown, G. 1925 *The Arts of Early England* 2, 355, 399, 430 & 432.
- Blaker, W. 1828 Plan of Sompting Church in the Library of the Society of Antiquaries of London (ICBS Grant Application No. 874).
- Bloxam, M. H. 1882 *Gothic Ecclesiastical Architecture* 11th edn., 44.

Clapham, A. W. 1935 'Sompting Church' *Arch. Jnl.*, 92, 405–9.

Crouch, F. A. 1910 'Sompting Church, Sussex' *Architectural Association Sketch Book*, 36–9.

Dallaway, J. & Cartwright, E. 1830 *County of Sussex* 2, part 2, 106–7.

Fisher, E. A. 1970 *The Saxon Churches of Sussex*, 175–82.

Gem, R. 1983 'The early Romanesque tower of Sompting Church, Sussex' *Anglo Norman Studies* 5, 121–8.

Harris, R. 1978 *Discovering Timber-Framed Buildings*.

Harrison, F. 1920 *Notes on Sussex Churches*, 187–8.

Hewett, C. A. 1978 'Anglo-Saxon carpentry' *Anglo-Saxon England* 7, 205–29.

Hewett, C. A. 1980 *English Historic Carpentry*.

Hewett, C. A. 1985 *English Cathedral and Monastic Carpentry*.

Hide, E. 1827 Plan of Sompting Church in the Library of the Society of Antiquaries of London (ICBS Grant Application No. 874).

Hillam, J., Morgan, R. A. & Tyers, I. 1987 'Sapwood estimates and the dating of short ring sequences', in *Applications of Tree-Ring Studies* (ed. R. D. W. Wood) BAR International Series 333, 165–85.

Mason, R. T. 1964 *Framed Buildings of the Weald*.

Otlet, R. L. 1976, 'An assessment of laboratory errors in liquid scintillation methods of Carbon-14 dating', in *Proceedings of the Ninth International Radiocarbon Conference, Los Angeles, San Diego*, 256–67.

Otlet, R. L. & Warchal, R. M. 1978, 'Liquid scintillation counting of low-level Carbon-14', in *Liquid Scintillation Counting* 5, (eds. M. A. Cook & P. Johnson) 210–18.

Rickman, T., 1836 'Ecclesiastical Architecture of France and England' *Archaeologia* 26, 26–46.

Rigold, S. E. 1966 'Some major Kentish timber barns' *Archaeologia Cantiana* 81, 1–30.

Rodwell, W. 1986 'Anglo-Saxon church building: aspects of design and construction', in *The Anglo-Saxon Church. Papers in history, architecture and archaeology in honour of Dr. H. M. Taylor* (eds. L. A. S. Butler & R. K. Morris) CBA Research Report 60, 156–75.

- Stewart, I. 1981 *The Parish Church of St. Mary Sompting* (Thesis for Architectural Association School of Architecture).
- Stuiver, M. & Pearson, G. W. 1986, 'High-Precision Calibration of the Radiocarbon Time Scale, AD 1950–500 BC', *Radiocarbon* **28**, 805–38.
- Taylor, H. M. & Taylor, J. 1965 *Anglo-Saxon Architecture* **1 & 2**.
- Taylor, H. M. 1978 *Anglo-Saxon Architecture* **3**.
- Wilson, D. M. 1964 *Anglo-Saxon Ornamental Metalwork 700–1100. Catalogue of Antiquities of the Later Saxon Period*.

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TWO EARLY MILLSTEADS, POLEGATE, EAST SUSSEX

by Lawrence Stevens

This paper outlines a rescue excavation of the remains of two post mill trestles at Polegate, East Sussex, after part of a post mill centre post had been discovered in June 1987. The excavated timbers were those of a medieval trestle type not previously excavated in this country and the remains provided evidence for the existence of not only double quarterbars but also intermediate pseudo crosstrees.

INTRODUCTION

The following description is intended to assist the reader to understand the substructure of a post mill, a three-dimensional drawing of which appears elsewhere (Stevens 1982).

The capability of turning the sweeps of a windmill into the wind was probably developed either before or during the 12th century when a box-like body containing the machinery and carrying the sweeps was set on a central post upon which it could be winded. Thus, this type of mill became known as a post mill and over several centuries the method of supporting and stabilising its centre post changed greatly. At first, this centre post was buried in the ground for stability, but later it was supported by a trestle which itself was covered by soil in the early stages of its development. Later the trestle was built 'open' and free-standing as in the case of the Sussex example at Nutley.

This trestle substructure of the post mill, perhaps supporting as much as 18 tonnes, consisted of two long timbers called crosstrees laid on the ground to form a cross. At their intersection there was sometimes a halving joint and over this was inserted the centre post which had four projecting horns which fitted into the angles of the cross. The centre post was supported by four diagonal timbers, known as quarterbars, each morticed at their lower end into the end of a crosstree while the upper end

was morticed into the centre post two or three metres above ground.

LOCATION

The site is situated in School Lane (TQ 58280510), on Weald clay just above the 15 m. contour, to the north of the (A27) Polegate to Westham Road (Fig. 1A–1C). A house, formerly No. 3, School Lane, had occupied the site which was being redeveloped by A. J. Hassell Ltd. of Stone Cross, East Sussex. During trenching the remains of the lower portion of a post windmill was uncovered, which led to archaeological excavation.

DOCUMENTARY EVIDENCE

There are numerous references to lands called Milllands and more specifically Little Milllands and Great Milllands from the mid-16th century onwards. It would appear that the lands were held in 1567–68 by the one-time Premonstratensian Grange of Otham (Salzmann 1901) and there are fairly continuous references to the holders of the Milllands well into the 19th century. Some references to the Milllands described them as close to Swines Hill which is the area of the site of the mills under discussion. Swines Hill Farm became known as Millfields Farm at the turn of the century and though the

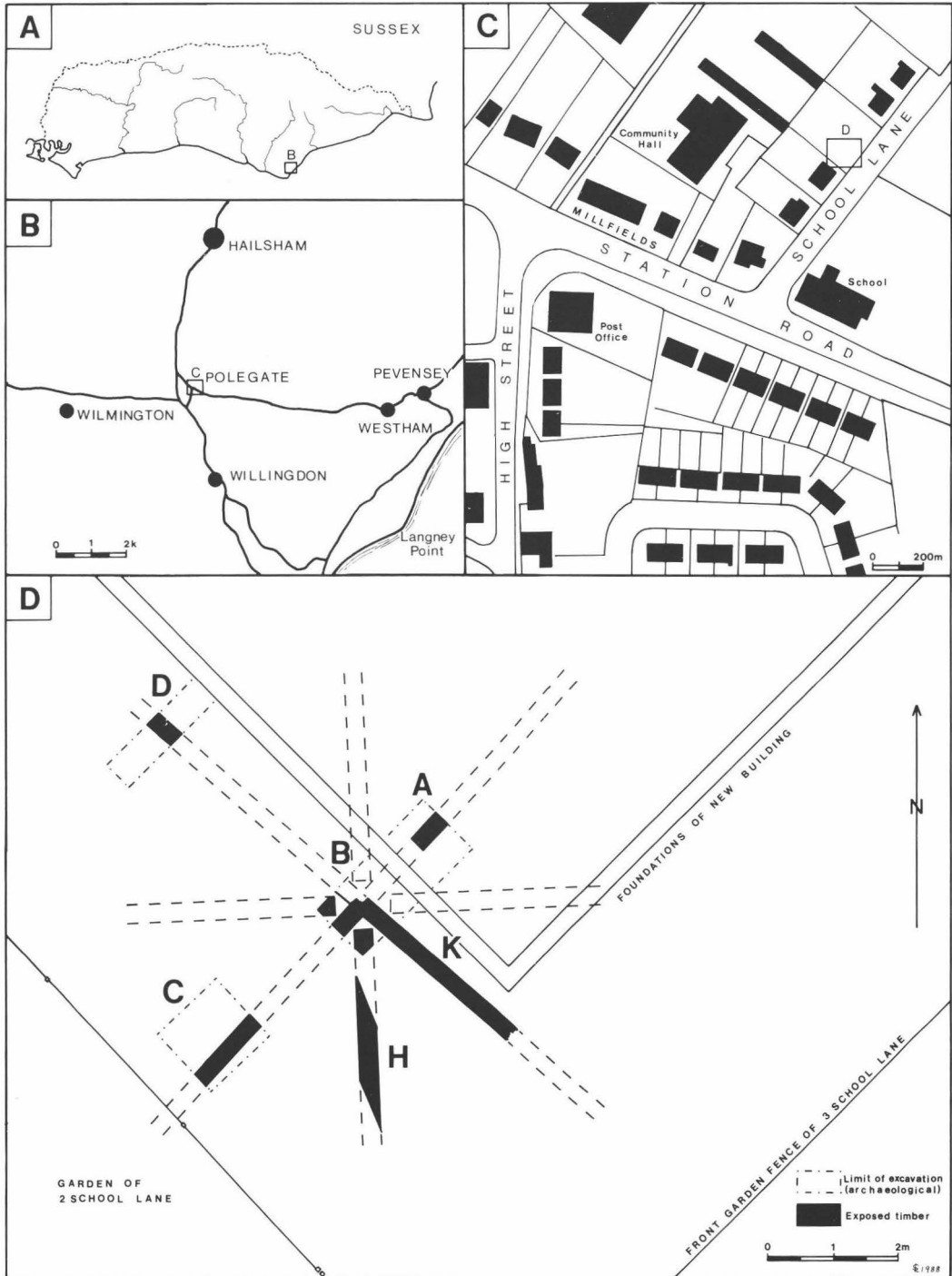


Fig. 1. A–C, Location plans showing the position of the excavation site; D, Site plan showing the position of the archaeologically excavated trenches A–D and the timbers H and K which were revealed by the contractor’s trenching.

farm no longer exists, the name Millfields survives in the name of a terrace in Station Road, Polegate. An eminence in this area is more than suggested by a trigonometric point on both the Ordnance Survey 25-inch maps of 1875 and 1899.

Two or three decades before the date of the earliest of these maps there appears to be a direct reference to the mill site in a description of the Searland (Sayerland) Estate which is described thus, '... close to the high road and to the mill field, where the mound is yet to made out on which stood—though not in living memory—the windmill; and here is Mill Lane, ...' (Gearing 1884). Later a house was built on the mound and its last inhabitant recalled 'The slope down all round the house could be felt very much when I was mowing the ground! Nos. 1, 2 and 4, were much flatter and I used to envy them ...' (Shelley pers. comm. 1987).

The writer organised a limited emergency excavation in order to locate the crosstrees of the mill trestle during the weekend 11–12 July 1987. Four trenches were cut, which revealed the position of the crosstrees aligned SE–NE, their intersection and evidence of secondary intermediate cross-members (Fig. 1D).

TRENCH A

A piece of fractured timber protruding from within the foundations of the new building, led to the first trench (A) being dug to examine it and 0.4 m into the clay, the splintered remains of a waterlogged timber measuring 254 mm × 305 mm were found. This was subsequently identified as the north-eastern crosstree of the trestle, which had been cut through by a mechanical digger during the contractor's trenching (Fig. 2A).

TRENCH C

Trench C was then cut to locate the south-western arm of the crosstree, which it did with the unexpected bonus of the remains of a quarterbar. This latter was removed for preservation and is

calculated to have made an angle of approximately 35 degrees with the crosstree (Fig. 2C).

TRENCH D

Knowing that during the contractor's trenching a timber (see K, Fig. 1D) had been disturbed outside the line of the south-western line of the new foundations and assuming that this could have been the south-eastern arm of the crosstrees, trench D was cut to test the hypothesis that the north-western arm ran roughly parallel to the south-western wall of the new building. Again a waterlogged timber was revealed, measuring in section 150 mm × 200 mm and lying on a small piece of timber packing (Fig. 2D).

TRENCH B

Trench B cut into what was calculated to be the area in which the timbers would have intersected. The intersection had been mutilated on its north-eastern side by contractor's trenching, but evidence of the other crosstrees and vestiges of the horns of the centre post remained (Fig. 2B). Intersecting the right-angle of the surviving crosstrees were the ends of what appeared to be intermediate cross-members, evidence of which had been noted (see H, Fig. 1D), during sewer trenching, earlier.

Below the intersection, there was a water-filled cavity which it was learned, had been created when the centre post fragment had been removed by the contractor's machine during trenching. Probing located intermediate timbers 770 mm below the lower face of the crosstrees, but it was not possible to say if these belong to the recovered portion of centre post, or had sunk from the upper trestle.

THE FINDS

Stone (by C. Cartwright)

A lump of a hard compact conglomerate with siliceous matrix containing large spherical reddy-brown chert pebble inclusions. Part of the surface shows signs of having been

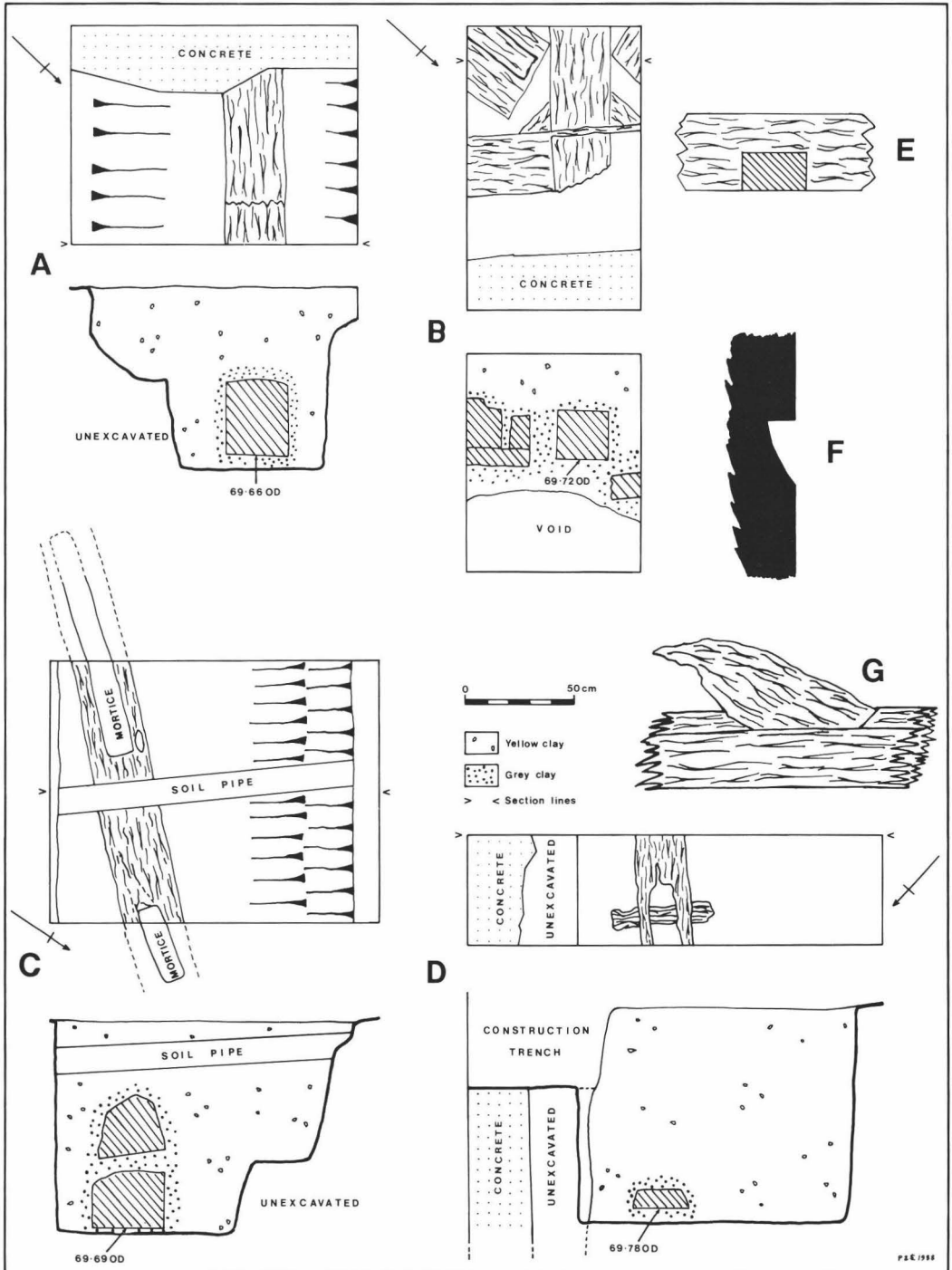


Fig. 2. A-D, Plans and sections of the planned trenches; E, Reconstructed section of the crosstree halving joint; F, Profile of the mortice in the centre post cut to take the upper quarterbar tenon; G, The remains of the quarterbar found in situ in Trench C.

water-worn. Found in trench C above the foot of the quarterbar.

Roofing Tile

A small quantity of tile was recovered from the fill above and around the timbers exposed during excavation.

The Pottery (by J. C. Dove)

All of the pottery mentioned in this report came from the excavated sections and from above or around the timbers of the trestle. In total there were 128 sherds, weighing 910 g. Most had worn edges, suggesting that they were residual when the windmill was constructed. It has not been possible to fit any of these together. It appears that all rim, handle and base sherds come from different vessels.

It was possible to distinguish six different fabrics:

Fabric A: Poorly fired. Coarse sand temper, up to 1.5 mm., with occasional grog. Generally having a grey core with red outer surfaces.

Fabric B: Medium sand temper, with sparse quartz up to 1.5 mm.

Fabric C: Fine sand temper with occasional grog. Generally having a grey core with red outer surfaces.

Fabric D: Well-fired. Fine sand temper with sparse quartz up to 1.5 mm. Generally having a grey core with grey outer surfaces.

Fabric E: Well-fired. Fine sand temper. Generally having a grey core with buff/red outer surfaces.

Fabric F: Very fine sand temper. Grey core with buff inner surface and olive-green glazed outer surface.

Brief examination showed that the pottery was medieval. Since a date sequence of medieval pottery has yet to be found in the Eastbourne area, dating must continue to be suggested by sequences from other areas (Down 1978; Rigold 1971; Vince 1985).

stabbed strap jug handles in Fabric E and a thumbled jug base in Fabric F. No sherds were considered to be later than the mid-14th century.

The pottery was divided into two groups and tabulated accordingly. The number of sherds are shown first, followed, in brackets, by the total weight in grammes and finally the fabric type. Thus 5 (50) C/D indicates that there are 5 sherds with a total weight of 50 g. in Fabrics C and D.

Wood

1. Lower portion of a centre post found below the later trestle in an excellent state of preservation, measuring 0.63 m. × 0.60 m. × 1.79 m. overall and weighing approximately 500 kg. All four horns are present and measured 175 mm × 200 mm × 115 mm. long. The distance between the horns is 260 mm. and indicates such a width to the crosstrees. A mortice had been cut on each face, 0.78 m. from the upper face of the crosstrees. Each mortice was approximately 300 mm. high and 180 mm. wide, and had a curved sloping bed (see profile F, Fig. 2).
2. Section of crosstree sawn from the north-eastern end of the south-western crosstree, approximately 250 mm. long for dendrochronology and subsequently found to be of insufficient width for such analysis.
3. The residual wood of two horns removed from the intersection of the south-western crosstree with the north-western to south-eastern crosstree.
4. Lower portion of the south-western quarterbar in an advanced state of decay (Fig. 2G). This surviving timber was 1.00 m. long and at its greatest, 260 mm. wide by 275 mm. thick. The tenon measured 135 mm deep, by 51 mm. at its widest and at least 340 mm. long. It had a well defined shoulder from which it was calculated that the angle between the crosstree and quarterbar was 35 degrees.

All the above timbers are being conserved at Polegate Windmill Milling Museum, Polegate, East Sussex.

	<i>Mid-12th to 13th century</i>	<i>Mid-13th to Mid-14th century</i>
JUGS		
Strap Handles	1 (25) B	2 (40) E
Rims	1 (10) B	2 (10) C
Spouted Lip	—	1 (30) C
Thumbled Base	—	1 (25) F
COOKING POTS		
Rims	6 (60) A/B	5 (50) C/D
Bases	4 (40) A/B	3 (30) C/D
Glazed	—	6 (40) C/D
Other	40 (260) A/B	56 (290) C/D
TOTAL	52 (395)	76 (515)

The flat-topped cooking pot rims in Fabrics A and B indicate a late 12th- to 13th-century date while the wide flat-topped cooking pot rims in Fabric D indicate a late 13th- to early 14th-century date. This date is also confirmed by

DISCUSSION

The commercial codes of practice, emanating from the Ile d'Oleron in the Bay of Biscay, which had their roots in classical antiquity, encompassed not only maritime customs and practices but matters relating to the removal of mills. Early in the 15th century these codes, known as the laws of Oleron were adopted in Britain and they note the diversity of millsteads, observing that 'Some windmills are altogether held above the ground, and have a high ladder; some have their foot fixed in the ground, being as people say, well-affixed' (Bennett & Elton 1899).

The Polegate site provided evidence of two such mill trestles in that the first mill trestle was

buried below ground level and therefore 'had its foot fixed in the ground'. The second was built above the first trestle and approximately on ground level, having a mound thrown up over its timbers for stability.

First trestle

No observation was possible when the centre post was excavated by the contractors but it is clear that it came from below the subsequently discovered crosstrees. It must be concluded that it originally lay below the crosstrees and may reasonably be interpreted as part of a buried trestle. The relatively short horns suggest that the trestle to which it belonged had crosstrees that were morticed at their intersection with a halving joint. Post-medieval crosstrees tend not to be morticed at their intersection but are generally laid one above the other and supported on plinths. However, what might be described as notched halving joints were in use and still exist at the 17th-century mills at Bourn Mill, Cambridgeshire and Outwood Mill, Surrey. Although both these examples exist in conjunction with plinths, it must be observed that the practice of morticing at the intersection of crosstrees creates unnecessary weakness at a most important point and it follows that a full halving joint would be doubly impracticable and would point to being laid on levelled ground.

The position of the quarterbar mortices less than a metre above the foot of the centre post suggests that the trestle was not only short by modern comparisons but if the quarterbars were of a reasonable length the angle between the quarterbar and the crosstree would be very low and the trestle would probably have in consequence been rather squat.

Examples of such buried trestles have been excavated and include Mucking, Essex (Jones 1975) and Sandon Mount, Hertfordshire (Westall 1934).

Second Trestle

The second trestle was laid on what was probably a levelled surface, for there was no sign

of a buried soil horizon. The impression of wood slivers interpreted as the shavings from trimming the timbers perhaps with an adze or draw knife, were found on the levelled surface. Clay had been cast over the whole, forming a mound and thus stabilising the trestle. A nearby pond may possibly have been the quarry for the clay or it may have been scraped up from the surface around the mill. Stability is of the utmost importance to mill trestles (Jarvis 1981) and it is noteworthy that one crosstree lays south-west to north-east, thus presenting the strongest alignment against the prevailing south-westerly winds.

Excavation did not determine the length of the crosstrees but the minimum length of 4.62 m. represents a common enough figure for such mills when crosstrees are lying on the ground. At the intersection of the crosstrees there was a halving joint (see section, Fig. 2E), which allowed the lower surfaces of all the crosstrees to lay flat on the ground, except where minor undulations necessitated the use of small pieces of wood packing under the crosstrees as was found in trench D. In the right-angle between the south-eastern and the south-western arms and the north-western and south-western arms were the decayed remains of what can be interpreted as the vestiges of the horns of a centre post.

In trench C, and in better condition, were the remains of the lower end of a quarterbar whose tenon was still *in situ* in the mortice of the crosstree. Measurements taken after its removal confirm an angle of 35 degrees between the quarterbar and the crosstree. Although this seems low compared with the two more modern Sussex examples of Nutley, 42 degrees (Wright 1987) and High Salvington, 47 degrees (Norwood 1976). The absence of a dowel to secure the tenon of the quarterbar further suggests considerable confidence in the stability of the structure so dependent on gravity. Evidence of ancient mill trestles is scarce and confined to a few illustrations. The low angle of 35 degrees is considered to be a good design feature (Jarvis pers. comm.) and would be

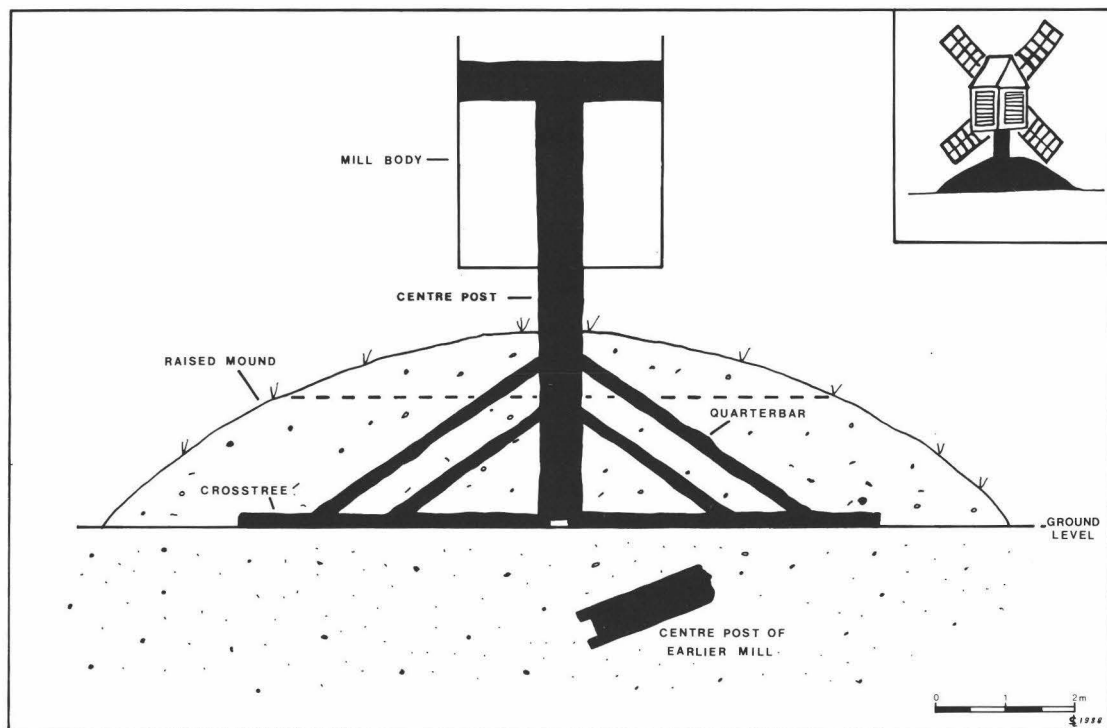


Fig. 3. Sectional reconstruction of the millsteads based on the recovered evidence. The broken line indicates a hypothetical line for the mound after settlement. (Inset) Typical postmill and mound in profile.

especially suited to the lighter and smaller mill body depicted in the early illustrations. The reconstruction (Fig. 3) shows that with an angle of 35 degrees the quarterbars would meet the centre post a little less than two metres above the top surface of the crosstrees. A mound of around two metres in height can be conjectured from these figures, but also shown is the broken line of the profile of the more commonly recorded flat topped mound.

Also in trench C there was a clay-filled second mortice in the crosstree further to the north-east which in spite of some rotting can be interpreted as the mortice for a second quarterbar. Although no previous archaeological evidence existed for double quarterbars in England, their existence in the medieval period is confirmed by their depiction

in the 14th-century Luttrell Psalter (British Library, Add. MS 42130, f. 158) and a 16th-century Flemish brass in St. Margaret's church, Walsoken, Norfolk. More recent Continental examples of double quarterbars are to be found in a painting of Moulin Cherrir, Bollezele, Nord, France (Wailes 1979) and another of the windmill at Montreuil-sur-Mer, south of Boulogne, Artois, France (Brangwyn 1923).

Observed during the contractor's trenching were the remains of a timber (see H, Fig. 1D), aligned north to south and bisecting the right-angle of the south-western and south-eastern crosstrees. Trench B revealed the end of this timber and the end of a second that would almost certainly bisect the right-angle between the south-western and north-western crosstrees in an east-west direction. Assuming that there were

four and that in part they supported the centre post, even though they would have a tendency to slide away from the centre at which they do not seem to have been attached, one can perhaps see them as intermediate pseudo-crosstrees. Such an arrangement has previously been postulated at Pashley Down post mill, Eastbourne (Stevens 1982) and can be seen in the painting of the windmill at Montreuil-sur-Mer, and present day examples can be found in Danish mills. Support between the main crosstrees would be most valuable, for it will be seen that the trestle is at its most vulnerable in terms of trestle destruction when the wind direction bisects the angle between the crosstrees. It is assumed that these pseudo-crosstrees are contemporary with the timber structure for there was no stratigraphic evidence to suggest that they were a later addition.

Examination of contemporary illustrations and reports of excavated post mill sites show many shared features with the site under discussion. A number of illustrations of medieval post mill mounds and trestles exist both in manuscripts and in carvings, an example of the latter being a pew-end at Bishop Lydeard, Somerset, where a mill is depicted on a mound. Most of the illustrations show the tops of the quarterbars showing, but in the reconstruction (Fig. 3) it has been tentatively assumed that the mound initially covered the whole trestle which became exposed during settlement.

Excavations of medieval millsteads are not numerous and those where timber remains have been recorded are few. At Butcombe, Somerset, timber fragments were found in a 1.2 m. deep cruciform trench below a mound 1.3 m. high and believed to be a flat-topped barrow (Rahtz 1958), but the lengths of the crosstrees were not determined. There are a number of multiple millstead sites as at Strixton, Northamptonshire, where a sequence of three phases produced evidence of a 13th-century 0.6 m.-high, rubble covered mound over two millsteadings (Hall 1973). Another similar two-phase site at Bridlington, Yorkshire, under a 1.37 m.-high

rectangular mound in a local park revealed a 5.18 m. \times 0.45 m. diameter centre post of one phase while the second phase millstead had unequal crosstrees of 8.53 m. and 7.0 m. respectively (Earnshaw 1973).

The most complete preserved trestle seems to be the one removed during the excavation of a millstead site at Bridgewater Without, Somerset, where a 21 m. diameter mound 1.8 m. high was excavated (Fowler 1972). The general description is similar to those of the Polegate trestle for not only were the crosstrees located and found to be 6.06 m. long and of roughly hewn timber with a halving-joint in the centre, but three quarterbars were discovered with pegged mortice and tenons. With the exception of the use of pegs (dowels) the trestle would appear similar in construction to the ones under discussion. The timbers have been preserved and are stored at Blaise Castle House Museum, Henbury, Bristol.

CONCLUSION

The earliest recorded windmill in England so far discovered is Wigston Parva, Leicestershire, 1137 and the earliest for Sussex may be any of three, *viz.* Amberley 1180–85; Boxgrove *c.* 1180; Ecclesdon 1183 (Kealey 1987). Nothing is known of the technology of any of the fifty or so 12th-century windmills known in England. No contemporary illustrations survive from this century and there are only a few for the two subsequent centuries and most of these are little more than thumb-nail sketches on manuscripts. There is therefore little to throw light on trestle technology.

The millwrights response to weather conditions are bound to be reflected in trestle construction, not the least of which in Sussex would have been the south-westerlies. Trestle typology must therefore incorporate elements of regional modification and tradition and it may be misleading to compare trestle construction from different parts of the country and arrange them in a chronological typology.

However, at present we are limited to a few comparisons and in particular the 15th-century Bridgewater Without trestle which although of apparent inferior design to the second trestle at Polegate, may in part at least have been contemporary with it. The presence of abraded pottery which was not later than the mid-14th century, would not challenge the hypothesis that the second trestle may be late 14th or 15th century. If we take the hypothetical life of a post-mill in South-east England to be a century, it would further be reasonable to suggest that the first trestle was laid down during the late 13th or 14th century.

While this site is believed to be the first excavated millstead in England where the existence of either double quarterbars or pseudo-crossrees have been recorded, the evidence confirms what some molinologists have thought for some years and it must only be a matter of

time before more sites are excavated and recognised.

Acknowledgements

The writer records his grateful thanks to Alan Hassell of A. J. Hassell Ltd., Stone Cross, East Sussex, for not only allowing the excavation to be carried out but also for his generous gift of the portion of centre post to Polegate Windmill Milling Museum and its transportation there. Thanks are also recorded to V. Hodsoll, for drawing attention to the site; J. Steer, for keeping a watching brief; D. Gregory for levelling; P. Stevens for drawing plans and sections and F. Gregory for his advice. The writer is also indebted to A. Sayers, J. Dove, D. Adams, B. Terry, N. Ingram, L. Somerville, L. Crumbie, R. Gearing and J. Sellens.

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References

- Bennett, R. & Elton, J. 1899 *History of Cornmilling*, 2, 272–75.
- Brangwyn, F. 1923 *Windmills*, 117–20.
- Down, A. 1978 *Chichester Excavations*, 3. Chichester, 341–64.
- Earnshaw, J. R. 1973 'The Site of a Medieval Post Mill and Prehistoric Site at Bridlington', *Yorkshire Archaeological Journal*, 45, 19–25, 39–40.
- Fowler, P. J. 1972 Bridgewater Without, *C.B.A. Group XII and XIII Archaeological Review for 1971*, 6. Dept. of Extra Mural Studies, University of Bristol, 9.
- Geering, T. 1884 *Our Sussex Parish* (reprinted 1925), 170.
- Hall, D. N. 1973 'A Thirteenth Century Windmill Site at Strixton, Northamptonshire', *Bedfordshire Archaeological Journal*, 8, 109–18.
- Jarvis, P. S. 1981 Stability in Windmills and the Sunk Post Mill. *International Molinological Society*.
- Norwood, J. F. L. 1976 Salvington Mill. *Worthing Museum Publication No. 12*.
- Jones, M. 1975 'Mucking—The Saxon Cemeteries', *Current Archaeology*, 50, 76.
- Kealey, E. J. 1987 *Harvesting the Air*, 227–28, 256–58.
- Rahtz, P. A. & M. H. 1958 'Barrow and Windmill at Butcombe, North Somerset', Dept. of Extra Mural Studies, *University of Bristol Speliological Society*, 8, No. 2, 89–93.
- Rigold, S. E. 1971 'Eynsford Castle and its Excavation', *Archaeologia Cantiana*, 86, 109–71.
- Salzmann, L. F. 1901 *The History of the Parish of Hailsham*, 148–95.
- Stevens, L. 1982 'Some Windmill Sites in Friston and Eastbourne Sussex'. *Suss. Arch. Coll.* 120, 93–138.
- Vince, A. 1985 'The Saxon and Medieval Pottery of London', *Medieval Archaeology* 29, 25–93.
- Wailes, R. 1979 *Windmills and Watermills*, 15.
- Westhall, P. 1934 'Sandon Mount, Hertfordshire: Its Site, Excavation and Problems', *Trans. St. Albans & Herts. Architects and Archaeological Society*, New Series, 4, 173–83.
- Wright, S. & Gregory, F. 1987 'Nutley Windmill', *Uckfield & District Preservation Society*.

A REVIEW OF ASHDOWN FOREST AND THE COMMON RIGHTS THEREON

by Jonathan Edwin Small

The theme of this article on Ashdown Forest is the long term causes of the disturbances following the commencement of enclosures in the Forest in the seventeenth century. The principal concern was the validity of common rights: accordingly, development in rights of common and their origin are investigated.

INTRODUCTION

There have been several articles concerning different aspects of Ashdown Forest in the *Sussex Archaeological Collections*.¹ The only general survey of the Forest's history in the *Collections* is that made by the Rev. E. Turner in 1862, without the assistance of the collection of documents concerning the Forest known as the Raper Papers.² Therefore, I have attempted a synthesis which, although by no means comprehensive, pays specific attention to the emergence and development of the common rights of the Forest up to the 17th century. It is unlikely that Ashdown Forest was a Royal Forest, in the strict sense, and therefore subject to Forest Law: there is no mention of a Forest in the north of Pevensey Rape in the Domesday Survey of 1086. A detailed appraisal of the question is not possible here, but in order that commoners' rights may be investigated in context, the status of the Forest will be considered firstly in broad terms.

Ashdown Forest is in East Sussex and today extends over about 14,000 acres, 6,400 of which is common land.³ It lies in the Weald and is a significant remnant of the great forest of 'Andredesweald' which, according to the Anglo-Saxon Chronicle, stretched 120 miles across and 30 miles north to south.⁴ In 1086, Ashdown would have fallen into the Rape of Pevensey and formed a part of Pevensel Forest, but by the end

of the 14th century was a separate, enclosed entity. As is the case with many forests, surrounding communities enjoyed rights of estovers (wood for fuel and 'house maintenance'), and herbage for livestock. These rights were carefully defined after the 12th century. Ashdown remained in this situation until the Restoration, when it was disafforested and subject to enclosures within. This made the local situation very tense indeed: many who had enjoyed common rights previously, tore down fences and filled in the ditches of the enclosures.⁵

Clearly, those who frustrated the enclosers' efforts had reason to be aggrieved: they and their predecessors had been exercising valuable rights on the Forest for centuries. The new owners were forced to concede land that could be used as common, but despite this, the parties failed to come to agreement. Finally in 1693, the Court of the Duchy of Lancaster found itself undertaking the peculiar task of 'creating' common land. It decreed that certain portions of land totalling 6,400 acres be left alone and used as the commoners had used it previously. The distribution of land has remained virtually the same ever since (as has the ownership: in the hands of the Sackville family as lords of the manor of Duddleswell).⁶

This article does not attempt to examine the 1693 Decree, or the immediate circumstances leading to it, but rather the deep-rooted causes of

the post-1660 situation. To this end, several factors are considered: the status of Ashdown Forest; the origin and emergence of common rights; how the two interests of common rights and the Forest administration were reconciled; finally, the commoners themselves and how their use of the Forest was monitored.

BACKGROUND: THE STATUS OF ASHDOWN FOREST

The exact date at which Ashdown was recognised as a separate entity is not known. Turner tells us that as a part of Pevensel Forest, it was very nearly co-extensive with the Rape of Pevensy. However, the Forest is referred to by name (c.1100–1130), when Henry I confirmed the right of monks to a road across the Forest of 'Essesdone'. The monks claimed to have held the right since the Conquest⁷—implying that the waste land in the north of the Rape was known by its present name since then, at least. Throughout the 11th and 12th centuries, Ashdown had to follow the vicissitudes of Pevensy. In 1086, the land was held by Robert, earl of Mortain (one of William's tenants in chief) as lord of Pevensy. Thereafter it was in the hands of the d'Aquila family (with temporary lapses), and the rape became synonymous with the Honor of Aquila.⁸ In 1246, the Honor was granted to Peter of Savoy, uncle to Queen Eleanor. Eleanor inherited Aquila in 1268; Edward I held the Honor directly between 1290 and 1299; thereafter, it was granted to Queens Margaret, Isabella and Philippa. It reverted to the crown in 1369.⁹ Ashdown was certainly an individual and independent entity in 1372 when, *inter alia*, it was given to John of Gaunt, duke of Lancaster, in exchange for the earldom of Richmond.¹⁰

In 1382, there was a warrant to the Receiver of Pevensy to 'make enclosure of the chace and Park of Asshedon'.¹¹ This is the first general warrant for enclosure I can find in the Raper Papers. However, 13th-century Master Foresters' accounts mention repair to the pale:¹²

so the 1382 warrant might imply either that the pale was in serious disrepair, or that Lancaster had a desire for a properly demarcated hunting ground. Turner says that, after 1372, the Forest was denominated in official documents 'Lancaster Great Park', but in Raper's Papers, I do not find it so styled until the 17th century.

If Ashdown was not part of the Royal Forest, it was, nevertheless, a 'hunting ground' in the gift of the crown, and had many similarities with the Royal Forest. Manwood said in his treatise on Forest Law (1598):

A forest is a certain territory of woody grounds and fruitful pastures, privileged for wild beasts and fowls of the Forest, Chase and Warren, to rest and abide in, in the safe protection of the King . . .¹³

The 'fruitful pastures' could be open country and heathland (Ashdown is today largely heathland)—a forest did not have to be wooded. Protection of the 'vert and venison' was by 'certain laws, privileges and officers'. Concern for the beasts would appear to have been paramount. In Ashdown Forest in 1297, there was a Master Forester who was paid 4d a day for his men and his horse, plus three foresters who received 1d a day.¹⁴ There was, in the 13th century, a distinction made between the lands of Ashdown and hunting rights. The legal extent of the Royal Forest covered up to one third of England in early medieval England, but most of this was ordinary farmland:¹⁵ owners of land which formed a Royal Forest could use it as they pleased, providing they did not disturb the beasts. There are exceptional cases in the 13th century, when grants were made of a forest *and* the whole forest jurisdiction, but it was usual to grant a subject only the lands of a forest—often styled a 'chase'. The grantee would benefit from the profits of agistment, and if the lands were part of a manor, the usual profits thereof.¹⁶ A few years after the grant of the Honor to Peter of Savoy, he acquired hunting rights therein.¹⁷ Though, in 1283, Ashdown is referred to as the 'King's Mother's Chase'.¹⁸

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(Volume II) translates the grant to John of Gaunt in 1372 as the 'Free chase of Ashdown with rights and liberties pertaining thereunto'.¹⁹

If we are to imply from this that John was granted the lands alone he certainly acquired full possession soon afterwards, for in 1382 Lancaster brought Sir Edward Dallingridge before six justices of Oyer and Terminer in East Grinstead, claiming £2,000 damages from Dallingridge for loss of game on Ashdown.²⁰ Sir Edward was charged with violent behaviour, illegal hunting, and firing the underwood there. Walker, in his article on the Lancaster versus Dallingridge dispute, suggests that under Queen Philippa's farmer, Sir John Seynclare, forest administration was very slack, with petty extortion and illegal hunting on the part of foresters; the manor of Maresfield was in a ruinous condition. In contrast, came the 'minute supervision' exercised by the Duke's council over his lands; the annual tournes were an 'irksome financial innovation'. Philippa received £30 per annum from the estates in and around Ashdown, Gaunt received £45. All this posed a threat to Dallingridge's and the local gentry's standing and influence. However, Gaunt's jurisdiction and franchise was upheld, his opponent found guilty on all charges except firing the underwood, and the damages were reduced to £1,080.

Unfortunately, the Raper Papers are insufficient to enable us to investigate the status of the Forest in the 11th and 12th centuries when Forest Law was at its height. However, after the deposition of Richard II by John of Gaunt's son in 1399, when the Duchy of Lancaster became a 'department' of the crown, Ashdown was considered a Royal Forest. Thus, it was disafforested in the 17th century, and in a legal case concerning commoners' rights in the 19th century (see below), the plaintiff argued from the standpoint that Ashdown was a Royal Forest in the 16th century. Henry IV granted Sir John Pelham all the chases in Aquila²¹ but in 1419, Pelham was charged with negligence in respect of the 'king's beasts';²² likewise, when in 1547 Mary granted the Forest to Sir John Gage, hunting

rights were reserved specifically for the crown.²³

THE EMERGENCE OF COMMON RIGHTS

Ashdown, by the end of the 14th century, was an enclosed forest, independent of any larger forest of the rape. Though now 'enclosed', local inhabitants continued to exercise rights of herbage and estovers in the Forest—who originally exercised these privileges and how they emerged is a matter for debate. The first written evidence of set rights existing is a late 13th-century document.²⁴

This states that there are 208 'customary tenants' living on the borders of the Forest, most of whom pay at Michaelmas, 2d; Christmas, one hen, and at Easter, two eggs. All of them had right to:

- a. Windfall wood, but not that torn up by the roots.
- b. Go into the forest with a cart for driftwood between Hockday and Michaelmas.
- c. Burn brushwood, furze and broom for fuel, and to make a clearing for pasture.
- d. Common of pasture for as much stock as they could maintain during the winter on their tenements.
- e. Pannage for swine except for 15 days either side of the feast of John the Baptist.

At Martinmas they had to pay 2d for each pig over twelve months; for younger swine, at the discretion of the forester. The king could take the best of ten swine in lieu of pannage dues (but it was rare for a tenant to have more than five or six pigs).

W. G. Hoskins, a leading member of the 1958 Royal Commission on Common Land, notes that the origin of such land is a 'most obscure problem'.²⁵ He emphasises the importance of common rights in a forest to the commoners. Ashdown was undoubtedly rich in pasture and mast; the importance of wood for fuel and repairs in a medieval economy cannot be overstated. Hoskins states that common rights 'probably antedate the idea of private property

in land, and are, therefore, of vast antiquity'. Taking the origins of common land back to prehistory, Hoskins shows that men lived on Dartmoor in the early Bronze Age. There are no traces of Neolithic dwellings, but plenty of flints, which, he argued, shows Neolithic man in the habit of using the lands for upland summer grazing. The prehistoric occupation of Ashdown Forest has also been examined,²⁶ and likewise, whereas no evidence of Neolithic dwellings have been found, hundreds of flints have—especially on flat hill tops where the whole of the valley comes into view. This might suggest temporary residence for grazing. Neolithic pottery, which would indicate more permanent dwellings, does not survive topsoil where searches for flints have been made. However, we can say that the fruits of the lands of Ashdown have been made use of for thousands of years.

Certainly, from the 17th century onwards, according to Hoskins, the common use of woodland, open glades, moors and other lands, is attested all over Southern England. This can be seen in the names of common land, for example, Sherfield in Hampshire, 'the field belonging to the shire', or Wychwood in Oxfordshire, the common wood of the 'Hwicce'. Thus, we see the development of intercommonable lands. The name 'Ashdown', far from having anything to do with ash (the constituency of the soil is unsuitable) is probably derived from a personal name of an individual or people, *Aesca* or *Aesca's dun*—the hill of *Aesca*.²⁷ Gradually we see the original unlimited summer pastures of *Andredesweald* being appropriated first to a whole county (Kent exercised common on the east of the Weald), and then to particular villages.

So, Hoskins paints the picture of unlimited use of forest land for grazing, which as forests split up, became more limited to local inhabitants. Therefore, when after the Conquest, William established codes and laws concerning the Royal Forest, he was in no position to ignore the practices of the peasantry on these new forests, for they existed from time immemorial

and were vital to the peasant economy. So vital and ancient were these practices, that to have not recognised them might have stimulated considerable local unrest. But, then, why should Ashdown tenants have had to pay for their custom (2d, a hen and two eggs—not insubstantial in the 13th century), and why were their rights so restricted—if they had enjoyed common of the forest with no regulation from time immemorial?

Note has already been made of a grant of Henry I to monks of a right across Ashdown Forest, indicating that the area north of the rape was known as Ashdown—moreover, excepting a place named 'Alchin' (now lost)²⁸ 'Domesday manors' surround the area we know as Ashdown today.²⁹ The purpose of Domesday in the words of William's grandson, Bishop Henry of Winchester, was that 'every man should know his right and not usurp another's'.³⁰ Why, then, were no rights mentioned of 'Domesday manors' concerning the Forest—manors (like Barkham and Parrock—see below) which were subsequently listed as having common rights? The surrounding manors are recorded as having sent many pigs into 'woodland', but what this woodland was is not specified.³¹ However, these villages each had their own common land ('pasture'), and many had adjacent woodland: going into the Forest was hardly necessary unless they were keeping more livestock than could be kept on their tenements. That commoners did not do this was an important proviso in future statement of rights. Thus, on present evidence, the possibility must be considered that in the 11th century, the boundaries of manors surrounding 'Ashdown' in the north of the rape were set; that they had no right of common on the Forest; and that their use of the land was unnecessary.

Turner points to neglect of the northern parts of Pevensey Rape: he states that in the 13th century, Richard de Aquila seems to be the first 'dominus de Aquila' to take an interest in the north when he grants lands lying in Maresfield, Hartfield and Cowden to Michelham Priory.³² Greater importance of the south in 1086 is

indicated by the sparse distribution of settlements in the north of the rape, compared with the south.³³ It is in the 13th century that the manors of Maresfield and Duddleswell, which were to have very strong links with the Forest in its subsequent history (Duddleswell becoming synonymous with it), appear in the records. Maresfield is mentioned as 'Mersfelde' in 1234 in the Calendar of Close Rolls 'open land of [or by] the pool'. Duddleswell, 'Dudle's Spring', is first mentioned in 1295 in Ministers' Accounts.³⁴ We also see in the early 14th century, the existence of a royal hunting seat at Maresfield.³⁵ (There are four documents of Edward II dated from 'Meresfeld', two deeds, one addressed to the Pope and two letters dated September and October, 1324).³⁶ So, by the end of the 13th century, two royal manors had developed in the south of Ashdown; we have already noted at that time the presence of a Master Forester and his staff, and that the Forest was enclosed with a pale.

It is possible that the statement of commoners rights at the beginning of this section, was a result of administrative developments in the 13th century. It might have been the attitude of the foresters that the local inhabitants were 'better in than out': if there was a formal way in which the surrounding community could enjoy the fruits of the land, then, at least, they could be supervised and their actions controlled. Realistic payment was demanded, probably because it was recognised that use of the lands was a desirable luxury—moreover, the practice was a means of forest income.

The above argument is further strengthened by examining later developments. Statements of Common Rights in 1564³⁷ and 1610³⁸ noted three categories of commoners.

1. *Free Tenants*: those who held immediately of the king in the royal manors of Duddleswell or Maresfield.
2. *Intertenants*: those who held of Duddleswell or Maresfield and of some other manor.

3. *Foreign Tenants*: those who held of some other manor.

Free and intertenants had common of estovers and herbage. Estovers are strictly for use on commoners' tenements, so those with no house or dwelling had no right of estovers. Foreign tenants had only right of herbage. The 1564 report on the Forest states Foreign tenants enjoy their custom by 'special grant'. So with the formation of two royal manors in the south of Ashdown, the Forest would be effectively their waste land: thus, those holding of them were 'free' tenants. In theory, only they had the right of estovers. We see lords of other manors, including 'Domesday Manors', petitioning for and being granted the right of herbage on the Forest. Hoskins showed use, but he did not show rights, in the modern sense, 'of vast antiquity'. While it is impossible to state anything categorically, there is nothing to indicate that the owners of Ashdown Forest had to bow to local pressure in the early Middle Ages. Those in Maresfield and Duddleswell had rights by virtue of their royal manors evolving in the Forest; others enjoyed rights by special grant.

THE RATIONALISATION OF COMMON RIGHTS

There were two strong interests in the Forest—its use as a royal hunting forest, and its value to those who had rights of common within it. While we see no list of common rights during the 14th century, there are numerous grants and confirmations of these rights. For example, Queen Philippa granted to William Fishide and Thomas de Barkham, ten loads of brushwood and herbage for thirteen cows and one bull for life; a confirmation under the Privy Seal in 1350 extended this right for ever.³⁹ We also see people petitioning the Duchy of Lancaster when their right was brought into question (see the case of Parrock manor in the next section). That persons should appeal against the denial of rights, and people like Fishide and Barkham seek rights illustrates just how valuable the 14,000 acres of

wood and heathland were seen to be.

Later, the 'ownership' of the Honor of Aquila by Sir John Pelham, shows how jealously the forests were preserved. Pelham was a loyal follower of Henry IV, who granted him 'the castle of Pevensey and Honor of the Eagle with all Lordships, manors . . . chases . . . to be holden for life without rent'.⁴⁰ Pelham lost favour under Henry V, but still retained the Honor. He owned the lands ('chases') of the forests like Ashdown in Aquila, but was not granted forest jurisdiction. In 1419, a Court was held in East Grinstead, and Pelham was charged with committing 'waste, sale and destruction to the disinheritece of the king . . . the pale and closure of the chase of Ashdown in the West part . . . to be broken and totally decayed so that the king's beasts escaped'.⁴¹ I do not know the outcome of the case, or whether Pelham was able to keep the lands until he died in 1429. Any political intrigue that might have surrounded events is irrelevant for our purposes: it is clear that preservation of 'vert and venison' was paramount.

For whatever reason, Raper's Papers were virtually silent on the Forest until 1519, when the first of six Henrician commissions complained that:

grete waste and destruction of our wood and other offences be daily committed . . . to our great hurt and damage and also loss of our deer and game⁴²

All tenants and farmers claiming any rights or liberties must apply personally to the commissioners and produce evidence of their claim. This is the first evidence I can find of a conflict between the two very strong interests in the Forest mentioned at the beginning of this section. It is possible that the administration of Ashdown had been lax in the 15th century, and commoners abused their custom and many others assumed custom who had no right to it.

Dated 10 October 1520, we have the 'Presentments of the Customal for Ashdown Tenants'.⁴³ The commoners stated their claims in a court held at Nutley. The notable differences between the late 13th-century statement of rights

(see above), and the 1520 document, is that the latter claims:

1. the right to 'routefall', expressly forbidden in the 13th-century document.
2. the right to cut for litter and quarry for stone.⁴⁴
3. that grazing sheep on the Forest is 'contrary to custom'.
- 4 the 1520 document makes no mention of burning furze for clearing.
5. no mention of collecting brushwood etc. by the cartload.

The important difference is in the status of the two documents: the former is part of an official survey of the Honor, whereas the latter is a statement of claim by commoners aware that their rights were coming under hostile scrutiny. This can be seen in the difference between what are claimed as common rights—points (1) and (2) above, are to their advantage (it is very unlikely litter cutting was ever a right, as will be explained below). A more reliable indication of what had changed in common rights, would be what was *omitted* from the later document (points (4) and (5)).

A report to the Duchy of 1526 concerns itself with not only the abuses of common rights, but also that of the forest administration.⁴⁵ It complains of forest keepers taking excessive agistment during winter months, reducing the mast available to commoners when they returned their swine at Martintide. The keepers also sold windfall wood which, by rights, belonged to commoners. Moreover, there were sundry enclosures, and woodfelling for the use of the iron furnaces on the Forest. Holdsworth mentions that abuse of the foresters' powers made the Royal Forests unpopular with local farmers, contributing to the decline of Forest Law, and adding to the general petitions to the crown for disafforestation.

Six commissions dated 1519, 1524, 1525, 1539, 1542, and 1545 all concern the 'grete waste and destruction' in Ashdown. Most commissions and subsequent reports (where Raper has found them) talk of the poor state of the pale and game,

but some mention the wood specifically. The 1524 Commission is entitled 'For Destruction of Woddy in Asshedowne'. J. K. Irons⁴⁶ takes the frequent commissions as manifesting national concern at the state of the iron industry. Some of the commissions do specify enquiry into the furnaces on the Forest. The last Commission of Henry's reign (1545) actually compiles an interrogatory:

1. How many trees, their age and worth?
2. What waste done of the wood and underwood?
3. What waste done of the deer?
4. What 'cool wood or ashes' have been made of wood other than lawful windfall?
5. What iron digged, where, by whom and for what value?

References to the underwood and deer would clearly indicate a concern at Ashdown's value as a hunting forest and care of the 'venison'. Enquiry into the value of the woodland and unlawful encroachment on it, would indicate a desire for 'increased productivity' in the Forest. The fifth point on 'iron digging' suggests to me a call for information on the industry and its capacity in relation to Ashdown Forest. There is little to suggest the commissions are part of a national survey on the industry and munitions supply; they are concerned primarily with Ashdown's 'effectiveness' as a forest. 'This view is borne out by two documents dating from Edward's minority. In 1550, there was a restraint⁴⁷ to the Keeper of the Forest and his deputy and deputies, against hunting for four years. A document dated between 1550 and 1552 complains that the pale is in great ruin to the 'great destruction of our game'.⁴⁸ Clearly, the Forest was not being managed properly. Yet no disciplinary action seems to have been taken—no solutions to the problems implemented. Queen Mary disposed of the lands of the Forest giving them to Sir John Gage, a loyal Catholic, but reserved the hunting rights for the crown.⁴⁹ This was a useless gift, considering the state of the lands. Gage, who had already been granted the

manor of Maresfield under Henry VIII (see below), returned the Forest in the second year of Mary's reign.⁵⁰

There is one aspect of common rights which was not to be called into question until the late 19th century—that is, the 'right' of litter cutting. In 1880, Lord De La Warr (lord of the manor of Duddleswell), took Bernard Hales and his servant Miles, both commoners, to the Court of Chancery. He was suing for damages for the disturbance of his game on the Forest, due to cutting bracken, fern, etc. for litter. The defendants claimed that cutting for litter was an ancient right existing in 1693 as it did in 1880.

Litter cutting was claimed to be a right in the 1520 document previously discussed, whether it was or not was an important point, especially in a Royal Forest. The late-13th century document on common rights shows that customary tenants could collect broom and furze and burn the same for their clearings. However, in 1384, Sir Edward Dallingridge was charged with firing the undergrowth in Ashdown in 1380. We have seen the claims made in 1520, but as Vice Chancellor, Bacon pointed out there is no recognition of evidence of the allowance of these claims, or their exercise without government interference. It could be that there were strict measures against the interference with underwood by the commoners, whether burning, cutting, or digging, at the end of the 14th century, but that this was forgotten during the possible 'grete waste and destruction' of the late 15th century. No mention is made of collecting broom and furze in 1520, and in the 1545 commission the second question in the interrogatory asks what waste was done to the wood and underwood. This question would appear to counter the claims made for marl, fern etc. in 1520.

The Vice Chancellor made the point in his judgement,⁵¹ that, considering the respective rights of crown and commoners in a Royal Forest, one must remember that the *royal prerogative extends* and the preservation of 'vert and venison' is paramount. Concerning the 'vert', according to Manwood, convert was an

absolute necessity in the fawning month. Thus, the cutting by tenants of brakes and litter was contrary to the law of the forest. Bacon speaks of the 'starring improbability' that such a grant might have ever been made in a Royal Forest, it would be 'improbable, unreasonable, and inconsistent with the unquestionable rights of crown and commoners'. The case went to the Court of Appeal, and the Lord Justices supported Bacon on the above points; however, Hales and Miles won their case, because they were able to prove a user of sixty years.⁵²

The common rights in Ashdown forest were always a matter of understanding between the foresters and the commoners—there has never really been a formal statement of rights or a contract between the lord (royal or otherwise) and the commoners. It is only when someone thinks his rights are being usurped that the historian finds out what is claimed by each party (or properly decreed as in 1881), be it the monarch remonstrating at the 'waste and destruction' of the Forest, an earl objecting to the spoiling of his game, or the commoners themselves complaining at the abuse of common by others. Possessing rights of common in a Royal Forest, meant that any such rights were going to come under scrutiny as and when they interfered with 'vert and venison'. However, such scrutiny which often resulted in the acknowledgement and clarification of rights, only strengthened the commoners' case against the private owners of a disafforested Ashdown after 1662.

THE COMMONERS AND DUDDLESWELL

Two very detailed reports and surveys were compiled in 1564⁵³ and 1610,⁵⁴ and both list as accurately as possible the common rights. The two documents supplement each others' deficiencies very conveniently for the historian. The Elizabethan report lists the commoners and what each paid for his custom; the Jacobean lists the tenements which had rights of common, their size, and by whom they were held and the rights

each had.

There were 208 'customary tenants' at the end of the 13th century. In 1564, there are only 147, and in 1610, there are 223 commoners (267 tenements, 59 of which are held by 15 persons). With no information it is difficult to establish a trend over three centuries, however, the decrease in commoners could be due to increasing size of tenements; but it could have also been a sudden decrease from 1500 due to hostile scrutiny of commoner's activities. Unfortunately this is pure speculation. However, the number of commoners rises from 147 to 223 over only fifty years: with an increasing number of tenants in Maresfield, Duddleswell and foreign manors. Common rights in the Forest might have found a new appeal, possibly the result of amending the 'grete waste and destruction' which must have been as harmful to the commoners as it was to the Duchy. The 1564 and 1610 reports are more detailed and comprehensive than previous ones, which possibly indicates better management of the Forest.

The report of 1526⁵⁵ mentions that unless one held at Duddleswell or Maresfield, one had no right of common. This is a confusing statement, but is explained by the 1564 and 1610 reports. In these, commoners had to sue to the Woodcourt to be held at Duddleswell. In 1545, Maresfield had been granted to Sir John Gage, and thereby, rendered independent of the Forest.⁵⁶ Now the administration of Ashdown would have to be centered around Duddleswell alone. One did not have to hold lands of Duddleswell (or Maresfield) in 1526, one just had to register one's claim to common rights in the Forest at Duddleswell. In 1564, almost every commoner 'payeth for his custom one henne and to the Woode Court . . . 2d'. This statement, endlessly repeated for each commoner, suggests they paid in kind for common rights, but they could not have these unless they registered at Duddleswell for which they had to pay 2d. The distinction between paying for custom and paying the Woodcourt was a very fine one, being purely technical: to the commoner he was paying

one hen and 2d. for the right of herbage and/or estovers on the Forest. It is interesting to note that payments to exercise common rights in the Forest had hardly changed since the thirteenth century.

Of the Free Holdings in 1610, only 38 per cent have right of herbage, which could imply that only 38 per cent of the tenements in Maresfield and Duddleswell had dwellings on them. Twenty-one per cent of the Foreign Holdings possessed estovers as well as herbage, although in principle, 'foreigners' were only supposed to have right of herbage. The survey also reports the building of 14 cottages on the Forest 'without lawful licence'—ranging from two to 25 years' old. These squatters would have undoubtedly taken estovers and made use of the pasture. The 1610 survey shows Duddleswell manor to have only 26 tenements, Maresfield, 76; and if one assumes that the number of tenants of the respective manors who exercised right of common was proportional to the size of the manors, Maresfield was three times the size of Duddleswell. Both surveys show a greater proportion of Foreign Holdings than Free Holdings. Ironically, both the foreign manors of Barkham and Tarring 'Peverall' have more holdings with common rights than Duddleswell. Yet, Duddleswell is a Royal manor of the Forest, and after 1662, we see that the lordship of Duddleswell is synonymous with owning the Forest.

Maresfield always enjoyed a higher status than Duddleswell, it used to boast the royal hunting seat, whereas Duddleswell is hardly mentioned. Consequently, when Henry VIII rewards Sir John Gage, Chancellor of the Duchy of Lancaster in 1545, Maresfield is the more worthy gift for it has a park, iron mills and is fairly large. As we have seen, Duddleswell is kept as an administrative centre. Once in receipt of Maresfield, a further gift, this time by Mary, would be logically the chase of Ashdown. The return of the lands of the Forest by Gage was to end the manor's involvement (except common rights: its 'Free' status was preserved) with

Ashdown to this day. Following Ashdown's disafforestation after the Restoration, the 'created' common land became the 'waste' of Duddleswell—this relationship has continued. The preamble to the 1974 Ashdown Forest Act states:

The said common lands form part of the manor of Duddleswell and the soil thereof is vested in the lord for the time being of the said manor . . .⁵⁷

The status of the manor of Parrock as a Foreign Manor, which lies north of the Forest, has always been a subject of contention. In the 1370s, Sir Thomas Lodewy petitioned the Duchy Council to appeal against the denial of his rights in the Forest. His rights of pasture, pannage and estovers in respect of his 'free tenement The Parrock' is confirmed; which rights his predecessors 'from all times past have had'.⁵⁸ In the 1526 report, Parrock is mentioned along with Hyndal and Reston manors for assuming common rights: the commissioners state 'we could never know by what liberty or custom' they assumed their rights. In 1543, we see that Richard Warner had petitioned the Duchy Chamber to show that he and his predecessors in title, lords of Parrock and their tenants had herbage in the Forest. The Warden of the Forest is commanded to allow Warner 'the aforesaid liberties as in times past'.⁵⁹ The only possible reason I could find for this continued doubting of Parrock's rights, is that originally the manor did not lie in the Rape of Pevensy in which the Forest lay. The Hundreds of Rushmonden, East Grinstead and Hartfield were, in 1086, divided between Pevensy and Lewes rapes. Parrock was the only manor in Hartfield Hundred, bordering the Forest, that was not in Pevensy Rape.⁶⁰

Finally, we must take advantage of the detail of the 1611 report, and examine the social status of the commoners. Commoners were not 'peasants'. In stating their case in 1691, they emphasised that they did not claim common rights as Forest tenants, but as manorial tenants. Turner records their common of pasture and

estovers was due to them for their *lands*, not because of their 'office'. To be a commoner one had (with a few exceptions), to hold land. The 267 tenements which had common rights in 1610 averaged 23 acres, or 18 acres if one does not include the nine tenements with over one hundred acres. It is therefore no surprise that of the 223 commoners in 1610, there was one earl, one baron, 12 knights, seven men styled 'esquire' and five styled 'gentlemen': over 11 per cent of commoners were members of the nobility or gentry.

CONCLUSION

By the mid-17th century, Ashdown Forest had been established under royal or central control for about four hundred years. It had come under careful scrutiny in the 14th and 16th centuries, there was mutual agreement as to the respective rights of the king and commoners. It is not surprising that there was such furore after

1662, when the enclosures of the Forest began. The hitherto lack of 'private enterprise' in the Forest, was clearly beneficial to commoners: the commoners had enjoyed an easy time, paying the same for estovers and herbage as they had done in the 13th century. They also had 14,000 acres in which to exercise their privileges—clearly too much, as the Duchy Court decreed in 1693 that 6,400 acres was ample and nobody complained.

As we have seen, the exercise of common rights was often a privilege of the well-to-do, who were able to represent themselves very well in front of the Chief Justice in 1691. They also had a strong case: their rights were by special (royal) grants, or by simple virtue of the Forest being the waste of their manor and the centuries, over which they had been taking advantage of such grants gave their arguments added force. The exercise of common rights was not, as the enclosers claimed, merely tolerated by the Forest staff, nor were they some undefined casual practice.

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Notes

- ¹ Rev. E. Turner, 'Ashdown Forest', *Suss. Arch. Coll.*, **14**, (1862), 35–64; E. Straker, 'Ashdown Forest and Its Inclosures', *Suss. Arch. Coll.*, **81**, (1940), 121–136; C. F. Tebbutt, 'The Prehistoric Occupation of the Ashdown Forest Area of The Weald', *Suss. Arch. Coll.*, **112**, (1974), 34–43; C. F. Tebbutt, 'King's Standing Ashdown Forest', *Suss. Arch. Coll.*, **112**, (1974), 30–44; S. Walker, 'Lancaster v. Dallingridge: A Franchisal Dispute in Fourteenth Century Sussex', *Suss. Arch. Coll.*, **121**, (1983), 87–94.
- ² The *De La Warr v. Hales* Chancery case of the 1880s saw the defendant's solicitor, William Augustus Raper (WAR), translate and transcribe all documents he could find relevant to Ashdown Forest, mainly in the Duchy of Lancaster. In full, they comprise six chronological volumes (hereafter WAR:i) c. 1230–1879; two final volumes were compiled for use in court (WAR:ii). Both sets are kept by the Conservators of the Ashdown Forest, Wych Cross, Forest Row, E. Sussex, and I am grateful to the clerk to the Conservators, Lt. Col. Nicholls and Mrs. Ruxton, for their co-operation in my study of them. In my footnotes, I have indicated where the reference is to be found in the Raper Papers.
- ³ 13,991 acres. See East Sussex Record Office (hereafter E.S.R.O.) Add. MSS. 3920 (Vice-Chancellor's

Judgement, 1880).

- ⁴ A. Mawer & F. M. Stenton, *The Place Names of Sussex* (1929), **1**, 1, 2.
- ⁵ Turner, 52–54.
- ⁶ *Ibid.*, 59–60. As this article goes to press the sale of the Forest to East Sussex County Council awaits the probate of the late earl's estate.
- ⁷ J. K. Irons, 'Aspects of the Impact of Man on the Historical Ecology of Ashdown Forest, Sussex, before 1885', (University of Sussex, D.Phil Thesis, 1982), 44–66.
- ⁸ Turner, 38–42.
- ⁹ Irons, *op. cit.*
- ¹⁰ R. Somerville, *History of the Duchy of Lancaster*, (1953), **1**, 52–3.
- ¹¹ WAR:i, **1**, 62.
- ¹² WAR:i **1**, 7–13.
- ¹³ W. S. Holdsworth, *A History of English Law*, 7th edn., (1956), **1**, 94–107.
- ¹⁴ WAR:ii, **1**, 1. (Pipe Roll, 26 Edward I).
- ¹⁵ O. Rackham, 'The Countryside: History and Pseudo-History', *The Historian*, **14**, (1987), 15–16.
- ¹⁶ Holdsworth, *op. cit.*
- ¹⁷ W. H. Legge, 'Forestry', in William Page ed. *The Victoria County History of the County of Sussex*, 2nd edn., (1973), **2**, (hereafter Legge), 314.

- ¹⁸ Irons, *op. cit.*
- ¹⁹ Legge, 316.
- ²⁰ Walker, 121.
- ²¹ Granted in 1413 (WAR:i, 1) or, according to Somerville 1, 428, granted in 1409 (DL:42/16f.245v).
- ²² WAR:i, 1, (DL:Inq.P.M./II/No.10).
- ²³ WAR:i, 1, 190–1.
- ²⁴ Legge, 314.
- ²⁵ W. G. Hoskins & L. Dudley Stamp, *The Common Lands of England and Wales*, (1963), 5–13.
- ²⁶ Tebbutt, *SAC*, 112.
- ²⁷ Mawer & Stenton, 1,1,2.
- ²⁸ *Ibid.* 2, 390.
- ²⁹ See the map of Pevensey Rape in J. Morris, ed., *Domesday Book*, 2, *Sussex*, (1976).
- ³⁰ Morris, *op. cit.* Introduction quoting ‘Dialogus de Sacaccurio 1, 16’.
- ³¹ See under Hundreds of East Grinstead, Hartfield, Rotherfield, and Rushmonden in Morris, *op. cit.*
- ³² Turner, 41–42.
- ³³ See the map of Pevensey Rape in Morris, *op. cit.*
- ³⁴ Mawer and Stenton, 349–50.
- ³⁵ Turner, 45–46.
- ³⁶ W. H. Blaauw, ‘Visit of King Edward II to Battle and other parts of Sussex in 1324’, *Suss. Arch. Coll.*, 6, (1853), 51.
- ³⁷ WAR:i, 1, 232–45.
- ³⁸ WAR:i, 2, 2–34.
- ³⁹ WAR:i, 1, 30. (Pat. Roll 24 Edward III).
- ⁴⁰ Granted in 1413 (WAR:i, 1) or, according to Somerville, *op. cit.*, 428, granted in 1409.
- ⁴¹ WAR:i, 1 (DL:Inq.P.M./II/No.10).
- ⁴² WAR:i, 1, 108.
- ⁴³ WAR:i, 1, 110–119.
- ⁴⁴ This 1520 claim is only mentioned in the 1880 Chancery Judgement.
- ⁴⁵ WAR:i, 1, 128–130.
- ⁴⁶ Irons, *op. cit.*
- ⁴⁷ WAR:i, 1, 186.
- ⁴⁸ WAR:i, 1, 187.
- ⁴⁹ WAR:i, 1, 190–1.
- ⁵⁰ WAR:i, 1, 191.
- ⁵¹ E.S.R.O. Add. MS 3920 (Vice-Chancellor’s Judgement, 1880).
- ⁵² E.S.R.O. Add. Ms 3975 (Lord Justices’ Judgement, 1881).
- ⁵³ WAR:i, 1, 232–45.
- ⁵⁴ WAR:i, 2, 2–34.
- ⁵⁵ WAR:i, 1, 128–30.
- ⁵⁶ WAR:i, 1, 158–165.
- ⁵⁷ United Kingdom Laws, Statutes, etc., *Ashdown Forest Act*, 1974, ch.xxi.
- ⁵⁸ WAR:i, 1, 45.
- ⁵⁹ WAR:i, 1, 153.
- ⁶⁰ Morris, 10, 16.

MARRIAGE IN THE 'PROHIBITED PERIODS' IN THE MID-SUSSEX WEALD, 1541–1799, AND MARRIAGE BY DAY OF WEEK

by *J. M. Caffyn*

THE 'PROHIBITED PERIODS'

Before the Reformation, the Church prohibited marriage in three canonical seasons of the year: Advent, Lent and Rogationtide. The prohibition arose because these most solemn periods of the Christian year were considered inappropriate for the celebration of the joys of marriage. It is of early date; a comprehensive canon to this effect was enacted at the Council of Eanham (A.D. 1009). The practice of the Church of England before the Reformation is shown by the rubric of the Sarum Manuals, which prohibited marriage from Advent Sunday until the Octave of Epiphany (that is, including Hilary, 13 January), from Septuagesima until the Octave of Easter (that is, including Low Sunday or Quasimodo, the Sunday after Easter), and from Rogation Sunday until six days after Pentecost (that is, excluding Trinity Sunday).¹ These periods varied from year to year, according to the ecclesiastical calendar. Advent begins between 27 November and 3 December, so that this prohibited period lasted six to seven weeks. The ten weeks and one day of the second (Lenten) period ran at its earliest from 18 January to 29 March inclusive, and at its latest from 21 February to 2 May. The third (Rogationtide) period, of three weeks, ranged from 26 April–16 May to 30 May–19 June. In *The Book of Church Law* J. H. Blunt comments: 'That this rule was observed equally as much after the Reformation as before, in many places, is shown by the fact that an entry of the prohibited times was often made in the parish register, and that inquiries on the subject are found in many visitation articles'. He gives examples, and notes that Sharpe, Archbishop of

York, in a Charge of 1750, names the prohibited periods as then observed.² But at no time after the Reformation was the prohibition mandatory. E. A. Wrigley and R. S. Schofield note: 'In 1575 Convocation required the bishops to publicize in every parish church a statement that marriages might be solemnized at all times of the year, but Queen Elizabeth rejected the Article concerned. Despite the lack of any legal basis for the prohibited seasons after the Reformation, bishops and other church officers continued to issue licences of exemption for a fee'.³

The extent to which pre-Reformation practices were continued into the post-Reformation era is of interest in itself. Additionally, there is an interrelationship between the extent of marriage in the 'prohibited periods' and seasonality. A weakening of observance of the 'prohibited periods' could result in changing the pattern of seasonality; but changes in the pattern of seasonality, attributable to other causes, could also affect the incidence of marriage in the 'prohibited periods'. What happened in Sussex is of interest, since the pattern of seasonality in Sussex (together with south and west Surrey, and the western edge of Kent) differed from that of most of the rest of the country.

The extent to which the 'prohibited periods' were observed seems often to have been researched using analyses of marriages by calendar months. Such data, however, are too superficial for the purpose: they do not take into account the important variation in the precise dates of the 'prohibited periods' year by year, and they do not allow for the fact that, if they wished, people could avoid the 'prohibited

periods' in most months in which they occurred. A good example of the latter is evident in Horsham. In the period 1550-74 there were 39 May marriages there. In this same period 414 of the 775 May days were 'prohibited', or 53 per cent; so, other things being equal, we might expect just over half the May marriages to fall on 'prohibited' days. In fact, only five of the 39 (or

13 per cent) did so—evidence that in Horsham at this time marriage in the third 'prohibited period' was being significantly avoided.

An authentic study of the extent of observance of the 'prohibited periods' from the middle of the 16th century to the end of the 18th in the neighbouring parishes of Bolney and Cowfold, in which each marriage date was

TABLE I
The Marriages, by Parish and Period

Period	Town		Rural Parishes				Total Rural	Total Base
	Horsham (1541-)	Ardingly (1558-)	Bolney (1541-)	Cowfold (1558-)	Cuckfield (1598-)			
-1599								
No. in reg.	827	106	96	166	19			
I.E.*	4	1	15	13	—			
Base	823	105	81	153	19	358	1181	
1600-49								
No. in reg.	798	105	125	180	513			
I.E.	10	4	2	2	4			
Base	788	101	123	178	509	911	1699	
1650-99								
No. in reg.	737	104	190	194	306			
I.E.	—	1	2	1	2			
Base	737	103	188	193	304	788	1525	
1700-49								
No. in reg.	613	112	131	83	293			
I.E.	3	—	—	1	3			
Base	610	112	131	82	290	615	1225	
1750-99								
No. in reg.	902	159	149	172	529			
I.E.	1	—	—	1	3			
Base	901	159	149	171	526	1005	1906	
Total Base	3859		580	672	777	1648	3677	7536

*I.E.: Incomplete Entries—insufficient evidence to determine the precise date of marriage.

Sources:

Horsham—1541-1635, *Suss. Rec. Soc.* 21; 1636-1753, West Sussex Record Office (hereafter W.S.R.O.), W. H. Challen T/S from R. Garraway Rice MS; 1754-99, W.S.R.O., PAR 106/1/1/4.

Ardingly—*Suss. Rec. Soc.* 17 (using the original paper register dates where these differ from the later copy).

Bolney—*Suss. Rec. Soc.* 15.

Cowfold—*Suss. Rec. Soc.* 22.

Cuckfield—1598-1699, *Suss. Rec. Soc.* 13; 1700-99, W.S.R.O., PAR 301/1/1/1, 301/1/1/2, 301/1/1/4, 301/1/1/6.

related to the ecclesiastical calendar for the year in which it occurred, is given in *Sussex Believers* as part of an examination of the seasonality of marriage.⁴ The present study seeks to expand this database, so that more authoritative conclusions can be drawn. To Bolney and Cowfold are added the rural parishes of Ardingly and Cuckfield, and the town parish of Horsham. The inclusion of Horsham is important because both observance of the ‘prohibited periods’ and seasonality may well vary between town and country—as indeed they did in the present case. (It is noted that early in the 18th century probably a third of the population of Horsham were dissenters, the dominant sect being the General Baptists; but there was no difference in the seasonal patterns of marriage between the mid-Sussex Baptists and their non-Baptist neighbours, nor any significant difference in the extent to which they married in the ‘prohibited periods’.⁵) The present study is based on the analysis of 7,500 marriages. Details of these, by parish and period, are given in Table 1. The sub-sample bases shown here are not repeated in subsequent tables. Throughout the study, year dates refer to the historical year beginning on 1 January.

The incidence of marriage in ‘prohibited periods’ is shown in Table 2. Overall, there was a steady increase in the proportion of marriages falling in ‘prohibited periods’, from 16 per cent in the second half of the 16th century to 39 per cent by the second half of the 18th century. There is a clear distinction between the period up to 1649 and the period 1650–1799: overall, the incidence of marriage in ‘prohibited periods’ increased from 19 per cent in the former period to 36 per cent in the latter. This increase may perhaps be explained, in part at least, by a change in the pattern of seasonality, attributable to other factors. But if marriages were randomly distributed across the year we could expect 37–38 per cent to fall into ‘prohibited periods’ (since the number of ‘prohibited’ days in the year can vary between 134 and 140, depending on the date of Advent Sunday); and the incidence of marriage in ‘prohibited periods’ in the 16th and first half of

the 17th century is so very much lower than this as to constitute, considerations of seasonality notwithstanding, strong evidence that at this time there was still marked observance of the ‘prohibited periods’.

The sample base for Horsham is large enough to split the analysis of the pre-1600 period. From 1541, when the surviving registers begin, to 1574, there were 485 marriages: as few as 8 per cent of these fell into ‘prohibited periods’. So avoidance of the ‘prohibited periods’ was very marked in Horsham during the third quarter of the 16th century. For the 338 marriages 1575–99, the equivalent figure was 20 per cent—the same as for 1600–49, and very close to that for the rural parishes up to 1649. Although this level was higher than that for the preceding quarter-century, it still points to marked avoidance of the ‘prohibited periods’.

Another piece of indicative evidence concerns Saturday marriages. As we shall see, Saturday was not a popular day for marrying; but in Horsham, 1541–99, there were 47 Saturday marriages. No fewer than 28 of these took place on the three Saturdays, of the 52 in the year, that immediately preceded the start of a ‘prohibited period’ (the Saturdays before Advent Sunday, Septuagesima, and Rogation Sunday). Those getting married on these Saturdays clearly wanted to get their marriage in before the ‘prohibited period’ started.

The extent of marriage in the ‘prohibited periods’ is likely to affect and to be affected by seasonality of marriage. The patterns of marriage by calendar months are shown in Table 3. (Percentages are used here to identify the patterns: owing to rounding-off to whole numbers totals do not always add to precisely 100.) March, and to a lesser extent July and August, were unpopular throughout, as was December until the second half of the 18th century. The most important changes in seasonality are summarised in Table 4. There was a steady increase in the popularity of spring marriages (April and May), from 17 per cent of all marriages in the 16th century to a peak of 37

TABLE 2
The Incidence of Marriage in 'Prohibited Periods'

<i>Marriages in 'prohibited periods' as the percentage of all marriages</i>			
	<i>Horsham</i>	<i>Rural Parishes</i>	<i>All Parishes</i>
Up to 1599	13	22	16
1600-49	20	22	21
1650-99	35	33	34
1700-49	30	40	35
1750-99	38	39	39

Up to 1649	16	22	19
1650-1799	35	38	36

For base totals, see Table 1

TABLE 3
Marriages by Month

<i>Marriages in each month as the percentage of all marriages</i>														
		<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	
-1599	Horsham	10	6	*	7	11	12	8	7	10	13	12	4	(100)
	Rural parishes	11	7	1	5	11	12	9	5	14	11	9	5	(100)
	All parishes	11	7	1	6	11	12	8	6	11	12	11	4	(100)
1600-49	Horsham	7	6	1	9	14	12	7	7	11	13	9	4	(100)
	Rural parishes	6	7	1	11	13	14	7	6	10	11	10	4	(100)
	All parishes	7	7	1	10	13	13	7	7	10	12	9	4	(100)
1650-99	Horsham	5	6	3	14	14	14	7	4	10	10	7	5	(99)
	Rural parishes	3	5	5	15	20	14	6	2	10	11	6	4	(101)
	All parishes	4	6	4	14	17	14	6	3	10	11	7	5	(101)
1700-49	Horsham	6	10	2	13	16	12	7	3	9	10	6	5	(99)
	Rural parishes	4	6	6	29	16	11	5	3	4	8	5	4	(101)
	All parishes	5	8	4	21	16	11	6	3	7	9	5	4	(99)
1750-99	Horsham	9	7	4	10	12	8	6	7	7	11	10	10	(101)
	Rural parishes	6	8	5	20	9	7	7	5	6	11	7	8	(99)
	All parishes	8	8	5	15	11	7	6	6	7	11	8	9	(101)

For base totals, see Table 1

TABLE 4
Changes in Seasonality of Marriage

	<i>Apr/May marriages as the percentage of all marriages</i>			<i>Sep/Oct/Nov marriages as the percentage of all marriages</i>		
	<i>Horsham</i>	<i>Rural Parishes</i>	<i>All Parishes</i>	<i>Horsham</i>	<i>Rural Parishes</i>	<i>All Parishes</i>
-1599	18	16	17	35	35	35
1600-49	22	23	23	33	31	32
1650-99	28	34	31	28	28	28
1700-49	29	46	37	26	17	21
1750-99	22	30	26	28	24	26

For base totals, see Table 1

per cent in the first half of the 18th century; this fell back to 26 per cent for the second half of that century. The very high percentage of April/May marriages in the rural parishes, 1700-49, was common to each of the four parishes, and points to a marked difference in seasonality between the rural and town parishes, viz:

<i>April/May marriages as a percentage of all marriages, 1700-49</i>	
Ardingly	43
Bolney	44
Cowfold	43
Cuckfield	49
Horsham	29

While the proportion of marriages in the spring increased over time, autumn marriages (September, October and November) decreased, from a high level of 35 per cent in the 16th century to a low of 21 per cent in the first half of the 18th century.

With its spring/early summer marriage peak from 1600, the seasonality pattern in mid-Sussex differed from most of the rest of the country. Wrigley and Schofield give, in aggregate, the peak months for marriage for 414 parishes in

England, 1601-1720.⁶ From the present study, for the period 1600-1749, the peak month for the five mid-Sussex parishes was May (with 15 per cent of all marriages), followed by April (with 14 per cent). For the Wrigley and Schofield parishes (which included 15 Sussex parishes, 12 with early summer peaks), only 16 per cent of parishes had their peak month in May, with 8 per cent having their peak in April. From Wrigley and Schofield's cumulated data for England, 1540-1799, the overall differences are clear, with April and May being more popular in mid-Sussex than in the country as a whole, and the months from October to February being more popular in the country as a whole than in mid-Sussex.⁷

Many factors affected seasonality of marriage, apart from religious considerations.⁸ Important in Sussex were agricultural demands, particularly those of the hay and corn harvests (July and August). One factor, perhaps more relevant in country than town, may have been a natural human preference to be married in the spring, which could have found increasing expression in the pleasure-seeking ethos that followed the Restoration. Another possibility is that in the Sussex wealden parishes the appalling state of the lanes (there were very few 'roads') may have inhibited marriages in the winter months. The possible significance of the difficulty of travel from one village to another ('... before turnpikes, there was no driving to

Billingshurst, they went on horseback. . .⁹), is pointed by the fact that of the 768 marriage partners of the 384 marriages in Bolney and Cowfold, 1650-99, 311 (40 per cent) were not residents of the parish in which they married.¹⁰

As has been noted, there was a large increase in the incidence of marriage in 'prohibited periods' between the period up to 1649 and the period 1650-1779 (Table 2). But the dominant cause of the change could simply have been the fact that more people chose to marry in the spring in the latter period (Table 4). There was a high incidence of 'prohibited' days in April and May, there were none in September or October and very few, if any, in November. We can investigate this issue by isolating the months of April and May (Table 5, A). In these two months there were both 'prohibited' days and days that were not 'prohibited'. Between the period up to 1649 and the period 1650-1799 there was a 50 per cent increase—from 32 per cent to 48 per cent—in the extent to which people marrying in these months married on 'prohibited' days. The change was especially marked in Horsham where, up to 1649, the 'prohibited periods' had been more strictly observed than in the rural

parishes. This finding can be checked by looking at January, a winter month which had, in most years, reasonable options for both 'prohibited' and not 'prohibited' days (Table 5, B). The same pattern is repeated, to an even more marked degree. Finally, we can cumulate the results for April, May and January, as the months in the year which offered the most balanced options between 'prohibited' and not 'prohibited' days (Table 5, C). The conclusion is clear: there was a very marked reduction in observance of the 'prohibited periods' after 1650. This finding can be taken one stage further: the number of 'prohibited' days in these three months was in every year either 46 or 47 (except in those few years when Easter was as early as 22 March, when it was 48); the proportion of 'prohibited' days in these three months was between 50 and 51 per cent—the same as the proportion of marriages that took place on 'prohibited' days in them after 1650. The conclusion must be that, from 1650 to 1799, the 'prohibited days' were ignored during these three months.

Nevertheless, in both March and December—the two months with the most 'prohibited' days—there was a low incidence of

TABLE 5
The Incidence of Marriage in 'Prohibited Periods' in Specific Months

	<i>Horsham</i>		<i>Rural Parishes</i>		<i>All Parishes</i>	
	<i>(All marr.)</i>	<i>Marr. in P/P as % of all</i>	<i>(All marr.)</i>	<i>Marr. in P/P as % of all</i>	<i>(All marr.)</i>	<i>Marr. in P/P as % of all</i>
A: <i>April + May</i>						
Up to 1649	(323)	27	(267)	38	(590)	32
1650-1799	(586)	48	(849)	48	(1435)	48
B: <i>January</i>						
Up to 1649	(141)	22	(97)	34	(238)	27
1650-1799	(150)	56	(115)	60	(265)	58
C: <i>January + April + May</i>						
Up to 1649	(464)	25	(364)	37	(828)	31
1650-1799	(736)	50	(964)	50	(1700)	50

marriage. This suggests that, despite increasing rejection of the extended 'prohibited periods', people may have still been reluctant to marry in Lent and, until 1750 at least, in Advent.

With regard to the 'prohibited period' from Advent Sunday to Hilary, was any distinction made between Advent itself and the days following Christmas (Christmas Day to Hilary inclusive)? The number of days in this 'prohibited period' varies from 42 to 48 according to the date of Advent Sunday. When Christmas Day falls on a Sunday there are 28 'prohibited' days before it, when it falls on a Monday there are 22—an average of about 25. From Christmas Day to Hilary inclusive there are 20 'prohibited' days. If no distinction was made between the two parts of this 'prohibited period' insofar as getting married was concerned, we can expect (other things being equal) a few more marriages to have taken place in Advent than in the latter part of the period. The findings were as follows:

<i>Advent marriages as a percentage of all marriages Advent Sunday to Hilary</i>		
<i>Up to 1649</i>	<i>1650-1749</i>	<i>1750-99</i>
(147)*	(175)*	(243)*
67%	57%	47%

(*Base: No. of marriages Advent Sunday to Hilary.)

Up to 1750 there were indeed more marriages in Advent than in the second part of this 'prohibited period'. Prior to 1650 the difference is very marked. Only after 1750 were there fewer marriages in Advent than we might have expected if both parts of the period were equally acceptable. The sample bases are small for analysis by town and rural parishes, but the equivalent figures for Horsham were 70 per cent, 53 per cent and 45 per cent; and for the rural parishes, 63 per cent, 63 per cent and 48 per cent. It is clear that up to 1750 people were just as prepared to marry in Advent as in the period

from Christmas to Hilary—indeed, they were more prepared to do so. It seems most unlikely that the reversal of the pattern in the last half of the 18th century was due to new religious scruples; it is much more likely to be attributable to social factors—simply that people preferred to get married after Christmas than before it. The finding for 1750-99 will have been affected by the increase in December marriages in the last half of the 18th century, from 4 per cent of all marriages to 9 per cent (Table 3), which is largely accounted for by an increase in the number of post-Christmas marriages; and this increase in the number of December marriages is more likely to be attributable to an improvement in the state of the roads (the proportions of marriages in November and January also increased at the time) or to social preferences, than to people becoming more prepared to marry in a 'prohibited period'.

A very different pattern is apparent for the 'prohibited period' from Septuagesima to Quasimodo. There are 71 days in this 'prohibited period' and they divide into three distinct sections: pre-Lent, from Septuagesima to Shrove Tuesday (17 days); Lent itself, from Ash Wednesday to the day before Easter Sunday (46 days); post-Lent, from Easter Sunday to Quasimodo (eight days). In total, there were 1,068 marriages during this 'prohibited period': 456 pre-Lent, 163 in Lent itself, and 449 in the post-Lent eight days. By comparing the percentage of days in each section of the period with the percentage of marriages in each, the avoidance of Lent becomes very apparent. This comparison is shown in Table 6. Lent accounted for 65 per cent of the days but for as few as 15 per cent of the marriages. This avoidance of Lent was common to both the town of Horsham and the rural parishes; it was particularly marked in Horsham. When analysed by period, there is the remarkable finding that for *c.*100 years up to 1649 only 5 per cent of the marriages during this long 'prohibited period' took place in Lent. For the next hundred years, the figure rose to 14 per cent, and for the last half of the eighteenth

TABLE 6
Distribution of Days and Marriages within the Second 'Prohibited Period'

	(Base)	<i>Septuagesima to Shrove Tuesday</i>	<i>Lent</i>	<i>Easter Sunday to Quasimodo</i>
% of days:	(71)	24	65	11
% of marriages:	(1068)	43	15	42
% of marriages by type of parish:				
Horsham	(460)	55	11	34
Rural parishes	(608)	33	19	48
% of marriages by period				
Up to 1649	(210)	68	5	27
1650-1749	(489)	39	14	47
1750-99	(369)	33	23	44

century to 23 per cent. But this last figure is still far below the 65 per cent that would have occurred if marriages had been evenly spread through the period. Lent was regarded as very different from the other 'prohibited' days in this 'prohibited period'.

The avoidance of marriage during Lent in Horsham is dramatically illustrated by the fact that of the 823 marriages there from 1541 to 1599 not one took place in Lent; and of the 1,611 marriages from 1541 to 1649 only two were in Lent—one in 1608 and one in 1646. The avoidance of Lent is also indicated by the relative popularity of marrying on Shrove Tuesday, the last day before Lent. In Horsham, 1541-1649, there were seven marriages on Shrove Tuesday compared with just the two in Lent; for the next hundred years, 1650-1749, there were the same number of marriages (19) on the one day, Shrove Tuesday, as on all the 46 days of Lent.

The 46 days of Lent account for 13 per cent of all days; but over the whole period studied, only 2 per cent of all marriages took place in Lent. In Horsham, only 1 per cent did so, in the rural parishes, 3 per cent. (The direction of this difference is interesting, since it might be expected that religious considerations would

have less influence in town than country.) The incidence of marriage in Lent increased over time, though it still remained low. Of the 2,880 marriages in the five parishes up to 1649, less than $\frac{1}{2}$ per cent took place in Lent; of the 2,750 marriages from 1650 to 1749, only 2 per cent; of the 1,906 marriages from 1750 to 1799, only 5 per cent.

The results shown in Table 6, and those relating to the 'prohibited periods' as a whole, suggest that the avoidance of Lent had little or nothing to do with conscious observance of the 'prohibited periods' as such. It probably arose from an amalgam of four factors: the significance of Lent to the deeply religious (of all persuasions), for whom it was an inappropriate time to marry; tradition, going back to the prohibition of pre-Reformation times (we can note that marriage in Lent was forbidden as early as A.D. 365—that is, earlier than the Advent and Rogationtide prohibitions¹¹); superstition, arising from the old prohibition and summed up in the proverb, 'Marry in Lent, live to repent'; the sombre and joyless mood of Lent (we can contrast the very few marriages in Lent with the many on Easter Sunday and the days that immediately followed it).

MARRIAGE BY DAY OF WEEK

At the same time as each marriage date was checked to see if it fell into a 'prohibited period', the day of week was noted. The earlier study of Bolney and Cowfold found that not only did the pattern of marriage by day of week change across time, but also that it changed suddenly.¹² This was first noticed in Bolney, where a major change occurred around 1625. It was thought this may have been due to a change of incumbent—a new minister, John Fowkes, was inducted in October 1627. But then a similar change was noted in Cowfold, around 1630, and this could not be explained by a change of incumbent: Thomas Hudson was minister there from December 1622 until some time after 1642, when he signed the burial register and married his third widow. The present study set out to test the hypothesis put forward in the earlier study, that there was not only a change in the pattern, from the dominance of Monday and Sunday to the dominance of Tuesday and Thursday, but also that this occurred quite sharply, round about 1625-30.

Table 7 sets out the patterns of marriage by day of week, by half-centuries. During the last half of the 16th century, Sunday (37 per cent of

all marriages) and Monday (30 per cent) were by far the most popular days for marrying. In the first half of the 17th century the popularity of Sunday plummeted, and Tuesday (24 per cent) became the second most popular day, after Monday (32 per cent). In the next half-century it was Monday's turn to plummet—falling from 32 per cent to 10 per cent. Thursday (30 per cent) became very popular, second to Tuesday, which had the high figure of 39 per cent of all marriages. And from 1650 to the end of the 18th century, Tuesday and Thursday remained the most popular days for marrying. In the first half of the 18th century there was some resurgence in the popularity of Sunday: it remained in third place overall, but in Horsham it was the most popular day (with 28 per cent, to Thursday's 23 per cent and Tuesday's 22 per cent). In the second half of the 18th century Sunday fell back a little (in Horsham, Tuesday regained the top position, with 26 per cent, followed by Sunday and Thursday, each at 19 per cent, and Monday at 18 per cent). Throughout the whole period, from the middle of the 16th century to the end of the 18th, Wednesday, Friday and Saturday were unpopular days for marrying.

TABLE 7
Marriages by Day of Week

<i>Marriages on each day of week as the percentage of all marriages</i>							
<i>(Boxes indicate the two most popular days in each half-century)</i>							
	<i>Mon</i>	<i>Tues</i>	<i>Wed</i>	<i>Thurs</i>	<i>Fri</i>	<i>Sat</i>	<i>Sun</i>
<i>All parishes</i>							
Up to 1599	30	12	4	8	2	7	37 (100)
1600-49	32	24	6	17	2	3	16 (100)
1650-99	10	39	5	30	3	3	11 (101)
1700-49	10	25	8	26	5	4	22 (100)
1750-99	17	27	8	21	6	5	16 (100)

For base totals, see Table 1

TABLE 8
The Principal Change in the Pattern of Marriage by Day of Week

Marriages on each day of the week as the percentage of all marriages
(Analysis based on all marriages up to 1699, omitting the years 1625-34.
Boxes indicate the two most popular days in each period.)

<i>(No. of marr.)</i>	<i>Mon</i>	<i>Tues</i>	<i>Wed</i>	<i>Thurs</i>	<i>Fri</i>	<i>Sat</i>	<i>Sun</i>	
<i>All parishes</i>								
Up to 1624 (2104)	34	13	5	10	2	5	32	(101)
1635-99 (1974)	12	40	5	29	2	2	10	(100)
<i>Horsham</i>								
1541-1624 (1221)	35	12	4	9	1	5	35	(101)
1635-99 (989)	13	42	4	23	2	3	13	(100)
<i>Ardingly</i>								
1558-1624 (164)	21	11	7	10	4	7	40	(100)
1635-99 (128)	9	41	3	40	2	1	4	(100)
<i>Bolney</i>								
1541-1624 (158)	41	11	8	7	3	5	26	(101)
1635-99 (206)	8	37	9	33	3	1	9	(100)
<i>Cowfold</i>								
1558-1624 (256)	27	11	5	13	6	9	30	(101)
1635-99 (228)	16	32	5	35	3	3	5	(99)
<i>Cuckfield</i>								
1598-1624 (305)	37	21	9	13	2	3	16	(101)
1635-99 (423)	9	41	5	32	3	2	8	(100)

The aggregated half-century data used in Table 7 hide a change in behaviour of some interest. Alerted by the findings of the earlier Bolney and Cowfold study, all parishes were examined to see if the change in the most popular days, from Monday and Sunday to Tuesday and

Thursday, happened suddenly or developed slowly over time. In every case there was a sharp change around 1630. Before the change, the pattern for 1600-c.1625 tended to follow that of the previous fifty years; after it, the pattern for c.1635-1649 tended to follow that of the next

fifty years. The change is shown up dramatically by comparing the period up to 1624 with 1635-99 (that is, omitting the 'changeover' period 1625-34 from the analysis: this is a short time for a change in social behaviour of this kind). The comparison is shown in Table 8, first for all the parishes combined, and then for each individual parish. Up to 1624, Monday and Sunday each attracted a third of all marriages. From 1635 to the end of the century, the popularity of both days fell to below average levels—to 12 per cent for Monday, 10 per cent for Sunday (if marriages were distributed equally across the days, each would obtain 14 per cent). Tuesday became by far the most popular day, with the remarkably high level of 40 per cent of all marriages, followed by Thursday, with just under 30 per cent.

This same change in the pattern occurred at the same time in every one of the five parishes (with the partial exception of Cuckfield, where up to 1624 Tuesday was the second most popular day after Monday, rather than Sunday: this divergence is almost certainly because the surviving Cuckfield registers do not begin until 1598, and the peak of Sunday's popularity was in the 16th century). The principal finding here is the consistency of the pattern of change across the parishes.

Under the overall trends, noted above, there are in the registers occasions when, for short periods, particular days seem to have been *de rigueur*—perhaps reflecting the influence of the minister, perhaps that of local fashion. Thus, in Horsham in 1588 there was a run of twelve consecutive Sunday marriages. In Cuckfield, from 1636 to 1642 there were 62 marriages, all but four of them on Tuesdays or Thursdays. Similarly, in Ardingly, from 1668 to 1681 there were 40 marriages, all but three of them on Tuesdays or Thursdays; in this same parish, from July 1685 to October 1686, there was a run of nine consecutive Thursday marriages. But such focussing on particular days fell within the general trends of popularity, and merely expressed them, for a short time, to an extreme degree.

CONCLUSIONS

The study was restricted to the town of Horsham and four rural parishes in the mid-Sussex weald. For this area, there are a number of clear findings.

Although after the Reformation there was no ban on marrying at any time of the year, the 'prohibited periods' of the pre-Reformation continued to be observed to a significant if lessening degree until the middle of the 17th century. Avoidance of marrying in these periods was more marked in the town of Horsham than in the rural parishes. But from the middle of the 17th century to the end of the 18th little observance seems to have been paid to them. Overall, the percentage of marriages falling into 'prohibited periods' increased from 16 per cent in the second half of the 16th century to 39 per cent by the second half of the 18th century. Analysis of the incidence of marrying in 'prohibited periods' by specific months makes it clear that this increase over time was not attributable to changes in the seasonality of marriage that occurred during the period studied, and that in those months in which there were reasonable options of both 'prohibited' and not 'prohibited' days, the 'prohibited periods' appear to have been completely ignored after 1650.

Nevertheless, from 1541 to 1800 there was a very marked avoidance of marrying in Lent, which fell into the second of the 'prohibited periods'. For the whole period studied, only 2 per cent of all marriages took place in Lent: up to 1649, less than $\frac{1}{2}$ per cent; for the period 1650-1749, 2 per cent; for the second half of the 18th century, 5 per cent. Although there was thus an increasing propensity to marry in Lent, the last figure is still far below the 13 per cent that would arise if marriages were distributed evenly across the year.

Advent did not have the same kind of significance as Lent as far as marriage was concerned. People were just as happy to marry in Advent as in the second part of the 'prohibited period' in which it occurred (from Christmas Day to Hilary).

In mid-Sussex, April and May were more popular months for marrying, and the months from October to February less popular, than in the country as a whole. March (because of Lent), and to a lesser extent July and August (because of agricultural demands), were relatively unpopular, as was December until 1750. The most marked change in seasonality across time was the increase in April/May marriages, which rose from 17 per cent of all marriages in the last half of the 16th century to a peak of 37 per cent in the first half of the 18th. This peak was higher in the rural parishes than in the town parish of Horsham.

There were distinct patterns of marriage by day of week, with a major change across time. In the second half of the 16th century, Sunday and Monday were by far the most popular days for

marrying; by the second half of the 17th century, Tuesday and Thursday were by far the most popular days. Although the collapse in the popularity of Sunday preceded the collapse of Monday, the change in the pattern was remarkably sharp, and occurred around 1630. Moreover, the same change occurred at the same time in all the parishes. From 1635 until the end of the 18th century, Tuesday and Thursday remained the most popular days for marrying. Wednesday, Friday and Saturday were unpopular throughout. There were, of course, some variations in the overall pattern between the parishes, but the principal finding here is the consistency of the pattern—and the change in the pattern—across the mid-Sussex wealden parishes.

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Notes

¹ J. H. Blunt, *The Book of Church Law* (1921), 148–9.

² Blunt, 149.

³ E. A. Wrigley & R. S. Schofield, *The Population History of England 1541–1871* (1981), 298*n*, drawing on R. Burn, *Ecclesiastical Law*, 8th edn. (1824), 2, 467–8.

⁴ J. M. Caffyn, *Sussex Believers* (1988), 115–20. The ecclesiastical calendars used, as for the present study, were from C. R. Cheney, *Handbook of Dates* (1981 edn.).

⁵ Caffyn, 113, 118.

⁶ Wrigley & Schofield, 300.

⁷ Wrigley & Schofield use an index technique to show the relative popularity of the different months, which takes

into account the fact that there are more days in some months than others. In Caffyn, 112, the data for Bolney and Cowfold are expressed in the same way, to provide a direct comparison with the Wrigley & Schofield data for England.

⁸ Caffyn, 113–25.

⁹ Caffyn, 114, citing Elizabeth Carter (1788–1885) as recorded in the 19th-century MS notebooks of F. Evershed.

¹⁰ Caffyn, 173.

¹¹ Blunt, 148.

¹² Caffyn, 125–8.

COADE STONE IN SUSSEX

by Alison Kelly, M.A.

Mrs Eleanor Coade was well known to her contemporaries, was commissioned by all the leading architects of the time,¹ and had the Royal Appointment from both George III and George IV, yet she has been forgotten by all but a few Georgian specialists. This is not surprising, since she was a mistress of camouflage; she made a ceramic artificial stone which so closely resembled natural fine-grained limestone that it has been mistaken for it ever since. Coade stone is known to survive at more than 600 sites, and there are probably many more waiting to be discovered. Frequently something described as 'finely carved stonework' turns out to be Coade stone.

Though made of clay and fired in a kiln, Mrs Coade's work bears no resemblance to the red and yellow shiny terracotta beloved by Victorian architects. Its colour and texture can be matched in Portland stone, the chief difference being that it is almost totally unaffected by the weather, so that it is as crisp now as when it was made 200 years ago. Mrs Coade did not stress its ceramic origin, referring to it as 'artificial stone' or sometimes 'ornamental stone'. (The term Coadestone, much used by auctioneers and dealers, has no validity, and only seems to have come into use since the 1940s.) In consequence, reference is often made to the mystery of its manufacture. As research carried out in the British Museum Research Laboratory shows,² there is no particular mystery about it. It is a *stoneware*. Its success lay in very careful choice of ingredients, preparation for firing and kiln control. There is no space here to elaborate on this, but Mrs Coade's techniques produced pieces of a size (nine feet or more) and regularity which astonish ceramic specialists.

Mrs Coade began manufacture at Narrow Wall, Lambeth, in 1769.³ In 1799 she went into partnership with her cousin John Sealy, and opened a showroom at the east end of Westminster Bridge. The handbook, *Coade's Gallery*, which describes the exhibits, includes a most useful list of places for which she had commissions between 1769 and 1799, and hundreds of surviving Coade pieces can be traced from it. To save many footnotes, such places are identified below as (1799 list). It has been possible to trace many of the architects and dates of these buildings from Howard Colvin's *Biographical Dictionary of British Architects 1600–1840* (1978), and my great debt to him is acknowledged here but will not be referred to again.

A *Catalogue* was published in 1784—there are copies in the British Library and elsewhere—and etchings were made of new designs in the 1770s and 1780s which were made up into booklets in what seems an *ad hoc* manner since each is different. The British Library, Sir John Soane's Museum and the Guildhall Library have copies. Reference to etchings and catalogue must be taken to refer to these.

The Coade and Sealy partnership from 1799 to 1813 produced nothing comparable to the 1799 list, and only a few references to their joint work can be found in a pamphlet they issued to publicise the great Nelson Pediment at Greenwich.⁴ On Sealy's death in 1813, the aged Eleanor Coade took on a distant relation, William Croggon. He was not made a partner, and on her death in 1821 he was not left the factory. His litigation with the executors over its purchase led to his work book, order book and correspondence being evidence in Chancery and

they eventually came to rest in the Public Record Office (C 111/106). He naturally had to begin new work books on taking over the factory and these are lost. He flourished in the 1820s, but went bankrupt and died in 1835. His son Thomas John refounded the firm which as Croggon (1835) and Co. survived into the 1970s, but little more Coade stone was made and the moulds were sold in 1843.⁵

The Coade firm manufactured anything which might be made in natural stone, marble or in some cases metal. Because the formula contained a high proportion of unshrinkable or pre-shrunk materials such as grog, it was very stable in the kiln and shrank exceptionally little. For this reason it could be produced to exact specifications (some of the pieces in the Coade catalogue have measurements detailed down to 1/8 inch), and architects ordering pieces for incorporation in brick or stone structures could be certain they would fit exactly. This, combined with the quality of the designs, ensured that Coade stone was used by all the eminent architects of the Georgian period and many minor ones. Compared to carving in natural stone, Coade stone was relatively inexpensive, particularly if a catalogue design was used, thus ensuring that a mould was available.

Sussex contains an unusually good supply of Coade pieces; only Hampshire, Kent and Essex, apart from the London area, are comparable. Counties with good coastal or river access usually appear to contain more Coade commissions than areas less well served in this way, though the new canals, with their Pickford's 'flying boats', made inland water transport easier in later years. As well as being easy of access, Sussex was also fashionable, and many followed the Prince of Wales to Brighthelmstone, where he used Coade stone at the Royal Pavilion in its first form.

Following the Prince's lead, there were commissions from the Dukes of Norfolk and Richmond, Lords Ashburnham, Colchester, Egremont, Galloway and Sheffield, and several knights—Sir Harry Fetherstone, Sir Bysshe and

Sir John Shelley and Sir Godfrey Webster. The greater number of orders, however, came from people of moderate, though comfortable incomes: the vicar, the owner of a small property, the businessman. Particularly for monumental commissions, where established sculptors charged large sums, the availability of Coade designs meant that the dignity of the deceased and the relicts could be sustained by appropriate putti or classical plaques.

A good selection of the range of Coade designs can be found in Sussex. Of specifically architectural features, *capitals* can be found at Ashdown House, Hammerwood Lodge and Castle Goring; *plaques* survive at Herstmonceux Place, Hammerwood Lodge, Lewes County Hall and the grotesque examples at Castle Goring; there are *modillions* at Lewes County Hall and *balusters* there and at Castle Goring.

The *monument* at Stanmer Park is the only Sussex example of a large group of commemorative pieces scattered about the country, but there are several *tombs*. At Bramber there is a plaque based on a piece in the Palazzo dei Conservatori in Rome, and at West Tarring there is a tomb with putti standing at the corners. At Old Shoreham there is an apparently unique tomb in the form of a Roman altar; this is dated 1828 and so was made by Croggon after he had taken over the Coade factory. Other tombs are at Ifield, Brighton and Wiston.

For garden use, *urns* and *vases* were made in large numbers. A fine copy of the classical Borghese Vase can be seen at Uppark, though the six 'antique vases' known to have been ordered for the house are now missing. At Rudgwick there is a pair of small fluted vases of a type often made, but their original site is not known. *Fountains* were made from time to time, and a lively example can be found at Petworth.

Only a small part of the Coade factory's production was in a *Gothick* style, and in Sussex I have only traced four sites. The work at Arundel disappeared in the later 19th century, when the Gothick ornaments on the Gothic castle were destroyed in the re-Gothicization of Victorian

times. At Sheffield Park some half-hearted Gothick pinnacles, a few medieval flowers and some heraldic work can be seen, but the greatest amount of Coade medievalizing work survives at Battle Abbey (again a genuine medieval site) where there are numerous label-stops in a variety of designs and a Gothick entrance doorway. There was also a chimneypiece, but this was lost in a pre-war fire.

Heraldry expresses the continuation of medieval traditions, and the Coade factory always had plenty of orders. Every church had to display the Royal Arms, and the Coade Arms at Petworth church survive. Royal Arms can also be seen on the Chapel Royal in Brighton and Horsham Town Hall. At Lewes and Chichester there are the Arms of the town and City. Family Arms can be seen at Findon Place, Castle Goring, at Goodwood House and on three of the Goodwood estate buildings. A very large example is on the back of Kidbrooke Park, now called Michael Hall.

Mrs Coade had a small zoo of naturalistic or heraldic animals, some of which were in Sussex. At Chichester there was a swan, for a public house, which has not been traced; and at Maresfield Park there was a pair of lions. Surviving, there is a lion in bas relief on a plaque at Parham, imported from Gloucestershire, and a 'Howard' lion and 'Fitzalan' horse near the Motte at Arundel Castle.

Since its special recommendation was its resistance to the weather, Coade pieces for *interior decoration* were made in lesser numbers than those for outdoors. Unfortunately the chimneypieces at Battle Abbey and Michel (Mitchell) Grove are lost, as well as the candelabra of the design used by the Prince Regent at Carlton House. Statues were used indoors as well as outdoors, and often held candle-branches. I have not traced any of these in Sussex, and the Prince's statues from the dome of the first Royal Pavilion seem equally to be lost. Nor have I found any of the large variety of busts which are known to have been made. (These were normally 'bronzed', i.e. covered with a brownish-

black glaze, and convincingly masquerade as actual bronzes.) At Parham, there is a pair of copies of thrones in the classical collection at the Vatican, drawn there by C. H. Tatham. They are now outdoors, but they correspond to a pair of thrones shown in Thomas Hope's Picture Gallery in his London house. If these are Hope's own pieces, and not duplicates, they too were designed for indoor use.

Evidence from the firm itself is very patchy, and most information has had to be obtained from outside sources. Sussex archaeological specialists may well know of other examples, and I should be very glad to hear of them. The following list has been arranged in alphabetical order following the arrangements in Pevsner's *Buildings of England*. Buildings in town are placed under the town name, but where a house is by itself, or where the name of a village might be misleading, it has its own entry—i.e. Kidbrooke Park is listed under K, and not under the nearest places, Forest Row or East Grinstead. It is suggested that this list should be read in conjunction with the *Buildings of England, Sussex* by Ian Nairn and Nicholas Pevsner. This book does in fact contain several references to Coade pieces, including an urn at Westmeston Place, which appears to have been removed since the book was written.

The Coade stone at **ARUNDEL CASTLE** belonged to the enthusiastic Gothicising of the Castle about 1790–1800 (1799 list). All of it was demolished in the re-Gothicising of the later-19th century; fortunately it survived, though only just, into the age of photography, and John Martin Robinson illustrated it in *Country Life*.⁶ There was a huge relief by J. F. C. Rossi, who modelled a number of figures for Mrs Coade in the 1790s, on the East Wing. It was dated 1797, and showed 'King Alfred Instituting Trial by Jury on Salisbury Plain'. It was 20 feet wide, and high in proportion. Fox Talbot's ancient and unfocussed image suggests that it was an impressive piece. A 19th-century guide-book to

the house includes a line drawing which shows the twelve jurymen standing ready for action in the background. Mr Robinson has kindly told me that the relief lay broken in pieces in the long grass for many years, but seems now to have disappeared. Possibly it was not even broken, but was lying in its constituent sections, since a 20-foot relief could not be fired in the Coade kilns (or even in one today), and the plaque would have had to be planned so that the unavoidable joins were concealed by features of the design. In addition to this, there was a coat of arms, some Gothic details in openwork cartwheels in the balustrade by the front door, and, standing in niches, statues of Liberty and Hospitality nine feet high. These were lot 281 in a sale of Regency pieces from Arundel at Sparkes, the local auctioneers, in April 1891.⁷ In the *Builder* a few months later,⁸ it was stated that 'Two terra-cotta figures ten feet high, formerly at Arundel Castle, have been presented by Mr Edgley to Lambeth Vestry, and, we understand, will be placed upon the Albert Embankment. They were burned at Coade's artificial stone manufactory in 1798, and if, as is said to be the case, they were modelled by Bacon the elder, sculptor, must be among his last works, for he died the following year'. The attribution to Bacon is likely to be correct, since Mrs Coade appointed him her manager in 1771⁹ and he continued to model for the Coade firm for most of his life. If the figures were ever set up on the Embankment, they are not there now. Both Mr Robinson and I would be glad to hear further news of them.

Also at the Castle are a Howard Lion and a Fitzalan Horse, but these are comparatively recent arrivals. They crowned the pylons of the Norfolk Suspension Bridge in 1833 at New Shoreham, and were removed about a century later. At that date, they must have been made by William Croggon. They are now near the Norman Motte of the Castle.

At **ASHBURNHAM PLACE**, Rupert Gunnis recorded a fountain in the dairy c. 1800.¹⁰ The house has now been demolished.

In William Croggon's Day Book for October 4 1816, he recorded 'Earl Ashburnham, a candelabra composed of three figures on a pedestal £21', but this might equally have been for Ashburnham House in London. The design is likely to have been a popular design of three standing girls with a round abacus or plateau on their heads. Four are at West Wycombe Park,¹¹ and another, of an earlier date than Earl Ashburnham's, was sold at Sotheby's, Billingshurst, Sussex on September 24th 1987, unfortunately without provenance.

ASHDOWN HOUSE, near Forest Row, is interesting as one of the two houses designed by Benjamin Henry Latrobe, the first professional American architect, before he emigrated. It dates from 1795, and with Hammerwood Lodge (see below) is on the 1799 list. Its semi-circular portico has Coade stone capitals copied from the North Portico of the Erechtheion in Athens, the illustrations of this being available in the second volume of James Stuart's *Antiquities of Athens* (1787, 89). The small scale detail is as sharp as it was originally. Inside the portico is a graceful oval vestibule, with pilasters matching the exterior columns. The capitals, with the bases, here and outside, are also of Coade stone. On the upper landing of the hall there are columns with curious capitals of a kind which Mrs Coade called 'composed'. They have acanthus leaves below and tall pointed leaves above. Similar capitals appear among the Coade etchings, but as the upstairs capitals are painted, it is not possible to be certain whether they are Coade stone or not.

At **BATTLE ABBEY**, Sir Godfrey Webster carried out the same kind of Gothicising work on a medieval building as the Duke of Norfolk had done at Arundel. Croggon's Day Book¹² shows that there were Gothic 'corbels'—actually label stops with little medieval figures—in a variety of designs in 1815. They include a hooded man, an abbot or bishop with book, a man with dagger and hat and a man with an animal. Twenty-two were sent off in December 1814 (£57.15.0) and a further eight in September 1815 (£21). Also that

month a 'Large Gothic archway' at £147 was 'sent this day per waggon'. The label stops and the archway, forming the front of the entrance porch, are still in situ, but there is an unsolved problem concerning other label-stops. In *Country Life* (Letters page) of 9 July 1970, L. J. Harper showed a photograph of label stops set out as an edging to a path at Battle Abbey, confirming a statement to me by F. J. Collins that he had seen them there in the 1950s. They are no longer there, and on a visit in 1984 Miss Susan Mumford, then History Mistress at the school now at the Abbey, told me that nothing was now known about them. They may have been on another part of the Abbey, now demolished.

In November 1815, a Gothic chimneypiece at £42 was sent, and a month later 'Arms, Crest on a circular tablet'. The arms were over the fireplace in the Great Hall until a fire in 1931, according to the Department of the Environment officer at Battle. The chimneypiece then disappeared, but the coat of arms was found on waste ground, broken in two but restorable. It is now kept in a shed.

BIGNOR is mentioned in the 1799 list, presumably signifying work for a house prior to the present Bignor Park of 1826–31. Nothing has been found.

BRAMBER CHURCH (called Steyning in the 1799 list) contains a round plaque with a seated mourning woman taken from a keystone in the Palazzo dei Conservatori in Rome, and known as *Weeping Dacia* or the *Weeping Province*.¹³ In the original the woman sits beside two shields and an axe; in the Coade version a more peaceful 'squat' urn is beside her. The monument is to the Rev. Thomas Green, his wife Ann Green and a daughter Ann. The inscription is on a stone plaque below dated 1789, and there is a tiny Coade coat of arms, only about 7 inches high, below again. It exhibits a feature used on Coade heraldic pieces, but not possible on natural stone. The lines and dots, used to indicate the 'tinctures' on heraldic engravings, were reproduced on the Coade clay before firing, using a skewer or bradawl, and became

permanent after firing. Where this can be seen, and is not filled in with later paint, it is an invariable indication that the piece is ceramic rather than stone.

BRIGHTLING PARK contains a small garden building of Gothic design with a Tudor arch, and detail the same as at the later Deane Church, Hampshire in the spandrels.¹⁴ Gwyn Headley and Wim Meulenkamp, in a recent book on *Follies*, noted that it dates from 1803 and 'bears the trademark COADE SEALY LONDON'.¹⁵

BRIGHTON contained a number of Coade pieces and some survive. In *Coade's Gallery 1799* Mrs Coade displayed 'A statue of Fortitude leaning on a broken column, clothed in a lion's skin, from the original executed for his Royal Highness the Prince of Wales, together with 5 other statues, placed on the outside of his Pavilion at Brighthelmstone in the year 1788'. They stood above each of the columns of the semicircular portico by Henry Holland of the first Pavilion, and Brighton Museum owns a charming aquatint of 1788, showing the figures in situ. All disappeared in Nash's reconstruction, but the Prince must have remembered the idea with pleasure, because, when Buckingham Palace was being built, the semi-circular portico on the garden side was decorated with more emblematical statues in Coade stone, including Fortitude again.¹⁶

In the churchyard of *St. Nicholas*, the parish church, there is the tomb of Anna Maria Crouch, who died in 1805. It is signed Coade and Sealy. On its top is an urn signed Croggon (i.e. after 1821). It is a tomb chest of a type made by Mrs Coade elsewhere, and usually has reversed torches on the sides. Whether they existed on this one I was unable to find out as the tomb is thickly encrusted with moss. The urn is in very bad condition, with the finial missing from the top and the masks on the ends almost worn away. This must be one of the rare examples of bad firing. I am indebted to Mr Edmund Esdaile for giving me details of the dates and marks, which are not now legible.

The *Chapel Royal* is at the end of the Pavilion grounds on the corner of North St. On a curious semi-pediment on a Victorian chapel there is a fine Royal Arms with recumbent Lion and Unicorn and the date 1793 in large Roman numbers. Colvin notes that the Chapel Royal was originally the Assembly Rooms of the Castle Hotel, designed for Mrs Shergold by John Crunden, c. 1776. Presumably she did not get the Royal Appointment until the Prince came regularly to Brighton. The building was converted to the Chapel Royal in 1821–2, but must have been rebuilt later.

Work for the *New Steine Hotel*, in New Steine seems to have been a cause of acrimony. A letter in the Letter Book of 18 February 1813 to W. R. Mott (PRO C 111/106) politely hopes to receive the money for a bill of £24.17.6 (p.4). On 6 October, a further letter was sent saying that the account of July 1812 was fully set out, (p.21). The letter is almost illegible, as Sealy was dying, and we do not know if Mr Mott paid up, or if the work was considered a bad debt, and hope to collect it was abandoned after Sealy's death. Mr Anthony Dale kindly informs me that the building is still standing, but ceased to be a hotel very early. I have not been able to discover what the Coade work was.

Information from F. J. Collins, dating from the 1950s, was that on a *Church Army* building at the corner of Upper James and Lavender Streets, there were two plaques with typical Coade reclining ladies marked Croggon 1823. I have not been able to discover what happened to them.

CASTLE GORING (Goring Park to Mrs Coade 1799) must be one of the oddest houses in the country. On the road side it is a castle, as understood in the 18th century, with round towers, battlements, machicolations and arrow slits, all in a rough-textured stone. A walk of twenty yards round the corner produces a transformation scene, a Palladian villa of ashlar decorated with Coade stone. The designer was John Biagio Rebecca who built it in the 1790s for Sir Bysse Shelley, the poet's grandfather, a fact which suggests that Percy Bysse's eccentricity

might have been inherited. On the Palladian side there are Coade Ionic capitals for the pilasters on the main front, and for the columns of the single-storey wings. There are Coade stone balusters below the windows of the piano nobile, and a very fine coat of arms, with fluttering ribbons, in the pediment. But the most remarkable features are three oblong plaques with reliefs of reclining figures. (Fig. 1) Any number of such plaques in low relief were designed by John Bacon, and as we shall see at Lewes, he designed some in very high relief, with the heads detached from the background; but at Castle Goring the figures lean so far out of their frames that when you look up at them from the terrace, they look down and meet your eye, and you long to stretch up a hand and push them back to safety. Only one of them, a Ceres, belongs to the usual Coade designs. The others are a Bacchus and a Satyr, with their arms stretching out about nine inches into thin air. It is not known who designed these phantasmagoric figures.

For the *Swan Inn*, **CHICHESTER**, the proprietor Mr Humphries (or Humphrey; Croggon tried both) ordered, in May 1819, 'a swan on a ground as drawing'—i.e. a special order given by the architect Mr George Draper. Possibly the inn was being redesigned, as there was a further bill for '2 ionic capitals modelled to drawing' which could be a slight variation of a standard design. The inn appears not to have survived. Two years later (Order Book April 1821) Mr Draper again ordered two Ionic capitals, and there is a bill for Mr James Smart of Chichester, also for two Ionic capitals, the following month. It is not clear if Mr Draper designed a house with an Ionic porch for Mr Smart, or if they are two separate orders. In either case, nothing has been traced.

Two further Coade commissions do survive however in Chichester. The *Market House* in North Street, by John Nash of 1807, has a coat of arms of the town which is marked Coade and Sealy 1808,¹⁷ and in Priory Park there is a *Druid*. This figure was a catalogue number (no. 21, 20



Fig. 1. Satyr, one of three plaques on the Palladian side of Castle Goring, near Worthing, designed by John Biagio Rebecca and built between 1795–1815. These grotesque figures, almost falling out of their plaques, are very different from the calm reclining figures by Bacon seen on other Coade plaques, such as those on Lewes County Hall, and their designer is at present unknown.

guineas) and at least five are known. This one was first put up as a conduit in South Street, in 1777. For some reason it was taken down and spent about 60 years in the Cathedral vaults, and when it reappeared it was called either Father Time or Neptune. The Rev. J. Bayley in *Sussex Archaeological Collections* 1969, concluded that it was Moses; and certainly a heavily draped figure, with a staff with which to strike water from the rock, ought to be Moses. However, the Coade etching, and the description in the catalogue, make it clear that to Mrs Coade it was a Druid.¹⁸ It is now in Priory Park. There is said to be another at *Craigwell House* near **BOGNOR**, but I have not seen it.

There is a letter of September 13 1813 in the Letter Book enclosing a drawing (missing) for a column for a dial (sundial) for the Earl of Galloway at **COOLHURST**, near Horsham.

Sealy estimated 20 guineas for it and seven or eight guineas for the dial from Dollond—an early reference to a familiar name. Nothing further has been traced and the house has been rebuilt.

The 1799 list contains a reference to Cranley, Sussex. There is no Cranley in the county, but this was an old spelling for Cranleigh, Surrey, close to the county border. Nothing has been found.

Mr Richardson of **FINDON PLACE** near Worthing, ordered Arms in pediment 2 feet 1½ inches high, not to exceed 20 guineas in August 1814. (Croggen Order Book) It is still there, and with its waving ribbons fits admirably into its pediment, justifying the very precise measurements Mr Richardson gave for it.

FRANT is listed in 1799, but I have been unable to find anything remaining. It could have been for Eridge Castle, the castellated building designed in 1787 and demolished in 1938–39.

GOODWOOD is on the 1799 list, and in a 1960s loggia, and so *ex situ*, I found a coat of arms on a drapery background dated 1771. This was before James Wyatt, a devoted Coade stone user, came to work at Goodwood, but I have also found a Coade coat of arms on his *Kennels*, now the Golf Club, and Mr J. H. Cordingley kindly informs me that there is another coat of arms on *Lilley Green Lodge*.

With **HAMMERWOOD LODGE** near East Grinstead, (Fig. 2) we come to one of the most interesting of the Coade commissions. It is on the 1799 list, and was designed by Benjamin Henry Latrobe in 1792. On small temple-like projections at each end, there are Doric porticos. In the list of Greek Doric capitals in England which Dr David Watkin¹⁹ has arranged chronologically, Hammerwood is only the eleventh. But it is the first, and I believe the only, Greek Revival building in the country with Doric capitals which are not of the neat, Parthenon type, but of the earlier, 6th-century design to be seen at Corinth and at Paestum. These great inverted mushrooms are far removed, in their primitive strength, from the elegance expected

from Georgian classical buildings, and it reflects great credit on the adventurousness of a very young architect, and his patron John Sperling, that the building should exist. Thomas Major's *The Ruins of Paestum* had come out in 1768, and contains an excellent measured drawing for Latrobe and Mrs Coade to copy. The large and heavy abaci, as well as the capitals, are of Coade stone; and hidden away on the backs of the abaci, only to be seen with difficulty and a good torch, is an inscription in Greek on one of the porticos. There is one line to each abacus,

ΤΗΣ ΤΟΥ ΙΩΑΝΝΟΥ ΣΠΕΡΛΙΝΓΟΥ ΕΠΑΥΛΕΩΣ
ΠΡΟΣΤΥΛΗ ΠΡΩΤΗ ΑΡΧΙΤΕΚΤΩΝ
Β ΗΕ ΛΑΤΡΟΒΕ ΕΠΟΙΕ
ΤΟΝ ΑΨΘΒ ΕΝΕΑΥΤΟΝ ΙΗΣΟΥ ΧΡΙΣΤΟΥ ΚΑΙ
ΤΟΝ ΔΕΥΤΕΡΟΝ ΤΗΣ Χ'ΜΒ' ΟΛΥΜΠΙΑΔΑΣ

and the translation is roughly as follows:—
'Of the residence of John Sperling this is the first portico. The architect is B. H. Latrobe. He made it in the 1792 year of Jesus Christ and the 2nd of the 642 Olympiad'. The Olympic Games had been proscribed as pagan when the Roman Empire became Christian; Sperling and Latrobe, devoted Philhellenes, counted up the four-year periods from classical times until their own day, as if the Games were still continuing.

Inside each portico there is a Coade bas-relief plaque (Fig. 3) taken from the bas-reliefs round the Borghese Vase, flattened out. Mrs Coade made a number of copies of this famous classical vase, and its near-pair, the Medici Vase, (see Uppark, below), but as far as I know the plaques at Hammerwood Lodge are the only use of the designs in this way.

Samuel Wyatt, the elder brother of James, designed an excellent series of country houses on two floors, with bow windows and Coade plaques between the storeys. Belmont, near Faversham in Kent, is perhaps the most graceful, but **HERSTMONCEUX PLACE**, runs it close. It was designed in 1777 and appears on the 1799 list. The plaques are of unusual designs, not catalogue numbers, and are nearest to those at

Woodhall Park, Hertfordshire. On the bows, plaques with urns alternate with paterae. It seems a pity that all the plaques have been painted white.

HORSHAM TOWN HALL was built by the Duke of Norfolk in 1812, and is a toy castle reminiscent of his work at Arundel. The back was rebuilt in 1888, but fortunately the front, with three coats of arms—the Royal arms, larger, in the middle, flanked by those of the town and the Howards—has survived intact. I am grateful to Mr Edmund Esdaile for drawing my attention to it.

At **IFIELD CHURCH** near Crawley there is the tomb of George Hutchinson (died 1801)²⁰ which is signed by Ralph Joanes of Horsham, the local mason, but has an urn marked Coade on top, and also a plaque—another standard Coade design—of the Woman of Samaria. Several tombs are known, particularly in Dorset, where Coade bas-reliefs and other decorations are inset in natural stone surrounds.

Croggon's order book for April 1818 refers to 'Lord Colchester, Kidbrooke Park, East Grinstead Sussex. Arms with supporters for a pediment, festoons of oak and ribbons'. **KIDBROOKE PARK**, at Forest Row is a school now known as Michael Hall. Its exterior remains much as it was left by Robert Mylne in 1805 and George Dance in 1814–15. The coat of arms is still *in situ* (on the back; there is another coat of arms in natural stone on the front). At 12 feet wide, the arms were large, and at sixty guineas expensive, and Croggon sent Thomas Dubbin, who often went out to deal with sensitive orders, to Sussex to get everything correct. The coat of arms shows very clearly the technique of inscribing the heraldic 'tinctures' described under Bramber Church, and the raised heraldic features which could be moulded separately and attached to the background before firing, thus saving much labour and expense in carving them.

A great deal of Coade stone was supplied for the **COUNTY HALL LEWES**.²¹ The building was by John Johnson, and work dragged on between 1808 and 1812. Most of the bills are of



Fig. 2. Hammerwood Lodge, now called Hammerwood Park, near East Grinstead, Sussex, designed by Benjamin Henry Latrobe in 1792. This is the first, and so far as is known, the only, use in England of the 6th century BC Order of the so-called Basilica at Paestum. The capitals and abaci are of Coade stone.

1809 and 1810; they are too extensive to be quoted in full, but characteristic prices were 'Oval pateras Apollo's hd [head] in centre, Enriched Ovolo Moulding, Leaves etc.' at a guinea each, half-balusters at 4s. and Impost Trusses also at a guinea. Negotiations seem to have been conducted by W. B. Longridge, Clerk of the Peace, who enraged the Coade firm by making deductions; 'we had no idea of such a Deduction being made for Discount when we gave the Estimate'²² and later wrote to Johnson 'transmitting particulars of Coade and Sealy's bill with my remarks on some of the charges which I conceived exorbitant'.²³ Possibly he was referring to the three large plaques of Wisdom, Justice and Mercy, designed by John Bacon, and almost duplicates of three plaques on Johnson's Shire Hall at Chelmsford, of nearly 20 years before. If so, he had little cause for complaint, since the Lewes plaques cost £94.10s.0d., whereas those at Chelmsford, which no doubt included the original modelling costs, were £141. At Lewes, Coade modillions support the top cornice—an unusual feature at that date. The half balusters are below the windows of the piano nobile, which have 'female head blocks' at the



Fig. 3. Plaque inside the portico of Hammerwood Lodge. The figures are taken from the Borghese Vase, thought in Georgian times to have been carved by Phidias. Copies of this vase, and its near pair, the Medici Vase, were among the firm's best sellers, being in production for over fifty years. The figures on a flat plaque, as here, were no. 242 in the Coade catalogue, costing 7 guineas. the figures on the other side of the vase (plaque no. 243) are in the companion portico on the other side of the house.

top corners—little faces curiously squeezed into an oblong shape—which Johnson also used on his Assembly Rooms at Leicester. In 1810, the building committee proposed to ask Johnson about the propriety of having Arms on the front of the hall. If he agreed, he was 'to give instructions for the same to be executed in composition or in such other manner as he thinks.'²⁴ As usual, since he was a devoted user of Mrs Coade's products, he turned to Coade stone. The arms are now painted.

For **MARESFIELD PARK**, near Uckfield, Croggon's day book of January 1819 records '2 lions couchant on plinths to Shelley's wagon' for £15.9s.0d. for Sir John Shelley, another of the poet's relations. At this price they would have been the small domesticated lions which can be seen at Audley End and elsewhere. At the end of the year he also had 'a crest, a griffin's head on a ground 12½ inches. by 10 inches'. The house was demolished after 1912.

MICHEL (or MITCHELL) GROVE, at Poling, near Arundel, is another missing house, which seems to have been demolished as early as 1832. Richard Watts Walker bought it from the Shelley family, and George Byfield enlarged it for him. Neale's *View of Seats*, 1818–29, XI, shows a castellated Gothick house, and the accompanying text recalls that 'Mr. Walker covered the house with cement and added a conservatory and dining and drawing room, the latter remarkably splendid in its Gothic decorations'. It was probably for this room that Mrs Coade supplied '2 rich Gothic candelabras' in November 1816 for £81.6s.4d.²⁵ The order, of the previous 24 March, specified '2 candelabras as Prince Regent',²⁶ so they must have resembled the huge pieces, about seven feet tall, with Gothic details, and Welsh dragons on the bases, which Coade and Sealy supplied for Carlton House, and which later went to Windsor. Mr Walker also had 'A Rich Gothic Chimneypiece with a centre' for the large sum of £189.²⁷ It will be recalled that the Battle Abbey chimneypiece only cost £42. I have been unable to find out what 'with a centre' means, and have found no

relevant illustrations.

MIDHURST is on Mrs Coade's 1799 list. I have not been able to find any Coade work.

For the Suspension Bridge at **NEW SHOREHAM**, see Arundel Castle, above.

In the churchyard at **OLD SHOREHAM** (Fig. 4) there is a Coade monument which is difficult to see, owing to the very closely spaced railings, painted white, which surround it, so that only a camera lens can be pushed between them. Pevsner in his *Sussex* volume describes it as a sarcophagus, but it is really a Roman altar (as in the Augusteum at Rome), a vertical oblong block standing on several steps. On each side is a sheaf of naturalistic flowers. It is marked Croggon 1828, and on the east and west sides is the inscription *Fuerunt*. There is no indication who 'those who were' might have been: they keep their anonymity.

At **PARHAM HOUSE** near Pulborough, there are some Coade pieces which came from elsewhere. On a blank wall at the end of the house there is a large relief plaque of a lion, which came from Northwick Park, Gloucestershire, marked Croggon 1832. David Verey, in the *Gloucestershire, Cotswolds* volume of the *Buildings of England*, records that the lion was on a picture gallery added by Charles Tatham. When the house was pulled down, after 1970, the lion came to Sussex. It is a stodgy beast.

Much more interesting are a pair of classical thrones now in the garden. (Fig. 5) These are copied from a throne in the Vatican, shown in *Etchings of Ancient Ornamental Architecture drawn from the Originals in Rome and other Parts of Italy during the years 1794, 1795 and 1797*, published by Charles Tatham in 1799–1800. The sides consist of sphinxes, whose wings curve up to meet the top of the backs. Apart from a slight simplification of the back supports, the Roman original is precisely repeated. They came to Parham via a dealer, and I believe that the original setting is not known. However, duplicates of these seats appear in the engraving of Thomas Hope's Picture Gallery in his Duchess Street house in *Household Furniture* (1807). In

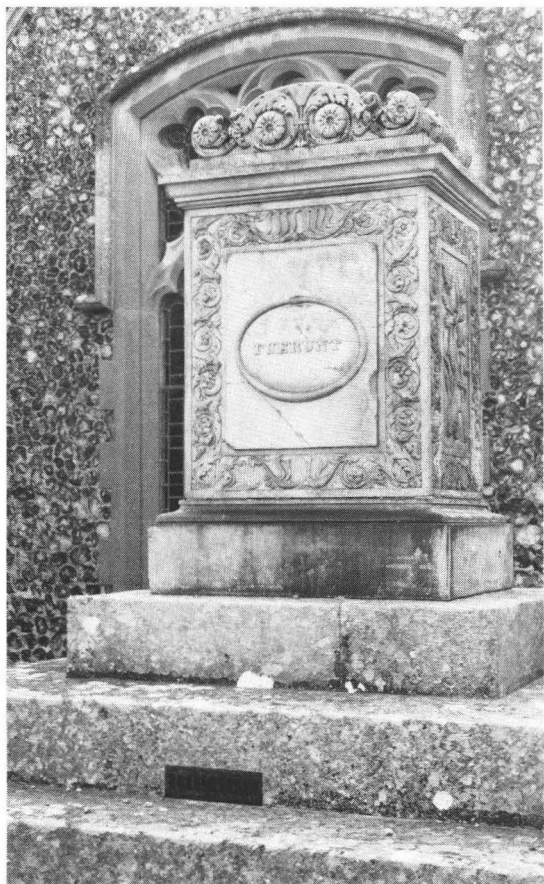


Fig. 4. St. Nicholas, Old Shoreham, churchyard. Monument, based on a Roman altar, stamped Croggon 1828. It is decorated on the sides with sprays of naturalistic flowers, unlike earlier neo-classical decoration. Those commemorated are not known as the monument is inscribed only FUERUNT. Note the fashionably heavy early 19th-century lettering.

the text accompanying the illustration, the seats are described as being of stone. Could the Parham seats have been made for Hope, one of the most influential arbiters of taste at the beginning of the 19th century, or are they copies? The Duchess Street seats have lotus flowers as finials to the backs; the Parham seats have no finials, but small holes show that there must once have been some sort of finial there—made separately and dropped in. Hope certainly used

Coade stone at his other house the Deepdene, and an Egyptian lion he had there survives.²⁸ He may well have used Coade stone earlier, though no records have so far been found.

PETTS HILL, now Pitshill at Tillington near Petworth is on the 1799 list. Sir John Soane designed a new front for it in 1794, but the design was modified in execution. Any Coade stone there has not yet been identified.

PETWORTH HOUSE is mentioned in the 1799 list, but I have not traced any 18th-century



Fig. 5. One of a pair of thrones at Parham House, *ex situ*. These are copies of classical thrones in the Vatican drawn by C. H. Tatham. Duplicates appear in the etching of the Picture Gallery of Thomas Hope's house in Duchess St., St. Marylebone, where they are described as being of stone. However, it is not known if the Parham thrones are Hope's own, or merely duplicates.

purchases. However, in 1809 Lord Egremont bought from Coade and Sealy the splendid fountain which survives near the main entrance. A youth raises a long, spiral shell which he is blowing as a horn. Dolphins gambol about his feet, and they and the conch shell originally sprayed out jets of water. There is a tall, rockwork base. The original model seems to have been a *Triton and Dolphins* attributed to Battista Lorenzi after an original by Giambologna, now in the Metropolitan Museum. It seems that the Coade modeller, probably at that time Joseph Panzetta, used a reversed engraving, since the original figure raises his right arm, and the Coade figure raises his left. The piece was made at a period for which no records of the firm survive, and it is curious that references do survive to what Coade and Sealy called 'the famous Barberini fountain in Rome',²⁹ or the 'Bernini fountain'.³⁰ Bernini's fountain consists of a triton with a conch, on a shell with dolphins, but it bears no relation to the Coade piece, and I have been unable to find an explanation of the confusion.

Petworth Church, next to Petworth House, has a Royal arms marked Coade and Sealy 1812.

At **RUDGWICK**, a house called Hyes, on the A281, has modern gate-piers crowned by small fluted Coade urns of a standard pattern, repeated frequently. They must be *ex situ*.³¹

SHEFFIELD PARK was Gothicised by James Wyatt in 1776-7, and has Coade stone Gothic pinnacles. A print of 1778 in the booklet on the house shows that these were originally combined with a plain stone cornice, and that the battlements, which are not of Coade stone, were added later. Small Coade flowers appear here and there below the battlements, and there is a fairly flat Coat of Arms inset above the garden door, high up. Immediately above this door is a much more vigorously modelled Arms with supporters, marked 1809. Benjamin Latrobe is known to have done some work at the house, but it has not been possible to identify any existing details by him.

STANMER PARK, near Brighton,

contains one of a set of four similar monuments, the others being at Brocklesby Park, Lincs., Lucan House, Co. Dublin, Ireland, and Mount Edgcumbe, Plymouth. (Fig. 6) In the *Lincolnshire* volume of Nikolaus Pevsner and John Harris (Brocklesby entry) the design is attributed to James Wyatt and the medium to Coade stone.

On a slope among carefully placed trees, and itself of a grace enhancing its setting, the Stanmer monument is a perfect example of the elegiac taste of the late 18th century, and

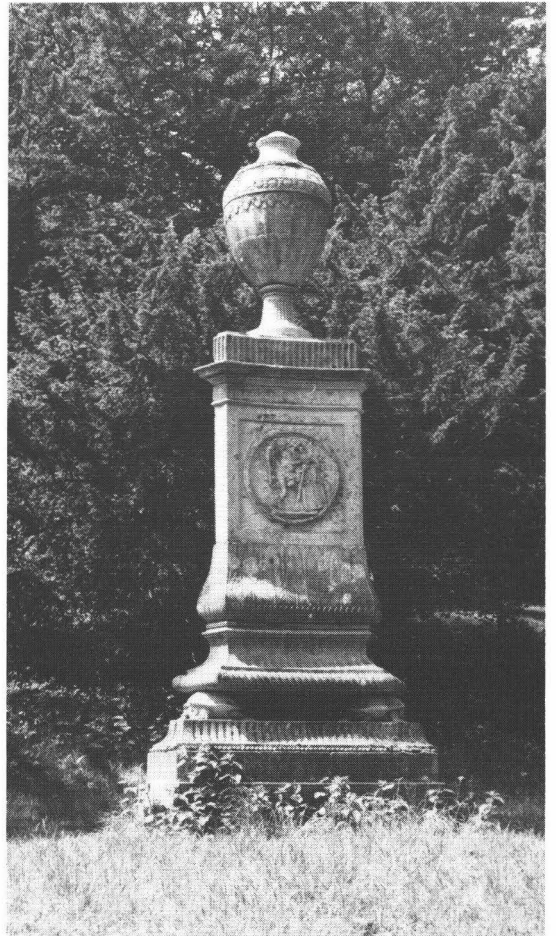


Fig. 6. Stanmer Park, Brighton. Monument of 1775 to the father of Lady Pelham, one of four similar designs, the other being at Brocklesby Park, Lincolnshire, Mount Edgcumbe, Devonshire, and Lucan House, Co. Dublin. The design is attributed to James Wyatt.

commemorates the father of Lady Pelham. The main body of it is of a concave triangular section, tapering towards the top, on which stands an urn. Low relief panels with characteristic classical figures decorate the sides, and it is supported at the corners by tortoises. The medium, however, is a surprise; it is much grittier than normal Coade stone, and is covered with a grey lichen. It therefore looks as if carved in a coarse-grained natural stone, and I should have believed that this was the case, but for the fact that the three tortoises (and no doubt the main structure if one could see it) are hollow. Their heads, which were modelled separately, have been wrenched off, but the bronze rods which held them in place can still be seen, and the hollow space inside. No sensible purpose would have been served by excavating a hole inside a solid stone tortoise; a ceramic piece, however, has to be hollow, so that its walls are the same thickness throughout. The evidence of the tortoises was therefore crucial in establishing that the monument was made of some form of ceramic, but I had not seen a comparably gritty surface on a Coade piece, and I wondered if there could be another manufacturer, hitherto unknown, who was capable, also, of producing a monument of this type, over seven feet high. Two urns now at Mottisfont Abbey resolved the question. They have an equally gritty surface, covered with grey lichen. It was possible to scratch this off sufficiently to see that both were marked Coade 1794, and so to establish that there were occasions when Mrs Coade changed her usual formula, (producing a surface like fine emery-paper) for a much rougher effect. I was unable to find a mark or date on the Stanmer monument, but the inscription is of 1775. I have not been able to see the other three duplicate monuments, so cannot say if they too are made of this unusual Coade formula.

In August 1814³² the Rev. Jos. Dixon was sent a bill for £17.17s.5d. for a 'monument to the memory of the Rev. Dixon, inscription and expenses'. It was addressed to **SULLINGTON, STORRINGTON**. Sullington remains to this

day a hamlet on the outskirts of Storrington, near Pulborough, and has no church, so the monument must presumably have been intended for Storrington Church. Considering that over £5 of the bill consisted of transport costs, it would have been a modest piece, perhaps a tablet with a small relief plaque. I suppose that it was ordered by a son in Holy Orders in memory of his father. A search in the church and graveyard has not disclosed this piece.

Croggon's order book for 25 April 1820 refers to an order for Sir H. Fetherstone Bart., **UPPARK**. It was for six antique vases which were to get there by Goddard's Petersfield wagon, and were to be 2 feet 4 inches high at four guineas each. In spite of searches in this National Trust house, there appears to be no trace now of these vases. There is however a fine Coade copy of the Borghese Vase which seems likely to have arrived in the grounds during Repton's reconstruction c. 1812. Mr Richard Crowther, who recently examined this urn thoroughly, kindly tells me that it has suffered an accident at some time, and now has a natural stone base. The remainder is in perfect condition.

At **WEST DEAN PARK**, in a clearing in the Arboretum, stand two copies of the Erechtheion caryatids (without capitals on their heads) such as Sir John Soane used at 13 Lincolns Inn Fields, Pitzhanger Manor and the Bank of England. They stand on square fluted bases of a type I have not seen elsewhere, and are marked Coade Lambeth 1793. They belonged to Edward James, who apparently kept them at his house Monkton, covered in ivy with only their heads showing. It does not seem to have done them any harm, and they now form part of a memorial to him. James was a great collector of 20th-century painting, particularly the Surrealists, painted his house mauve and put metal palm trees by the front door. He owned a red sofa designed for him by Salvador Dali in the shape of Mae West's lips. Though he owned them, the two Coade statues appear altogether too chaste, as a monument to such an eccentric.

At **WEST STOKE**, north of Chichester, a

pair of cottages, Copse Cottages nos. 13 and 14, have a coat of arms on a drapery panel over their front doors, very similar to that in Goodwood (q.v.) It is dated 1790. The cottages are not far from Goodwood, and may be, or have been, on the estate.³³

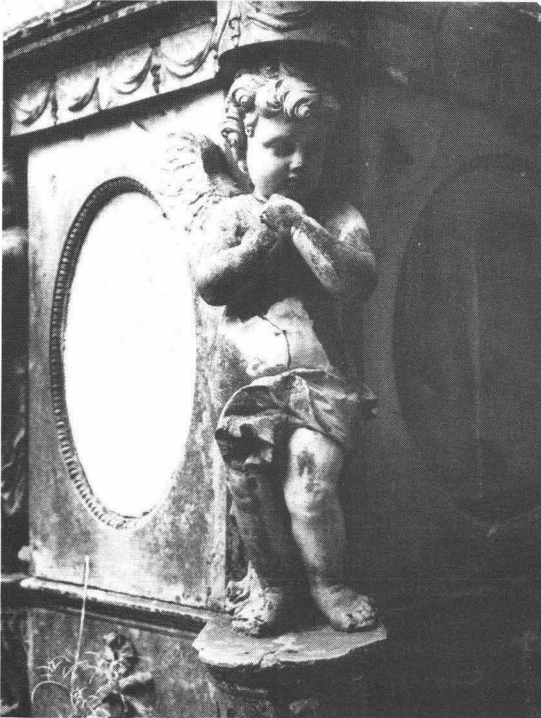


Fig. 7. Tomb of Martha Chilvers, d. 1807, in the churchyard of St. Andrew, West Tarring, near Worthing. The design of this tomb is the same as that of Edward Keepe, d. 1782, the drawing for which, by the architect S. R. Robinson, was exhibited at the Royal Academy in 1784. Keepe's tomb has unfortunately been badly vandalised, so the survival of the Chilvers tomb, in fairly good condition, is valuable. In the Coade catalogue of 1784 it is 'An elegant tomb for a churchyard, 60 guineas'.

At **WEST TARRING**, part of Worthing, there is a churchyard tomb to Martha Chilvers, dated 1807 (Fig. 7). It is a pleasing design, with infant angels standing at the corners, and an urn on top, and is among the Coade etchings; the model first appeared at Woodford, in Essex, dated 1782. Mrs Katharine Esdaile, in a pioneering study of Coade stone, mentions that the design was shown in the Royal Academy in 1784, and that the Woodford tomb is inscribed 'S. R. Robinson Archt. Coade Lambeth fecit'.³⁴ Mrs Esdaile's son, Mr Edmund Esdaile, kindly drew my attention to the West Tarring tomb. As the Essex tomb has been vandalised, it is fortunate that the Sussex one is in fairly good condition.

At what Mrs Coade called **WESTON** but which is now Wiston, near Steyning, the church contains a monument to Sarah Goring, died 1798. A reclining classical figure, with her elbow resting on an urn, is fitted into a busily decorated Gothic recess. Thomas Scheemakers had used a similar figure at Powick, Worcestershire, and I think it probable that both the sculptor and Mrs Coade had drawn on a common classical source.

This list may have suggested the variety of pieces which were made by the Coade firm, and I hope something of their quality. It may also have suggested that the discovery of Coade pieces, other than those in the PRO work books or the 799 list, is often a matter of good luck. It will be seen from this article how often I have been told of Mrs Coade's work by kind friends. She needs many more such friends if her oeuvre is to be fully known and appreciated.

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Notes

¹ For a short summary, see Alison Kelly, 'Coade stone in Georgian architecture', *Architectural History* 28, 1985.

² I. C. Freestone, M. Bimson and M. S. Tite, 'The

Constitution of Coade stone' in *Ancient Technology to Modern Science*, The American Ceramic Society Inc., Columbus, Ohio, 1985.

³ She gave the date in *Coade's Gallery*, 1799.

- ⁴ 'Description of the Grand Model of Neptune giving up the Body of Nelson . . .' Scottish National Library, Acc. 5111, Box 12. Dated, in pencil, 1813. The date is probably correct.
- ⁵ Admission card for a preview of the sale by auction on the premises of 'the valuable works in Terra Cotta of Coade's celebrated Manufactory . . .' on 'Friday July 21st 1843 and the three following days . . .' by Messrs. Rushworth and Jarvis. Minet Library, Brixton, no. 12/64.
- ⁶ J. M. Robinson, 'Magna Carta and Pretty Ladies' Maids', *Country Life*, 7 July 1983.
- ⁷ Information kindly supplied by John Martin Robinson, Archivist to the Duke of Norfolk.
- ⁸ 22 August 1891, 140-1. Information kindly supplied by F. J. Collins, formerly of the LCC/GLC Historic Buildings Department.
- ⁹ 'ELEANOR COADE begs Leave to acquaint the Nobility, Gentry and the Publick in general, that her Manufactory . . . is now under the Superintendance of Mr. JOHN BACON, Sculptor . . .' *Daily Advertiser*, 23, 25 October 1771.
- ¹⁰ Rupert Gunnis, *Dictionary of British Sculptors 1660-1851* 1953, Coade entry.
- ¹¹ Alison Kelly 'Coade stone in National Trust Houses', *National Trust Studies* 1980, 95-111.
- ¹² PRO C 111/106. Order book, 10 October 1814. Day book September and December 1815.
- ¹³ Francis Haskell and Nicholas Penny, *Taste and the Antique* 1981, 193-4.
- ¹⁴ Photograph in the Coade file deposited by Rupert Gunnis in the Conway Library, Courtauld Institute, Portman Square, London.
- ¹⁵ G. Healy and W. Meulenkamp, *Follies, a National Trust Guide*, 1986, 123.
- ¹⁶ H. M. Colvin and M. H. Port, *History of the King's Works*, VI, 270, and H. Clifford Smith, *Buckingham Palace*, 1931, 62.
- ¹⁷ Information kindly supplied by F. J. Collins.
- ¹⁸ I have not found an original for this design. It may be by Bacon.
- ¹⁹ David Watkin, *Thomas Hope and the Neo-Classical Idea*, 1968, Appendix B, 245-7.
- ²⁰ Information kindly supplied by Edmund Esdaile, 53 Surrenden Road, Brighton BN1 6PQ
- ²¹ The records are W(est) S(ussex) R(ecord) O(ffice) QAH/1/7E3(27) and are summarised in R. F. Dell, 'The building of the County Hall, Lewes 1808-12' *Suss. Arch. Coll.* c, (1962), 1-11. Information kindly supplied by Miss Nancy Briggs, late of Chelmsford Record Office, the authority on John Johnson.
- ²² W.S.R.O. QAH/1/7E3 (27). Letter to W. B. Longridge of 12 June 1809.
- ²³ W.S.R.O. QAH/1/E1. Committee Minutes. 5 January 1810, letter to Johnson on the Coade bill. 3 March 1810, Johnson asked for advice of the Arms.
- ²⁴ *Ibid.*
- ²⁵ Croggon day book, November 1816.
- ²⁶ Croggon order book.
- ²⁷ Croggon day book, January 1818.
- ²⁸ I last heard of it at Boxford, Suffolk, in the 1970s.
- ²⁹ Croggon day book, 3 April 1820, bill for Flambards, Harrow.
- ³⁰ *Coade's Gallery*. The problem is discussed at greater length in Alison Kelly, *National Trust Studies* 1980, 94-111 with illustrations.
- ³¹ Information kindly supplied by R. Breakell, Ormond House, Loxwood, West Sussex RH14 0TR.
- ³² Croggon day book August 1814.
- ³³ Shown to me by F. J. Collins.
- ³⁴ Katherine Esdaile in *Architect and Building News*, 26 Jan 1940.

OASTHOUSES IN EWHURST PARISH: EVIDENCE FOR THE HISTORY OF AN INDUSTRY

by Gwen Jones with John Bell and John Martin

Oasthouses are valued for their contribution to the south-eastern landscape. Their interest is not merely aesthetic, however. Very few are still used for hop drying, but while they are still in agricultural use, they retain features and details which show the development of the industry for which they were built. Although conversion to other uses preserves to a greater or lesser extent their outward appearance, that same conversion usually removes entirely the features of historical value and it is important that remaining buildings be recorded. This article seeks to chart the progress of the industry in one parish by using the evidence of the oasthouses themselves set within a framework of documentary research.

Ewhurst Parish covers 5,820 acres in East Sussex and lies close to the Kent border. Its soils are formed on the clays and sands of the Hastings beds and most of the hops were grown on the slopes and meadows by the river Rother, the Tillingham stream and their tributaries. Both were formerly larger watercourses and the retreat of their waters has left layers of alluvium particularly suited to hops.

In Ewhurst, as in other local parishes, hop cultivation became a veritable industry. Thomas Daws, a Ewhurst farmer and banker, was one of three important growers named in the Customs and Excise Report on hops in 1835.¹ Twenty-four years later Frederick Webster, steward to the Battle Abbey Estate, mentioned Ewhurst as 'a large hop-growing parish' in his evidence to the Parliamentary Committee considering the repeal of the hop duty.²

Today there are 23 oasthouses, including two malshouses, still standing. None are now used for drying hops; they were last dried in the parish in 1983. Five are used for agricultural storage, one is used as a clubroom, one as a garage, one as a carpenter's store, two for light industry and thirteen have been converted into dwellings. Unconverted buildings reveal much about the development of the industry and even converted

ones are still worthy of study.

This total of 23 is not a maximum, the number of oasthouses changed according to the conditions and demands of the industry. It reached its peak in the mid-19th century and 28 buildings known to be oasthouses can be identified on the first edition of the Ordnance Survey 25-inch maps. Since then 11 have been demolished and six new ones built and this reflects a pattern of demolition and replacement which had prevailed since the late-17th century. Only more recently has rebuilding not followed demolition. (Fig. 1)

THE DEVELOPMENT OF HOP GROWING IN EWHURST

No specific reference to hop growing has yet been found for the 16th century although there is evidence for hop cultivation in other local parishes.

For the 17th century documentary evidence is sporadic but hops were clearly established: a lease of 1646 allowed the tenant of Udiam farm to cut ten cords of wood for hop poles out of a total of 20 cords provided for his use.³ The rector's Tithe Book reveals small acreages, generally of one to two acres, sometimes as little

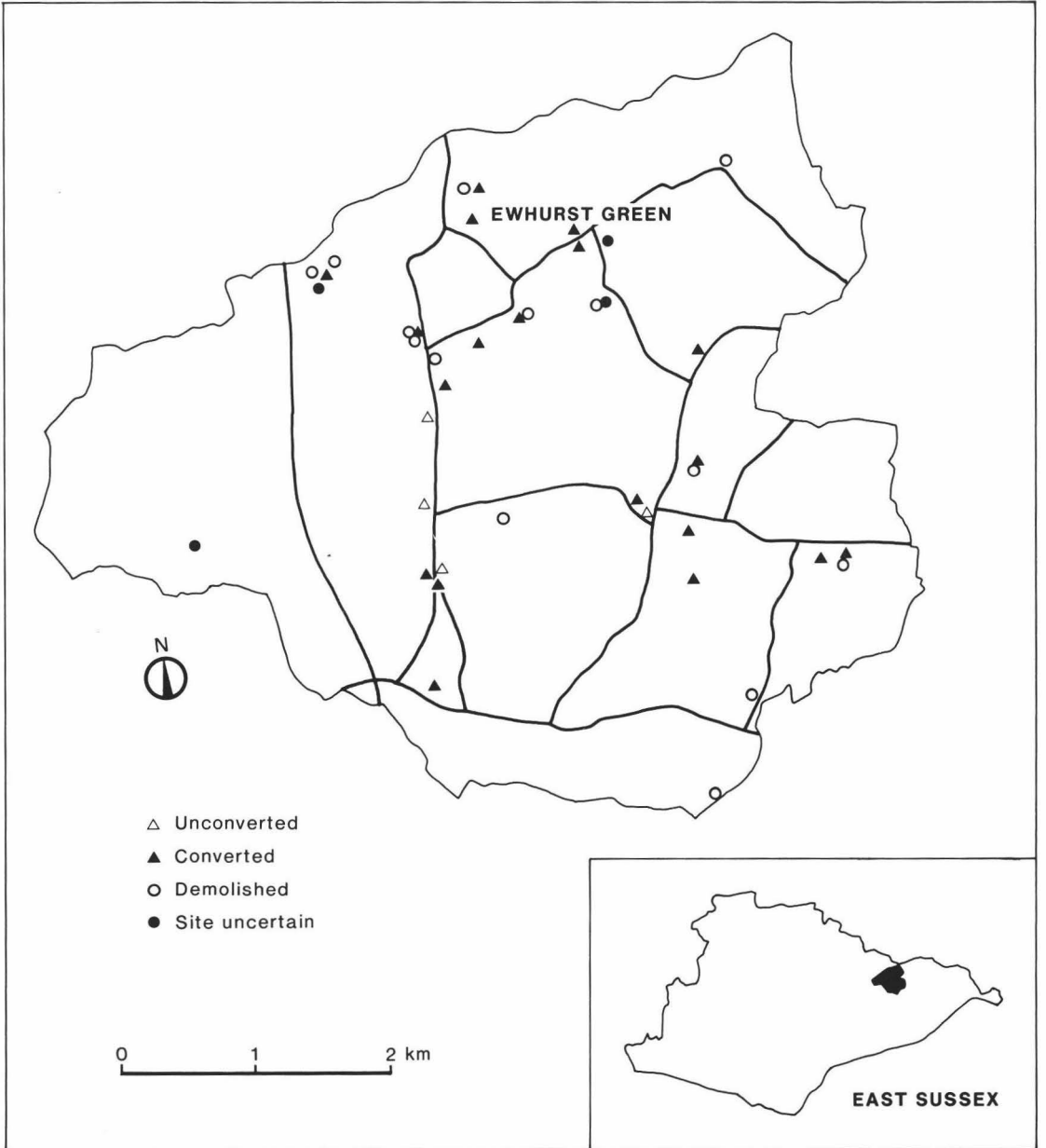


Fig. 1. Known Sites of Oasthouses in Ewhurst Parish.

as half an acre and subject, even then, to an extraordinary tithe rent.⁴

The same volume records 18th-century agreements made between the rector and individual farmers: hopgrowers agreed a rate of 10s. per acre of hops plus 2s. in the pound according to their rent instead of the usual flat rate of 2s. 6d. in the pound. While hop acreages remained small this system worked equitably and could even have been slightly advantageous to the very small growers. It was certainly disadvantageous to the larger growers as the same rate was exacted whether or not the crop was good. But since good years brought these growers more profit than they could ever hope to make on other crops, it was designed to prevent them from netting proportionately larger profits without sharing part at least with the rector.

Detailed hop tithe records show that hop cultivation first began to expand after 1760. (Tables 1 and 2). The years 1760–71 reveal the beginnings of an important change: the emergence of a number of larger growers who were gradually expanding their acreages. For the first time the Tithe Book records acreages of both old and new hops showing that some farmers were planting more new hops than were needed merely to replace gardens grubbed in rotation.

TABLE 1
Acreages of Hops in 1740 & 1742

ACREAGES	YEAR	
	1740	1742
0–1	6	5
1–2	13	10
2–3	3	3
3–4	3	4
4–5	1	1
5–6	1	
No. of growers	27	23

Source: *Tithe Book*, E.S.R.O. 324/6/1

In 1819 a parish terrier showed that there had been continued expansion.⁵ The figures are to be treated with caution as it is not always certain whether the hops had been measured in statute or hop acres (according to the 1,000 hills). Nevertheless, there had clearly been a large increase, since the returns show 395 acres being grown by 30 farmers, the largest number of growers ever recorded for the parish (Table 3). In the 18th century the numbers had fluctuated between 21 and 27, and the number had fallen again to 25 when the Tithe Award was made in 1843.⁶ To some extent the number depended on the state of the market: when prices were good, extra gardens were planted and new growers came in; conversely, when they were bad, old gardens were grubbed and not replaced and some small growers might even come out of hops altogether. Thus, after the Napoleonic Wars prices had been abnormally high in some years. Depression followed in the 1820s and early 1830s and the lower figure on the Tithe Schedule is not surprising.

Examination of this schedule shows that the entrepreneurial approach of a very small number of growers first identifiable in the 1760s had changed the whole structure of the industry (Table 4 and Fig. 2). For the entrepreneur the secret of success lay in the cultivation of large acreages, not necessarily all in one parish, wherein all the good (and some bad) land was planted up with hops while over the rest of the land good mixed farming rotations were maintained; marshland, some of it distant, was used mainly for stock with some corn. The results of this system of high farming can be judged from the returns for Newhouse farm for which the overall sales figures are available for the years 1849–55 (Table 5).⁷

Detailed figures become available again when the series of government June Returns begin and for these, totals have been taken at five-year intervals.⁸ The figures again have to be treated with caution; the first returns were made in hop acres and the change to statute acres was made between 1885 and 1890 (Table 6).

OASTHOUSES IN EWHURST PARISH

TABLE 2
Acreages of Hops 1760-1771

ACREAGES	YEAR											
	1760	1761	1762	1763	1764	1765	1766	1767	1768	1769	1770	1771
0-1	2	3	3	5	3	2	2	2	1	1	2	3
1-2	5	3	4	2	6	5	5	5	5	3	3	3
2-3	4	2	2	2	1	2	4	3	3	4	3	3
3-4	3	4	2	4	3	4	4	3	4	2	4	2
4-5	2	3	4	3	4	3	2	4	2	4	3	3
5-6	1	0	1	0	0	0	0	0	1	0	0	2
6-7	0	1	0	1	1	1	1	0	0	0	1	1
7-8	0	1	2	1	2	1	0	1	0	0	0	1
8-9	1	1	1	1	1	2	2	2	2	1	1	1
9-10	1	1	0	1	0	0	0	0	0	1	0	0
10-11	0	0	0	1	0	0	0	1	0	1	0	1
11-12	2	2	2	1	1	0	0	1	1	0	1	0
12-13	1	0	0	0	0	0	1	0	1	1	2	1
13-14					0	0	0	1	1	1	0	0
14-15					1	1	1	0	0	1	0	1
15-16											1	1
No. of growers	22	21	21	22	23	21	22	23	21	20	21	23

Source: *Tithe Book*, E.S.R.O. 324/6/1

TABLE 3
Acreages of Hops in 1819

ACREAGES	YEAR 1819
0-4	12
5-9	7
10-14	6
15-19	0
20-24	1
25-29	1
30-39	0
40-49	0
50-59	1
60-69	1
70-79	1
No. of growers	30

Source: *Parish Terrier Schedule*, E.S.R.O. A 2698

TABLE 4
Acreages of Hops in 1843

ACREAGES	YEAR 1843
0-4	5
5-9	6
10-14	4
15-19	3
20-24	3
25-29	0
30-34	1
35-39	0
40-44	0
45-49	1
No. of growers	23

Source: *Tithe Map and Schedule*, E.S.R.O. TD TE 139

NB. Two growers not included: Tilden Smith had 95 acres, Thomas Daws had 177 acres.

TABLE 5
 NEWHOUSE FARM: SALES 1849–55: sales of hops expressed as a percentage of the total sales (£) shown over a 7-year period.

YEAR	WOOL	CORN	LIVESTOCK	BUTTER	WOOD	SUNDRIES	HOPS	TOTAL	%
1849–50	31	821	98	—	39	39	988	2016	49
1850–51	26	1001	405	73	114	91	720	2430	30
1851–52	69	928	502	88	42	144	1750	3523	50
1852–53	30	966	1083	66	70	39	2256	4510	50
1853–54	—	1394	613	71	43	73	3853	6047	64
1854–55	—	1496	448	91	119	50	2654	4858	55
Total	156	6606	3149	389	427	436	12221	23383	

Source: *Newhouse Farm Accounts*, E.S.R.O. BAT 2928 a–f

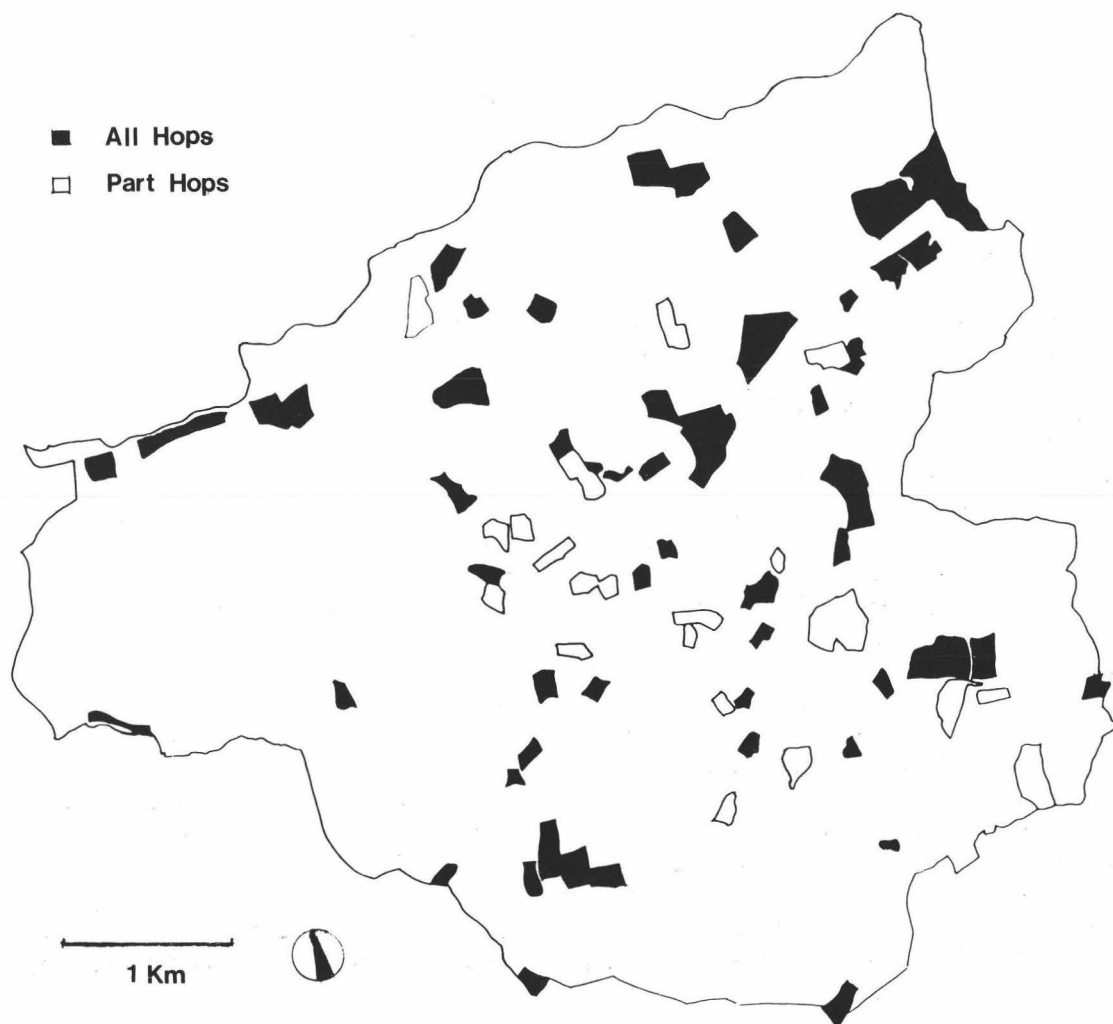


Fig. 2. The Fields under Hops in 1843.

TABLE 6
Hop Acreages from 1875 to 1940, totals at five yearly intervals.

YEAR	ACREAGE
1875	392 $\frac{3}{4}$
1880	345 $\frac{1}{4}$
1885	477 $\frac{3}{4}$
1890	263 $\frac{1}{2}$
1895	300 $\frac{1}{4}$
1900	220 $\frac{1}{2}$
1905	292 $\frac{1}{2}$
1910	179
1915	158 $\frac{1}{4}$
1920	120
1925	208
1930	273 $\frac{1}{4}$
1935	439
1940	637 $\frac{3}{4}$

Source: *P.R.O. MAF 68/433-3957*

It is clear that a high level of hop production was maintained over the century. Difficulties were experienced locally in the late 1890s with a serious downturn at the end of the first decade of the 20th century. Acreages were cut by government order during the First World War and thereafter, with the institution first of the Hop Control and later of the Hops Marketing Board, acreages locally were maintained at about half their 19th-century level.

An anomalous increase took place in Ewhurst due to the presence of a brewery hop farm in the parish. Although it was later known as the 'Bodiam Hop Farm', for the first 29 years all the land owned or tenanted by Guinness lay in Ewhurst parish and a gradual decline in hop production in the rest of the parish after the Second World War is masked by their increasing presence.

The final decline came in the 1960s. One by one the remaining oasthouses became disused and many, including modern ones built by Guinness, were either demolished or converted before their significance as sources of industrial archaeology was realised. Those that remain

have been carefully recorded and assessed in the light of knowledge culled from a wider survey now in progress.

THE BUILDINGS

The pattern of demolition and renewal characteristic of an important hop-growing parish resulted in the destruction of many oasthouses and malthouses which became too ramshackle or too small to permit either renovation or extension. So, in 1663 one Henry Backwell was already being paid for 'one day's work shorning up the Malthouse' and this building no longer exists.⁹ As the growth of the industry did not accelerate until the 19th century, 18th-century buildings retain features characteristic of earlier centuries.

EARLY 'SCOT' OASTHOUSES:

Hobby Hobbs Oasthouse

Reynolde Scot, writing in 1574, provides a description which is useful as a yardstick for evaluating the later development of the buildings.¹⁰ The essential details are these:

a) the oasthouse was to be carefully constructed with care taken to prevent dust and draught; the building to be positioned with due consideration both for the efficient harvesting of the hops and for the fire risk;

b) the published plan was for a timber-framed and daubed building divided into three 'rooms', but with no provision made for a roof vent since the walls of the kiln rose only to eaves level. (Details of roof construction or covering were not included);

c) brick was to be used at least in the wall adjacent to the furnace mouth and, honeycombed, for the furnace itself, on which ordinary wood was to be burned;

d) the kiln, centrally placed, was either 8 feet square (2.44 square metres) for the standard oast, or rectangular, provision being made for a slightly larger building with a kiln 10 feet × 8 feet (3.05 × 2.44 metres) if the acreage

were 'verye great';

e) the walls of the kiln were to be 9 feet (2.74 metres) high, the drying floor 5 feet (1.52 metres) above the ground and 2 feet (0.60 metre) above the furnace top;

f) the kiln would be loaded either from a ladder or a platform at one side and unloaded through a hatch level with the drying floor at the other;

g) the slats of the drying floor were to be one inch square (0.025 metre) and no haircloth was to be used;

h) the area of the smaller kiln would be 64 square feet (5.95 square metres), that of the larger, 80 square feet, (7.44 square metres);

i) for a 'normal' load 18 inches deep (0.46 metre), the capacity of the smaller kiln would be 96 cubic feet (2.74 cubic metres), for the larger, 120 cubic feet (3.42 cubic metres);

j) the central position of the kiln would allow an efficient throughput of the hops.

The nearest equivalent to this prototype in Ewhurst parish is the original oasthouse at Hobby Hobbs farm. Here the building is timber-framed with walls of stud and weatherboard recently underbuilt with brick; the roof was originally thatched. (Figs. 3 and 4)

The original building, marked by three remaining hip rafters in the roof measured 7.35 × 4.32 metres (24 × 14 feet). To the west a lean-to, still partially surviving, ran the full length of the building. On that side a low hatch constructed level with the drying floor opened into the southern bay of the lean-to where the walls are matchboarded as though lined to receive the dried hops. The kiln is therefore believed to have been in this southern bay and the opening in the ground floor wall might have been for draught.

In comparison with Scot's oasthouse this building was 1.5 metres (5 feet) larger in both length and breadth. The low hatch for unloading the drying floor is retained and no attempts appear to have been made to funnel the hot air out of the building. The area of this bay was

14.14 square metres (152.1 square feet), its capacity, assuming the same loading line, 6.50 cubic metres (229.5 cubic feet), just less than twice that of Scot's large kiln and just over twice that of the smaller. Given this greater area, the drying floor was, as is to be expected, slightly higher at 1.8 metres (5.9 feet) above the present floor. A major difference was that the kiln was not placed centrally in the building and the walls were considerably higher, rising to 3.8 metres (12.46 feet).

As can be seen from Figs. 3 and 4, two bays were later added, one at each end, perhaps in one, or possibly two separate operations. The interpretation of the function of the extension(s) is problematic because so little supporting evidence remains, much having been removed when the building was finally adapted to house hop pickers.

The inclusion of another hatch opening at first floor level suggests that the kiln area was extended at this end. This would have given an area of 28.28 square metres (304.2 square feet), a capacity of 13.0 cubic metres (459.0 cubic feet) and if this were indeed so, it would have been extremely difficult to produce a good draught of hot air with the floor as low as it was.

This may explain why, on the evidence of the cowl opening and of remnants of lath and plaster lining, the kiln was later moved to the north end with the drying floor possibly raised onto joists lodged between the planks nailed across the face of the timber studs. The kiln here would have offered an area of 29.58 square metres (318.2 square feet), a capacity of 13.6 cubic metres (480.1 cubic feet), but with the drying floor at about 3 metres (9.84 feet) above the present floor a much better draught would have been achieved.

On the evidence of the construction—flimsy in comparison with the carpentry standards of previous centuries—the original building may date from the early 18th century and was extended in order to cope with an expanding acreage such as was prevalent at that time on some farms.

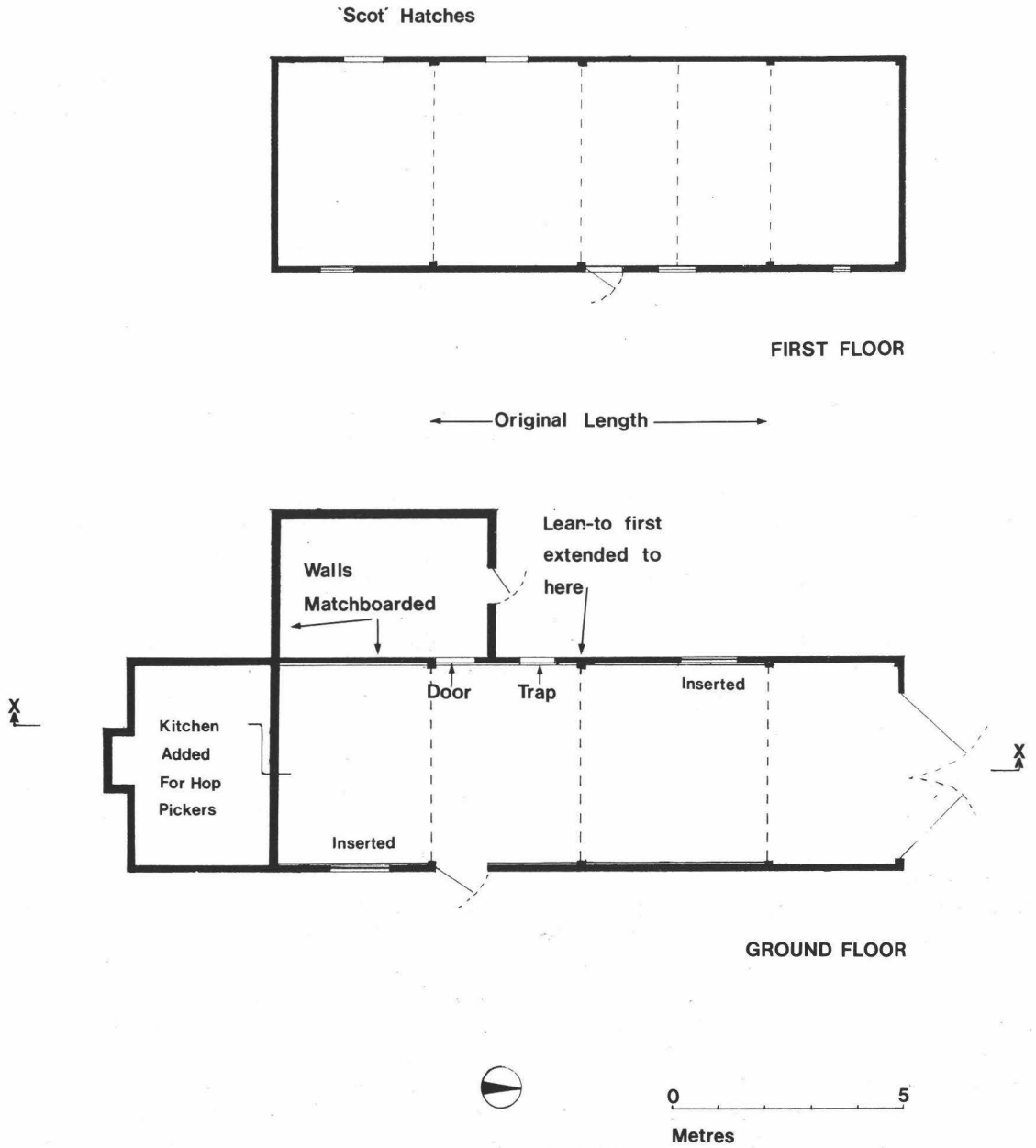


Fig. 3. Hobby Hobbs Oast: Plans.

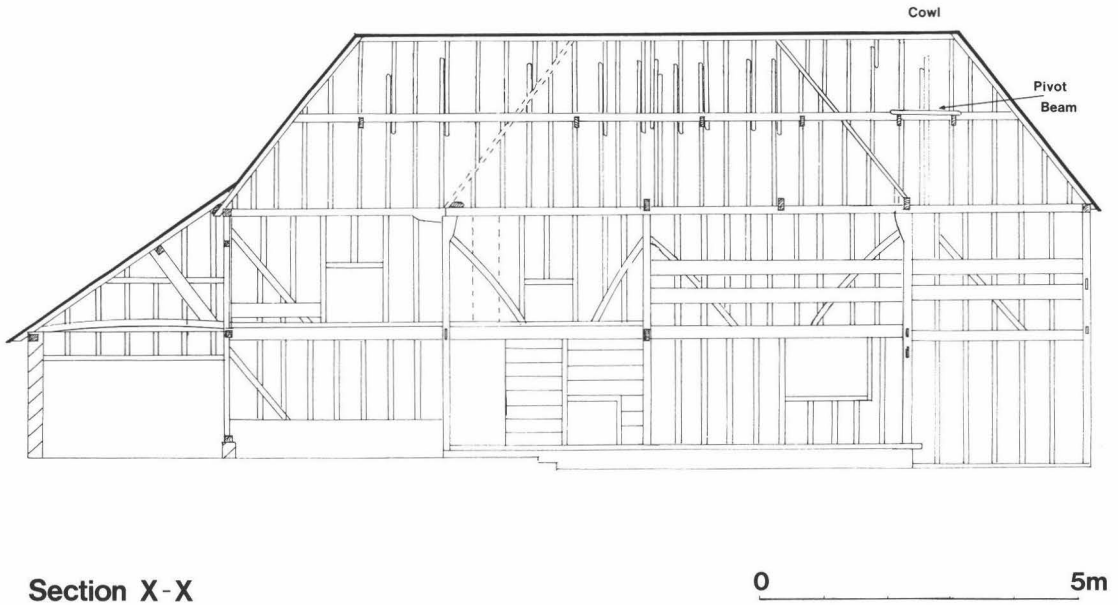


Fig. 4. Hobby Hobbs Oast: Section X-X.

*MALTHOUSES USED FOR HOP DRYING:
Rectory Cottage, Ewhurst Green*

On other farms where acreage remained more stable, malthouses, if they existed, continued to be used for hop drying and this was obviously an economic extension of their use.

Rectory Cottage (Fig. 5) has been too much altered to permit detailed survey. Its development, as indicated by map evidence, illustrates very well the amount of change such buildings underwent, particularly during the 19th century by which time they were used more for drying hops than for drying malt.

It stood then right on the village street, one of the two small glebe buildings which had originated as encroachments. They were described in a later rental as 'Barn, Malthouse and Waste on Ewhurst Green' and occupied a thin sliver of land measuring 36 perches.¹¹ A map of 1789 accompanying the rental clearly shows two buildings but by 1823 one had been

demolished and the malthouse had been lengthened.¹² The Tithe Map of 1843 shows a crosswing at the east end but this had been demolished by 1872 when a rectangular building divided into one large and one small unit is shown.¹³ The same length and division survived until the final stage of the conversion of the building in the 1960s.

Where the original structure remains it is of brick to the ground floor, timber-framed and probably weatherboarded on the first floor. A partition which survives in the roof suggests that the kiln may originally have been at the west end. The later crosswing may, however, have housed extra kilns and the position of a press hole just within the western section of the building seems to corroborate the theory that, indeed, kilns were later placed at the eastern end since the press hole would be positioned at the further edge of the cooling floor, away from the kilns.

This building may have been built during



Fig. 5. Rectory Cottage, Ewhurst Green: South Elevation.

the first half of the 18th century. It is, perhaps, the earliest of the surviving buildings of the industry in the parish to reflect the increasing use of brick in the 18th century. Still too expensive a material to allow its use throughout the building, its use in the ground floor walls lessened the fire risk and offered better insulation to the plenum chamber of the kiln. Similarly, the use of tile for the roof, although more expensive, was clearly desirable because of the fire risk. The undertaking of such expense for buildings which, even when used for both malt and hops, were only in primary use for part of the year, is an interesting reflection of the importance of those crops as sources of farm income.

LATE-18th CENTURY DEVELOPMENTS IN OASTHOUSE CONSTRUCTION:

Hollow Wall Oast

Increases in acreage during the second half of the century brought the need for more kiln

space, and this is visible in the construction of the oasthouse at Hollow Wall farm. It now comprises a stowage and two roundels but was originally a rectangular building with two kilns inset, probably built during the last quarter of the 18th century. (Figs. 6, 7, 8, 9 and 10)

Brick, here pale and yellowish in colour, in contrast to the normal red of local bricks, was used for the ground floor walls, timber framing and weatherboard for the first floor. The roof, half-hipped at each end, was tiled. Mortices cut into the south wall show that a stage and staircase formerly gave entry to the first floor.

The first-floor windows were half- or fully-shuttered and inside, the walls have been lined with matchboarding in order to prevent the hops from lodging in between the studs of the framing, and becoming a source of dust and dirt. This matchboarding is possibly not original.

The tie-beams and wall-plate at the east end formed part of the framework of the two kilns:

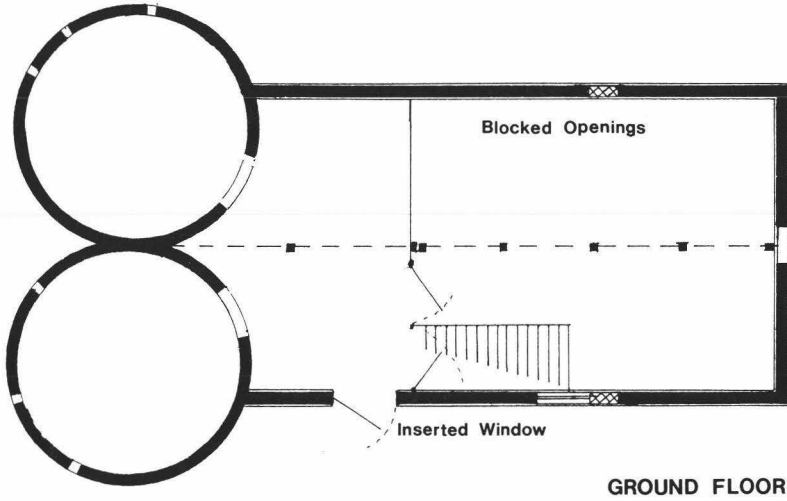
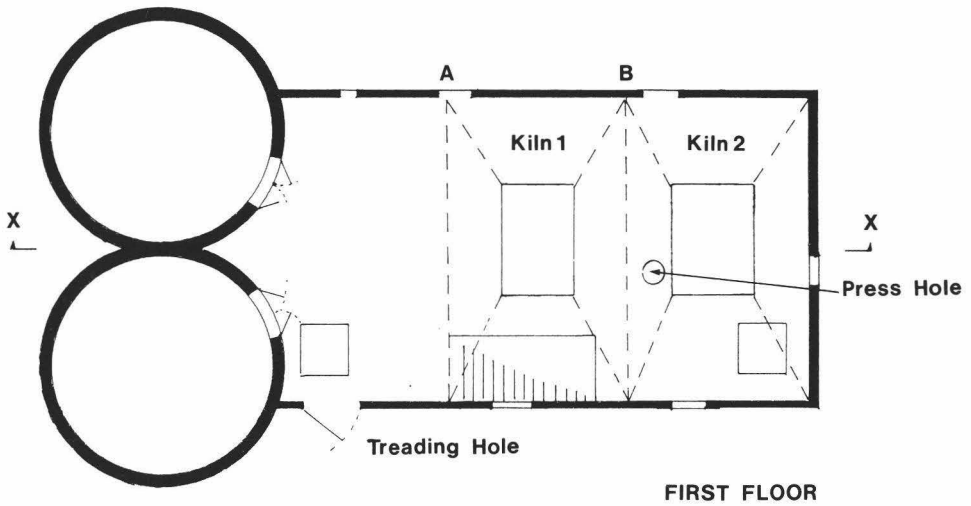


Fig. 6. Hollow Wall Oast: Plans.

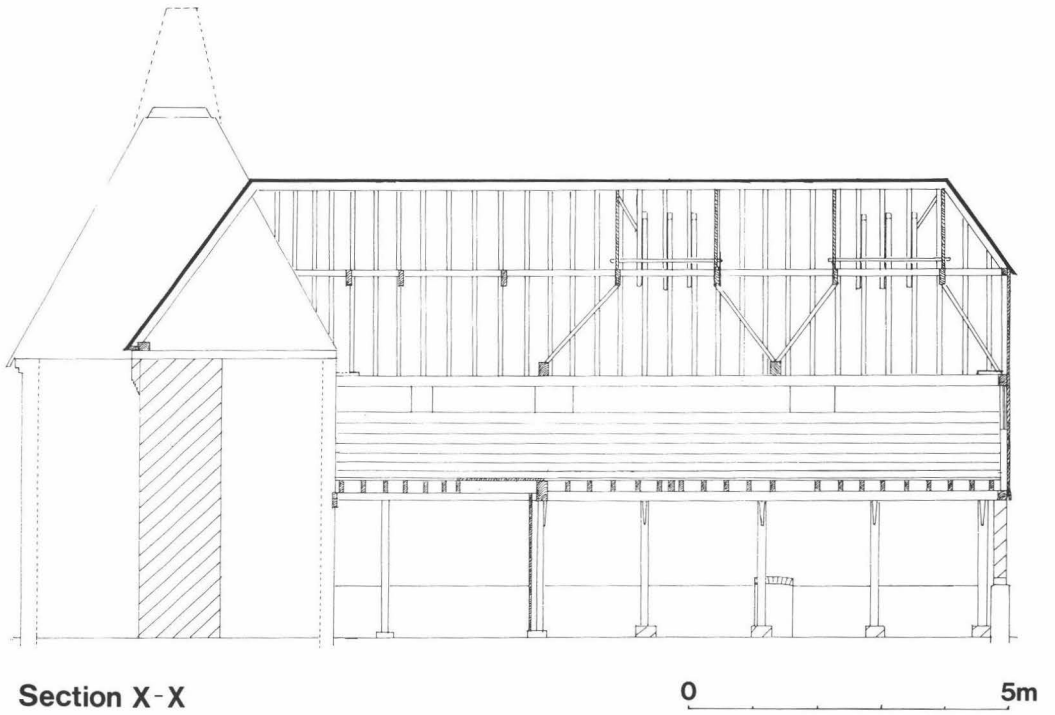


Fig. 7. Hollow Wall Oast: Section X-X.

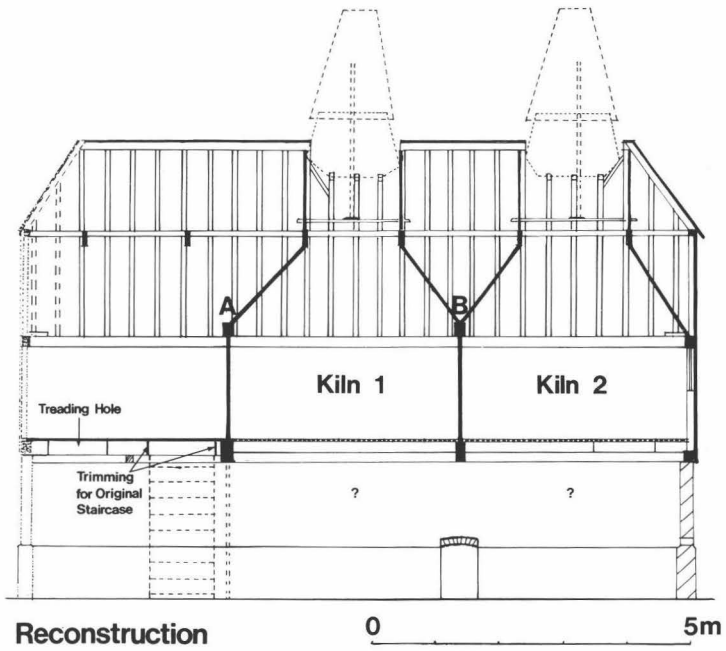


Fig. 8. Hollow Wall Oast: Reconstruction.



Fig. 9. Hollow Wall Oast: Exterior.



Fig. 10. Hollow Wall Oast: The Tops of the Inset Kilns in Situ.

stave-holes in the underside of the tie-beam held the timbers in the lower vertical walls; from the top of the tie-beam other staves sloped inwards towards the two collars forming an inverted funnel shape for the upper part of the kilns. Above the collar the partitions were carried up to the apex of the roof. Nail holes visible on the face of those rafters which formed the side walls of the kilns and on the staves which remain in position between the wall-plate and the collar at the east end of the present stowage are evidence of the lath and plaster lining to the kilns. A beam to support the pivot of the cowl was tusk-tenoned into the partitions just above the collars to both kilns.

The position of the door into Kiln 1 is marked by an interruption in the regular spacing of the stave-holes in the underside of Tie-beam A. No such interruption is visible in those on Tie-beam B but a door is presumed to have existed.

Two trimmings in the underside of the floor mark the position of former traps and it is possible that a third identical one in Kiln 1 was removed when the present staircase was constructed. If so, the traps in the kilns were probably used for bagging the inferior hops. The other trap is interpreted as a treading hole which was normally placed close to the corner of the building, as here. There were probably two reasons for this: one, to offer the treader some support as he worked in the pocket—the framing of the wall providing a handhold, the other, to retain the hops which failed to enter the pocket, the angle of the walls forming a barrier which prevented them from scattering too far.

On the ground floor nothing remains of the original firing arrangements which were probably removed when the roundels were added. There are, however, three openings in the walls at ground level which are interpreted as draught openings: it is significant that those in the side walls are exactly opposite each other and exactly central to the two inset kilns and it is possible that a firing tunnel was originally constructed along the building with fireboxes either side.

Some advances in building design are visible in this oasthouse. Brick was again used for the ground floor walls and tile for the roof. The drying floor was higher, 2.45 metres (8.04 feet), this increase accompanying a corresponding increase in kiln area, 21.3 square metres (229 square feet). That is nearly three and a half times the area of Scot's smaller kiln, nearly three times that of his larger one. Each kiln, therefore, offered a similar scale of increase in capacity.

It is also probable that less time was taken to dry the hops in these kilns. The whitened surface of the inward-sloping walls reflected some of the heat back down on to the top of the hops, precisely where they took longest to dry. The cowls, designed always to swing their closed side against the wind, improved the flow of hot air out of the kilns, pulling the heat up from the furnaces and through the hops more quickly.

The faster drying must also have contributed towards an improvement in the quality of the final product with less likelihood of the lower layer being scorched through overlong drying or of the top layer being 'coddled' (ruined through moisture condensing back on to them). The inclusion of a treading hole itself implies the expectation of a better quality product.

Nevertheless, the positioning of the two kilns side by side must have made the end kiln awkward to load and difficult to unload. Indeed, the lack of provision of extra cooling space must indicate either that the kilns were never loaded to capacity, which seems unlikely, or that the hops were normally left to cool on the drying floors. In this case limitations must have been placed upon the flow of picked hops coming up from the gardens with the consequent risk of ripe hops spoiling on the bine, particularly if the crop was abundant or the weather conditions adverse.

Wherever this method of cooling was used the limitations could not have been tolerable for long. By the end of the 18th and early in the 19th century many of the buildings then in use must have been found inadequate to meet the demands being placed upon them. The solving of this problem brought about a radical re-

designing of the oasthouse with the exteriorisation of the kiln(s).

*THE REDESIGNING OF THE
OASTHOUSES IN THE LATE 18th
CENTURY: Poplar Cottage*

This redesign turned a wayside encroachment near Staplecross into a malthouse where hops were probably also dried, particularly as the conversion took place after 1761.¹⁴

A kiln 6.14 metres by 5.27 metres (20.14 × 17.29 feet) was built on to the northern end of the cottage, into which it was intruded by 1.10 metres. This left an area 2.0 metres by 4.38 metres (6.56 × 14.37 feet) between the kiln and the adjoining first and ground floor cottage rooms. This area must have given access to the kiln and the first floor may have been used for cooling, but since it could only offer 8.76 square metres (94.27 square feet) for a kiln 32.36 square metres (348.2 square feet) in area, this seems unlikely, and more probably the hops were again left to cool in the kiln. As at Hollow Walls and Rectory Cottage, the ground floor walls are of brick, the first floor walls timber-framed with regular studding and external weatherboard. The front facade of the kiln was set back, out of line with the cottage; its eaves are 0.72 metres (2.36 feet) above the wall-plate of the cottage.¹⁵

The extension of a building by adding an external kiln or kilns marked a major advance in the development of the oasthouse and it was a turning point that made possible all the increases in efficiency that were to be achieved during the 19th century. Given sufficient space alongside the building, not only was it possible to provide as many kilns as were necessary for an expanding acreage, but the adoption of external kilns freed the farmer from restrictions to the height of the kiln roof and, therefore, to the height of the drying floor.

Initially the advantages of this were not fully realised. In the beginning kiln roofs remained fairly low, as at Poplar Cottage, not more than a metre or so above the stowage roof, and drying floors remained at the height they had reached in

inset kilns, about 2–2.5 metres (6.56–8.2 feet) above the ground.

What surprises at Poplar Cottage is the kiln area: 32.36 square metres (348.22 square feet). This gave a capacity of 14.89 cubic metres (522 cubic feet), nearly half as much again as that of the kilns at Hollow Wall and greater than that of the majority of 19th-century kilns. These, in fact, were dimensions which were not again to be equalled or outstripped until the 20th century. Given the 'great rebuilding' which was to follow in the 19th century, not many of these external kilns now survive. Others of similar size have been recorded in other parishes, nearly all superseded by later kilns.

This suggests an inherent weakness in the design. Since the spring of the roof slope is at the same level as that in the kilns at Hollow Wall, the advantages of the inverted funnel would seem to have been retained. The weakness must have lain in the problems posed by the creation and maintenance of the right temperature over so large an area.

**MAIN METHODS OF FIRING: LATE 18th
CENTURY**

By the end of the end of the 18th century three main methods of firing had evolved:

- i) free-standing brick built furnaces, larger versions of the one advocated by Scot, more than one per kiln if necessary,
- ii) open fireplaces in any number, usually set behind a screening wall which prevented loss of heat and protected the drier from over-exposure to heat,
- iii) an enclosed furnace or stove, either with four walls funnelling towards the outside walls of the kiln or with a system of pipework which carried the heat up close to the drying floor.

While wood could be used for the enclosed furnaces, on the open grates and in the honeycombed brick furnaces its use was discontinued because the smoke and fumes harmed the hops. Charcoal and, increasingly,

anthracite were preferred although the latter brought dangers of chemical contamination and it had to be carefully mined to avoid arsenical seams in the ground.

The burning of sulphur to keep the hops bright in colour and to improve their keeping quality was also becoming standard practice.¹⁶ The grates and furnaces were easy and not too expensive to build and could easily be increased in number as required; the state of the fire being visible, they were relatively simple to control. The enclosed stoves were more expensive to install but they avoided the dangers of contamination and they did permit the burning of less expensive fuels.

TRANSITIONAL OASTHOUSE: LATE 18th AND EARLY 19th CENTURIES

With all three methods there must frequently have been difficulties in raising and maintaining the right temperatures, particularly in the very large kilns. This may have led farmers to prefer smaller kilns in greater numbers. Examination of the Tithe Map leads one to suppose that these smaller square or rectangular kilns existed in some numbers, if one can safely judge by the uneven shape of some of the buildings which are known from other documentary sources to have been oasthouses. The Commissioners of Excise in their report on the hop industry in 1835 described the typical oast or kiln as 'usually a square building about 15 to 20 feet high [4.57–6.09 metres], with a floor fixed upon a brick or iron frame, parallel to the ground floor at about half that height,'¹⁷ but gave no indication of typical size or capacity.

Since the excise returns in which farmers annually reported details of their oasthouses have not survived, more precise details of these early external kilns will never be known for Ewhurst parish unless their outline plan can be recovered by excavation, because they were swept away and replaced with more advanced kilns during the heyday of the industry in the 19th century. Possible footings of one such kiln have been located at just one farm in the parish:

Madams farm; excavation here may reveal details of the plan and of the firing method used. Another large external kiln partially survives in the converted oasthouse of Sempstead farm. Elsewhere all such kilns have been lost.

THE INTRODUCTION OF THE ROUNDEL

Possibly because the building of external kilns brought new problems of insulation, John Read, a gardener and inventor from Horsmonden in Kent, turned his attention to the perfecting of hop drying.

He is credited with the introduction of a new shape of kiln: the roundel. It was introduced during the first quarter of the 19th century and the design embodies more than the principle of elimination of cold corners, often popularly supposed to have been its sole aim. It was claimed to have been adopted because 'it contains a greater area than any other figure with the same quantity of exterior walling.'¹⁸ It ought, therefore, to have been less expensive to erect.

THE CONSTRUCTION OF THE ROUNDEL IN EWHURST

The walls

Up to eaves level brick was used. Rising from wider footing courses the wall was normally 0.23 metre (9 inches), sometimes 0.33 metre (13½ inches) thick, occasionally with a plinth. The joists and slats, slats of either timber or metal, were supported by beams either lodged directly into the brickwork or carried on corbelled courses or on piers. Just below the eaves oversailing courses kept some of the rainwater off the brickwork. Also at this level a metal band was often placed and then tightened round the wall in order to prevent the brickwork from bulging under the thrust of the roof.

The roofs

Initially, the conical roofs were constructed of timber, lathed and plastered internally and tile-hung externally, using tapered tiles. The rafters rose from a timber plate laid on the outer

rim of the wall up to the timber curb of the cowl opening. The size of this opening was determined by the volume of the air intake into the ground floor of the kiln. The orifice had to be large enough to allow the heated and moisture-laden air to pass freely out at the top; otherwise, if it were too small, the air current would return and moisture would condense on to the top layer of hops and spoil them. The cowl revolved on a pivot which was supported by a pivot-beam halved over a cross beam, both beams being jointed into rafters.

About mid-century, possibly prompted by the removal of the brick tax, the roofs were also constructed of brick: a course, half-brick thick took the place of the timber plate and three courses one-brick thick were laid over it, thus creating the angle at which the sloping roof would rise. The conical roof was then built half-brick thick and rendered externally for protection from the weather. The rendering was often blackened with pitch and the pitch was frequently taken down the upper courses of the walls to drying floor level.

The firing

On many farms the growers retained in these new kilns the open grates traditional in many of the older square kilns (Fig. 11). They were placed either inside a circular screening wall or behind the walls of a firing tunnel. In other kilns the larger versions of Scot's furnace were placed in the middle of the roundel floor. The economy of installation and ease of control still recommended these methods to many farmers. The new 'cockle' stoves were adopted, however, by larger growers with sufficient capital who were more interested in 'pure air drying'. The capital outlay was worthwhile because the hops, being of better quality when dried, would command a better price.

THE REFURBISHMENT OF OLDER BUILDINGS

Sufficient details of the costs of construction are not readily found, but whatever they were,

increasing numbers of farmers and landowners in Ewhurst parish, as in other parishes around, were to become sufficiently convinced of the efficiency of the design to have roundels built on their farms.

The addition of a roundel or roundels must in most instances represent a compromise between the need for economy and the need for new technology. Given sufficient space, two methods of adding were possible, choosing not just any point alongside the existing building but where the wind would create sufficient draught:

i) A wall, or part of a wall might be removed and the new kiln(s) either intruded slightly into the building or placed directly on the line of the wall removed; with this method some form of support was contrived for the joists of the first floor.

ii) Where the removal of all or part of a wall would create too many problems, the new kiln was butted up to the building and the existing wall only cut where doors into the kiln were to be made. This method did not always avoid all the problems, however: not infrequently the wall of the existing building was found to be slightly out of plumb at the top and awkward gaps appeared between it and the new kiln. Depending on their size, they were either left or infilled.

Both methods offered direct access between kiln and cooling floor and the only extended joining section needed was for the roof. Either the existing ridge-piece was extended between two kilns to terminate in a hipped section rising on Jack-rafters jointed into the cones or, where single kilns were concerned, a short ridged section extended between the main building and the kiln, one end jointed into the rafters of the stowage, the other into the rafters or brickwork of the cone.

The whole operation involved the minimum of expense in new building but money also had to be spent on altering the layout of the existing building: new doors were frequently cut in and old ones blocked; the same was true of windows and very often the staircase was moved; where inset kilns were removed new flooring had to be

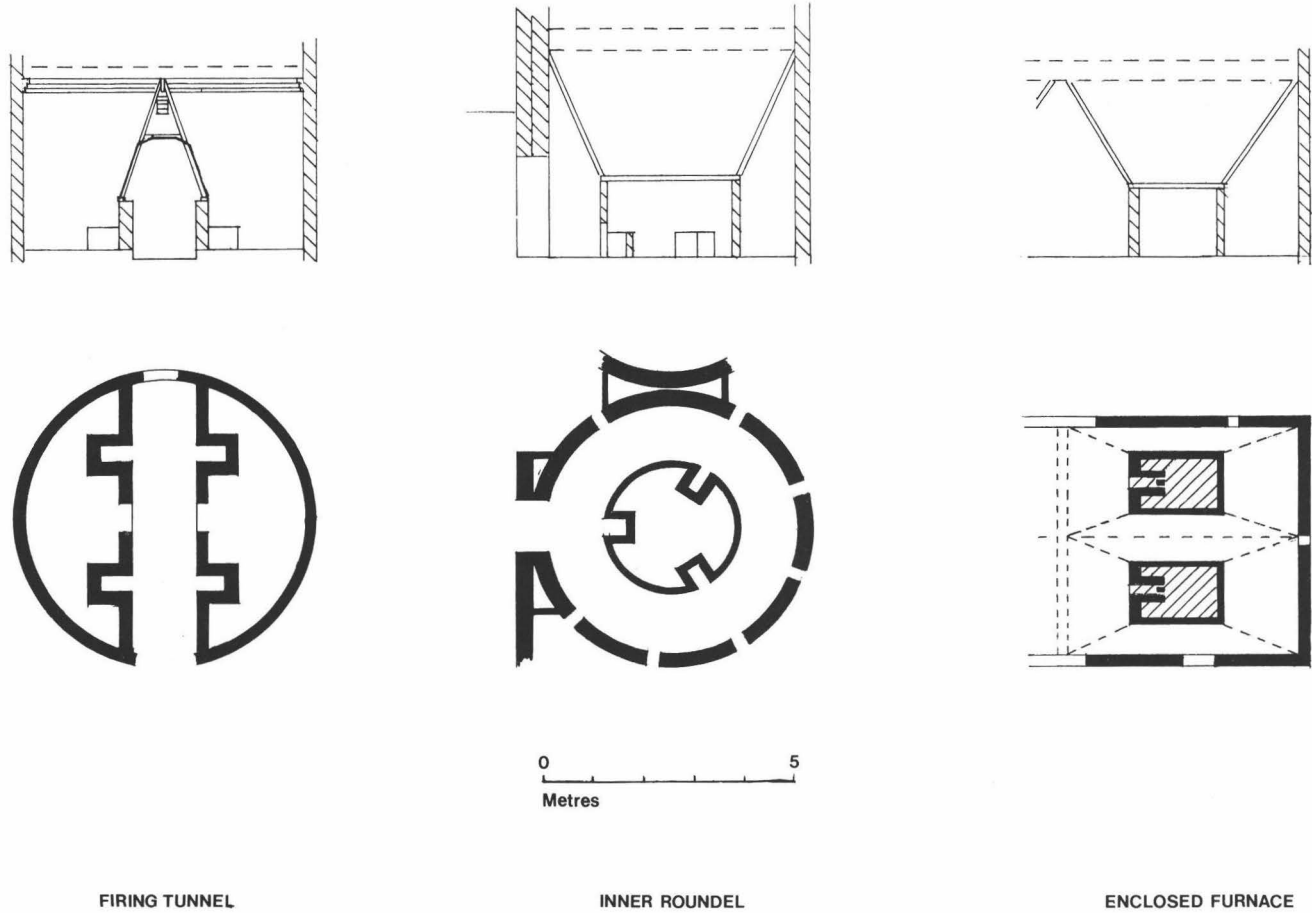


Fig. 11. Firing Arrangements in Nineteenth-Century Kilns.

laid. As a result, the hallmark of many oasthouses is the great number of alterations visible in the fabric, offering vital clues to the successful unravelling of the history and archaeology of the buildings.

The date of erection of the first one is not known. Mr Read certainly visited Thomas Daws and his son in 1833 in order to discuss the new oasthouse which was to replace one burnt down at Shoreham farm, but may not have convinced them of his design.¹⁹ By the time the Tithe Map was drawn, 1843, nine oasthouses had roundels (r) shown: Winterlands (1r), Brasses, Prawls, Ockham, Hollow Wall and Brede High (2r); Marchants and Udiam (3r); Padgham (4r).²³

Seven of these oasthouses were later demolished without record; those at Prawls and Hollow Wall farms remain and both show clearly that they had one end wall removed in order to accommodate the roundels.

At Prawls (Figs. 12 and 13), the building appears to have been truncated; stave-holes for the studs of a timber-framed first floor wall are visible in the wall-plate now serving as a tie-beam and the roundels could have replaced either inset or external kilns.

At Hollow Wall, stumps remain where the dragon-ties were cut away, and the yellow bricks of the original ground floor wall were reused in the lower courses of both roundels. Here the change was certainly made from inset kilns to roundels. At this farm they added a combined drying area of 30.4 square metres (327.0 square feet), but less than the 41.3 square metres (444.4 square feet) of the two inset kilns. What had clearly been gained here was space for the cooling and conditioning of the hops. This would allow a more efficient use of the roundels: the almost uninterrupted use of the kilns and, therefore, a greater volume of hops dried. As a result, the farm's acreage could then be expanded.

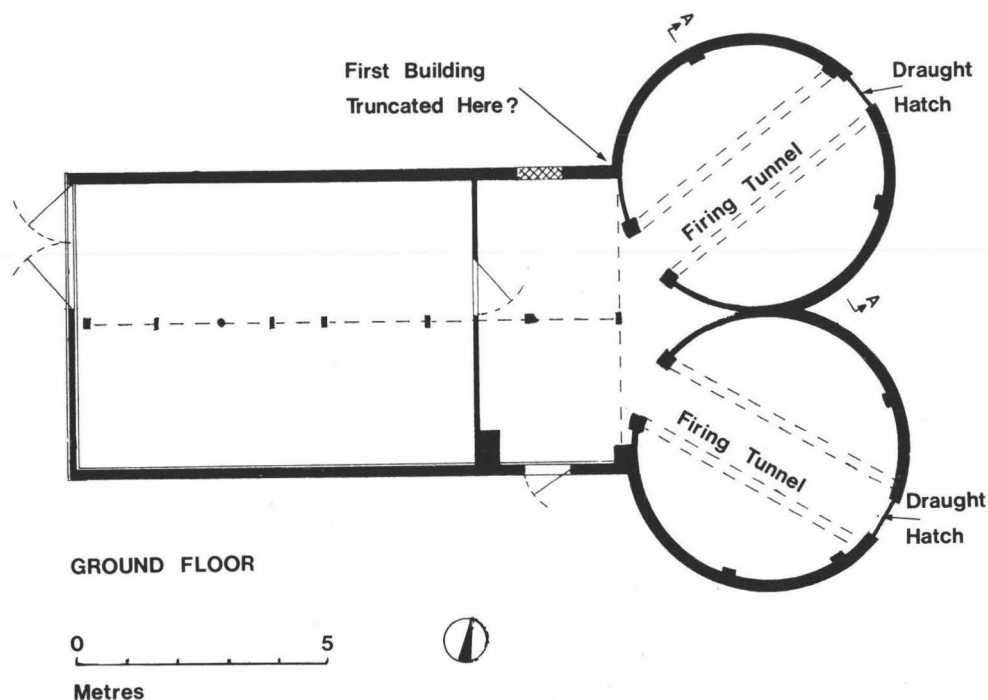


Fig. 12. Prawls Oast: Section A-A.

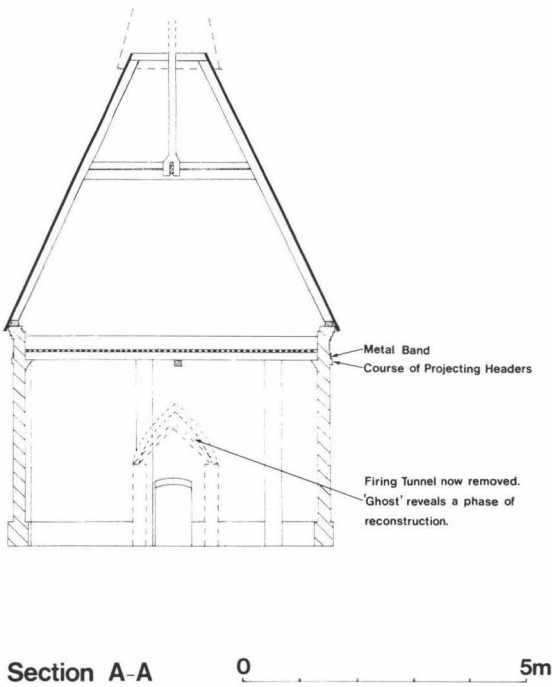


Fig. 13. Prawl's Oast: Section A-A.

These advantages must have been available since the introduction of external kilns. It seems likely that while the first need may have been for more kiln space, the possibility of making more ergonomic use of the building by removing inset kilns and creating extra cooling space must have followed soon after. Therefore the widespread adoption of the roundel on the farms of the parish which may have involved removing not only inset but external kilns also, must testify to a general expectation of greater efficiency in the drying effected in it.

After 1843 and well into the period of agricultural depression the refurbishing continued. Single roundels were added to four other oasthouses: Edgington; Sparks; Wattle Hill and Boyces. An extra kiln was also added at Udiam, bringing the number of roundels there to four.

THE 'GREAT REBUILDING' IN THE 19th CENTURY

At the same period, however, the refurbishing was outstripped by the rebuilding. Seven oasthouses, at Court Lodge, Lordine, Gate, Madams, Ockham, Hobby Hobbs and Brede High farms were replaced by new ones; at two other farms, new sections of stowage plus twin roundels were added to existing buildings. Such an amount of building activity speaks eloquently of the importance attached to the hop industry and of the faith placed in the roundel.

Its advantages were further enhanced by the construction of purpose-built stowages and although they were simple, functional buildings their addition greatly improved the quality of the finished product.

A PURPOSE-BUILT 19th-CENTURY OASTHOUSE: Gate Farm

The oasthouse at Gate farm, (Figs. 14 and 15), replaced an earlier building on the same site. It was constructed some time after 1843 and, to judge from some of its features and from the three-sided cattle yard of which it forms one arm, possibly in the 1850s. Although only small, it incorporates many design features typical of the buildings of the time.

The side walls to both ground and first floor are all one brick thick, the end elevation had timber framing to the first floor, double doors which open directly on to the road on the ground floor. The windows to the first floor are half glazed, half shuttered. Away from the road, access to the building was provided close to the kiln and on both floors. The first floor door also acted as a loading door and has an elaborate metal staircase and platform. Because the ground floor had a partition between the kiln area and the rest of the stowage, another door in the east wall opens into the storage area. The press hole is original and half-height matchboarding lines the first-floor walls.

The roof is of tie-beam, collar and through purlin construction, hipped at the southern end

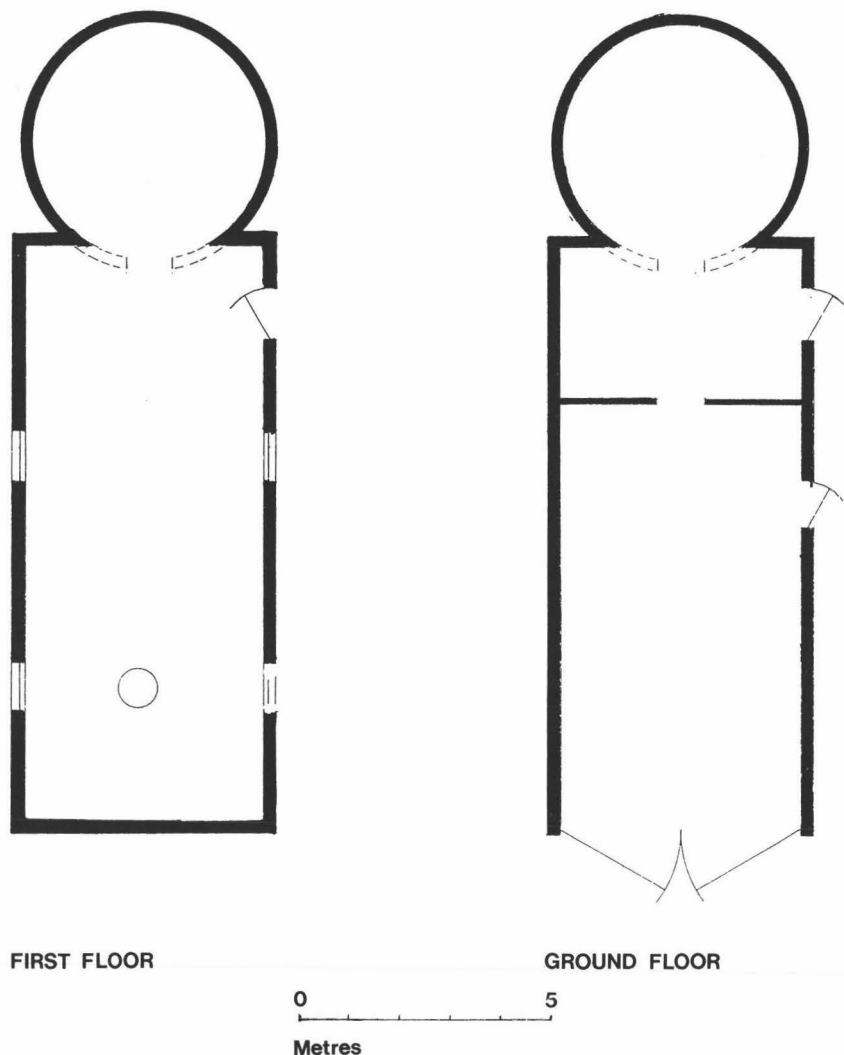


Fig. 14. Gate Oast: Plans.

and has always been tiled. Two of the tie-beams are reused medieval timbers, one a dais beam, and they are the only obvious examples of the reuse of materials.

The top of the roundel has been taken down but the kiln is believed to have had a brick cone. No draught doors are visible in the lowest courses of the brickwork and it is therefore believed to have been provided with some form of 'pure air' stove. (There was clearly some

evolution in stove design and in the provision of pipework: Lordine had flues up the outside wall of the kilns and at Court Lodge stovepipes ducting away the combustion fumes emanated from the conical roofs).

Although timber framing continued to be used for the first floor in many 19th-century oasthouses, buildings all of brick became increasingly common after the middle years of the century. The careful provision of half glazed,



Fig. 15. Gate Oast: East Elevation.

half shuttered windows is typical of oasthouses of all periods because strong sunlight is harmful in that it bleaches the colour of the cooling hops. In other oasthouses of the period elaborately framed louvres have been recorded; these could be adjusted to ensure not only the right light but draught-free conditions as well.

The matchboarding, often not merely waist high but up to wall-plate level is another feature which is typical of the period: it allowed the cooling floor to be brushed clean between each load. The close boarding of the floor was a similar measure: the accumulation of dust and hop residue which would have contaminated the new load was prevented.

The central press hole is again typical: earlier treading holes situated in the corner became redundant after the invention of the rack and pinion press towards the middle of the century. The positioning of the press under the ridge of the building allowed the free operation of the rack.

Doors close to the kiln on both floors were essential for quick communication between the floors when the drier wanted to check the condition of the hops on the kiln. The use of the first-floor door for loading also often led to the provision not only of an outside staircase but of a platform in front of which the loaded waggons from the hop garden could stop. Such staircases and platforms were more usually of timber, the use of metal here is a measure of the expense which was undertaken.

On the ground floor the partitioning of the stowage is a feature often found: it helped to regulate draught if necessary, and allowed the drier a comfortably warm area in which to settle himself during the long drying sessions. If enclosed, as at Gate farm, the rest of the ground floor could be used to store the finished pockets in the right airy conditions. If left open-fronted, its use was always for storing waggons or implements and this allowed good circulation of air under the hops while the tongued and

grooved floorboards prevented draught from cooling the hops too quickly. Airiness was also carefully considered in deciding the height and area of the stowage, and 19th-century buildings reflect the increasing importance attached to cooling and conditioning. At the very least stowages needed to match the area of the kilns and to have sufficient height to obtain an ample volume of cool but draught-free air in which the hops could be left to lie as long as was necessary to assure their prime condition.

The siting of this oasthouse right on the roadside, which allowed pockets to be loaded most conveniently on to a waggon is a feature shared by all the other 19th-century oasthouses and by many earlier ones also. Scot's advice about placing the oasthouse in the hop garden with due caution for the fire risk was almost totally disregarded. Transportation of loads of heavy hop pockets was often difficult enough over the roads; over muddy farm tracks it would

frequently have been impossible.

The purpose-built 19th-century oasthouses are not only near or in the farmstead. Many can be seen to have been integrated into an enclosed stockyard as at Gate farm and at Newhouse, where the oast and barn formed part of an enclosed square which was established piecemeal as buildings were added to the farmyard; at Madams farm the oasthouse was planned as part of an H-shaped layout.

THE DEVELOPMENT OF THE ROUNDEL

As built on individual farms over the 19th century, the roundel developed considerably in height and diameter. Even a small one-kilned oasthouse such as that at Gate farm already marked an advance in area and capacity. The area of the early kilns at Hollow Wall was 15.2 square metres (163.5 square feet), at Gate it was 16.98 square metres (182.7 square feet), at Sempstead farm, it was 19.63 square metres



Fig. 16. Marchants Oast: South Elevation.

(211.2 square feet). As the century progressed the kilns grew larger and taller until they reached the proportions of those at Marchants farm, 28.27 square metres (304.1 square feet) (Fig. 16), or at Newhouse farm, 29.6 square metres (318.4 square feet). As the diameter of the kilns increased the drying floors were constructed progressively higher until they reached 3.9 metres (12.8 feet), as at Newhouse, or, exceptionally, 4.98 metres (16.3 feet), as at Marchants.

The increase in area probably resulted from the increase in height: it was found that a taller kiln improved the draught and this improvement allowed the heat to spread across a greater area. This was the final realisation of the advantages offered by the exteriorisation of the kiln although, as often, one advantage brought in its wake a disadvantage: unless the stowage floors were raised, the dried hops had much further to fall when 'scuppeted' out of the kiln. This must have resulted in the loss of some of the resin which gives the hop its brewing qualities, although it was not until the 20th century that the actual loss could be measured.

Nevertheless, there was obviously going to be much greater expenditure on oasthouse building if stowages in proportion to the new kilns were to be provided also. It is possibly for that reason that at Newhouse and Marchants farms where such tall kilns were erected only part of the stowage was built from new and then added to an existing building. At Marchants the walls of the kiln rise to 6.25 metres (20.5 feet) and the stowage roof is of two heights, the new section being the higher, its floor sloping slightly towards the existing barn floor. Given the height of the drying floor it is possible that there was a second drying floor underneath, although present evidence is inconclusive. Experiments with two or more tiers of hops had taken place on a few farms in other counties since the 1830s but not, so far as is known, in Sussex.

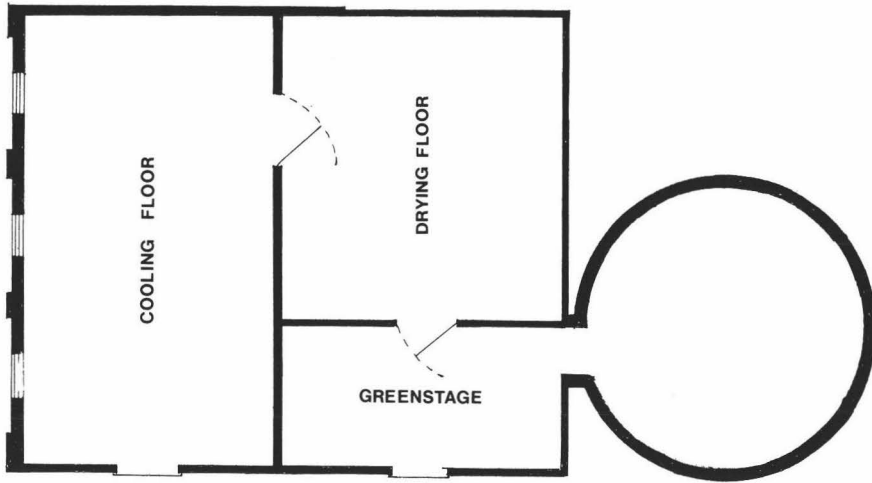
The oasthouse at Marchants marks the summit of development in Ewhurst parish of the 19th-century kiln and stowage. The only

oasthouse to be erected later, that at Hobby Hobbs farm, was modest in comparison since it was to serve a much smaller acreage. While the extension, renewal or replacement carried out during the 18th century is a sure indication of the importance of hops, sporadic and piecemeal as it was, it puts into perspective the scale of 19th-century refurbishment and rebuilding: by 1872 54 roundels were in use in the parish and the efficiency of the buildings had been doubled by the new design of kilns and stowage. Whereas at the end of the 18th century one kiln was provided for every four to six acres of hops, by the end of the 19th century each kiln could dry the crop of roughly eight to ten acres.

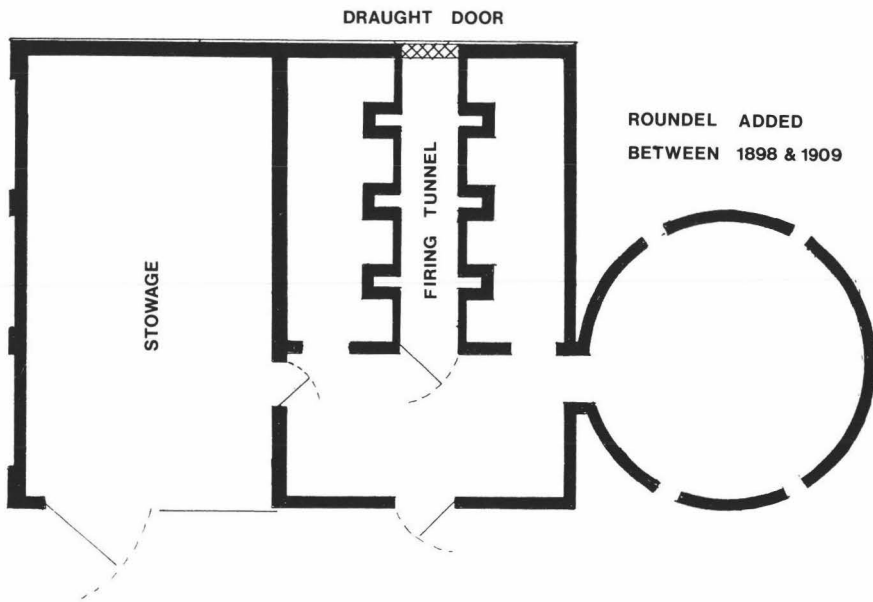
They were not in Ewhurst until the 20th century any multi-kilned oasthouses with seven or more roundels serving large growers. Not all the buildings served only one farm, however; the large growers then used more than one oasthouse. The three oasthouses at Marchants and Newhouse with seven roundels in all, dried 60 acres of hops. Thomas Daws and his son who grew 164 acres used four oasthouses: Lordine, Padgham, Shoreham and Madams. Indeed their investment on the farms they owned or tenanted is remarkable: they may well have paid for Padgham, they rebuilt Lordine oast with four roundels in 1845 and paid for two rebuildings at Shoreham; at Madams farm, which they also owned, there were three new oasthouses in just under fifty years, one in 1808, one in 1830 and the last in 1855.

Balancing this picture of large-scale investment in the industry were the growers at two farms who continued with their inset kilns: at Boyces, and Brewery. It may well be that what was lacking was belief in the new design rather than capital, for Boyces oasthouse (Fig. 17), was clearly enlarged after 1843 and at the same time the Brewery acquired its kiln (Figs. 18 and 19).

The same lack of belief may have brought about the first reintroduction of an external rectangular kiln in the parish: that at Stockwood Firs built between 1843 and 1872. It has one feature not known in any oast anywhere else: its



FIRST FLOOR



GROUND FLOOR



Fig. 17. Boyces Oast: Ground Floor Plan.



Fig. 18. The Brewery: East Elevation.

walls had one skin of hollow bricks which show clearly in the photograph to the side of the right hand opening. (Fig. 20) The re-adoption of square kilns increased towards the end of the century, largely, it seems, because they were finally found to be as efficient as and easier to build than roundels; they were also easier to put to alternative use at other times of the year. No sweeping changes accompanied this reintroduction, however, and new kilns both round and square were built, depending entirely on the preference of the growers concerned.

The continued addition of kilns shows that momentum in the industry was clearly maintained well into the agricultural depression. Any increase in poultry rearing and cattle farming, when it came, will have dovetailed well with the hop industry in that it will have offset some of the expenses previously incurred in the purchase of manures, and although there were difficulties in the 1880s in some years, marked

decline in acreage began locally only in the 1890s when problems caused by the increased importation of foreign hops (and therefore political in origin), were rendered more acute by a run of bad seasons.

THE 20th CENTURY

The oasthouses at Ockham and Udiam farms were not adequate for the needs of Guinness the brewers who had leased the farms in 1905 and they added a kiln, 6.09 metres square (20 × 20 feet) to Ockham oasthouse in 1907. In the same year two oasthouses were built at Udiam farm, one with two square kilns of the same size, the other with two rectangular kilns, 4.57 × 9.14 metres (15 × 30 feet).²⁰ Neither oasthouse now survives, but both are known to have later had 'forced draught' kilns which incorporated a centrifugal fan below the hops, a

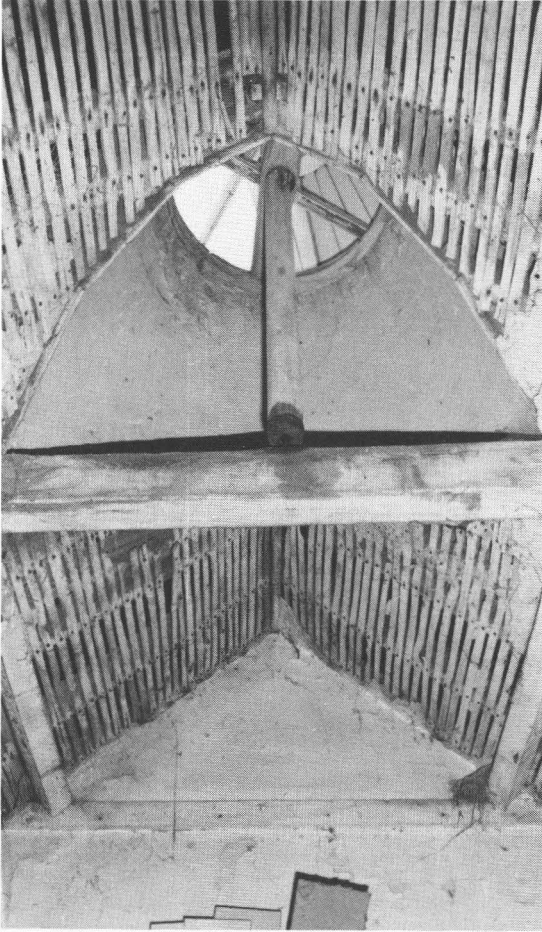


Fig. 19. The Brewery: Chimney to Inset Kiln.

technology that was borrowed from the tea-drying industry. This allowed loads in the kilns to be increased and, under normal circumstances, lessened the overall time taken for drying.

The forced-draught kilns were, however, found to be more difficult to manage and when Guinness added a fourth kiln to the oasthouse at Ockham in 1923 it was built as a natural draught kiln, 7.62 metres square (25 × 25 feet) with a tall roof (the low vented roof seen on the photograph was added later), exactly the design for malt kilns which the firm had had constructed in London. This was generally found more satisfactory but its size caused problems in some years and it was

afterwards decided that 6.09 square metres (20 × 20 feet) was the practical limit for kiln size (an interesting reflection of the difficulties which appear to have arisen when external kilns were first introduced).

Accordingly, a third oasthouse was built at Udiam in 1926 with three identical kilns of this size, brick up to the drying floors and with tall chimneys of matchboarding, felt and asbestos sheets, these being new materials for oasthouse construction in the parish. Each had a central coal-fired furnace, sufficient height for good natural draught and were found to function well. Two other identical kilns were added here, one in 1929 and the other in 1933. A fourth oasthouse with three similar kilns was built at Udiam in 1931 to which three more kilns were added in 1933 (Fig. 21). Yet another oasthouse with four kilns of this design was built at Ockham in 1934 to which three other kilns were added in 1945/46, making seven kilns in all, although originally with taller roofs (Fig. 22).

Guinness' recourse to natural draught and coal open firing is interesting and may suggest that the late-19th century methods were not to be bettered. The problems experienced in the 'forced draught' kilns may, however, just have been the teething troubles of an infant technology. Further experiments and installations were made so that four kilns at a time could be supplied with hot air blown through a central duct, the heat still produced by a coal-fired furnace. This equipment was installed into both original forced draught kilns at Udiam and also into the extended two roundel oast at Ockham. Elsewhere in the parish two square kilns were added at Court Lodge and a roundel at Madams oasthouses.

The introduction of oil firing, however, which came in in the 1930s changed everything yet again. This, together with the reintroduction of fans made possible areas, capacities and drying speeds that would have been thought unattainable 50 years earlier. It appears to have been adopted at all remaining working oasthouses and the installation of oil burners



Fig. 20. Stockwood Firs Oast: Hollow Lining Bricks inside the Kiln.

supported on brick bases was responsible for the entire removal of early firing effects (making it necessary to reconstruct earlier stages of development in the building from the 'clues' left visible in the fabric).

In many oasthouses oil firing and the use of electrical power were the two main 20th-century additions. Louvred vents replaced cowls on top of the kilns and experiments with roller hairs, designed to tip the dried hops out on to the cooling floor without handling, were made in some kilns, but generally methods remained 'traditional' if faster.

THE END OF THE INDUSTRY

The industry died a lingering death from the 1960s onwards. Because of the presence of Guinness, Ewhurst parish maintained for longer a larger than normal acreage. The overall pattern

in neighbouring parishes in the 20th century is one of greatly reduced acreages in comparison with 19th-century levels and these acreages were subject to considerable fluctuations because of political influences during the wars and in the setting up of the Hop Control and, later, the Hops Marketing Board which imposed quotas on the growers.

The quota system assured stability until the 1960s but during that decade and thereafter, in the Ewhurst area the oasthouses gradually dropped out of use, one by one. Spiralling costs, the incidence of 'Verticillium Wilt' in the gardens, followed by increased competition and restrictions after entry into the EEC brought the last stages of the decline. The last oasthouse to dry hops in the parish was one of the oldest still surviving, that at Hollow Wall farm which ceased production in 1983.



Fig. 21. Udiam Oast: Modern Kiln Roof Replaces Six Chimneys.



Fig. 22. Ockham oast: Seven Kiln Oast, Its Roofs Rebuilt.

Acknowledgements

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Society for help in surveying many of the buildings and to Alan and Jean Dickinson for helpful criticism of the text. They especially wish to thank the owners for their permission to photograph and record.

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APPENDIX: Location of buildings referred to in the text

Boyces	TQ 79632248 Ockham 1	TQ 78412487
Brasses	TQ 78182364 Ockham 2	TQ 78492486
Brede High	TQ 80272023 Padgham	TQ 80442508
Brewery	TQ 78122247 Poplar Cottage	TQ 78182341
Court Lodge	TQ 79372454 Prawls	TQ 78502368
Edgington	TQ 78132115 Rectory Cottage	TQ 79362448
Gate	TQ 79692232 Sempstead	TQ 80222357
Hobby Hobbs 1	TQ 78122197 Shoreham	TQ 78832393
Hobby Hobbs 2	TQ 78142204 Sparks	TQ 80272220
Hollow Wall	TQ 78172317 Stockwood	TQ 80072190
Lordine	TQ 80142275 Stockwood Firs	TQ 78682241
Madams 1	TQ 78052380 Udiam 1	TQ 77282431
Madams 2	TQ 78092381 Udiam 2	TQ 77282431
Marchants 1	TQ 81242200 Udiam 3	TQ 77382427
Marchants 2	TQ 81242201 Wattle Hill	TQ 78162190
Newhouse	TQ 81052201 Winterlands	TQ 80542100

Notes

- ¹ *Sixteenth Report of the Commissioners of Excise Inquiry 1835 Hops*. British Parliamentary Papers, 35 (1835), 565.
- ² *Report on the operation of Excise and Customs Duty on Hops* H.C. 14 (1857), 397.
- ³ East Sussex Record Office (hereafter E.S.R.O.) Add. Ms.

1788.

⁴ E.S.R.O. PAR 324/6/1.

⁵ E.S.R.O. A 2698.

⁶ Tithe Award E.S.R.O. TD TE 139.

⁷ E.S.R.O. BAT, 2928 a-f.

⁸ Public Record Office MAF 68/433–3957.

⁹ E.S.R.O. Add. Ms. 5691/2.

¹⁰ Reynolde Scot *A Perfitte Platforme of a Hoppe Garden*, 1574, *passim*.

¹¹ E.S.R.O. CHR 18/1–7.

¹² E.S.R.O. A2752.

¹³ O.S. 25-inch 1st Edition 1872, Sheet: Sussex 31:10.

¹⁴ E.S.R.O. CHR 18/1–7.

¹⁵ David & Barbara Martin. *The Rape of Hastings Architectural Survey* Report No. 900, 1985.

¹⁶ W. Marshall. *The Rural Economy of the Southern Counties*. 1798, I, 267.

¹⁷ Excise Inquiry, 1835.

¹⁸ J. C. Loudon *Encyclopaedia of Farm, Cottage, Villa Architecture*, (1833).

¹⁹ The Diaries of Thomas Daws and Thomas Chester Daws, Hastings Museum.

²⁰ J. F. Brown *Guinness and Hops*, (published privately by Guinness, 1980), *passim*.

The Society is grateful to Messrs Arthur Guinness Son and Company for a grant towards the cost of publishing this article.

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. Those without previous experience in writing up such material for publication should not be deterred from contributing; the editor and members of the editorial board will be happy to assist in the preparation of reports and illustrations.

**Prehistoric Flintwork from the Midhurst area,
West Sussex**

A collection of over 1,000 humanly-struck flints amassed from over 20 localities by Mr O. H. Knowles in the late 1950s and 1960s was donated to Chichester District Museum in 1986. Knowles is best known for discovering the later Mesolithic site at Fitzhall Common, Iping (SU 84652162); excavations were undertaken here in 1960–61 (Keef *et al.* 1965). Of the other places investigated by Knowles, ten produced 19 or more flints (Table 1). These sites are situated on the Lower Greensand close to the River Rother (Fig. 1).

The majority of the flintwork dates to the Mesolithic period, although the collection also contains one Lower or Middle Palaeolithic flake and some flints of Neolithic or Bronze Age date. These sites probably represent short-stay camps, a number of which are known on the Lower Greensand in the western part of the Weald (Jacobi 1978;

1981). The Neolithic/Bronze Age material, notably the two leaf-shaped arrowheads from Furze Reeds, could result from task-specific activity, for example hunting, as opposed to permanent settlement. This collection adds to the evidence already available for Mesolithic and Bronze Age activity on the Lower Greensand west of Trotton (Drewett 1976; 1985) and east of Midhurst (Holgate *et al.* 1986).

Acknowledgements

We are grateful to Mr Max Wholey for his help in provenancing this material.

Authors: Anne Bone, Chichester District Museum; Robin Holgate, Luton Museum, Wardown Park, Luton, Beds. LU2 7HA

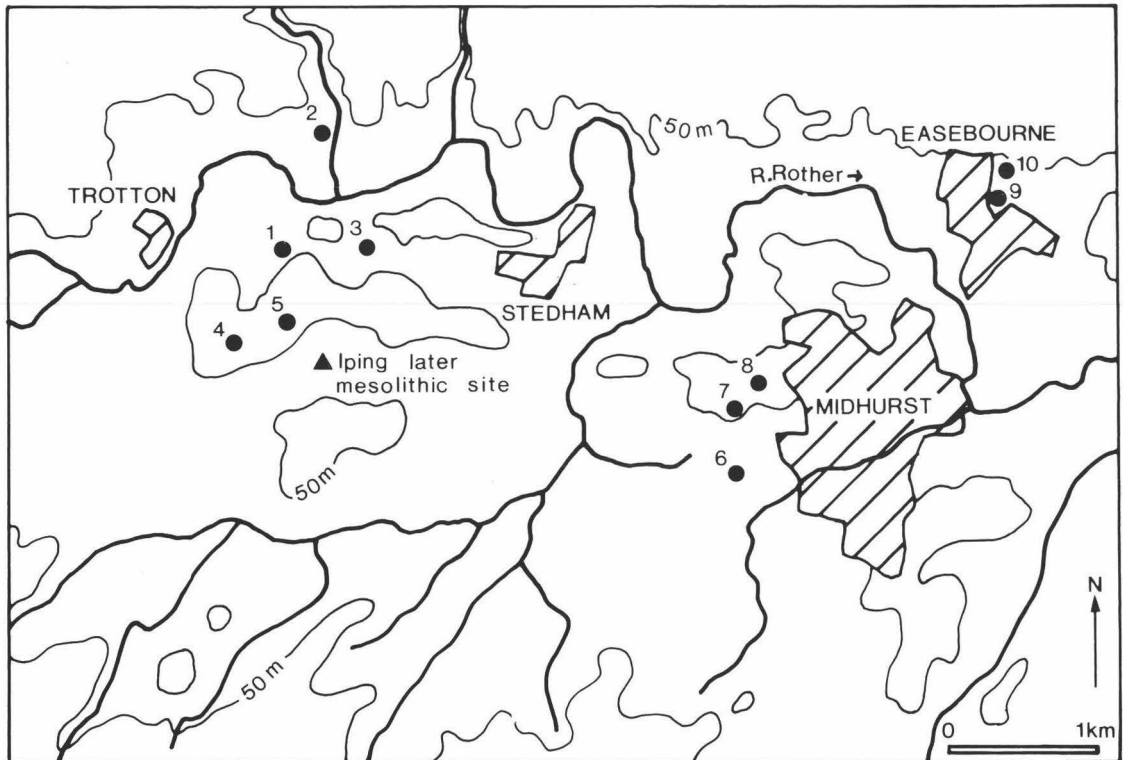


Fig. 1. Location of the prehistoric sites investigated by O. H. Knowles.

TABLE I
Prehistoric flintwork recovered by O. H. Knowles

	Flakes	Blades & bladelets	Crested blades	Core tablet	Cores	Shattered pieces	Axe-sharpening flakes	Misc. retouched flakes	Scrapers	Notched flake	Fabricator	Palaeolithic Levallois flake	Microburin	Leaf-shaped arrowheads	Fire-fractured flint	TOTAL
1. Furze Reeds SU 844224	66	63	4		1	4		3	3	1			1	2	4	152
2. Chithurst: Hammer Stream I SU 847232	151	38		1	6	5			2			1				204
3. Collins Field c. SU 850225	11	6			4				6							27
4. The Warren, Trotton Common c. SU 841218	12	3				4										19
5. Three Barrows, Trotton Common SU 844219	102	8	1			10										121
6. Minsted Sandpit c. SU 874209	32	40			3	7										82
7. Minsted Common c. SU 874213	39	37														76
8. Midhurst Allotment SU 876215	24	22	1			5	1				1					54
9. Cowdray Tree Nursery c. SU 891228	47	6					1	3	2							59
10. Snowhill Nursery c. SU 892229	34	2							1							37
TOTAL	518	225	6	1	14	35	2	6	14	1	1	1	1	2	4	831

References

- Drewett, P. L. 1976 'The Excavation of Four Round Barrows of the Second Millennium B.C. at West Heath, Harting, 1973-1975,' *Suss. Arch. Coll.* **114**, 126-50.
- Drewett, P. L. 1985 'The Excavation of Barrows V-IX at West Heath, Harting, 1980,' *Suss. Arch. Coll.* **123**, 35-60.
- Holgate, R. D. C., Holden, E. W. & Holden, H. G. 1986 'An Early Mesolithic Site and Prehistoric Flintwork from Graffham Common and Neighbouring Areas on the Lower Greensand, West Sussex,' *Suss. Arch. Coll.* **124**, 1-8.
- Jacobi, R. M. 1978 'The Mesolithic in Sussex,' in *Archaeology in Sussex to AD 1500* (ed. P. L. Drewett), 15-22. C.B.A. Research Reports, **29**.
- Jacobi, R. M. 1981 'The Last Hunters in Hampshire,' in *The Archaeology of Hampshire from the Palaeolithic to the Industrial Revolution* (ed. S. J. Shennan and R. T. Schadla-Hall), 10-25. Hampshire Field Club & Arch. Soc. Monograph **1**.
- Keef, P. A. M., Wymer, J. J. & Dimpleby, G. W. 1965 'A Mesolithic Site on Iping Common, Sussex, England,' *Proc. Prehist. Soc.* **31**, 85-92.

A Fieldwalking project at Pyecombe: Interim Report.

Earlier this century, the Downs north of Brighton were a popular hunting ground for amateur flint collectors. Examples of the many artefacts they collected can be found in the Curwen collection, Barbican House, Lewes. One of the main sites they visited was the area around Newtimber Hill, west of Pyecombe. Although a large number of flints were retrieved, most of these pieces consist of finely-retouched implements such as arrowheads, scrapers and knives. Other flints, for example flakes and cores, undoubtedly littered the ground here, but were passed over for the more attractive objects. At present, then, the material picked up in the past gives a rather biased picture of the surface scatter of flints in this area.

Despite this, the flint implements from the Newtimber Hill area consist of pieces dating to the Neolithic and early Bronze Age, indicating that activity of some description took place here during these periods. But what was the nature of this activity? Only further fieldwork can provide the answer.

As part of a larger project, a 1 km² area of downland covering East and West Hills between Saddlescombe and Pyecombe is being fieldwalked on a systematic basis (Fig. 2). Transects spaced at 20 metre intervals and orientated on grid north are being walked, with material found along each transect being picked up and bagged in 20 metre collection units. A full report on this survey will be submitted for publication in the *Sussex Archaeological Collections* on completion of the fieldwalking.

Although only the upper fields in this area have been finished, the results achieved to date are of considerable interest. There is a general scatter of worked flint across all of the upper fields, along with discrete areas where higher densities of material, including a variety of implements, are found. A number of concentrations of fire-fractured flint can also be discerned. Most of the flintwork comprises hard hammer-struck flakes, but also includes a range of implements, for example scrapers, piercers, knives, notched flakes and a transverse arrowhead. This material probably dates to the later Neolithic period and early Bronze Age. In addition a small concentration of Mesolithic flintwork was found just below the crest of West Hill, including blades,

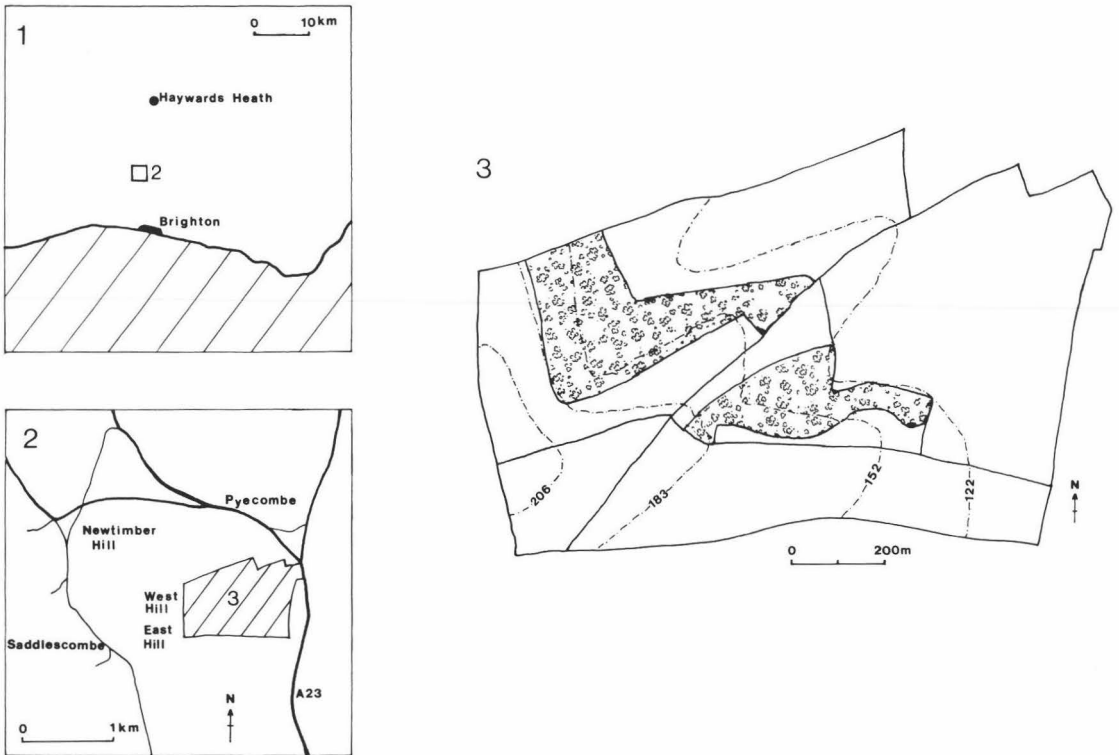


Fig. 2 Pyecombe: East and West Hills: location and sketch plan.

bladelets, blade cores, tranchet axe-sharpening flakes, axe-thinning flakes and scrapers.

Elsewhere in Sussex, Mesolithic material has been found on the Downs, particularly on patches of Clay-with-flints (Jacobi 1978, 15). This is also the case with the concentration of Mesolithic material on West Hill located during the survey. One of the activities carried out on this site was the manufacture of tranchet axes using flint nodules obtained from the upper chalk situated close by. The other debitage and implements recovered from the site suggest that other activities were also performed here. Although similar material has been collected from various sites on the Downs, for example on Bullock Down (Drewett 1982a), this is the first time that a Mesolithic camp has been located and defined on the Sussex Downs by systematic fieldwalking.

The later Neolithic/early Bronze Age flintwork, covering a much larger area and extending further down slope than the Mesolithic camp, probably represents a domestic site where a variety of activities were carried out. The area covered by this site and its location on a hill slope capped with Clay-with-flints is typical of later Neolithic sites on the Sussex Downs, for example Bullock Down (Drewett 1982b; Holgate, in this volume).

The results presented here show that systematic fieldwalking is an extremely useful way of reconstructing the nature and extent of past activities practised on the Downs. Flint collection earlier this century produced material which suggested Neolithic/Bronze Age activity of some description on West and East Hills: systematic fieldwalking not only defined the extent and probable nature of this activity, but also located a previously undiscovered site. Similar survey work elsewhere on the Downs is essential to show whether the evidence for prehistoric settlement encountered in this survey is representative of the South Downs as a whole.

Acknowledgements

I am grateful to Mr. I. Currie of Pangdean Farm for allowing the survey to take place, and to those who have helped, and continue to help, with the fieldwalking. I would like also to thank Robin Holgate for his encouragement throughout the survey, for commenting on the material and the draft of this report.

Author: Chris Butler, 31 Stonefield Way, Burgess Hill, West Sussex.

References

- Drewett, P. 1982a 'Hunter-gatherers on Bullock Down: 8500-4000 B.C.' in *The Archaeology of Bullock Down, Eastbourne, East Sussex: The development of a landscape*. (ed. P. Drewett), Sussex Archaeological Society Monograph 1, 42-4.
- Drewett, P. 1982b 'The Neolithic Settlement of Bullock Down 4000-2500 B.C.' in *The Archaeology of Bullock Down, Eastbourne, East Sussex: The development of a landscape*. (ed. P. Drewett), Sussex Archaeological Society Monograph 1, 45-57.
- Holgate, R. 1988 'Further investigations at the Later Neolithic Domestic Site and Napoleonic "Camp" at Bullock Down, near Eastbourne, East Sussex.' *Suss. Arch. Coll.* 126, 21-30.

Jacobi, R. 1978 'The Mesolithic in Sussex.' in *Archaeology in Sussex to AD 1500*. (ed. P. Drewett) CBA research report 29, 15-22.

Bronze Age awl from Plumpton, East Sussex

In May 1987 a bronze awl was discovered with the aid of a metal detector by Mr. L. Gaston on the northern scarp slope of the South Downs near Novington Farm (TQ 370130). It was subsequently taken to Barbican House Museum, Lewes and was identified by Miss F. Marsden, the Curator. The awl has now been deposited at the museum.

The bronze awl (Fig. 3) is 5.5 cm in length; one end is rectangular, probably to facilitate hafting. The opposite 'working' end is pointed and worn with use.

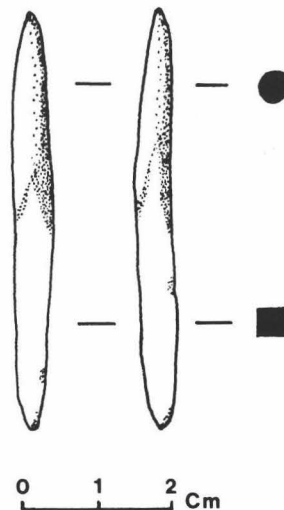


Fig. 3

A similar bronze awl was found at Black Patch during the excavation of a later Bronze Age settlement (Drewett 1982); another, found at Highdown, is on display in Worthing Museum. The dimensions of these three tools are almost identical.

It is almost certain that this find dates to the later Bronze Age (1200-700 B.C.). As such, it might have been associated with the settlement site at Plumpton Plain, situated approximately 1.5 km away.

Reference

- Drewett, P. 1982 'Later Bronze Age Downland Economy and Excavations at Black Patch, East Sussex,' *Proc. Prehist. Soc.* 48, 321-400.

Author: Chris Butler, 31 Stonefield Way, Burgess Hill, West Sussex.

An estuarine mollusc from Bishopstone village

The bivalve *Scrobicularia plana* (Da Costa) (= *S. piperata* (Gmelin) or Peppery Furrow Shell) is an aid to reconstructing ancient environments. It lives in the intertidal zone where fresh and salt water meet as in river estuaries, burrowing in soft bottoms of clay or mud rich in organic matter.¹ Bell² recorded *S. plana* from an Early Neolithic site on Rookery Hill, Bishopstone and implied that the shell may have been collected on the mudflats (Salts) near Newhaven where the animal was common in the mid-nineteenth century.³ Shells are certainly common there at certain horizons in the Alluvium (grey clay) below Storm Gravel Beach Deposits.⁴ The land E. of Rookery Hill is low-lying and underlain by an elbow-shaped wedge of Alluvium.⁵ Shell fragments of *S. plana* are frequent in the brown clay exposed in the banks of the drainage ditch⁶ below Bishopstone village, 1.13 km N.N.E. of the present coastline. The fragments are unworn and often come from the same valve indicating a local provenance; valves vary in size. The buried shells at Newhaven are brittle and fragmentation during ditching at Bishopstone is to be expected. The brown clay also yields occasional domestic animal bones⁷ and crushed *Helix aspersa* Müller which might suggest a late Iron Age or later date,⁸ but this is uncertain without proper excavation. Complete valves of *S. plana*, some paired (closed), occur in silty brown clay beneath the ditch⁹ associated with the land snail *Cochlicella acuta* (Müller) which could be of earlier date. The occurrence of *S. plana* below Bishopstone village is consistent with a former tidal inlet and it is anticipated that the species will be found in the ditches opposite the new estate on Rookery Hill.

Author: E. A. Jarzembowski, Booth Museum of Natural History, Dyke Road, Brighton.

Notes

- ¹ N. Tebble, *British bivalve shells*, British Museum (Natural History), London, 1966, 150.
- ² M. Bell, 'Excavations at Bishopstone'. *Suss Arch Coll*, **115** (1977), 285.
- ³ Mrs. Merrifield, *A sketch of the natural history of Brighton and its vicinity*. W. Pearce, Brighton, 1860, 84.
- ⁴ Commercial excavations at East pier, 1987 (NGR TQ 452003).
- ⁵ H. W. Bristow, W. A. E. Ussher, C. Reid, B. Young, & R. D. Lake, Eastbourne Sheet 334 (1:50,000). British Geological Survey, 1979, Keyworth.
- ⁶ TQ 470008.
- ⁷ That they are not introduced is suggested by a distinct, blotchy red patina. Animal samples are deposited in the Booth Museum of Natural History, Brighton.
- ⁸ M. P. Kerney, 'A proposed zonation scheme for late-glacial and postglacial deposits using land Mollusca'. *Journal of Archaeological Science*, **4** (1977), 388.
- ⁹ Between 0.7 and 2.6 m below general ground level in gas main excavation, 1987 (TQ 46840104).

An Iron Age Silver Coin found at Ditchling

During 1987 a silver coin (Fig. 4) of Verica, King of the Atrebatas tribe AD 10–40, was found by Mr. Richardson on Park Barn Farm, Ditchling, East Sussex (TQ 329158).

The obverse of the coin has the legend COMI.F between two crescents above and below. The reverse has the legend VIRI below a boar, which in turn is beneath a star. The coin weighs 1.1 g.



Fig. 4

The obverse legend is a variant of the more common type which reads COM.F (Mack 1975, Type 115). Other COMI.F examples were present in the recently-discovered Wanborough Hoard (Pers. Com. Dr. J. Kent). One other example (which is unfortunately unprovenanced) is recorded in the Index of Celtic Coins, Oxford University. The dies of this coin, while close, are not identical with those of the Ditchling specimen (Pers. Com. Dr. C. King). The basically similar COM.F type coins have a wide distribution including: Alfriston and Selsey, Sussex; Farley Heath and Wanborough, Surrey; Winchester, Hampshire; and Burghfield, Maidenhead, Waltham St. Lawrence, and the Thames gravels, Berkshire (Allen 1960; Haselgrove 1978; Haselgrove 1984).

The Ditchling coin has now been purchased by the Sussex Archaeological Society (acquisition number: 1987.23).

It is interesting to note that another Verica coin (a gold Stater) was found in Ditchling in 1986 (Rudling 1987).

Author: David Rudling, Institute of Archaeology, London.

References

- 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), Institute of Archaeology Occasional Paper **11**, 97–308.
- Haselgrove, C. 1978 *Supplementary Gazetteer of Find-spots of Celtic Coins in Britain, 1977*, Institute of Archaeology Occasional Paper **11a**.
- Haselgrove, C. 1984 'Celtic Coins Found in Britain, 1977–82' *Bulletin of the Institute of Archaeology*, **20**, 107–54.
- Mack, R. P. 1975 *The Coinage of Ancient Britain*, 3rd edition.
- Rudling, D. 1987 'An Iron Age Gold Coin found at Ditchling,' *Suss. Arch. Coll.*, **125**, 238.

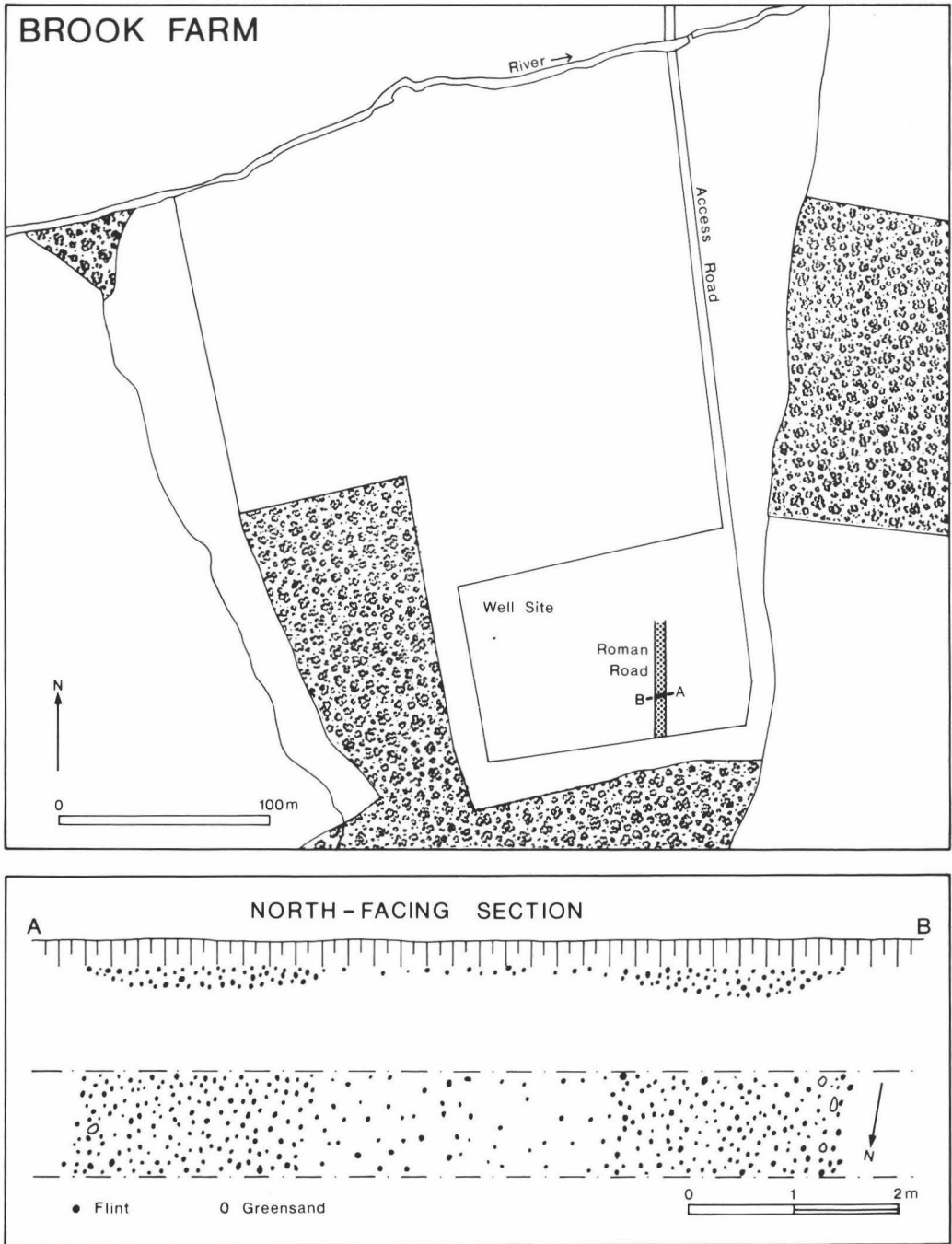


Fig. 5. Location, section and sketch plan of the length of Roman road recorded during construction work at Brook Farm, Iping-with-Stedham.

The Chichester to Silchester Roman Road at Brook Farm, Stedham-with-Iping, West Sussex

Topsoil stripping in advance of exploratory oil drilling by Carless Exploration Ltd. provided an opportunity to check the line of the Chichester to Silchester Roman road at Brook Farm, Stedham-with-Iping, situated immediately west of Midhurst. The road has been observed on the Downs north of Chichester, for example during recent archaeological excavations at Rummages Barn, Binderton (Kenny 1985, 61). The first sightings of the road north of the Downs are at Fitzhall Farm and Iping Common, c. 1–1.5 km to the north of Brook Farm (Margary 1973, 78–9), and then at Iping Marsh near Milland, where a small posting-station abuts the road (*ibid.*, 78).

At the oil drilling site, a c. 7 metres wide layer of small flint nodules and the occasional piece of Greensand running approximately north-south for a distance of just over 50 metres was recorded at SU 84882025 (Fig. 5). Ploughing in recent years could have truncated this layer over the remainder of the site.

No artefacts were recovered in association with the layer of metallurgy. However, 33 pieces of prehistoric flintwork were recovered from the site in general; none were found on the line of the access road. The flints include 19 flakes, five blades, three cores, three miscellaneous retouched flakes, a cutting flake, a notched piece and a possible microlith fragment. The blades and the possible microlith fragment are Mesolithic in date and could represent a small hunting camp. The remaining flintwork could either be associated with this activity or with Neolithic/Bronze Age activity of some description on the site. The flints have been deposited at Chichester District Museum.

Acknowledgements

The Field Unit is grateful to Mr Fred Aldsworth for drawing the Unit's attention to the site, and to Carless Exploration Ltd. for providing the opportunity to record this section of Roman road.

Author: Robin Holgate, Luton Museum, Wardown Park, Luton, Beds. LU2 7HA

References

- Kenny, J. A. 1985 'Excavations at Rummages Barn, Binderton, West Sussex, 1983,' *Suss. Arch. Coll.* **123**, 61–72.
Margary, I. D. 1973 *Roman Roads in Britain*, 3rd edn.

Two Roman Shoe fragments from Sedlescombe

During December 1985, while field-walking the site of the Iron Age and Romano-British ironworks south-east of Footland Farm, Sedlescombe, members of the Field Group of the Wealden Iron Research Group recovered two fragments of leather from the bank (TQ 77302010) of the stream which runs through the site (Hodgkinson, 1987). The leather was found at a depth of about 450 mm. below the

general ground level. The sub-soil is of the Ashdown Beds and it must be assumed that the normal acidity of Wealden soils, which would have undoubtedly caused the rapid disintegration of leather in another location, was ameliorated by the alkalinity of the iron slag which permeates a wide area of the soil around where the leather was found. In the immediate vicinity were found a few sherds of East Sussex Ware and three pieces of Samian. The date range of the site runs from the Iron Age of the 1st century AD to the 4th century and both the pottery and the leather date from within that period.

The leather fragments were sent to the Ancient Monuments Laboratory of the Historic Buildings and Monuments Commission where they were freeze-dried by Bridget Ibbs, under the supervision of Jacqui Watson. When conservation was completed, the fragments were submitted to Quita Mould whose report follows.

Catalogue:

1. (see Fig. 6a) Small fragment from left side of one-piece/moccasin shoe with small, simple fastening loop; torn from the rest of the shoe. Wear from the fastening lace is visible on the loop. Similar leather to 2 below, but does not join. Leather: delaminated cattle hide.

Length 59 mm. (inc.); Width 72 mm. (inc.).

2. (see Fig. 6b) Fragment of shoe upper with four grain/flesh stitches from a short length of butted, oversewn, vertical seam (SL 6 mm.), the remainder of seam torn away. Three edge/flesh stitches (SL 6 mm.) are present running at a right angle to the vertical seam along the lower edge, below this a small crescentic area has been deliberately cut away. The rest of the lower edge is torn with an area of wear visible at the margin of the sole area. The cut top edge drops slightly from the vertical seam before extending into a round ended latchet with a crescentic fastening hole. The latchet is decorated on the grain side by a pair of diverging incised lines each ending in a quatrefoil motif of four crescentic stamps, the lowest stamp being placed at some distance from the other three. The top edge continues for a short distance from the latchet rising again to the stub of the loop which, like the remainder of the top edge, has been torn away. The fragment has been obliquely cut from the rest of the upper.

Leather: delaminated cattle hide.

Length 203 mm. (inc.); Height with latchet 105 mm. max latchet width 30 mm.

Discussion:

The two fragments of shoe upper, despite being of similar cattle hide, may come from different shoes.

The smaller fragment (Fig. 6a) comes from the left side of a one-piece/moccasin shoe, probably a simple carbatina with plain fastening loops (see Bar Hill, Robertson, Scott and Keppie 1975, Fig. 21 no. 28 for illustration of a complete example), of a type frequently found throughout the northern Roman provinces during the 1st and 2nd centuries (Rhodes in Jones 1980, 127–8) and recent work suggests that their use continued well into the third century (Penny MacConnoran pers. comm.).

The larger fragment (Fig. 6b) is interesting as it apparently combines features usually found on shoes of

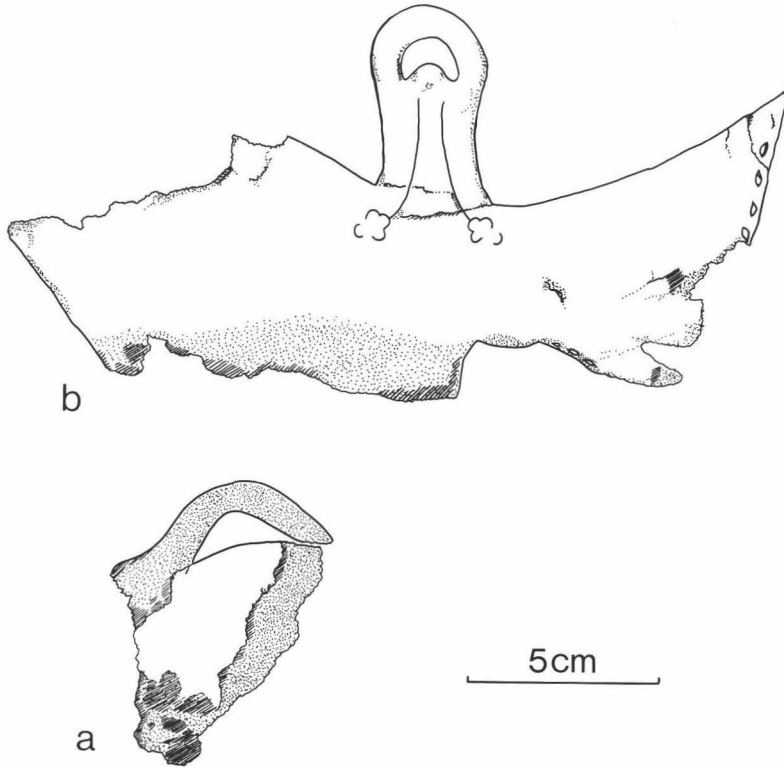


Fig. 6

differing constructions. The fragment appears to come from the left side of a one-piece/moccasin shoe, having part of a butted, oversewn, back seam and three edge/flesh stitches from around the heel remaining. Although the sole has been torn away, distinct wear at the margin of the sole area is visible in places. It is unusual, however, in having a latchet to fasten over the instep, a feature commonly found on uppers of shoes of nailed construction. It is possible that the fragment does, indeed, come from a latchet fastening upper of nailed construction of the type found at Bar Hill (*ibid.* *calcei* Fig. 22, 23 etc.), Hardknott (Charlesworth and Thornton 1973, Fig. 1) and Saalburg (Busch 1965, *tafel* 13 no. 215, *tafel* 14 no. 219), for example. In which case, the vertical seam represents a side seam, as seen on the Saalburg examples, and the three edge/flesh stitches come from some form of repair. As the lower edge is torn, no sign remains of a former lasting margin.

The fragment is intriguing as insufficient of the upper remains to show conclusively from which type of shoe it originally belonged. It may be that it comes from a shoe of one-piece construction which, with its latchet fastening, has copied a typical nailed shoe upper style using a carbatina manufacturing technique. This interchangeability of shoe style and construction is known to occur on footwear of early 3rd-century date. Alternatively, if the fragment is interpreted as a side seamed upper from a shoe of nailed construction, a

mid-2nd century date is suggested (Carol van Driel-Murray *pers. comm.*).

I am grateful to Carol van Driel-Murray for her most helpful correspondence and to Penny MacConnoran of D.U.A. for information regarding the Roman leather in the Museum of London's collection.

Acknowledgements

The Wealden Iron Research Group is grateful to Quita Mould for the above report and to Bridget Ibbs and Jacqui Watson of H.B.M.C. for their conservation work. The Group is also grateful to Sue Hodgkinson for the illustrations, and to Dr. Tony Clark and Mr. Ivan Neve for their help. The fragments will be deposited in Hastings Museum.

Author: **Jeremy S. Hodgkinson, 7 Kiln Road, Crawley Down, near Crawley, on behalf of The Wealden Iron Research Group.**

References

- Busch, A. L. 1965 'Die römzeitlichen Schuh und Lerderfunde der Kastelle Saalburg, Zugmantel und Kleiner Feldburg', *Saalburg Jahrbuch* 22, 158–210.

- Charlesworth, D. & Thornton, J. H. 1973 'Leather found at Mediobogdom, the Roman fort of Hardknott', *Britannia* 4, 141–52.
- Hodgkinson, J. S. 1987 'Footlands Ironworking site, Sedlescombe', *Bulletin of The Wealden Iron Research Group* Sec. Ser. 7, 25–32.
- Rhodes, M. & Jones, D. M. 1980 '“Leather Footwear” in Excavations at Billingsgate Buildings “Triangle”, Lower Thames Street 1974', *L.A.M.A.S. Special paper* 4, 99–128.
- Robertson, A., Scott, M. & Keppie, L. 1975 'Bar Hill: A Roman Fort and its Finds'. *B.A.R.* 16, 59–90.

Roman Burials at Portslade

Introduction

During the latter part of the last century, Mr. John Dudney of Portslade presented Brighton Museum with a collection of Roman pottery and cremated remains. These were discovered during brickearth digging at a brickfield centred on TQ 259058, now the Victoria Recreation Ground and Southdown bus depot in Portslade. A brief paper recording the discovery was read to the Society of Antiquaries by E. H. Willett (1877). This note intends to provide a fuller description and reassess the burials, while setting them in their local context.

Site History

The parishes of Portslade and Aldrington have long been associated with Roman remains. Camden, in the 16th century, fostered interest in the area by identifying Aldrington as the site of *Portus Adurni* of the *Notitia Dignatatum* (Camden 1695). This connection gained considerable antiquarian support in the 18th and 19th centuries; and appeared in print in numerous local histories and guides, for example Pelham's *History of Brighthelmstone* (1761), and Taylor's *Brighthelmstone Directory* (1770).

Nevertheless some doubt over the connection remained. Horsley (1732, 488) disagreed with Camden and placed *Portus Adurni* at Porchester. The lack of any substantiating archaeological discoveries was one reason for the continuing doubts. By the early 19th century this was no longer the case, and Horsfield (1835, 1: 160) was able to write

Within the last half century, however, the doubts raised by this non discovery have in a large deal been removed by the bringing to light of numerous relics of Roman origin on the Downs which overlooked the port as also in the adjacent villages. Urns, Skeletons, Fibulae, have frequently been exhumed at Aldrington by the brick makers.

This appears to be the earliest reference to the discovery of Roman burials in the area. Horsfield is vague about the dates of these finds, but might be suggesting that discoveries had been occurring for some years. The Downland sites mentioned would seem to include the villa at West Blatchington, excavated in 1818 and described as the:

. . . Mansio ad Portum Adurni, or residence of the Praefect or chief officer of the port . . . (Turner 1860, 120).

Despite the enthusiasm with which it was greeted in some quarters the connection between Portslade/Aldrington and *Portus Adurni* was not maintained by later research. Haverfield (1892) demonstrated clearly that the link had been based on the uncritical use of river and place names. Nevertheless the idea remained in circulation until the early 20th century and can be seen to influence research until the 1920s, for example Dunning's *The Roman Road to Portslade* (1925). Indeed it is still a common belief in the Brighton area today that a large Roman settlement and port existed at Portslade.

The continuing discovery of burials may in some measure have been responsible for the maintenance of the connection. In the autumn of 1876 workmen in Portslade exhumed a number of cremations at the Victoria Road site, of which Willett was eventually able to record seventeen complete vessels, together with cremated bone and Fibulae (Willett, 1877). This site seems to have had a reputation for archaeological remains, and discoveries of Prehistoric and Roman remains continued to be made. The last mention of these was in the early years of this century (*Brighton Herald*, 25 February 1905 and *Sussex Daily News*, 6 December 1906) but no detailed account is available. The area has now been developed and landscaped, but no further discoveries were reported during this process, or during the construction of an underpass on the Old Shoreham Road.

It is clear that a cemetery of Roman date existed at the Victoria Road site. However, what is not clear is whether this was also the site referred to by Horsfield. A number of brickfields existed at various times which makes attempts to locate the site or sites, difficult. A further complication arises from the extant finds from the area which have two proveniences. Willett's 1876 group from Portslade is the largest assemblage but a smaller group of pottery, found at Aldrington in 1879, is also extant in Brighton Museum.

Willett produced drawings of the pottery he saw, and these were deposited together with a tracing of the site's location in the Library of the Society of Antiquaries. Unfortunately these could not be found during a visit by the present writer, but the Ordnance Survey Record cards for this site, which refer to Willett's tracing, give a grid reference for the site at TQ 259057. This is now the Victoria Recreation Ground, but was once part of a larger brickfield.

Two other brickfields need to be considered here. Both are shown on the first edition Ordnance Survey 25-in maps of 1873–5. One is in Aldrington at TQ 273052, but another larger and possibly older example once existed on the Portslade/Aldrington parish boundary at TQ 262052. Either of these might be one of the sites recorded by Horsfield and the provenience of the smaller group of pottery referred to above. Of course it is possible that Horsfield's site and the find spot of the pottery provenienced as coming from Aldrington can be located at the Victoria Road site. The growth of Portslade from an inland village to a seaside town now larger than its older coastal neighbour Aldrington may have produced a situation resulting in the confusion of find spots. Later discoveries could have become associated with Portslade, and the earlier with Aldrington. This might of course imply that the cemetery had been quite substantial, with discoveries continuing over a long period. However, there is no certain evidence that this was so, and it is only

possible to locate firmly Willett's site.

The Extant Finds, Portslade

Note numbers in brackets refer to drawings, and Brighton Museum accession numbers are given where applicable.

Fine Wares

1. 250032, Ae 68. Samian ware dish of form 18/31, the stamp of which is indecipherable. This vessel is an East Gaulish product, and is more likely to be early than late, possibly early- to mid-3rd century. Found placed over the top of beaker 6. (250020, Ae 25) (Fig. 7).

2. 250030, Ae 36. Short globular 'hunt' beaker in a fine white fabric with a blue/black colour coat. The design of a dog chasing a stag, is executed in barbotine. The white fabric and sinuous design of the running stag and hound, mark this out as a lower Rhineland product rather than Nene Valley (Anderson 1982, 14-16). The products of the latter kilns commonly have a yellowish fabric and the design is less flowing. The wide curved form places this in a Hadrianic context. Antonine and later 'hunt' beakers from the Rhineland are taller and have a more angular form (Fig. 8 a and b).



Fig. 7

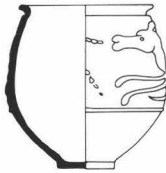


Fig. 8a



Fig. 8b

Coarse Wares

3. 250017, Ae 22. High shouldered jar with a cordoned neck and everted rim. The shoulders are decorated with a low double cordon. Hard grey/buff gritty fabric. For general remarks concerning the form and decoration of this type of

vessel, see number 5 below. Cremation A was contained in this jar (Fig. 9).

4. 250018, Ae 23. Jar in a hard grey gritty fabric with numerous ironstone and other inclusions. This vessel is very similar to some of the early Alice Holt products, notably Lyne and Jefferies type 1.19; with a first- or early-2nd century date. However, the products of this industry do not reach Sussex in any quantity before the 3rd century. It is possible, though unlikely, that this may represent an early example or alternatively a local copy. Cremation B was found in this vessel (Fig. 10).

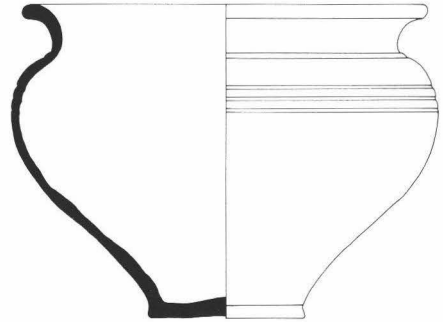


Fig. 9

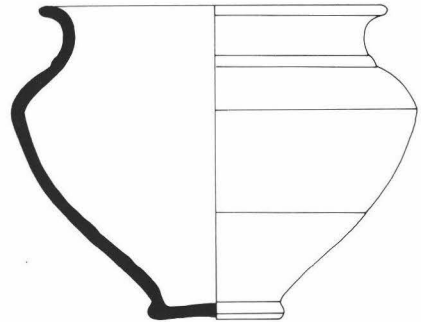


Fig. 10

5. 250019, Ae 24. Jar with cordoned neck and double cordoned girth in a hard gritty light grey fabric. The rim is broken and missing. The decoration of this jar is very similar to some of the later Alice Holt products, especially Lyne and Jefferies (1979) type 1.31. The development of girth cordoning seems to be a late 2nd- or 3rd-century development (Lyne and Jefferies 1979, 35). Form 1.31 is dated AD 180-270, but Alice Holt products are rare in Sussex before the 3rd century. This form is paralleled locally by examples from Preston (Kelly and Dudley 1981, Fig. 7.1) where it is given a 1st-century date although the supporting evidence for this is not certain, and Worthing (Fenton 1886,

Fig. 1). The pottery sequence from Newhaven also has two jars from an Antonine context which show familiar features. Numbers 140 and 207 (Bell 1976, 273, 279) both have girth cordons/grooves, and 140 also has a neck cordon. The form of 140 is reminiscent of number 3 above, and the fabric of both Newhaven vessels is similar to the Portslade examples (Fig. 11).

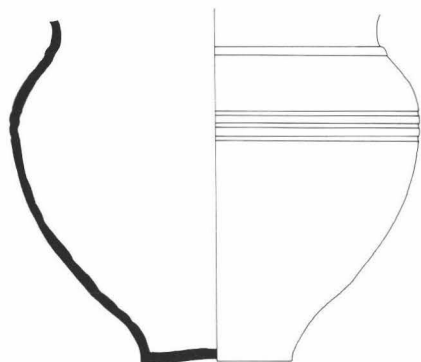


Fig. 11

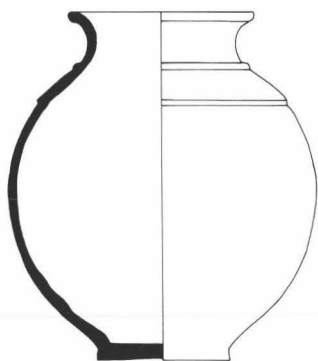


Fig. 12

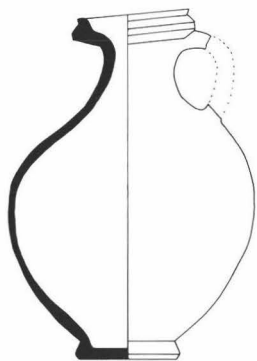


Fig. 13

6. 250020, Ae 25. Large beaker with a cordoned and stepped neck. Hard light grey gritty fabric, somewhat micaceous. Found covered by Samian dish 1, which probably suggests a date for this jar in the late 2nd or 3rd centuries. Cremation D was contained in this vessel (Fig. 12).

7. 250031, Ae 37. Flagon with a pulley wheel rim, in a fine sandy fabric, mottled grey off white in colour. I can find no exact parallels for this flagon, but similar examples are known from Chichester (Fig. 13).

8. 250032, Ae 38. Bottle with a treble cordoned shoulder in a coarse hard grey sandy fabric. The fabric contains a few dark inclusions, probably ironstone, of up to 3 mm. in length (Fig. 14).

9. 250033, Ae 39. Small wide-mouthed beaker of bulbous form in a hard light grey sandy fabric with a flat base and applied handle. A large decorated example of this type is known from Fishbourne (Cunliffe 1971, type 263), where it is dated early- to mid-3rd century (Fig. 15).

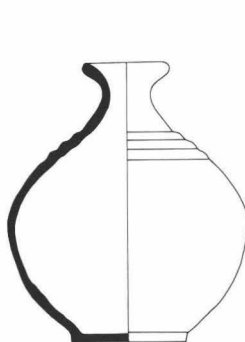


Fig. 14

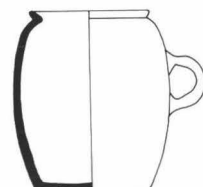


Fig. 15

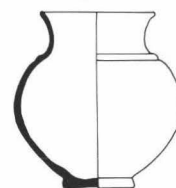


Fig. 16

10. 250034, Ae 40. Small globular poppyhead beaker with a cordoned shoulder, in a fine hard grey fabric. An exact parallel exists from Chichester (Down and Rule 1979, 94, Fig. 23d) which is dated mid- to late-2nd century (Fig. 16).

11. 250035, Ae 41. (A) Circular platter in a coarse buff/brown gritty fabric, with numerous dark inclusions (Fig. 17).

12. 250035, Ae 41. (B) Circular platter rather smaller than A in a grey/brown fabric with inclusions. The interior is slightly ridged (Fig. 18).

Four other sherds of pottery, probably representing vessels broken on excavation are in the Museum's collection, as well as a small quantity of a very friable orange coloured material which may be daub. The single identifiable sherd is the shoulder of a poppyhead beaker in a grey reduced fabric, decorated with a lozenge pattern of barbotine dots. Of the seventeen complete vessels recovered by Willett the above twelve seem to be the only ones which were presented to the Brighton Museum. The whereabouts of the remaining five is unknown, and a series of drawings by Willett which he placed in the library of the Society of Antiquaries (Willett 1877) seem to have been mislaid. Nevertheless it is clear from Willett's (1877) written description, that three of the missing five were of Samian or colour coated ware.



Fig. 17



Fig. 18

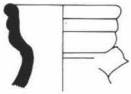


Fig. 20

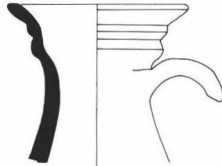


Fig. 21

The Cremations

Four cremations from this site were recovered, and these were kindly examined by Dr Phillip Armitage, formerly of the Booth Natural History Museum who suggested the following brief comments.

- (A) Skull and limb bone fragments from one individual. The bones are heavily burnt and broken, and it is not possible to deduce more from them due to their condition. A single large iron nail was associated with this cremation.
- (B) Very fragmentary skull and limb bone fragments with some dental material from one individual. Associated with this cremation were the remains of four iron nails.
- (C) Heavily burnt and broken skull and limb bone fragments from one individual.
- (D) Human skull and limb bone fragments, well broken.

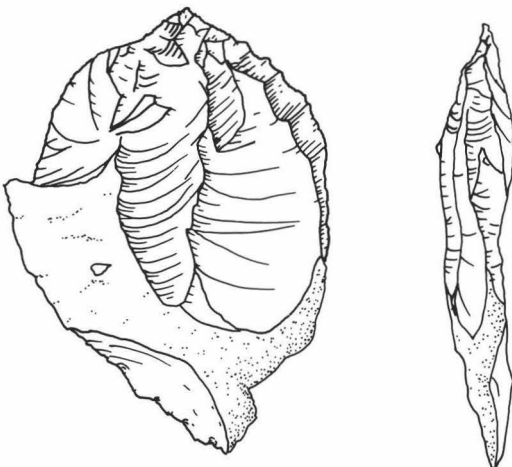


Fig. 19

No dental material was apparent. Associated with the cremation was the unburnt skull of a sub adult/adult hornless sheep, and a single oval retouched flint flake (Fig. 19).

The very fragmentary condition of the cremations may have been due to the rather rudimentary recovery techniques. However, Dr. Armitage suggested that the similar condition of all four burials might support the view that this was a deliberate funerary custom. If this is so it might indicate that the four cremations are representative of a single community.

The association of the iron nails with the burnt bones is fairly certain as several of the nails had fragments of bone adhering to the oxide deposits, and jar number 5 had the remains of a nail attached to the interior wall of the jar. The nails did not appear to have been burnt, and so may be deliberate inclusions at the time of burial. The depositing of nails with the cremated remains is paralleled in Sussex, by burials from the cemetery at Seaford (Price 1882), and in a cremation burial at South Malling (Norris 1956). The presence of these nails, and also possibly of the flint scraper (see below) may be indicative of some form of burial custom, connected to easing the entry of the dead to the after life as has recently been suggested (Black 1986). The sheep skull associated with cremation D, may have been intended as nourishment for the dead person in the afterlife, or possibly, like the nails, intended as a ritual deposit to facilitate entry into the netherworld. One of the recovered cremations also contained:

. . . a little heart shaped fibula of bronze attached to which is a chain of Trichinopoli pattern . . . (Willett 1877).

Again this could either have been a votive deposit or included in the burial for the dead person's use.

The single flint artefact is a roughly oval flint flake, retouched on one edge as a scraper. It is unburnt and so must have been added to cremation D at or after the time of burial. Deposits of flint flakes are also known from the burials at Seaford (Price 1882). However, Prehistoric remains are known to have been found at the Victoria Road site and this example may have been redeposited, at time of burial or excavation.

The Finds from Aldrington

Although provenienced as coming from Aldrington, the date of collection (1879) and the similarity in date of this group to Willett's pottery might suggest that they came originally from the same site as Willett's group. Certainly no other sites of Roman date are recorded as existing in the area at this time.

13. 250161, R. 1572/1. Part of the base of a form 31 Samian platter. The potter's stamp reads MACRINVS, a Lezoux worker. Oswald (1931) gives the products of this particular manufacturer a Hadrianic/Antonine date (not illustrated).

14. 250161, R. 1572/2. This vessel could not be found in Brighton Museum's collections. However, the Museum's index describes it as: 'Half a Samian basin Dragendorf form 44. Possibly of Lezoux fabric'.

15. 250162, R. 1572/3. Rim, neck and part of the handle of a large wide-mouthed flagon. The fabric is pinkish with a grey core, covered with the remains of a white slip (Fig. 20).

16. 250163, R. 1572/4. Part of the neck and rim of a flagon. The fabric is a pinkish buff with a black core (Fig. 21).

17. 250164, R. 1572/5. Neck of a flagon or bottle, in a fine sandy micaceous fabric, buff in colour (not illustrated).
 18. 250165, R. 1572/6. Base of a vessel in a gritty light grey ware with large black inclusions (not illustrated).

Discussion

Although he did not see the actual excavation of the cremation burials, Willett was able to obtain a description of their arrangement from the workmen involved.

The graves were about 3 feet long by 18 inches wide and were formed as usual by layers of flints on which was placed a cinerary urn accompanied by two or three smaller vessels (Willett 1877).

Given the seventeen vessels recovered on this occasion, at least four and possibly six cremation burials of late-2nd or 3rd-century date, perhaps representative of one community were recovered. The fairly close date range of the vessels must pose the problem of whether the Victoria Road site was merely a small local burial ground used for a short period. The various references in local newspapers imply that other burials had been found, and the pottery from Aldrington may have been mis-provenanced. It is also possible that Horsfield's site might be located here, but there is no firm evidence of this. In the absence of any corroborating proof of a large burial ground the burials recovered by Willett are best considered in isolation.

No features are known in the immediate vicinity which might indicate the settlement represented by these burials, and it is unlikely now that any will be found. However, an area of occupation is known about a mile to the north of Eastwick Cottages on Foredown Hill. The area was studied by Winbolt (1926) who attempted to pin down the site of a Roman building believed to exist in the vicinity of Portslade Windmill, where building debris had been found in the 19th century (Haverfield 1888). Winbolt was unsuccessful in this, but managed to record a scatter of pottery to the east of the smithy (TQ 259068) where a number of 4th-century coins had been found in 1900. Winbolt (1935) considered that any building was probably halfway between windmill and smithy, approximately at TQ 359067. Subsequent development of this area has produced no reports of any structures being found, and further investigation is now impossible. Ward (1932) may also have been referring to this site when he recorded finds from the downland above Portslade.

Acknowledgements

I would like to thank Alan Ward and Nicki King for reading the text and suggesting improvements, Philip Armitage for examining the cremations, and Anthony King for giving his opinion on the Samian. Also I would like to express my gratitude to John Roles and Marion Waller for allowing me access to the collections at Brighton Museum.

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References

- Anderson, A. 1980 *A Guide to Roman Fine Wares*.
 Bell, M. 1976 'The Excavation of an Early Romano British Site and Pleistocene Landforms at Newhaven, Sussex',

- Sussex Arch. Coll.*, **114**, 218–305.
 Black, E. W. 1986 'Romano British Burial Customs and Religious Beliefs in South Eastern England', *The Archaeological Journal*, **141**, 201–40.
 Cunliffe, B. 1979 *Excavations at Fishbourne, II*.
 Down, A. and Rule, M. 1971 *Chichester Excavations, I*.
 Camden, W. 1695 *Britannia*, pub. E. Gibson.
 Dunning, J. 1925 *The Roman Road to Portslade*.
 Fenton, A. J. 1886 'An Account of the Discovery of Roman Remains on the East Chesswood Estate, Worthing', *Sussex Arch. Coll.*, **34**.
 Haverfield, F. J. 1888 'Index Notes: Roman Remains in Sussex', *Archaeological Review*, **1**, 428.
 Haverfield, F. J. 1892 'On the Site of Portus Adurni and the River Adur', *Sussex Arch. Coll.*, **38**, 217–21.
 Horsley, J. 1732 *Britannia Romana*.
 Kelly, E. and Dudley, C. 1981 'Two Romano British Burials', *Sussex Arch. Coll.*, **119**, 65–89.
 Lyne, M. A. G. and Jefferies, R. S. 1979 *The Alice Holt Romano British Pottery Industries*.
 Norris, N. E. S. 1956 'Miscellaneous Researches', *Sussex Arch. Coll.*, **94**, 1–13.
 Oswald, F. 1931 *Index of Potters Stamps on Terra Sigillata*.
 Price, J. F. 1882 'On Excavations in the Camp, the Tumulus and Romano British Cemetery, Seaford, Sussex', *Sussex Arch. Coll.*, **32**, 167–200.
 Pelham, A. 1829 *A History of Brightelmstone*.
 Taylor, I. 1770 *Brightelmstone Directory*.
 Turner, Rev. E. 1860 'Domus Anchoritae, Aldrington', *Sussex Arch. Coll.*, **12**.
 Ward, R. C. 1931 'La Tene III Type Brooch from Old Portslade', *Sussex Arch. Coll.*, **73**, 203.
 Willett, E. H. 1876–8 *Proceedings of the Society of Antiquaries of London*, Second Series, **7**, 92–3.
 Winbolt, S. E. 1926 'A Roman Building in North Portslade', *Sis N & Q*, **1**.
 Winbolt, S. E. 1935 *Victoria County History Sussex*, **3**, 62.

A Roman Grave Group from Fulking Corner, Portslade

In the middle of the last century, Mr. Edward Blaker of East Hill Portslade purchased an area of previously virgin downland some three-quarters of a mile to the south west of the Devils Dyke. Upon ploughing, a great mass of pottery sherds was uncovered in the vicinity of Fulking Corner (TQ 252101). The four complete vessels recorded here were also found in this area although the exact spot is not known. Presumably these were not found during ploughing, but by some digging operation. Two complete beakers and a Samian dish and five sherds, the latter being the only extant finds from the ploughsoil, were presented by Mr. Blaker to Brighton Museum shortly after discovery, and a single jar was given by his son in 1926. Apart from a brief description by Winbolt (1935) this pottery has not previously been published.

The Pottery

Note: Brighton Museum accession numbers are given

where applicable.

1. 250230, R 2838/3. Large jar in a hard, light grey fabric, with numerous dark inclusions. The neck is decorated with a single cordon, and two more encompass the vessel's girth. This jar seems to have contained a cremation, and some fragments of burnt bone still adhere to the interior, but this cremation does not seem to have been presented to the Museum with the jar (Fig. 22).

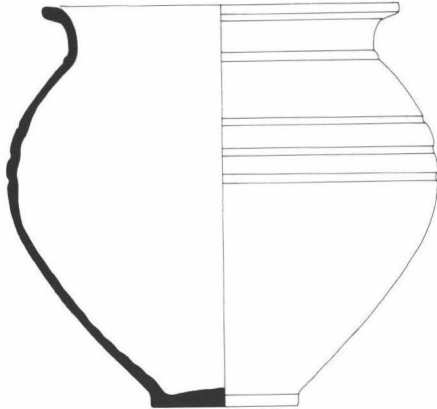


Fig. 22

2. 250231, R 2838/4. Samian dish of form 31. This is probably an East Gaulish product. However, the multiplicity of fabrics from the East Gaulish kilns makes pinpointing the origin of a particular vessel difficult. This dish is unstamped but the poor quality of the glaze may indicate that this is a late product, probably mid-3rd century. The vessel was broken in antiquity and several holes have been bored through the sides to facilitate repair. The amount of wear apparent on this dish probably indicates a fairly long life prior to burial (Fig. 23).

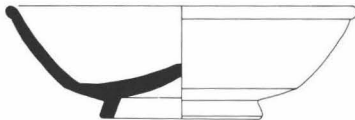


Fig. 23

3. 250232, R 2838/5. Small globular beaker in a fine hard light grey fabric, with a dark purple/black colour coat. Narrow incised bands of decoration run around the vessel's circumference above and below the girth. This vessel is very similar to some of the products of the New Forest kilns, especially Fulford's (1975) type 30, and the fabric fits in well with Fulford's 1a category. The plain globular beaker seems to enter production at the beginning of the 4th century and continue into the 5th (Fulford 1975, 52) (Fig. 24).

4. 250233, R 2838/6. Small bag-shaped beaker in a fairly soft, off white/buff fabric with a red-brown colour coat. A

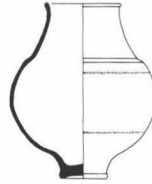


Fig. 24



Fig. 25

single incised line runs around the circumference. This is probably also a New Forest product. The form is very similar to Fulford's (1975) form 44, although this form is generally not as squat as this example. The reduced fabric and colour coat might indicate that this is an example of the 1a fabric category. This form of beaker is dated the late 3rd- to mid 4th-century (Fulford 1975, 56-8) (Fig. 25).

Another five odd potsherds, three of which are of East Sussex ware, also seem to have been presented to the Museum at the same time as the other vessels. The remains of some highly corroded small iron nails are also part of this assemblage. These may have come from a box in which the burial was contained, or possibly represent the remains of a pair of sandals originally included in the grave. Their condition does not make it possible to determine which.

Although these vessels all come from the same general area there is no written evidence pertaining to their discovery, so their association is not proved. Therefore it needs to be considered whether a single or multiple burial is represented. Certainly they form a compatible group: jar, dish, and two beakers, which can be paralleled in other cremation burials, for example at the St. Pancras cemetery at Chichester (Down and Rule 1971, 89-122), and nearer at hand by a late Roman burial at West Blatchington (Gilkes 1987). The beakers 3 and 4 seem to overlap in date and could certainly both have been included in an early 4th-century burial. The Samian dish 2 might be residual, its battered and worn state has already been noted and this may have prompted its inclusion with a burial. The cinerary jar 1 may possibly be an Alice Holt product. The decoration is similar to Alice Holt cordoned jars, notably Lyne and Jefferies (1979) type 1.31, which were introduced from the late 2nd-century onwards. Production continued until the late 4th-century. However it should be noted that this jar has neither the three-quarter profile or downturned rim characteristic of the later Alice Holt products of this type. Another possibility is that this is a local product. Primary vessels for cremations with this triple cordon decoration are found frequently with burials in the Brighton area. An example from the Preston villa is dated without apparent justification to the 1st century AD (Kelly and Dudley 1981 Fig. 7.1), and another example is known from Worthing (Fenton 1886, Fig. 1). Further examples with a late 2nd- or 3rd-century date to judge from associated pottery, are stored in Brighton Museum. It is possible that these cordoned jars might have continued into the 4th century but this cannot at present be proved.

It is possible then that this group of pottery represents a single cremation group of the late 3rd- or early 4th-century, although without definite proof of association this judgement must be tentative. More than one burial may indeed be represented here.

In 1983, Bob Saville and the Brighton and Hove Archaeological Society conducted a field walk over the area known as Scabes Castle which lies immediately to the east of Fulking Corner (finds and records in Brighton Museum). The finds were badly abraded compared with the material recovered in the last century, and a long period of ploughing has probably considerably damaged underlying features. The results of the fieldwalk indicate concentrated occupation in the area from the Iron Age to the Later Roman period, and it was noticeable that the concentrations of burnt flint, Iron Age and Romano-British pottery and tile were heaviest in the northwestern part of the area walked, that is close by Fulking Corner (TQ 252101) (Saville 1984). This seems to suggest that ancient occupation was located on the eastern slopes of Fulking Hill close to Fulking Corner, a place well sheltered from the prevailing wind. Such a location would parallel other downland settlements, for example Thundersbarrow Hill.

It has recently been suggested on the basis of fragmentary flue and roof tile found in this area that a villa may have existed near to Fulking Corner (Black 1987, 155, and Winbolt 1935, 54). While this might be possible any such establishment is more likely to have taken the form of a Romanised farmstead like that excavated at Park Brow, or the late establishment at Lambs Lea, near East Dean in West Sussex (Gilkes, forthcoming).

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I would like to thank Nicki King for reading the text and suggesting improvements. In addition I would like to thank John Roles and Marion Waller for allowing me access to the collections at Brighton Museum, and affording me all possible assistance.

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References

- Black, E. W. 1987 *The Roman Villas of South Eastern England*, BAR 171.
 Down, A. and Rule, M. 1971 *Chichester Excavations, I*.
 Fenton, A. J. 1886 'An Account of the Discovery of Roman Remains on the East Chesswood Estate, Worthing,' *Sussex Arch. Coll.* 34, 215–21.
 Gilkes, O. J. 1987 'A Late Roman Grave Group from West Blatchington,' in *Sussex Arch. Coll.* 127, 241–3.
 Gilkes, O. J. forthcoming 'Excavations on a Roman Farmstead at Lambs Lea, West Sussex' 1953–55.
 Kelly, E. and Dudley, C. 1981 'Two Romano British burials,' *Sussex Arch. Coll.* 119, 65–89.
 Lyme, M. A. G. and Jefferies, R. S. 1979 *The Alice Holt Romano British Pottery Industries*.
 Saville, R. 1984 *Field Walk at Scabes Castle*, unpub. archival report in Brighton Museum.
 Winbolt, S. E. 1935 *Victoria County History Sussex*, 3.

Two 9th-Century Anglo-Saxon Strap-Ends from East Sussex

In September 1984 Mr. Lawrence Gaston was prospecting near an old trackway halfway up the hill on the east side of Westmeston when he located the finest example of an ornamented Anglo-Saxon strap-end to have been found in Sussex (Figs. 26–27). It was 'about 12 ins. deep', he reported, 'laying flat in the ground, 4 ins. of turf then virgin chalk'.¹ Subsequently, in 1986, Mr. S. J. Isted brought likewise to the attention of the Sussex Archaeological Society (Barbican House) Museum another such strap-end (Fig. 28) said by him to have been found in his garden at Eridge Green, Landport, Lewes.² They may be described as follows:

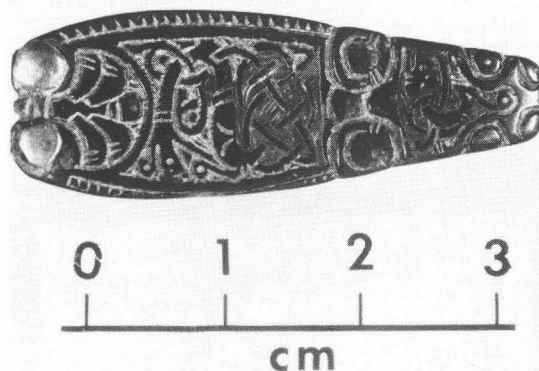
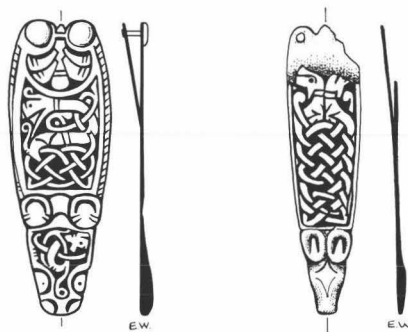


Fig. 26 Anglo-Saxon strap-end of copper alloy with silver rivets, from Westmeston, East Sussex.



Figs. 27–28 Anglo-Saxon strap-ends of copper alloy from Westmeston (left), and of silver from Lewes (right). Scale 1:1. Drawn by Eva Wilson.

Strap-end of copper alloy (Figs. 26–27) in excellent condition, although very worn down one side, with incised decoration containing the remains of niello inlay and with a pair of intact silver rivets at the split-end; the reverse in plain. It terminates in a stylised animal's head seen from above, with prominent oval ears containing lunate incisions, below which (on the forehead) is a field containing a single animal with its head in the top right-hand corner. It has a squared-off snout and drilled eye, with a snake-like body forming an

interlacing loop with two tendril-like extensions, one of which curls downwards between the eyes of the animal-head terminal, with a drilled end, above the nostrils indicated by semi-circular lines. There is a hatched or beaded border along both sides of the main body of the strap-end which contains a sub-rectangular field with a concave upper edge into which extends a fan-shaped field containing a 'potted plant' motif (consisting of a bud, with a double band, between two pairs of leaves with nicked lower edges), extending downwards from between the rivets. The main field contains a single backward-looking animal in profile, enmeshed in interlace. The open-jawed head in the top left-hand corner has a drilled eye and a club-like extension, with a drilled terminal (to be interpreted as the ear). There is a double band forming a collar around the neck. Instead of a front leg the forequarters are indented for a penetrating ribbon which forms the knot of interlace below the animal (into which its featureless hind-leg extends); this has two leaf-like off-shoots, one between the neck and the body and the other in the top right-hand corner. The tail is treated in the same manner as the ear and extends upwards into its open jaws. Length: 385 mm.

Sussex Archaeological Society (Barbican House) Museum. Found in 1984 at Westmeston, East Sussex.

Strap-end of silver (Fig. 28), broken across the split-end so that the upper part of the front is missing, although the back retains one of its original pair of rivet-holes being broken across the other; the reverse is plain. The terminal takes the form of a stylised moulded animal's head, seen from above, with a squared-off snout and prominent oval ears containing lunate incisions, having a convex-sided lozenge incised on its forehead. The main body of the strap-end is occupied by a single field, within a plain border, containing incised decoration consisting of a pair of confronted animals with interlaced bodies; it was presumably nielloed (? scrubbed out). The animals are backward looking, with open jaws, a drilled eye and an ear that extends forward above the eye and snout; a double band forms a collar around the neck. A short fore-leg is turned backwards beneath the body with the foot roughly indicated. The body degenerates into ribbon-interlace returning to terminate in a scroll within its own jaws. The bodies interlace with each other (that of the right-hand animal having an additional loop) and with an oval ring situated towards the bottom of the field. Length: 380 mm.

Sussex Archaeological Society (Barbican House) Museum. Found in 1986 at Lewes, East Sussex.

These two strap-ends are representative examples of a well-known type of late Anglo-Saxon ornamental metalwork, most fashionable in the 9th century, decorated with the so-called 'Trehiddle style' on their obverse. The terminal in the form of an animal's head seen from above is a standard feature, with the oval ears (rather than comma-shaped) being characteristic of those from southern England.³ The main variation in such strap-ends is provided by the ornament on the body, occupying one or more fields (see, for example, those illustrated and discussed in Wilson 1964, and in Graham-Campbell 1982).

The stylised animals on both the new Sussex strap-ends share a number of details in their treatment, apart from their common characteristic of degeneration into interlace. These

are the squared snouts, open jaws (around their own tails), small circular eyes, forward-projecting ears, and collared necks.

The pair of confronted animals, with interlaced bodies, on the simpler of the strap-ends, from Lewes (Fig. 28), is found on a number of other such strap-ends (e.g. Wilson 1964, no. 144: an unprovenanced example in the British Museum), as well as on other Trehiddle-style artefacts, such as the splendid gold finger-ring from the River Reno at Bologna (Bruce-Mitford 1956, pl. xxii, b-d). The animals themselves, however, are more closely related to those in somewhat similar postures, but separate fields, on a silver strap-end from Dymchurch, Kent (Wilson 1964, Fig. 1).

The Lewes strap-end, although competently designed and executed, and even if made in silver, is not to be compared for quality with the exceptionally fine example from Westmeston (Figs. 26–27). This is evident in many respects, from the detail of the perfect 'potted-plant' motif in the customary fan-shaped field at the top (missing on the Lewes example), down to the ingeniously contorted creature filling the forehead of its animal-head terminal. The latter is paralleled on such first-class Trehiddle-style pieces as the Poslingford, Suffolk, finger-ring (Wilson 1964, no. 61, fig. 29). The single animal occupying the main field has strong similarities to animals on a high-quality silver hooked-tag, excavated in Canterbury, Kent (Graham-Campbell 1982, fig. 2.2). There is no doubt that the Trehiddle-style ornament of this piece will receive fuller discussion in due course, when this important phase of late Anglo-Saxon art receives its much-needed re-appraisal.

It has been the intention here solely to bring forward sufficient evidence to place these strap-ends securely within the corpus of late Anglo-Saxon metalwork and to demonstrate that they are fully at home in southern English art of the 9th century. Their immediate importance lies in the fact that examples of such quality, mainstream Trehiddle-style ornament have not previously been recorded from Sussex. Indeed, the only late Anglo-Saxon strap-end from the county in Wilson's hand-list (1964, 99–116) was that, now apparently lost, found at Selsey (Salzmann 1912, 60, pl. v); none other has since come to attention.⁴

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Notes

¹ In a letter to the author (December, 1984).

² Information from the Curator, Fiona Marsden, to whom I am grateful for the invitation to publish these strap-ends.

³ As noted by Mrs. Leslie Webster, in a paper read to the British Museum's '9th-Century Symposium' (January 1987).

⁴ Since this Note went to press two further strap-ends have been found in East Sussex, near Bishopstone church (see *Suss. Arch. Coll.* 127, forthcoming).

References

- Bruce-Mitford, R. L. S. 1956 'Late Saxon Disc-Brooches', in *Dark-Age Britain* (ed. D. B. Harden), 171–201.
Graham-Campbell, J. A. 1982 'Some new and neglected finds

of 9th-century Anglo-Saxon ornamental metalwork', *Med. Arch.* 26, 144–51.

Salzmann, L. F. 1912 'Excavations at Selsey, 1911', *Suss. Arch. Coll.* 55, 56–62.

Wilson, D. M. 1964 *Anglo-Saxon Ornamental Metalwork, 700–1100, in the British Museum*. London: Trustees of the British Museum.

A Saxon Coin-Brooch from Alfriston

I have been loaned for identification and recording purposes a Saxon coin-brooch found near Alfriston (approximately TQ 503038).

The coin (Fig. 29) is a silver penny of King Edward the Confessor, and is of the Expanding Cross Type (B.M.C. V), c. 1050–1053. The reverse legend reads: L[*E*]OFENOD ON

GLEPL (i.e. the moneyer Leofnoth of the Gloucester mint).

At some stage (presumably after the death of King Edward) the coin was used to make a gilt brooch. Originally, four small copper alloy studs passed through the coin from the reverse side and then continued into a pair of copper alloy clasps located on the obverse of the coin (only one of these clasps and two of the studs still remain). The reverse of the coin was then gilded. The brooch was cracked prior to its recent discovery.

Acknowledgements

I should like to thank the finder, Mr. B. E. Forrest, for loaning me the brooch, and Ms. Ruth A. Parkin, who produced the illustration.

Author: David Rudling, Institute of Archaeology, University of London.

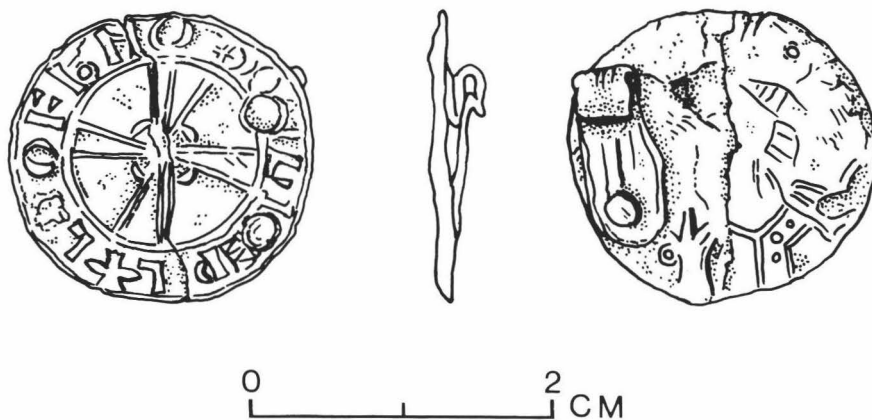


Fig. 29

The Medieval Farm on Bullock Down

Since the publication of the main Bullock Down multiperiod landscape project (Drewett 1982), various new discoveries of medieval material have been made on Bullock Down Farm. In addition, another recent discovery is that of a silver penny of King Eadgar, and this is the first artifact found on Bullock Down which can definitely be attributed to the Saxon period.

The Medieval Farm in Kiln Combe

Since the excavation of the medieval farmstead in Kiln Combe (Drewett 1982, 143–90) the farmer, Mr E. Williams, has found various metal objects and coins in the ploughed field some 40 metres east of the excavated area (Drewett 1982, Fig. 85). These items are catalogued below.

Metalwork (by Peter Drewett)

a, Silver

1. Finger-ring in the form of a buckled belt. Inscribed

M TO PR. No marks inside the ring. (Fig. 30).

b, Copper Alloy

2.–3. Fragments of gilt copper alloy harness pendants. (Fig. 30).

4.–5. Harness pendant fragment (these two fragments are parts of the same pendant). (Fig. 30).

6. Small annular brooch or buckle. (Fig. 30).

7. D-shaped buckle frame. (Fig. 30).

8.–9. Strap-ends.

10. Strap attachment (cf. Drewett 1982, Fig. 100, no. 3).

11. Key from box or small chest. (Fig. 30).

12. Rivetted fitting, perhaps from a wooden box.

Close dating of these objects is difficult, but clearly they are associated with the adjacent farmstead which has a likely period of occupation from c. 1250–1550 A.D.

Coins

1. HENRY II (1154–1189). Cross and crosslets (Tealby) Type Coinage, 1158–1180. Cut Farthing of uncertain Class, Mint or Moneyer (the coin is too worn for such

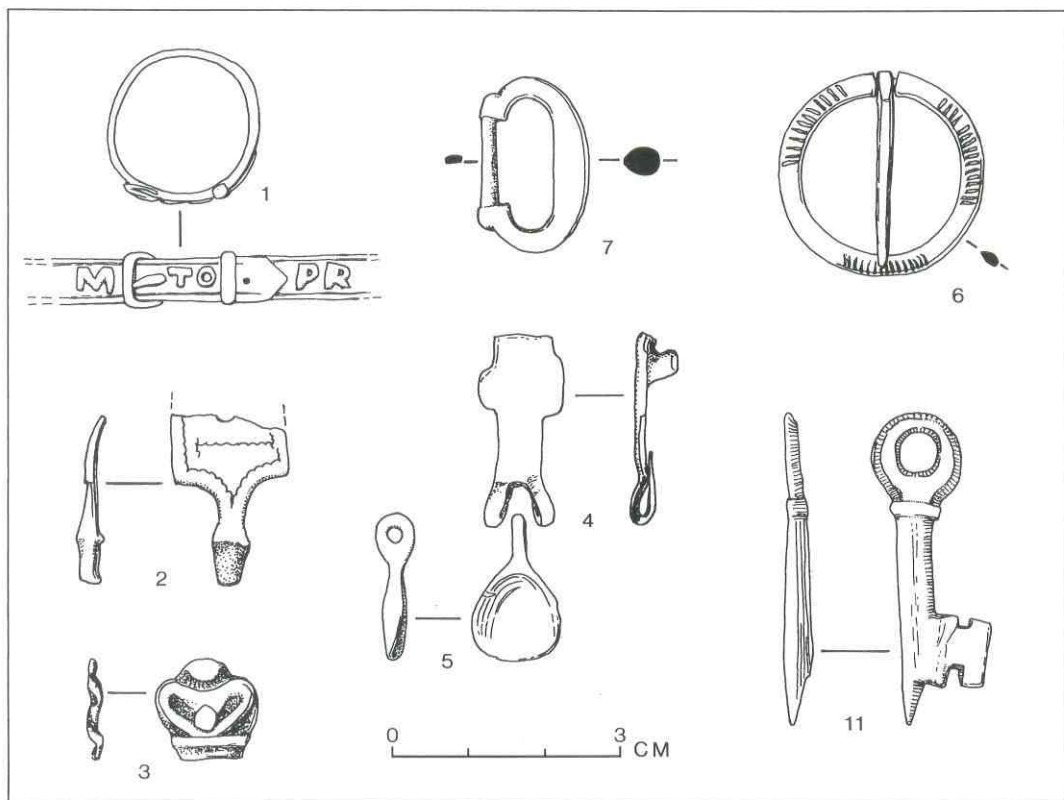


Fig. 30. Bullock Down, Kiln Combe. Medieval metalwork.

identification). From late Saxon times until the reign of Edward I small change was provided by the cutting of silver pennies into halves (halfpennies) and quarters (farthings).

2. HENRY II. Short Cross Coinage, 1180–1189. Silver Penny, Class 1c. Reference: *North* 964. Reverse legend: RAUL ON LVNDE (ie the moneyer Raul of the London mint). No signs of clipping, but signs of wear on the raised surfaces.

3. EDWARD I (1272–1307). New Coinage (from 1279). Silver Farthing, Class I (1279). Reverse: LONDONIENSIS (ie London mint). Ref.: *North* 1051. Signs of wear on the raised surfaces, quite worn in places.

4. EDWARD I. Farthing, Class IIIc (1280–1). London mint. Ref.: *North* 1053. Not very worn.

5. EDWARD I. Farthing, Class IV (1282–3). London mint. Ref.: *North* 1054. Some signs of wear on the raised surfaces.

The only other medieval coin found at the farmstead in Kiln Combe was a dinero of Ferdinand III of Castile and Leon (1230–52). Other medieval coins from Bullock Down Farm include a dinheiro of Alfonso III of Portugal (1248–79) and two silver pennies of Edward I of England (Rudling *in* Drewett 1982, 162–3).

Chimney pot

An additional surface find from the site of the

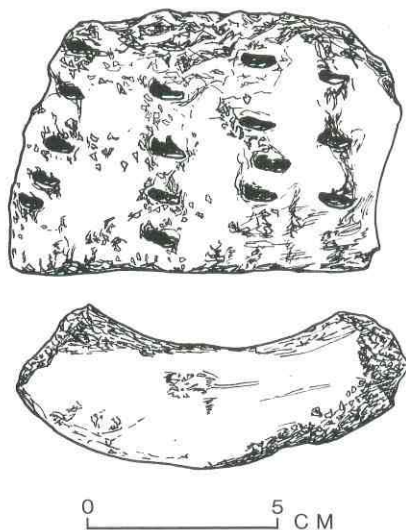


Fig. 31. Bullock Down, Kiln Combe. Medieval chimney pot sherd.

excavations in Kiln Combe is a piece of chimney pot (Fig. 31). This sherd is grey-buff in colour, and has a medium-coarse flint temper. The external surface is stabbed. This is the first fragment of chimney pot to have been found at the Kiln Combe farmstead.

Field 0016

During 1987 Mr Williams discovered a Saxon penny (Fig. 32) to the north of the pond in Field 0016 (Drewett 1982, Fig. 44). This findspot is just to the south of the site of one of the Romano-British settlements (Site 16) on Bullock Down.

EADGAR (959-975). Pre-Reform Coinage (959-973). Silver Penny. Cross Type (B.M.C.iii). Obverse: the legend EADGAR REX ANGLORVM, around a small cross pattée. Reverse: the legend LEOFPOLD MONETA PILTVN (ie the moneyer Leofwold of the Wilton mint, Wiltshire), around a small cross pattée. Reference: *North* 749.



Fig. 32. Bullock Down. Penny of King Eadgar.

Acknowledgements

I would like to thank Mr E. Williams who kindly loaned me his recent discoveries; Dr P. L. Drewett for his report on the metalwork finds; and Mrs L. Drewett who produced the illustrations of the metalwork and the chimney pot sherd.

Author: David Rudling, Institute of Archaeology, University of London.

References

- Drewett, P. 1982 *The Archaeology of Bullock Down, Eastbourne, East Sussex: The Development of a Landscape*. Sussex Archaeological Society Monograph 1.
 North, J. J. 1975 *English Hammered Coinage, 2, Edward I to Charles II, 1272-1662*. Second Edition. London.
 North, J. J. 1980 *English Hammered Coinage, 1, Early Anglo-Saxon to Henry III, c. 600-1272*. Second Edition. London.

Finds of Pottery and Glass at Thakeham

The timber-framed house known as 'Old Cottage', Greenhurst Lane, Thakeham (TQ 098158), which appears to be of 17th-century date, had the brick floor of the living room lowered by c. 0.3 metre in 1986. There was no archaeological supervision, but care was taken to watch for anything unusual. It is understood that there were no signs of an earlier hearth, and structural features were not apparent. Amongst the soil removed close to the angle of the NW corner of the room (one wall being external) were some large pieces of coarse pottery.¹ Just beyond the outside north wall, close to the corner of the room and within 0.5 metre of the potsherds, was found a lump of dark-coloured glass. The latter was first shown to Mrs. H. G. Holden, who recognised it immediately as part of a linen-smoother.

Pottery (Fig. 33, A)

There were three large sherds with abraded edges, lightly covered on faces and edges with patches of thin clay: further breaks occurred during soil removal by the workmen. The sherds formed part of the wall of a large vessel, probably a storage jar, the maximum diameter being c. 430-35 mm. The fabric has a grey core and internal face of the same colour, while externally it is a mottled red-brown with a roughish surface. Tempering is of sand and flint grit, some of the fragments being up to 2 mm. long. This fabric resembles some Sussex 10th- to 13th-century coarse wares. There are no signs of wheel-turning, whereas there are slight indications of hand manufacture, possibly in sections, as postulated by M. W. Barley at Torksey, Lincs.² There are remains of two vertical bands of decoration which fade out at one end, suggesting that, following other known examples, the sherds are from the lower half of the vessel. Equally spaced there would be about ten vertical applied strips around the circumference of the storage jar.

Such strips occur on large pots from Saxo-Norman times throughout most of the medieval period. K. J. Barton has noted that the method of making and the application of decorative strips varies through the centuries. The Thakeham

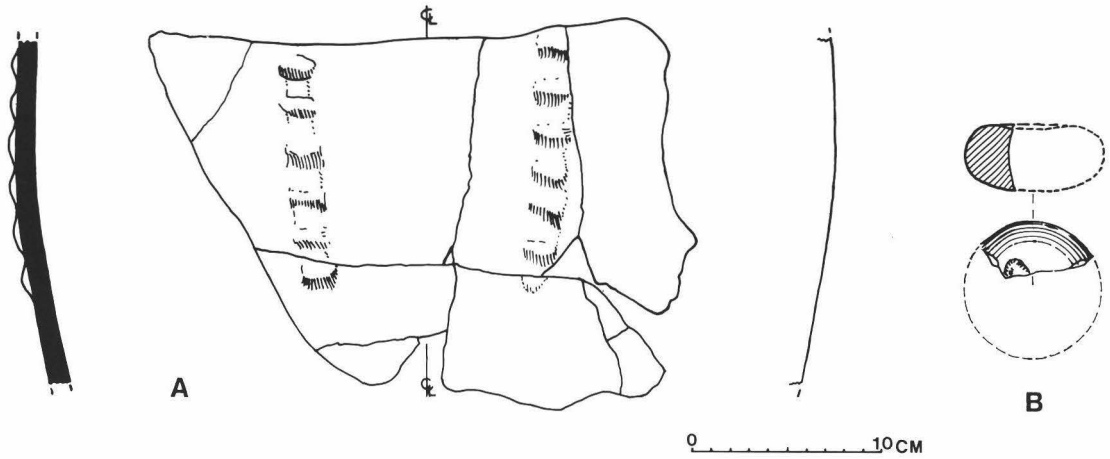


Fig. 33 'Old Cottage', Thakeham. A. Pottery sherds from a large storage jar. B. Glass linen-smoother.

strips conform to his 'strips rolled thin and cut into lengths then applied with vertical wipes giving a "wave" pattern'. This method, he suggests, 'occurred at some time unspecified, but probably during the 12th century'.³ Storage jars with applied strip decoration were first described in any detail in 1939 by the late G. C. Dunning, who put most of them into the latter half of the 13th century,⁴ but it must be remembered that in 1939 the study of medieval pottery was in its infancy, and in many instances since then dates have been placed somewhat earlier.

Similar jars are known in Sussex,⁵ one huge vessel being found below the floor of Arlington church.⁶ It was noted by Dunning that three such pots were found in the soil below floors, one floor being that of a church (Boxley, Kent), like Arlington; another was found, whole, beneath a farmhouse floor at Fawkham, Kent.⁷ The Thakeham house has every appearance of once being a farmhouse, and it may be no coincidence that pieces of a large storage jar were found beneath the floor. It is possible that more sherds remain to be discovered on the other side of the internal wall. Such jars, when found whole were usually standing upright with the neck about level with the old ground surface. Such was the Arlington jar, while another earlier example with Saxo-Norman characteristics in itself (incised decoration, not applied strips) and in its surroundings, came from Upwaltham, West Sussex, and was standing on what appears to have been the floor of a sunken hut.⁸ The use to which these large vessels were put is unknown, Dunning suggesting that they were used for keeping dry foodstuffs, such as grain or flour. Even when they occur under church floors, he proposes that they could have been used by the masons for such purposes.

Glass Linen-Smoother (Fig. 33, B)

This object was broken in antiquity, originally being bun-shaped. Where the core is visible it is of a grey-black colour, the outer faces including the fractured surfaces being iridescent. Originally it would have had a diameter of c. 74 mm. and a maximum thickness of c. 35.5 mm. The

convex face of a smoother was used for rubbing linen, especially the seams, before smoothing irons came into use.⁹ Probably they had a number of other industrial and household uses. This type was common from Viking times and throughout the medieval period; they are thought to have been imported. Three found in Sussex have already been published: Hangleton (two smoothers of 13th or 14th century date,¹⁰ and from Old Erringham (12th century).¹¹ There are, in addition, three undated specimens in Barbican House, Lewes, from Pulborough, Pevensey and Selmeaton. All six are between 70 and 80 mm. in diameter, and 29–38 mm. in thickness.¹² Glass smoothers were utilised in post-medieval times, but these usually have a glass stem for holding in the hand. Dark glass continued to be used, but becomes clearer by the 18th century, and smoothers probably were made in England.¹³ Pieces of polished marble or stone were also used for smoothing purposes.¹⁴

Conclusions

Neither the pottery nor the linen-smoother can be dated within narrow limits, especially the smoother, which was available for at least 500 years without changing its form. The pottery suggests that it is not later than the 12th century. There can be no guarantee that the pottery or linen-smoother were associated, but their time-spans overlap and both could have been in use simultaneously. Their presence suggests that an earlier structure stood on or near the site of the present house.

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Notes

¹ Thanks are due to Ms. G. Reay for showing us the finds.

² M. W. Barley, 'The Medieval Borough of Torksey: excavations 1963–8', *Antiq. Jnl.* **61** (1981), 278.

³ K. J. Barton, *Medieval Sussex Pottery* (Chichester, 1979), 78–9.

⁴ H. C. Andrews & G. C. Dunning, 'A 13th-century stirrup

and storage-jar from Rabley Heath, Herts.', *Antiq. Jnl.* **19** (1939), 303–12.

⁵ Barton, 35–49, 75–9.

⁶ Barton, 49; *Suss. Arch. Coll.* **110** (1972), 125.

⁷ Andrews & Dunning, 305–6, Fig. 3; 309, Fig. 6; the Dorking jar is referred to briefly on p. 310, as from Guildford and is not illustrated, but it has been seen by E. W. H. in Guildford Museum.

⁸ M. Bell, 'Saxon Settlements and Buildings in Sussex', in *The South Saxons*, (ed. P. Brandon, 1978) 49, and Barton, 1979, 44.

⁹ A Cowdray House Inventory of 1682 states: 'IN THE LANDRY (*sic*) Three Tables to Smooth linnen upon . . . eight smoothing irons', F. W. Steer, 'A Cowdray inventory of 1682', *Suss. Arch. Coll.* **105** (1967), 96.

¹⁰ E. W. Holden, 'Excavations at the Deserted Medieval Village of Hangleton Pt I', *Suss. Arch. Coll.* **101** (1963), 163–5, Fig. 35, nos. 10–11.

¹¹ E. W. Holden, 'Excavations at Old Erringham, Shoreham, West Sussex, Pt II, the "Chapel" and Ringwork', *Suss. Arch. Coll.* **118** (1980), 292–3, Fig. 16, no. 8.

¹² Specialists' reports, including discussions on dating glass by means of weathering layers, are in the above papers (notes 10, 11).

¹³ A. M. Terlinden & D. W. Crossley, 'Post-medieval glass-making in Brabant: the excavation of a seventeenth-century furnace at Savenel, Nethen', *Post-Med. Arch.* **15** (1981), 194.

¹⁴ Eliot Curwen, 'Two stone implements from Deans, Piddinghoe' *Suss. Arch. Coll.* **71** (1930), 253–4; G. H. Kenyon, 'Petworth town and trades 1610–1760, Pt II', *Suss. Arch. Coll.* **98** (1960), 74.

Trial Excavations in Horsham, West Sussex, 1987

During October 1987 the Field Archaeology Unit undertook small-scale trial excavations on two sites: Burton's Yard Car Park and the Central Market, which are located to the south of Cophall Way, Horsham. These sites form part of a major scheme of redevelopment, and the aim of the trial excavations was to try to evaluate the archaeological implications of the proposed building work. The land in question is within the area of the medieval town of Horsham (Aldsworth and Freke 1976, 33–5) and lies to the rear of parts of East Street and North Street.

In the north west corner of Burton's Yard Car Park a single trench, 10 metres long and 1 metre wide, was machine excavated to a depth of 1.2 metres. The natural yellow clay was encountered at depths varying from 0.8 to 1.2 metres. No archaeological features were discovered, and the only finds were pieces of modern (19th/20th century) pottery and oyster shells.

On the Central Market site three trenches were machine excavated in the area to the north east of the market stalls. The first trench (2 × 1 metre) revealed, below the modern tarmac, a surface made of bricks. Beneath the bricks was a thin (15 cm.) layer of grey clay, which rested on the natural yellow clay. No finds were recovered from the grey clay. The second trench (maximum dimensions of 8 × 4.5 metres)

revealed no brick surface below the tarmac. The grey clay layer was present however, and this yielded two sherds of late-medieval fine-medium sand tempered pottery. A very shallow (2–5 cm. deep) linear feature, probably the remains of a ditch or gully, was found cutting into the natural yellow clay. No artifacts were found in this feature. The final trench (2 × 1 metre) revealed the same sequence as for the previous trench, but failed to produce any features or finds.

The trial excavations were disappointing in that they yielded only two sherds of late-medieval pottery and no features which can definitely be dated to the medieval period. It should be noted, however, that the sampled areas were very small, and located some distance from the rear boundaries of the tenements which line North Street and East Street. It is hoped that further archaeological work will be possible in this area of Horsham, especially so in locations nearer to the medieval street frontages.

Acknowledgements

The Field Archaeology Unit would like to thank Newland Development Limited and Horsham District Council for permission to undertake the excavations. In addition, the developers kindly arranged for their contractors, James Longley, to provide a machine to excavate the trenches, and the District Council provided a grant towards the staff costs involved by the Field Archaeology Unit. Mr. C. Place assisted the writer during the excavations. The finds and a copy of the Site Archive have been deposited at Horsham Museum.

Author: David Rudling, Institute of Archaeology, 31–34 Gordon Square, London, WC1H 0PY.

Reference

Aldsworth, F. and Freke, D. 1976 *Historic Towns in Sussex, an archaeological survey*. Institute of Archaeology, London.

Two Post-Medieval sword-belt fittings from Pyecombe, West Sussex

During 1987 two copper-alloy belt fittings were submitted for identification to the Department of Medieval and Later Antiquities, the British Museum, by Ms Fiona Marsden, Curator of the Sussex Archaeological Society Museum, Lewes. Both artefacts were recovered by means of a metal detector from Pyecombe, Sussex (TQ 291126).

Description of the objects

Figure 34.1

A cusped horizontal bar, slightly curved along its length in order to fit the belt when riveted. There are three rivet holes, one in the centre and one at each end. Three rings project from the lower edge, from which hang two surviving pendant-mount hooks. The decoration is cast in low relief, with scrolling vine foliage of devolved Renaissance-type. Length of bar: 70 mm.

Figure 34.2

A pendant-mount cast with a similar curve along the length

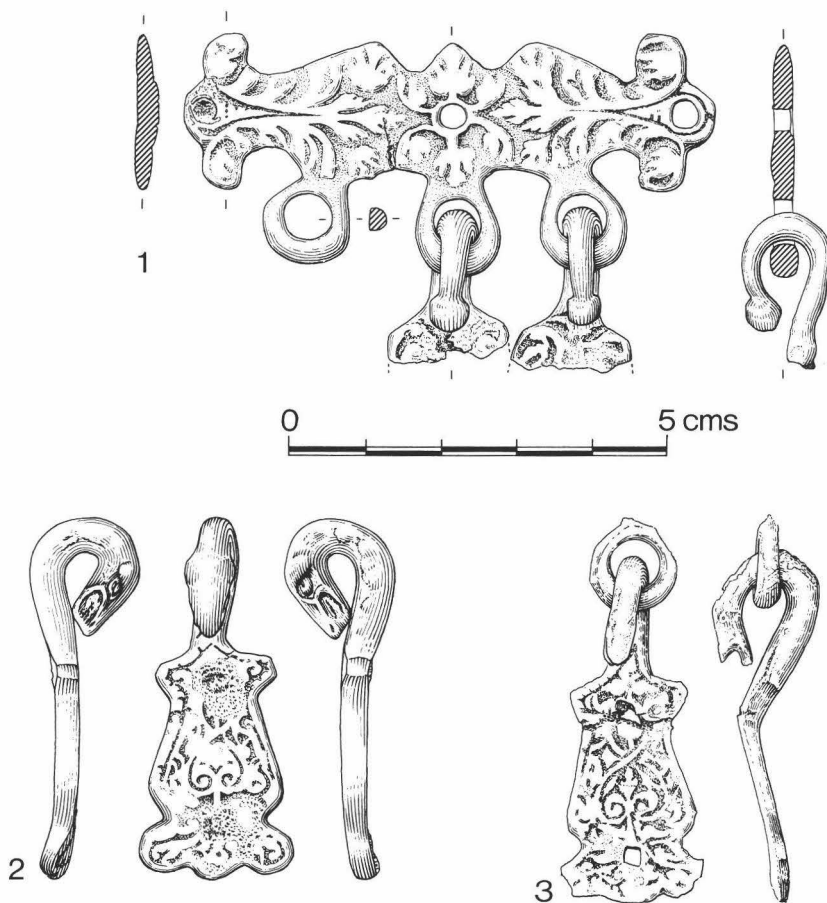


Fig. 34

of the back-plate. Two rivet holes pierce the mount. The forward-curling attachment-hook terminates in a zoomorphic head. The back-plate is decorated with incised geometric scrolling.

Length of mount: 47 mm.

Discussion

Based on comparison with similar types from Moulsham Street in Chelmsford, Essex,¹ these objects from Pyecombe have been identified as part of a set of sword-belt fittings: the horizontal bar for attachment to the sword-belt and the pendant-mounts to the slings. It is highly likely that they were originally gilded. An undecorated bar-fitting from London is housed in the collections of the British Museum.²

The Renaissance-type relief and incised ornament is very similar to that on the Chelmsford types and to the decoration on a wide range of belt fittings from Amsterdam.³ On stylistic grounds, therefore, the Pyecombe examples were probably manufactured between the second half of the 16th and early 17th centuries. The zoomorphic head terminal appears on

fittings of the same date range in Amsterdam.⁴

A pendant-mount of virtually identical form and decoration has recently been recovered as a casual find from Cowthorpe, near Wetherby, N. Yorkshire,⁵ and is illustrated in Fig. 34.3. The extensive distribution of these finds suggest a non-local manufacture for the Pyecombe fittings.

Acknowledgements

The author is most grateful to Fiona Marsden of the Sussex Archaeological Society Museum, Lewes, for submitting the Pyecombe objects for identification and for providing such a reliable provenance. Special thanks are also due to Thom Richardson and Dr. Sarah Bevan of the Royal Armouries, HM Tower of London, for bringing the Chelmsford material to my attention; and to Mrs. Elizabeth Hartley of the Yorkshire Museum, for notifying me of the Cowthorpe find and for allowing it to be illustrated here. I am indebted to Karen Hughes, Graphics Officer at the British Museum, for preparing the illustrations.

Author: **David R. M. Gaimster, Dept. of Medieval and Later Antiquities, British Museum, London.**

Chelmsford Archaeological Trust Report 5 (CBA, Res. Rep. 54) 1985, 40–43.

² B.M. M.L.A. 56, 7–1, 2869 (C.R.S.) from Fleet St., 1845.

³ J. Baart *et al.*, *Opravingen in Amsterdam: 20 jaar stadskernonderzoek*, Amsterdam, 1977, nos. 186–92.

⁴ Baart *et al.*, no. 196.

⁵ Yorkshire Museum, York, 1987, 32.

Notes

¹ B. Ellis, 'Part of a set of fittings from a sword-belt'. in *Post-medieval sites and their pottery: Moulsham Street, Chelmsford*, ed. C. M. Cunningham and P. J. Drury,

This section of the *Collections* is devoted to short notes on aspects of local history. Those without previous experience in writing up such material for publication should not be deterred from contributing; the editor and members of the editorial board will be happy to assist in the preparation of reports and illustrations.

The Evolution of Warlege

In the Domesday Book (DB), *Warlege* is described as a manor in the Hundred of Grinstead but outside the Count of Mortain's Rape of Pevensey.¹ As no farm or village now exists bearing a derivative of the original name, its location has remained unexplained.²

Although an unreliable guide, the list position of *Warlege* in the DB suggests a location on the west side of East Grinstead and Gullege Farm, a faintly similar name, (NGR. TQ 366384) attracts attention as lying in an area of land sandwiched between Imberhorne Manor,³ on the east, and South Malling Lindfield Manor, which was linked with the DB manor of *Berchellie*,⁴ on the West. The development of *W-* > *G-*, as in *Warlege* > Gullege, is philologically unsound⁵ but the places are not unconnected. A possible direct connection between *Warlege* and Gullege is found in the Hearth Tax assessment in 1662 where Gullege and Tilkhurst (the next farm to the south) are listed under the Borough of *Wardley*, in the Hundred of Danehill Horsted.⁶ This connection is strengthened by Post Mortem Inquisitions on three members of the Alfrey family, dated 1574, 1611 and 1643, whose lands, in each case, included Gullege, Tilkhurst and *Wardleigh*.⁷ The link with the Alfrey family can be traced to 1531 and Edmund Alfrey, who devised Gullege and the entail of Tilkhurst.⁸

The Hundred of Danehill Horsted, which, it has been shown above, extended into part of East Grinstead parish in the 17th century, was descended from the medieval Hundred of Denne, which combined with the Hundred of Riston and became the Hundred of Rushmonden. In the Lay Subsidy of 1296, in the Hundred of Rushmonden (Denne), William de *Wardlegh* and Robert Alfrey are among those subject to taxation. The appearance of William de Kouelyngleghe (Cuttinglye, in the north-east corner of Worth parish) in the same Hundred may imply the northerly extent of the Hundred, although the entry may refer to land in Denne Hundred but owned by someone from outside. Tilkhurst, in the surname forms Telgherst and Telghurst, is listed in the Hundred of East Grinstead, villat' of Hymberhorn (Imberhorne) in the 1296 Subsidy but is transferred to the Hundred of Rushmonden, villat' of Horsted Keynes by 1332.⁹ Elsewhere in the Lay Subsidy there are references to the surname Wardley or Wardeley but they all relate to Iping and can be identified with the property of the same name in that parish.¹⁰

It is suggested that the forms, Wardleigh and Wardley, refer to the same place and that Wardlegh is the direct precursor of the other two. The evolution of *Warlege* > *Wardlegh* > *Wardleigh* > *Wardley* is philologically sound and would seem to represent the probable development of the Domesday manor as an outlying borough on the western edge of East Grinstead.

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Notes

- ¹ John Morris (ed.) *Domesday Book* (1976) 2, Sussex. 22c, 10, 100.
- ² P. Brandon, 'The South Saxon Andredsweald' in *The South Saxons* (1978) ed. P. Brandon, 144, 155. Here it is implied that the identity of *Warlege* is known; supporting evidence is wanting.
- ³ *Suss. Rec. Soc.* 38 (1932), 72f.
- ⁴ M. S. Holgate, 'The Canons' Manor of South Malling'. *Suss. Arch. Coll.* 52 (1929), 183-95.
- ⁵ Dr. Richard Coates, pers. comm.
- ⁶ M. J. Burchall (ed.) *Sussex Hearth Tax Assessments 1662* (1980) 2. Pevensey Rape, 40.
- ⁷ *Suss. Rec. Soc.* 14 (1912), 4-5.
- ⁸ J. Comber, *Sussex Genealogies* (1932) Ardingly Centre, 4.
- ⁹ *Suss. Rec. Soc.* 10 (1910); 32, 34, 306-7.
- ¹⁰ *Suss. Rec. Soc.* 10, 100, 117 & 240; also A. Mawer & F. M. Stenton, *The Place Names of Sussex* (1929), 23.

Building Practices in the Eastern Weald around 1700

In 1969 David & Charles of Newton Abbot published a facsimile of *The City and Country Purchaser, and Builder's Dictionary: or, the Compleat Builders Guide . . .* by Richard Neve, Philomath, the second edition, with additions (London: D. Browne, J. & B. Sprint, G. Conyers and C. Rivington, 1726).¹ In so doing they made readily accessible an important source of information on building techniques and costs in eastern Sussex and adjoining parts of Kent. *Builder's Dictionary* is the part of the title which most clearly indicates the book's character: it comprises definitions and descriptions under headings arranged alphabetically, e.g., to take the sequence of headings on pages 13 to 22, Architrave, Aræostyle, Ash [timber], Ashlar, Ashlering, Astragal, Attick. The first edition, published in London by J. Sprint, G. Conyers and T. Ballard in 1703, has been described as 'the first major encyclopaedic approach to the genre published in England'.²

The material relevant to the Weald was unchanged from the first edition, as a study of the latter shows. A dedication, omitted in the second edition, names the author as T. N. who appears on the titlepage as T. N. Philomath. This dedication and a 'proæm', also omitted in the second edition, give some insight into the author's method and intention. 'I have made use of the best authors extant, to the number of about 50, great and small' and 'what lay scattered up and down in diverse volumes, I have comprised under their proper heads

... I have intermixt a great many new things, which were observations of my own making, and some were communicated to me by my friends, many of which were experienced trades, or handicrafts men, whose employments wholly depended on building; and some notions I had from some observing gentlemen, and others that were sometimes master of such buildings'. The author's business has frequently been amongst workmen of diverse professions and different places; his book is intended for the young and ignorant handicrafts man.

The sources of the author's information, as he reveals them, can be placed in four groups: first, writers on architectural theory and style, classical, Italian, French and (one) English; secondly, English writers on building practice; thirdly, informants among building craftsmen; and fourthly, the author's own practical experience. It is the last two groups which are of most interest. In every instance where the author states the locality from which his informants came or for his own observation, it is Sussex, Kent or London, in that order of frequency. For instance, 'some workmen in Sussex tell me that, for framing the carcase of a house and sawing the timber, they have but 8s. per square' (p.138). 'Carpenters about us in Sussex and Kent have about 1s or 1s 2d per load for felling of timber, and about 3s. per load for hewing' (pp.263-4). 'A smith at Rye asked me 9d. per foot for ordinary casements, which I think is dear; for in other parts of Sussex, they proffered me to make them for 6d. per foot, if ordinary' (p.100). 'Mr. Miller, stone-cutter in Coldharbour in London, tells me, that they usually sell firestone hearths at 1s. per foot' (p.131). 'I have bought of these [fire] stones in London for 20s. per pair' (p.115). 'I am informed that at London they but seldom measure the gutters [i.e., valleys], but only as they are as part of the roof, so they are included in the flat and half measure. And I know some workmen at Tunbridge Wells never demand any other . . . In laying of gutters with concave titles, the workmen in some parts of Sussex and Kent had gotten a custom to be allowed so many feet more than the plain measure, as there are gutter tiles' (p.158). The most specific references to localities mention corroded timber found by a bricklayer in pulling work down at 'Eridge place (which is one of my Lord of Abergaveny's country seats)' (p.53), and the cost, reported by a carpenter, of palisades at the bowling green at Mount Ephraim, Tunbridge Wells, and at the High house behind the green (p.214).

It is clear from references such as these that the author's involvement with the building trades was primarily as a measurer, the precursor of today's quantity surveyor, and perhaps as a surveyor in a rather wider sense. From at least the second half of the 17th and during the 18th century, the prospective owner of a building which he or an 'architect' had designed also directly employed the various tradesmen needed to erect it. Each tradesman was to be paid for the actual quantity of his trade's work which went into the finished building. So the amount of such work had to be 'measured' and 'valued' at piecework rates agreed either before or after. For any job, two measurers were appointed, one acting for the owner and the other for the tradesman, and they had to agree the amount of work done. Each trade developed conventions, though these clearly varied from district to district, as to how the work was to be measured and

reduced to units to which a piecework rate could be applied.³

The author does not however use the term measurer, and indeed the specialisation and division of function which had become established in London and on major public works was still not appropriate in country areas. But there is no clear evidence that the author did himself design buildings. Rather he shows much experience in buying materials, particularly fixtures and fittings as distinct from the bulk, raw materials which the individual tradesmen would part-process, e.g., by burning clay for bricks or sawing timber. Perhaps he had gained his experience acting on behalf of the owner who employed an architect to design, or himself, designed his building, in commissioning and supervising the construction; or similarly in specifying and supervising alterations. Clerk of works might be a more apt term than surveyor.

The titlepage of the second edition clearly states Richard Neve to be the author. *The Eighteenth Century Short Title Catalogue*⁴ lists three other books by Richard Neve. *Baroscopologia, or, A Discourse of the Baroscope, or Quicksilver Weather-glass* (London: W. Keble, 1708) is about having a barometer made, set up and maintained, with adages about forecasting the weather. *The Merry Companion: or, Delights for the Ingenious* (London: Eben. Tracy [1716]), 2nd edition (London: H. Tracy, 1721) was designed 'for the Recreation of Youth . . . and to find them innocent Diversion at Home, without giving them the Trouble to seek it Abroad, among ill Company, first at the Ale-House, and then at the Bawdy House'. There follow many number games and the like. *Mathematicks made Plain in the Solution of a Variety of Useful Propositions . . . All perform'd by . . . Gunter's Line . . . Approv'd by the Royal Society* (London: G. Conyers, J. Sprint, T. Ballard, 1708) is the most substantial of the three. Gunter's Line of Numbers or logarithmic rule was the first step towards the slide-rule.⁵ Among the applications (pp. 116-133) was the mensuration of artificers' work. Furthermore, *Arts Improvement: or, Choice Experiments and Observations in Building, Husbandry, Gardening . . .* By the author of the builders dictionary, 2nd edition (London: D. Browne, 1723—before the second edition of the latter appeared in 1726), is identified as a reissue with a cancel titlepage of T. Snow, *Apoproscopy: or, A Compleat and Faithful History of Experiments and Observations: not only Chymical and Curious, but Mechanical* (London: D. Brown, 1702) which had already been reissued in 1715 as by T. S. Therefore, T. N. (and T. N. Philomath) who is named in the first edition of *Builder's Dictionary*, and T. Snow (and T. S.) are identified in the *Short Title Catalogue* as Richard Neve.

However, the 'Advertisement concerning this new edition of the *Builder's Dictionary*' of 1726 sets out to make clear that someone other than the author of the first edition was the editor of the second: '. . . the Booksellers were of opinion, that a new edition . . . would, at this Time, be not at all Unseasonable . . . The small speculative knowledge of the builder's art, which I think I have gained . . . enabled me to distinguish, in the general, what was right from what was wrong in this Dictionary . . . I was surpriz'd and sorry to find that the author in almost all his quotations . . . out of [Sir Henry Wotton's] Elements of Architecture, has made him write such bad English, and lay down such absurd maxims of

building, as I am certain never appear's in print before'. Then follow many examples of alleged mistranscription, and later: 'No printed book or ballad ever contain'd such multitudes of typographical errors as the former edition of this Dictionary'. All of this may have been deliberate subterfuge to obscure responsibility for the defects of the first edition and to create the impression that another mind had greatly improved on the efforts of the original author—when in fact both editions came from the same hand.

Furthermore, *Apopiroscopy* has 94 pages on building materials and techniques. Seventy of those are devoted to decorating woodwork—which received little attention in, but would have been appropriate to *Builder's Dictionary*, and the remaining 24 which cover similar ground do not read as if they were written by the same person—though curiously the references to specific localities which are not attributed to other authors name Kent and Sussex. Yet it refers to a very hard cement used in some parts of Sussex for maltster's cisterns, but the longer work does not; the accounts of flooring tiles in Sussex are similar in substance but different in detail; and the method of polishing marble which in *Builder's Dictionary* was observed at Lewes is entirely different.⁶

T. N.'s dedication in the first edition confirms his Sussex origins. It is to John Baker, Esq., of Mayfield Place, Sussex, Mr. Robert Knight, Treasurer of the Honorable Irish Society in London, and Mr. Robert Baker of Birchden Place, Sussex. 'I have been brought up, educated, and have acquired that little knowledge which I have of this and other Arts, under the favour and roof, (as it were) of the first of you . . . From the second of you, I have received no small number of favours, tho' I was wholly a stranger to him, until these last years. And by the kindness and liberality of the third, I have been very much encouraged and assisted in my mathematical, and other studies'. John Baker (1643–1724) had a sister Dorothy (born 1646) who married twice. Her first husband was a third cousin, John Baker of Stoneland in Withyham (1629/30–88), and their eldest surviving son was Robert Baker of Birchden Place in Rotherfield (c. 1670–1721). She married, secondly, in 1701, Robert Knight, citizen and grocer of London. The three to whom the book was dedicated were therefore closely related through Dorothy.⁷ It is unlikely that T. N. would have used other than his own initials for a dedication to people known to him personally.

Richard Neve's dedication of *Mathematicks made Plain* (1708) is to another Sussex gentleman living within ten miles of Mayfield, John Fuller of Brightling, to whom Neve was bound in gratitude, as he was a general encourager of all ingenious studies; as 'you have expressed a particular respect to me by your many civilities; notwithstanding I was an absolute stranger to your worship til within these few months'; and as on sight of the book he had shown it to the Royal Society and brought their approbation of it. Fuller's connection with the Royal Society is simply explained: his wife was the stepdaughter of Dr Hans Sloane, the Society's Secretary from 1693 to 1712. Indeed Fuller was elected a Fellow in 1704, the year after his marriage and Sloane's surviving correspondence shows Fuller informing him of curious phenomena down in Sussex. For example in April 1711 'I send you herewith a Couple of Monstrous Piggs, one of them was farrowed alive the other dead, the sow had six Piggs beside, all of them as they should be. The Plates for the

Chimneys are all cast, and shall be sent, as soon as the Ways are Good'.⁸ A manuscript on the use of logarithms would have been a less noisome present from the country than two dead deformed piglets dispatched when the roads were too bad to send the new firebacks!

The deferential tone of these two dedications suggest that T. N. and Richard Neve were of modest social origins. T. N. moved amongst craftsmen and Richard Neve learnt one card trick from the maids 'I being once at a gentleman's house'. Maybe they were the sons of Thomas Neve, a joiner who between 1663 and 1669 became occupier of a dwelling near The Star inn in Mayfield and can be traced there until 1679.⁹ The first reference to the Neve family in the parish register is to the baptism of Thomas, son of Thomas and Ann Neve, in 1666. Other children follow in 1669 (John, buried 1684), 1671 (Henry, presumably died in infancy), 1672 (Henry again), 1676 (William), 1678 (Anne) and 1681 (Elizabeth). The register and bishop's transcripts are each manifestly incomplete, so it is likely that further children were baptised in Mayfield.¹⁰ In 1690 Thomas Neve the father was granted the administration of the estate of his late brother, Richard of Ewhurst,¹¹ and two years later died himself, being buried at Mayfield in October 1692.¹² A Richard Neve of Mayfield, joiner, was granted a marriage licence in 1705.¹³

We can therefore surmise that Thomas Neve, joiner (died 1692), had sons named Thomas (born 1666) and Richard (perhaps his second son, named after his brother). The first at least was taken up by John Baker who had him educated with his own children, born between 1664 and 1684. Thus launched into a career related to building, Thomas junior supervised and measured work in and around Tunbridge Wells and drew on this experience to write *The City and Country Purchaser, and Builder's Dictionary*. Maybe he was dead by the 1720s and in 1723 his brother, who was of a more academic turn of mind, was appropriating the authorship in anticipation of his second edition.

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Notes

¹ The original is unpaginated but the facsimile adds page numbers which are cited here. Spelling and punctuation have been modernised in quotations.

² *The Builder's Dictionary: or Gentleman's and Architect's Companion*, 2 vols. (1734; repr. Washington: Assoc. for Preservation Technology, 1981), preface.

³ F. M. L. Thompson, *Chartered Surveyors, the Growth of a Profession* (1968), 66–72.

⁴ London: British Library, 1983; 1986 on-line update.

⁵ E. G. R. Taylor, *The mathematical practitioners of Tudor & Stuart England* (Cambridge 1954), 196.

⁶ T. Snow, *Apopiroscopy* (1702), 6, 12, 15.

⁷ East Sussex Record Office (hereafter ESRO), KIR 28/85, pedigree of the Baker family, 1840.

⁸ R. V. Saville, 'Gentry Wealth on the Weald in the Eighteenth Century: the Fullers of Brightling Park'. *Suss. Arch. Coll.* 121 (1983), 131. Information on Fuller's F.R.S. from Dr. M. W. C. Hunter, Birkbeck College, London. British Library, Sloane MS. 4042, f. 278.

- ⁹ ESRO, A 1244, Mayfield manor court book.
¹⁰ ESRO, PAR 422/1/1/2, and copy of bishop's transcripts.
¹¹ ESRO, W/B 11, f.97.
¹² ESRO, Mayfield bishops' transcripts.
¹³ *Calendar of Sussex Marriage Licences*, ed. E. H. W. Dunkin, Suss. Rec. Soc. 6 (1907), 316.

Catholicism at Patching, Sussex 1713–14¹

Patching is a South-Downs parish, situated five miles north-west of Worthing. At the beginning of the 18th century, it was a tiny rural community, containing, at most, 25 houses and cottages² and overshadowed by two aristocratic homes in particular—Arundel Castle and Michelgrove House. Both these places were Catholic strongholds: the former was owned by the Duke of Norfolk, England's premier Catholic nobleman, and the latter belonged to the Shelleys, a Catholic gentry family who held the manor of Patching. John Bossy and other historians have stressed in recent years that post-Reformation English Catholicism was preponderantly seigniorial in character, with ordinary Papists (who were usually tenants) coalescing around the protection of a Popish gentleman's or nobleman's house and enjoying the services of his priest.³ Given its location, therefore, one might have expected Patching to have formed a small Catholic community of this kind in late Stuart times. It is usual to maintain, however, that this was not the case—for recusancy in the parish, although well documented up to 1640, is commonly thought to have died out in Charles II's reign.⁴ Nevertheless, such a picture is misleading for there is evidence of Catholicism in Patching dating from 1713–14.

In the early 18th century, the Society for Promoting Christian Knowledge acted as an official spearhead in the drive against Catholicism in Britain, and had a watching brief on 'the practices of priests to pervert Her Majesty's subjects' to Popery. It consequently sought to monitor the proselytizing activities of Popish priests and gentry in the provinces, and encouraged parsons who were sympathetic to these aims to provide it with detailed information about the strength and structure of Catholicism in their respective localities.⁵ The Society's fine archive contains much information of this kind—including reports of correspondence from the Rev. Thomas Blennerhayset, the Rector of Patching, written at the end of Queen Anne's reign. This was, of course, a worrying time for England's Protestants. In the event of the Queen's death, what assurance was there that the Protestant Elector of Hanover would smoothly take the crown as George I? Might not a Jacobite coup or rising restore the Catholic Stuarts and place the Old Pretender on the throne? If this occurred, how safe would the Church of England be under his rule? It was against this background that Blennerhayset wrote to the S.P.C.K. in December 1713, complaining about Sir John Shelley's overt Catholicism and the local magistrates' tolerance of it.⁶ The following April he sent the Society a more lengthy account of Popery in Patching and the surrounding district, and I print the body's report of this in full below, retaining the original spelling and punctuation.

Mr. Thomas Bennerhayset Rector of Patching near Arundel in the County of Sussex gives an Account Reced. 7. April 1714.

That there are several Popish Families in that Neighbourhood, of note for Estate and Interest, that have a very considerable influence upon the Common People.

The D: of Norfolk has a Seat at Arundel Castle, where there is a Romish Priest of great Subtlety, openly known to be so.

Sr. Wm. Goring of Burton about 8. miles from Patching is reported to keep a Popish Priest at his Seat there.

---- Caryl Esqr.⁷ in or near West Greensted, about 8. miles also from Patching, is a Papist of great bigotry, where there is a Romish Priest, and a Popish Schoolmistress that brings up many Scholars.⁸

The Lady of Sr. Cecil Bishop of Parham, about 3. miles from Patching, turn'd Papist since she was married, and keeps a Popish Priest in her house. (Sr. Cecil himself seldom coming to church)

Sr. John Shelley of Mitchel Grove-house in Clapham is Lord of the Mannor of Patching (his Seat being a little mile distant from it) He is lately come from travelling, and has been resident at his Seat about half a Year; at which time there were two Romish Priests in his house. He is violent in his way, as is also his Mother lately married to Geo. Mathews Esqr. an Irish Papist.

This family has the greatest Influence upon Patching: The Farmers being all their Tenants, and managed by them. One of the Farmers about 20. Years ago turn'd Papist, and still continues so.

The Steward manageth the rest at his Pleasure, by giving them Drink at his Master's Cellar and other Methods pleasing to their Lusts. He is of a bloody disposition, and the great Opposer of any thing that is good.

The underservants are always insinuating, into the poorer Sort, such things as may work upon them, particularly by disparaging our Religion & Ministry, and magnifying theirs.

They have gain'd one Maid:Servant to Popery this last Year, and as is fear'd, another that is gone with the Family to London.

This Year My Lady Shelly was brought to Bed, and the child baptized by a Popish Priest so openly as to be known to all the Neighbourhood.

The Parish of Patching consists but of 4. Farms, and about 16. Cottages besides the Popish Farmer before mention'd, and the Wife of one of the Cottagers, there are two Families wholly Popish, both which came into the Parish since Michmas last.

Others not professed Papists speak often in favour of Popery and Popish Doctrines: His Clerk's Wife owning that she believes Purgatory &c.

Sr. John Shelly acquainted Mr. Blennerhayset's Wife, that Mr. James Lloyd Rector of Clapham aforementioned (in which Mitchel Grove-house stands) did own to My Lady Shelly that he had been a Romish Priest (thinking, as is supposed, to ingratiate himself thereby) This was before suspected, and agrees with his

Character in other things: He is an Irish man that came over in the latter end of King James's Reign, and is notorious for all sorts of Debaucherys, beyond what can be expres't or is seemly to relate.

In the Absence of the Family a Popish Priest from Arundel Castle performs his Office at Mitchel Grove-House, where the Proselytes of each Parish publicly resort, without any disturbance, the first Sunday in every Month.

Mr. Story Vicar of Burfham about 3. Miles from Patching in discourse with Mr. Blennerhayset within these 3. months past. Spake to this Effect. 'That there was very little Difference between the Romish Religion and ours of the Church of England—That the Oath of Abjuration was a devilish Oath, not fit to be imposed on any one: That tho he took it to save his living, it was with a great deal of Reluctancy, and he wished he had never done it. That the taking the Abjuration Oath would be the means of bringing in the Pretender, and making him more outrageous & violent against us: Whereas if he came in peaceably, he might have enjoyed his own Religion, and the Church of England Hers' This was not spoken to him alone, but in a mixt Company.⁹

Author: Colin Haydon, King Alfred's College, Winchester.

Notes

¹ I am most grateful to the Archivist and Librarian of the Society for Promoting Christian Knowledge, the Rev. Dr. G. Huelin, for granting me permission to publish the document printed above.

² *V[ictoria] C[ounty] H[istory of] Sussex VI i* (Oxford, 1980), 186.

³ J. Bossy, *The English Catholic Community, 1570–1850* (1975), 174–81.

⁴ *V.C.H. Sussex VI i*, 191.

⁵ C. Haydon, 'The Anti-Catholic Activity of the S.P.C.K., c.1698–c.1740', *Recusant History XVIII* (1987), 418–21.

⁶ A[rchives of the] S[ociety for] P[romoting] C[hristian] K[nowledge], CR I 5 (Abstract Letter Book, 1713–15), Letter 3817: T. Blennerhayset to S.P.C.K., 10 Dec., 1713.

⁷ John Caryl: E. E. Estcourt and J. O. Payne (eds.), *The English Catholic Non-jurors of 1715* (1886, repr. Westmead, 1969), 264. On the Carylls at West Grinstead, see T. J. McCann, 'West Grinstead: A Centre of Catholicism in Sussex, 1671–1814', *Suss. Arch. Coll.* **124** (1986), 193–212.

⁸ Cf. West Sussex Record Office, Ep. 1/37/3: Returns of Papists, West Grinstead, 1727.

⁹ A.S.P.C.K., CP I (Papers and Memorials, 1715–29), 137–9.

Old Erringham 'Chapel'—a correction

Suss. Arch. Coll. **118** (1980), 262, describes a scratch-dial on the SE. corner of the 'Chapel.' To avoid having to publish a drawing at the time, the rays cut into the stone were said to be at 95, 113 and 128 degrees E. of N. respectively, as if the knon-hole was the centre of a compass. Recently it has

been noted that these figures are wrong (owing to the writer having misread the protractor) and they should be corrected to 185, 203 and 218 degrees. If likened to the hour hand of a clock, the rays are between 6 and 8 o'clock.

Author: E. W. Holden, 93 Penlands Vale, Steyning

The Old Workhouse, Mouse Lane, Steyning

In the preface of their book the late H. M. and U. E. Lacey state that Steyning possesses no example of a dragon beam.¹ Whilst this may now be so, a drawing of the Workhouse, Mouse Lane, by J. Cordwell² shows that part of the western elevation of the Lacey's Bay A was jettied, as is the south side facing the street. When such an arrangement occurs a dragon beam is required and is indicated somewhat sketchily in the Cordwell drawing. The present west wall of the main range is now of brick, including a chimney breast, stack and two buttresses. When they were built it was necessary to remove the western timber-framed jettied portion from first-floor level up to the eaves. This had the effect of reducing the width of the south face of Bay A, which is confirmed by Bay A now having eight panels of framing, whereas Bay C (SE. jettied part) has nine and is c. 2½ feet (0.75 metre) wider than Bay A. The ceiling above the ground floor of Bay A is plastered, so any traces or remains of a dragon beam cannot be verified.

The building ceased to be the parish workhouse in 1836 and was sold to the Goring family of Wiston. From the high quality of the brickwork in the west wall and the presence of moulded masonry blocks in the buttresses it is probable that the Gorings were responsible for the alteration. This could have happened soon after the change of use in order to render the building more suitable for private occupation after having housed paupers for more than 100 years.

The drawing is undated, but probably is before 1836. Joseph Cordwell was a Brighton artist and drawing master, references having been noted on pictures and in directories from at least 1821 to 1866.³ Later directories have not been checked.

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Notes

¹ H. M. and U. E. Lacey, *The Timber-Framed Buildings of Steyning* (1974), 32, 43. A dragon beam is a diagonal member at the corner of a timber-framed building where jetties occur on both elevations.

² I am indebted to Mrs. P. Nightingale for calling my attention to the drawing by Cordwell.

³ Mrs. J. Crow, our Hon. Librarian, kindly gave me details of Cordwell drawings at Barbican House, Lewes. A copy of the Workhouse drawing is now in the Society's Library.

Willingdon Village Pump, Willingdon, near Eastbourne, East Sussex

The animal bone panels of the old village pump at Willingdon have generated interest for many years. Recently, the writer has taken a closer look at the building (Fig. 1).

The pump is situated at TQ 58850210 on the 30 m. contour, at the junction of the Lower Chalk to the west and the Upper Greensand to the east. Here, a small stream rises and runs eastwards to Hampden Park, some 1.3 km. distant and it is over this spring that a well was constructed. Its history has been traced (Vine 1978) from it firstly being just a dipping hole, then a well, later covered by a well house which gave way to a pump and house. The well was constructed with animal bones, probably in the early 18th century. The pump-house was erected in 1880 by Col. William Brodrick Thomas, Esq. (1811–1898)—brother of Freeman Thomas—who presented it to the village. William Thomas was a successful landscape gardener (Macnaghten 1983) with a London address and held property called 'The Townlands' in Willingdon. In the gable of the pumphouse, inserted into the

rendering were the initials 'WBT' and the date, constructed of animal knuckle bones. Many more bones were employed to decorate the walls each side of the entrance and were arranged in rows, forming unusual decorated panels.

The bones have long since been referred to as sheep bones and romantically linked with the downland sheep so common in the area. One writer (Woodward 1961) even referred to the unique pumphouse as a peculiar kind of memorial to the downland flocks.

The editor of the Sussex County Magazine (Beckett 1933) quotes a story related by Lady Willingdon at a parish meeting in 1896, when she spoke of an old woman living near The Dell at Willingdon and her habit of collecting knuckle bones which were used to build the well and later the well-house. It is said butchers from all around supplied her (Woodall 1963) and she saved the knuckle bones until she had enough to build a well. Later still, Mr. Vine recalls that his grandfather supplied from the slaughter-house, sheep knuckle bones for the panels in the pump-house.

The building is rectangular, with its longest axis running parallel to the road, with its entrance faced with greensand



Fig. 1 Willingdon Pumphouse 1986.

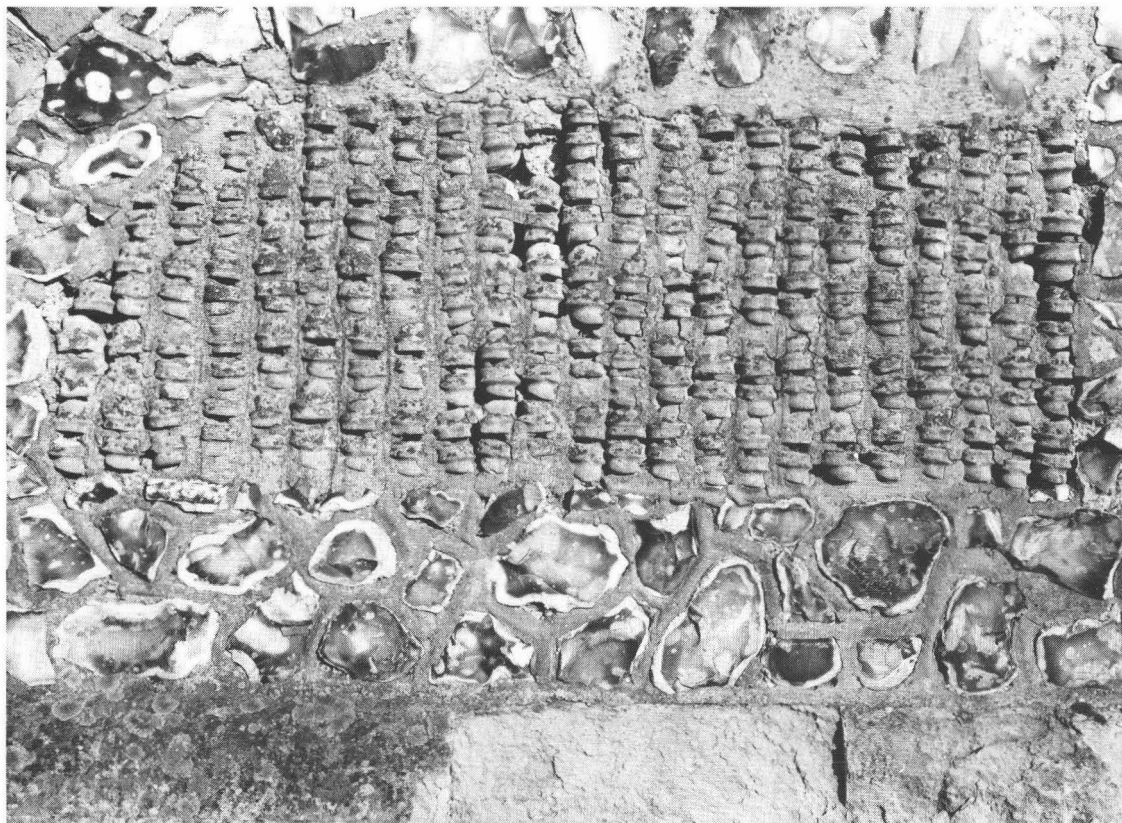


Fig. 2 North panel of bone decoration 1986.

quoins, fronting the road. The field flint walls extend only three-quarters of the height of the building, the roof being supported on oak pillars—leaving it open to the elements. The roof, covered with clay tiles, consists of a gable running north-south, with a smaller gable extending to the west, and it is this gable which had the initials of William Brodrick Thomas and the date set in the rendering.

The inside is lined with Minton, blue and yellow glazed bricks (Beckett 1935) and the pump is housed towards the north-east corner of the building, with a D-shaped trough at its base, which would presumably have collected overflow from the pump and stopped it running into the road.

The pumphouse as it stands today probably bears little resemblance to the original building. The side panels with their bone decoration have become very eroded over time and have become somewhat smaller and their shape has even changed from pictures taken in the early 1960s. What now remain are two small panels of bones, set in rows—six rows in the south panel, with 118 bones remaining and 110 bones set in five rows in the north panel (Fig. 2). It was hoped to be able to measure most if not all of the bones, but they were so eroded that only a small number in each panel could be measured—12 in the south panel and 11 in the north panel. These measurements show that there were both metacarpals

and metatarsals present, which are found in the feet just above the finger and toe bones respectively; metacarpals in the fore- and metatarsals in the hind-limb. Among those measured, in the south panel there were two metacarpals and ten metatarsals and in the north panel, four metacarpals and seven metatarsals.

It is a common belief that the bones used to build the well and decorate the pump-house were sheep. However, having examined the pump-house decoration, it is quite obvious that the bones are from ox (or cattle), which having been measured show that there are both metacarpals and metatarsals present. The few measured (Fig. 3) form two groups and from these it can be seen that it is likely that both male and female bones were used.

Unfortunately, the well is not accessible, and the gable which had the initials 'WBT' and the date set in its rendering has been refaced, so that this evidence has been obliterated. It would seem that the people of Willingdon probably ate heartily of cow heel brawn and stew (Hartley 1979) in order to decorate their pump house! Bone is known to have been used for decorating walls of buildings, an example of such decoration is on a house at Cley, North Norfolk, where bones from cattle, horse and sheep are used. At the present time the writer knows of no other example of a pump house decorated

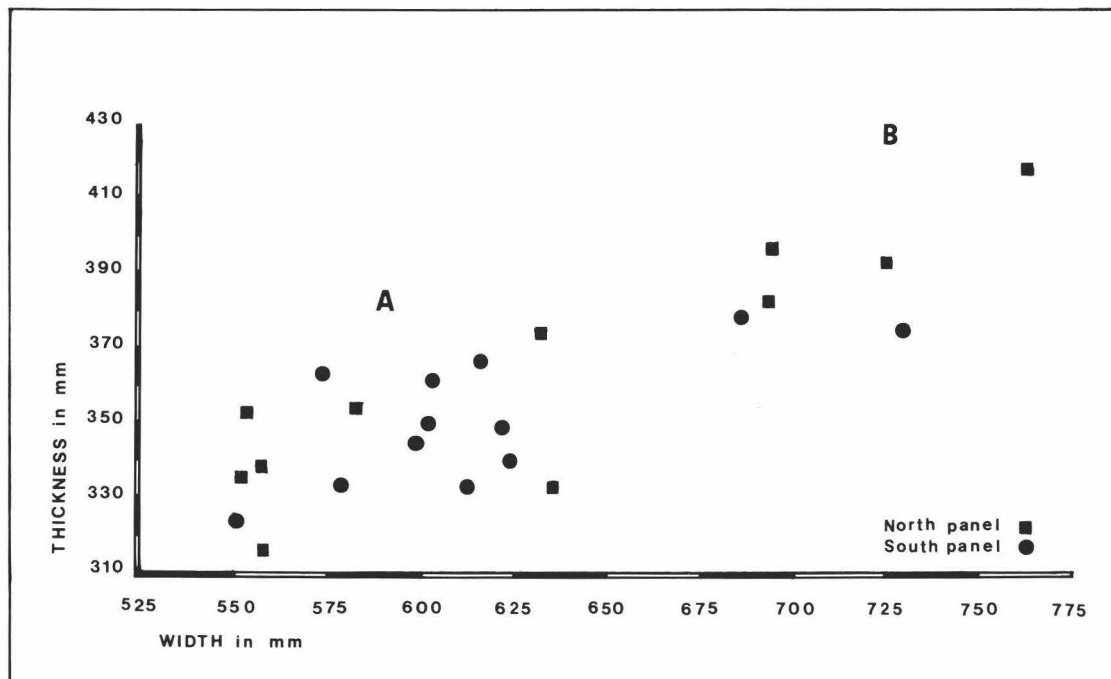


Fig. 3 Metrical analysis of distal measurements taken from the bone panels of Willingdon Pumphouse, showing two distinct groups: A—Metatarsals (mean width 591 mm.) and B—Metacarpals (mean width 715 mm.).

with animal bones and it may be that the Willingdon pumphouse is unique in this respect.

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References

- Beckett, A. 1933 'Willingdon Well-House', *Sussex County Magazine*, 7, 341.
- Beckett, A. 1935 'Willingdon Pump', *Sussex County Magazine*, 9, 577.
- Hartley, D. 1979 *Food in England*, (London: McDonald) 80.
- Macnaghten, A. 1983 'A Typical Sussex Man', *Country Life*, 25 August, 488.
- Woodall, N. M. 1963 'Bones in the Wall', *Country Life*, 1 August, 200.
- Woodward, G. 1961 'When Walking was no Pleasure', *Country Life*, 3 August, 237.
- Vine, W. J. 1978 *Old Willingdon*, Eastbourne: Webb & Reed, 68-71.

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Notes: Alphabetization is word-by-word. Place names with two elements of which the first is East, Greater, Old Upper, etc., are indexed under the first element. A page reference including n indicates a note, and a reference preceded by M indicates a sheet of microfiche. Other abbreviations: m., married; d., died; fl., flourished.

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