Excavations at Emwell Street, Warminster: the Early Economy and Environment of a Wiltshire Market Town

by R.W. Smith

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edited by
Julie Gardiner

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Acknowledgements

Bob Smith wrote: In directing the excavation and bringing it to publication I have received considerable encouragement and assistance from Wiltshire Field Archaeological Officer, Roy Canham (now County Archaeological Officer). His versatile handling of such disparate objects as wrecking bars and computer tapes will always be an inspiration. Of necessity, the working of this difficult urban site was restricted to experienced hands, indeed it is doubtful if uninitiated volunteers would have had the vision to see that the foul smelling, oil-soaked quagmire they worked in really would repay the effort of excavation. For giving their all with only an occasional complaint I am especially grateful to Adrian Barrance, Ann Beard, Judith Blades, Alison Borthwick, Julie Cave, Tim Darvill, Lesley Marshman, Martin Norgate, Andrea Smith, Jane Timby and Andrew Webb. Special thanks for providing those vital early morning cups of coffee are due to Sue Conrad.

As a result of the faith and interest shown in the project by Mr Stephen Dunmore the excavation received grant-aid from the Department of the Environment who additionally bore part of the cost involved in bringing its results to publication. Perhaps the biggest debt of all is owed to the (then) owner of the site who generously permitted excavation to take place ahead of building works and maintained a keen interest throughout its progress. That this, the first [*sic*] archaeological report on the town of Warminster, has reached publication is ultimately due to his selfless support and enthusiasm.
(28 June 1982)

Julie Gardiner would like to thank the various specialists who assisted in the final preparation of this report for publication, especially Rob Scaife for re-examining the plant remains against a minimum of available background information. Erica Hemming and S.E. James performed some surgery on the illustrations. The editing of the report was commissioned by Roy Canham and we would like to thank Duncan Coe, Assistant County Archaeologist, and Danny Howell, former Curator of the Dewey Museum, Warminster, for their assistance. The publication of the report has been funded by English Heritage and we thank Dr Geoffrey Wainwright and Tim Cromack for their support and encouragement.
(20 June 1997)

Excavations at Emwell Street, Warminster: the Early Economy and Environment of a Wiltshire Market Town

Excavations during 1979 on the fringes of Saxon Warminster have revealed evidence which suggests that the town's origins will eventually be traced to a nearby late Roman or early Saxon farmstead. Environmental studies illustrate how this primary settlement expanded into its surrounding landscape. Initially stock rearing and dairying appear to have been particularly important but from the 11th century onwards, the emphasis progressively moves towards 'sheep and corn' husbandry so typical of the medieval chalklands. Urban development, initiated in late Saxon times, impinged on the excavated site during the 11th century when Emwell Street was almost certainly a back street to the early urban quarter of the town. Activities taking place in the area during the medieval period include the smelting and forging of iron, butchery, and perhaps leather working and potting. By AD 1300 most of the town's commerce had shifted to a new, formally laid out, market area. Redundant in its former role, Emwell Street attracted some residential development, but sloping topography and a susceptibility to winter flooding appears to have inhibited most further building until the post-medieval period. The site produced an important assemblage of medieval pottery from the Crockerton kilns.

Introductory Note

by Julie Gardiner

The draft of this text was completed in 1982 by the late Bob Smith, formerly an Inspector of Ancient Monuments with The Historic Buildings and Monuments Commission (now English Heritage) who lived, and indeed is now buried, in Warminster. It was laid out as a series of short chapters and was intended to form part of a monograph on the market towns of Wiltshire (R. Canham, pers. comm.), in which another of Smith's draft reports, on excavations at Trowbridge Castle, was also to be included. For various reasons that volume never materialised and, following the untimely death of the author in 1987, the various sections of prepared text were effectively relegated to archive. The report on Trowbridge Castle was subsequently included in a volume in the *Wessex Archaeology Report* series (Smith 1993).

In April 1994 Wessex Archaeology was approached by the office of the County Archaeologist, Roy Canham, to assess the draft text for Emwell Street, which had recently come to light, with a view to updating it and rendering it suitable for publication. Most of the paper archive survived and the artefacts were extant in the Dewey Museum, Warminster, where they were briefly examined by the present writer. It was concluded that the report was very largely suitable for publication as it stood, and that it could be successfully updated and amended without the need for re-examination of the artefacts. There was one exception to this: the draft report includes a detailed discussion of the environmental background and sequence at the site, with specific reference to waterlogged plant macrofossils. However, although some identifications and notes provided by N. Bannister were in the archive, no specialist report was presented. Included with the artefacts in Warminster were several labelled glass bottles containing dried plant material, although it was not clear if this constituted the complete assemblage. In view of the lack of substantiated evidence for plant species in the existing report, and since it was possible to reassign the extant samples of material to the contexts from which they derived, it was recommended that they be examined by a specialist and both an archive and publication text prepared. This was the only 'new' work undertaken.

The report presented here is, therefore, very substantially that written by Bob Smith, with specialist contributions prepared at that time. The illustrations are also those prepared by Smith, some of which have been remounted, notably those of the pottery (by Liz James) and with a few minor errors corrected and damage repaired (by Erica Hemming). The various specialist sections of text have been checked and updated by current specialists (Michael Allen, David Hinton, Lorraine Mepham, Rebecca Montague and Robert Scaife) and the whole text edited by the present writer. Because it proved unnecessary to *rewrite* the report the original authors' names are retained at the head of each contribution with that of the individual responsible for the checking and updating provided in brackets. Where no authorship is cited the text is by Smith, edited by Gardiner. The only new section of text, apart from this introduction, is the report on the plant macroremains by Robert Scaife.

Inevitably, some problems were encountered in editing this report; there are some minor contradictions and ambiguities in both text and illustrations which it has not been possible to resolve from the existing archive. As it is no longer possible to discuss the matter with the excavator these have had to remain but notes are provided to indicate where these problems exist.

Bob Smith was a fine excavator and a good writer and illustrator. The archaeology of Warminster has rarely been investigated and this report therefore constitutes a major addition to our knowledge of the early development of the town. We are pleased to have been able to produce this important report on Bob's behalf with a minimum of alteration.

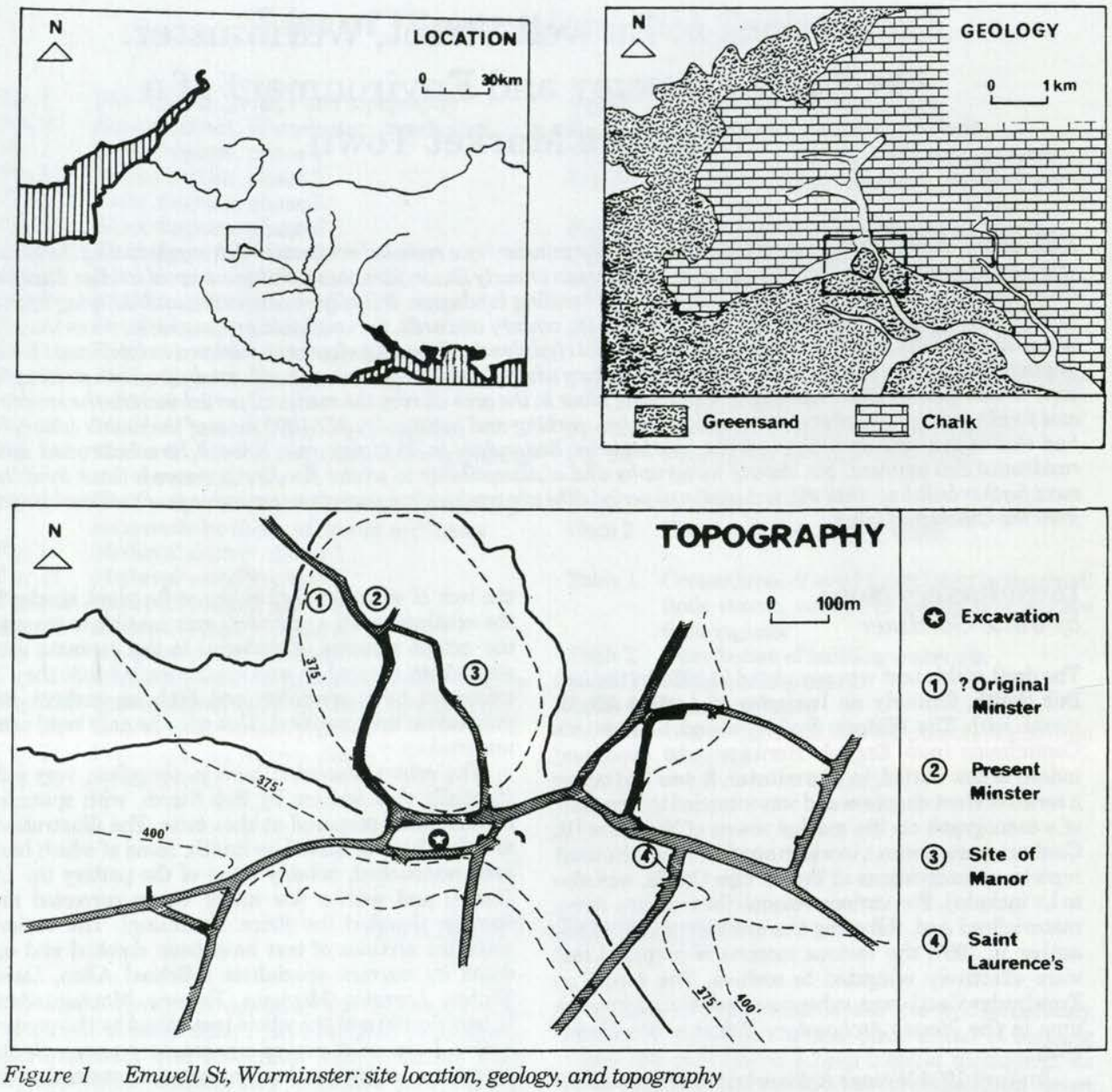


Figure 1 *Emwell St, Warminster: site location, geology, and topography*

The Site

The town of Warminster rests up the Upper Greensand in a vale crossed by numerous streams which, in flowing eastwards to join the River Wylye, have laid down shallow channels of alluvium. To the north lie chalk downs — the south-western edge of Salisbury Plain — whilst southwards the Greensand rises to form a ridge (Fig. 1).

The earliest part of Warminster, containing the Saxon manorial complex and the Minster, occupies an 'island' of elevated ground virtually encircled by two streams. One of these which is known locally as the Were and allegedly gave the town its name (*Were-minster*). As the Saxon settlement began to expand and acquire a semi-urban character it is thought that the area to the south, now occupied by Silver Street, was the focal point of such activity. Emwell Street (Fig. 1), situated immediately south of and parallel to Silver Street, would then have functioned as a rear access route and indeed was, until recently, known as Back Street. The two streets are separated by a stream-course which forms the southern boundary of the original Saxon nucleus.

In its present state Emwell Street is something of an urban backwater not much affected by the changes which have remodelled much of Warminster's architectural facade. The buildings along it are mostly at least 100 years old and many are large solid brick and stone houses. The latter, which include the Weymouth Arms public house, are considerably older and probably date from a time when merchants dealing through Warminster market resided in this quarter. Prior to excavation the plot which is the subject of the report was

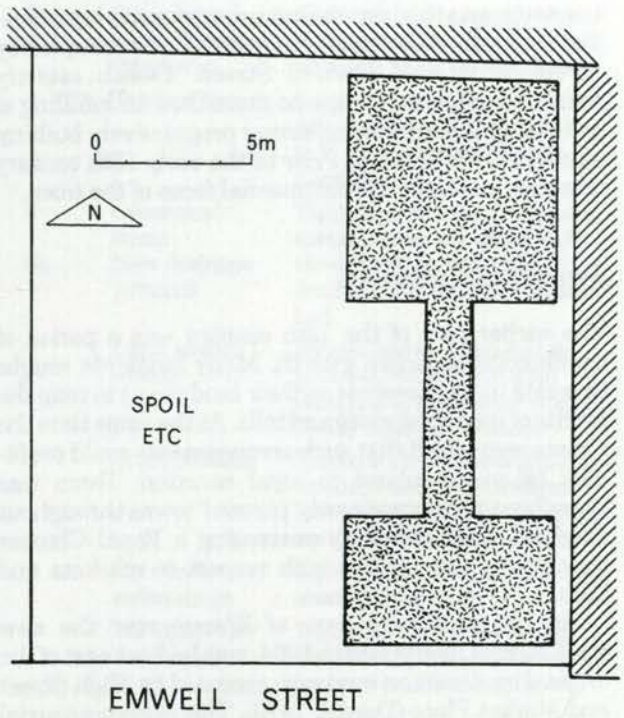


Figure 2 Emwell Street excavations: trench plan

covered by two conjoined corrugated iron sheds originally built to accommodate a mineral-water bottling plant. The premises later became a maintenance garage for a local motor coach firm. Houses have now been built over it.

The decision to excavate ahead of redevelopment in Emwell Street stemmed initially from routine monitoring of planning applications. In this particular case the area in question had already been identified as one of considerable archaeological interest (Haslam 1976, 63-4) since it was thought to contain the early urban nucleus of Warminster. Ostensibly, redevelopment offered an opportunity not only to record archaeological remains before they were destroyed but also to study the process by which Warminster was transformed from a rural hamlet to an early town.

An attraction of the redevelopment site was that it appeared to be in a low-lying area more likely to have been infilled than eroded and the only structures on it were lightweight sheds. Specifically it held the promise of a deep and largely undisturbed sequence of deposits dating from the earliest phase of urbanisation. There was also every indication that the lower layers would contain waterlogged remains capable of yielding useful environmental information. Outwardly the only drawback of the site was its small size (20 x 20 m) but given the time available for excavation and, more importantly, the question to be answered, it was considered to be wholly adequate.

In July of 1979 excavations, directed by the author, commenced with a team of workers drawn on a rotational basis from staff of the Wiltshire County Council Archaeology Section augmented by experienced volunteers. Work was completed in late September. Conduct of the excavation was pre-determined by two constraining factors — first the need to minimise subsoil disturbance in areas that would eventually carry new house foundations, and secondly, the small size of the site which would clearly hamper spoil dumping. In consultation with the developer, a dumb-bell shaped excavation area was pegged out so as to avoid excessive disturbance of foundation material. This was designed to give two open areas, one at the street edge and another at the back of the site with a transect trench 1.5 m wide connecting them (Fig. 2).

The strategy behind the layout was to maximise the chances of revealing structures on the street edge and any pit groups at the rear of the property while retaining a physical and stratigraphic link between them. In this respect the layout was satisfactory but the need to excavate to a greater depth than had been anticipated generated a soil dumping problem, exacerbated by the small size of the site, that was only overcome by transporting material away in skips. Furthermore as investigations reached important earlier medieval layers the watertable was crossed and flooding became an additional headache demanding use of a pump to keep the excavation open. Despite these problems, the project satisfied all its main aims and indeed in some cases, such as the need to recover environmental data, actually exceeded expectations.

Historical Narrative
(D.A. Hinton)

Origins

Although prehistoric and Roman settlements abound in the surrounding hinterland, no traces of pre-Saxon occupation have ever been recorded within the confines of the town itself. Indeed, Warminster is not specifically recorded as a settlement until the early 10th century although it is clear that reference is made to an established situation rather than a new development. The place name in the earliest form — *Worgemynster* — has been variously interpreted but the last element is uniformly taken to signify the existence of a monastery or large church. *Worgemynster* was also a manor owned by the Kings of Wessex and the centre of the Hundred that takes its name.

Collectively these three attributes point to settlement origin possibly as early as the 7th century since they are hallmarks of the early organisational structure of Wessex at a time when Church and Kings collaborated in establishing their control over loosely knit pagan communities.

Late Saxon Warminster

Quite apart from being in royal ownership the manor of Warminster was, from at least as early as the 10th century, described as a royal residence; thus when the *Domesday* surveyors recorded its obligation to accommodate the King and his household for one night each year they were referring to a long established tradition

(VCH II, 32). As would be expected, the true character of late Saxon Warminster cannot be derived from histor- ical evidence but it is known that moneyers working in the service of the King operated a mint here during the reign of Aethelred II (978–1016) and coins were still being struck long after the Conquest. For the first tolerably complete picture of Warminster we must turn to the *Domesday* survey, wherein the settlement is referred to as *Guerminstre* ('church or mynster on the river Were', which Haslam (1976, 63) considers to be a transliteration of the Saxon form.

Domesday

In many respects the *Domesday* survey of 1086 records a late Saxon landscape although many tenurial and legal arrangements had undergone changes as a result of the Conquest. Warminster, unlike its neighbour Westbury (also a large royal manor), was located within the eastern margins of the great forest of Selwood, indeed the forest is occasionally referred to in medieval records as Westbury Forest. Of the woodland, extending two leagues by two leagues, recorded in 1086, most if not all lay to the south and west of the manor; the present day Eastleigh, Southleigh and Norridge Woods being survivals of what was formerly perhaps a single large expanse. Most of the arable land, reckoned at 40 caracutes (possibly 2000 acres), could have been to the north and east on Greensand soils. Forty-two ploughs are recorded and grain production must have been important but it is difficult to see how it could have justified the operation of no less than seven mills. Either Warminster was acting as a grain processing centre, albeit in a modest way, for communities that lay beyond its boundaries, or the recorded mills were actually located at dependent settlements.

A total of 111 people are mentioned in the survey but since they are heads of household a true population nearer 500 souls may be inferred. Amongst these were 30 burgesses, a group of traders and craftsmen who served not only the needs of the estate itself but those of others dependent on it. Clearly the settlement was no ordinary rural manor, possessing many of the hallmarks of an early town.

Further hints that Warminster had a somewhat specialised economic role are given by the nature of the direct labour force available to the capital manor. Working of the demesne arable consisting of only six caracutes can hardly have occupied all of the 24 serfs living on the manor and some of these were probably engaged in non-agrarian tasks. Similarly the 13 pigmen living there indicate that intensive production of pork was taking place.

Organic Development

Although Warminster continued to be a royal holding after the Conquest it had, by 1156, been granted to the Constable of Sarum Castle and, as Haslam suggests (1976, 63), its new owner appears to have attempted to promote development. Reference to the layout of the town suggests that the earliest urban quarter lay immediately south of the manor in an area now occupied by Silver Street and Emwell Street. Twelth century development was perhaps no more that an infillling of an area that had been becoming progressively built up since the 10th century. Prior to the early 13th century this was, however, the commercial focus of the town.

Planned Extension

The earlier part of the 13th century was a period of unprecedented urban growth. Many landlords sought to create market centres on their lands so as to reap the profits of increased rents and tolls. At the same time the Crown recognised that such arrangements could profitably be made subject to royal sanction. There was therefore a plethora of newly 'planted' towns throughout England, each generally possessing a Royal Charter formalising their rights with respect to markets and fairs.

In the particular case of Warminster the new market, first mentioned in 1204, was laid out east of the original centre in an area now occupied by High Street and Market Place (Daniell 1879). This entrepreneurial venture may be attributed to the Maudit family to whom ownership of Warminster had passed in 1175, although it is possible that other local landlords were collaboratively involved.

Subsequent History

If market tolls are taken as a guide to the success of the new town, it is clear that Warminster did not really make significant commercial progress until the 1320s (Daniell 1879). However, once established it retained a thriving economy, based almost exclusively on the processing and marketing of grain, throughout the medieval period. The traveller Leland, writing in 1540, described the town as a great corn market and Aubrey noted that in his time (*c.* 1670) an average of 260 wagon loads of corn were brought to each market; 400 being recorded on one occasion. Important though the corn trade was, the town inevitably developed other commercial and industrial sidelines in keeping with its role of central place to an area of approximately 400 km^2.

The Excavated Sequence

The excavated sequence may be summarised as follows:

Phase		
0	Pre-existing deposits	Peat & silts overlying alluvial clay in aggrading watercourse
1	Primary features	Ditches & other features assoc. with 1st attempts to control drainage of site
2	Primary layers	Maintenance of ditches with stone rubble packed into soft parts of site surface

3	Secondary layers & stake structures	Continued dumping of refuse over most of site. Fresh attempts to control flooding
4	Tertiary layers	S. part of site under cultivation. Alluvial deposits accumulating in N. part. Further rubbish dumping
5	Greensand dump	Thick layer of fresh greensand spread across site as far as N.
5a	New drainage patterns	stream course. Promotes drainage. Dog burial in stream bed
6	Later stream course	Stream becomes chocked & polluted. Subsequent spoil dumping in this part of site finally infills old channel
7	Stone building	Traces of stone building founded on chalk blocks. Demolition leaves assoc. occupation refuse scattered across site
8	Garden & outbuildings	Land drains sink into site, barn erected afterwards
9	Mineral water bottling plant	Upper part of profile heavily disturbed by construction & occupation of bottling factory

Note: in the site records no independant numbers were assigned to individual cuts. In the descriptions which follow feature numbers refer to both the cut and the primary fills within them. Some layers do not have context numbers, though it is generally clear from the illustrations which layers are being discussed.

Plate 1 Woodman Mead in 1979 — the western fringes of Warminster as they may have looked in late Saxon times. Note the under-developed meadow divided by mature hedgerows and flanked by woodland

Phase 0: Pre-existing Deposits

Reference to the natural topography of the area clearly indicates that the excavations lay in a lowlying corridor of land channelling a watercourse which enters the town from (in 1979) meadows, known as Woodman Mead, to the west. Deposits observed at the base of the excavated profile therefore reflect a local environment of unimproved marshland and consist of green clays overlain by silty peat. Plate 1 illustrates the same topographical zone as it appeared in 1979 in Woodman Mead.

Circumstances surrounding formation of these early deposits are discussed in detail below, the colour and consistency of the clay mark it as derived from weathered Greensand probably with some admixture of chalk, as would be expected given the geological character of the area through which the stream flows. Although the depth of clay could not be determined it certainly occupied the whole span of the excavation site and probably at least 15 m further north. In effect it forms the floor of the shallow waterworn valley along which Emwell Street is laid out. No archaeological finds were made in this material.

The transition from clay-depositing to peat-forming conditions seems to reflect partial drying-out of the area sufficient to allow progressive colonisation by marshland vegetation. Assuming that the centre of the watercourse broadly equates with the northernmost point of excavation, peat reaches a maximum depth of c. 0.90 m and extends sideways to a presumed width of about 20 m, progressively thinning towards its edge. Pottery and other artefacts were found within its upper layers, probably having settled in from dumping horizons above, but the main body of peat was archaeologically sterile. It is suggested that the clay and most of the overlying peats were laid down under alluvial action in a period during which little or no human activity was taking place in the immediate vicinity.

Phase 1: Primary Features

In its natural state the clay surface slopes downwards from south to north, the overall drop in level being in the order of 1.5 m. As would be expected the first evidence for human activity on site is evidenced in the higher (drier) southern end of the excavation. This takes the form of a pattern of broadly contemporaneous ditches cut into the clay surface and aligned parallel with the watercourse axis. From south to north these are a shallow scoop (37); major ditch and bank (40, 38); small gully (36) and an irregularly cut ditch (32) (Figs 3 and 11).

The earliest features are probably ditches 32 and 40, the primary fills of which, being dark brown, clayey silts, indicate that they served to contain slow moving water for some time before becoming fouled by the refuse and spoil which accounts for their upper filling.

Ditch 32

Approximately 1.5 m wide and 0.40 m deep, with a bank to the south. After natural silting a layer of straw and manure (35), up to 0.20 m thick, was dumped across the southern flank of the ditch and then set alight causing the underlying clay surface to become fire-reddened. Domestic refuse was rarely encountered within these deposits.

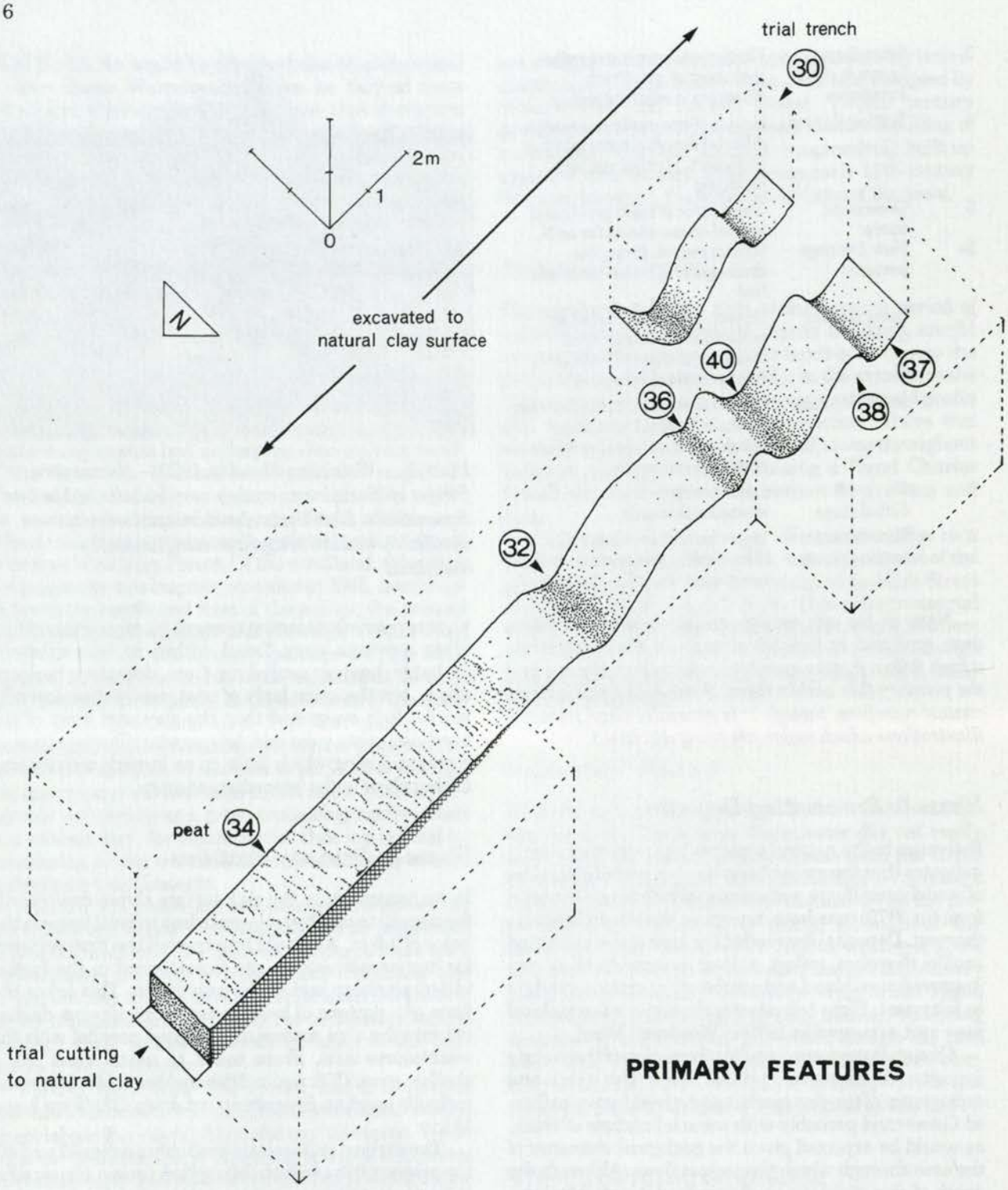


Figure 3 Block diagram, phase 1

Ditch 40

Maximum width 2.5 m and c. 0.55 m deep, with a slight bank to the south (38). The ditch (Pl. 2) similarly contained dark, clayey silt in the bottom, above which a mixture of dirty clay and greensand caused the feature to become almost entirely infilled. Resting over these deposits was a layer of burnt plant material similar in character to that noted in ditch 32. Domestic refuse was again rare.

Phase 2: Primary Layers

After an indeterminate length of time the ditches had become so choked that they cannot have served their original purpose of drainage and they were redug (Fig. 4). In both cases the new ditch appeared as a flat-bottomed, square-sided slot totally different in character to the original profile. Dating evidence is lacking from the southern recut (39) of ditch 40 but the recut (41) of ditch 32 fortunately contained many interesting finds.

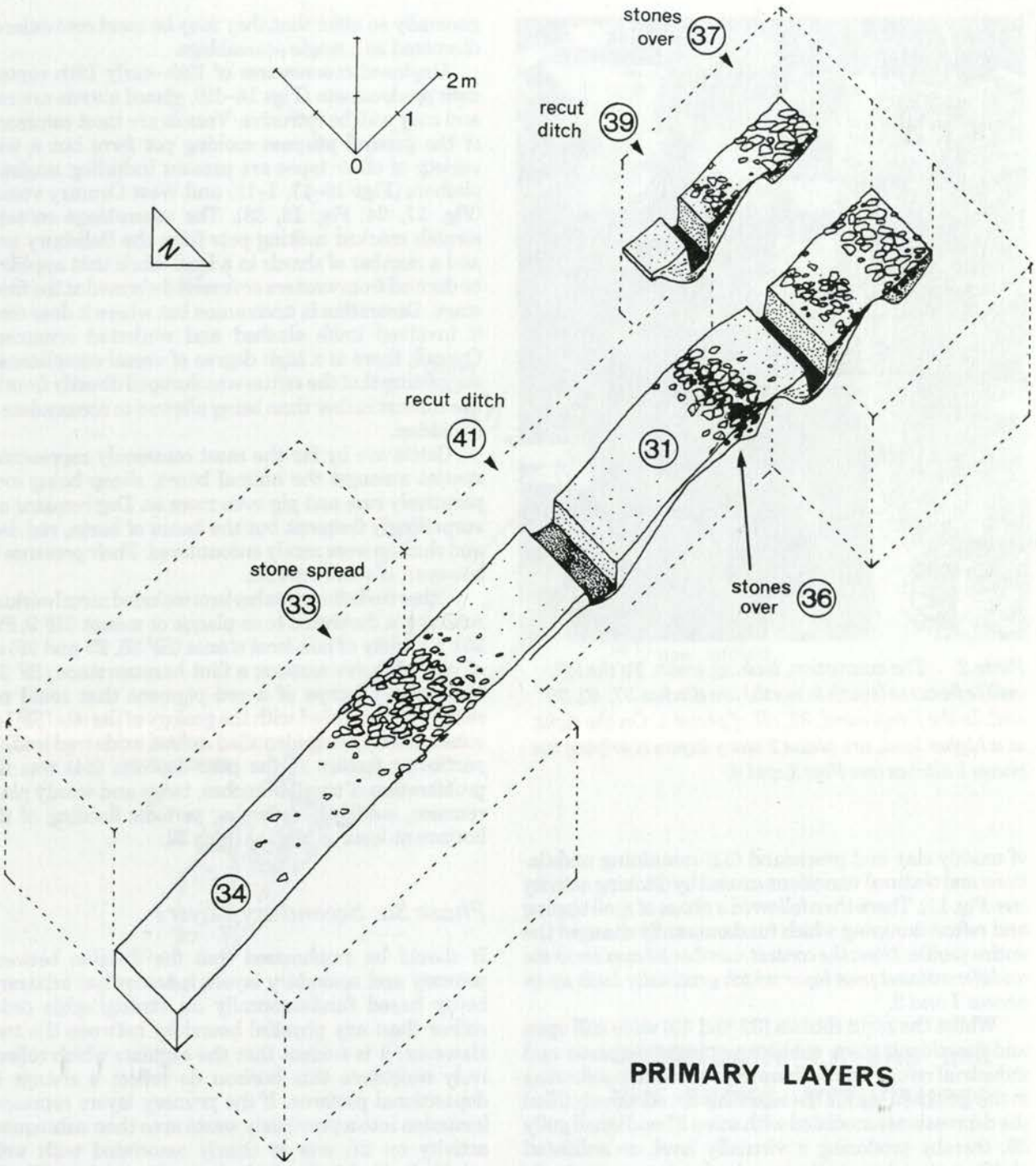


Figure 4 Block diagram, phase 2

For the first time domestic refuse is moderately common. Both recut ditches appear to have initially silted naturally under the action of slow moving water but then the northern recut (41) received a series of rubbish deposits. Straw and manure were again present but interspersed within it was animal bone and a number of substantially complete, unglazed, heavy cooking vessels (Fig. 16). In association was a wooden disc (SF 11; Fig. 26) which may originally have served as a lid to one of the pottery vessels alongside it. Sheep, cattle and pigs are all represented amongst the animal bone which, to judge from the elements present, looks more like butchery waste than the remains of a meal.

Following the re-establishment of ditches 32 and 40, the site appears to have become significantly less waterlogged. Peats which encroached into the original profile of 32 did not reform in its recut. Indeed it seems that peat formation generally slowed or stopped altogether. Thus the contemporaneous horizon consisted of an inactive peat layer (34) to the south of which lay a surface

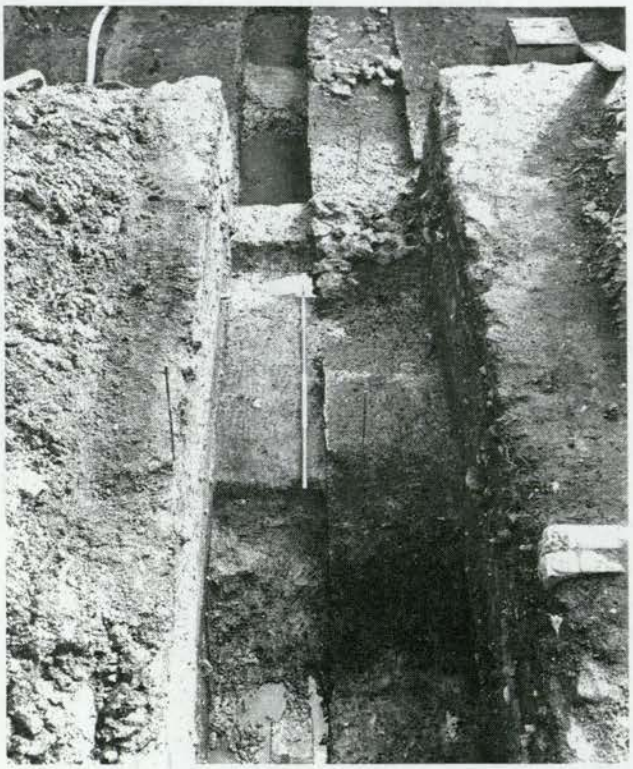


Plate 2 The excavation, looking south. To the left, visible features (south to north) are ditches 37, 40, 36 and, in the foreground, 32, all of phase 1. On the right, at a higher level, are phase 2 stony layers overlying the phase 1 ditches (see Figs 3 and 4)

of muddy clay and greensand (31) containing undulations and textural variations caused by ditching activity (see Fig. 11). There then followed a phase of spoil tipping and refuse dumping which fundamentally changed the entire profile. *Note: the context number 34 applies to the undifferentiated peat layer which gradually built up in phases 1 and 2.*

Whilst the recut ditches (32 and 40) were still open and functional, stone rubble containing domestic and industrial refuse was deliberately packed into soft areas in the southern part of the site. This act effectively filled the depressions associated with scoop 37 and small gully 36, thereby producing a virtually level, consolidated platform stretching to the marsh edge, interrupted only by the two main drainage ditches. Beyond ditch 32, to the north, a further band of rubble and refuse (33) was observed lying on the peat surface (34). Joining sherds of pottery from 31 and 33 indicate that the two contexts are broadly contemporaneous.

Whether these rubble bands were primarily laid so as to improve access into the marsh for refuse dumping purposes is difficult to determine but there is ample evidence that such activity did in fact take place. Logically, dumping in the furthermost peats (34) would tend to occur only after surfaces 31 and 33 had established, as is confirmed by the date of some of the associated pottery. However, all three groups of artefacts are generally so alike that they may be most conveniently discussed as a single assemblage.

Unglazed coarsewares of 12th–early 13th century date predominate (Figs 16–19); glazed sherds are rare and may well be intrusive. Vessels are most commonly of the general purpose cooking pot form but a wide variety of other types are present including unglazed pitchers (Figs 16–17, 1–12) and West Country vessels (Fig. 17, 24; Fig. 18, 38). The assemblage contains scratch marked cooking pots from the Salisbury area and a number of sherds in a local fabric that appear to be derived from wasters or vessels deformed at the firing stage. Decoration is uncommon but where it does occur it involved knife slashed and rouletted ornament. Overall, there is a high degree of vessel completeness suggesting that the refuse was dumped directly from its use context rather than being allowed to accumulate in a midden.

Cattle are by far the most commonly represented species amongst the animal bones, sheep being comparatively rare and pig even more so. Dog remains are surprisingly frequent but the bones of horse, red deer and chicken were rarely encountered. Their presence is, however, of some interest.

Other finds from this horizon included metalworking residues; a decorated bone plaque or mount (SF 9; Fig. 26); a variety of non-local stones (SF 25, 26 and 29) all of very abrasive texture; a flint hammerstone (SF 24) and sample lumps of a red pigment that could not readily be reconciled with the geology of the site (SF 14), subsequently being identified as lead oxide (red lead). A particular feature of the peat deposits (34) was the proliferation of small branches, twigs and woody plant remains, evidently reflecting periodic flooding of the horizon at least as high as ditch 32.

Phase 3a: Secondary Layers

It should be emphasised that the division between primary and secondary layers is somewhat arbitrary, being based fundamentally on stratigraphic order rather than any physical boundary between the two. However, it is evident that the contexts which collectively constitute this horizon do reflect a change in depositional patterns. If the primary layers represent incursion into a previously waste area then subsequent activity on the site is clearly associated with well-established habitation in the immediate vicinity (Fig. 5).

A noteworthy aspect of the secondary horizon is that the transverse ditches (32 and 40), which had previously been recut on at least one occasion, were allowed to fall into neglect. By the time secondary dumping began to impinge on the southern area, the ditches were almost certainly redundant and virtually infilled. Gully 27 occupies almost the same line as ditch 32 but cannot credibly be seen as a replacement since it was only 0.15–0.20 m deep and cut into a ground surface which bore no indications whatsoever of the latter's existence (Fig. 5). Whatever its intended purpose, this feature effectively marks the northern extent of soil and refuse deposits in the southern area which were recorded as layers 25, 26 and 29.

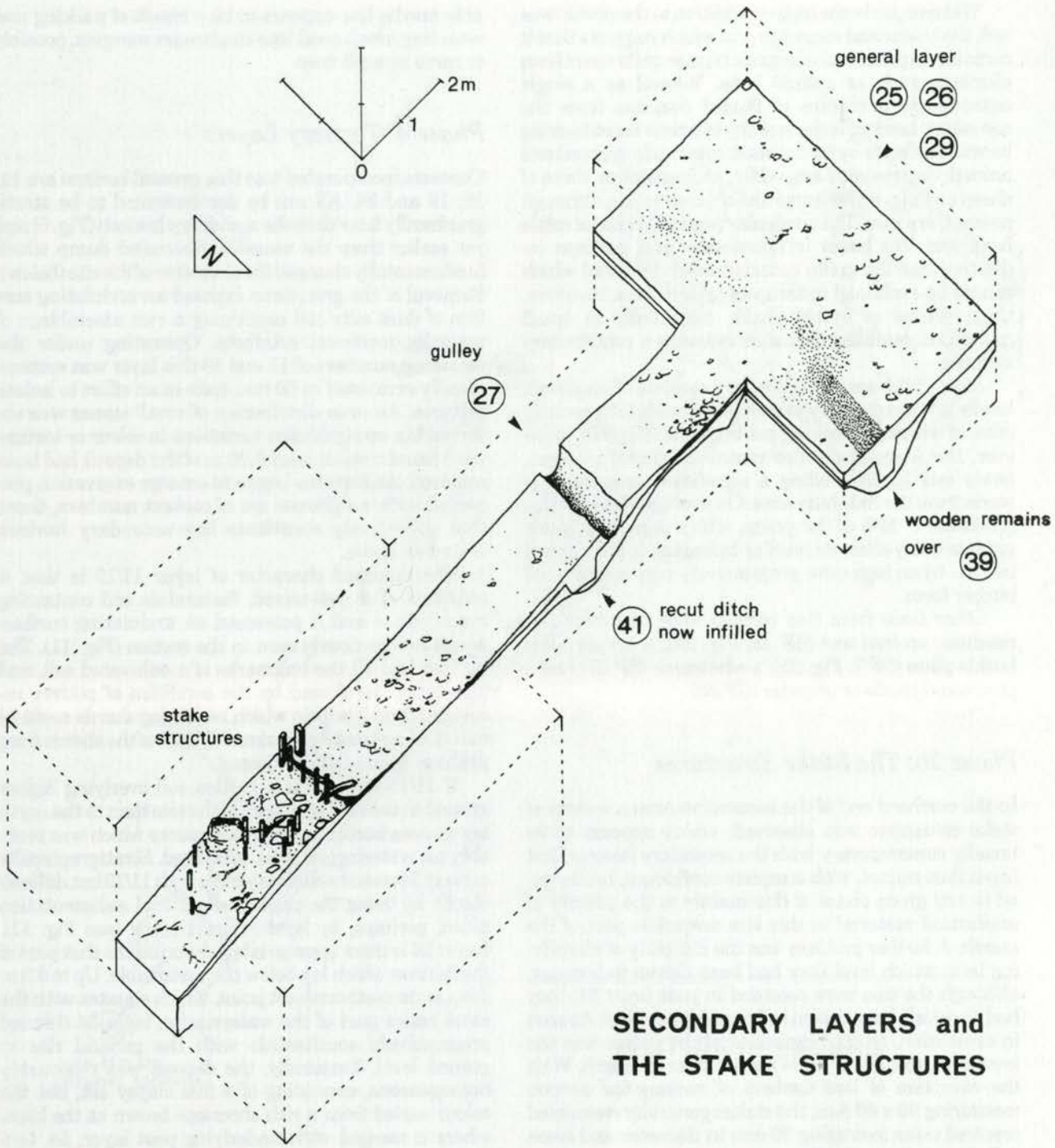


Figure 5 Block diagram, phase 3

Amidst a matric of dark, silty soil, averaging 0.15 m depth, artefact groups were observed to be distinctly clustered. At first it was thought that this pattern betrayed the presence of refuse pits but subsequent examination demonstrated that they merely reflected piecemeal dumping into a yielding ground surface. Stratified within this accumulation of soil and refuse was a thin film of carbonised material extending part way along the former line of ditch 40. With two distinct parallel edges *c.* 0.50 m apart, the line of charcoal initially seemed to be the remains of a wooden board that had burnt *in situ* but at its eastern end the feature became amorphous. The explanation of these remains could not, at the time of excavation, be resolved but, with hindsight, it is possible that the intention was to cover the soft filling of recut ditch 40 with redundant lengths of planking. *Note: this layer is unnumbered on Figs 5 and 11; it is not mentioned on the context sheets but is labelled on the relevant field plan as 'charcoal film'.*

Without doubt the biggest addition to the profile was soil, the colour and consistency of which suggests that it contained a great deal of organic matter quite apart from elements such as animal bone. Viewed as a single assemblage, a feature of faunal remains from the secondary horizon is the scarcity of prime meat-bearing bones. Cattle are by far the most commonly represented animal; dog remains are, oddly, as frequent as those of sheep and pig, whilst horse and chicken bones, although present, are rare. The particular predominance of cattle head and foot bones is noteworthy and perhaps indicative that the group contains much material which cannot be explained in terms of table refuse. However, the presence of oyster shells, admittedly in small quantities, confirms that such refuse is a contributory element.

Most of the associated pottery consists of unglazed, locally produced, utility vessels of probable 13th century date, of which the cooking pot is typical (Fig. 19). However, the assemblage also contained glazed pitchers, bowls and jugs including a significant proportion of wares from the Salisbury area. On average glazed wares constitute *c.* 15% of the group, which is perhaps most appropriately characterised as belonging to that period in time when jugs were progressively replacing the old pitcher form.

Other finds from this horizon were metalworking residues; an iron awl (SF 18; Fig. 25); a copper alloy buckle plate (SF 7; Fig. 25); a whetstone (SF 27) and a greensand pestle or pounder (SF 28).

Phase 3b: The Stake Structures

In the northern end of the excavation area a variety of stake structures was observed, which appears to be broadly contemporary with the secondary layers. That the stakes cannot, with complete confidence, be assigned to any given phase is due mainly to the paucity of artefactual material in this less accessible part of the marsh. A further problem was the difficulty of identifying from which level they had been driven in because, although the tips were recorded in peat layer 34, they had obviously been driven in from a higher level. As seen in excavation, all that remained of the stakes was the lowest portion, never more than 0.20 m in length. With the exception of two timbers of rectangular section measuring 50 x 40 mm, the stakes generally resembled coppiced poles averaging 30 mm in diameter and some still retained outer bark.

In terms of their arrangement, most stakes do not conform to any clear pattern although those on the southern fringe seemed to form a line running parallel to the contours of the slope into which they were driven (Fig. 5). Since some of these stakes were observed to have fragments of wattling adhering to them, the possibility exists that the linear element represents the remains of a hurdle held in position by pairs of rectangular stakes, as shown in Fig. 5. That this structure was within, or at the edge of, the watercourse traversing the site suggests a function connected with stream management. Similarly, the density of small branches and woody remains amongst stakes north of the probable hurdle line appears to be a result of packing and retaining brushwood into the stream margins, possibly to serve as a silt trap.

Phase 4: Tertiary Layers

Contexts incorporated into this general horizon are 11, 18, 19 and 24. All can be demonstrated to be stratigraphically later than the secondary horizon (Fig. 6) and yet earlier than the massive greensand dump which fundamentally changed the character of the site (below). Removal of the greensand exposed an undulating surface of dark silty soil containing a rich assemblage of typically medieval artefacts. Operating under the recording numbers of 11 and 19 this layer was systematically excavated in 50 mm spits in an effort to isolate features. An even distribution of small stones was observed but no significant variations in colour or texture were found until at least 0.20 m of the deposit had been removed. As features began to emerge excavation proceeded with a different set of context numbers, those that collectively constitute the secondary horizon described above.

The essential character of layer 11/19 is that it consisted of a well-mixed, featureless soil containing much refuse and it possessed an undulating surface, which can be clearly seen in the section (Fig. 11). The horizon had all the hallmarks of a cultivated soil, and impression reinforced by the condition of pottery recovered from it within which no joining sherds could be found. In contrast approximately 40% of the sherds from primary layers could be joined.

If 11/19 represents a garden soil overlying higher ground in the southern part of the site then to the north lay an area bordering the watercourse which was probably too waterlogged to be cultivated. Stratigraphically context 24 must be contemporary with 11/19 but differed chiefly by being the product of natural sedimentation aided, perhaps, by light refuse tipping (see Fig. 11). Layer 24 is most appropriately described as that part of the horizon which lay below the watertable. Up to 0.3 m deep at its northernmost point, which equates with the more active part of the watercourse, layer 24 thinned progressively southwards with the general rise in ground level. Texturally, the deposit was reasonably homogeneous, consisting of a fine clayey silt, but the colour varied from a rich chocolate brown at the base, where it merged with underlying peat layer, 34, to a bluish grey at the top through intermediate hues of grey–brown. Blue flecks (vivianite), derived from minerals within the silt were abundant throughout. The development of this part of the horizon is discussed in more detail below but it should be noted that a change in depositional circumstances is implied.

Occupying a high position within layer 24 a pocket of markedly different deposits at the northern end of the site was excavated under the separate context number 18. Here the prevailing matric of grey–brown silt was interleaved by lenses of coarser grey–green sand indicating the former existence of a more active part of the watercourse. Context 18 represents the late development of a stream channel within layer 24 which is, itself,

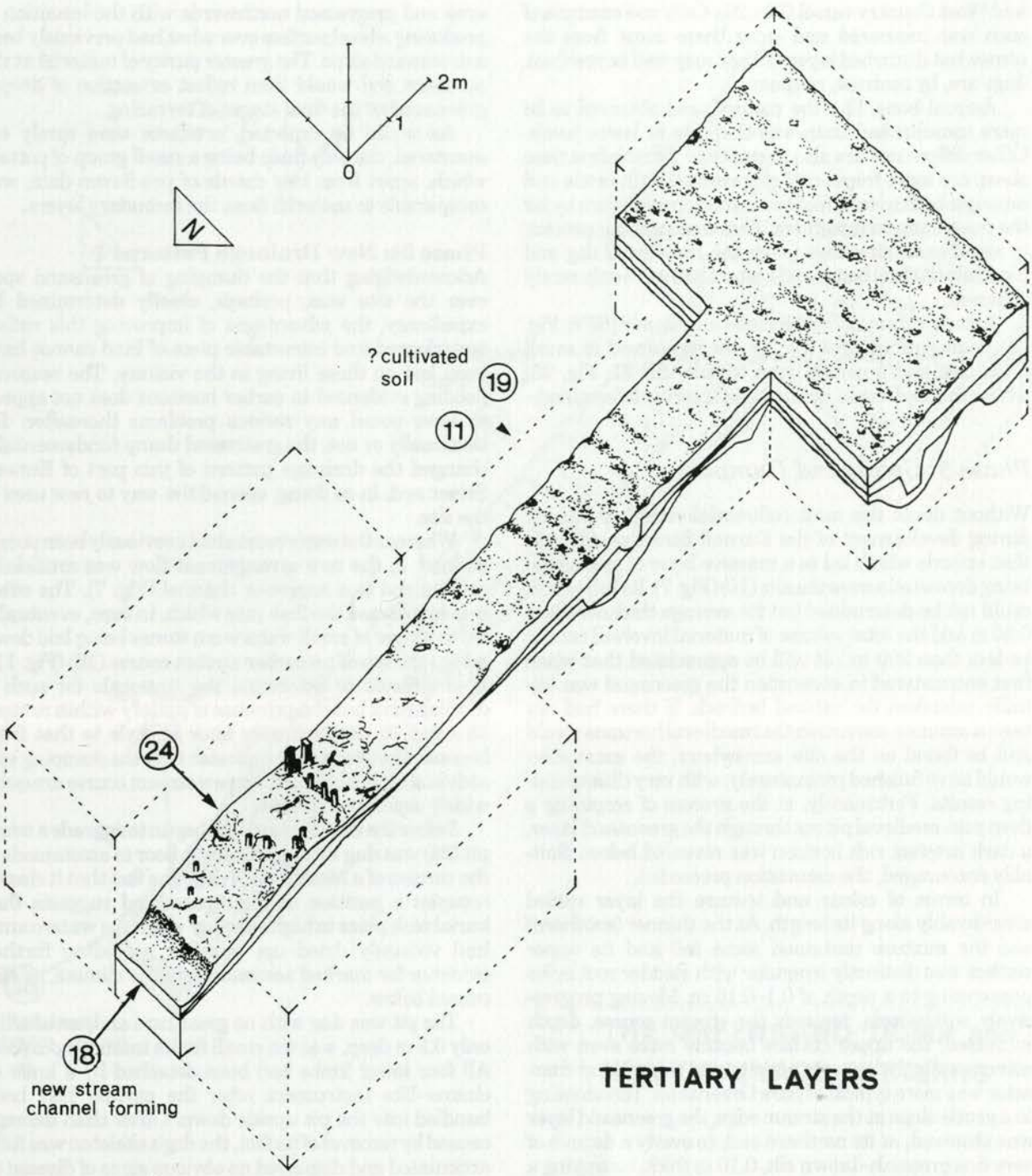


Figure 6 Block diagram, phase 4

an alluvial formation containing abundant woody remains testifying to periodic flooding.

It was clear during excavation that most refuse had been tipped over the southern (higher) part of the site. Associated pottery, when used as a chronological indicator for such activity, illustrates that, although the garden soil 11/19 continued to regularly receive refuse over a long period of time, dumping in the marsh edge (24) occurred infrequently and probably only during the earlier part of the time span represented by this horizon. Stream course 18 is, however, an exception, the pottery from it being markedly later in character with a very high proportion of glazed wares. Indeed it is possible that, although the context itself formed the tertiary phase, dumping of refuse within it did not take place until after the greensand dumping episode described below.

Apart from the predominance of unglazed general purpose vessels the pottery assemblage is characterised by the virtual disappearance of forms such as the pitcher

and West Country vessel (Fig. 20). Only one example of each was recovered and since these came from the somewhat disturbed layer 19 they may well be residual. Jugs are, by contrast, common.

Animal bone, like the pottery, was observed to be more comminuted than was the case in lower levels. Other differences are also in evidence. For the first time sheep are more frequently represented than cattle and amongst both species foot bones (metapodials) are by far the most numerous element. Less common, but present in significant quantities, were the remains of dog and pig while chicken bones and oyster shell were only rarely observed.

Associated small finds include an iron awl (SF 6; Fig. 25), a quern fragment (SF 32; *not mentioned in small finds list*) and a conical lead ferrule (SF 21; Fig. 25) whose function could not be satisfactorily determined.

Phase 5: Greensand Dumping

Without doubt the most influential round of activity during development of the Emwell Street profile was that episode which led to a massive layer of greensand being deposited across the site (10) (Fig. 7). Its full extent could not be determined but its average thickness was 0.50 m and the total volume of material involved cannot be less than 200 m^3. It will be appreciated that when first encountered in excavation the greensand was initially mistaken for natural bedrock. If there had not been a common conviction that medieval horizons would still be found on the site somewhere, the excavation would have finished prematurely, with very disappointing results. Fortunately, in the process of emptying a deep post-medieval pit cut through the greensand layer, a dark artefact rich horizon was revealed below. Suitably encouraged, the excavation proceeded.

In terms of colour and texture the layer varied considerably along its length. At the thinner (southern) end the mixture contained some soil and its upper surface was distinctly irregular with slender root holes penetrating to a depth of 0.1–0.15 m. Moving progressively northwards, towards the stream course, depth increased, the upper surface became more even with correspondingly less root activity and the general character was more typical of pure Greensand. Terminating in a gentle slope at the stream edge, the greensand layer was observed, at its northern end, to overly a deposit of very fine greenish–brown silt, 0.10 m thick, occupying a depression in the surface below (*un-numbered but shown on Fig. 11, top*). Given the stream edge position of the silt it seems reasonable to assume that it represents sediment dropped during a phase when the stream overflowed beyond the slight natural levee that had formed at its edge (see Fig. 11). Thus the greensand layer appeared to have been laid shortly after an episode of flooding.

The greensand was, despite its natural textural variation, a single unit and it is difficult to see it as anything but the result of terracing for house platforms in the slope that adjoins the southern end of the excavation. Viewed within this framework it may be suggested that spoil dumping started in the southern area and progressed northwards with the intention of producing a level surface over what had previously been a downward slope. The greater purity of material at the northern end would then reflect extraction of deeper greensand in the final stages of terracing.

As would be expected, artefacts were rarely encountered, the only finds being a small group of pottery which, apart from two sherds of pre-Saxon date, was comparable to material from the secondary layers.

Phase 5a: New Drainage Patterns

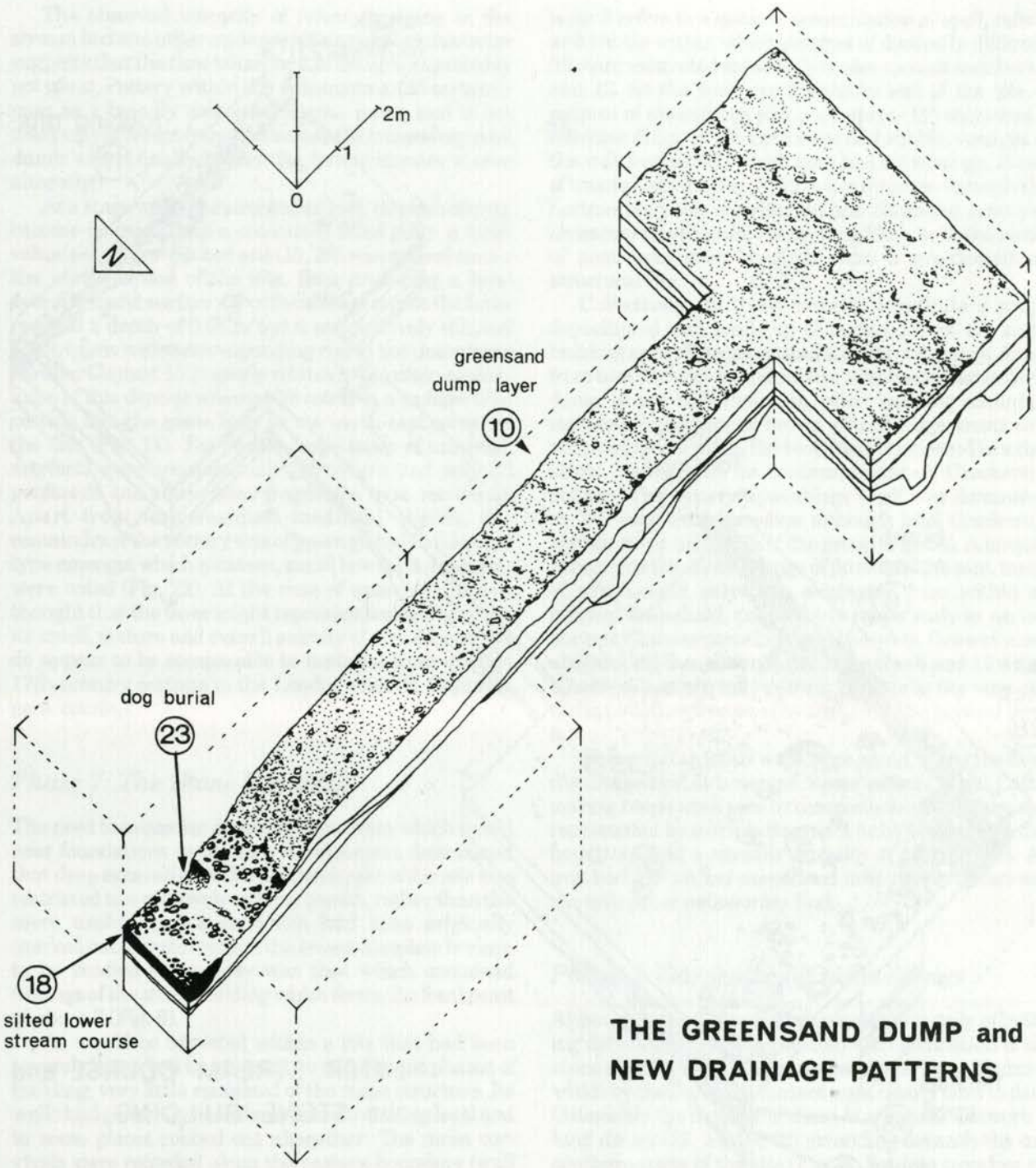
Acknowledging that the dumping of greensand spoil over the site was, perhaps, chiefly determined by expediency, the advantages of improving this rather waterlogged and intractable piece of land cannot have been lost on those living in the vicinity. The seasonal flooding evidenced in earlier horizons does not appear to have posed any serious problems thereafter. Intentionally or not, the greensand dump fundamentally changed the drainage pattern of this part of Emwell Street and, in so doing, opened the way to new uses of the site.

Whereas the watercourse had previously been poorly defined, in the new arrangement flow was artificially constrained to a narrower channel (Fig. 7). The effect was to increase the flow rate which, in turn, eventually led to a layer of small waterworn stones being laid down across the top of an earlier stream course (18) (Fig. 11). It is difficult to determine the timescale for such a development but the presence of pottery within context 18 which is demonstrably later in style to that from beneath the greensand indicates that the dumping episode and stabilisation of the new stream course are quite widely separated in time.

Before the new channel had begun to aggrade a small pit (23) was dug through its stony floor to accommodate the carcass of a Mastiff sized dog. The fact that it clearly occupies a position in the stream bed suggests that burial took place in high summer when the watercourse had virtually dried up, possibly providing further evidence for marked seasonality in the climate, as discussed below.

The pit was dug with no great care and, measuring only 0.3 m deep, was too small for its intended purpose. All four lower limbs had been detached by a knife or cleaver-like instrument after the carcass had been bundled into the pit upside down. Other than damage caused by removal of its feet, the dog's skeleton was fully articulated and displayed no obvious signs of disease or injury. Indeed, it gave every indication of having been a well-fed, healthy animal. Associated with the burial was a group of unrelated animal bone amongst which sheep metapodials were the most numerous element, as they had been in the tertiary horizon. The context yielded only two sherds of pottery which could not be reliably dated.

Contemporaneous activity over the rest of the site appears to have been minimal. Theoretically the new greensand surface was dry enough to have accommodated buildings in the later medieval period but no structural traces were recorded. Whilst this lack of features may be due to post-medieval disturbance it must be pointed out that late medieval refuse was only



THE GREENSAND DUMP and NEW DRAINAGE PATTERNS

Figure 7 Block diagram, phase 5

recovered from the stream course. If the site had been occupied such remains should have been recovered as residual material in later horizons but that was not the case.

Phase 6: The Later Stream Course

Following deposition of a stony layer across its floor and the insertion of the dog burial, the stream appears thereafter to have slowly aggraded. Eventually its channel became choked by a build-up of black silt averaging 0.25 m in depth, within which lenses of grey sand were interleaved (16) (Fig. 8). A distinctive aspect of the deposit was its pungent smell, an attribute which, when considered in conjunction with the blackened nature of the sediment, suggested that the stream was heavily polluted.

Faunal remains again predominantly consisted of sheep metapodials with an unusually common occur-

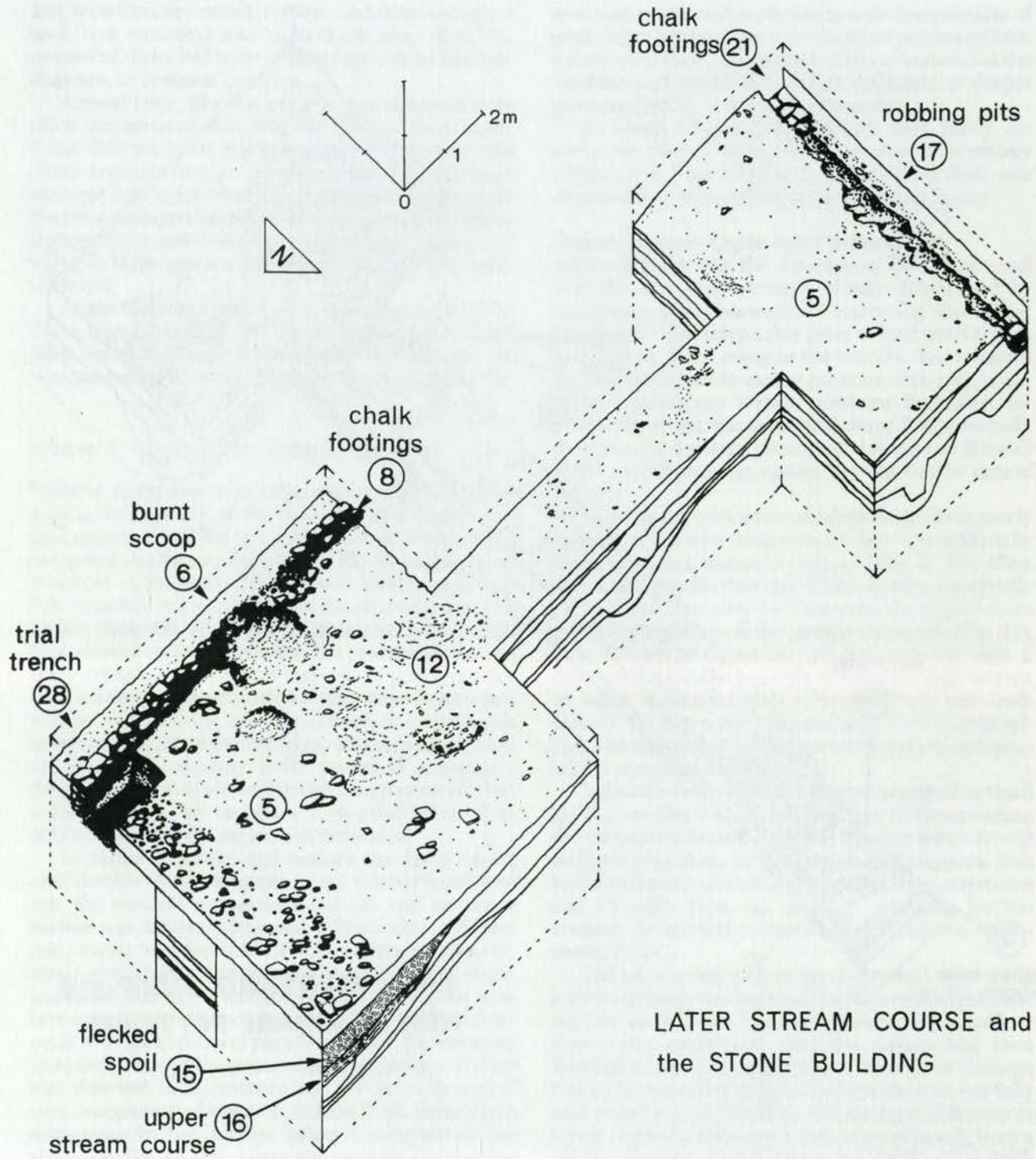


Figure 8 Block diagram, phase 6 and 7

rence of dog bones. Associated pottery included two medieval sherds but the majority was a refined green glazed type thought to have been produced in 16th century kilns at nearby Crockerton (Fig. 23). Two small bowls or cups, and the handle from a meat dish were the only recognisable pieces, some of which had been decorated by the sgraffito technique.

For such a restricted context the number of small finds recovered was high. From the very base of the sediments came a decorated bone handled table knife (SF 12; Fig. 25), while objects found at a higher level included a wooden heeled leather shoe (SF 2), a small iron wedge (SF 23; Fig. 25) and a stone rubber (SF 31; *not mentioned in small finds list*).

The observed intensity of refuse dumping in the stream bed and other evidence for its polluted character suggests that the time taken for it to silt up was probably not great. Pottery within the sediments could certainly pass as a broadly contemporaneous group and is not markedly different from that within the succeeding spoil dump which finally buried the former stream course altogether.

At a stage when the stream bed had, through silting, become no more than a seasonally filled gully, a large volume of ginger-flecked soil (15, 28) was spread across the northern end of the site, thus producing a level overall ground surface. Over the stream course the layer reached a depth of 0.60 m but it progressively thinned southwards with a corresponding rise in the underlying surface. Context 15 properly relates to the main exploitation of this deposit whereas 28 refers to a smaller trial cutting into the same body in the north-east corner of the site (Fig. 11). For such a large mass of material, artefacts were conspicuously infrequent and only 22 potsherds and seven bone fragments were recovered. Apart from four residual medieval sherds, the remainder of the pottery was of green glazed Crockerton type amongst which a cistern, small bowl and pancheon were noted (Fig. 23). At the time of excavation it was thought that the layer might represent derived cess and its smell, texture and overall scarcity of domestic refuse do appear to be comparable to material from unlined 17th century cesspits in the London area (R. Canham, pers. comm.).

Phase 7: The Stone Building

The need to minimise disturbance to areas which would bear foundations in the new development determined that deep excavation of the northern part of the site was restricted to a relatively narrow trench, rather than the more useful open area which had been originally marked out. For this reason the lowest complete horizon to be studied extensively was that which contained footings of the stone building which forms the focal point of phase 7 (Fig. 8).

As would be expected within a site that had been severely disturbed by at least two subsequent phases of building, very little remained of the stone structure. Its walls had generally been demolished to footing level and in some places robbed out altogether. The main survivals were recorded along the eastern boundary (wall 8) where roughly-dressed greensand stonework was intermittently observed in position over a line of chalk blocks 0.36 m wide. In the north-east angle of the northern area footings butted onto a well-made foundation of greensand blocks that extended along the northern edge of the excavation beneath an existing and obviously later concrete block wall. To the south an identical line of chalk block footings (21) were seen to have originally occupied a position parallel to, and only slightly removed from, the edge of Emwell Street.

The extent to which this building was destroyed and its contemporary horizon disturbed means that its function and occupancy can only be perceived within those contexts that relate to its demise. Extending overall, layer 5 refers to a general accumulation of spoil, refuse and rubble within which patches of distinctly different fill were excavated separately under context numbers 6 and 12. At the southern (roadside) end of the site, a pattern of amorphous pits and scoops (17) contained a common filling of mortar lumps and rubble, vestiges of the wall footing (21) which they had cut through. Zones of intense burning (eg. 6, 12) were common through the horizon but their distribution and character conveyed an impression that they were more likely to be the result of post-demolition bonfires than a pre-demolition structural fire.

Collectively, all these contexts constitute a single depositional unit made up of material from the stone building and refuse associated with its occupancy. Apart from tumbled stones and rubble, which was particularly dense in the northern area, other building materials included fragments of brown glazed ridge crests and various types of plain, flat roof tiles all rendered in a clay fabric comparable to contemporaneous Crockerton pottery. The pottery assemblage itself was dominated by Verwood earthernwares although local Crockerton vessels made up c. 25% of the group (Fig. 23). A notable aspect was the diverse range of finewares present, many of which could only have originated from within an affluent household, particularly items such as an important Chinese porcelain cup. However, finewares are absent from demolition features such as 6 and 12 which otherwise contain only pottery datable to the very end of the period represented by that from the general layer 5.

Sheep metapodials were, once again, by far the most common element amongst waste animal bone. Cattle and pig bones were rare by comparison and chicken was represented by a single fragment only. The horizon did, however, yield a sizeable quantity of oyster shells. An iron awl (SF 16; *not mentioned in small finds list*) was the only other noteworthy find.

Phase 8: Garden and Outbuildings

Although layer 5 was seen to consist primarily of building debris and refuse associated with demolition of the stone structure it also encompassed a variety of features which by their artefact content were clearly later in date. Ostensibly the earliest of these is a regular network of land drains (13, 14, 20, 22) extending beneath the mid southern parts of the site (Fig. 9). Set into trenches cut deep into the profile, each element consisted of limestone capping slabs resting on unmortared brick side walls forming a simple unlined culvert. The three lateral lines feeding into a central drain were evidently designed to collect ground water and pass it into a roadside culvert on the southern edge of the site. The system was still intact and performing this function when encountered by excavation.

Within the central transect trench two staddlestones were observed to be resting on the land drain capping slabs and therefore, stratigraphically later than that system although generally of the same period. With the exception of some small residual sherds all pottery from backfilling of the drainage trenches was 19th century,

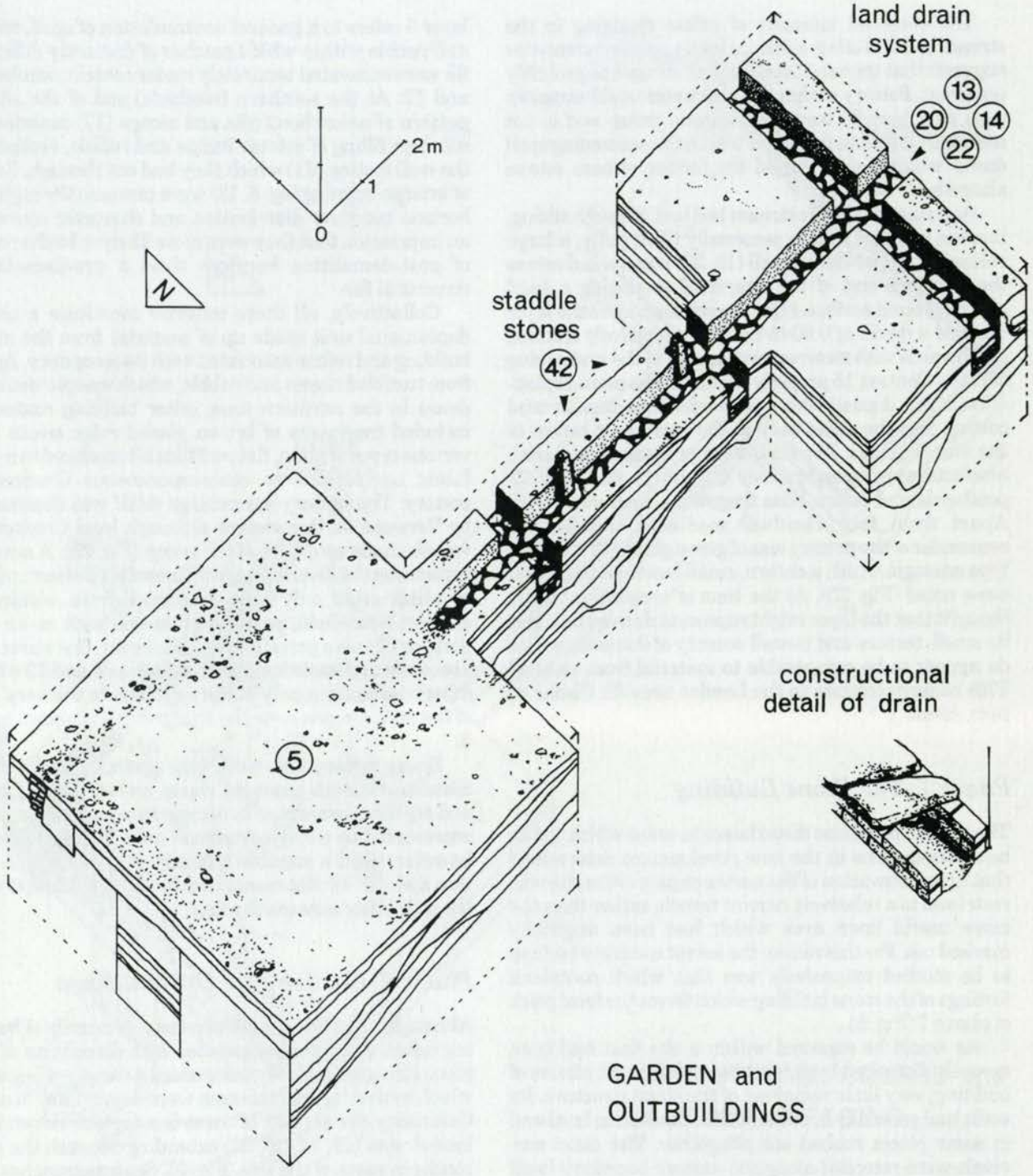


Figure 9 Block diagram, phase 8

either of later Verwood type or transfer printed. There were no other significant finds.

Phase 9: The Mineral Water Bottling Plant

At the northern end of the site the upper surface of layer 5 had been cut down to accommodate a rectangular brick built structure (4). Spoil generated by this activity (3) was dumped within the foundations. On the western side of the building lay a brick-built drainage system (2) connected to the roadside sewer (Fig. 10).

The area south of the building had been in use as a refuse dump for many years prior to excavation. Once this accumulation had been removed the underlying layer (1) was seen to have been severely disturbed by a variety of pits, post-holes and other minor excavations (eg. 7, 9, etc). Most of these features had been cut through a thin layer of ash and burnt material but all contained fragments of glass and stoneware lemonade

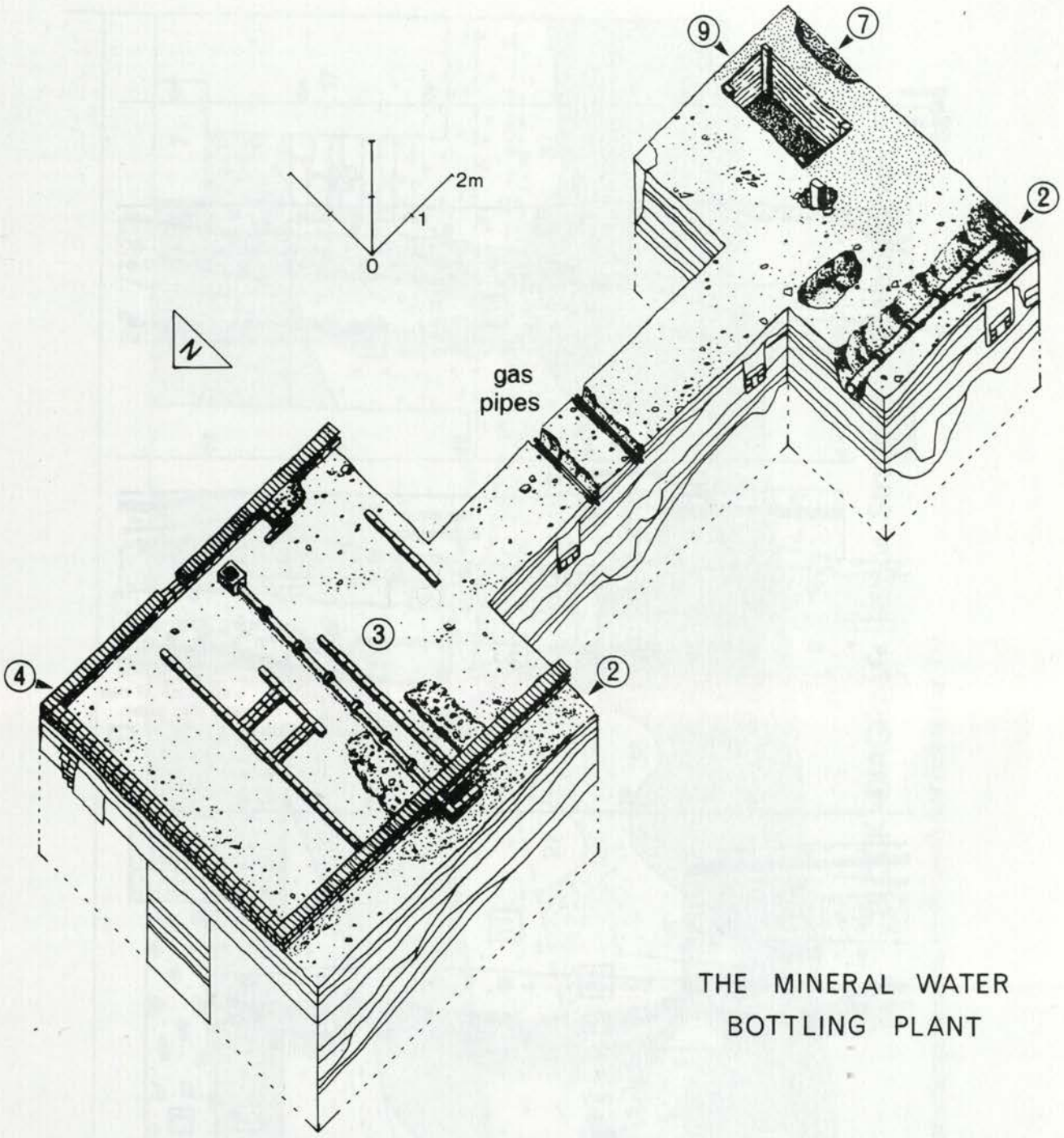


Figure 10 Block diagram, phase 9

bottles. Indeed such bottles proliferated throughout the general horizon proving that the brick building was the mineral water bottling plant known to have occupied the site within living memory.

Dating the Sequence

The site did not yield any coins or closely datable small finds and historical evidence is available only for the last three centuries of its occupation. Chronology has therefore been assessed almost exclusively from stratified pottery groups. Figure 11 presents the main north–south section across the site and Figure 12 summarises the major stratigraphic units.

a. *Pre-existing deposits* Since artefact material from the peats is considered to be wholly intrusive, they cannot be directly dated. However, with regard to peat growth rates and the prevailing environmental circumstances it may be suggested that the time taken for this layer to form was in the order of 300–500 years. Even allowing for the possibility

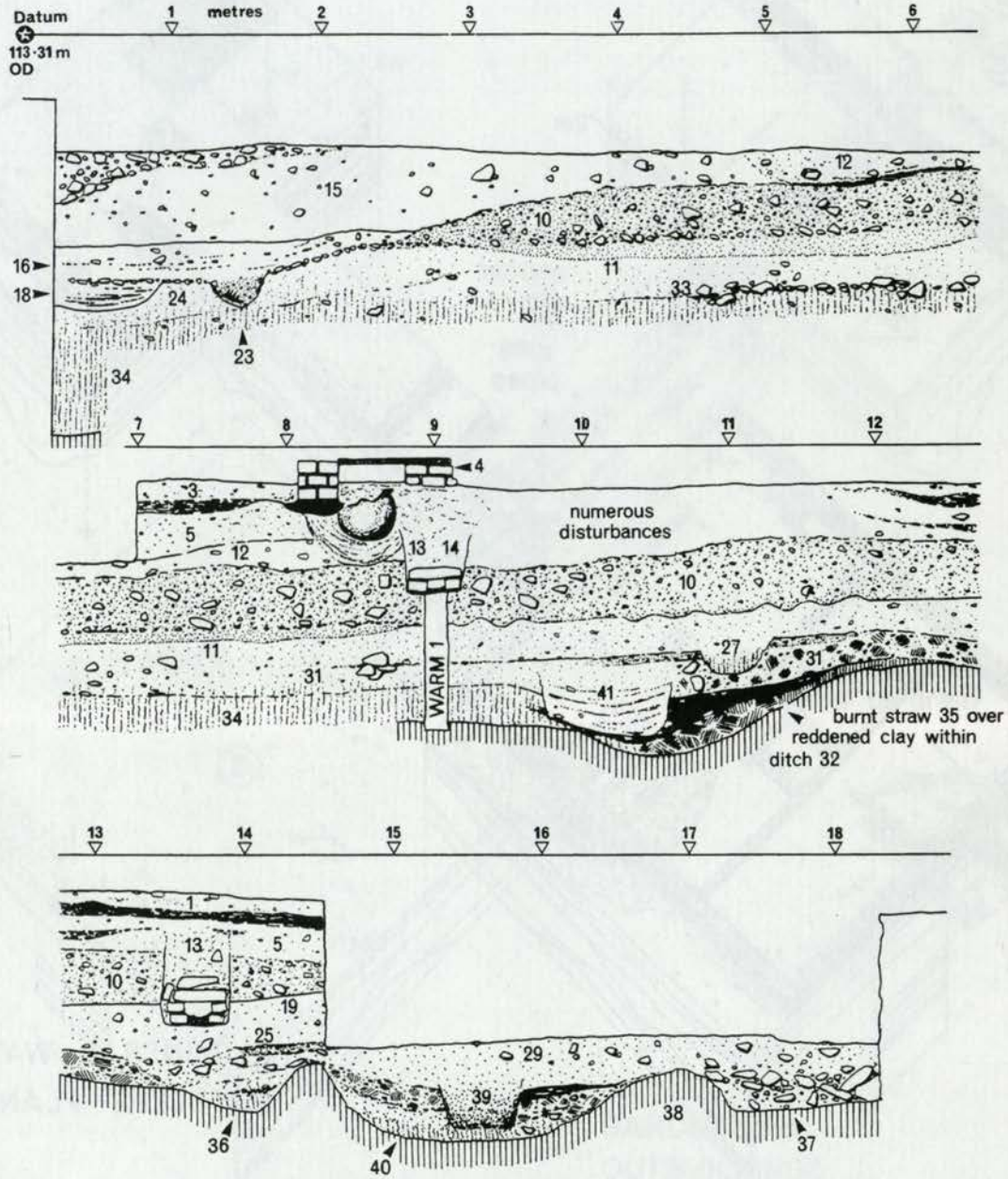


Figure 11 The main north–south section (note that no key was provided with the original, but see text for layer descriptions)

of compaction, which is difficult to observe, the span involved is still almost certainly less than 1000 years. Since features associated with a standstill in peat forming conditions are dated to the 11th century it would seem that the layer started to form in the period AD 700–900, although an origin within late Roman times cannot be ruled out.

b. *Phase 1: primary features* The date of these contexts must be derived from their pottery which consists exclusively of hand-built, plain cooking vessels, most with unthickened rims and convex bases. The forms themselves are not closely datable but an absence within the assemblage of glazed wares, West Country vessels, pitchers and bowls points, on present evidence, to a date not later than the mid 11th century. By comparison, a

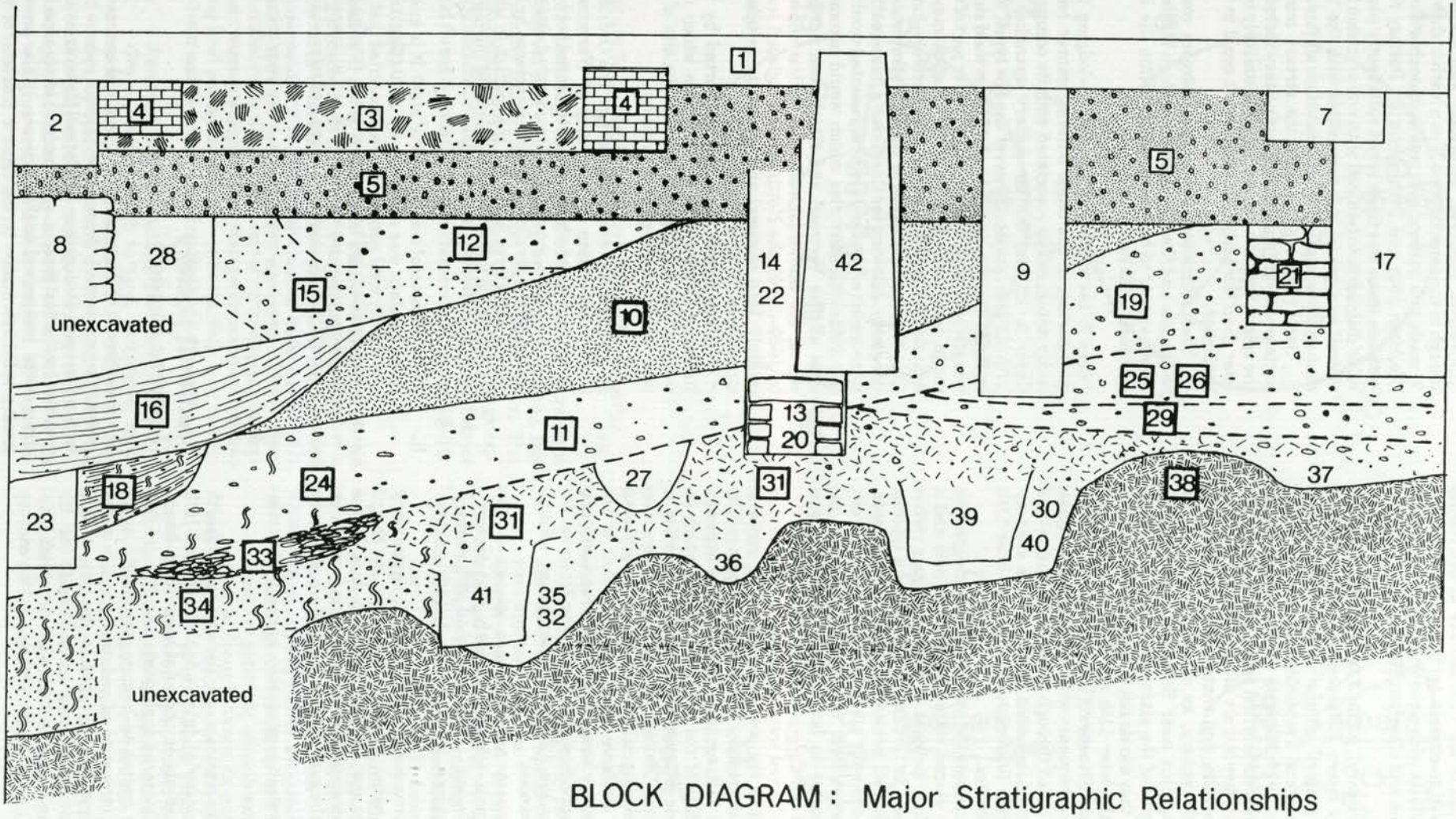


Figure 12 Block diagram of major stratigraphic units, north–south (see note to Fig. 11)

coin-dated pit of the 11th century at Old Sarum was observed to contain early pitchers and West Country vessels with an overall glazed proportion of 8% (Stone and Charlton 1935, 185).

c. *Phase 2 (primary), phase 3 (secondary) and phase 4 (tertiary) layers* Reference to other stratified medieval pottery groups in the area, eg Old Sarum, Bath and Trowbridge (Musty and Rahtz 1964; Vince, 1979; Mepham 1993) establishes that West Country vessels first appear in Wessex in the late 11th century but are most widely used during the 12th century and that they persist into the earlier 13th century, as shown by finds at the Laverstock kilns near Salisbury (Musty *et al.* 1969). Origins of the pitcher lie in the late Saxon period but they too do not come into wide circulation until the later 11th and 12th centuries and rarely appear in contexts later than the early 13th century. The frequency with which these two types were distributed through primary, secondary and tertiary layers indicates that the time span involved in their formation was from the later 11th to 13th centuries.

Other comparable trends are the progressive increase in glazed wares from 6% to 24% and a corresponding increase in the use of jugs rather than pitchers. In tertiary layers almost a quarter (by weight) of all pottery consisted of jug sherds, the most common type being a tall, narrow, straight-necked form which at Southampton, for example, occurs in late 13th–14th century contexts (Platt and Coleman-Smith 1975).

These observed trends, which are discussed in more detail in the pottery report itself, serve to indicate that primary layers began to accumulate in the later 11th century. This would be expected given the date of the primary features which on stratigraphic grounds are only slightly earlier in the sequence. Division of the three layers into precise chronological periods cannot be achieved on pottery evidence alone but then that is not really necessary since they merely represent one prolonged episode of refuse dumping. However, for convenience the following chronological scheme may be advanced:

Primary layers — later 11th–early 12th century
Secondary layers — later 12th–mid 13th century
Tertiary layers — later 13th–early 14th century

d. *Phase 5: greensand dump* Since the layer is clearly derived material the few sherds of pottery that it contained cannot be used to infer a date for the event. A more appropriate indication is given by finds from the surface beneath it which cannot be later than the early 14th century. Here the style of the Laverstock jugs is taken as being most relevant.

e. *Phase 6: later stream course* To judge by the dearth of artefact material datable to the 14th and 15th centuries, activity on site, or at least refuse dumping, virtually ceased during this time. The artefact record only begins to become meaningful again during the formation of sediments in the upper stream course (16). Located at the base of this deposit, a decorated bone handled knife (SF 12) exhibits a hafting style with a bolster which Hayward (1957, 4) has suggested was a 16th century innovation. However, stratified well above it, though in the same deposit, was a leather shoe (SF 2) made to a pattern that was fashionable during the later 15th and 16th centuries. Pottery from between these two finds is not sufficiently plentiful or diagnostic to be dated with any precision but, viewed as a group, it is compatible with the 16th century date implied by associated small finds.

Spoil (15), used to infill the stream course, contained a very similar range of pottery including the spigot boss of a cistern which is unlikely to be later than the early 17th century. It could in fact be earlier.

Thus formation of the upper stream course sediments and the spoil dumping which infilled it would appear to be encompassed within the 16th and early 17th centuries.

f. *Phase 7: the stone building* Acknowledging that construction of the stone building cannot be directly dated, refuse associated with its occupancy (layer 5, 12, etc) contain pottery spanning the 17th–19th centuries. However the few types, such as Delft, Chinese porcelain and Westerwald stoneware, which might belong to the earlier part of this range are clearly fineware and as such may be expected to survive in use for relatively longer than the local coarsewares which predominate in the group. Allowing for this factor a more realistic assessment of the time span represented would be the 18th–19th centuries which would accommodate all the Verwood and Crockerton earthenwares; the Staffordshire/Bristol yellow slipware (*c.* 1680–1750); the Nottingham saltglazed wares (mainly 18th century) and the white saltglazed stonewares (1720–1770).

These conclusions are supported by the Inclosure Durard map of 1783 from which it is evident that an outhouse stood on the site of the foundations observed in excavation.

g. *Phase 8: garden and outbuildings* The Ordnance Survey 1st edition 50 inch map of Warminster shows that the site had been restructured between 1783 and 1886. Amongst other observed changes the original outbuilding had been replaced by two smaller structures occupying the position in which staddle stone bases were encountered during excavation.

h. *Phase 9: mineral water bottling plant* It is known that the plant was operating by 1890 (Gee 1978) and elderly local residents have recounted that the original structure burnt down in the first decade of the 20th century. The small shed occupying the site, which was demolished ahead of excavation, therefore appears to represent a subsequent rebuilding on the foundations of the first bottling plant.

Medieval pottery
(Lorraine Mepham)

The development of Warminster as a medieval commercial centre is known through documentary sources to have been long and complex. Pottery from the Emwell Street excavation provides, for the first time, an opportunity to study aspects of the material background to this sequence. It also provides much n eeded information on the ceramic character of the

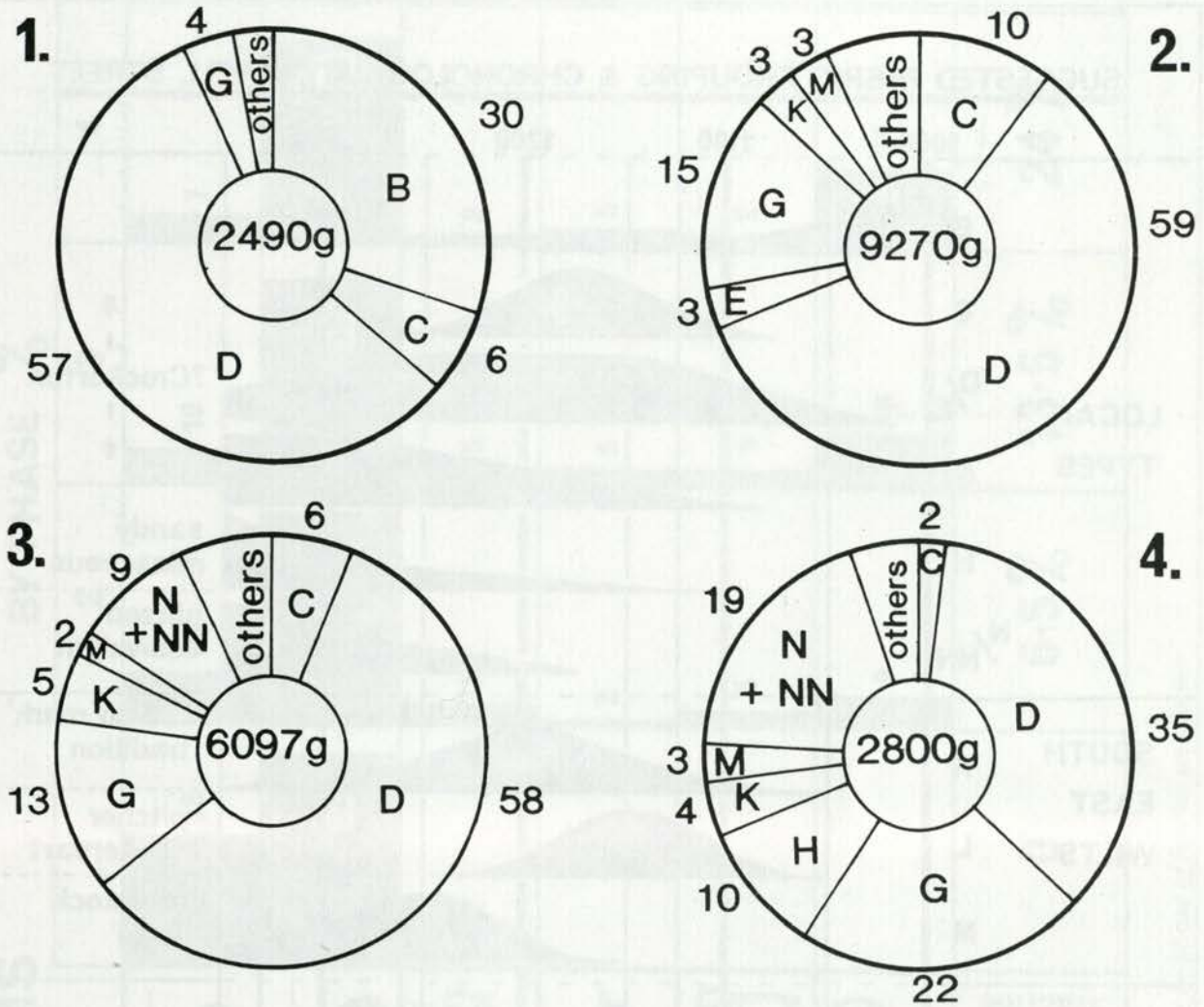


Figure 13 Medieval pottery, fabrics by phase (%)

area including material produced in the important medieval kiln at Crockerton, as yet undiscovered, but probably located about 2 km south of the town. The distribution of fabrics by phase, suggested fabric groupings and chronology and the correlation between fabrics and forms by phase are summarised in Figures 13–15.

Fabrics

The dearth of comparable stratified medieval pottery groups relevant to the Warminster area made establishment of a fabric series for Emwell Street very difficult. Sorting proceeded within a framework that recognised often minor variations in fabric types, but it is now evident that most of the 15 types identified really illustrate the sort of variability and development which one might expect within perhaps no more than two long lived pottery traditions — one essentially local to Warminster and the other centred on the Salisbury area.

A. *Residual.* Rare Roman and prehistoric sherds.

B. *Gravel tempered.* Soft to hard, underfired, micaceous fabric with abundant, unsorted, waterworn quartz and rare angular flint and greensand. Variably oxidised, uneven surfaces ranging from grey–black to grey–brown; cores exhibit crude wedging and occasional lengths of vegetable matter. Hand-built cooking pots and bulbous storage vessels with near upright simple unthickened rims and convex bases.

C. *Quartz and greensand.* Similar to B but differentiated by more careful working and an absence of flint. Hand-built cooking vessels in a wider range of sizes, with some thickened rims and occasional use of knife slash decorations on shoulder and rim tops.

D. *Generalised.* Predominant throughout medieval layers. Soft to hard, micaceous fabric clearly related to B and C but with common, well-sorted quartz, rarely larger than 1 mm, together with scattered angular or irregular fragments of flint, greensand and chalk up to 3 mm in length. Surfaces are generally smooth and more evenly oxidised although there is considerable colour variation throughout the range. Greys predominate in early contexts; pinks and buffs in later layers. Mainly hand-built cooking and storage vessels with thickened rims and convex bases. Special features are rare use of rouletted decoration and a variety of new forms including West Country vessels, unglazed pitchers and jugs. Some sherds by their freshness and untypical zonal oxidisation appear to be waster material but there are no seriously deformed vessels.

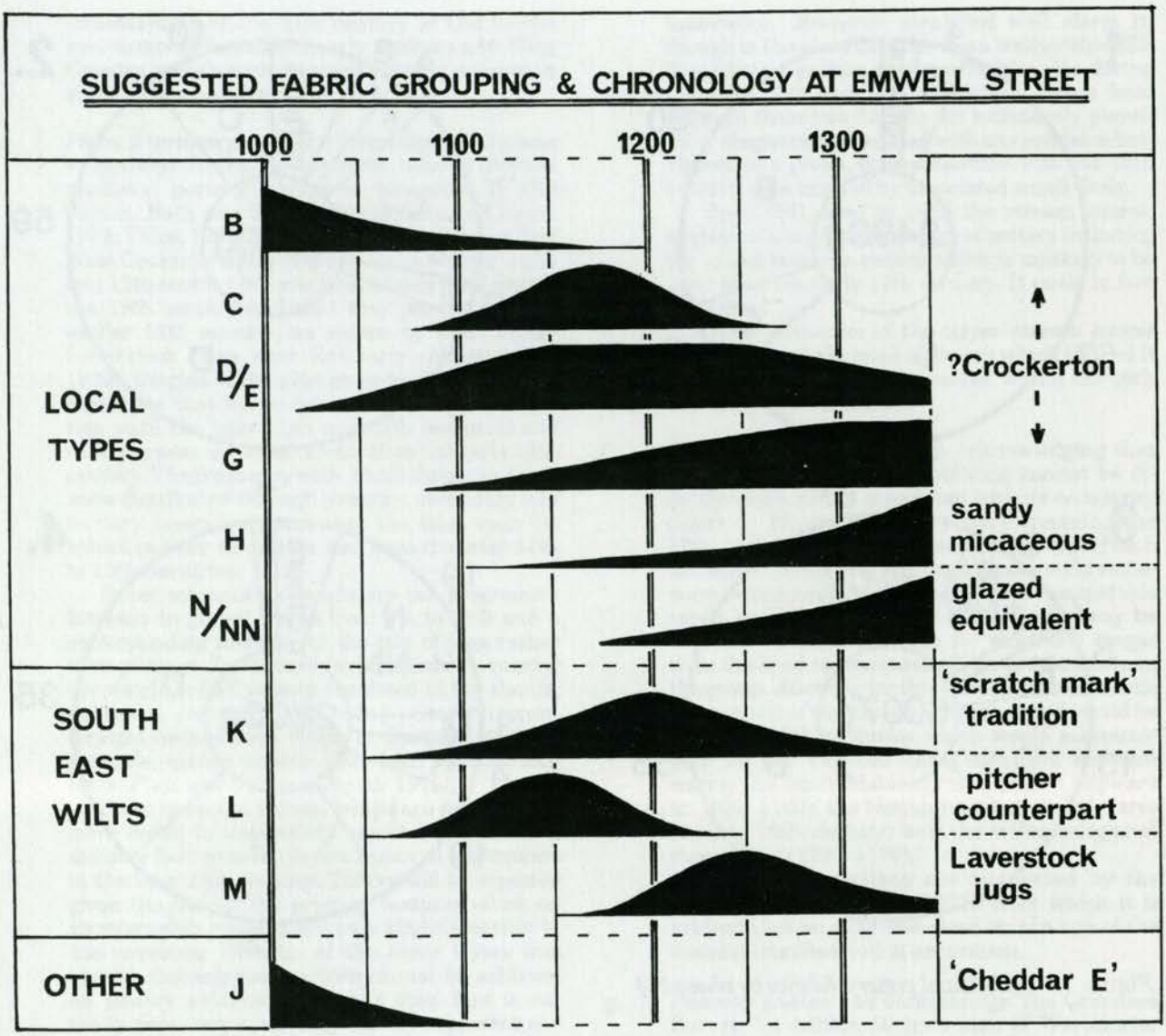


Figure 14 Medieval pottery, suggested fabric grouping and chronology

E. *Quartz and flint.* As fabric D but the most significant large size inclusion is clearly angular flint. Hand-built cooking vessels.

F. *Crushed flint.* Hard, very coarse, black fabric characterised by an abundance of angular flint fragments. Single vessel. Not within main range of local fabrics but need not be derived from any distance.

G. *Small quartz.* A refinement of D rendered in a similar range of forms. Well-sorted, small quartz grains predominate although few are visible without magnification. Crushed flint and chalk rarely noted. Finger-tipped rims are new.

H. *Sandy-smooth.* Fine, soft to hard, sandy micaceous fabric with smooth, occasionally powdery surfaces. Inclusions are generally too small to be seen without magnification. Both fabrics G and H appear to be unglazed counterparts of glazed fabric N.

I. *Miscellaneous medieval unglazed.*

J. *Cheddar E.* Only present in very small quantities (Rahtz 1979, 315).

K. *Scratchmarked ware.* Hard quartz-tempered fabric ubiquitous in south-east Wiltshire. Abundant angular quartz grains give a rough feel and granular fracture. Surfaces are variably scratch-marked and unevenly oxidised. Hand-built cooking vessels with robust and sharply everted rims; the coarseware travelling companion of both L and M.

L. *South-East Wilts pitcher.* Fabric related to, and marginally more refined than K but with an olive brown to drab green glaze used in conjunction with incised and, less commonly, stamped decoration. Pitchers (eg Musty and Rahtz 1964, fig. 6:6).

M. *Laverstock glazed.* Mainly, if not entirely, jugs. The baggy forms, restrained decoration and high quality suggest manufacture during the earlier part of the *known* production run (Musty *et al.* 1969).

N. *Warminster monochrome.* Moderately hard, fine, sandy micaceous fabric exhibiting few visible inclusions. Typically with buff, unglazed surfaces and even, light grey cores. Glaze is most frequently drab green but occasionally orange–brown on reddish surfaced vessels. Almost certainly the glazed counterpart of Fabric H. Jugs, bowls/pans, some glaze-splashed cooking vessels and an aquamanile.

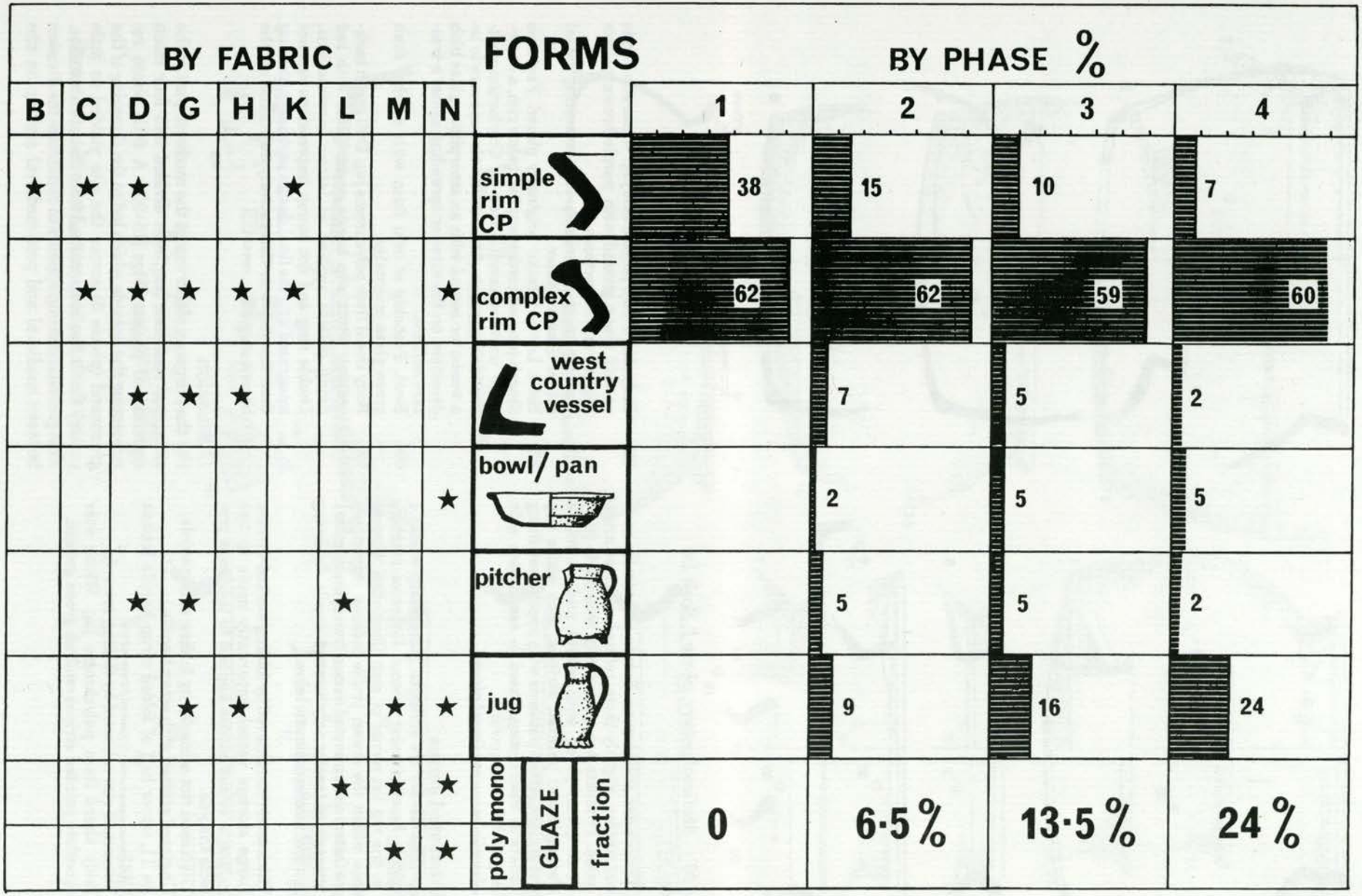


Figure 15 *Medieval pottery, correlation and percentage occurrence by phase of fabrics and forms*

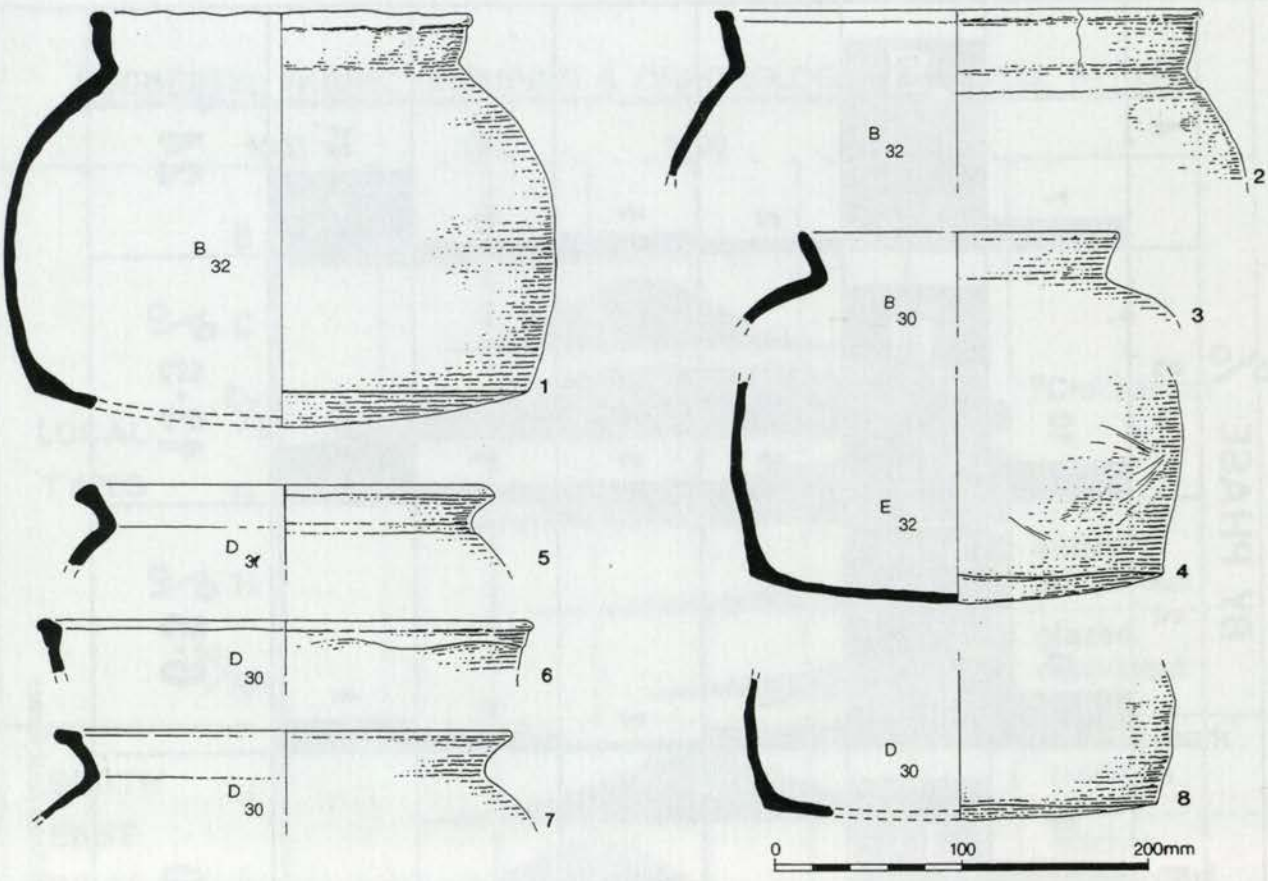


Figure 16 Medieval pottery, phase 1. Scale 1:4

NN. *Warminster polychrome.* Fabric essentially as N but harder, slightly more refined and less micaceous. Products are exclusively well-made jugs. Drab green glaze with white and chocolate (?manganese) painted stripes; also white slip underglaze lattice patterns with applied red firing pellets at intersections used in association with ring and dot stampwork.

O. *Miscellaneous medieval glazed*

The illustrated series

Drawings (Figs 16–20) are arranged contextually within a chronologically based phasing scheme. Reference numbers appear in the top left corner of each illustration whereas annotations within the drawn profile indicate respectively fabric type (letter) and excavated context (two figure number). In the interests of brevity only selected sherds displaying special features receive comment below.

6 Thickened rim achieved by folding worked-up rim.

9 Large storage vessel apparently made in two halves, a raised cordon applied to the waist protects the join.

10 Thickened rim achieved by folding rim inwards.

11 Unglazed pitcher with strap handle.

12 As 11, upper half of folded strap handle broken away.

25 Thickened rim achieved by folding inwards.

29 Body sherd from polychrome jug. White over chocolate painted stripes on drab green ground.

32 Body sherd from polychrome jug. White slip bands on dull green ground with purple brown pellets applied at intersections.

35 Tubular spout — probably from a cooking vessel rather than a pitcher.

55 Bowl. Lower interior originally glazed. Features thumb-pressed cordon applied below rim, a decorative trait repeatedly used on Crockerton post-medieval products. The vessels also appears to be a waster or second with an amorphous glaze blob deposited on the exterior spreading across a fracture surface.

60 Bowl. Probably of oval form with patchy, drab green glaze internally.

62 Body sherd from polychrome jug. Dull green background; white slip bands under glaze with red firing pellets applied at lattice intersections. Double ring and dot stamp impressions are not integrated into the final design perhaps indicating that the jug was decoratively reworked at the biscuit stage.

Discussion

For the purposes of this report the medieval part of the excavated sequence has been divided into four main depositional phases (Figs 16–20). A fifth phase representing the episode which led to the dumping of the greensand (phase 5) across the site yielded so little pottery that it has been omitted from statistical studies. This greensand dump appears to demarcate the division between medieval and post-medieval activity on site

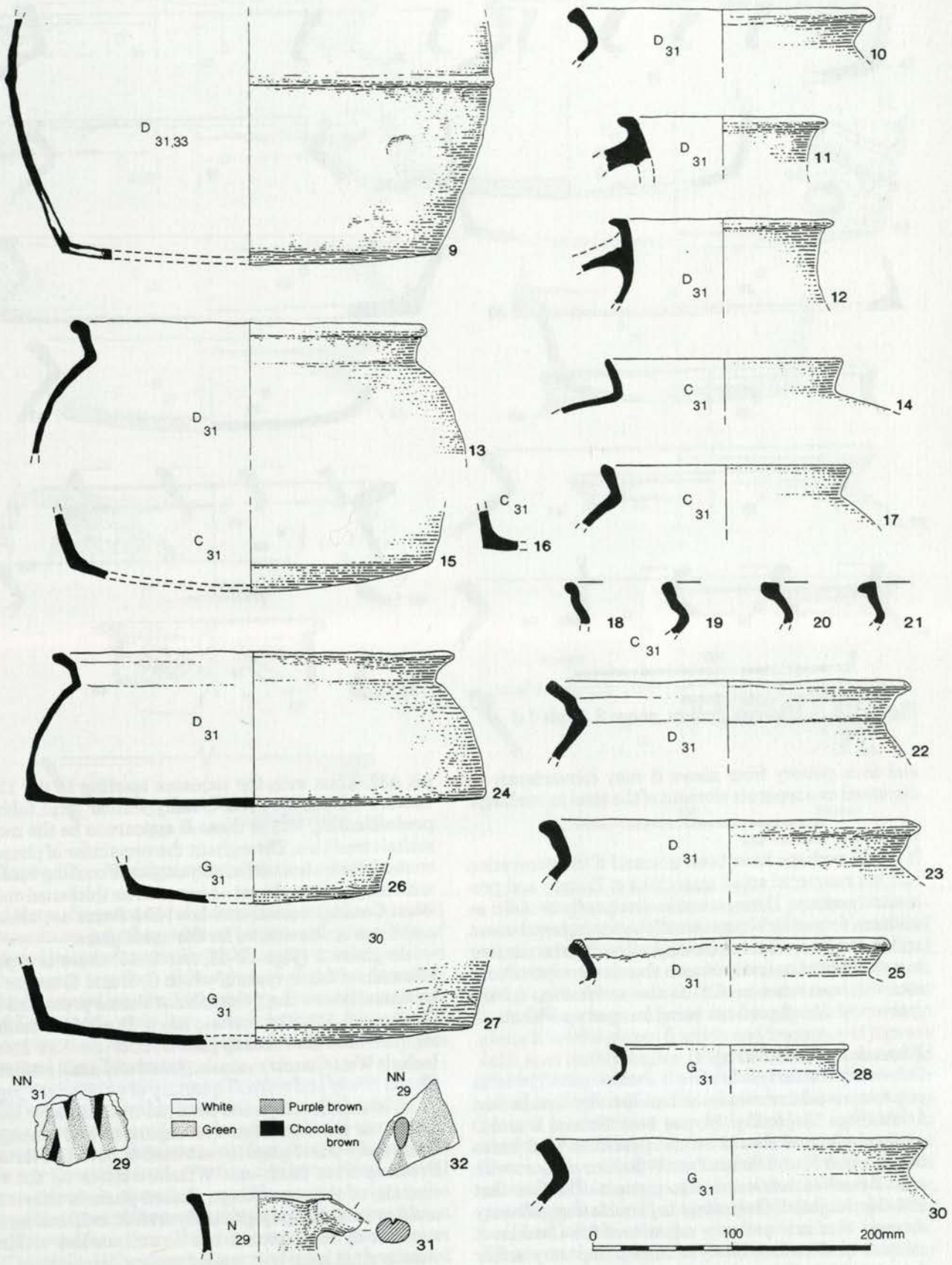


Figure 17 Medieval pottery, phase 2. Scale 1:4

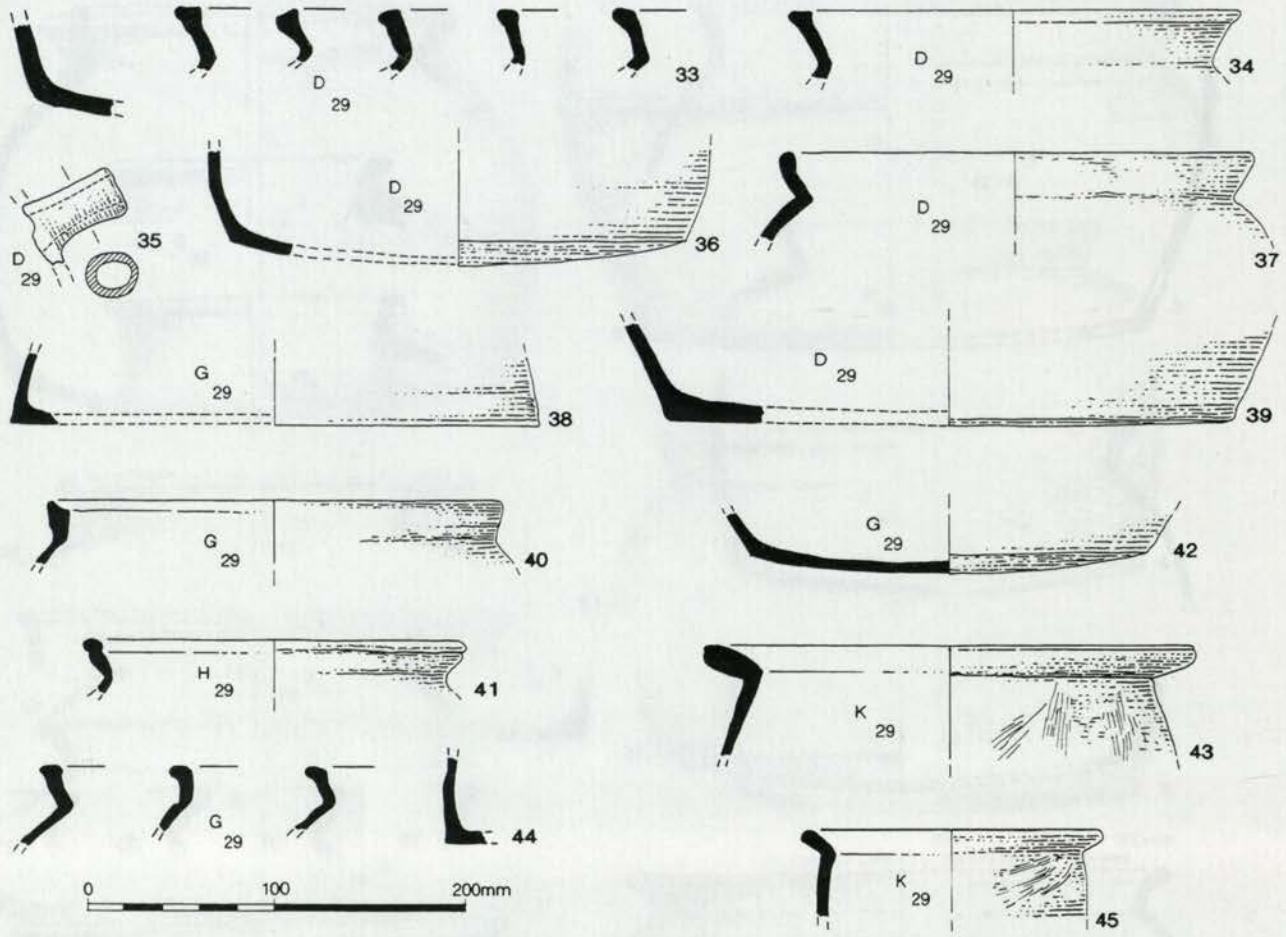


Figure 18 Medieval pottery, phase 2. Scale 1:4

and thus pottery from above it may conveniently be discussed as a separate element of the total assemblage.

Residual material

It would perhaps have been unusual if the excavation had not recovered small quantities of Roman and prehistoric pottery. Their presence can hardly be used as evidence for earlier occupation of the site but settlement within the immediate area is possible. It is interesting to note that the majority of such sherds were introduced into the excavated profile at the same time as the greensand dump, perhaps being scraped up with it.

Phases 1–4: medieval

Ostensibly the earliest feature is shallow pit A32 and its ceramic content serves as a baseline for trends that follow (Figs 13–15; Fig. 16, nos 1–8). Fabrics B and D predominate and should be interpreted as local wares but Cheddar E and South-East Wiltshire pitchers with scratchmarked wares are also present. The fact that 53% (by weight) of the pottery is joinable suggests very strongly that it is primary refuse and the Cheddar E element is, therefore, likely to be contemporary rather than residual. Although 10th century at its type site, Cheddar E has been observed in 11th century contexts at Trowbridge (Mepham 1993) and such a date would be compatible with the combined evidence presented in pit A32. Thus with the sequence starting in the 11th century we see just two broadly similar local fabrics predominating and or these B appears to be the more archaic tradition. Throughout the remainder of phase 1 contexts forms are exclusively unglazed cooking vessels with simple rims almost as common as thickened ones. West Country vessels and bowl-like forms are absent and there is no evidence for the use of glaze.

In phase 2 (Figs 17–18, nos 9–45) there is a proliferation of fabric types of which C, E and G appear to be variations on the predominant theme presented by D (Figs 13–15). The archaic fabric B with its mainly simple rim forms virtually passes out of use. New forms include West Country vessels, glazed and plain pitchers, glazed bowls and a small quantity of polychrome jugs. Most of this development occurred in essentially local fabrics as the repertoire was expanded and amongst these early use of glaze is restricted to bowl-like forms. Products from south-east Wiltshire make up the remainder of the assemblage. Glazed pitchers (fabric L) and Laverstock-type jugs clearly arrived to fill a demand not met by local potters but scratchmarked cooking vessels must have been traded against competition.

The chronological span of phase 2 cannot be determined with precision but its ceramic composition is clearly paralleled in 12th century groups at Citizen House, Bath, Trowbridge Castle and Old Sarum. Spout-

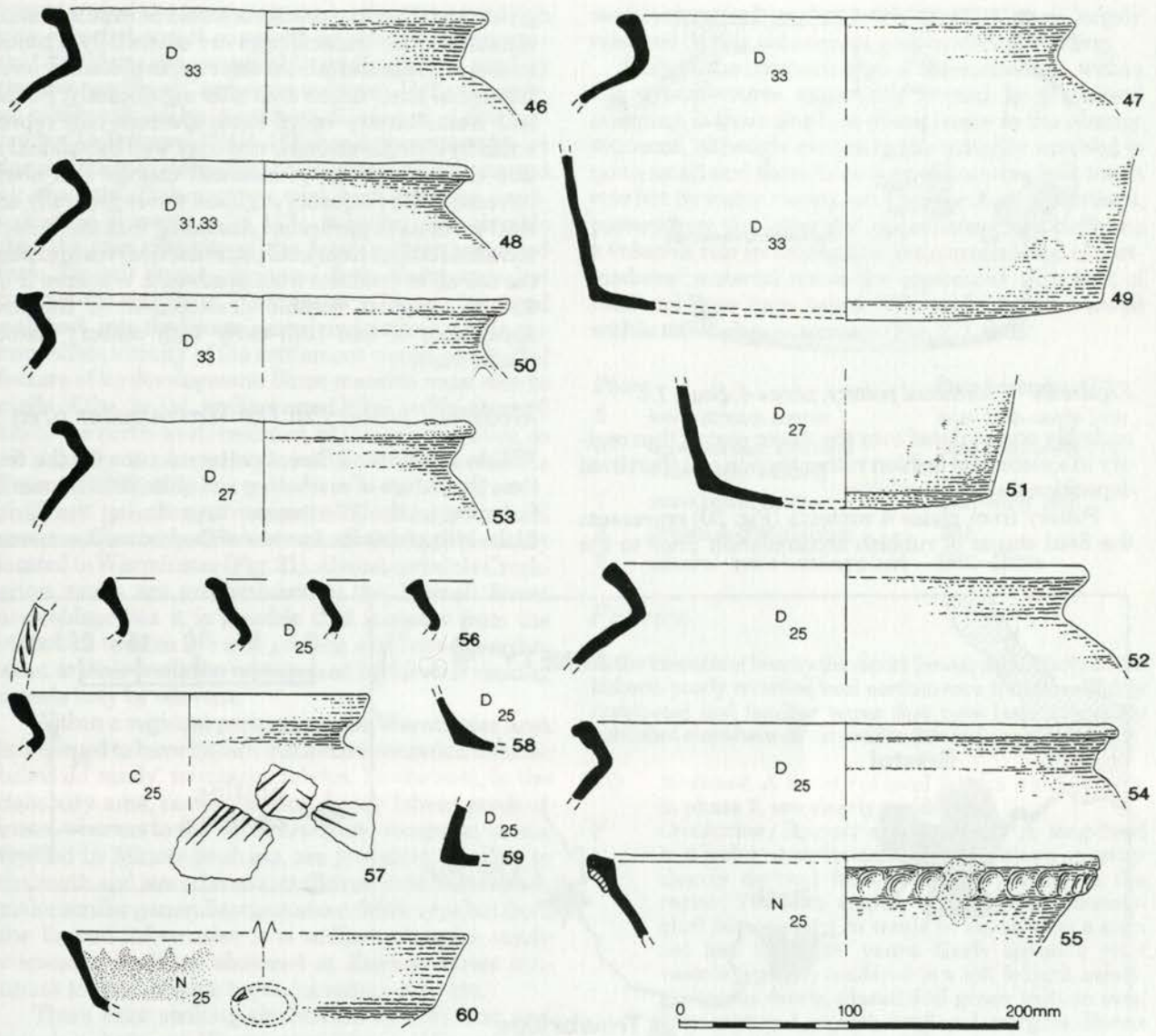


Figure 19 Medieval pottery, phase 3. Scale 1:4

ed forms, frequent use of stamped, rouletted and incised decoration, together with a low overall proportion of glazed wares are typically 12th century attributes when they occur together, although such features do individually persist into the 13th century. Indeed the presence of Laverstock style jugs, albeit in early form, would suggest that some of the phase 2 contexts were open beyond the 12th century.

Stratigraphically phase 3 contexts (Fig. 19, nos 46–60) are demonstrably later than those of phase 2 but in many cases there was no clear depositional changeover between them; they were in effect successive elements in a prolonged episode of refuse dumping. Some vertical movement is therefore possible particularly in the southern part of the profile which appeared to have been cultivated for a time. This may account for the presence of typically 13th century Laverstock jugs in the phase 2 assemblage which would otherwise appear to be entirely of 12th century date. However, the problem cannot be a serious one for developmental trends between the two phases are clearly manifested.

Within the predominant locally produced coarsewares, progressive refinement of fabric is evident and vessels are more evenly fired than before with buffs and pinkish–browns more common than the dark browns and grey black hues which characterise vessels in earlier layers. The range of forms is virtually the same as in phase 2 but the glazed fraction and frequency of jugs are both appreciably higher (Figs 13–15). Scratchmarked cooking vessels from the Salisbury area achieve their greatest frequency in this phase but Laverstock jugs became less common as polychrome jugs are added to the local repertoire and the somewhat archaic pitcher form is present only in an unglazed local fabric. At the same time waster type sherds in fabrics D and N occur, possibly indicating the existence of kilns nearby but they could equally be vestiges of a local trade in 'seconds'. Whatever the explanation it is most unlikely that they were manufactured at any distance from the town.

By analogy with stratified pottery groups from the Salisbury area the phase 3 assemblage appears to be mainly if not entirely of 13th century character and

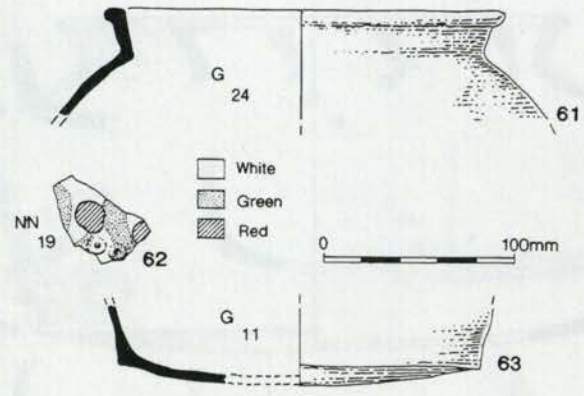


Figure 20 Medieval pottery, phase 4. Scale 1:4

probably accumulated over the major part of that century in a piecemeal fashion rather than in one shortlived depositional episode.

Pottery from phase 4 contexts (Fig. 20) represents the final stages of rubbish accumulation prior to the greensand dumping event. As would be expected many elements of the assemblages are essentially a continuation of forms and fabrics observed in preceding levels but actual composition does alter significantly. Pitcher and West Country vessel forms are each only represented by a single example and may well be residual at this time. The most pronounced change is a sharp increase in the frequency of glazed wares generally and local variants in particular. Assuming that this reflects increased output from local potteries, it serves to explain the fall off in products from south-east Wiltshire (Figs 13–15). Another notable development is the first appearance of late 13th–early 14th century Lacock glazed ware.

Medieval pottery in the Warminster area

Within the Emwell Street pottery we see for the first time the nature of marketing and quite possibly manufacturing in the Warminster area during the period 11th–14th centuries. In view of the known commercial

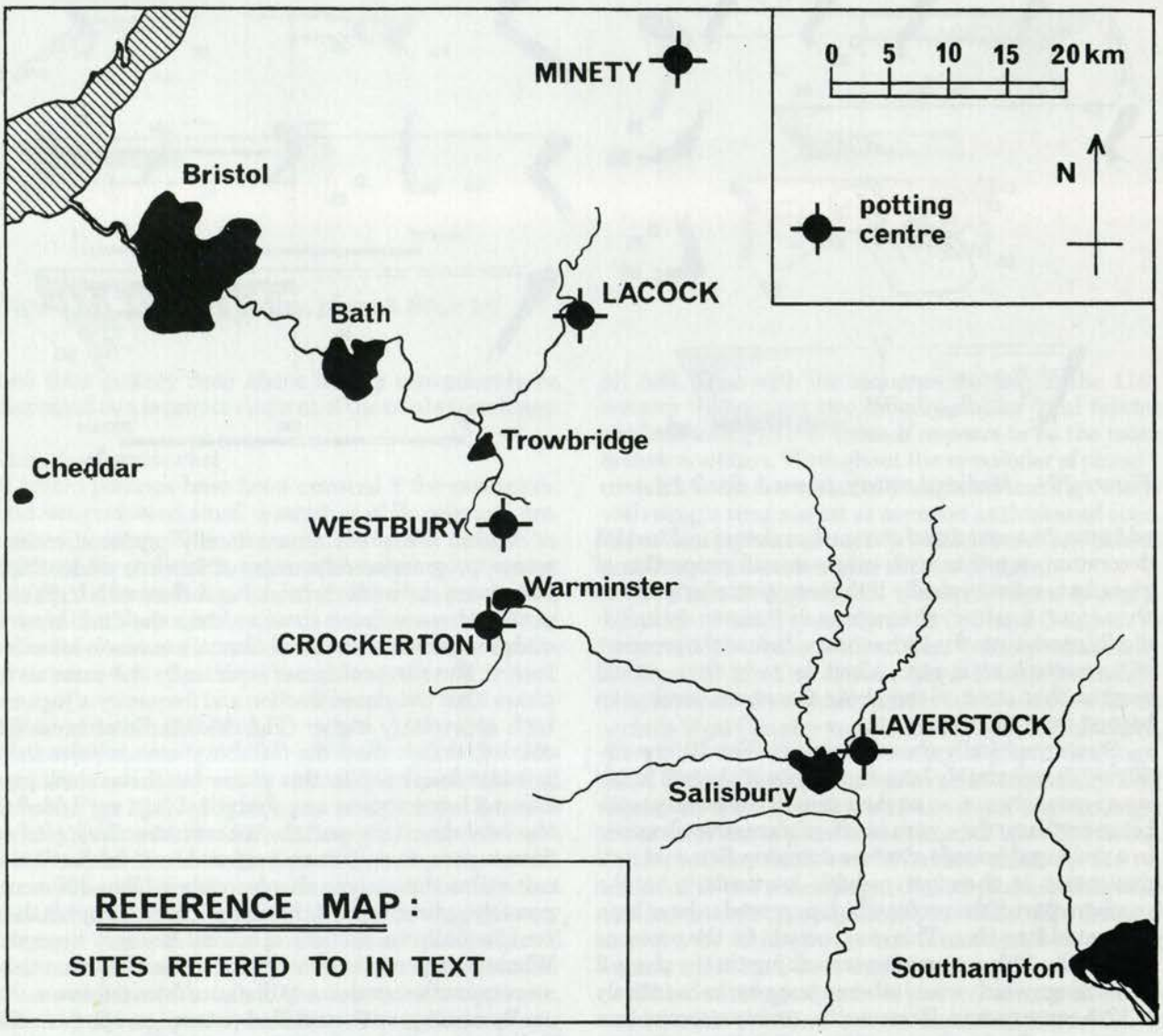


Figure 21 Medieval pottery production sites in Wiltshire

importance of the town a strong local potting tradition was expected and it occasions no surprise to discover that its fabrics are remarkably similar to that used by the post-medieval Crockerton industry. Unfortunately, no medieval kilns have yet been discovered at Crockerton but Le Patourel (1968, 105) has demonstrated from documentary evidence that production probably started by the mid 12th century and had assumed semi-industrial proportions by 1234. It is therefore possible that the vast majority of the 'local' pottery recovered from Emwell Street originated from that source but commercial activity at Warminster is known to extend well back into the Saxon period and potting within the immediate vicinity of the settlement would be a logical feature of its development. Some mention must also be made of the, as yet, undiscovered kilns at Westbury (6 km to the north-west) recorded, in *Domesday* survey, as an industry similar in scale to that of Crockerton (Le Patourel 1968, 105).

There are, then, three potential sources for local wares—Westbury, Crockerton and kilns hypothetically located in Warminster (Fig. 21). Almost certainly Crockerton wares are predominant in the Emwell Street assemblage but it is possible that material from the other two sources are also present and here the somewhat archaic tradition represented by fabric B cooking vessels may be relevant.

Within a regional perspective the Warminster area is observed to have its own distinctive ceramic character based on sandy, micaceous fabrics. To the east, in the Salisbury area, non-micaceous, sandy fabrics predominate, whereas to the north limestone-tempered wares, typified by Minety products, are prevalent. Looking to the south and west there is inufficient published data to make similar generalisations about fabric type but from the limited information it is unlikely that the sandy micaceous tradition observed at Emwell Street continues to predominate beyond a radius of 20 km.

There exist striking similarities in both form and petrology between Warminster fabrics D/G and that identified in excavations at Bath (Vince 1979, 27) and Trowbridge (Mepham 1993, fabric Q401) as 'Bath A'. In all three assemblages this type occurs at a frequency of between 55% and 70% of the total pottery weight and Vince makes the observation that it appears to have been exported from Bristol to various points on the south Wales coastline and Ireland. Such a widespread distribution of coarsewares is difficult to understand but it should perhaps be considered against a background of trading along the important Bristol/Southampton axis upon which the medieval markets of Salisbury, Warminster, Trowbridge and Bath were to varying degrees dependent.

Later and Post-Medieval Pottery
(Lorraine Mepham)

Pottery from above the greensand dump layer is quite clearly post-medieval in character yet, strangely, no vessels likely to be later that the 14th century were recovered from below it. It would seem that either little or no refuse was discarded on the site during the later medieval period or that such deposits were largely removed during subsequent post-medieval building.

Only at the northern edge of the excavation, within the stream course apparently formed by greensand dumping, is there any hint of continuity in the ceramic sequence, although even here the quantity involved is quite small and there is no way of knowing how much was lost by water movement. Despite these limitations, pottery from the lower and upper stream silt performs a valuable role in linking the main assemblage of post-medieval material above the greensand with that of medieval date from below. The evidence is reviewed within a five phase sequence (Fig. 22), thus:

Phase		*Date (centuries AD)*
5	lower stream course	later 14th–early 16th
6	upper stream course & subsequent infilling	later 16th–early 17th
7	stone house on site	18th–early 19th
8	garden & outbuildings	19th
9	mineral water bottling plant	1890–1920s

Fabrics

In the interests of brevity the report focuses particularly on the hitherto poorly recorded local earthenware tradition. Widely distributed and familiar wares that have been adequately published elsewhere do not receive detailed comment.

I/O *Medieval.* A variety of local fabrics which, except in phase 5, are clearly residual.

P *Crockerton/Donyatt earthenwares.* A long-lived and widely distributed tradition with an ancestry clearly derived from medieval potting in the region. Products display considerable chronological development as would be expected in a span not less than 250 years. Early contexts yield vessels typically rendered in a soft to hard, sandy, micaceous fabric, glazed dull green with an even grey core and pinkish unglazed margins. Forms include bowls, a shallow dish and a cistern. In later contexts two trends may be observed — firstly, towards iron-filled lead glazes giving a range of brown colours and secondly, towards specialisation in large, thick-walled storage/utility-type containers rendered in a relatively unrefined reddish earthenware which lacks the micaceous glitter present in earlier fabrics. Later forms include large jars, pancheons, bowls and various horticultural vessels.

PP *Crockerton/Donyatt slip decorated earthenwares.* A range of vessels upon which a white slip coating appears usually on surface but occasionally overall. Final glazing gives the slip coat a cream appearance and where it has been cut through for decorative purposes (sgraffito) the exposed red body becomes a contrasting rich brown. Observed forms include bowls, shallow dishes, tankards and a jug.

Q *Verwood earthenwares.* Potting in the Ringwood district extends back into the medieval period but it is not until the 18th century and later that its products appear in the Warminster sequence. The fabric is typically salmon-pink with a somewhat granular appearance in section and unglazed margins are white to pale grey. Glaze, most commonly restricted to internal surfaces, is iron-flecked and

Phase	Medieval residuals	Crockerton plain	Crockerton decorated	Verwood	Utility Stoneware	Fine Stoneware	Miscellaneous & transfer printed	Staffs type combed slipware	OTHERS	SAMPLE SIZE g
6	10		89 1							615
7	5	25	2	43	2	1	18	3	Delft type; Westerwald; Chinese porcelain; Wedgewood 'black basalt'; White salt glazed;	7290
8 & 9	3	8		24	38	4	19			3495

Figure 22 Post-medieval pottery, fabrics by phase (%)

varies considerably in colour. Darker glazes such as olive-browns and greens predominate on earlier vessels but by the 19th century markedly brighter yellows and ambers are most common. With regard to the forms, the earlier repertoire is quite varied but as with so many earthenware industries there is a trend towards specialisation in heavy/utility vessels from the late 18th century onwards. Observed forms include pancheons, bowls, pans, jars etc (Algar *et al.* 1979).

R *Staffs/Bristol combed slipware.* Plates, posset cups, etc.

S *Delft type tin glazed earthenware.*

T *Utility stonewares.* A broad category encompassing mainly Victorian stoneware jars and flagons often bearing the name of a local grocer or wine merchant.

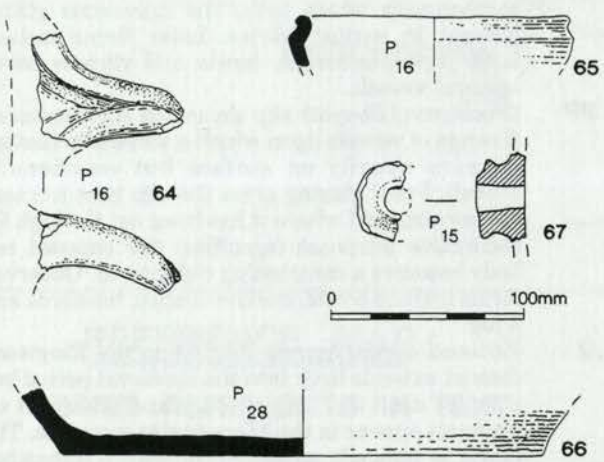


Figure 23 Post-medieval pottery, phase 6. Scale 1:4

U *Fine brown stonewares.* Typically of Nottingham type — tankards, bowl, etc.

UU *White saltglazed stonewares.* Plate, cup.

V *Westerwald stoneware.* Tankard.

W *Wedgewood type 'Black Basalt' ware.* Cup?

X *Mocha ware.* Tankard.

Y *Chinese export porcelain.* Cup.

Z *Miscellaneous modern and transfer printed wares.*

The illustrated series

(Phase 6: Fig. 23)

64 rolled handle of (?) meat dish; dark green and chocolate glaze. Crockerton.

65 small bow; dark green glaze internally. Crockerton.

66 pacheon base; olive-green, iron-flecked glaze internally. Crockerton.

67 spigot boss from cistern; traces of dark green glaze. Crockerton.

(Phase 7: Fig. 24)

68 pancheon; brown–olive, iron-flecked glaze internally.

69 bowl; white slip coated overall, clear glaze internally. Crockerton.

70 bowl; olive glaze internally. Verwood.

71 bowl; orange-brown glaze internally. Crockerton.

72 cup/porringer; olive-green internally, bronze glaze externally. Verwood.

73 pancheon; bright amber, iron-flecked glaze internally. Verwood.

74 small dish; olive-brown glaze internally. Verwood.

75 large dish; possibly oval with bright amber, iron-flecked glaze internally. Verwood.

76 shallow dish; white slip coat with rich brown foliar sgraffito decorative border, all under clear glaze. Crockerton.

77 large dish; light olive, iron-flecked glaze internally. Verwood.

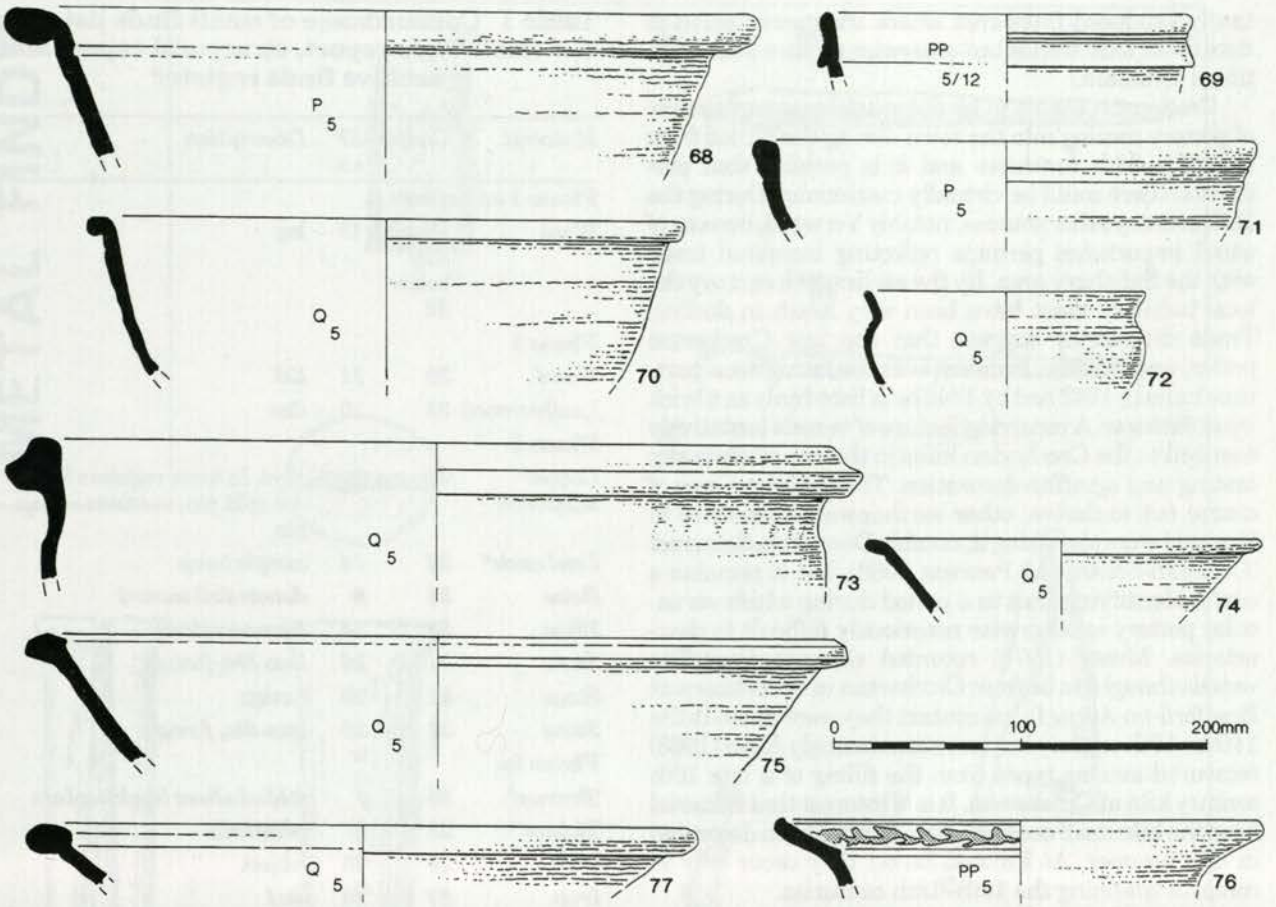


Figure 24 Post-medieval pottery, phase 7. Scale 1:4

Discussion

The greensand dumping episode, which has been dated to the early 14th century, appears to mark the termination of normal refuse dumping activity. There is certainly medieval pottery in layers above it but in almost all cases it is stratified with 18th and 19th century material and therefore residual, probably being derived from the few late features which actually cut through the greensand. *In situ* late medieval refuse was only encountered on the northern excavation boundary in a silted stream course that forms after greensand dumping. Even here the actual quantity of pottery recovered was very small but viewed within a two phase sequence (lower and upper silts) the material does provide a tenuous link between the main assemblages from above and below the greensand.

Throughout phases 5 and 6 it is virtually certain that associated pottery is exclusively local (Fig. 22). From the lower streambed silts a single sherd of post-medieval Crockerton glazed earthenware was recovered within a group of twenty sherds that were otherwise entirely medieval in character. In the upper streambed silt post-medieval Crockerton ware, including a single slip-decorated sherd, becomes more frequent than medieval types and the end of phase 6 it is predominant. At this time the medieval type fabrics must also certainly be residual.

Within phase 7 a major change occurs. The pottery present is, in contrast to preceding phases, of a very diverse character reflecting not only contemporary changes in the manufacture and distribution of pottery but almost certainly in the nature of activity over the site as well. Crockerton earthenware for the first time experiences competition from the neighbouring industry of Verwood and both lose ground to the more fashionable products from Staffordshire and Bristol. Imported Chinese porcelain cups and German stoneware tankards combine with a wide range of quality British tablewares to convey the impression that this assemblage represents refuse from an affluent household. Allowing for long survival of some late 17th century types, notably the finewares, the group appears to reflect an accumulation spanning the 18th to mid 19th centuries.

Little pottery is added to the profile during phase 8 but finally in phase 9 the character of associated pottery once again becomes mundane with utility stonewares predominating in a group virtually devoid of quality tablewares. Amongst the earthenwares Verwood is most common with the Crockerton element being mainly residual. Those tablewares that are present are exclusively of the mass-produced and transfer-printed type.

Summary

The main value of the post-medieval pottery groups from Emwell Street would appear to be their portrayal of developments in local earthenware industries. Dis-

tantly produced finewares where they occur serve to date these local trends but otherwise require little additional comment.

Crockerton seems to be the most important source of pottery coming into the town during the period from the 12th–18th centuries and it is possible that production there could be virtually continuous. During the 18th century other sources, notably Verwood, become of equal importance perhaps reflecting increased trade with the Salisbury area. By the earlier 19th century the local industry must have been very much in decline. Trade directories suggest that the last Crockerton potter, one William Butcher, was operating on a part-time basis in 1842 and by 1848 he is listed only as a brick manufacturer. A recurring feature of vessels tentatively ascribed to the Crockerton kilns in the use of white slip coating and sgraffito decoration. The technique was of course not exclusive, other earthenware industries in England were also using it, notably Donyatt in Somerset (Coleman-Smith and Pearson 1988), but it remains a useful identifying trait in a period during which vernacular pottery is otherwise notoriously difficult to characterise. Musty (1970) recorded slip-coated/sgraffito vessels thought to be from Crockerton in excavations at Bradford-on-Avon. In his context they were dated to the 14th or 15th century but more convincingly Algar (1968) recovered similar types from the filling of a late 16th century kiln at Crockerton. It is of interest that material from the kiln itself does not seem to have been decorated in this manner. At Emwell Street they occur only in contexts spanning the 16th–18th centuries.

Small Finds

(R. Montague)

*Note: it became apparent during the final preparation of this report for publication that not all the finds from the site were dealt with in the section below. Some finds are mentioned in the structural report but not in the small finds report, others are described in the small finds report but not in the structural report, whilst others are not discussed at all. Table 1 provides a concordance of all small finds from the site arranged by phase, material type, context order and SF No. order. It is compiled from the primary archive and from the prepared publication report. In Table 1 italic entries = discussed in structural report; bold = discussed in detail in this report; bold italic = discussed both here and in the structural report; * = mentioned in metalworking residues report; no highlighting = taken from original finds registers, not discussed in text.*

The finds were not examined personally, and so any additional parallels and references have been cited on the basis of the illustrations alone. For this reason it has not been possible to provide further information about the leather shoe (SF 2) described in the structural report as having a wooden heel but with no mention of a wooden component in the finds report; or about the pestle (SF 28) described as of greensand in the structural report but as of a 'stone type unidentified but not local' below. It should be noted that only one of the many

Table 1 Concordance of small finds listed in the small finds report, structural report and archive finds register

Material	*Context*	*SF no.*	*Description*
Phase 1 or earlier			
Wood	alluvial clay below 32	13	log
Phase 1			
Wood	***32***	***11***	***lid***
Leather/wood	32	10	disc
Phase 2			
Copper alloy/bone	31	8	rivet. In some registers SF.8 = cua split pin, in others = bone pin
*Lead oxide**	*34*	*14*	*sample lump*
Bone	***31***	***9***	***decorated mount***
Flint	***34***	***24***	***hammerstone***
Stone	*31*	*26*	*lava-like, foreign*
Stone	31	29	foreign
Stone	*33*	*25*	*lava-like, foreign*
Phase 3a			
'Bronze'	***25***	***7***	***folded sheet buckle plate***
'Bronze'*	25	4	pellet/ball
Iron	29	15	?object
Iron	***29***	***18***	***awl***
Stone	***25***	***28***	***pestle/pounder***
Stone	***29***	***27***	***whetstone***
Phase 4			
Lead	***11***	***21***	***sheet lead ferrule***
Iron	11	22	nail
Iron	***19***	***6***	***awl***
Iron	19	20	?poss. broken tang ('object')
Wood	18	3	stake tip
Chert/flint	18	33	2 objects
Stone	*19*	*32*	*quern frag.*
Phase 6/4			
Iron/bone	***16/18***	***13***	***Fe knife, bone handle***
Phase 6			
Iron	***16***	***23***	***wedge or chisel***
(?Leather &) wood	***16***	***2***	***shoe***
Stone	*16*	*31*	*rubber*
Phase 7			
Iron	*12*	*16*	*awl*
Iron	12	17	nail frag.
Phase 8			
Slag	5	25	lump
Uncertain			
Iron	**?30**	**19**	**knife**
Flint	?30	30	?blade frag.
Copper alloy	?	1	modern blazer button, discarded

see text for key

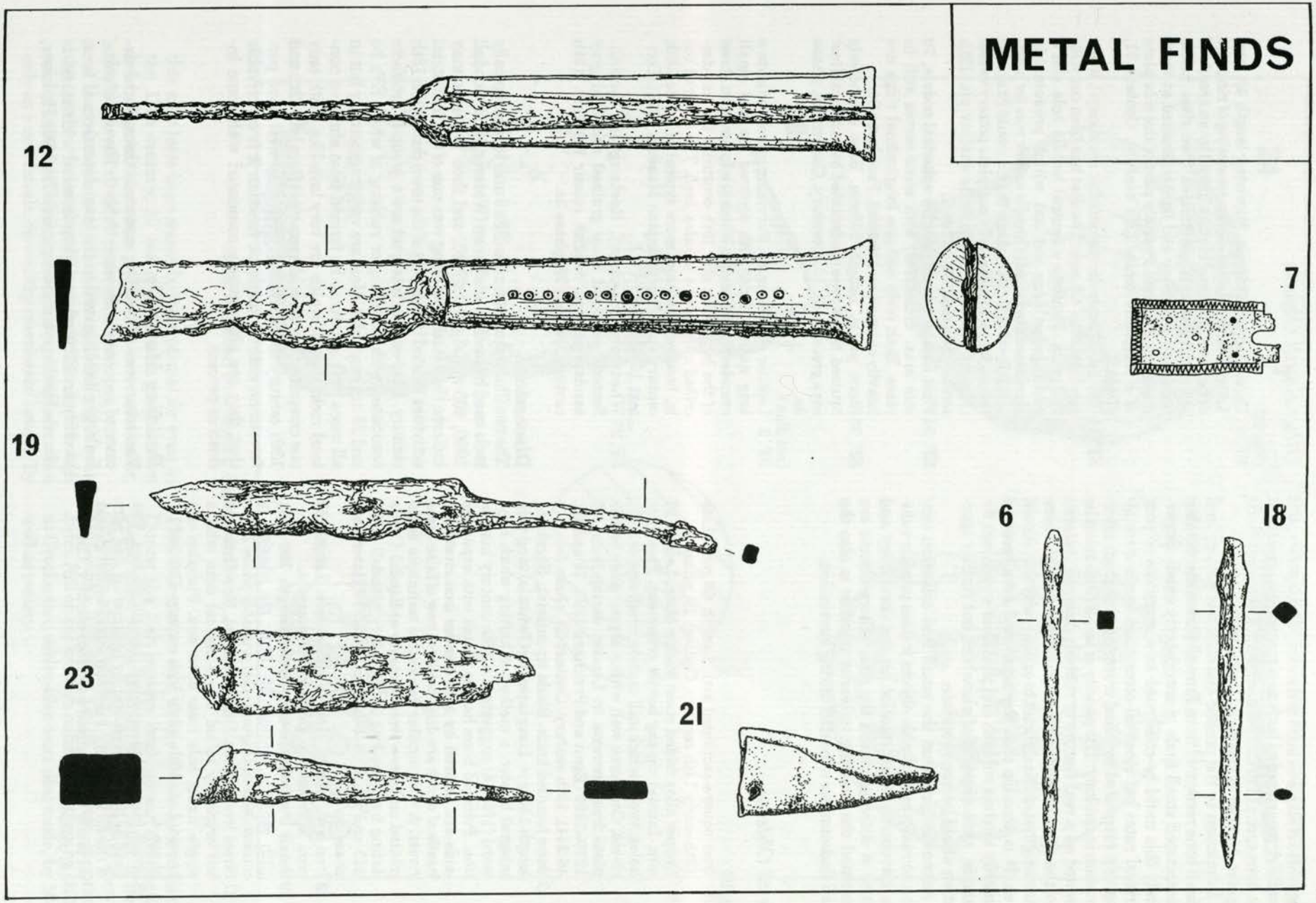


Figure 25 Metal objects. Scale 1:1

fragments of slag was accorded a small find number, and that SF 8 was recorded both as a copper alloy rivet and as a bone split pin in different versions of the small finds register. Neither is discussed in the text.

In relation to the prolific quantities of pottery and animal bone recovered from Emwell Street the number of associated small finds is surprisingly small. Superficially this could be construed as a symptom of poor retrieval rates but since all occupation levels were intensively excavated by hand trowelling, such an interpretation is unlikely. The paucity of small finds must be accepted as a real feature of rubbish disposal patterns over the site although without knowing exactly where refuse originated it is difficult to explain why this should be so. It is possible that the excavated area received primarily kitchen rubbish and that floor sweepings for example, were disposed of elsewhere but further speculation would be inappropriate.

Acknowledging that the small find collection contains no really remarkable objects it does provide valuable corroborative information on the chronology and nature of activity around the site. Where objects are illustrated the drawing reference number is also the small find number allocated during excavation.

Metal Objects

(Fig. 25)

SF.6 Iron square-sectioned awl. Length 68 mm. Late 13th–early 14th century. Context 19, phase 4.

SF.7 Copper alloy folded sheet buckle plate. Length 27 mm. Incised zig-zag border ornament. Five rivet holes, two of which still contain small copper alloy rivets. Compares well with a copper alloy buckle plate from contexts in London dating from AD 1270–1350 (Egan and Pritchard 1991, 76 and fig. 46.314); 13th century. Context 25, phase 3a.

SF. 12 Bone handled knife. Blade tip missing. Surviving length 146 mm. Long tapering (?whittle) tang with integral bolster, a method of hafting which Hayward (1957, 4) suggests is a 16th century innovation. Polished bone handle plates with expanded ends are secured by four slender iron rivets the heads of which are disguised in a row of false brass rivets. A very similar decorative technique is exhibited on knives from contexts at Sandal Castle dating from the late 17th century (Goodall 1983, 242 and fig. 6.78–80). Context 16/18 (interface), phase 5a/6.

SF. 18 Iron awl, section oval to sub-square. Length 68 mm. 13th century. Context 29, phase 3a.

SF. 19 Small iron whittle-tang knife. Length 106 mm. 12th century. Context 30 (*Note: the phasing of context 30 is ambiguous but probably phase 2*).

SF. 21 Sheet lead ferrule. Length 38 mm. Now flattened but originally rolled into a conical form with a single fixing hole near open end. Function unknown. Late 13th–early 14th century. Context 11, phase 4.

SF. 23 Small iron wedge or chisel. Length 65 mm. The head as been burred over by hammering and part of the tip is missing. Function unknown but almost certainly a specialised tool. 16th century. Context 16, phase 6.

Other Small Objects

(Fig. 26)

SF. 9 Decorated bone mount. Surviving length 48 mm, 1.5 mm thick. Incised design consisting of ring and dot motifs arranged in rows linked by an arcade of alternating double semicircles. Two rivet holes. Surface worn glossy and lightly straited at right angles to long axis. Possibly part of the side plate of a composite comb. 12th century. Context 31, phase 2.

SF. 11 Oak lid. 132 mm diameter (after shrinkage), average thickness 4.5 mm. The disc has been cut with the grain. Exhibits a central handle hole and a rectangular edge cut out which presumably accommodated a ladle handle and/or was for pouring. Allowing for shrinkage the lid would fit across the neck of a substantially complete pottery vessel (Fig. 16, 1) found in the same shallow pit. 12th century. Context 32, phase 2.

SF. 24 Flint hammerstone. Roughly spherical nodule, 70 mm max. dimension, with some cortex still in place. Both ends and one longitudinal ridge are heavily chipped and bruised. Peat layer 34.

SF. 28 Stone pestle. Length 105mm. Base extensively bruised. Stone type unidentified but not local (*text says greensand*). 13th century. Context 25, phase 3a.

(not illus.)

SF. 2 Leather shoe remains. Surviving pieces indicate a long narrow form with squared toe and small rounded heel, features which are common on shoes of the later 15th and 16th centuries (*in text described as having a wooden heel*). The squared toe is, however, perhaps more typical of a late 16th century style (Northampton Museum 1975). Context 16, phase 6.

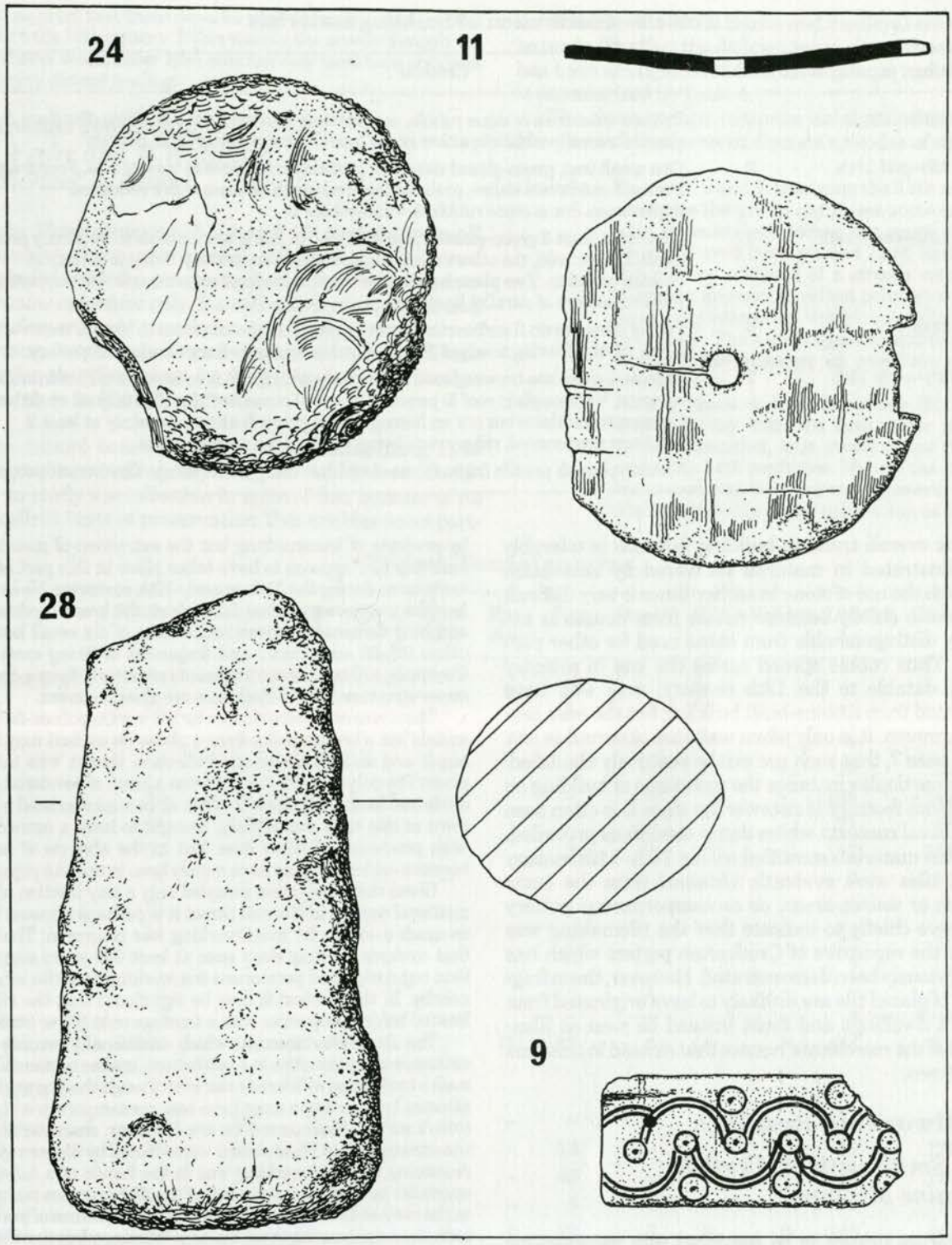
SF. 27 Whetstone fragment. Rectangular section. Smooth surfaced close grained non-local grey sandstone with reddish colour banding. 13th century. Context 29, phase 3a.

Discussion

The two illustrated iron awls (SFs 6 and 18) are typically tools used by leather craftsmen (Waterer 1968; Goodall 1990, 405 and fig. 9.1:47–61) and their presence may indicate that leatherworking was one of the industrial activities located in this part of the town during the 13th century. Less easy to interpret are a group of artefacts associated with pounding or rubbing of which SFs 24 and 28 are examples. Most are very fragmentary but in all cases they appear to be formed from abrasive non-local rock some of which are very lava-like. With only one exception they were all recovered from late 12th and 13th century levels. Whilst they may well have performed an entirely domestic function it is conceivable that they are alternatively associated with some industrial process.

Building Materials

The occurrence of building materials through the excavated sequence is shown in Table 2. The use of stone for larger buildings within the town dates from at least as early as 1200 when a shop 'covered with stone' is recorded in the new market place (VCH 8, 92). However,



Stone, wood and bone objects. Scales 1:1 (SFs 24, 28, 9), 1:2 (SF 11)

this may have been somewhat exceptional for even in the 17th century; 13 out of 14 houses in the town belonging to the manor of Furnax were of timber, thatched with straw or reed.

The most commonly used material in the 18th century was coursed stone rubble quarried locally although ashlar stone and brick was beginning to appear, often only as a new facade, on wealthy merchants' houses. By 1796 Warminster was widely known as a stone town. During the 19th century brick almost completely replaced stone rubble even in the construction of humble dwellings. Contemporary Trade Directories show that brickworks exploiting Gault clay were operating at Brick Hill on the western outskirts of town by 1822 and at Crockerton, where tiles were also made, by 1844 as well as pottery.

Table 2 distribution of building materials

Date range (centuries AD)	*Phase*	*Content*
Later 11th–12th	2	Profuse quantities of stone rubble, not certainly derived from a building. Six frags fired clay slabs in a local fabric; either crude hearth tiles or pottery kiln fittings
Later 1th–mid 13th	3	One small frag. green-glazed ridge tile, probably instrusive in view of size. Four frags Pennant sandstone slabes, prob. surfaced a hearth because of fire-reddened appearance. Some stone rubble & wooden boards
Later 13th–early 14th	4	Parts of at least 3 green-glazed ridge tiles, one in fabric attributable to Salisbury area (prob. Laverstock), the others matching contemporary pottery thought to be from Crockerton kilns. Two plain hearth tiles frags, on in local micaceous fabric, dsplaying rollered pattern of parallel lines on face.
Early 14th	5	Part of olive-brown floor/hearth tile with circular knife-cut recess in base & traces of white grout adhering to edges. Fabric matches contemporary Crockerton pottery.
Mid 18th–early 19th	7	At least 2 chocolate brown-glazed ridge crests with knife & cockscomb ornamentations on spine. Various plain roof & pantiles & part of stone roof tile. Virtually all could be Crockerton products but not an homogeneous group & almost certainly at least 2 buildings represented, ridge crests being perhaps the earliest items
19th	8	Various plain & pantile frags, fabric of which is comparable to late Crockerton pottery

This overall trend in building fashions is tolerably well illustrated in material recovered by excavation although the use of stone in earlier times is very difficult to perceive chiefly because rubble from houses is not readily distinguishable from stone used for other purposes. Thus rubble spread across the site in primary layers, datable to the 12th century, may well have originated from a stone-built building but the case cannot be proven. It is only when walls are observed *in situ* as in phase 7, that such use can be positively identified. In this particular instance the technique of building on chalk block footings is noteworthy since it is often seen in medieval contexts where damp conditions prevailed.

Of the materials stratified within 12th–14th century layers, tiles were evidently obtained from the same sources, or source areas, as contemporaneous pottery and serve chiefly to indicate that the tilemaking was part of the repertoire of Crockerton potters which has not previously been demonstrated. However, these fragments of glazed tile are unlikely to have originated from peasant dwellings and must instead be seen as illustrative of the merchants' houses that existed in this part of the town.

Metalworking Residues

R.W. Smith with M. Corfield (Lorraine Mepham)

All materials thought to be associated with metalworking processes were submitted to Mr M. Corfield (formerly Conservation Officer, Wiltshire Library & Museum Service). His findings form the basis of this summary report. It should be emphasised that the small size of the site makes it difficult to make generalisations about early metalworking in Warminster but the material does at least permit some useful insights into industrial activity in this quarter of the town.

As a principle only material from securely stratified layers was studied. In practice this means that the report focuses on the crucial earlier medieval layers. A detailed guide to the nature of metalworking residues recovered and how they were distributed within the excavated sequence appears in Table 3. As can be seen, most of the residues may be explained as by-products of ironsmithing but the extraction of metals by smelting also appears to have taken place in this part of the early town during the 11th or early 12th centuries. No *in situ* hearths were observed but debris from the breaking down of smithing furnaces survives in the form of six small bottom cakes (65–85 mm diam.) and fragments of lining material. Curiously, although these fragments are clearly from a domed super-structure the vitrified faces are always convex.

There was no direct evidence for hot working of non-ferrous metals but a bronze pellet from a phase 3a context may be a small and entirely fortuitous indication that it was taking place. The only other find of note was a lump of powdered lead oxide (red lead) from phase 2 which since a mint existed in the town at this time was initially thought to have a connection with processing of silver ores. But in the absence of corroborative evidence it may have merely been in use as a pigment.

Given that excavation sampled only a tiny fraction of the medieval regions in Emwell Street it is perhaps unusual that so much evidence for metalworking was recovered. The fact that contexts yielding slags span at least 200 years suggests that regularly used permanent ironworking facilities existed nearby. In this context it may be significant that the site is located behind properties with a frontage onto Silver Street.

The *Domesday* account, which occasionally records the existence of blacksmiths in a settlement, makes no mention of such a tradesman at Warminster even though the ironworking attested by excavation must have been contemporary with the town's survey. Such omissions are, however, characteristic of the cursory way in which towns were treated by the surveyors. Assuming that ironworking was in the hands of a full-time specialist he may have been one of the 30 burgesses recorded in the town at *Domesday*. The nearest known source of iron ore is on the neighbouring royal estate of Westbury but there is, as

Table 3 metalworking debris (g)

Phase	*SS*	*TS*	*FL*	*Ore*	*Date range*
1	–	170	–	–	11th
2	1600	25	45	35	later 11th–early 12th
3	210	–	65	–	later 12th–mid 13th
4	330	–	–	–	later 13th–early 14th

SS = smithing slag, TS = tap slag, FL = furnace lining

yet, no proof that these deposits were commercially exploited before the 19th century. If this was not the source of supply for medieval Warminster then ores can only have been obtained by more distant trading.

Faunal Remains

L. Freke and R.W. Smith
(Michael J. Allen)

Note: Three contexts (11, 14 and 16) containing small numbers of bones are recorded within the archive but not included with the groups defined below and this data remains in archive only. Identifications of cat, rabbit and roe deer are only recorded in archive by group and not context, but their presence is discussed in the text. These species therefore occur in the group totals but not as records in individual contexts.

The animal bone collection is small comprising 1144 fragments, weighing only 23 kg. It was, however, decided to study the collection in spite of this because of its excellent state of preservation.This enables some pertinent comments of the Saxon and medieval economy to be made. To offset the deficiencies in size of the material has been amalgamated into three groups and the data is summarised in Table 4.

The three groups comprise amalgamations of the site phases but represent discrete episodes of site use:

Group A: Phases 1, 2 and 3; spanning the 11th and 12th centuries the group comprises some comminuted or secondary refuse but most material was recovered from pit and ditch features in the marshy margins of a stream course and therefore appears to reflect primary dumping from habitations or workshops within close proximity. The waterlogged condition of these contexts has ensured an excellent state of preservation.

Group B: Mainly phase 4, but also phase 5b; broadly contemporary with the first major phase of urban expansion, this group spans the 13th and early 14th centuries. Most of the material was recovered from layers of general accumulation probably under cultivation as a garden

Table 4 Faunal remains

Context	*Cattle*	*Sheep/ goat*	*Pig*	*Horse*	*Red deer*	*Roe deer*	*Dog*	*Fowl**	*Cat*	*Rabbit*	*Unid.*	*Total*
GROUP A												
25	24	17	4	1	–		15	2		–	82	145
26	3	–	–	–	–		–	–		–	5	8
27	7	3	–	–	–		–	–		–	10	20
29	25	8	9	–	–		–	–		–	103	145
30	14	4	–	2	–		–	–		–	21	41
31	52	8	6	1	1		9	2		–	157	236
32	4	2	2	–	–		–	–		–	6	14
33	21	3	2	–	–		–	1		–	40	67
34	11	2	–	1	–		3	–		–	19	36
35	–	1	–	–	–		–	–		–	4	5
36	2	–	–	–	–		–	1		–	–	3
39	2	–	–	–	–		–	–		–	3	5
Total	165	48	23	5	1	(1)	27	6	(4)	0	454	734 (729)
GROUP B												
18	8	23	2	–	–	–	–	2	–	–	8	43
19	26	35	9	–	–	–	18	–	–	–	82	170
23	4	11	1	–	–	–	43	–	–	–	60	119
24	2	2	1	–	–	–	1	1	–	–	9	16
Total	40	71	13	0	0	0	62	3	0	0	159	348
GROUP C												
5	3	25	2	–	–	–	–	1	–		6	37
12	–	1	–	–	–	–	–	1	–		2	4
15	2	3	–	2	–	–	–	–	–		1	8
17	2	3	2	–	–	–	–	–	–		4	11
21	1	–	–	–	–	–	–	–	–		–	1
Total	8	32	4	2	0	0	0	2	0	(1)	13	62 (61)
TOTAL	213	151	40	7	1	1	89	11	4	1	626	1144 (1138)

* fowl = Gallus sp.

plot in their final stages of development. Some weathering and mechanical breakage is evident but overall condition is still good.

Group C: Phase 7; comprising bone from all contexts post-dating the 14th century episode of greensand spoil dumping, the group is an amalgam of many phases and sources. It serves merely as a point of reference when comparing medieval with later trends.

Contamination

The Emwell Street sequence is one of progressive if piecemeal deposition with minimal disturbance of medieval layers. Analysis of pottery associated with the reported bone groups confirms that contamination amongst groups A and B can be discounted although it is certainly a factor in group C (post-14th century).

Recovery, analytical procedures and rejected bone

Although the important medieval horizons were extensively excavated by hand, no sieving or flotation was attempted. Recovery may have been biased against small fauna. However, domestic fowl and rabbit are present, and given the nature of bone preservation, other species are unlikely to have been at all common. The major loss would therefore seem to have been remains of fish assuming that these were indeed originally an element in domestic refuse at the site.

All bones were studied for evidence of butchery technique, injury and disease. Where possible assessment was made of the age (following Silver 1968), sex (Chaplin 1971), stature (Harcourt in Sutton 1978), and meat-weight (Payne 1975). Loose teeth, small skull fragments and carpals were rejected because of the potentially misleading effect on fragment counts.

Species Represented

The data illustrated in Figure 27 are based on the major meat yielding species only, as these contributed most to the economy. Horse has been omitted because of its rarity and the lack of evidence for its consumption by humans. The data suggests that the numbers of pigs utilised remained fairly static throughout the use of the site, while there was a progressive decline in the numbers of cattle offset by an increase in sheep.

Minor species present (Table 4) are horse, red and roe deer, dog, cat, rabbit and domestic fowl. With the exception of deer and possibly rabbit, it is a highly domestic fauna. At least four dogs were recovered from both medieval levels including the articulated skeleton of a very large dog of mastiff size.

Butchery and Carcass Utilisation

There is little evidence for industrial processing of bone although the large percentage of cattle and sheep feet may be an indication of tanning and hide preparation for leatherworking in the vicinity. Much of the bone seems to be the waste from food preparation.

The excavated bone sample was far too small to attempt a detailed analysis of butchery techniques but the more obvious points are that the metapodials of sheep in particular, and of cattle were chopped across the trochlea; ulnas were chopped across the olecranon; tibiae at mid-shaft; humerii and femurii at the distal end; mandible at the ramus and beside the mental

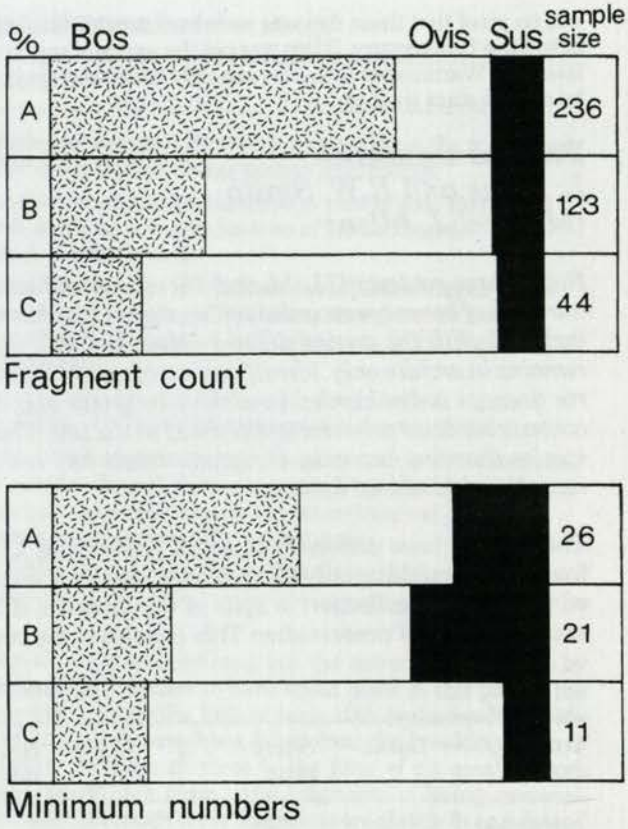


Figure 27 Animal bone, major species data

foramen; and radii just beneath the proximal epiphyses, including one pig radius from group C neatly sawn off at this point. Often chopping was not completely achieved and the bone was broken to complete the operation. The articulated skeleton of a very large dog had been partially dismembered at burial apparently so that it would fit a hastily dug pit that was otherwise too small. Both humerii and femurii had been chopped at the distal end to accomplish interment.

Appreciable numbers of foot and skull fragments of cattle and sheep in group A suggests that butchery of the main meat yielding species was carried out close to the excavated area, or that hide-working took place there. Pig bones from this group display a more even trend of utilisation from all parts of the body which is not surprising as the economic value of pig comes from meat, skin and lard. In group B, 46% of the pig bones

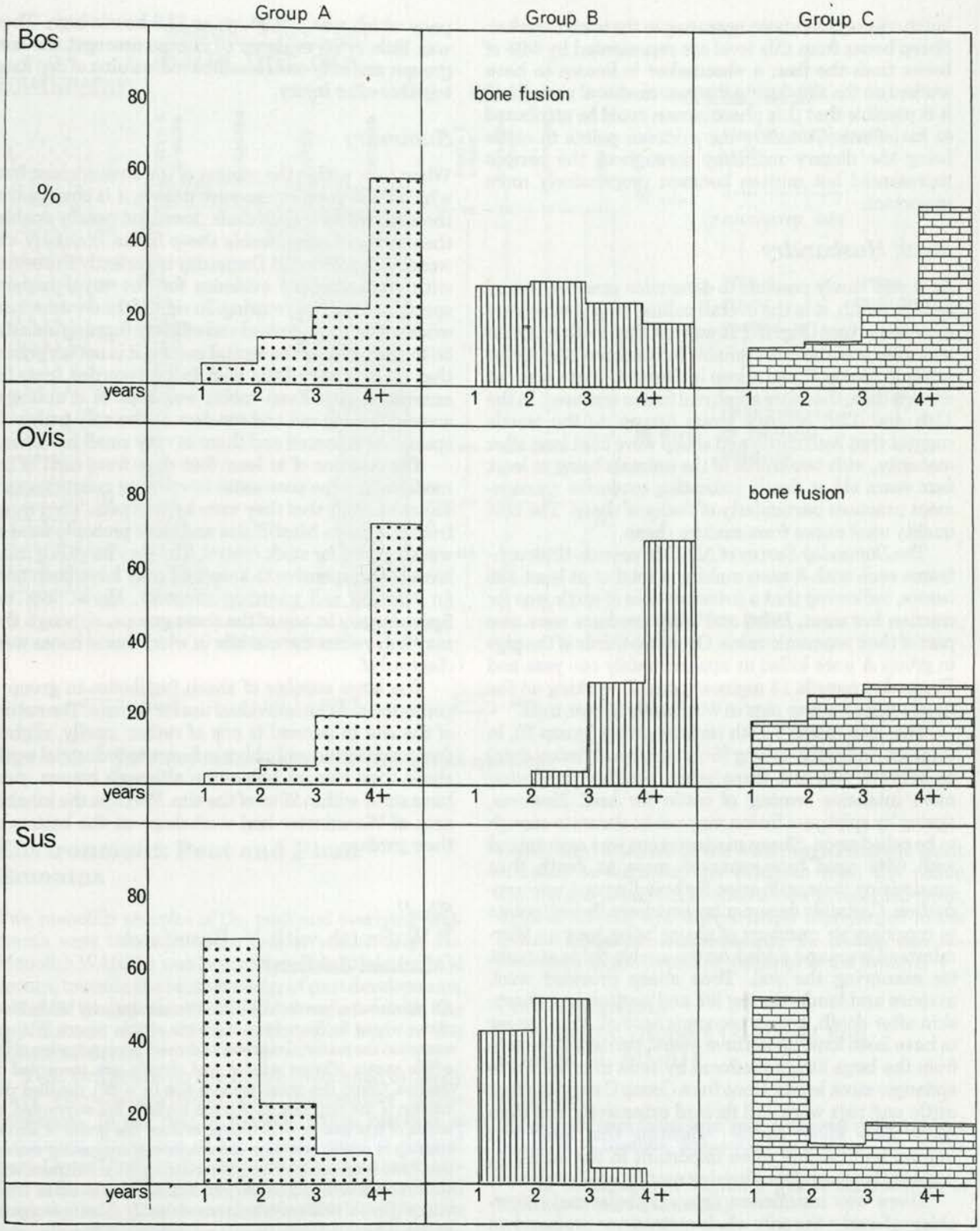


Figure 28 Animal bone, age data and culling trends

are skull or mandible fragments; could this indicate a preference for brawn amongst the inhabitants of 13th century Warminster, or is this disposal of non-food elements? A greater proportion of meat yielding bones of cattle are represented in group B suggesting that they were utilised for beef. A large proportion of the bones of sheep are from the feet, however, and it is possible that they were being used primarily for leather and hide work. In the post-medieval (group C) phase 63% of the cattle bones come from the hindquarters which is the prime choice for beef, indicating that marketing methods had changed by this time and professional

butchers may have been operating in the town's market. Sheep bones from this level are represented by 84% of bones from the feet; a shoemaker is known to have worked on the site during the post-medieval period and it is possible that this phenomenon could be attributed to his efforts. Certainly the evidence points to cattle being the dietary mainstay throughout the periods represented but mutton becomes progressively more important.

Stock Husbandry

As it was rarely possible to determine precisely actual ages at death, it is the overall culling trends which are most important (Fig. 28). It was felt that tooth eruption and wear was the most reliable indication of age but for cattle in Group B and sheep in Group C there was not enough data, therefore epiphysal fusion was used. In the 11th and 12th century group (group A) the trends suggest that both cattle and sheep were kept long after maturity, with two-thirds of the animals being at least four years old at death, indicating extensive management practices particularly of flocks of sheep. The best quality wool comes from mature sheep.

The *Domesday Survey* of AD 1086 records 42 plough-teams each with 8 oxen making a total of at least 336 beasts, indicating that a principle uses of cattle was for traction but meat, hides and dairy products were also part of their economic value. Over two-thirds of the pigs in group A were killed at approximately one year and Domesday records 13 pigmen (*pocarii*) working on the royal estate rearing pigs in woodlands at that time.

The 13th to early 14th century group (group B), in contrast, indicates culling (from epiphysal fusion data) at between two and three years, possibly suggesting more intensive rearing of cattle for beef. However, ageing by epiphysal fusion may not be accurate enough to be relied upon. Sheep management was maintained with 68% aged four years or more at death thus maximising their utilisation for breeding and wool production. Certainly documentary evidence (below) points to considerable numbers of sheep being kept on Warminster Down and folded on the arable fields at night for manuring the soil. Thus sheep provided wool, manure and lambs during life and mutton and sheepskin after death, a very economic animal. Pigs appear to have been kept up to three years, perhaps to benefit from the large litters produced by sows in order not to endanger stock levels. Bone from Group C suggests that cattle and pigs were still farmed extensively and even sheep were killed earlier indicating that lamb and mutton had become more important in the economy, probably because of the thriving market at Warminster.

There was insufficient data on the sexual dimorphism of cattle; the only whole metatarsus produced an index rating within the female range given by Chaplin (1971, 103–4). The evidence for stature is similarly inadequate except for sheep and dog. The sheep range from 51 cm to 65.5 cm in height using Harcourt's metapodial factors (Harcourt in Sutton 1978), and the dogs from 40.4 cm (Beagle size) to the large articulated skeleton from group B with a height of 75–85 cm (Mastiff size). The only other withers height available comes from a metatarsus of a cow standing 105.19 cm and a pony which was 133.25 cm or 13.3 hands high. There was little or no evidence of disease amongst the bone groups, and only one reossified radius/ulna of dog fused together after injury.

Summary

When seen within the context of the environment from which these populations were drawn, it is obvious that the large tracts of open chalk downland nearby enabled the rearing of considerable sheep flocks. Similarly, the woodland recorded at Domesday is perfectly in keeping with contemporary evidence for the royal manor's specialisation in pig rearing. In view of the documentary evidence for an organised and efficient farming industry on the demesne of the capital manor, it is not surprising that there is very little wild fauna recorded from the excavation site. Even rabbit was kept in a managed warren leaving red and roe deer as the only truly wild species represented and these in very small numbers.

The remains of at least four dogs from each of the medieval groups pose some interesting questions as it seems unlikely that they were kept as pets. They range from Beagle- to Mastiff size and were probably used as working dogs for stock control. The very large dog must have been expensive to keep and may have been used for hunting and guarding property. Horse does not figure largely in any of the three groups, although this may only reflect the manner in which horse bones were disposed of.

The large number of sheep foot bones in group C points towards an individual use for the site. The nature of the site in general is one of rather smelly, slightly damp conditions probably conducive to industrial workshops than human habitation although houses must have stood within 20 m of the site. Perhaps the inhabitants of Warminster had workshops at the bottom of their gardens.

Shell

R.W. Smith with N. Bannister (Michael J Allen)

All marine shells were submitted for analysis by Nikki Bannister whose findings form the basis of this report. Without exception the material represents domestic consumption of the edible oyster (*Ostrea edulis*) and details are presented in archive. Given the small sample size (n = 20), detailed discussion of the significance of these shells is not warranted. In terms of age and growth characteristics the group is almost entirely of one to two year old specimens suggesting oysters that have been selected bought for eating. This contrasts with oysters from both late Saxon and Elizabethan levels at Trowbridge (Smith 1993) which are consistently older (average 3+ years). Why this should be so is not clear but different marketing processes may be a factor.

Most of the valves are right (upper side) and suggest the discard of the shell for food preparation (the oyster is eaten from the left valve) and a number of shells from the 14th–18th centuries are recorded with notches made by knives when opening shell. A number of the Warminster oysters had whelk damage and could have been obtained from a number of places such as the Bristol Channel area, Southampton Water or Poole Harbour.

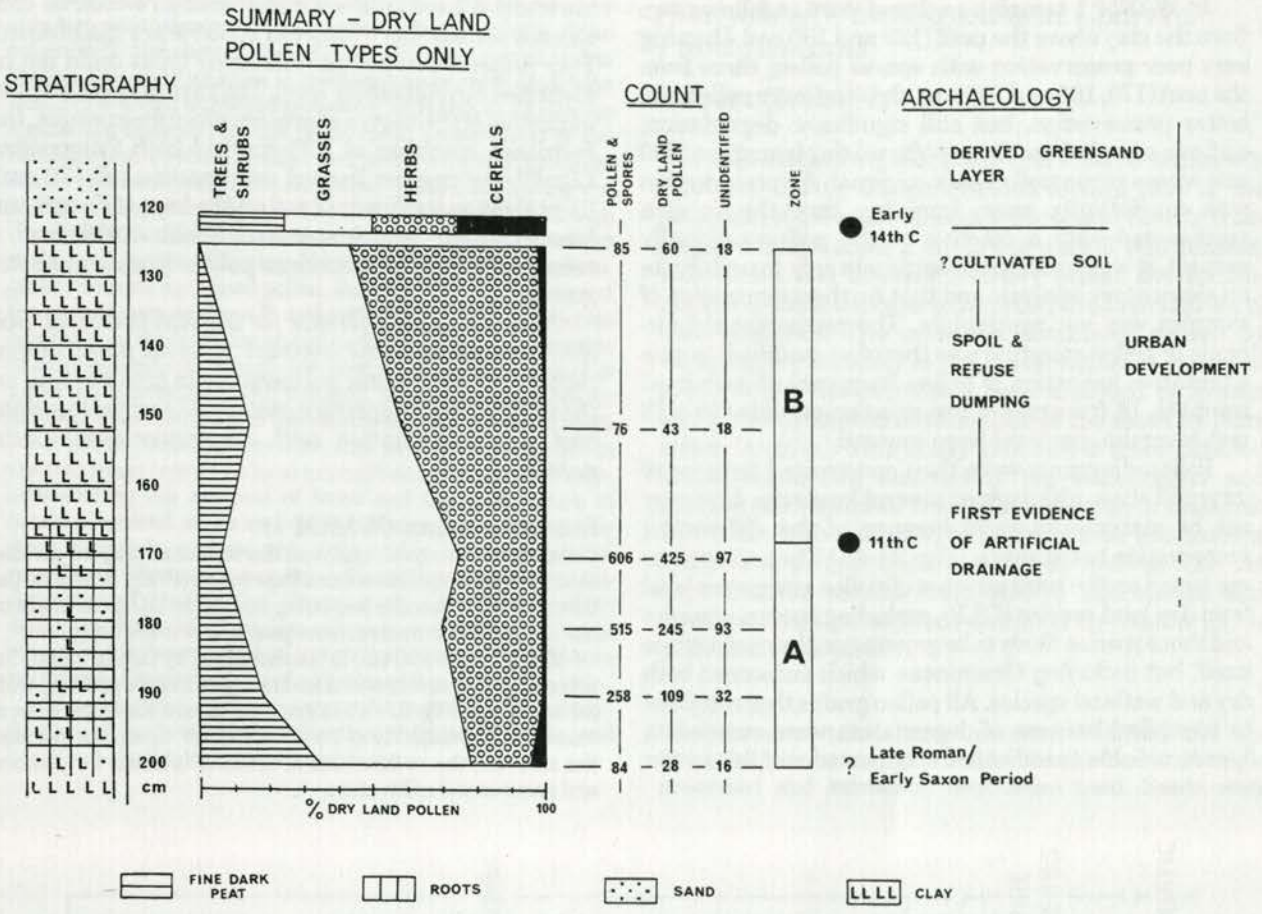


Figure 29 Summary pollen diagram, dryland pollen types only

Environment: Peat and Plant Remains

Two monolith samples of the peat and overlying sediments were taken from the master section (Fig. 11). Monolith WARM 1 was located 9 m along the horizontal datum, towards the southern edge of peat development, whereas the position of WARM 2 equated with the approximate centre of the watercourse (zero on the horizontal datum).

Peat formations on the Lower Greensand lithology have elsewhere yielded very informative pollen sequences. In the case of Emwell Street, however, a significant proportion of the groundwater is derived from Lower Chalk to the west and conditions are therefore rather too alkaline for perfect preservation. Initial study by Paul Waton revealed that the level of pollen depletion in WARM 2 was too great for analysis to be warranted. Fortunately, this poor preservation was not as serious in WARM 1 and the analysis of this monolith forms the basis of the sequence examined.

In an attempt to reconstruct the environments associated with the accumulation of clays, silts and peats in the northern part of the excavation, monolith sample WARM 2 (from the watercourse itself) was submitted for study to N. Bannister. She conducted elementary analysis of the waterlogged/charred plant remains to augment the evidence from the pollen spectra and in particular with a view to recorded types, such as cereals, which were under-represented in the pollen evidence. Subsequently R. Scaife has re-examined all the available material in the archive.

Pollen Analysis
P.V. Waton (Robert G. Scaife and Michael J. Allen)

Methods

Six samples were taken from each of the two sequences and subjected to chemical preparation as described by Barber (1976).

The stratigraphy of WARM 1 was as follows (levels in centimetres below site datum):

35–75 cm	Modern, mixed, stony soil
75–100	Greensand & stones
120–145	Dark grey clay, some organic matter
145–165	Lighter grey clay, some organic matter
165–190	Fine, mid-brown, clayey rootlet peat
190–205	Peat/green clay transition
below 215	Green clay, some ?tree roots

In WARM 1 samples analysed were as follows: two from the clay above the peat (125 and 150 cm), showing very poor preservation with sparse pollen; three from the peat (170, 180 and 190 cm), showing more pollen and better preservation, but still significant degradation; and one sample from the peat/basal clay transition (200 cm) where again pollen was minimal. As preservation was consistently poor, implying that the spectra represented only a fraction of the pollen originally present, it was considered legitimate only to undertake an elementary analysis and that further preparation of samples was not worthwhile. The conventional technique of pollen counting was therefore modified: to give a tentative indication of pollen frequency at each level sampled, 14 traverses of one microscope slide (18 x 18 mm coverslip) per level were counted.

Pollen diagrams were then constructed for ease of interpretation, although at several levels the data may not be statistically valid because of the differential preservation noted above. (Figs 29–31). The percentages are based on the total number of pollen grains per level from dry land species (DLP), excluding spores, aquatics and those species likely to be growing on the peat surface itself, but including Gramineae which subsumes both dry and wetland species. All pollen grains that could not be identified because of degradation were counted as 'Unidentifiable' to indicate the importance of this factor: normally 5% (of DLP + Unidentifiable) would be considered serious; here values of 20–35% are maintained. Poor preservation meant that many types could not be identified beyond family level. The taxa present are also indicative of the degree of preservation: for example, the restricted spectrum at 125 cm and high Compositae Liguliflorae suggest limited preservation (cf. 170 cm). Identification itself was based on the keys of Faegri and Iversen (1975) and Moore and Webb (1978) and a reference collection of modern pollen types and photographs.

Note: For easy reference for the non-specialist Bob Smith substituted the common English plant names rather than their Latin counterparts in both text and on the illustrations; the archive contains the all the raw data and a single diagram with the conventional Latin names.

Interpretation (WARM 1)

From the six samples analysed the sequence may be divided tentatively into pollen assemblage zones (PAZ), A and B, the boundary between the two being located at 167.5 cm at about the level of the transition from peat below to grey clay.

Zone A (165–205 cm) is characterised by falling values for arboreal pollen and bracken and rising values for grasses, with cereals at a low level. This is interpreted as a slow clearance of woodland, particularly of hazel and alder which surrounded the site, and the reclamation of areas of bracken for pasture and some cereal cultivation.

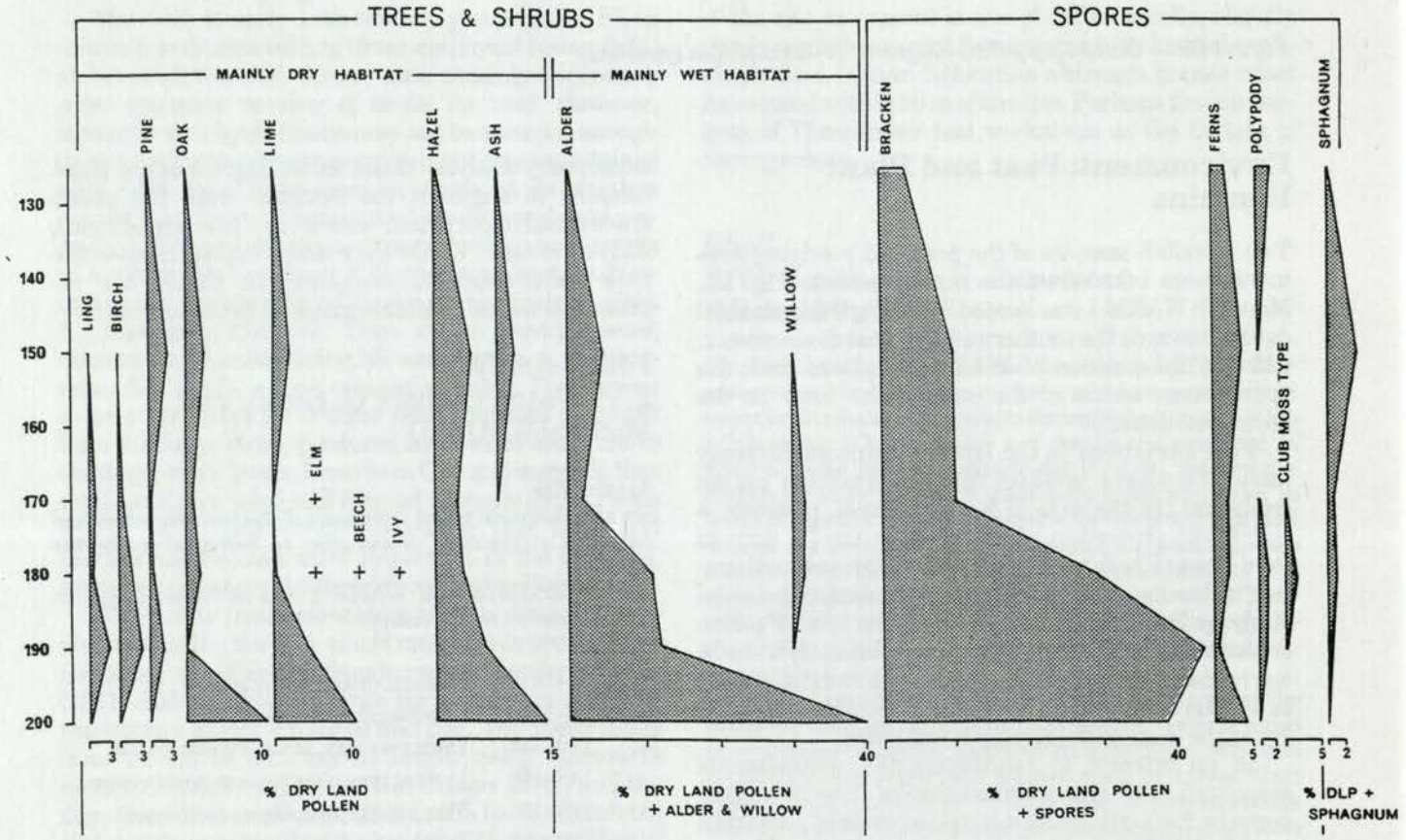


Figure 30 Pollen diagram, trees shrubs and spores

The interpretation of Zone B (125–165 cm) is hindered by only two counted samples and by the extreme paucity of the pollen with the obvious loss of taxa with less robust pollen grains. This zone appears to represent more open conditions than Zone A with increased grassland, although at 125 cm the trends are distorted by the preferential preservation of the resistant Compositae Liguliflorae. The differing stratigraphies of the two zones must be considered when interpreting the palaeo-environment suggested by the pollen spectra. Although the alluvial clay horizon may represent an attempt to reclaim the marsh by the dumping of material from elsewhere, together with its contained pollen, the apparent continuation of the trends seen in Zone B and initiated in Zone A mitigate against this. Reclamation would have involved the excavation of drainage ditches within the peat or deliberate mixing of imported alluvial clay with the peat. There is no evidence for either of these activities in the vicinity of the monolith at least.

It seems probable, therefore, that the recorded changes in the two zones represent local intensification of land use characterised by the removal of trees and the reclamation of bracken covered areas and their replacement, in the immediate vicinity, by pasture with some arable. Increased surface runoff over tilled areas may indeed have been the cause of the deposition of the fine clay. The area concerned is difficult to determine from pollen evidence alone because of the unknown extent of the deposit and uncertainties over the relative contributions of waterborne and airborne pollen.

The sequence, therefore, seems to represent an intensification of land use with utilisation of formerly waste and bracken area for pasture and arable uses.

Analysis of Waterlogged and Charred Plant Remains

Robert G. Scaife

The sequences of organic peats and alluvial sediments recovered during the excavations formed part of the floodplain of the small stream/watercourse flowing from Bugley Hamlet some 2 km to the west of Warminster. Excavation and artefact recovery places the accumulation of these deposits to between the 11th and early 14th centuries. The anaerobic conditions caused by waterlogging resulted in the preservation of sub-fossil pollen which has previously been analysed by Waton and previous limited examination of the seeds by Bannister (archive). This study provides a more detailed identification and analysis of the waterlogged and charred seed material from the sediments in monolith WARM2 which remained from this earlier assessment study. This investigation was also carried out with the hope that its results could add to information and environmental perceptions obtained by Waton in his pollen analysis (above).

Methods

Samples were taken from monolith WARM2 but unfortunately, no data remains which indicates the size of sample processed and extraction techniques used. Seeds were

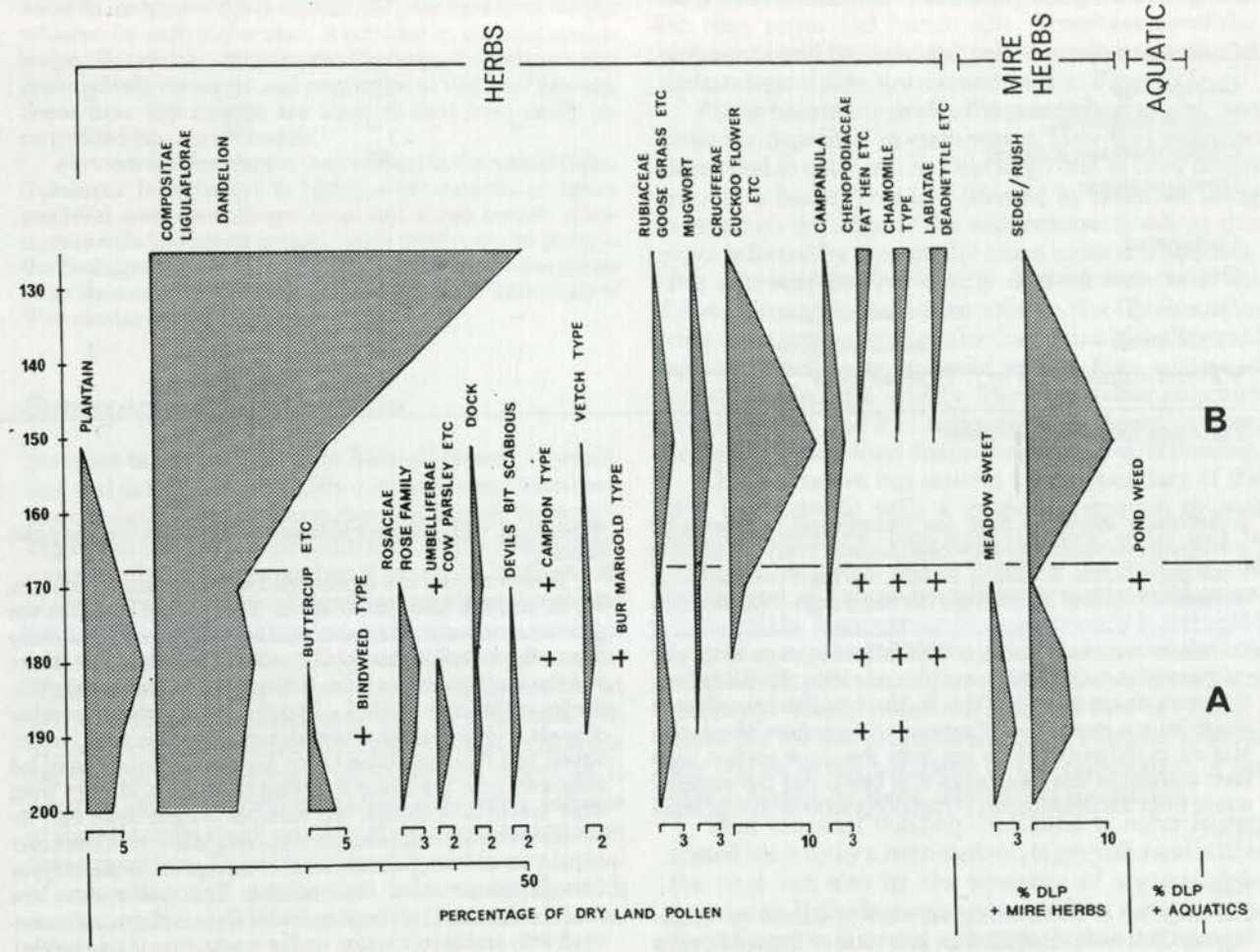


Figure 31 *Pollen diagram, herbs*

Table 5 waterlogged and charred plant remains from WARM2

	Context	*18*	*24*	*34*	*34*	*34*
	Depth	*95-107*	*107-128*	*128-136*	*136-183*	*183-199*
Trees/shrubs	**macro-fossil type**					
Corylus avellana	nut	–	–	1	–	–
Prunus spinosa	Spine	–	–	1	1	–
Rubus fruiticosus agg.	Seeds	2	–	2	1	–
Sambucus cf *nigra*	Seeds	1	2	–	8	5
Herbs						
Ranunculaceae indet.	Seeds	–	–	–	2	–
Ranunculus a/r/b	x	12	3	6	19	21
Urtica dioica	x	3	–	–	–	1
Chenopodium cf *album*	x	–	1	1	–	–
Cerastium holosteoides	x	–	–	–	1	–
Agrostemma githago	x	–	–	–	1	–
Polygonum persicaria	x	–	–	–	5	–
P. hydropiper type	x	–	–	1	–	–
Fallopia cf *convolvulus*	x	–	–	1	1	–
Rumex acetosella	x	–	–	1	–	5
Rumex sp.	x	–	–	–	2	–
cf *Brassica*	x	–	–	2	–	–
Potentilla cf *erecta*	x	1	–	–	–	1
Epilobium sp.	x	–	–	–	–	1
Apium graveolens	x	–	–	–	1	–
Lamiaceae indet.	x	–	–	–	2	–
Galeopsis sp.		–	1	–	–	–
Lycopus europaeus	x	–	–	–	2	–
Chrysanthemum segatum	x	–	–	13	–	–
Cirsium vulgare	x	–	–	–	–	–
Cultivated						
Triticum aestivum type	Charred caryopses	–	–	–	2	1
Triticum sp.	Charred caryopses	–	–	–	1	–
Secale cereale	Charred caryopses	–	–	–	–	1
cf *Pisum sativum/Vicia* sp.	Charred seeds	1	–	–	–	–

Taxonomy follows Stace (1991)

undoubtedly extracted from the waterlogged sediments by sieving and subsequently have been allowed to dry out causing some degradation. A total of 22 taxa has been recorded from contexts 18, 24 and 34 from the northern edge of the site (see Figs 11 and 12 for stratigraphy and location). Identification of the seeds was made using a Wild M3 low power binocular microscope at magnifications of about x10 to x60. Data from this analysis are given in Table 5. Absolute numbers of seeds identified are given. Identifications and numbers of samples present in different bottles but from the same context have been merged in this table since it is likely that the material comes from the same context. Taxonomy follows that of Stace (1991).

Results

The majority of seeds identified were preserved by waterlogging. This comprised 22 taxa in a total of 134 seeds, nuts and spines identified. A smaller number (6) of charred seeds of cereal grain with a single specimen of *Pisum sativum* were also present.

Three contexts are represented in the sediment column; 34, 24 and 18. Context 34 spans 199–128 cm and has the greatest number of taxa recorded. However, this is most likely due to the fact that this context was thicker than the others and three samples were taken and analysed. The sample from the top of this context (136–183 cm) has the greatest number of seeds and taxonomic diversity but again this may be construed as a function of the 45 cm depth of sediment sampled compared with the closer sampling of 16 cm and 8 cm from other contexts. Although the variable sample sizes and intervals has given data somewhat skewed in favour of the lower context 34, there appears to be little change in the plant types through the period of accumulation. The seed spectra are clearly dominated by weeds typical of disturbed ground associated with arable cultivation and/or waste ground (see below). In addition to this are a small shrub component which includes

Corylus avellana (hazel), *Prunus spinosa* (sloe), *Rubus fruticosus/idaeous* (blackberry/raspberry) and *Sambucus* cf. *nigra* (elderberry). Although the peat and sediments were deposited in a river/floodplain environment, it is surprising that aquatic and marginal aquatic taxa are not more prevalent in the assemblage. Those plants which may, however, be attributable are *Lycopus europaeus* (gypseywort), possibly *Apium graveolens* (celery) and Ranunculaceae indet. the latter possibly being of *Ranunculus*, Batrachium sub-group.

The disturbed ground/arable component is the most important group. Typical are *Agrostemma githago* (corn cockle) (1), *Chrysanthemum segetum* (corn marigold) (13), and sporadic records of *Chenopodium cf. album* (fat hen), *Urtica dioica* (stinging nettle), Polygonaceae, Brassicaceae and less likely but definitive records of other groups (eg. Labiatae). Cultivated crops are represented by the small number of charred grain of *Triticum (aestivum* type; indet *Triticum* (wheat, inc. bread wheat type), *Secale* (rye) and *Pisum sativum* (pea). It must be stated, however, that numbers of caryopses are small and no chaff remains were present. Thus, little can be said other than that they provide an indication that crops were being used. The waterlogged assemblage of waste-ground and/or arable weeds which includes diagnostic segetals such as corn marigold and corn cockle and ruderals, is perhaps more diagnostic and a better indication that cultivated land existed in the vicinity. Waton's pollen analysis similarly provides evidence for this with pollen from what was described as the 'Tertiary layers' of 13th and 14th century date showing an expansion of pollen of cereals and weeds of cultivation. This was associated with woodland depletion at least in the area of Warminster town.

Waton has noted an earlier, 11th century phase of pastoralism at 170 cm in his profile. He has attributed this to pasture areas on margins of the floodplain and peat mire area. Whilst evidence for such pastoralism is not clear in the seed assemblages, *Ranunculus acris/repens/bulbosus* (buttercup) seeds are relatively abundant and may relate to this local pasture. Seeds from this habitat are likely to have been easily incorporated into the sediments.

No trees and few shrubs were present in the assemblages. *Sambucus* (elderberry) is highly characteristic of urban medieval seed assemblages since this shrub favours nitrogenous soils and waste ground. Little weight can be given to the finding of hazel(nut), blackberry/raspberry and sloe spines other than providing evidence of local growth in the vicinity of Warminster during this period.

Summary and Conclusions

Samples taken in 1979 from Emwell Street, Warminster and dating from the 11th–14th centuries have been re-examined. Seed preservation was largely by waterlogging in the floodplain sediments of the local watercourse and in a small number of examples by charring. Overall, the seed assemblages are largely assignable to arable and disturbed ground habitats which perhaps indicate local cultivation. This is similarly evidenced in Waton's pollen record of the late 13th–14th century at this site. Similarly, there may also be additional evidence for pasture/grassland in close proximity to the site perhaps on and adjacent to the floodplain. Above all, it must be stated this interpretation is tentative because of the relatively small number of seeds remaining from this excavation. The range of seeds found is very typical of assemblages of similar date from medieval urban contexts; although it is rather impoverished in its diversity.

Sediments and Environment: discussion (Michael J. Allen)

The key to interpretation of sediments (examined from the site in monolith WARM 2) lies in attempting to understand how the environment developed in the catchment area of the watercourse. Currently this stream rises as a spring located 2 km west of the town in the vicinity of Bugley hamlet. After flowing across Upper Greensand, it briefly follows the line of the Warminster fault before crossing onto Lower Chalk where it has deposited alluvial material in a wide channel that extends eventually into the excavated site.

It is only in the upper part of its course that land suited to cultivation is found adjoining the stream. To the north lies Chedlanger Field, one of the original medieval open fields, shared jointly between Warminster town, Bugley and the nearby village of Corsley. To the south of the stream lay Bugley hamlet, first mentioned in 1236, but possessing a place name form which may well be Old English in origin. Once past Bugley, the watercourse enters a broad expanse of marshland that, since 1323, has been known as Woodman Mead. This meadow and Chedlanger Field were, throughout the medieval period, managed together on a rotation that involved fallowing every other year.

In order of deposition, sediments correlating with the pollen sequence, (which terminates in the late 13th/early 14th century) may be simply categorised as greenish clay, peats and humic silts. Their nature of the sediments and the relevant palaeo-environmental and archaeological data are summarised in Figure 32.

At the base of the profile the greenish–grey clay was probably deposited in open water. How this situation developed is not clear, but blockage due to flood debris may be a factor. This is evidenced by branches being trapped on the edge of the watercourse which at this point is forced by topography into a natural bottleneck. The alluvium itself is clearly derived from both the Lower Greensand and from soils on the Chalk and in view of the presence of angular fragments of chalk would appear to represent material eroded from cultivated slopes by rainstorm activity. There is no clear structure to the deposit and it is suggested that it results from, perhaps, no more than one prolonged episode of flooding.

The distinctive but uneven upper boundary of the clay is consistent with a gradual transition to peat forming conditions. How long the flood water took to recede is uncertain, but to judge by the mottling and oxidisation of lowest peat layers, vegetational colonisation of the drying ground was repeatedly interrupted by, perhaps, seasonal fluctuations in water level. Once established, peat seems thereafter, to have formed continuously. Woody plant remains are rare in primary peats but become progressively more frequent towards the higher levels, testifying to the colonisation of the marsh surface by reeds, shrubs and small trees.

That seasonal flooding continued to occur is suggested not only by a high content, of greyish sand within the peat but also by the presence of angular stone fragments. Both elements may, as before, reflect cultivation of upstream areas, although in this instance, the

absence of calcareous sediments indicated that such activity was perhaps restricted to fields over Upper Greensand. In the final stage of development, the peats were trapping a fine blackish silt rather than sand.

A notable feature of seed remains from the peats and indeed, the first humic silt layer above them is that wheat grains, some carbonised, were relatively common throughout the sequence (Bannister, archive). Assuming that they were introduced by flooding, they serve as a fortuitous indication of why the upstream fields were being cultivated. They also add to the evidence for cereals previously determined by pollen analysis. The reason why peat formation ceased cannot be discussed in any detail at this stage, but both natural and cultural causes seem to be responsible. Following a standstill, the site continued to receive waterborne sediment, generally similar in character to that deposited in the peat layers, but are more sediment (alluvial clay) rather than fibrous peaty monocot in character. The main distinguishing characteristic of this horizon is the evidence for minor stream activity. Within the sample itself, two 'stream' phases, each identified by lenses of waterworn grey–green sand, are separated by a phase in which sand is rare. Rather than interpret these as distinct hydrological interludes, it is probably more appropriate to regard them as the by-product of a braided watercourse whose many elements are periodically changing position.

Environmental Reconstruction

Note: throughout the discussion Bob Smith places relatively high reliance upon the presence of cereal grains of wheat. There were very few surviving in the archive (see Scaife above) and, although Bannister does record cereals in her notes nowhere is wheat specifically recorded. It is assumed that this evidence is no longer in the archive, but we must be wary of the heavy reliance placed on this evidence by Smith in his discussion as neither the quantities are known, nor whether they were charred or waterlogged, which is crucial to their interpretation. In view of Scaife's analysis and a single comment by Smith (below) it has been assumed that cereal grains were charred.

Any attempt to reconstruct the past environments of Emwell Street should start with an examination of the processes, both cultural and natural, that lie behind the formation of the excavated deposits and the evidence they contain. For this reason, data obtained by analysis of sediments, pollen and plant remains should be correlated with archaeological and historical evidence for human activity in the area (Fig. 32).

The various sources are each subject to their own limitations. These may be summarised as follows:

Pollen — Preservation was less than ideal with an attendant risk of biased results. It is better, therefore, to base interpretations on general trends rather than detailed values. In view of the evidence for regular flooding of sampled horizons, a significant proportion of the pollen may be derived from upstream areas to the west of the site. However, most pollen from short stemmed plants probably originated from within a 30 m radius, whereas airborne tree pollen by virtue of greater release height, may be derived from further afield.

Waterlogged plant remains — Chiefly transported into the silt by flooding, the assemblage must also contain some material representative of very local conditions, but not necessarily at the excavated site. The sediments show no significant reworking, but obviously much of the original spectrum of plant remains has been most to decay.

Sediments — The sequence of deposits (WARM2) indicate local wet river margins (peats) with occasional overbank flooding represented by the deposition of lenses of sands derived from the Lower Greensand. Increase in the quantity of redeposited sand, and the presence of discrete sand lenses indicate higher energy flooding episodes on perhaps a drier, less marginal land surface. The mixture of alluvial silt and organic matter with plant remains is difficult to interpret, but is unlikely to be the physical deposition of imported alluvium for reclamation, and may represent deposits resulting from increased local run-off due to tree removal and the increase of agriculture with the local catchment.

Archaeology and history — The excavation has revealed physical evidence of how and why settlement encroached into this marshland site. Whilst the associated faunal remains are useful as a crude indication of contemporaneous environment, trends observed within the stock population, hay have been induced by economic factors as well as habitat changes. Historical sources for the period prior to the 14th century are few and since none are specific to the Emwell Street area, they can only be employed as a guide to environment in Warminster's hinterland generally.

For convenience the evidence for past environment is reviewed within a chronological framework based on successive pollen sampling horizons.

a) Early settlement (200 cm)

Remains of Roman settlement are relatively abundant in the Warminster area and include at least one large villa estate on the eastern side of the town. That such sites have not yet been recorded within the town precincts, or on its western outskirts is probably due to inadequate investigation of these areas. This point is relevant because the green–grey clays noted at the base of the Emwell Street profile are best explained as the result of massive sediment run off from cultivated areas during a prolonged episode of wet weather. Whilst the event cannot be accurately dated, it appears to have taken place in the late or immediate post-Roman period) and may, therefore, be symptomatic of the climatic and hydrological changes recorded elsewhere in England at this time (Potter 1976, 214).

Pollen trapped in the upper surface of these clays was poorly preserved but the setting it conveys is one of a poorly drained alder marsh adjoining tracts of woodland in which lime, oak and hazel appear to be the dominant tree types. Non-arboreal pollen indicates that the local landscape also contained small areas of arable ground and pasture but the scale of agricultural activity was probably very restricted.

b) Limited settlement expansion (190 cm)

A reduction in arboreal pollen is broadly paralleled by increases in grasses, other herbs and a continuing presence of cereals; a trend indicative of limited agricultural

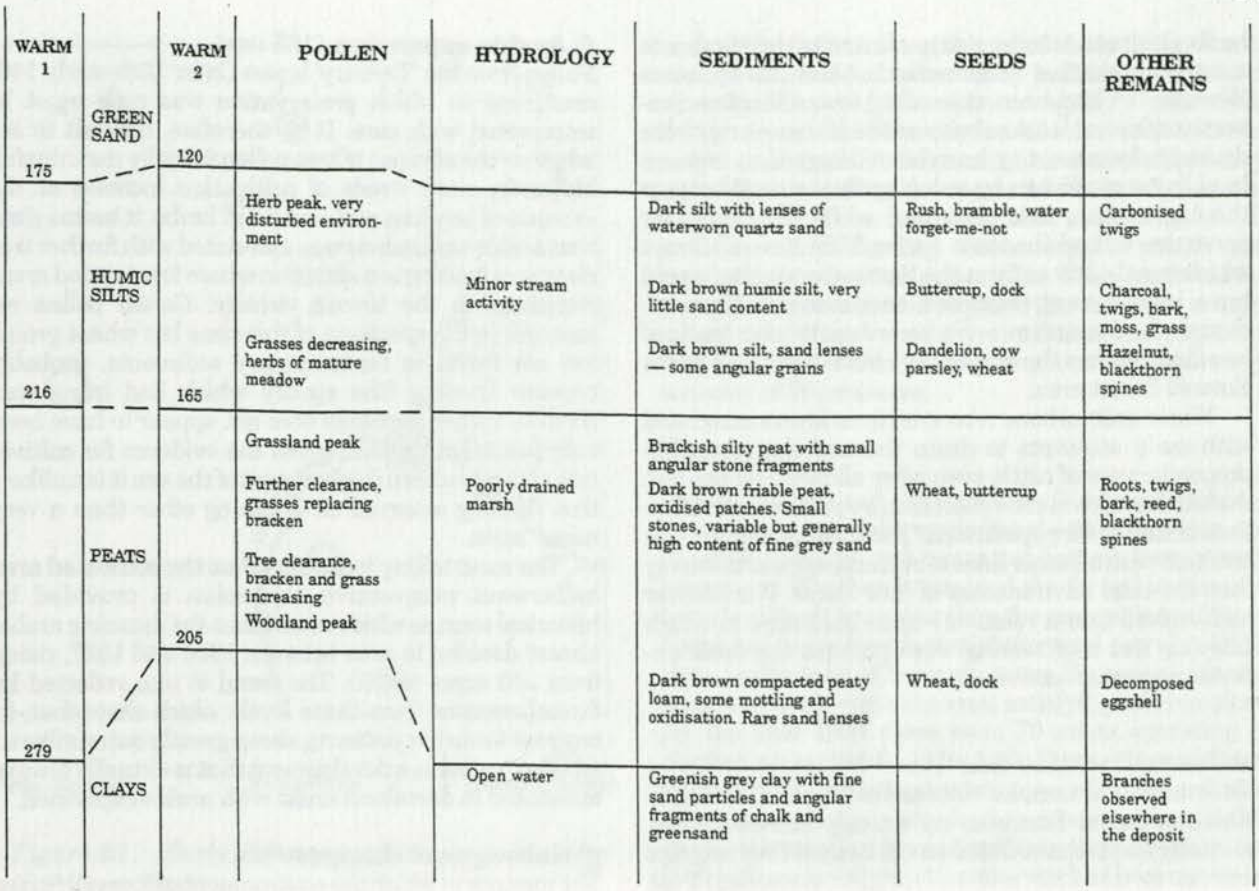


Figure 32 Summary of sediments and vegetation and suggested links with the pollen sequence

expansion. The disappearance of oak at this time may reflect selective felling for building timber and hazel, which may have been selected for wattling and fencing, but also lime, show a marked decrease.

Whilst some of the newly cleared areas appear to have become stable grassland, others evidently lay in waste as suggested by the spread of bracken and the appearance of colonising species such as ling and birch. The presence of pine has to be treated with caution as it is often carried long distances, but if local in origin, we may tentatively suggest that it might represent the progressive acidification (podzolisation) of local soils.

In the marsh itself peat formation was actively taking place and although some hydrological changes occurred the layer continued to receive greensand sediments as a result of periodic flooding. Alder pollen decreases sharply, possibly being partly replaced by types such as blackthorn which is evidenced by its spines and perhaps pollen.

c) Consolidation (180 cm)

Tree pollen values continue to decline with the notable exception of oak which may have re-emerged locally as a carefully managed timber resource. The taking in hand of waste is seen chiefly in the manner by which grasses and herbs replace bracken, but declines in ling, birch and pine may also be related to this process.

Changes in the local marshland are reflected mainly in further replacement of alder by species such as blackthorn and willow. Periodic flooding remained a constant feature with and greensand sediments from upstream arable areas being deposited in the peats and the charred wheat grains representing waste from processing areas in the town which had been dumped in the river or on the river margins.

d) Pastoral peak (170 cm)

With virtually all woodland gone from the immediate vicinity and grass pollen attaining their highest value, the environment appears to be one dominated by pastoral activity. It is just possible that the tree types that do occur, such as elm, may have been growing in hedgerows or copses with many of the herbs present at this level. Although formalised division of field by hedgerows largely occurred with the enclosure movement late in the 17th and early 18th centuries, it is possible that this may represent some limited enclosure of pasture areas on the edge of the marsh. Peat continued to form but there are signs that drainage of the area was improving since alder and sedge are at or close to their lowest values.

It is at this point in the sequence that the first direct evidence for human activity in the Emwell Street site is seen. These primary features contain refuse datable to the 11th century and consist of at least two drainage ditches aligned parallel to the route of the watercourse. If they are representative of what was happening elsewhere in the area, the overall intention would appear to

be the desire to convert a strip of intractable marsh into a more productive meadowland. Alternatively, since Warminster had been expanding towards urban proportions from at least as early as the 10th century, these drainage features may have been designed to improve local living conditions by reducing flood risk. Whatever the explanation, it is clear that when the *Domesday* surveyors visited the town during 1085 Emwell Street which is only 300 m from the Saxon manor site, would have been a very disturbed environment. Thus, although the *Domesday* entry records extensive tracts of woodland within the manor very little, if any, lay in the Emwell Street area.

Waste animal bone recovered from layers associated with early attempts to drain the site shows a clear preponderance of cattle even after allowing for the fact that such evidence can reflect dietary preferences rather than actual stock populations. Thus, faunal remains, in common with all other lines of evidence appear to convey that the local environment of late Saxon Warminster had evolved into a relatively open landscape in which dairying and beef rearing were perhaps the most important agrarian activities.

e) Transition (150 cm)

Environmental samples obtained at this level correlate with excavated features, collectively known as the secondary layers, and dated on the basis of their artefact content to the 12th and earlier 13th centuries. Peat formation had ceased and of those plant species likely to be growing in the site itself, or very close to it, nearly all are typical of mature meadowland and can be paralleled without difficulty in present day Woodman Mead (Pl. 1). Periodic flooding was evidently still a problem which may have prompted the positioning of hurdles and stake bound brushwood on the edge of what had now become a more clearly defined watercourse. These measures certainly encouraged the formation of a natural levee as sediment accumulated at this point, but it did not altogether prevent the deposition of flood silts in lower parts of the site.

In areas beyond the stream banks an increase in tree pollen may be an effect associated with maturing hedgerows for closes are indeed recorded around the town in the 13th century. It is, however, more likely that limited woodland and copse regeneration was taking place as suggested by an increase in colonising species such as ash. In balance it seems likely that both explanations are valid. The most significant point is that the composition of this woodland was markedly different from that observed at the base of the excavated profile which is more characteristic of mature forest.

That changes were occurring in agricultural areas is implied by a marked reduction in grass pollen which cannot be wholly explained in terms of woodland regeneration. Cereals, which are generally under-represented in the pollen evidence, are absent altogether at this point but charred grains of wheat in these sediments and a sharp rise in waterlogged weeds of cultivation may suggest the ploughing of former pasture. Ostensibly, the 12th century was a period of environmental and agricultural transition.

f) Arable expansion (125 cm)

Pollen from the 'Tertiary' layers (later 13th–early 14th centuries) in which preservation was poor must be interpreted with care. It is, therefore, difficult to see whether the absence of tree pollen is really meaningful. However, since weeds of cultivation increase at the expense of bracken and woodland herbs, it seems clear that arable expansions was associated with further tree clearance leading to a situation where few wooded areas remained in the town's vicinity. Cereal pollen re-emerges in the spectrum of this time but wheat grains are not found in contemporary sediments, probably because flooding (the agency which had introduced them to earlier horizons) does not appear to have been very prevalent. Indeed, given the evidence for cultivation of the southern (higher) part of the site it is unlikely that flooding occurred on anything other than a very minor scale.

The most telling indication that the cultivated area underwent progressive expansion is provided by historical sources which record that the demesne arable almost doubled in area between 1300 and 1327, rising from 240 acres to 400. The trend is also reflected by faunal remains from these levels which show that, in contrast to earlier patterns, sheep greatly outnumbered all other animals, a development that is virtually always associated in downland areas with arable expansion.

g) Subsequent changes

The manner in which the environment of Emwell Street changed after the 14th century cannot be determined. Pollen simply does not survive sufficiently well for meaningful analysis and sediments display considerable disturbance as would be expected given the urban nature of the site. Further discussion of the environment can therefore only take place within the context of what was happening to the town in general (see below).

Interpretation

Origins

When Warminster first appears in recorded history its importance rests on the fact that it was a royal estate upon which a Minster Church had been founded. There is unfortunately no way of knowing how early this situation came into being but it was certainly before the opening decades of the 10th century when the first mention was made. Warminster was by that time already an established village beginning to acquire many of the features that are the hallmarks of Saxon times.

Ultimately its origins must be sought in the evolving pattern of prehistoric and Roman settlement arranged around the town but more specifically there are two lines by which to approach the question of when the town site was itself initially occupied. The first concerns the character of the pollen spectrum from the lowest excavated layers at Emwell Street. This indicates that land within 50 m was being farmed in the late Roman to early Saxon period. With regard to topography and land use capabilities the most logical point from which to exploit the area is that later occupied by the Saxon and medieval

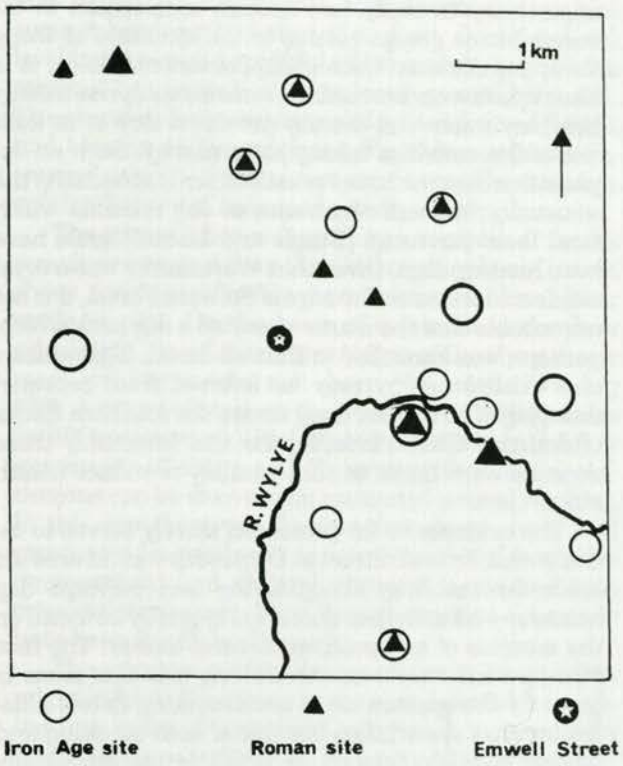


Figure 33 Early settlement patterns in the Warminster area

manorial nucleus. A second approach to the question of origins stems from a consideration of the Minster. Such churches represent the earliest attempts (dating mainly from the 7th century), to provide a permanent spiritual service to rural areas and appear to have functioned as a base from which a small corporate body of priests could travel about their designated territories. Obviously to achieve this purpose a new foundation would ideally be based on nodal points in the communication network or alongside settlements with an established administrative role.

Why Warminster was selected as the site of a Minster may never be determined. it may well have been the focus of a large royal estate at this time but its neighbour Westbury probably also has the same credentials (Fig. 33). Whatever the reason it seems that the late Roman or early Saxon agricultural settlement, observed within the pollen data, had by the close of the 7th century developed to the extent that it was a viable centre from which to expand the church's influence in south-western Wiltshire.

Consolidation

The scale of mid–late Saxon settlement at Warminster should not be overstated. It is clear that although its agriculture was being progressively expanded the landscape still contained large areas of waste and woodland — part of the huge expanse of Selwood. Direct evidence for the way in which its agriculture was organised is lacking but it is possible to reconstruct some aspects on the basis of environmental and land use constraints operating in the vicinity. The early settlement occupies an oval Upper Greensand 'island' of about 12 ha extent, most of which if not taken up by buildings, yards and other facilities could have been regularly cultivated. Such an area would scarcely have been sufficient on its own and other arable fields must have existed but they were separated from the manorial nucleus by an encircling band of low lying land that even today is still prone to winter flooding. These areas of marsh and meadow are only of economic value when exploited for grazing or as a source of hay and this factor, to a large extent, would have predetermined that cattle rearing and dairying were of especial importance to the early economy of Warminster.

Transition

During the 10th and 11th centuries Warminster changed from an essentially agricultural settlement into one in which industry and commerce became increasingly important. Whether it attained the formal status of a town is difficult to see but then the recognition of Saxon burhs has never been a straightforward exercise. Of all the possible tests of borough status the possession of a mint is in many ways the most satisfying and complete. By the year 1000 there were 70 mints operating in English areas (Biddle 1976, 138). From coin evidence it is clear that Warminster was one of them and was therefore probably recognised as a burh although this need not imply that it was a settlement of any great size. It does however signify that the site had become something of an economic and administrative centre for its hinterland which probably extended to a radius of 10–15 miles (15–25 km).

Warminster was a royal residence from at least as early as the 10th century, a factor which in itself may have promoted commercial development. It also may have had a bearing on the siting of new industrial and commercial facilities. Reference to the present day street plan shows that the road from Bath is routed in a curve around the Saxon manorial nucleus (Church Street) and enters an open area, formerly the site of Emwell Cross (now the Obelisk) which is traditionally said to have marked the centre of the old town. From here it passes south of the manor through Silver Street which, with Emwell Street running parallel to its rear, has been identified by Haslam (1976, 63) as the most likely location of the earliest urban development. Although Haslam suggested that settlement expansion into this area took place in the mid 12th century and was associated with the manor being granted away from the Crown it can now be seen that the process started much earlier. As such it must be attributable to the period of royal ownership and was presumably motivated by a desire to site noisy, smelly industrial activity well clear of the royal residence.

Excavation reveals that attempts to drain the marshy strip at the back of Silver Street were underway by the early 11th century. Whether this was intended to enhance its agricultural potential or to improve local living conditions is not clear but the fact that domestic and industrial refuse thereafter began to be deposited on the southern edge of the marsh suggests that it was the latter.

At this stage it should be stressed that the earlier refuse layers observed in excavation appear to have been cast into the marsh solely from the southern side (Emwell Street). If the topography of the area has been correctly interpreted Emwell Street served as a rear access route to properties fronting onto Silver Street and as such the refuse is perhaps more likely to have emanated from workshops and outbuildings than permanently occupied houses.

Domesday

It is evident from the 1085 survey that large woodland tracts still survived around Warminster. However, these most probably lay well away from the town chiefly in a belt to the south and west of which Eastleigh. Southleigh and Norridge woods are the last surviving vestiges. Excavated evidence, particularly the pollen data, suggests that most land actually adjoining the town was given over to grassland, some of which, typically the more valuable meadowland, may well have been enclosed by mature hedgerows.

The manner in which the environment had been progressively altered in the period prior to the 12th century conveys an impression that the estate was heavily committed to stock raising. *Domesday* actually records 13 pigmen on the manor and faunal remains from Emwell Street show that, on the basis of age data, pigs were indeed intensively reared, being mostly slaughtered as soon as they reached maturity. Cattle and sheep were by contrast generally kept until they were at least four years old. In the case of the former, this is partly explained by the ever-present need for trained draught oxen. Nominally the 42 ploughs recorded at *Domesday* would have required 336 beasts.

Although faunal remains indicate a marked predominance of cattle in early layers the evidence is to some extent biased by relative differences in carcass value. It is therefore a minor tragedy that the *Domesday* Surveyors did not record the number of animals at Warminster, as they did in other West Country settlements. Had they done so it would have provided a rare opportunity to study how species composition in excavated bone groups relates to the structure of living stock populations. These disappointments aside, it is clear that the earliest animal remains comprise mainly butchery waste and thereby provide a clue to at least one of the activities taking place nearby. Such an explanation does not however satisfactorily account for the unusually frequent occurrence of dog remains which from their size range (Beagle and Mastiff) could have been hunting dogs. Given that Warminster was a royal residence located on the edge of Selwood Forest, it is not improbable that the manor operated a dog pack which, perhaps, was kennelled in Emwell Street. That stables also existed nearby may be inferred from repeated dumping of straw and dung across the southern flanks of drainage ditches crossing the site. Invariably these deposits were burnt *in situ*, possibly to reduce health risks.

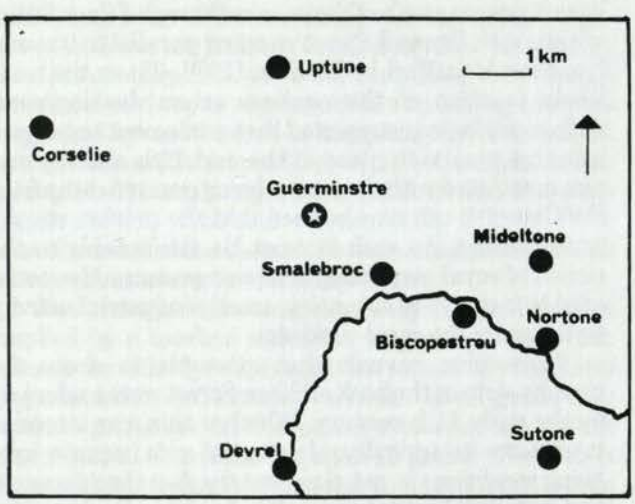


Figure 34 Named Domesday settlements in the Warminster area

The evidence so far presented merely serves to indicate that Emwell Street at Domesday was an area set aside for stabling, slaughtering and perhaps dog kennels — all activities that could typically be found on the margins of any prosperous rural manor. The first sign that industry was encroaching into this scene is given by the appearance of metalworking debris illustrating that a workshop capable of both smelting and forging iron lay close by. A smith is not specifically mentioned by the 1085 survey (as they sometimes are) but he could well have been one of the 30 burgesses recorded. The trade or craft pursued by the others can only be guessed but it is clear from the pottery is use that they had commercial connections in the Salisbury area.

Commercial Development

By 1156 Warminster had passed out of royal ownership and belonged to the Constable of Old Sarum, an event which can only have enhanced trade opportunities in that direction. Pottery from the Salisbury area does indeed become more commonly used but such vessels are only a minor part of the spectrum of traded commodities. It is more interesting to consider what was being carried to Salisbury on the carts and packhorses that brought pottery back. In the light of later documentation of Warminster Market documentation of Warminster's market it was probably grain, some of which may have been detailed for export via Southampton.

Throughout most of England the economic importance of grain production markedly increased from the end of the 12th century (Postan 1972, 58), whilst market trends may have been vastly responsible, climatic changes must also be considered, for as Evans (1975, 174) observes, this was the period known as the 'little climatic optimum' during which summer temperatures were considerably higher than they are today. Such a shift in emphasis from pastoral to arable farming can be seen in the excavated pollen sequence which clearly shows a fall-off in grassland although not all of the land released was necessarily cultivated. Neither did climatic improvement bring flooding of Emwell Street to an end. The early drainage ditches had, it is true, become redundant but this was chiefly because the level of the site had been built up by repeated dumping of rubble, spoil

and refuse. At the stream edge brushwood packed against hurdling had started to form a semi-natural level but it was not yet fully effective and winter floods continued to deposit silt over lower ground behind it. The site was, however, drier and better drained than it had been in earlier centuries. For this reason the increased volume of refuse cast into it must be seen as a valid indication of increased activity nearby.

The picture that emerges from analysis of faunal remains recovered from the 13th century levels is that sheep were considerably more numerous than either cattle or pigs. On the basis of a minimum numbers calculation the relative percentages of the three major meat yielding species are: sheep 48%, cattle 34%, pig 28%. A record of stock on the demesne in 1296 gives an 'in-life' structure of 72%:14%:14%, confirming the new importance of sheep and illustrating that useful conclusions can be drawn from excavated animal remains. In this case, however, the fact that sheep are so well represented is partly due to a proliferation of foot bones (metapodials) and skeletal elements associated with prime joints are rare. Meat for consumption appears to have been chiefly beef or pork.

The unusual predominance of sheep metapodials might indicate that these bones were selected for working into items of household equipment, a purpose for which they are well suited. But none bear any signs of working whatsoever and the preferred explanation is that they represent detritus from the processing and tanning of hides, which probably still had foot bones attached when they arrived from the slaughterer. That these remains were associated with iron awls further suggests that craftsmen capable of fashioning hides into saleable, leather goods worked nearby. Indeed the entire process of skinning, tanning and leatherworking may have been carried out within just the one workshop.

Of other industries or crafts attested by excavation, ironworking is still in evidence and there are hints that pottery was being made in the vicinity although the vast majority of locally made vessels were probably obtained from the well-known kilns at Westbury and Crockerton.

During the period from the later 12th–mid 13th centuries Emwell Street had obviously undergone considerable development and although some habitations must have existed along its course the area is more readily recognisable as a rather smelly industrial backdrop to commercial properties facing out onto Silver Street.

A New Town

At some time probably around the beginning of the 13th century the Maudits, lords of Warminster, set in motion plans to extend the town eastwards. The motive for doing so may have been partly because the old commercial quarter could not accommodate the growing volume of the trade operating through the market but chiefly one suspects that it was the promise of increased profit from market tolls. The characteristically regular layout of new burgage plots in the 'planted' town can still be traced in the present-day plan of the Market Place (Fig. 35) but it is most unlikely that they were all immediately taken up. Indeed the nature of refuse deposited in the Emwell Street site shows clearly that commercial or at least industrial activity continued in the older part of the town throughout the 13th century. There was then no sudden translocation, but it was perhaps inevitable that trade would eventually refocus in the more spacious market to the east.

In 1300 tolls received from the market and fair of St Laurence amounted to 15 shillings but by 1327 they had risen to 100 shillings, and increase that must reflect a massive growth in trade because apart from a wild upsurge in 1315–17 prices had remained fairly constant (Postan 1976, 264). To understand these developments, reference must be made to what was happening in the landscape for the economy was still very firmly based on agriculture.

Pollen evidence, from Emwell Street, for renewed forest clearance and arable expansion is corroborated by contemporary historical sources which show that demesne arable almost doubled in extent between 1300 and 1327, the same period in which market tolls increased so rapidly. Warminster arable was arranged in four large fields, North, South, East and West (Chedlanger), of which two would lay fallow each year. In economic terms, wheat, because of its high market value, was the most important crop of the day and was predictably the most widely sown in Warminster fields. Barley and to a lesser extent, oats, were also of importance and we may further suspect that a wide variety of vegetable crops were grown in crofts and gardens around the town but on this matter the documents are silent. They do, however, show continued expansion of sheep flocks was would be expected in an agricultural region that relied heavily on fold manure to keep its arable in good heart. That flocks were not expanded as quickly as the arable was an error of judgement repeated throughout England at this time and one that would inevitably lead to fertility problems, lower yields and economic misfortune later in the century.

If the late 13th–early 14th century was a period of boom in the new town it is likely that the citizens of Emwell Street shared in it, even if they were peripheral to most commercial activity. There is evidence that leather and iron continued to be worked near the site but there are also signs that the character of the area was changing from an industrial to a residential quarter. Butchery is still an element in the animal remains but bones from prime joints, particularly beef, are much more common. Oyster shell is for the first time present in quantity and amongst the associated pottery highly decorated jugs, many obtained from non-local sources, are frequently scattered.

Redundant in its commercial role it was perhaps natural that the old part of the town would be redeveloped as a residential area, a process which can be to some extent be seen directly in the excavated material, containing as it does scatters of broken glazed ridge tiles and hearth tiles. Outwardly this would appear to be meagre evidence on which to invoke a rebuilding episode but if the houses were constructed of timber and thatch, as were most medieval houses in Warminster, these are almost the only materials likely to survive decay or not be reused. While the type of buildings being pulled down can only be guessed at it is most unlikely that glazed

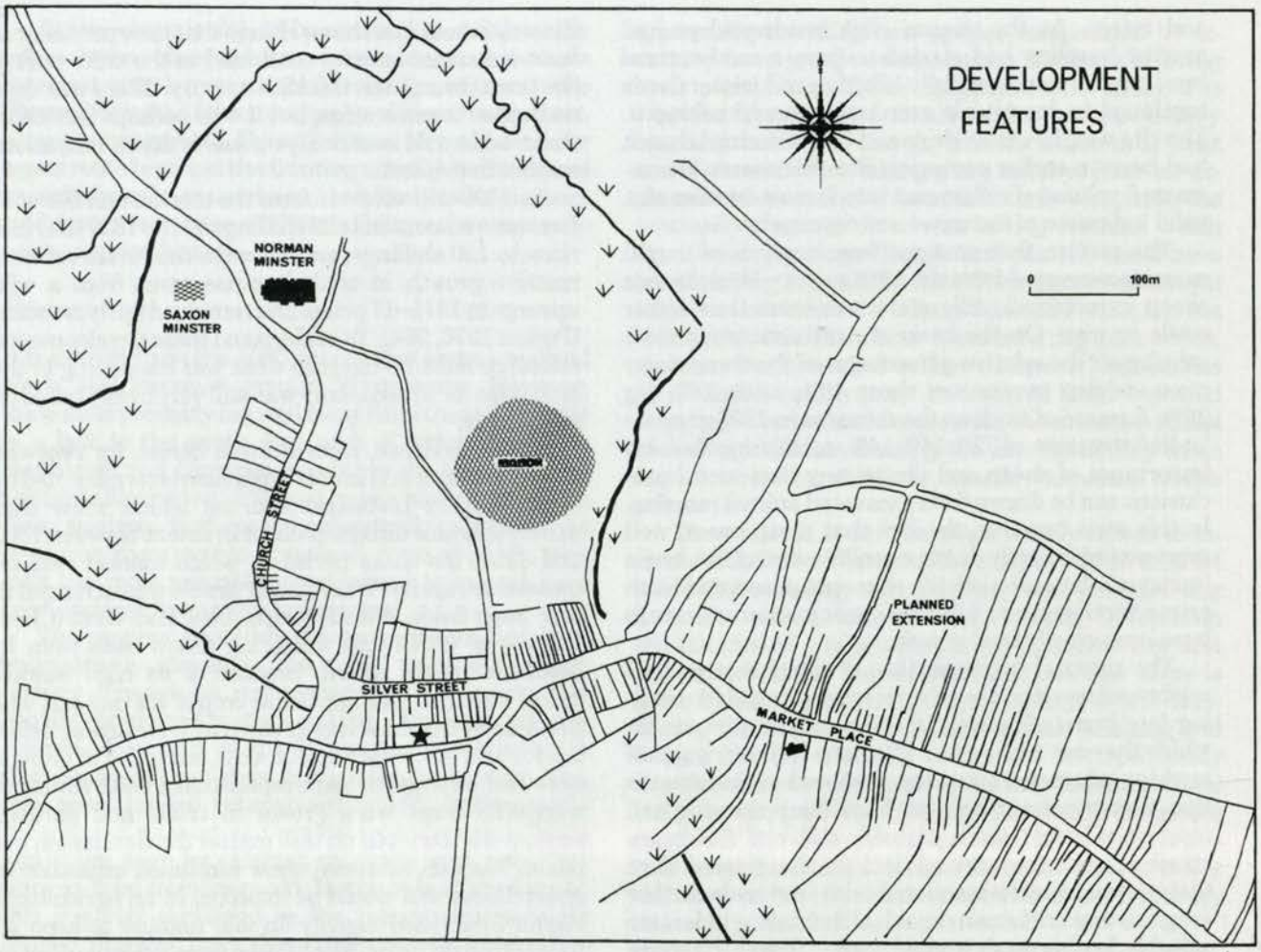


Figure 35 Development features of the town

ridge crests would have been fitted to the roofs of peasant hovels.

The prospect of redevelopment was also made viable by the fact that the area was generally better drained and drier. Flood silts are virtually absent from the lower part of the site and ground only marginally higher was actually cultivated, probably as part of a croft or garden attached to a house in Emwell Street. There are also signs that, in summer, the watercourse occasionally dried up altogether because it is difficult to see how burial of the dog, encountered in a pit on the northern edge of the site, could otherwise have been accomplished. The disposal of a dog in this manner, even a Mastiff, is not in itself a particularly remarkable event but it provides an opportunity, all too rare in archaeological investigation, to reconstruct in some detail the actions of an individual. It is unfortunate that the person concerned was evidently an inept bungler or, as will be explained, a poor loser.

Mastiffs were prized in the middle ages because of their ability in bear baiting contests. Whether the Emwell Street dog met one bear too many we shall never know but he was certainly a fine healthy specimen with no obvious sign of disease or infirmity. Prized or not, his demise appears to have occurred in high summer and the need to get the body beneath the ground as quickly as possible ruled out any prospect of a ceremonial departure. So it was that our individual set out to bury the carcass. His fundamental mistake was to underestimate the size of the pit required. A hole no more that 35–40 cm deep simply will not accommodate an animal that stood at least 90 cm high at the shoulder, especially if *rigor mortis* had set in. Having bundled the body in upside down the inadequacy of the grave became apparent but instead of digging a deeper pit he rather irreverently lopped off the projecting legs and threw them into the hole before departing from the scene. We are entitled to consider whether these were not the actions of a man who had bet and lost heavily on his dog!

Emwell Street in Later Times

Early 14th century development of Emwell Street culminated, as far as the excavated record is considered, in deposition across the site of a 45 cm thick band of freshly dug greensand. Its origin can only be conjectured but with reasonable confidence it may be suggested that it was derived from digging out the slope, south of the road, to accommodate a building. Many such terraces are still occupied by present-day houses.

There is little doubt that Emwell Street continued to attract settlement throughout the remainder of the medieval period but within the excavated area traces of such activity are almost totally absent. Disturbance

associated with post-medieval building on the site may be a contributory factor in destroying refuse or occupation horizons but it does not explain the rarity of artefacts datable to the period, which should have survived in redeposited spoil. Taken at face value it is possible that this part of Emwell Street was not much used between the 14th and 18th centuries but the situation is far from clear.

The Elizabethan period was a time of prosperity for Warminster, and indeed it was elsewhere. To the west John Thynne and purchased a tumble-down priory set in 60 acres of moor and marsh and with enterprise typical of the times set about constructing new mansion — Longleat, the centre of an estate that would eventually envelop most of Warminster.

Leland, a 16th century traveller, tells us that the town was widely known as a great corn market but we know from other sources that matting, leatherworking and the clothing industry also contributed to its economic success. Only at the northern edge of the site is there any evidence to indicate what was happening in Emwell Street. The stream course had become heavily polluted and choked by silt and domestic rubbish. It was in all probability an open sewer, a factor which would explain why houses were apparently not built on its southern bank. Refuse thrown into this, by now rather squalid, little stream, included a few Crockerton vessels but by far the most common element was waste animal bone amongst which sheeps' feet are again prolific. As before these finds point to leatherworking, or at least tanning, in the immediate vicinity. The wooden heeled shoe recovered from the stream silts may even be a local product but it had clearly been in use for some time before being discarded and cannot therefore be regarded as a workshop reject.

By the 17th century the former stream course had probably lost all meaning as a physical feature although its line continued to be perpetuated as a boundary dividing properties in Silver Street and Emwell Street. Safe from flooding and pollution the site was ripe for occupation and in the early 18th century it was indeed developed. Reference to the 1783 to Inclosure Award map of the town shows that the stone foundations observed in excavation are vestiges of a workshop outhouse sited alongside the residence of one Henry Aldridge whom contemporary trade directories list as a shoemaker. Even without this identification, leatherworking on the site could have been deduced from associated refuse which contains an iron awl and the, by now customary, predominance of sheep metapodials, which, in this case, constitute more than half of all the bones recovered.

That Henry Aldridge was no ordinary shoemaker is conveyed by the fact that amongst his personal possessions were imported German stoneware mugs, Chinese porcelain and a wide variety of English finewares from potteries in Staffordshire and Bristol. Food debris from his kitchen shows a preference for prime beef joints and oysters occasionally served.

For reasons which are not now clear the site has been restructured by the later 19th century and Aldridge's substantial stone and tile workshop replaced by a pair of barns or sheds. Then some time shortly before 1890 the Warminster Aerated Water Company commenced operations from the site, apparently for a new purpose-built brick building. Vast numbers of broken glass and stoneware bottles underline that the main task of those who worked there was the bottling of lemonade and ginger beer. After a disastrous fire in the first decade of the century the original foundations were re-used in the erection of a timber framed shed. Throughout most of its subsequent life, it served as part of a motor coach garage, although during World War II the shed was pressed into use as a workshop for calibrating and repairing American tank gun sights.

Postscript (1982)

While much has been learned from the excavation it will perhaps be most appropriately regarded as a pilot study or as a signpost to the archaeological potential of Warminster. Much more work remains to be undertaken. There has, for instance, never been any investigation of the 'planted' part of the town — the Market Place — an area which has been subject to increasing commercial redevelopment.

Should the opportunity arise, excavation of one of the original burgage plots, which can still in some cases be traced on the ground, will offer a chance to study how early commercial activity was organised and the extent of the town's trading network. However, excavation is both costly and time consuming. The first priority for future research must therefore be a systematic field survey of the town and its hinterland undertaken in parallel with a new and more detailed appraisal of the historical sources available.

The Emwell Street excavation was, above all, designed to study the early development of Warminster (Fig. 36). In this report one of the most significant facts to emerge is that the town's origins lay in a farming settlement established very early in the Saxon period if not actually in late Roman times. The process by which it became a royal residence and the chosen site of a Minster is an intriguing problem and one that deserves to be explored in detail.

I would speculate that future research will show Warminster to be merely the latest form of a central place that has existed at various points in the western end of the Wylye valley during the past 2500 years. Battlesbury Camp, a large multivallate hillfort 2 km east of the town, is known to have been heavily used during the mid–late Iron Age (VCH I.I, 118) and there are signs that it was superseded towards the time of the Roman Conquest by a 52 acre (c. 5.4 ha) univallate earthwork in the valley below (Fig. 33). This site, known locally as the *Buries*, stands immediately alongside the River Wylye and when examined by Colt Hoare (1812, 108) yielded profuse remains of Romano-British occupation including items of armour.

A short distance east is the only known villa in this part of Wiltshire — the Pitmeads complex, discussed by Cunliffe (1973, 453) as belonging to the later Roman period. Here, discovery of two bodies in the ruins, one evidently trapped by a roof fall, speaks of a violent end to the estate. The fact that no attempt was made to recover the dead must surely signify that the villa had

ceased to serve its intended role, rule of its lands having passed elsewhere. It is possible that Battlesbury was, during these troubled times, temporarily re-used but as we have seen when a central place next emerges in the area it was located away to the west on what was perhaps the edge of the old villa estate.

We seem to be looking at a situation where factors such as topography and land use potentials have conspired to give sites in the western end of the Wylye valley clear advantages as centres from which to organise and control agricultural production. The establishment of Warminster as a mid Saxon administrative focus that went on to become a late Saxon town was perhaps an inevitable outcome of the same processes that created Battlesbury, the Buries and the Pitmeads villa complex. Less clear are the factors that brought mobility to the latter. What made the Pitmeads site, standing as it does in the poorly drained meadowland, so attractive to its Roman builder? Why wasn't the mid Saxon royal residence established closer to the villa? These and other related questions must be approached before we can begin to see the true origins of Warminster.

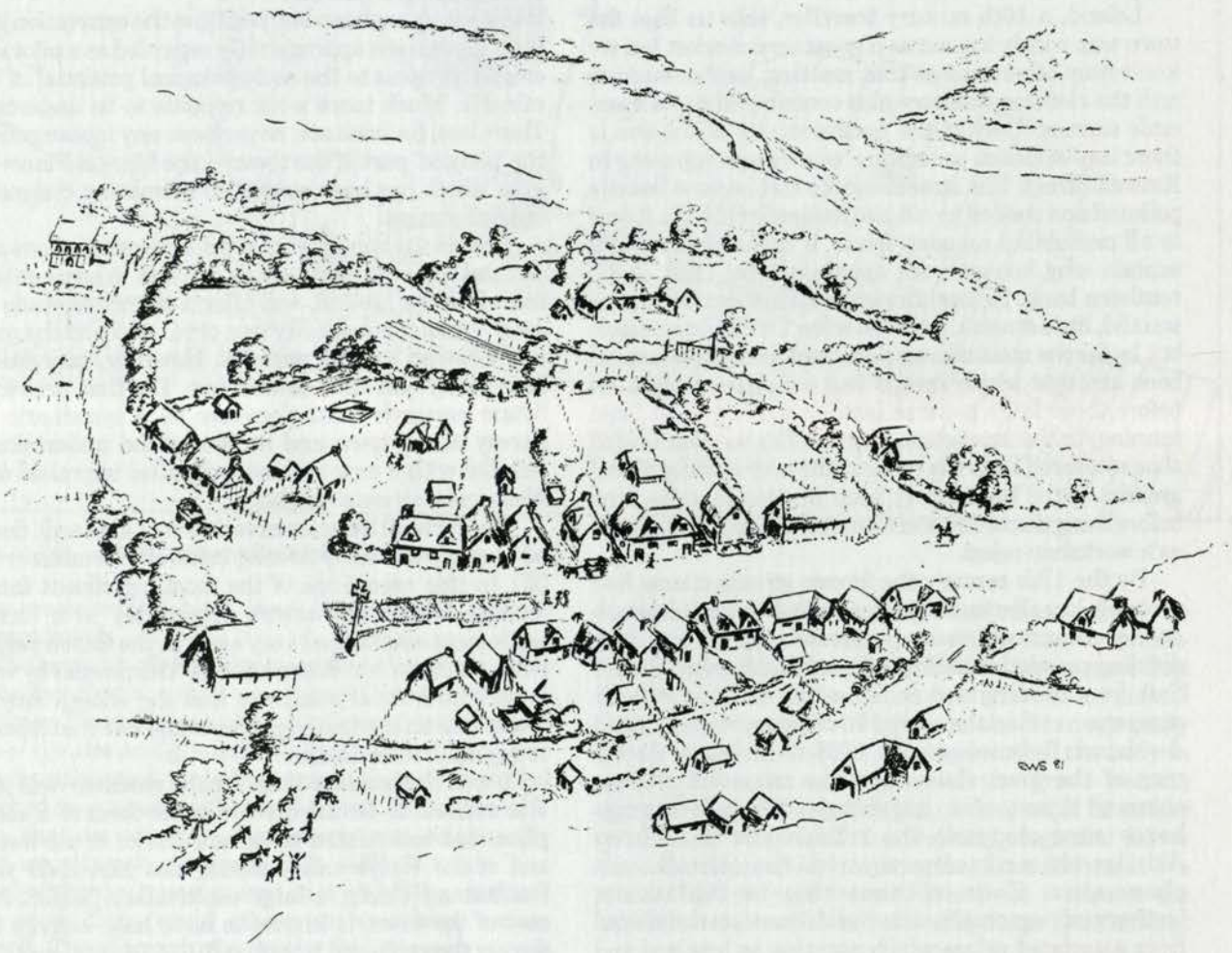


Figure 36 Reconstruction of the early town

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Excavations during 1979 on the fringes of Saxon Warminster have revealed evidence which suggests that the town's origins will eventually be traced to a nearby late Roman or early Saxon farmstead. Environmental studies illustrate how this primary settlement expanded into its surrounding landscape. Initially stock rearing and dairying appear to have been particularly important but from the 11th century onwards, the emphasis progressively moves towards 'sheep and corn' husbandry so typical of the medieval chalklands. Urban development, initiated in late Saxon times, impinged on the excavated site during the 11th century when Emwell Street was almost certainly a back street to the early urban quarter of the town. Activities taking place in the area during the medieval period include the smelting and forging of iron, butchery, and perhaps leather working and potting. By AD 1300 most of the town's commerce had shifted to a new, formally laid out, market area. Redundant in its former role, Emwell Street attracted some residential development, but sloping topography and a susceptibility to winter flooding appears to have inhibited most further building until the post-medieval period. The site produced an important assemblage of medieval pottery from the Crockerton kilns.

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