

# Kentish Sites and Sites of Kent

A miscellany of four archaeological excavations

By

*Phil Andrews, Kirsten Egging Dinwiddy, Chris Ellis, Andrew Hutcheson,  
Christopher Phillpotts, Andrew B. Powell and Jörn Schuster*





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*Cover photographs*

*Front:* Excavations at Manston Road, West Malling Bypass, and Manston Road, Margate with a selection of flint artefacts from West Malling Bypass, metalwork from Late Bronze Age Hoard 2, Weatherlees WTW and pottery from Margate

*Back:* Rheinzabern samian jug from a Roman grave at Cottington Road, Ramsgate and socketed axe from the Late Bronze Hoard 2, Weatherlees WTW, Margate

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# Acknowledgements

## **West Malling and Leybourne Bypass**

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### **A Kentish type of medieval sunken-featured bakery/kitchen**

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# Abstracts

## **West Malling Bypass**

A programme of archaeological fieldwork, including evaluation, targeted excavation and targeted watching briefs was undertaken both in advance of and during the construction of the A228 West Malling and Leybourne Bypass. Evaluation indicated predominantly later prehistoric (specifically Late Iron Age but also Late Bronze Age/Early Iron Age) and medieval (12th–13th century) activity along the route. Subsequently, targeted excavations were undertaken in seven areas of high archaeological potential.

Residual worked flint (Late Mesolithic–Late Bronze Age) was recovered from topsoil/subsoil horizons and later (mainly Iron Age) archaeological features from several areas. No firm evidence was identified to indicate settlement activity of this date within Area A, although the palaeotopographic setting would have been attractive to hunter-gatherers and sedentary farmers alike. A possible cremation burial was recorded in Area B. An important find in Area B2 was a near-complete Pot Beaker deposited in a pit.

Two Iron Age enclosure groups were found in Areas A and E2. In both cases the main focus of associated settlement lay outside the road corridor. Finds suggest animal butchery and cooking, textile manufacture, crop harvesting and possibly pottery production within these small-scale agricultural communities.

Very little evidence for either Romano-British or Anglo-Saxon activity was found. Romano-British activity was limited to residual pottery, two coins and a piece of possible tile. An Anglo-Saxon sunken-featured building (SFB) and a post-hole were identified in Area E2 producing artefacts and environmental material.

Medieval and post-medieval features and finds include, most significantly a bakery structure of medieval date in Area B1 and a post-medieval mill leat in Area C. The bakery structure contained hearths and ovens, from which charcoal-rich deposits were recovered. A near-complete pottery vessel was recovered from the final filling of the structure.

## **Weatherlees–Margate–Broadstairs pipeline**

Archaeological investigations were undertaken in advance of the expansion of a wastewater treatment works and the construction of a c. 12.5 km long underground wastewater pipeline traversing the Isle of Thanet, Kent. The pipeline route extended northwards from Weatherlees Wastewater Treatment Works (Weatherlees WTW) to Margate Headworks, Foreness Point. A further route extended from the

Headworks south-east towards the smaller Broadstairs Headworks, North Foreland.

Thirteen sites with archaeologically significant remains were identified along the route. Features from all periods from the Neolithic to the Second World War were encountered; stray finds of Palaeolithic and Mesolithic date meant that all periods of human history were represented. A selection of the most significant findings are reported on here.

A Late Neolithic mortuary enclosure was found next to Broadley Road, Margate. This may be the remains of a non-megalithic long barrow, with a later superimposed ring-ditch (probably a Bronze Age round barrow). In addition to three previously known examples, two further examples of Late Bronze Age ‘Carp’s Tongue’ hoards were recovered from Weatherlees WTW. These occurred in or overlaying a large ‘midden’ spread.

More than 30 Late Iron Age–Romano-British burials were encountered, including some graves with burial customs only rarely found in Kent, for instance:

- a small cremation cemetery at Coldswold Road, Manston, dated to the mid- and later 1st century AD, with several burials containing cremated remains deposited in wooden caskets. Four inhumation burials, also dated to around the time of the Roman Conquest, were found in large, probably defensive boundary ditches at Ebbsfleet Lane and Weatherlees WTW;
- two adjacent early Romano-British inhumation burials were located near to Cottington Hill, in an area close to the location of a Romano-British villa;
- an enclosed, dual-rite cemetery, including several burials in amphorae, of early to late Romano-British date as recorded just north of Cottington Road.

Of more local significance was the Middle Anglo-Saxon sunken-featured building at Cottington Road, just south of the Romano-British dual-rite cemetery, as well as an inhumation burial at the base of a ditch terminus at Cottington Hill. A sunken-featured building at Star Lane, with two partially extant ovens, was probably used as a bakery in the 12th–13th centuries. It belongs to a type of building so far confined to northern Kent. Evidence for the fortification of Thanet during the Second World War includes a probable searchlight position at Ebbsfleet Lane, and air-raid shelters at Manston Airport and Foreness Point.

### **A medieval enclosure and bakery/brewery at Fulston Manor, Sittingbourne, Kent**

Excavations in advance of housing development revealed part of a large rectangular ditched enclosure, subdivided by internal ditches and dated by pottery to the mid-11th–early 13th centuries. The most significant feature within the enclosure was a sunken-floored building, interpreted as a bakery, for which a number of close parallels are known in Kent. It contained a bread oven, rebuilt on at least two occasions, and an adjacent hearth. Archaeomagnetic dates from the oven indicate its use between 1180 and 1230, following which the bakery was demolished. Other features in the enclosure included a fire-pit and some form of drier, as well as pits containing apparently domestic waste, although no domestic structures were recognised.

A second phase of medieval activity was dated by pottery to the early 13th–mid-14th centuries. The main feature was another rectangular sunken feature, the base of which was accessed by a metalled ramp from one end. Although no evidence of a building superstructure was identified, this feature probably represents the base of an overlying timber structure.

Animal bone, charcoal, and charred plant remains from the medieval features reflect the mixed agricultural base of the economy, with the rearing of cattle, sheep/goat, and pig, and with fish, fowl, and horse also contributing to the diet. Following woodland clearance, wheat, barley, oats, and rye were cultivated, along with peas and beans.

Apart from medieval pottery, there were relatively few finds and little to indicate a settlement of high status. However, the presence of the bakery within the enclosure, the site's proximity to the supposed site of the post-medieval Fulston Manor and, therefore, potentially to that of the medieval manor, may indicate that the enclosure was part of the manorial complex. Documentary research has placed Fulston Manor, first referred to as *Fugeleston* (meaning

Fugul's farmstead) in 1197, within its wider social, economic, and historic context as part of the former Saxon royal estate of Milton Regis.

A possible post-medieval building was represented by a small stone structure, and an associated spread of material, within which a number of possible beam-slots were recorded, indicating the extent of a floor.

### **Manston Road, Ramsgate**

An area of c. 1 ha south of Manston Road on the western periphery of Ramsgate was excavated in advance of redevelopment. Previous evaluation had established the presence of features of Late Bronze Age, Anglo-Saxon and medieval date. The subsequent programme of work revealed a single Early Neolithic pit; two pits containing the remains of Middle Bronze Age vessels; a complex of Late Bronze Age enclosure ditches; and a rectangular post-built structure assigned to the 11th–8th century BC. Five Anglo-Saxon sunken-featured buildings of 6th–7th century AD date produced a wide range of finds including metalwork, glass, and sherds from a group of wheelthrown Frankish vessels. A series of ditches defined a possible moated orchard surrounding structural remains associated with the medieval manor known as Upper Court.

### **A Kentish type of medieval sunken-featured bakery/kitchen**

During the past decade, a number of sunken-featured buildings with two ovens, or an oven and a hearth, have been excavated in Kent. So far, no parallels are known from outside the county, suggesting that this may be a regional type of kitchen, bake- and/or brewhouse. The buildings date between the 11th- and 14th century. It is possible that in some instances these buildings were communal structures, perhaps under seigniorial control, but the considerable number found at one site on the Isle of Thanet may also hint at less centralised types of ownership.

# Zusammenfassungen

## **West Malling Bypass**

Sowohl vor als auch während der Bauarbeiten an der Umgehungsstraße der A228 zwischen West Malling und Leybourne in Kent wurden archäologische Voruntersuchungen sowie gezielte Ausgrabungen und baubegleitende Maßnahmen durchgeführt. Die Voruntersuchungen lieferten Hinweise auf vorgeschichtliche (hauptsächlich späte Vorrömische Eisenzeit aber auch späte Bronze-/frühe Eisenzeit) und mittelalterliche (12./13. Jh.) Aktivitäten entlang der geplanten Straßentrasse. Im Anschluß daran wurden sieben Areale mit signifikantem archäologischem Potential für gezielte Ausgrabungen ausgewählt.

Streufunde von bearbeitetem Feuerstein (spätes Mesolithikum bis späte Bronzezeit) wurden in mehreren Arealen aus der Pflugschicht und dem Unterboden aber auch aus späteren, hauptsächlich eisenzeitlichen, Befunden geborgen. In Area A fanden sich keine schlüssigen Hinweise auf Besiedlung während dieses Zeitraums, obwohl die Paläotopographie dieses Fundplatzes sowohl für Jäger/Sammler als auch für sesshafte Bauern attraktiv gewesen sein muß. Eine mögliche Brandbestattung wurde in Area B dokumentiert. Ein wichtiger Fund in Area B2 war ein nahezu vollständiger ‚Pot Beaker‘, der in einer Grube deponiert worden war.

Zwei separate Gruppen eisenzeitlicher Einfriedungen wurden in Areas A und E2 gefunden. Beide Fundplätze gehören zu zeitgleichen Siedlungen, aber in beiden Fällen lag der Schwerpunkt der Siedlungsaktivitäten außerhalb der Straßentrasse. Das Fundmaterial dieser Fundstellen bezeugt das Schlachten von Tieren, sowie Kochen, Textilherstellung, Ernte und möglicherweise Töpferei innerhalb dieser kleinen landwirtschaftlichen Gemeinschaften.

Nur geringe Hinweise auf romano-britische oder angelsächsische Aktivitäten fanden sich entlang der Straßentrasse. Romano-britische Funde beschränken sich auf Streufunde von Keramik, zwei römischen Münzen und einem möglichen Ziegelstück. Angelsächsischer Zeitstellung sind ein Grubenhaus und ein Pfostenloch in Area E2; beide enthielten Kleinfunde und paläobotanische Reste.

Mittelalterliche und frühneuzeitliche Befunde und Funde waren etwas häufiger. Die wichtigsten Befunde waren eine mittelalterliche Bäckerei in Area B1 und ein frühneuzeitlicher Mühlgraben in Area C. Der Bäckereikomplex enthielt Öfen und Herde mit stark holzkohlehaltigen Fundschichten. Ein fast komplettes keramisches Gefäß wurde aus der jüngsten Verfüllschicht des Komplexes geborgen.

## **Weatherlees–Margate–Broadstairs pipeline**

Im Vorfeld der Erweiterung einer Kläranlage und des Baus einer ca. 12,5 km langen, unterirdischen Abwasserleitung quer durch die Isle of Thanet wurden archäologische Untersuchungen durchgeführt. Die Pipelinetrasse verlief von der Kläranlage Weatherlees (WTW) im Süden bis zur Pumpstation Margate bei Foreness Point im Norden. Ein weiterer Arm der Trasse erstreckte sich von der Pumpstation in südöstlicher Richtung zu der kleineren Pumpstation Broadstairs bei North Foreland.

Insgesamt wurden 13 archäologisch signifikante Fundbereiche im Verlauf der Trasse entdeckt. Es wurden Befunde aller Zeitschnitte vom Neolithikum bis zum zweiten Weltkrieg freigelegt; da auch paläolithische und mesolithische Streufunde gemacht wurden, sind quasi alle Perioden der Menschheitsgeschichte vertreten. Eine Auswahl der bedeutendsten Funde und Befunde werden in diesem Band vorgelegt.

In der Nähe der Broadley Road, Margate, wurde eine spätneolithische Grabanlage freigelegt. Höchstwahrscheinlich handelt es sich dabei um die Überreste eines nicht-megalithischen Langhügels, der durch einen späteren Kreisgraben (wahrscheinlich eines bronzezeitlichen Rundhügels) geschnitten wurde. Zusätzlich zu drei bereits bekannten Horten wurden zwei weitere spätbronzezeitliche Metallhorte (sogenannte ‚Carp’s Tongue‘ hoards) bei der Kläranlage Weatherlees in, oder unmittelbar unter, einer ausgedehnten Abfallschicht (middens) gefunden.

Mehr als 30 Bestattungen der späten Vorrömischen Eisenzeit und der Römischen Kaiserzeit wurden im Verlauf der Pipelinetrasse gefunden, darunter einige Gräber mit Bestattungsriten, für die es nur wenige Vergleiche innerhalb Kents gibt, u.a.:

- ein kleines Brandgräberfeld des mittleren und späten 1. Jhs. n. Chr. an der Coldswood Road, Manston. Es fanden sich hier mehrere Bestattungen bei denen der Leichenbrand in hölzernen Kisten oder Kästchen niedergelegt wurde. Vier Körperbestattungen, ebenfalls aus der Periode der Römischen Eroberung Britanniens, wurden an der Ebbsfleet Lane und der Kläranlage Weatherlees (WTW) in großen Begrenzungsgräben gefunden, die wahrscheinlich Verteidigungszwecken dienten;
- zwei benachbarte Körpergräber der frühen Römischen Kaiserzeit, die bei Cottington Hill in der Nähe einer dort vermuteten römischen Villa gefunden wurden;

ein eingefriedeter, bi-ritueller Friedhof der frühen bis späten Römischen Kaiserzeit, mit mehreren Bestattungen in Amphoren, der unmittelbar nördlich der Cottington Road ausgegraben wurde.

Von eher lokaler Bedeutung waren ein Grubenhaus der mittleren angelsächsischen Periode an der Cottington Road, unmittelbar südlich des bi-rituellen Friedhofs, sowie eine Körperbestattung gleicher Zeitstellung, die bei Cottington Hill in einem Grabenende niedergelegt worden war. Ein Grubenhaus mit zwei teilweise erhaltene Öfen an der Star Lane diente während des 12./13. Jhs. wahrscheinlich als Bäckerei. Das Grubenhaus gehört zu einem Gebäudetyp, der bislang nur aus dem nördlichen Kent bekannt geworden ist. Hinweise auf Verteidigungsanlagen aus der Zeit des zweiten Weltkriegs in Thanet fanden sich in der Form einer möglichen Suchscheinwerferanlage an der Ebbsfleet Lane sowie von Luftschutzbunkern beim Flughafen Manston und bei Foreness Point.

### **Fulston Manor**

Vor Erschließung eines Neubaugebiets in Fulston Manor, Sittingbourne, Kent, wurde eine Ausgrabung als Teil der bauleitplanerischen Auflagen durchgeführt.

Im Zuge der Ausgrabung wurde ein Teil eines von einem großen, rechteckigen Graben umschlossenen Areals freigelegt, das durch interne Gräben weiter unterteilt war und anhand von Keramikfunden in das mittlere 11. bis frühe 13. Jh. datiert wurde. Der wichtigste Befund innerhalb des Areals war ein Grubenhaus, das als Bäckerei interpretiert wird, und für das es mehrere enge Vergleiche in Kent gibt. Es enthielt einen Backofen, der mindestens zweimal erneuert wurde, sowie einen daneben liegenden Herd. Die Nutzung des Ofens wurde archäomagnetisch auf die Zeit zwischen 1180 und 1230 datiert; danach wurde der Ofen abgerissen. Weitere Befunde innerhalb des Areals waren eine Feuergrube und eine Art Darre sowie einige Gruben mit Siedlungsabfall; es wurden jedoch keine Hausbefunde erkannt.

Eine zweite Phase mittelalterlicher Aktivität wurde anhand von Keramik in das frühe 13. bis mittlere 14. Jh. datiert. Der wichtigste Befund dieser Phase war ein weiteres rechteckiges Grubenhaus, dessen Sole über eine an einem Ende gelegene gepflasterte Rampe erreicht werden konnte. Obwohl keine Spuren des Aufgehenden erkannt wurden, wird es sich bei dieser Struktur ebenfalls um das Fundament einer darübergelegenen Holzkonstruktion handeln.

Tierknochen, Holzkohle und verkohlte Pflanzenreste aus den mittelalterlichen Befunden bezeugen die verschiedenen landwirtschaftlichen Grundlagen der mittelalterlichen Wirtschaft, die die Haltung von Rindern, Schafen/Ziegen und Schweinen umfaßte, aber auch Fisch, Geflügel und Pferd fanden sich auf dem Speisezettel. Nach der Waldrodung wurden Weizen, Gerste, Hafer und Roggen angebaut, darüber hinaus auch Erbsen und Bohnen.

Mit Ausnahme mittelalterlicher Keramik gab es nur relativ wenig Fundmaterial und kaum etwas, daß eine Besiedlung höheren sozialen Rangs andeuten könnte. Es ist jedoch möglich, daß die Bäckerei innerhalb der Anlage sowie die Nähe der Fundstelle zum neuzeitlichen Fulston Manor, und damit möglicherweise auch zum mittelalterlichen Herrenhaus, als Hinweise darauf zu deuten sind, daß die Anlage Teil des Gutsgehöfts war. Mithilfe historischer Dokumente war es möglich, das weitere soziale, wirtschaftliche und historische Umfeld von Fulston Manor, 1197 erstmals urkundlich erwähnt als *Fugeleston* (d.h. Fugul's Gehöft), als Teil des angelsächsischen königlichen Guts Milton Regis zu rekonstruieren.

Ein mögliches neuzeitliches Gebäude wurde durch eine kleine steinerne Struktur angedeutet, und eine dazugehörige Fundschicht, in der mehrere Spuren – wohl von Schwellbalken – dokumentiert wurden, markierten die Ausmaße eines Fußbodens.

### **Manston Road, Ramsgate**

Im Vorlauf einer Wiederbebauung wurde eine Fläche von ca. 1 ha südlich der Manston Road am westlichen Rand von Ramsgate ausgegraben. Eine vorausgegangene Voruntersuchung hatte ergeben, daß sich in diesem Bereich Befunde der späten Bronzezeit sowie angelsächsischer und mittelalterlicher Zeitstellung befinden. Im Zuge der nachfolgenden Untersuchung fanden sich eine vereinzelt frühneolithische Grube, zwei Gruben mit Resten mittelbronzezeitlicher keramischer Gefäße, ein Komplex spätbronzezeitlicher Einfriedungsgräben sowie eine rechteckige Pfostensetzung, die in das 11. bis 8. Jh. v. Chr. datiert wurde. Fünf angelsächsische Grubenhäuser des 6.–7. Jhs. n. Chr. enthielten ein großes Spektrum an Funden, u.a. Metallfunde, Glas und Scherben scheidengedrehter, fränkischer Keramik. Eine Reihe von Gräben gehört vielleicht zu einem von einem Wassergraben umgebenen Obstgarten, in dem sich auch bauliche Reste befanden, die mit dem als ‚Upper Court‘ bekannten mittelalterlichen Gutshaus in Zusammenhang stehen.

### **A Kentish type of medieval sunken-featured bakery/kitchen**

Während des vergangenen Jahrzehnts wurden in Kent mehrere Grubenhäuser mit zwei Öfen, oder einem Ofen und einem Herd, gefunden. Bislang sind keine Vergleiche außerhalb der Grafschaft bekannt geworden, so daß es sich wohl um einen regional begrenzten Typ eines Küchen-, Back- und/oder Brauhauses des 11. bis 14. Jahrhundert handelt. Es ist möglich, daß die Gebäude in einigen Fällen gemeinschaftlich genutzt wurden, vielleicht unter herrschaftlicher Kontrolle. Die beachtliche, an einem einzigen Fundplatz auf der Isle of Thanet gefundene Anzahl solcher Grubenhäuser deutet aber auch auf weniger zentralisierte Besitzstrukturen hin.

*Übersetzung: Jörn Schuster*

# Résumé

## **Archéologie de la déviation de West Malling et de Leybourne, West Malling, Kent**

Un programme de prospection au sol, qui comprenait une évaluation, des fouilles et une surveillance ciblées fut entrepris à la fois avant et pendant la construction de l'A 228, la déviation de West Malling et de Leybourne. Le long de la route l'évaluation a essentiellement relevé une activité de la préhistoire récente (plus particulièrement du second âge du fer, mais également de l'âge du bronze final/du premier âge du fer) et de la période médiévale (12<sup>ème</sup>/13<sup>ème</sup> siècles). Par la suite, des excavations ciblées furent entreprises dans sept zones qui offraient un fort potentiel archéologique.

Des rebuts de silex travaillés (du mésolithique final au bronze final) furent recouverts des horizons de terre arable/sous-sol, et des vestiges archéologiques plus tardifs (essentiellement de l'âge du fer) de plusieurs zones. On n'a pas identifié de témoignage solide indiquant la présence d'une occupation de cette date dans la zone A, bien que la situation paléo-topographique aurait présenté des attraits aussi bien pour les chasseurs-cueilleurs que pour les agriculteurs sédentaires. On a répertorié, dans la zone B, ce qui pourrait être une sépulture à incinération. Une importante trouvaille, dans la zone B2 consistait en un pot, de type peuples à vases, presque complet, déposé dans une fosse.

On a trouvé dans les zones A et E2 deux groupes d'enceintes de l'âge du fer. Dans les deux cas, le centre principal des occupations associées se situait à l'extérieur du corridor formé par la route. Les trouvailles suggèrent l'abattage et la cuisson d'animaux, la fabrication de textile, la récolte de céréales et peut-être la production de poterie dans le cadre de ces communautés agricoles de petite taille.

On n'a trouvé que très peu de témoignages d'activités soit romano-britanniques, soit anglo-saxonnes. L'activité romano-britannique se limitait à des rebuts de poterie, deux pièces de monnaie et un morceau peut-être d'une tuile. On a identifié un bâtiment Anglo-saxon à fondations enterrées (SFB), et un trou de poteau, dans la zone E2, révélant des objets manufacturés et du matériel environnemental.

Les traces et trouvailles médiévales et post-médiévales comprennent plus particulièrement une structure de fournil datée du moyen-âge dans la zone B1 et un bief de moulin post-médiéval dans la zone C. La structure de fournil contenait des foyers et des fours d'où on a recouvert des dépôts riches en charbon de bois. Un récipient en poterie quasi-complet a été retrouvé dans le dernier remplissage de la structure.

## **La plus longue excavation de Thanet – Recherches archéologiques le long du tracé de la conduite d'eaux usées de Weatherlees–Margate–Broadstairs**

On a entrepris des recherches archéologiques en anticipation de l'extension d'une usine de traitement des eaux usées et la construction d'une conduite souterraine d'évacuation de ces eaux, longue d'environ 12,5 kilomètres, à travers l'île de Thanet, Kent. Le tracé de la conduite s'étendait, vers le nord, de l'usine de traitement des eaux usées de Weatherlees (WTW) à la station de pompage de Margate, Foreness Point. Une branche supplémentaire s'étendait de la station principale, dans une direction sud-est, vers la plus petite station de Broadstairs, North Foreland.

Le long du tracé on a identifié treize sites recelant des vestiges archéologiques conséquents. On y a rencontré des traces de toutes les périodes du néolithique à la seconde guerre mondiale; des trouvailles éparses datant du paléolithique et du mésolithique attestent que toutes les périodes de l'histoire humaine étaient représentées. On présente ici une sélection des trouvailles les plus représentatives.

Un enclos mortuaire du néolithique final a été découvert à côté de Broadley Road, Margate. Ce sont très probablement les vestiges d'un tertre en longueur non-mégalithique, sur lequel un fossé circulaire avait été surimposé à une date ultérieure (probablement un tertre rond de l'âge du bronze). En plus des trois exemples déjà connus, on a recouvert de Weatherlees WTW deux autres exemples de trésors de type 'langue de carpe' de l'âge du bronze final. Ceux-ci se trouvaient dans ou sous un important tas de rejets domestiques.

Nous avons retrouvé plus de 30 sépultures du second âge du fer – période romano-britannique, y compris des tombes attestant de pratiques funéraires qu'on ne trouve que rarement dans le Kent, par exemple

- un petit cimetière à incinération à Coldswold Road, Manston daté du milieu et de la fin du 1<sup>er</sup> siècle ap. J.-C., avec plusieurs sépultures dont les restes calcinés avaient été déposés dans des coffrets en bois. Quatre sépultures à inhumation, datées également des alentours de la période de la conquête romaine ont été découvertes dans de grands fossés limitrophes probablement à rôle défensif à Ebbsfleet Lane et Weatherlees WTW.
- deux sépultures à inhumations adjacentes du début de la période romano-britannique se trouvaient près de Cottington Hill, dans une zone proche de l'emplacement d'une villa romano-britannique

- on a répertorié un cimetière enclos, où les deux rites étaient représentés, comprenant plusieurs sépultures dans des amphores, daté début à fin de la période romano-britannique, juste au nord de Cottington Road.

Plus important sur le plan local était le bâtiment à fondations enterrées de la période anglo-saxonne moyenne à Cottington Road., juste au sud du cimetière à double rite romano-britannique, ainsi qu'une sépulture à inhumations à la base d'un terminus de fossé à Cottington Hill. A Star Lane un bâtiment à fondations enterrées, avec deux fours en partie debouts, servait probablement de fournil aux 12<sup>ème</sup>/13<sup>ème</sup> siècles. Il appartient à un type de bâtiment jusque là exclusivement confiné à la partie nord du Kent. Les témoignages de la fortification de Thanet pendant la seconde guerre mondiale comprennent la position probable d'un projecteur à Ebbsfleet Lane et des abris antiaériens à l'aéroport de Manston et à Foreness Point.

#### **Enceinte médiévale et fournil/brasserie à Fulston Manor, Sittingbourne, Kent**

Des excavations en prévision de la construction d'un lotissement ont mis au jour une partie d'une grande enceinte rectangulaire avec fossé, subdivisée par des fossés internes et datée par sa poterie du milieu du 11<sup>ème</sup> au début du 13<sup>ème</sup> siècles. L'élément le plus remarquable à l'intérieur de cette enceinte était un bâtiment à sol enterré, interprété comme étant un fournil, auquel on connaît un nombre de proches parallèles dans le Kent. Il contenait un four à pain, reconstruit au moins à deux occasions, et un foyer adjacent. Des dates archéomagnétiques du four indiquent qu'il était en usage entre 1180 et 1230, à la suite de quoi le fournil a été démoli. Parmi les autres vestiges dans l'enceinte, on compte une cuvette à feu et une sorte de séchoir, ainsi que des fosses qui contenaient des déchets apparemment domestiques, bien qu'on n'ait reconnu aucune structure domestique.

Une seconde phase d'activité médiévale a été datée du début du 13<sup>ème</sup> au milieu du 14<sup>ème</sup> siècles grâce à sa poterie. L'élément principal était une autre structure rectangulaire enfoncée, on accédait à la partie basse par une rampe métallique à un des bouts. Bien qu'on n'ait identifié aucun indice de superstructure pour ce bâtiment, ce vestige servait probablement de base à une structure en bois au-dessus.

Des restes d'ossements d'animaux, de charbon de bois et de plantes carbonisées provenant des vestiges médiévaux reflètent l'agriculture mixte à la base de l'économie, avec élevage de bétail, moutons/chèvres et porcs, poissons, volailles et chevaux contribuant également à l'alimentation. A la suite du défrichement des forêts, blé, orge, avoine et seigle furent cultivés à côté des pois et des haricots.

A part la poterie médiévale, les trouvailles étaient

relativement peu nombreuses et peu d'indices attestent d'une occupation de haut rang. Cependant la présence du fournil à l'intérieur de l'enceinte, la proximité de ce site du site supposé du manoir post-médiéval de Fulston Manor, et donc, potentiellement de celui du manoir médiéval, pourraient indiquer que l'enceinte faisait partie du complexe du manoir. Des recherches documentaires ont placé Fulston Manor, mentionné sous le nom de Fugeleston (ce qui veut dire ferme de Fugul) pour la première fois en 1197, dans son contexte social, économique et historique plus étendu comme faisant partie de l'ancien domaine royal saxon de Milton Regis.

Une petite structure en pierre, et du matériel associé dispersé, dans laquelle on a répertorié un nombre de possibles emplacements de poutres, indiquant l'étendue d'un sol, pourrait représenter un bâtiment post-médiéval.

#### **Excavations d'un site d'occupation de l'âge du bronze final, de la période anglo-saxonne et du moyen-âge à Manston Road, Ramsgate, 1995–97**

Une zone d'environ un hectare au sud de Manston Road, à la périphérie ouest de Ramsgate a été fouillée avant sa remise en valeur. Une évaluation précédente avait confirmé la présence de traces datant de l'âge du bronze final, de la période anglo-saxonne et du moyen-âge. Le programme de travaux qui s'en est suivi a révélé une seule fosse du néolithique ancien, deux fosses contenant les restes de récipients de l'âge du bronze moyen; un complexe de fossés d'enceintes de l'âge du bronze final; et une structure rectangulaire bâtie ultérieurement et attribuée aux 11<sup>ème</sup>–8<sup>ème</sup> siècles av. J.-C. Cinq bâtiments anglo-saxons à fondations enterrées datant des 6<sup>ème</sup>–7<sup>ème</sup> siècles av. J.-C. ont révélé une gamme étendue de trouvailles y compris du métal, du verre et des tessons d'un groupe de vases francs façonnés au tour. Une série de fossés délimitait peut-être un verger avec douves entourant des restes de bâtiment associés au manoir médiéval connu sous le nom d'Upper Court.

#### **Un type 'Kent' de fournil/cuisine médiévale à fondations enterrées**

Pendant la dernière décennie, un certain nombre de bâtiments à fondations enterrées avec deux fours, ou un four et un foyer, ont été excavés dans le Kent. Jusqu'à présent, on ne connaît aucun parallèle à l'extérieur du comté, ce qui donne à penser que ce pourrait être un type régional de cuisine/fournil et/ou brasserie. Les bâtiments datent d'entre les 11<sup>ème</sup> et 14<sup>ème</sup> siècles. Il se pourrait que dans certains cas ces bâtiments aient été des structures communales, sous contrôle du seigneur, mais le nombre considérable découvert sur un site de l'île de Thanet pourrait aussi indiquer des types de propriété moins centralisés.

*Traduction: Annie Pritchard*

# Specialist methodologies

## Later prehistoric and Roman pottery

by *Grace Perpetua Jones*

All pottery examined for Chapters 1–3 of this volume was fully analysed, using the Wessex Archaeology recording system (Morris 1994) in accordance with national guidelines for both prehistoric (PCRG 1997) and Roman pottery (Darling 1994). Each sherd, or group of related sherds, was allocated a pottery record number (PRN) as a unique identifier. The fabric codes used for the recording system are alpha-numeric and indicate the dominant inclusion(s). Where appropriate, Roman fabrics have been correlated with the Canterbury Archaeological Trust (CAT) type series. Each rim type has been assigned an ‘R’ code; however, well-known type series have also been used or referred to, including the Dragendorff series for samian, and the Thompson (1982) form series for ‘Belgic’ wares in the South-East. Details of decoration, surface treatment, and evidence of use have also been recorded. Assemblages from all features that produced more than 30 sherds have been termed ‘key groups’ and examined in detail. Appendices 1.1 and 2.7 give brief descriptions of the wide range of fabrics present at sites discussed in Chapters 1 and 2 respectively.

The material from Manston Road, Ramsgate (Chapter 4) was examined in 1997 and the original fabric codes used at that time have been retained here. Fabric codes combine the fabric group letters with a chronologically significant number (1–99 for prehistoric fabrics; 100–399 for Romano-British fabrics). Brief fabric descriptions are given in Appendix 4.1.

## Post-Roman pottery

by *Lorraine Mepham*

The pottery examined for Chapters 1–3 of this volume was recorded following the standard Wessex Archaeology recording system for pottery (Morris 1994), using similar methods to those used for the later prehistoric and Romano-British pottery. Fabric types were correlated with the Canterbury Archaeological Trust (CAT) type series for post-Roman pottery. The definition of vessel forms follows nationally recommended nomenclature (MPRG 1998). Details of decoration, surface treatment and manufacture were also recorded. Quantification in all cases is by both number and weight of sherds. All data are held in the respective project archives. For Manston Road, codes 400–599 were used for post-Roman fabrics and these are retained here.

## Human bone

by *Jacqueline I. McKinley*

Osteological analysis of the cremated bone followed the writer’s standard procedure (McKinley 1994, 5–21; 2004a). The degree of erosion to the unburnt bone was recorded using the writer’s system of grading (McKinley 2004b, fig. 7.1–7). Age (cremated and unburnt bone) was assessed from the stage of tooth and skeletal development (Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bone (Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994). Measurements were taken of the unburnt bone (Brothwell and Zakrzewski 2004) and skeletal indices calculated where possible (Trotter and Gleser 1952; 1958; Bass 1987). Non-metric traits were recorded in accordance with Berry and Berry (1967) and Finnegan (1978).

## Animal bone

by *Jessica M. Grimm and Sheila Hamilton-Dyer*

Each animal bone fragment examined for Chapters 1–3 of this volume was recorded using the Disarticulated Animal Bone database (DAB) developed by Wessex Archaeology. For each fragment, the following characteristics were recorded where applicable: species, bone element and side, fusion, mandible wear stages (following Grant 1982), sex, and measurements (von den Driesch 1976). The positions of butchery marks were recorded according to the pictorial system of Lauwerier (1988). To establish the degree of burning the data published by Wahl (1981) was used. Evidence of gnawing and condition (on a scale of 1–5) was also recorded. The zone system of Serjeantson (1996) was used to record completeness.

Conjoining fragments that were demonstrably from the same bone were counted as one bone in order to minimise distortion and, therefore, specimen counts (NISP) given here may differ from the absolute raw fragment counts in the finds table. There may also be some discrepancies when bone is fragile and may fragment further after initial quantification.

Prummel and Frisch (1986) was used to distinguish sheep from goat and the atlas published by Prummel (1987) to identify domesticated foetal bones. Fragments that could not be identified to species or family were recorded as small, medium, or large mammal, bird, fish, or amphibian. Withers heights were calculated using von den Driesch and Boessneck

(1974, cows), Teichert (1975, sheep), Clark (1995, dogs), Harcourt (1974, dogs), Vitt (1952, horses), and May (1985, horses) and ages estimated using Habermehl (1975) and Jones (2006, sheep).

For Manston Road, identifications were made using the modern comparative collections of the writer. Bones excavated in pieces were counted as single fragments where reconstruction proved possible. Unidentified cattle/horse-sized and sheep/pig-sized, and other, small, indeterminate fragments were recorded as mammalian only. Measurements follow von den Driesch (1976).

### **Charred plant remains and charcoal**

*by Chris J. Stevens, Dana Challinor,  
and Catherine Barnett*

The samples examined for Chapters 1–3 of this volume were processed by flotation in a modified Siraf-type machine, with the flots collected onto a 500 µm mesh. The residues were fractionated into 4 mm, 2 mm, 1 mm, and 0.5 mm mesh sizes. The flot was

dried and the coarse residue sorted by eye, while a low-powered binocular microscope was used for sorting the flot and small residue fractions. Plant macrofossils were then extracted, identified, and quantified. The plant taxa identified from each sample are tabulated following the nomenclature of Stace (1997) for native species, Zohary and Hopf (2000) for cultivated taxa, and the traditional nomenclature for cereals, (*ibid.*, 28, table 3 and 65, table 5).

Bulk soils samples from Manston Road were also processed by flotation. The charcoal was extracted from the seed and plant plant macrofossils from the 2 mm and 4 mm flot fractions.

Charcoal fragments measuring >2 mm in radial cross-section were prepared for examination using standard methods. Each fragment was fractured to expose fresh transverse, tangential and radial surfaces. The fragments were supported in sand and examined using a Labophot incident-light microscope at magnifications of up to x400. The anatomical structure was matched to reference material. Where possible the maturity (ie, sapwood/ heartwood) of the wood was recorded.



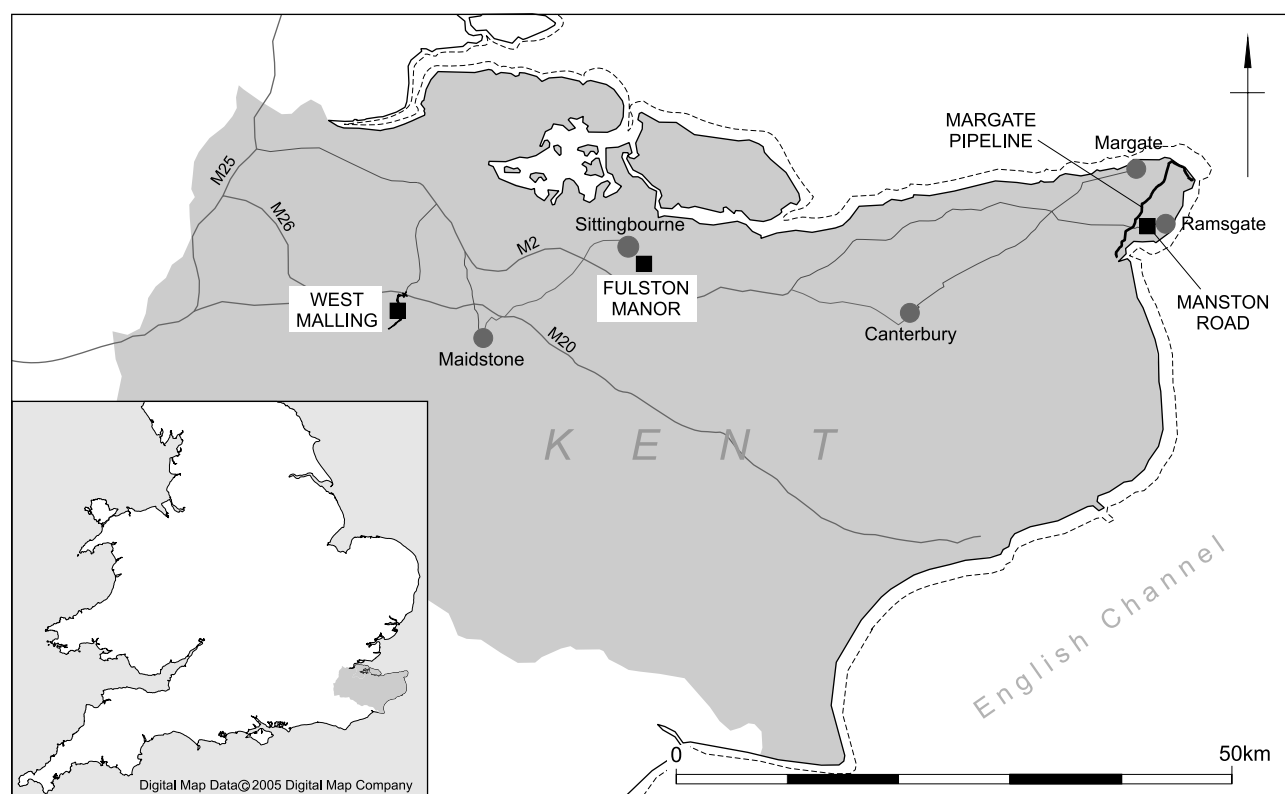
## Preface

This volume presents the results of archaeological investigations undertaken by Wessex Archaeology at four sites in Kent, one west of the Medway and three to its east – hence the title of the volume. The decision to combine these sites in one volume was first suggested when it became clear that the medieval sunken-featured buildings revealed at West Malling, Fulston Manor, and Star Lane, Manston, might belong to a type of building specific to Kent. A short study is included at the end of this volume, examining the function and distribution of these buildings which might have had combined uses as bakeries, brewhouses, and/or kitchens.

Individually, the four reports are too large for inclusion in a regional journal, while they are at

the same time too short to merit publication as individual monographs. The opportunity was taken to include the fourth site, Manston Road, Ramsgate, which had been awaiting a suitable publication venue. This site and those investigated in the course of the wastewater pipeline scheme also share some phases of activity, most notably the Anglo-Saxon period with six additional sunken-featured buildings, thus considerably augmenting the number of such structures known from the Isle of Thanet.

*Jörn Schuster*  
Wessex Archaeology



*Location of archaeological excavations featured in this volume*



# 1. Archaeology of the West Malling and Leybourne Bypass

by Chris Ellis

This report presents the results of archaeological fieldwork carried out prior to, and during, the construction of the West Malling and Leybourne Bypass in 2005. The route of the Bypass ran from the M20 Motorway along Birling Road before joining the existing A228 to the south of Leybourne (Fig. 1.1). The route lay between the historic towns of West Malling and Leybourne and crossed a landscape where prehistoric, Romano-British, and especially medieval activity and settlement is well-attested.

Assessment and evaluation of the route in 2005 (Thorne and Worrall 2005) identified seven sites with features of Late Bronze Age/Early Iron Age to post-medieval in date. Worked flint ranging in date from the Late Mesolithic to the Bronze Age was also found along the route. The aims and objectives of both the evaluation and subsequent investigations were to record and understand the archaeological resource within the Bypass route where the preferable option of 'preservation *in situ*' was not feasible. More specific aims were to identify the character, nature, and extent of the archaeological resource in areas of greatest archaeological potential.

## Topography, Geology, and Land-use

The Bypass commences at Junction 4 of the M20 Motorway (NGR 5692 1594) at a height of c. 22 m above Ordnance Datum (aOD) and runs adjacent to Birling Road, reaching a height of 40 m aOD, close to Leybourne Wood. The route then descends a shallow slope and crosses a small tributary of the Medway, formed by the nearby confluence of the Leybourne and West Malling streams, at a height of 20 m aOD. It then ascends the adjacent slope and crosses the A20, rejoining the present A228 to its south. From this point to the Tower View roundabout, the existing A228 was widened. Along this stretch of the Bypass the land gradually rises from 25 m aOD to c. 70 m aOD at the roundabout (NGR 5677 1564) at the southern end of the route.

The underlying natural geology of the route comprises Folkestone Beds overlain by Head deposits in the northern part and Sandgate Beds and Hythe Beds overlain by Head Brickearth and Brickearth to the south (Geological Survey 1976). There is a band of alluvium along the course of the Leybourne Stream. Prior to construction the land was largely farmland although a section around the

A20 comprised rough ground, former housing, and gardens.

## Archaeological Background and Previous Fieldwork

Previous archaeological investigation along the Bypass route included a desk-based assessment and fieldwalking survey by Canterbury Archaeological Trust (CAT 1992) and an earthwork survey, also undertaken by CAT (2005), covering most of the later Areas C and E, in conjunction with a small watching brief by Oxford Archaeology (2004) on works in the Leybourne Stream valley to the north of the A20.

A number of prehistoric and Romano-British findspots are known from this work, or are recorded on the Kent Sites and Monuments Record (SMR), along or close to the route (Fig. 1.1). Mesolithic–Neolithic worked flint has been found on and in close proximity; to the south of Park Road (SMR TQ 65 NE 89) and to the east of Leybourne Wood, close to Pump Close (SMR TQ 65 NE 91). Although no Iron Age material had been found within the route, Iron Age pottery and coins are recorded within a few hundred metres; to the east of Junction 4 of the M20 (SMR TQ 65 NE 25), in West Malling (SMR TQ 65 NE 23) and in East Malling (SMR TQ 65 NE 55). Romano-British finds including coins (SMR TQ 65 NE 10, 17 and 20) and two cremation burials (SMR TQ 65 NE 4 and 7) have also been recorded around West Malling.

Both West Malling and Leybourne were well-established settlements by the medieval period. West Malling benefited in particular from the establishment of an Abbey (St Mary's Abbey, established c. AD 1090) at the eastern edge of the settlement. Medieval pottery and other material has been found along sections of the Bypass route between Lavenders Road and the railway line (CAT 1992) and along Birling Road (SMR TQ 65 NE 80 and 90). The area of the streams, close to Pump Close and the A20, in the area of Leybourne Mill (SMR TQ 65 NE 67) contains the remains of a post-medieval water management system of leats, embankments, and other features (SMR TQ 65 NE 54 and 68), the origins of which may be significantly earlier.

A programme of trial trench evaluation was undertaken along the full length of the Bypass route

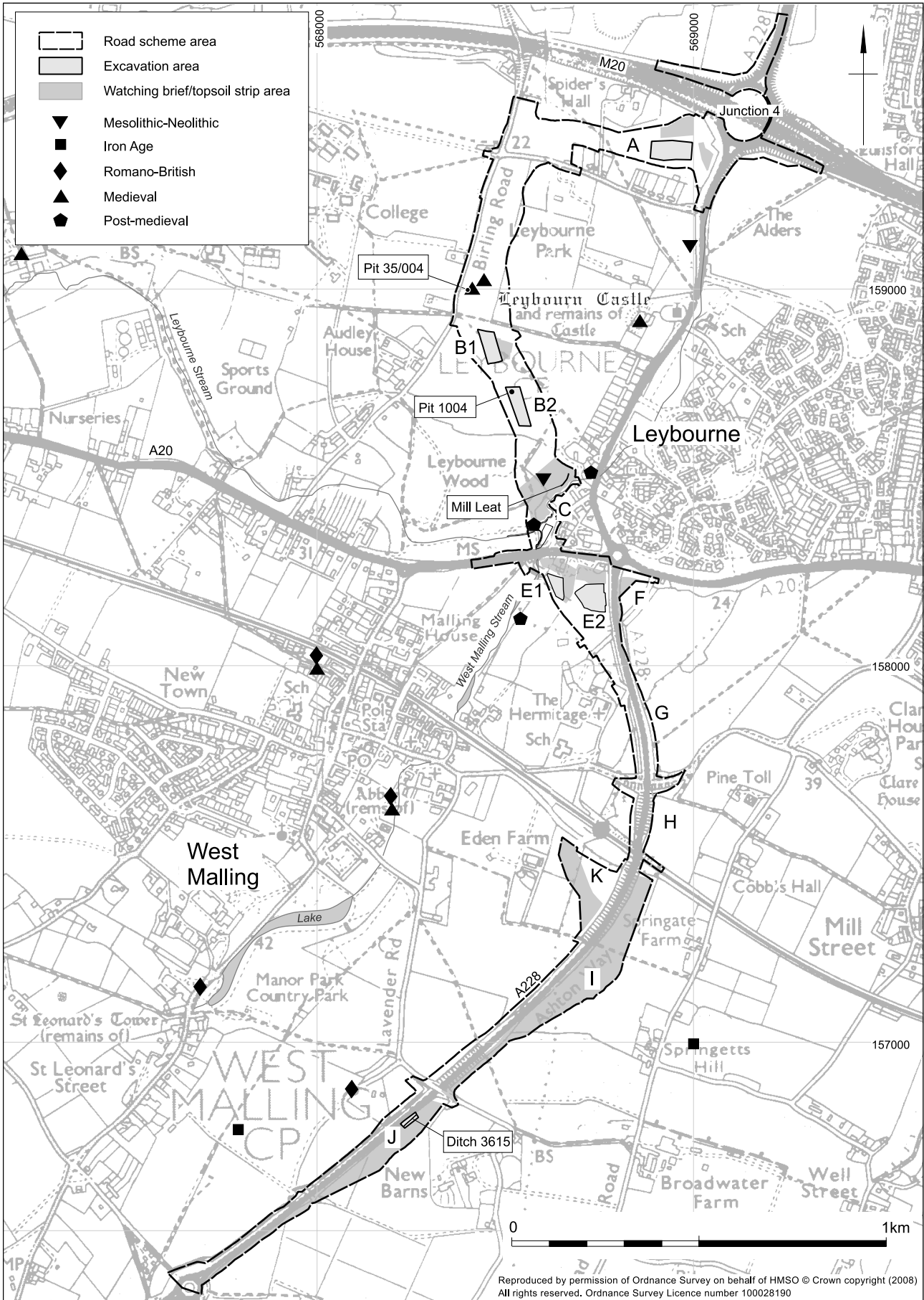


Figure 1.1 Site location showing areas excavated

(CAT 2005; Thorne and Worrall 2005), comprising 280 evaluation trenches. The route was divided into 12 Areas (A, B, B2, E, E2, F, G, H, I, I2, J, and K) based on modern land divisions and features (Fig. 1.1). Areas F and K initially included within the evaluation, were subsequently withdrawn and no excavations were undertaken in these areas.

These designated Areas were utilised, with minor changes, for the excavation and have been used in this report. Areas B and E each contained two discrete excavation areas (B1–2, E1–2). Finds ascribed to these areas are from the evaluation trenches, even when they coincide with later excavation areas. Where evaluation features are referred to in the text they are described by Trench No./Feature or Layer No. ie, pit with cremation-related deposit 35/004 and fill 35/005. In a few instances features identified in the evaluation were subsequently re-examined during the excavations; where this occurs both numbers are noted (ie, 214/004 (ditch 220)).

The evaluation (and earlier CAT fieldwork in Area C) resulted in seven areas of significant archaeological potential being highlighted for further work (excavation Areas A, B1, B2, C, E1, E2, and J) (Fig. 1.1) which contained features of Late Bronze Age/Early Iron Age, Late Iron Age, Saxon, medieval, and post-medieval date. Additionally a little evidence, largely worked flint, for Mesolithic to Early Bronze Age activity was recovered.

## Results

### *Evaluation*

The distribution of datable and diagnostic finds from the topsoil and subsoil of the evaluation trenches supported the general distribution of the features that were subsequently revealed during the excavations (Table 1.1). However, a small assemblage of later prehistoric pottery was recovered from the topsoil/subsoil of Trenches 57–8, 60–1, 64 (Area B), on the higher ground between excavation Areas B1 and B2. Only residual prehistoric pottery was recovered, no contemporaneous features were identified in Area B1. An undated pit with cremation-related deposits (35/004) was recorded from Area B, to the north-west of Area B1 (Fig. 1.1).

### *Excavation*

Seven excavation areas were undertaken, based upon the results of the evaluation:

- Area A – South-west of the M20/A228 junction: possible Late Bronze Age and Late Iron Age field systems and settlement.



*Plate 1.1 West Malling Bypass: Pit 1004 with pot 1451 in situ*

- Areas B1 and B2 – East of Birling Road: gully, ditches and pits/post-holes dating from the Late Iron Age and Anglo-Saxon–medieval periods.
- Area C – Adjacent to Pump Close: possible Romano-British road/crossing-point.
- Areas E1 and E2 – South-west of the A228/A20 crossroad: ditches, pits, and post-holes and possible structure, dating from Late Iron Age and Anglo-Saxon–medieval periods.
- Area J – South-west of the Lavenders Road Bridge: undated ditches/possible enclosure, thought to be associated with Neolithic worked flint

### *Mesolithic–Early Bronze Age*

Worked flint provides evidence for Mesolithic and Neolithic activity. This material was mostly redeposited in later features or came from the topsoil and subsoil. Unstratified, undiagnostic, and undatable worked flint, mostly debitage, came from most areas (A, B, B1, B2, C, E, E2, J). Diagnostic residual Early Neolithic worked flint was recorded from the topsoil/subsoil horizons in low quantities in Areas E, I, and J in the southern extent of the route. The greater part of the flint assemblage came derived from the base of the subsoil and from Late Iron Age features in Area A. Later Neolithic distinctive forms include transverse arrowheads. Some Early Bronze Age worked flint was also recovered (see Leivers below).

#### **Area B2**

In the very north-west corner of Area B2 an irregular, oval pit (1004), contained a near-complete Pot Beaker (Obj. No. 1451) (Figs 1.1–2; Pl. 1.1). The



vessel lay on its side and was filled with a silty sandy material (1005/6), charcoal, (mainly oak but including a piece of hazel), fragments of hazelnut shell, and burnt sandstone. Two radiocarbon dates, both on charred hazelnut shell, were obtained. One sample (KIA-37133 3820±30 BP) came from the layer (1008) beneath the vessel and the other (KIA-37134 3790±30 BP) from the fill (1006b) immediately above. Both dates have returned consistent results and, when calibrated, indicate a date in the range of 2450–2060 cal BC. This date indicates that the vessel belongs to an early phase of Beaker use and at a time when Beaker cultural values were becoming more widespread across Britain (Needham 2005, 209). The date confirms this vessel (mid-carinated, all-over incised/grooved) as one of the earliest Beaker finds from Kent. It also confirms the idea that so called ‘pot beakers’ were in use at a very early stage.

### *Late Bronze Age/Early Iron Age*

Limited evidence for Late Bronze Age/Early Iron Age activity was recovered from the excavations. Features recorded in Areas A, B, and E consisted of pits and ditches. Later prehistoric worked flint and post-Deverel-Rimbury pottery were recovered as residual finds or from the topsoil/subsoil of several other areas (B, B1, B2, C, E, E2, I, J). Significant residual finds also include two pieces of copper alloy: an ingot (Obj. No. 3322) from the subsoil of Area E2 and a leaf-shaped socketed spearhead (Obj. No. 162, Fig. 1.16, 1) from the subsoil of Area J. Both are thought to be Late Bronze Age in date but whether casual losses or originally components of ‘placed deposits’ or hoards is not possible to ascertain.

Only two features of Late Bronze Age/Early Iron Age date were found in and around Area A. Pit 132 lay south of the entrance to Late Iron Age/Romano-British enclosure ditches 169/220 (Fig. 1.3). It was a large, sub-oval steep-sided pit measuring 2.23 by 1.67 m. It had a flat base and was 0.42 m deep. A little worked flint, burnt flint and pottery was recovered from its fills. A possible pit (225/004), was recorded in Trench 225, immediately south-east of Area A. It was 0.41 m diameter and 0.09 m deep. A small quantity of abraded pottery and a few charcoal fragments were recovered from its fill. Late Bronze Age pottery was also recovered from the topsoil/subsoil of two other nearby trenches (224, 228).

An undated pit (35/004) was identified in Area B (Fig. 1.1). It was steep-sided, measured 0.39 m in diameter and was 0.33 m deep. It was filled with a single charcoal-rich layer (35/005) from which a small quantity of cremated remains, identified as an adult, possibly female, were recovered. The remains

represent a deposit of pyre debris rather than a formal cremation burial (see McKinley below). It is possible that other cremation-related deposits were present in the vicinity but no further fieldwork was undertaken in this area. Although undated, this feature is likely to be prehistoric.

Ditch 266/004 was in the south of Area E. It was aligned north-east to south-west and was 1.40 m wide and 0.26 m deep. It had a U-shaped profile and its single fill (266/005) contained worked flint, animal bone, fired clay, and shell, suggesting a prehistoric date.

These results are indicative of low density Late Bronze Age/Early Iron Age activity along the Bypass route but particularly in Areas A, B, and E. These areas subsequently became foci for later Late Iron Age and medieval activity.

### *Late Iron Age/Romano-British*

Material of this date was recovered from topsoil/subsoil from all areas except Areas G and H (Table 1.1). Archaeological features were only recorded in Areas A, B2, E2, and J, of which the most significant remains are from Areas A and E2. In Areas B2, I, and J single features of this date were recorded.

#### **Area A**

Traces of a possible Late Iron Age/early Romano-British settlement were identified during the evaluation of Area A. At least four phases (1–4) of ditched enclosures were identified (Fig. 1.3). However, a small component of the pottery assemblage suggests a 2nd century BC, Middle Iron Age, date for the beginning of the sequence, perhaps during phases 1–2.

#### *Phase 1*

Two parallel east–west aligned ditches (136 and 137) were assigned to this phase. The ditches were 45 m long and 2.60–4.00 m apart. Both were cut by later enclosure ditches (Fig. 1.3) but probably form an early component to the enclosure system. They appeared to be too close together to be a driveway, but they may have been retained within the Phase 2 enclosure (ditches 169 and 220) to define distinct zones of activity.

Ditches 136 and 137 were 0.60–1.20 m wide and 0.35–0.55 m deep with steep sides and concave bases. They were filled with greyish–brown and orange–brown silty sand. Dumps of charcoal-rich material, fired clay, and large quantities of burnt animal bone (especially within cut 264, fills 227, 262–3), were recovered from the fills. This domestic rubbish is indicative of settlement in the vicinity. Carbonised grain from a deposit in the upper part of

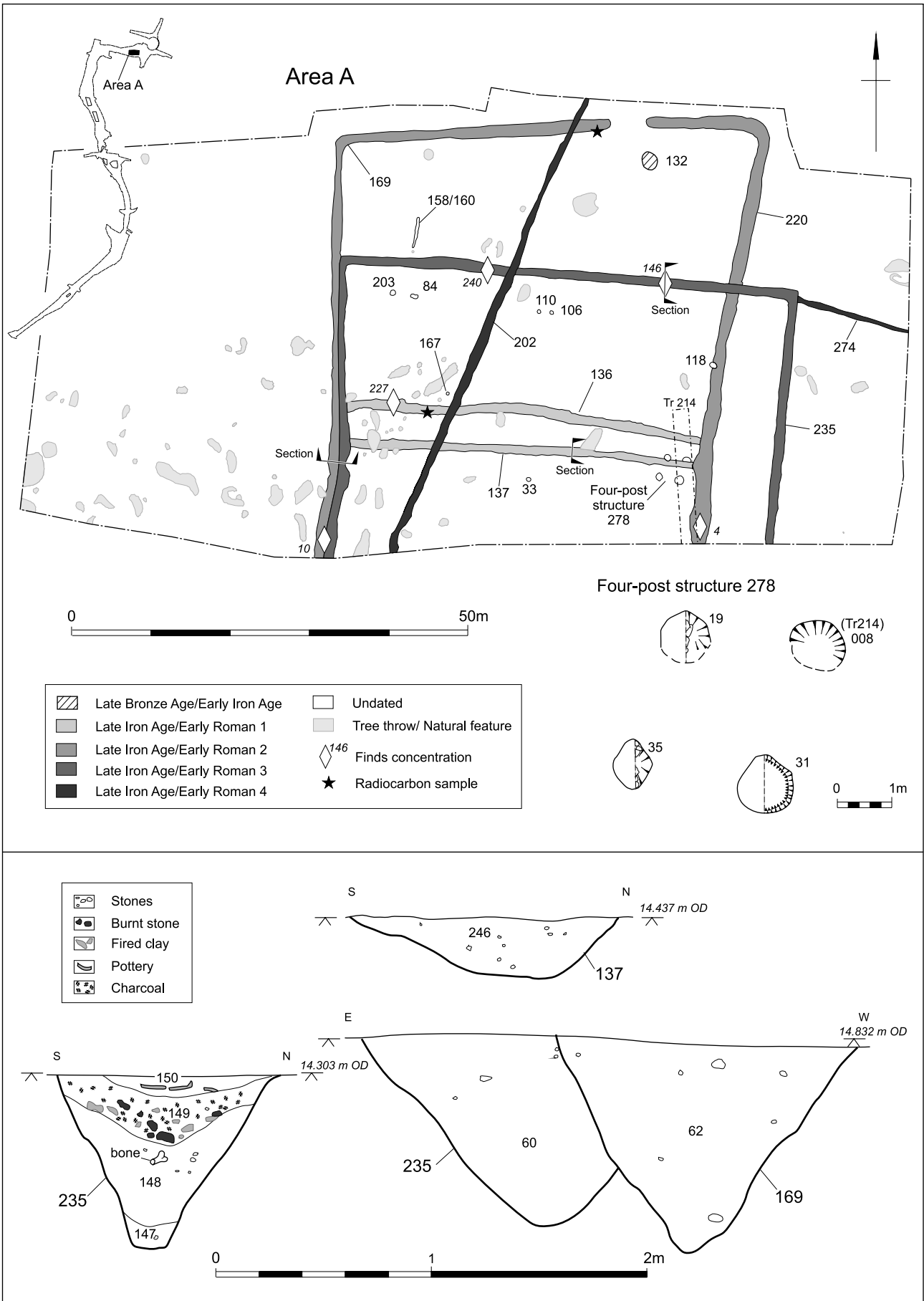


Figure 1.3 Detailed plan of Area A



ditch 136 (264) produced a radiocarbon date of 200–40 cal BC (NZA-27233; 2093±30 BP) (Table 1.2, Fig. 1.11).

### *Phase 2*

A large sub-rectangular enclosure (ditches 169 and 220), which extend beyond the southern extent of the excavation area, was constructed during Phase 2. This substantial ditched enclosure (c. 0.25 ha) was 44–51 m wide (widening to the north side) and at least 51 m long. A single entrance, 4.5 m wide, was recorded towards the eastern end of the north side. The only possible contemporaneous internal feature was a short length of undated gully (158/160) in the north-west corner.

The ditches were of slightly different proportions, with the deeper ditch (169) forming the western side of the enclosure (Fig. 1.3). This was 2.40 m wide and 0.98 m deep with a U-shaped profile. Ditch 220 was less substantial, measuring 1.20–2.00 m wide and was up to 0.90 m deep. Both ditches became shallower to the north to 0.30–0.40 m depth. They contained 2–3 fills of greyish–brown and yellowish–brown clayey sand and sandy silt.

A concentration of large sherds and near-complete vessels, together with significant amounts of burnt sandstone, were recorded at the southern ends of both ditches (4, 10; Fig. 1.3). This differs from the pattern of finds distribution in the Phase 3 enclosure ditch and suggests that the focus of the Phase 1 settlement activity may have been immediately to the south of the excavation area. Finds from the ditches included Late Iron Age pottery, animal bone, residual early and later prehistoric worked flint, burnt flint, and briquetage. A total of 408 g of slag was recovered from the south of this ditch suggesting metalworking in the vicinity. A bone spindlewhorl was recovered from ditch 220 (214/004).

Sherds of a whiteware flagon as well as a possible Roman tile fragment from the southern end of ditch 169 indicate that the enclosure was still in use as late as the third quarter of the 1st century AD. Carbonised grain from the east terminal (141) of ditch 169 produced a radiocarbon date of 360–50 cal BC (NZA-27234; 2144±30 BP) (Table 1.2, Fig. 1.11).

### *Phase 3*

A new enclosure ditch (235) was dug during this phase of activity. It was at least 37 m long and 57 m wide, providing a minimum enclosed area of 0.20 ha. This later enclosure was on the same alignment as the earlier Phase 2 enclosure, although it extended further east than Phase 2 ditch 220. It had no discernible entrance within the excavated area.

Ditch 235 was less substantial than those associated with the Phase 2 enclosure, being on average 1.18 m wide and 0.80 m deep with a U-

shaped profile (Fig. 1.3). It was filled with light to mid-orange/brown silty sand.

A relatively large concentration of pottery (comprising large sherds and near-complete vessels) and burnt sandstone, fired clay fragments, and dumps of charcoal were found along the length of the ditch (eg, 146, 240). These deposits are likely to represent deliberate dumping of domestic refuse close to a settlement, as indicated by the condition and size of the potsherds recovered. Other finds include residual worked flint, burnt flint, and animal bone. The pottery is predominantly Late Iron Age in date but also includes sherds of a whiteware butt-beaker from the latest fill of ditch segment 224, which may date as late as the third quarter of the 1st century AD.

A small number of small, shallow pits (84, 110, 106, 118, and 203) and post-holes (33, 167) were recorded inside the Phase 3 enclosure. Unfortunately nearly all were undated, except 106 and 203 which contained small quantities of Late Iron Age pottery. These cannot be firmly associated with the Phase 3 enclosure but at least one pit (118) post-dates Phase 2 ditch 220.

A four-post structure (278) was located just inside the eastern Phase 2 enclosure ditch (220) (Fig. 1.3). The structure was c. 2.60 m square, with sub-rounded steep-sided post-pits (19, 31, 35, and 214/008). The post-pits were 0.85–1.20 m in diameter and 0.16–0.60 m deep, and were filled with mid-greyish–brown silty or clayey sand. Fragments of burnt sandstone were used as packing stones. Post-built structures are traditionally interpreted as above-ground granaries (Cunliffe and Poole 1991) although other functions have been proposed (Ellison and Drewett 1971).

### *Phase 4*

This phase is represented by two ditches (202, 274) which have no stratigraphic relationship with each other, but are stratigraphically the latest features within Area A.

Ditch 202 was a north-east to south-west aligned ditch, at least 61.20 m long, 1.00 m wide and up to 0.39 m in depth with moderate, concave sides and a shallow, concave base (Fig. 1.3). The ditch cut all earlier ditches (136, 137, 169, 235) and continued beyond the northern and southern limits of the excavated area. It was filled with reddish–brown and greyish–brown silty sands. Residual worked flint, burnt sandstone fragments, and a little Late Iron Age pottery were recovered from these fills.

Ditch 274, aligned east–west, cut the north-eastern corner of the Phase 3 enclosure (235; Fig. 1.3). This ditch was 14.50 m long, 1.86 m wide and 0.50 m deep. It was filled with light brown sandy silt, a little Late Iron Age pottery was recovered from this fill.

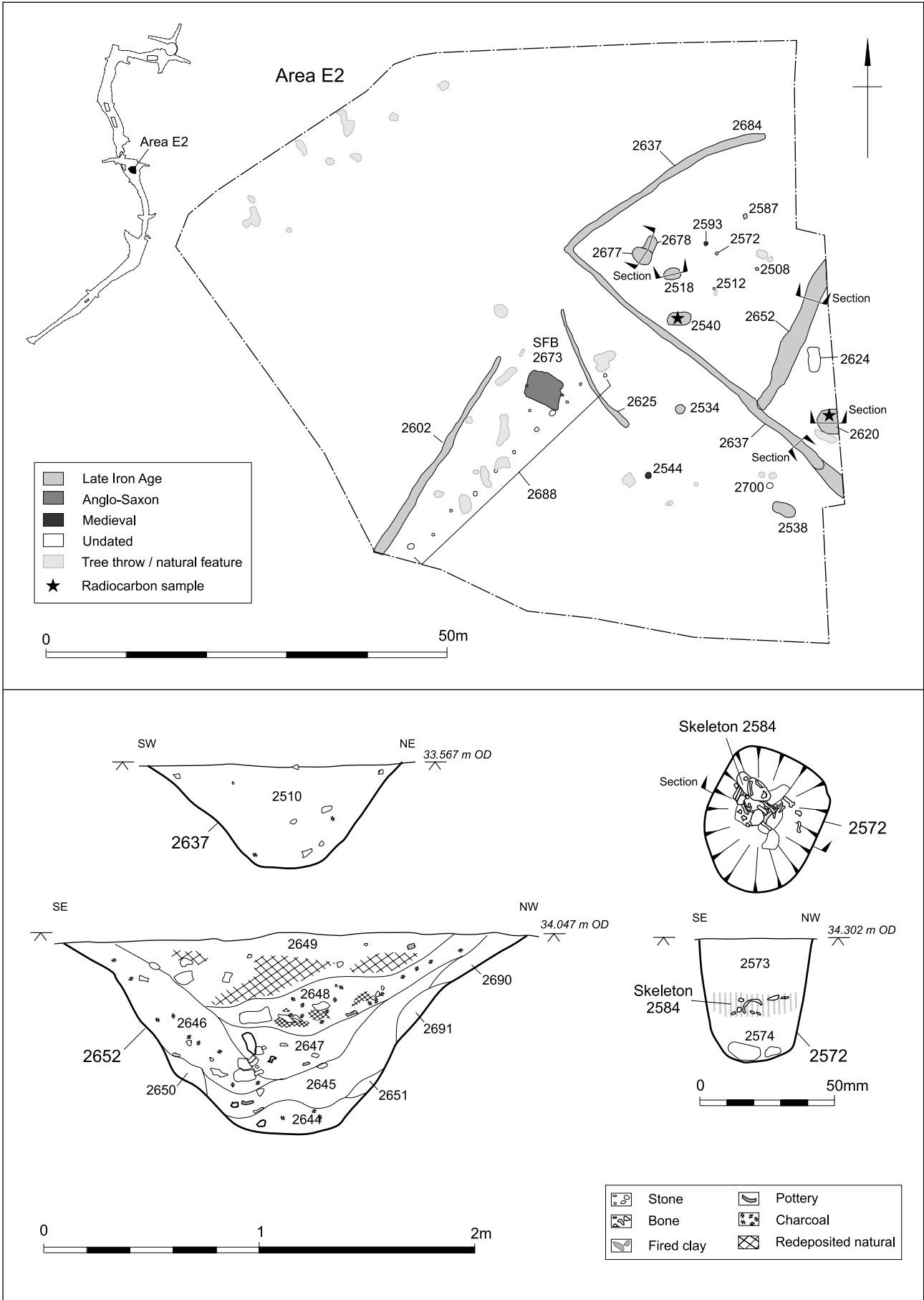


Figure 1.4 Detailed plan of Area E2

### Area E2

A small but significant number of Middle–Late Iron Age/early Romano-British features were recorded during the evaluation of this area, although no datable material was recovered from the topsoil or subsoil. Upon excavation the remains of a small farmstead complex within a D-shaped enclosure were found (Fig. 1.4).

A large sub-divided and incomplete, possible D-shaped enclosure of Late Iron Age/early Romano-British date lay at the eastern edge of the excavated area (2637) (Fig. 1.4). It extended eastwards out of the excavation area, with a significant portion lying below the present A228. The enclosure (ditch 2637) measured at least 30 m by 45 m (0.16 ha) in extent, within it there were a number of pits and post-holes. A terminal (2684) in the northern end of the ditch suggests at least one entrance to the enclosure at this point. The ditch was 0.70–1.20 m wide and 0.25–0.69 m deep (Fig. 1.4). A relatively small assemblage of predominantly Late Iron Age, but also including residual Late Bronze Age, pottery was recovered. An iron ring (Obj. No. 3309) from terminal 2684 may be part of a bridle (see Jones, below).

The main enclosure was defined by two separate lengths of enclosure ditch (2652, 2637) with a slight indication at the south-west end of ditch 2652 that ditch 2637 could be later. Ditch 2652 was more substantial than 2637, being 1.00–1.20 m deep and c. 0.90 m wide with concave sides (Fig. 1.4). Fills were derived from erosion of the clayey sand ditch sides as well as dumps of material including a relatively large assemblage (218/2721 g) of Middle–Late Iron Age pottery, residual Late Bronze Age pottery, animal bone, loomweight fragments (Obj. Nos 3303, 3304, Fig. 1.17, 2) and quantities of fragments of Kentish ragstone. An iron nail and a possible iron binding from a copper alloy vessel or shield were recorded from ditch 2652 (context 2504).

A shallow section of curvilinear ditch (2625) was recorded to the south-west of the D-shaped enclosure which appears to respect the line of the enclosure ditch and may be associated with it. It was 20 m long, 0.75 m wide and 0.20 m deep. It contained a small quantity (22/87 g) of Late Iron Age pottery. Ditch (2602) to the south-west of the D-shaped enclosure may also be associated. It was at least 30 m long and extended beyond the southern edge of the excavation area. It was 0.52 m wide and 0.10 m deep with a fill single containing a small quantity (3, 22 g) of Late Iron Age and a southern Gaulish samian platter fragment of late 1st century AD date. An undated fenceline (2688) lay to the south of ditch 2602.

A number of pits (2518, 2534, 2538, 2540, 2572, 2620, 2624, 2677–78, 2700; Fig. 1.5), and post-holes (2505, 2508, 2587) lay within or immediately adjacent to the D-shaped enclosure (2637). There

were several relatively large, sub-oval bathtub-shaped pits (2518, 2534, 2538, 2540, 2620) and a large nearly cylindrical one (2677). The bathtub-shaped examples (Fig. 1.4) were typically 2.00–3.00 m long, 1.40–1.50 m wide, with vertical or near-vertical, sides and flat bases. They were 0.40–0.90 m deep. Finds include residual Late Bronze Age pottery, Late Iron Age pottery, animal bone, dumps of charcoal, fired clay loomweights (Fig. 1.17, 1), and metalwork, including an iron hooked cutting tool (Obj. No. 3306) from pit 2620 and iron blade (Obj. No. 3317) from pit 2678 (Fig. 1.16, 2–3).

Carbonised grain from pits 2540 and 2620 was radiocarbon dated (Table 1.2; Fig. 1.11). The sample from pit 2540 produced a date of 390–200 cal BC (NZA–27235; 2237±30 BP). The sample from pit 2620 produced a date of 200 BC–40 cal BC (NZA–27236; 2095±30 BP) which correlates well with the pottery assemblage suggesting that this feature is later than pits 2450, 2677, and 2678 (see Jones, below). The material from these pits suggests a possible Middle/Late Iron Age date, perhaps 2nd century BC, which may indicate an open settlement on the site originally, later enclosed in the 1st century BC.

The remains of an undated neonatal burial (2589) were recovered from a smaller pit (2572) also within the D-shaped enclosure (Fig. 1.4). The sub-oval pit measured 0.52 m by 0.41 m and was 0.44 m deep. The burial was at the very base of the pit and was covered with a large quantity of small (80–120 mm), Kentish ragstone fragments.

### Area I

Only two features containing Late Iron Age pottery were recorded in Area I. A possible pit (114/004), 1.09 m wide and 0.19 m deep was recorded which contained a few sherds of possibly Late Iron Age pottery. A north–south aligned ditch (119/004) was 1.46 m wide and 0.26 m deep. A small quantity of Late Iron Age pottery and burnt stone was recovered.

### Area J

A north-east to south-west aligned ditch (142/004) was recorded during the evaluation. The ditch, possibly a field boundary, contained a small finds assemblage including possible Iron Age pottery, unidentifiable fragments of copper alloy and a small quantity of fuel ash slag.

### *Romano-British*

There were no archaeological features of post-1st century AD date from the Bypass route and the only finds were residual pottery from topsoil or subsoil in Areas B1, C, E, E1, and E2. Two Roman coins of late

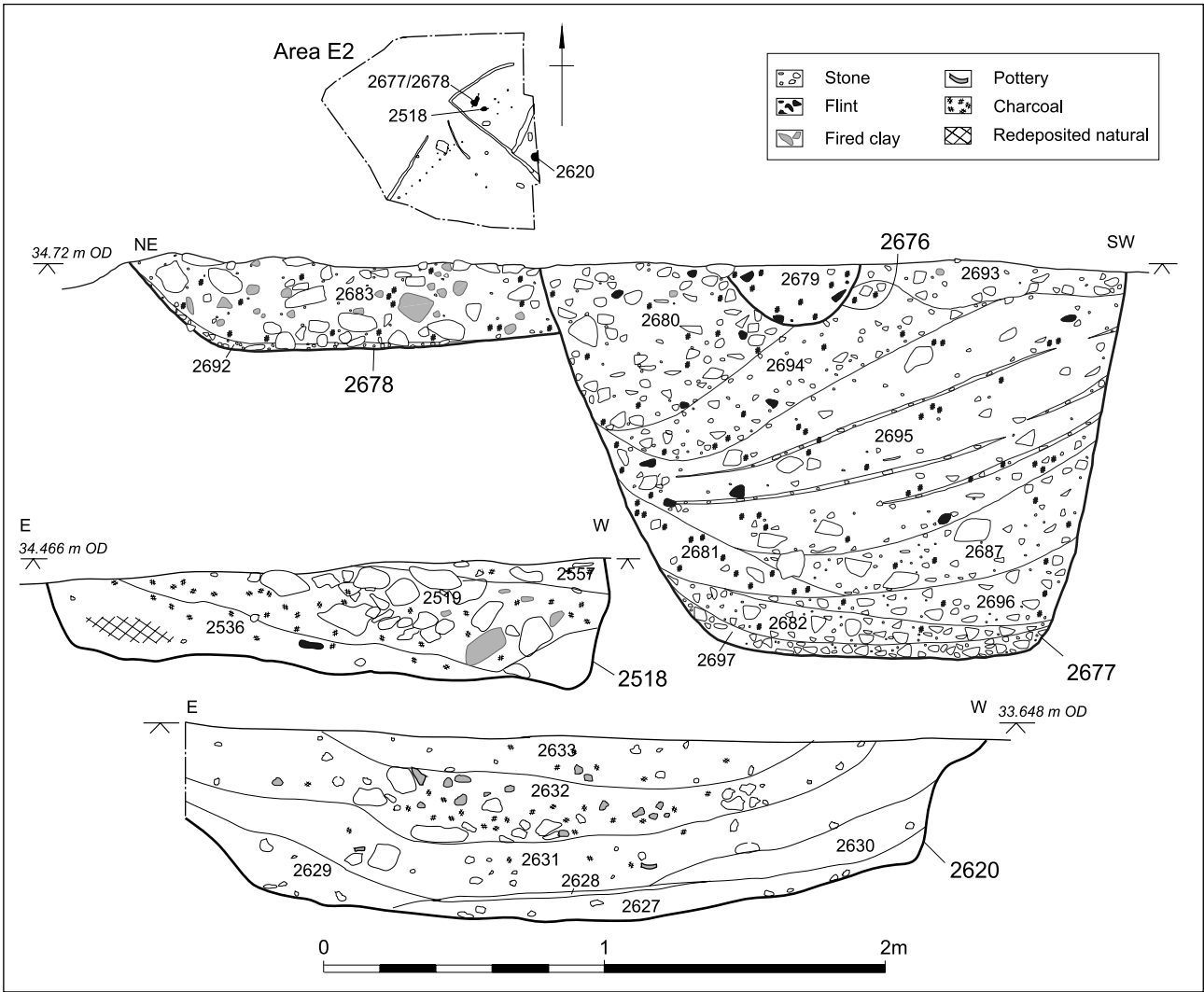


Figure 1.5 Area E2 selected sections

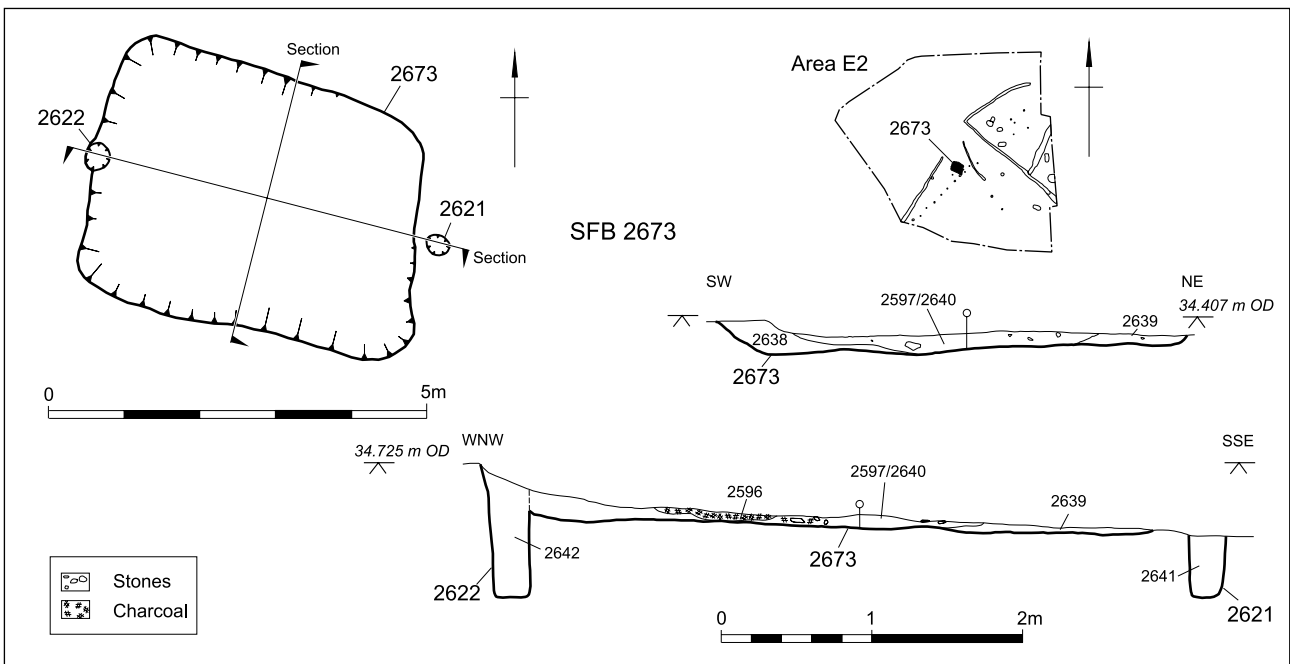


Figure 1.6 Area E2 plans and sections of SFB 2583

3rd/early 4th century and late 4th century date respectively were recovered from the subsoil of Areas A and E. A possible Roman tile was recorded from enclosure ditch 169 (Area A). Overall, this reflects the very low density of Romano-British material or features in this particular part of the River Medway valley.

### Anglo-Saxon

Little evidence for Anglo-Saxon activity was recovered. Only two Early to Middle Anglo-Saxon (5th–7th centuries) features (2673, 2593) were identified in Area E2 (Fig. 1.4). Residual pottery was recovered from the topsoil and subsoil in Areas B, C, and E.

Sunken-featured building (SFB) 2673 was identified in the evaluation of Area E (Trench 252); it was subsequently fully excavated. SFB 2673 measured 4.90 m by 3.06 m wide and was 0.30 m deep. Large post-holes were positioned at the western (2622) and eastern (2621) ends, 5.41 m apart (Fig. 1.6). The post-holes were sub-oval in shape, measuring 0.28 m by 0.18 m and 0.41–0.75 m deep. The hollow was filled with light to mid-yellowish-brown sandy silt. A charcoal dump (2596) was recorded in the north-west and south-west quadrants. Finds included pottery, animal bone, fired clay, burnt bone, and 11 badly corroded copper alloy fragments (Obj. No. 3305) which are probably from a single object but could otherwise not be identified further.

To the north of the SFB, a post-hole (2593) within the earlier Late Iron Age enclosure (2637) contained a small quantity of Saxon pottery and animal bone (Fig. 1.4). Two undated post-holes close to 2593 (2508 and 2587) may be of a similar date.

### Medieval

Residual medieval pottery, along with small quantities of medieval roof tile, was recorded in Areas A, C, E, G, and H. Medieval features were recorded in Areas B1, E1, and J.

#### Area B1

In Area B1 a large sub-rectangular feature (638) was identified. The ploughed out remains of numerous field boundaries and a few isolated post-holes and a pit were also found. Dating evidence was generally fairly sparse although a 12th century coin came from ditch 672 and 13th century pottery from pit 554.



Plate 1.2 Bakery structure 638, from NE (2 m scale)

#### Bakery(?) structure (638)

Structure 638, large sub-rectangular feature (Figs 1.7–8) was recorded in the north-west corner of Area B1 (Pls 1.2–3). This structure consisted of a sub-rectangular pit or hollow, measuring 4.06 m by 3.24 m and 0.34 m deep. It was aligned north-east to south-west, on the western side it had been partially terraced into the natural geology. A possible entrance was noted in the north-eastern quadrant.

Inside structure 638 were two ovens (679 and 686) and a small hearth (699). Oven 679 was a small teardrop-shaped feature in the south-east quadrant of the structure. It was 1.24 m long and 0.92 m wide. A poorly-preserved foundation (698) of Kentish ragstones (c. 80–150 mm) was *in situ* against the east side of the oven. A charcoal-rich deposit (697) was recovered from the oven, analysis of which showed that oak was the main fuel used (see Barnett, below). The oven seems to have been sealed deliberately with a layer of sterile silty clay (676).

A small hearth-like feature (699) was located against the east side of structure 638 immediately north of oven 679. Hearth 699 was a small sub-circular area of burnt natural, c. 0.40 m diameter.



Plate 1.3 Bakery structure 638, oven 638, from SW

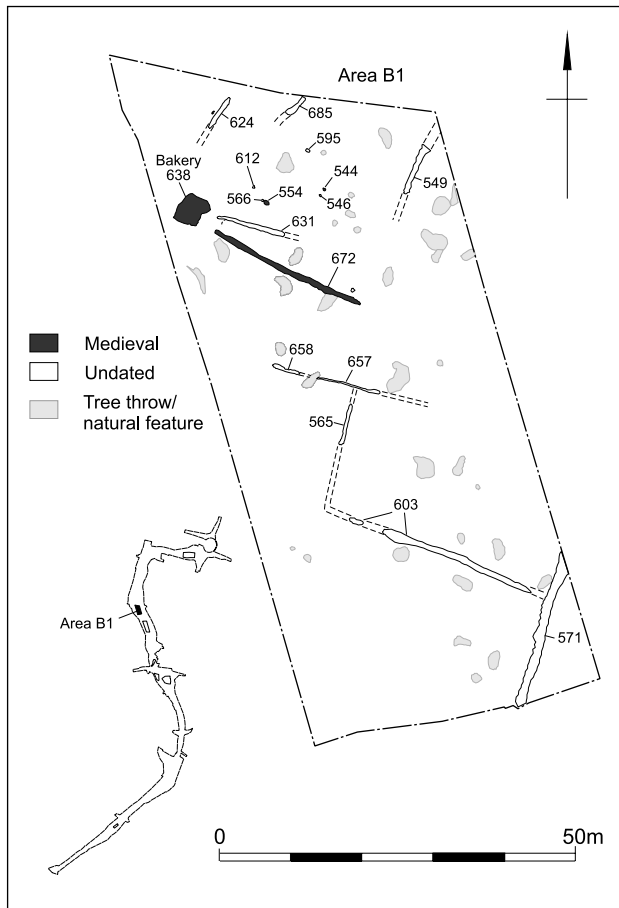


Figure 1.7 Detailed plan of Area B1

Oven 686 lay in the south-western part of structure 638. The foundation of the oven consisted of fragments of Kentish ragstone (680) with an infilling of fine gravel (687) that had burnt during the oven's use. This foundation was capped by a 0.10 m thick baked clay lining (688). A series of rakings of charcoal-rich deposits (including 678), interspersed with sand lenses lay above this base. The material spread to the north-east quadrant of the structure suggesting the mouth of the oven lay to the north-east. Analysis of the charcoal shows that oak and beech were the most commonly used fuel although hazel, hawthorn, maple, and elm were also found.

An assemblage of early 13th century pottery, including a near-complete pottery vessel (Obj. No. 952), which seems to have been smashed *in situ* in the final fill, was recovered from the structure. Other finds from the structure included residual worked and burnt flint, oyster shell, and a small number of unidentifiable iron lumps (Obj. Nos 953, 954).

The lack of smithing or smelting waste material or intense heating associated with metalworking or other craft activity such as pottery production would suggest a bakery. The recovery of rich environmental remains consisting grains and many rachis fragments of free-threshing wheat (*Triticum*

*aestivum*), a little barley (*Hordeum* sp.) and possible rye (*Secale cereale*), and two seeds of broad bean (*Vicia faba*) were also recovered along with many weed seeds (see Stevens, below). Nearly identical structures of 11th–13th century date have been recorded at Manston (Perkins *et al.* 1998), Fulston Manor (see Chapter 3), and Star Lane (see Chapter 2).

#### Field system

Ten truncated boundary ditches were recorded (549, 565, 571, 603, 624, 631, 657, 658, 672, and 685), forming a rectilinear field system, orientated north-west to south-east and north-east to south-west which clearly continued beyond the extent of the excavation area (Fig. 1.7).

Many of the ditches were discontinuous, 15–20 m in length, although some shorter lengths were also recorded. Most were 0.25–0.8 m wide with shallow concave profiles, often only 0.10–0.25 m in depth. They were filled with light to mid-orange-brown sand. A relatively small finds assemblage was recovered, predominantly from the ditches, including residual Neolithic and Bronze Age worked flint, burnt flint, very fragmentary animal bone, oyster shell, clay pipe, and iron nails. A notable find was two quarter fragments of a cut silver penny of Stephen (Obj. No. 951), dated AD 1145–1150, from ditch 672.

The largest element of the field system was a large axial ditch (571) which was at least 20.50 m long, 1.70 m wide and 1.10 m deep. The fills were light yellowish-brown or reddish-brown sands. A small quantity of abraded residual Late Bronze Age pottery was recovered.

#### Other features

A number of other features were recorded in this area including five post-holes (544, 546, 566, 595, 612) and a small pit (554). The post-holes were steep-sided, 0.30 m diameter and 0.12–0.25 m deep. Post-hole 546 contained fragments of Kentish ragstone as packing stones. The single fills of these features were characterised by an homogeneous, red-tinted greyish-brown silty sand.

Pit 554 was filled with identical material to the post-holes and contained early medieval (13th century) pottery. The few datable features fit with the general date of the rectilinear boundary system and the bakery structure (638) all suggesting early medieval activity, with possible settlement in the vicinity.

#### Area E1

The recovery of residual medieval pottery in Areas C and the north of Area G, as well during the evaluation, indicates a low level of medieval activity in Area E. Excavation revealed two field boundary

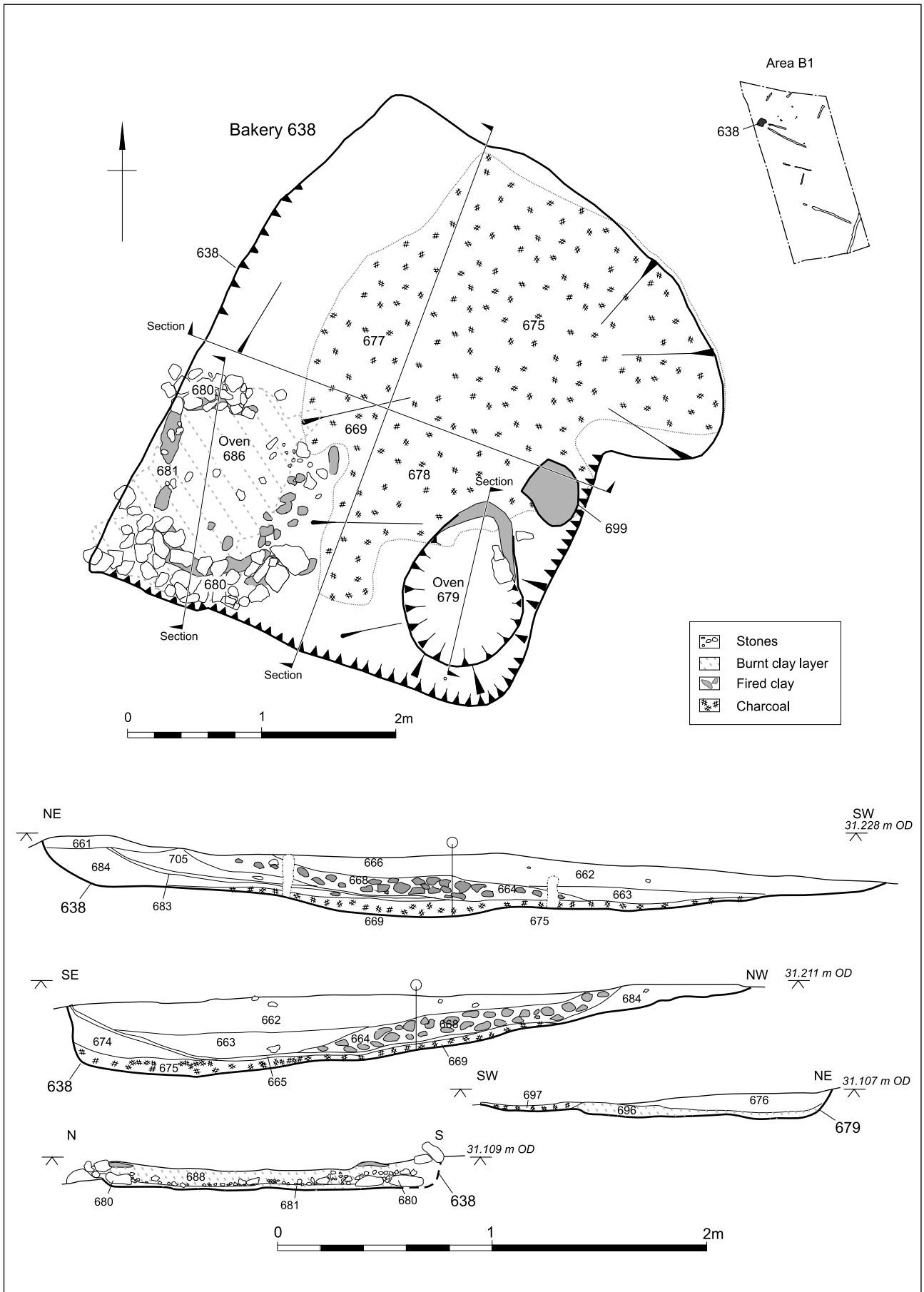


Figure 1.8 Detailed plan and sections of Bakery 638

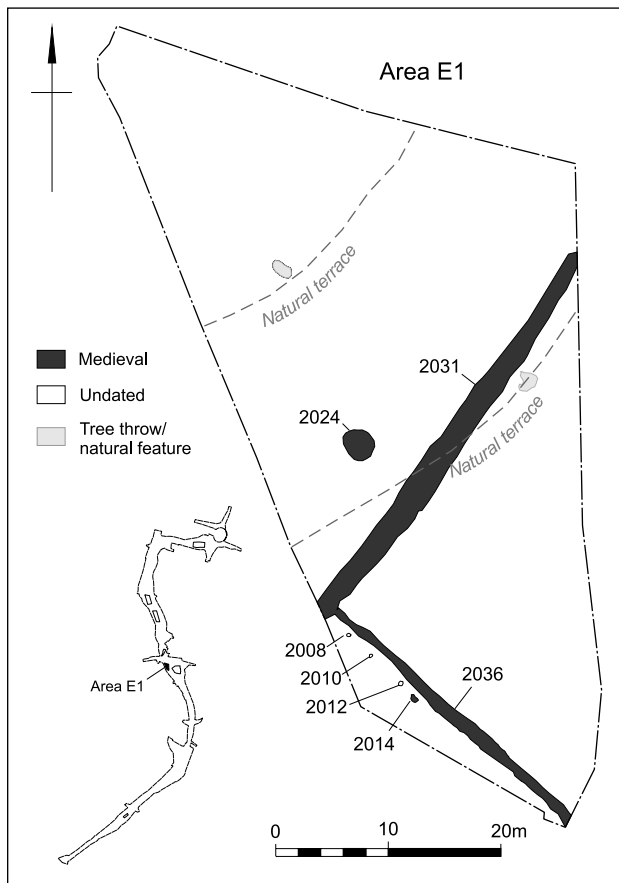


Figure 1.9 Detailed plan of Area E1

ditches (2031, 2036) with an associated post-hole alignment (2037), along with a large pit (2024; Fig. 1.9). All contained 13th century pottery. A relatively large assemblage of residual 13th century pottery and peg tile fragments was also recovered during machining from the subsoil, notably within the north-west of the excavation area.

#### Ditches

Ditch 2036 was aligned north-west to south-east in the southern part of the area which contained early 13th century pottery. This ditch is likely to be a precursor to the present field boundary hedgerow that runs along the southern extent of the paddock containing Area E1. The ditch was at least 28 m in length, 1.10 m wide and 0.26 m deep with a moderate concave profile. A section of fenceline (7037), at least 8.00 m in length was recorded parallel and to the immediate south (0.4–0.8m) of ditch 2036. It comprised sub-square post-holes (2008, 2010, 2012, 2014), generally 0.30 m square, 0.10–0.24 m deep, and 2.50–3.20 m apart filled with single fills characterised by dark greyish-brown silty clay with some sand mottling in places. A single sherd of medieval pottery was recovered from post-hole 2014.

The north-west end of ditch 2036 intersected perpendicularly with a second, larger ditch (2031),

although no clear stratigraphic relationship was discernible between them. Ditch 2031 was at least 35 m long and aligned north-east to south-west, it partially followed the contours along the upper terrace. The ditch was 1.40–1.60 m wide and 0.30–0.40 m deep with a moderate to steep, concave profile. It had a reddish-brown clayey silt primary fill and a mid-greyish-brown clayey silt upper fill, which contained common angular Kentish ragstone boulders (10–400 mm in size). A relatively large assemblage (76/881 g) of 13th century pottery was recovered from the ditch as well as a small quantity of animal bone and oyster shell. Most of the pottery (69/798 g) comprised part of a north-west Kent ware jar (Obj. No. 2401), from the upper fill (2003) of the ditch (Fig. 1.15, 1).

Although the stratigraphic relationship between the two ditches could not be proven; they contained similar fills and similar dated material, and were perpendicular to each other. No indications from the ditch sections suggest associated banks. The alignment of these ditches with reference to natural geological terraces and present fencelines suggests that these represent a small part of a rectilinear pattern of 13th century land divisions following the prevailing topography. The size and general condition of the pottery assemblage recovered from the ditches suggest that contemporaneous settlement was located nearby.

#### Pit 2024

This large pit was immediately north of ditch 2031. It was relatively shallow, oval, measuring 2.60 m by 2.22 m, and was 0.21 m deep. It contained a single mid-dark orange/brown silty loam fill (2025), from which an iron nail, medieval tile fragments, and a single sherd of 13th century pottery were recovered.

#### Area J

Little was recorded in this area during the evaluation and the subsequent excavation and watching brief though a small quantity of residual medieval pottery was recovered from the topsoil/subsoil horizons in the immediate vicinity of the later recorded ditch and c. 200 m to the south-west.

Only one archaeological feature was observed, ditch 3615 (Fig. 1.1). It was orientated north-east to south-west and extended beyond the northern and southern limits of the excavation area. The ditch was 52 m long, 1.00–1.20 m in width and up to 0.27 m deep with a concave base. It contained a single fill, a mid-reddish-brown silty sand with rare gravel and small fragments of Kentish ragstone. A small quantity of medieval material was recovered, including medieval pottery dating to the late 12th–13th century and medieval peg tile fragments.



*Post-medieval*

Only one post-medieval feature of note was recorded. This comprised a mill leat in Area C, initially noted on historical maps (CAT 1992) and recorded during the watching brief. Initial topsoil stripping of this area revealed faint traces of a possible mill leat, immediately to the north-west of the stream and so a small number of machine-excavated trenches (1A–5A) were opened to record it.

At least two phases of the mill leat were evident in Trenches 4A and 5A (Fig. 1.10), which was recorded over at least 68 m on a north-east to south-west alignment as shown on the early map. The earlier

channel (4010) was characterised by a 5.30 m wide and 0.50 m deep shallow concave cut and base. The fills (4005–4008) were fine greyish–brown natural alluvial clayey silts, sands, and gravels indicating a low energy environment. The small number of finds include Romano-British pottery, clay pipe, and post-medieval iron nails and pottery.

The later channel (4004/4015) was characterised by a 3.90 m wide and 0.50 m deep, shallow concave cut and base (Fig. 1.10). This cut into the natural geology (4002) as well as the fills of the earlier leat. This later channel was filled predominantly with alluvial clayey silts (4003, 4012–4014) which were devoid of finds.

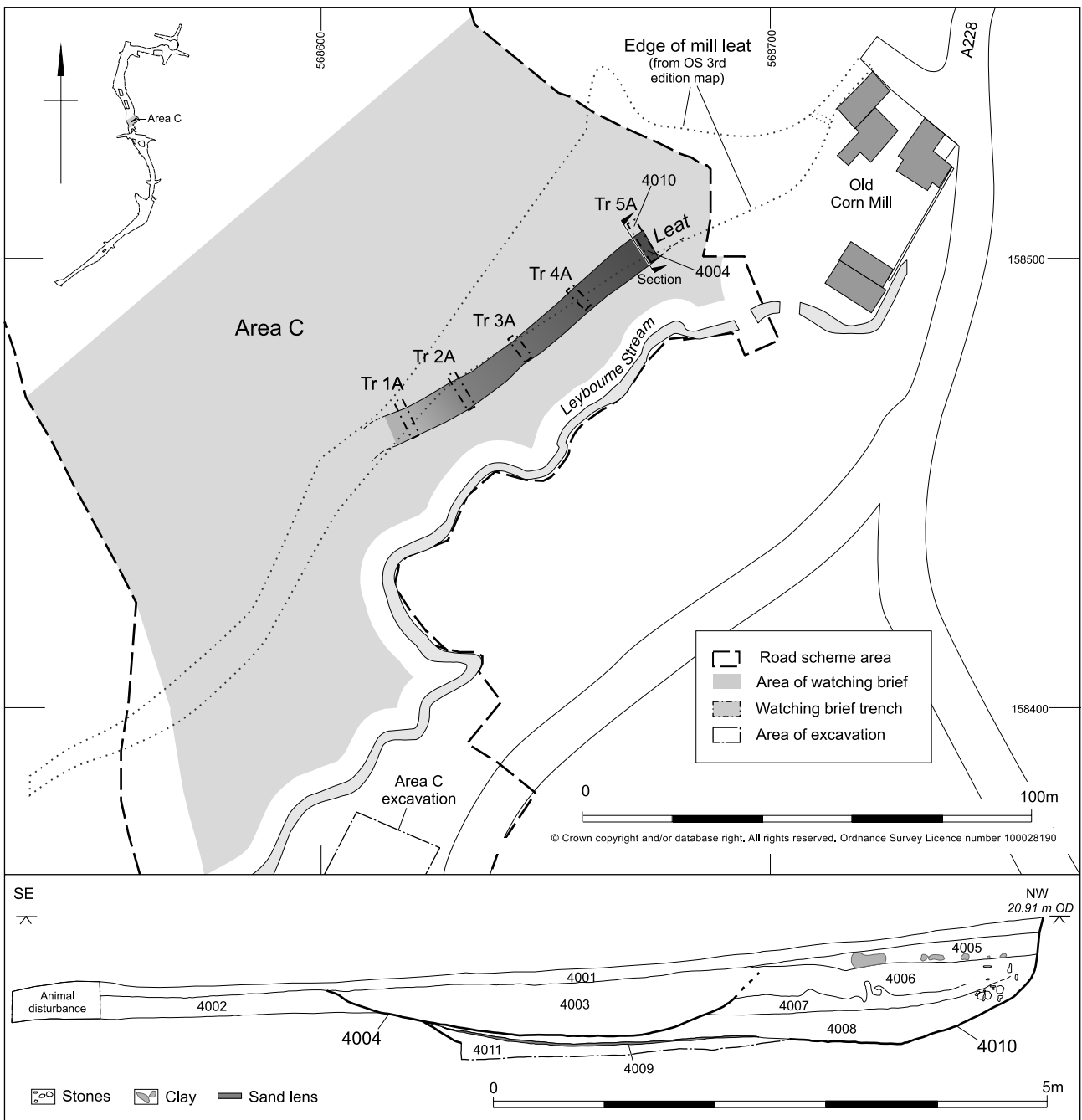


Figure 1.10 Detailed plan of Area C

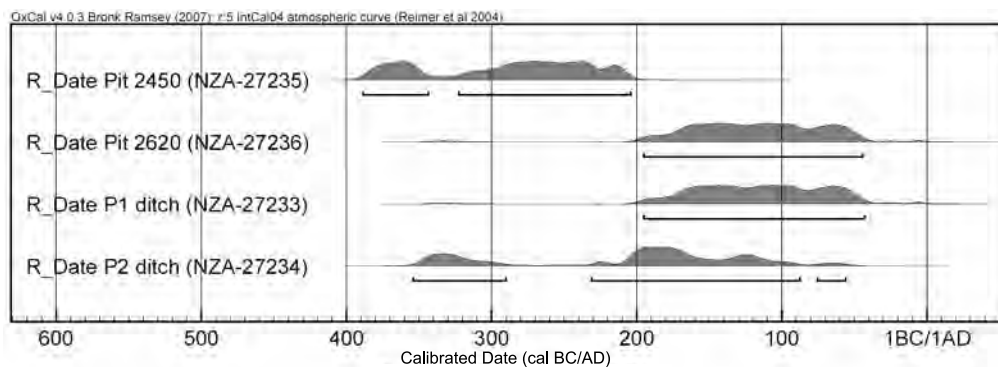


Figure 1.11 Plot of radiocarbon determinations

Although the leat channel is not closely datable its location corresponds exactly that clearly shown on a mid-19th century map. The channel runs along a contour to the east of Leybourne Wood into the 'Mill Race', which is marked to the immediate south of the known post-medieval mill on early maps. Remnants of this later mill structure are extant in a house on Pump Close (CAT 2005). The existence of a mill at Leybourne is documented in *Domesday*, which might suggest a mill at Leybourne in the Anglo-Saxon period, however, these references cannot be correlated confidently with the known location of a post-medieval mill. The present remains probably date from the mid-16th century onwards, though the first historical mention of a mill at this location is from 1686 (CAT 2005).

## Finds and Environmental Remains

### Worked Flint

by Matt Leivers

A total of 578 pieces of worked flint was recovered from the excavations, 497 of which came from Area A (Table 1.3). None of the flint was securely stratified and is therefore summarised below; further details of the assemblage may be found in the site archive.

Table 1.3 Composition of the flint assemblage from Area A

Flint Types	No.	% of assemblage
<i>Retouched tools:</i>		
Microoliths	1	0.20
Scrapers	12	2.41
Tranchet Adze	1	0.20
Projectile points	1	0.20
Misc. retouched pieces	6	1.21
Retouched tools sub-total	21	4.22
<i>Debitage:</i>		
Flakes (incl. broken)	380	76.47
Blades (incl. broken)	35	7.04
Bladelets (incl. broken)	2	0.40
Utilised flakes, blades, bladelets	(73)	(14.69)
Core preparation/rejuvenation pieces	14	2.82
Cores/core fragments	36	7.24
Debitage	9	1.81
Total	497	100.0

### Raw material

Small, poor quality cobbles and pebbles from the local gravels, a much better quality dark grey/black flint which may originate in the chalk either of the north Kentish Downs or further afield, and a small amount of Bullhead flint, probably from the local beds was utilised. Most of the material is in good condition, suggesting that it came from the immediate locality and was not exposed to long periods of surface reworking. Some patination was noted.

### Burnt unworked flint

A relatively small quantity of burnt, unworked flint was recovered, from six areas. Only one context (Area A, ditch 169) produced more than 500 g. This material is probably derived from Late Iron Age activity.

### Area A

Most of the assemblage is not diagnostic chronologically, and could date to any period. There are, however, a number of pieces which are more distinct. A large tranchet adze (subsoil) and a geometric microlith of Late Mesolithic date (Clark's (1934) type B4; Palmer's (1977) lanceolate B2; Jacobi's (1978, 5b)) came from ditch 141 (Group 169). Similar Mesolithic material has been recovered in the vicinity. Tranchet adzes from Snodland and New Hythe, a pick from Barming, and microliths and other flakes and blades from East Malling, suggesting general utilisation of the Medway floodplain margins.

A number of blades, bladelets, flakes, and associated cores struck primarily with soft hammers are likely to date to the later Mesolithic or earlier Neolithic. A blade fragment and scraper of comparable date were recovered during initial work on the route (CAT 1992).

Identifiable Neolithic and Bronze Age tools include end and end-and-side(s) scrapers, mostly of Riley's types 3–6 (1990, 225–7). A Late Neolithic transverse arrowhead (Green 1984) came from the subsoil and a second unfinished example was found in ditch 273 (Group 235). Numerous cores date to this period, including several discoidal examples, most of

which are worked-out multi-platform cores. Several occur in a dark grey–black flint of significantly better quality than the bulk of the assemblage and which may have been quarried from the Kentish chalk (or obtained from further afield). Material of this period has been found in the general vicinity. Leaf-shaped arrowheads, polished flint axes, and other tools and flakes were found at East Malling, Ham Hill, and Barming. The Medway was a focus for Neolithic activity and contains a well-known group of chambered tombs (Ashbee 1999; 2000).

A number of unsystematically worked cores and rudimentary flakes with characteristics of hard-hammer percussion are likely to be Middle Bronze Age, if not later. These tended to be made on poor quality flint with many flaws and incipient thermal fractures and flaking errors. There is also some limited evidence for the re-use of older materials, including an end scraper with a very low-angle retouch from evaluation Trench 293 (to the immediate north-west of the Area A excavation).

#### Other areas

A total of 81 pieces of worked flint, almost all residual in later contexts, was recovered from the other areas investigated. A small patinated group of flakes and blade-like flakes, an end scraper and a pyramidal core of probable earlier Neolithic date were recovered from the interface of the subsoil and natural geology in Area J. A roughed-out but unfinished fine leaf-shaped arrowhead (probably Green's type 3c or 4c) was recovered from an unstratified context on Area J. The only other formal tools included a variety of scrapers and a scraper knife; the from these areas were a side scraper from Area G (perhaps Bronze Age), end scrapers from Area E (one probably later Neolithic, the other crude and not closely datable), and end-and-side scrapers from Area I (one Early Neolithic; one a scraper knife, not closely dated).

#### Discussion

The density of the material suggests low-level human activity of Late Mesolithic and Neolithic date, especially in Area A and to the south of the route. The relatively low density and size of the assemblage for each location is difficult to characterise further and probably represents the residue of small hunter-gatherer communities exploiting a range of resources.

#### *Pot Beaker*

by Alistair Barclay

A fragmentary Pot Beaker (*potbeker*), weighing 1987 g was found lying on its side in a shallow pit (Pit 1004, context 1008, ON 1451 and small number of sherds from 1005–6, 1009; Fig. 1.2). It could have

been buried in a complete or semi-complete state (Pl. 1.1); although it had suffered some post-depositional disturbance.

#### Form and decoration

The relatively tall (440 mm) vessel has the slender S-shaped profile found in some Wessex/Middle Rhine (W/MR) Beakers (Clarke 1970; Needham's (2005, 188 and fig. 6) tall mid-carinated (TMC) group); although the sinuous shape can be described as bipartite with the rounded shoulder set relatively high and just above the mid-point. The rim diameter is slightly wider than the shoulder and both are more than twice the width of the base, which is surprisingly narrow. The rim is thickened so that it has a slight collar, a feature that is found on W/MR and other styles of vessel (Clarke 1970, 37 and fig. vi). The base is almost flat but has a notable boss on the interior, a recognised feature of some vessels (*ibid.*, 30 and fig. v) and has a slight 'foot'. The base is decorated with finger-tip impressed rustication, while the rest of the vessel is decorated all-over with evenly spaced grooved lines (V-shaped and rounded profiles), although in places the application is haphazard. The grooves appear to have been made with a point or with a rounded object. It is possible that some of the V-shaped grooves were made by dragging a finger-nail tip across the surface of the pot. Slight finger print marks on the collar could be from manufacture rather than a deliberate attempt at decoration.

This type of grooved decoration is widespread with a notable concentration in the south and south-east of England. Other grooved vessels from Kent have been found at Beechbrook Wood (Barclay *et al.* 2006) and Springhead (L. Mephram pers. comm.). There is evidence that the vessel was in a worn state when buried with slight damage to the surfaces, base and rim.

#### Fabric

PGSF1/LNEBA: Hard fabric with a soapy texture, tempered with sparse clay pellets (P; <4 mm) and sub-angular grog (G; <8 mm – some reddish–brown clasts are likely to be naturally occurring iron-rich clay), possibly shell (S; rare lenticular voids) and very rare angular white flint (F; < 5 mm). The outer and inner surfaces, which had originally been smoothed, are oxidised to a patchy pale reddish–brown or darker greyish–brown. The core is dark grey.

#### Discussion

The vessel can be placed within the overall incised/grooved group of Beakers, within which a distinction can be made between the groove-decorated vessels and those that are decorated with many finer-incised lines and between those vessels where the decoration is arranged so as to spiral up the

wall of the pot as opposed to parallel horizontal rows (as at West Malling).

The vessel is without close parallel and is different in style to classic *potbekers* from the Netherlands and elsewhere (Case 1993; Gibson 1980; A. Gibson pers. comm.; H. Fokkens pers. comm.). Therefore, it is best considered as a British style Pot Beaker or oversized vessel. A vessel type that is frequently found on domestic sites and/or from pit deposits and only rarely found in graves (Gibson 1980; Clarke 1970).

Clarke illustrates a number of vessels with either all-over or banded grooving (1970: Brantham Hall Suffolk 107 (854), Hexham, Northumberland 321 (679), Stanton Harcourt and Eynsham, Oxfordshire. 509 (764) and 326 (741), Rudstone 62, Yorkshire 386 (1371), Upper Deal, Kent 391 (414), Boyton, Suffolk 420 (850), Stalham, Norfolk 424 (603), Broad Down, Devon 880 (155)) and others are illustrated by Gibson (1982). Of particular note is a vessel from Uddelermeer, Gelderland, Netherlands (Clarke 1970, 325) which has both grooved decoration and fingertip impressions around the base.

The two radiocarbon dates (KIA-37133 and 37134) indicate that the pot was deposited at some point during the interval 2450–2060 cal BC, which suggests that it belongs within 100–200 years or just a few generations of the uptake of Beaker culture values (Needham 2005, 209 and fig. 13). The precise currency of Pot Beakers and domestic assemblages is still a matter of debate, although these results support the suggestion that vessels recovered from funerary and non-funerary contexts can be equally early.

The deposition of whole or near-complete Beakers buried in pits is a fairly common practice (Barclay *et al.* 2006) with several examples known from Kent (eg, Ringlemere, Stuart Needham pers. comm., and Beechbrook Wood (Barclay *et al.* 2006).

## *Later Prehistoric and Roman Pottery*

by Grace Perpetua Jones

A combined total of 2415 sherds (32,239 g) of later prehistoric and Roman pottery, predominantly of Late Iron Age date, was recovered from evaluation and excavation. Despite a relatively high average sherd weight (MSW) across the assemblage (13.3 g), the surface condition of the pottery is poor and this may have masked evidence of surface treatment and use.

### **Chronology**

Areas A, B, B1, and E2 produced small quantities of material (66 sherds, 624 g) that have been identified as Late Bronze Age/Early Iron Age (fabrics VF1, FG1, F3, F4). This material mostly occurs as body sherds, however three rims are present and include a long-necked form of uncertain profile (R28, FG1;

Fig. 14.28), a high-shouldered jar (R49, VF1), and a lid (R45, F4). For the most part these sherds were residual in Late Iron Age features (such as enclosure ditches 220 and 235 in Area A; ditch 2504 and pit 2538 in Area E2) or recovered from subsoil layers in Area B (Trenches 44, 58, 61, 64) and B1. Two features contained exclusively Late Bronze Age/Early Iron Age material: pit 132 (Area A) and ditch 531 (Area B1).

Romano-British pottery was encountered in similar quantities (64 sherds, 535 g) across the route: Area A (38 sherds, 254 g); B1 (6 sherds, 97 g); C (1 sherd, 6 g); E (1 sherd, 3 g); E1 (7 sherds, 47 g); E2 (1 sherd, 12 g) and J (7 sherds, 52 g). This material mostly consisted of undiagnostic greyware and oxidised sherds, however a whiteware butt-beaker (R100, Cam. 113) and probable flagon were identified from Area A, and a south Gaulish samian platter (Dragendorff form 15/17) from Area E2. The remainder of the assemblage is predominantly of Late Iron Age date; however Middle Iron Age elements are also present. The Iron Age material is broadly of 2nd century BC to 1st century AD date, with a focus on the 1st century BC.

### **Context of recovery**

The route-wide assemblage was recorded from 169 contexts, of which 23 produced 30 sherds or more but 88 contexts contained five sherds or fewer. The largest concentrations of material were from Area A and Area E2 (Table 1.4). The vast majority of pottery from the excavations came from ditches (60% by count), with smaller quantities from other features, including 16% from pits (Table 1.5).

### **Fabric**

Fabric descriptions are given in Appendix 1.1. The assemblage is dominated by grog-tempered fabrics, representing 34% of the overall count and 37% of the weight (Table 1.6). Glauconitic sandy fabrics are also very common and account for 27% of the count and 35% of the weight. This glauconitic sand was also used in combination with flint (6% by count and 2% by weight) and grog (4% by count and 3% by weight). Non-glauconitic sandy wares occur in lesser quantities (10% by count and 8% by weight), and in combination with grog in only eight sherds. Shell-tempered fabrics make up 8% of the assemblage by count (6% by weight), and flint-tempered wares only 5%. Minor fabrics comprise one Late Bronze Age ware dominated by organic and flint inclusions (1%) and one imported Roman fineware (<0.1%).

Grog temper was widely used for 'Belgic' forms in Kent and much of south-east Britain (Pollard 1988, 31). Most of the West Malling grog-tempered fabrics are equivalent to Canterbury Archaeological Trust (CAT) fabric group B2, 'Belgic coarse

grog-tempered'. Exceptions include G4 which relates to CAT B1 'Belgic fine-grog-tempered', and G6, equivalent to CAT B3, 'grog-tempered with sparse flints'. Fabrics QG1–QG4 are equivalent to CAT fabric B5. Pottery from the recent excavations along the Channel Tunnel Rail Link (CTRL) shows that grog-tempered fabrics were most common in the Ashford area (Barclay *et al.* 2006).

The West Malling glauconitic fabrics are equivalent to CAT fabric B9.1, while the glauconitic sandy wares with flint are equivalent to CAT B9.2. Glauconitic fabrics are characteristic of sites in the Medway Valley where they were used for 'Belgic' forms, both handmade and wheelthrown (Thompson 1982, 12). Glauconitic fabrics have been found at Quarry Wood, Loose, and Teston, Rochester (Pollard 1988, 31). Recent work on the Channel Tunnel Rail Link (CTRL) has revealed that these distinctive fabrics first occur during the Middle Iron Age. At Eyhorne Street, Hollingbourne, glauconite-rich fabrics have been recorded from a pit dated to 400–260 cal BC (NZA 22594; G.P. Jones 2006b). At Beechbrook Wood, Hothfield, glauconite-rich fabric Q5 was used for barrel-shaped jars, S-profiled bowls and jars, proto-saucepan pots, and more developed saucepan pot forms. These vessels were recovered from an enclosure ditch, a radiocarbon date for the recut of which provided a *terminus post quem* of 390–170 cal BC (NZA-20052; G.P. Jones 2006a). At Hockers Lane, CAT fabrics B9.1 and B9.2 made up 44% of the Late Iron Age/early Roman assemblage by count, with the grog-tempered wares accounting for a further 22% (Lyne 2006a). At Snarkhurst Wood glauconitic fabrics accounted for nearly all of the earliest Late Iron Age phase at the site (Phase 1, dated AD 10–30) and were used for bead-rimmed jars with corrugated shoulders (Lyne 2006b). The evidence from the CTRL sites supports Pollard's interpretation (1988, 31) that the distribution of glauconitic wares centred on the Medway Valley, in particular the Maidstone area (Barclay *et al.* 2006).

The underlying geology of West Malling consists of the Folkestone Beds of the Lower Greensand, and this is the local geology of many of the CTRL sites, including Eyhorne Street and Beechbrook Wood. The presence of glauconitic fabrics on these sites is therefore to be expected. However, petrological analysis of samples of a 'hard dark grey–black fabric tempered with much fine hard grey sand' (Fabric A) from Little Waltham, identified as probably glauconitic, appeared identical to material from Birchington, Holwood, and Oldbury and is comparable in the hand specimen to sherds from two sites in Essex: Gun Hill and Mucking. The close textural similarity of the Little Waltham fabric to the Kentish material presents 'a strong argument for regarding it as emanating from a single source'

(Peacock and Williams 1978, 58). The glauconitic fabrics did not survive the Conquest (Thompson 1982, 12) and 'appear to have been abandoned in the early part of the 1st century AD at the latest' (Pollard 1988, 33).

The non-glauconitic sandy wares often contain rare to sparse amounts of red ferruginous inclusions. A sand-tempering 'ceramic zone' has been identified in the south-eastern part of Kent, focusing on the Deal and Folkestone area (Pollard 1988, 31). Indeed, in West Kent sandy wares were of little or no importance during the pre-Conquest period (*ibid.*, 41). This trend has again been recognised along the CTRL route (Barclay *et al.* 2006). The clear dominance of glauconitic fabrics over non-glauconitic sandy fabrics at West Malling also supports this pattern.

Shell-tempered wares, which represent *c.* 7% of the West Malling assemblage, are characteristic of the later 1st century BC–late 1st century AD in north and west Kent and south Essex (*ibid.*, 31). This distribution pattern is again borne out along the CTRL route and shell-tempered wares occur in some quantity at Thurnham but are not seen to the south of this (Barclay *et al.* 2006).

The flint-tempered wares comprise a minor component of the assemblage (5%). Of the 126 sherds identified, 13 are of Late Bronze Age date. During the Late Iron Age, such fabrics tend to be a

**Table 1.4. Quantification of later prehistoric and Roman pottery by area**

Area	Count	Weight (g)	MSW (g)
A	1301	19,972	15.4
B	83	646	7.8
B1	27	183	6.8
B2	5	25	5.0
C	2	7	3.5
E	17	214	12.6
E1	7	47	6.7
E2	914	10,624	11.6
I	42	390	9.3
J	17	131	7.7
Total	2415	32,239	13.3

**Table 1.5 Quantification of later prehistoric and Roman pottery by feature type**

Feature type	Count	Weight (g)
Ditch	1445	21,478
Leat channel	1	6
Pit	394	4144
Posthole	1	3
Pit/posthole	2	14
?Kiln	159	2354
?Oven	1	2
SFB	2	4
Wall/plinth	12	52
Tree-throw hole	14	63
Natural features/subsoil/topsoil	45	510
Evaluation trenches (ASE)	339	3609
Total	2415	32,239

Table 1.6: Quantification of fabrics by count, weight and percentage

Fabric	Count	% of count	Weight (g)	% wt	Phase
<i>Flint-tempered</i>					
F1	85	3.5	1661	5.2	LIA
F2	8	0.3	61	0.2	LIA
F3	3	0.1	13	<0.1	LBA
F4	10	0.4	47	0.1	LBA
F5	4	0.2	27	0.1	LIA
F99	16	0.7	29	0.1	Undated
<i>Sub-total</i>	<i>126</i>	<i>5.2</i>	<i>1838</i>	<i>5.7</i>	
<i>Flint- and grog-tempered</i>					
FG1	26	1.1	135	0.4	Later prehistoric
GF99	2	0.1	2	<0.1	Undated
<i>Sub-total</i>	<i>28</i>	<i>1.2</i>	<i>137</i>	<i>0.4</i>	
<i>Grog-tempered</i>					
G1	586	24.3	8347	25.9	LIA
G2	101	4.2	1196	3.7	LIA
G3	3	0.1	28	0.1	LIA
G4	40	1.7	706	2.2	LIA
G5	20	0.8	653	2.0	LIA
G6	43	1.8	624	1.9	LIA
G7	9	0.4	125	0.4	LIA
G8	8	0.3	77	0.2	LIA
G99	3	0.1	2	<0.1	Undated
<i>Sub-total</i>	<i>813</i>	<i>33.7</i>	<i>11,758</i>	<i>36.5</i>	
<i>Sandy wares</i>					
Q1	18	0.7	276	0.9	LIA
Q5	19	0.8	260	0.8	LIA
Q6	13	0.5	58	0.2	LIA
Q7	25	1.0	168	0.5	LIA
Q8	136	5.6	1212	3.8	LIA
Q9	36	1.5	579	1.8	LIA
Q99	5	0.2	15	<0.1	Undated
<i>Sub-total</i>	<i>252</i>	<i>10.4</i>	<i>2568</i>	<i>8.0</i>	
<i>Glauconitic sandy wares</i>					
Q2	69	2.8	635	2.0	LIA
Q3	494	20.4	7330	22.7	LIA
Q4	93	3.9	3112	9.7	LIA
Q10	6	0.2	85	0.3	LIA
<i>Sub-total</i>	<i>662</i>	<i>27.4</i>	<i>11,162</i>	<i>34.6</i>	
<i>Sand and flint-tempered (glauconitic)</i>					
QF1	57	2.4	256	0.8	LIA
QF2	49	2.0	217	0.7	LIA
QF3	4	0.2	171	0.5	LIA
QF4	27	1.1	126	0.4	LIA
<i>Sub-total</i>	<i>137</i>	<i>5.7</i>	<i>770</i>	<i>2.4</i>	
<i>Sand and grog-tempered</i>					
QG1	8	0.3	43	0.1	LIA
QG2 (glauconitic)	1	<0.1	9	<0.1	LIA
QG3 (glauconitic)	70	2.9	797	2.5	LIA
QG4 (glauconitic)	31	1.3	160	0.5	LIA
<i>Sub-total</i>	<i>110</i>	<i>4.6</i>	<i>1009</i>	<i>3.1</i>	
<i>Shelly wares</i>					
S1	183	7.6	1802	5.6	LIA
S2	16	0.7	295	0.9	LIA
<i>Sub-total</i>	<i>199</i>	<i>8.2</i>	<i>2097</i>	<i>6.5</i>	
<i>Organic and flint-tempered</i>					
VF1	27	1.1	429	1.3	LBA
<i>Sub-total</i>	<i>27</i>	<i>1.1</i>	<i>429</i>	<i>1.3</i>	
<i>Imported wares</i>					
E301 (South Gaulish samian)	1	<0.1	12	<0.1	RB
<i>Sub-total</i>	<i>1</i>	<i>&lt;0.1</i>	<i>12</i>	<i>&lt;0.1</i>	
<i>Roman sandy wares</i>					
Q100 (greyware)	14	0.6	159	0.5	RB
Q101 (oxidised ware)	7	0.3	43	0.1	RB
Q102 (whiteware)	38	1.6	254	0.8	RB
Q103 (unsourced colour-coat)	1	<0.1	3	<0.1	RB
<i>Sub-total</i>	<i>60</i>	<i>2.5</i>	<i>459</i>	<i>1.4</i>	
<b>Totals</b>	<b>2415</b>		<b>32,239</b>		

feature of the Medway Valley and eastern Kent where they have been found in association with, and even used for, the manufacture of 'Belgic' and Gallo-Belgic forms (Thompson 1982, 12; Pollard 1988, 32). Kiln and waster evidence from the Upchurch Marshes indicate production of flint-tempered bead-rim and S-profile jar forms during the pre-Flavian period, for local distribution to a maximum distance of c. 15 km (Pollard 1988, 46). Like the glauconitic fabrics, flint-tempered wares declined in use during the earlier 1st century AD (*ibid.*, 32).

Romanised fabrics are relatively rare in the assemblage, comprising six sherds of sandy greyware, 38 sherds of whiteware, one sherd of unassigned colour-coated ware, and one sherd of south Gaulish samian. The whiteware sherds represent a CAM 113 butt-beaker (Fig. 1.14, 30), possibly of immediate pre-Conquest date, and a flagon. Large quantities of south Gaulish samian are first seen during the Conquest period in Kent (Pollard 1988, 47).

### Vessel form

Each rim has been assigned to a sequential rim type. The variability exhibited in prehistoric forms has resulted in a series of 49 rim types. Where possible, these have been grouped into form types, such as *bead-rim jars*, in order to create an overview of the assemblage. Correlations are made where appropriate with the regional type series (Thompson 1982). The correlation of vessel form to fabric is given in Table 1.7.

#### Bead-rim jars (Thompson forms C1-2 and C1-3)

- R1: Bead-rim jar with flattened rim top and rusticated body (Fig. 1.12, 5).
- R16: Barrel-shaped jar with proto-bead grooved rim (Fig. 1.12, 2).
- R17: Proto-bead rim jar with internally-bevelled channel-topped rim (Fig. 1.12, 1).
- R20: Barrel-shaped jar with beaded rim.
- R21: Round-bodied jar with proto-bead rim.
- R23: Thin-walled bead-rim jar.
- R27: Bead-rimmed jar with internally-bevelled rim (Thompson form C1-4) (Fig. 1.12, 3).
- R34: Proto-bead rim jar with flattened rim top.
- R37: Bead-rim jar, one example has rilled shoulder (Fig. 1.12, 4).
- R38: Small bead-rim jar with flat-topped rim.
- R42: Bead-rim jar with short upright neck.

#### Storage jars

- R6: Bead-rim, form uncertain but probably from storage jar.
- R44: Storage jar with heavy internally-bevelled triangular rim (Fig. 1.14, 19).

#### Vessels with corrugated shoulders (Thompson form B2-1)

- R3: Upright, flat-topped rim from vessel with corrugated neck.
- R4: Everted rim jar with corrugated neck (Fig. 1.13, 6, 7).
- R7: Everted rim jar with corrugated neck. This form has a more concave neck than R4. (Thompson form B2-2)
- R8: Jar with beaded rim and corrugated neck.
- R9: Slack-sided jar with corrugated neck/shoulder.
- R19: Vessel with undifferentiated rim and corrugated exterior surface (Fig. 1.13, 8).
- R30: Bead-rimmed vessel with corrugated exterior surface.

#### Upright necked jar/bowl with groove or cordon at base of neck or shoulder (Thompson form D1-1)

- R18: Round-bodied bowl with short, upright neck and beaded rim (Fig. 1.13, 13).
- R26: High-shouldered necked bowl with everted thickened rim, grooved around base of neck (Fig. 1.13, 10).

#### Jars with externally expanded rims and groove(s) on body

- R10: Bowl/jar with externally thickened rim and two horizontal grooves on upper body, possibly carinated (Fig. 1.13, 11).
- R11: Jar with externally expanded, in-turned rim, grooved exterior suggests this form may be the forerunner of the vessels with corrugated shoulders.
- R15: Jar with out-turned thickened bead-rim and groove on body.
- R31: Jar with everted rim and groove(s) on body.
- R32: Externally expanded, almost beaded rim, with groove at base of rim and raised, roughened band below neck zone (Fig. 1.13, 12).

#### Plain jars with internally expanded, bevelled and in-turned rims (Thompson form C3)

This description encompasses the following forms: R12, R13, R22, R50 (Fig. 1.14, 16).

#### S-profiled vessels

- R39: Rounded, S-profiled jar with everted rim (Fig. 1.14, 14).
- R46: Round-bodied vessel with everted rim, possible bowl form (Fig. 1.14, 15).

#### Other forms

- R2: Slack-shouldered jar with internally-bevelled, proto-bead rim (Fig. 1.14, 17)
- R5: Everted rim, form unknown.
- R14: Undifferentiated flat-topped rim, slightly thickened, from neutral or open profiled vessel, possible saucepan pot style (Fig. 1.14, 22).

- R24: Small, high-shouldered jar with everted rim (Fig. 1.14, 23).  
 R25: Small bowl or cup, straight-sided, with irregular rim (Fig. 1.14, 24).  
 R28: Long-necked vessel with out-turned rim. Uncertain form, probably Late Bronze Age date (Fig. 1.14, 28).  
 R29: Flat-topped rim with external lip, form unknown.  
 R33: Pedestal urn (Fig. 1.13, 9).  
 R36: High-shouldered jar with upright, flat-topped rim.  
 R40: Round-bodied bowl with everted rim (Fig. 1.14, 21).  
 R41: Out-turned bead rim on upright necked vessel. Unknown form but probably one of the latest types.  
 R43: Saucepan pot-style vessel with thickened rim (Fig. 1.14, 20).  
 R45: Lid (Fig. 1.14, 29).  
 R47: Platter with rounded wall (Thompson form G1-10).  
 R48: Carinated jar with long, upright neck and flat-topped rim (Fig. 1.14, 18).  
 R49: High-shouldered jar with upright, flat-topped rim.  
 R100: Butt-beaker. (Fig. 1.14, 30).

The bead-rim jars are the most commonly occurring forms (23 examples). They are present in a range of fabrics, predominantly glauconitic sandy wares, although grog-tempered and shelly wares also occur with relative frequency. The bead-rim jars are encompassed by Thompson forms C1-2 'Rims of rounded jars with bead-rims' and C1-3 'Wide-rimmed straight-sided jars with bead rims', both dating from the late 1st century BC through to the end of the 1st century AD (Thompson 1982, 218). Form R27 (Fig. 1.12, 3) may be assigned to Thompson form C1-4, of the same date range. A number of the West Malling forms have less well developed rims and have been described as having 'proto-bead rims'. These probably date from the earlier part of the 1st century BC (R16, R17, R20, R21, R34). Of note is the R17 rim which is channel-topped (Fig. 1.12, 1). Form R1 is unique and most unusual in that the exterior is rusticated (see below; Fig. 1.12, 5).

Vessels with corrugated shoulders (Thompson forms B2-1 and B2-2) are also a dominant theme in the assemblage (18 vessels). This form is closely associated with grog-tempering which accounts for 13 vessels, including 11 out of 12 of the B2-1 types. The glauconitic sandy wares were also utilised, but in much lesser quantities. Both forms date from the 1st century BC into the post-Conquest period, but the handmade examples 'are typologically early and have some support for an early date in the development of grog-tempered pottery' (Thompson 1982, 118).

The plain jars with internally expanded, bevelled, and inturned rims (Thompson C3) are found in a range of fabrics. Whilst grog is the most frequently occurring (6 vessels), shelly wares are also quite

common (5 vessels) and outnumber the glauconitic sandy wares (3 vessels). The form appears in the 1st century BC, deriving from Iron Age forms, and continues into the post-Conquest period (Thompson 1982).

Jars with externally expanded rims and grooved bodies are found in glauconitic fabrics (6 vessels) and grog-tempered wares (4 vessels). Comparanda for this group has not been forthcoming although the range of fabrics suggests contemporaneity with the other Late Iron Age forms.

The S-profiled jars occur exclusively in sandy wares, most of which (5 out of 6) are glauconitic. The form is seen from the Middle Iron Age period onwards. S-profile bowls and jars were identified in a large Middle Iron Age assemblage from Beechbrook Wood, Hothfield (G.P. Jones 2006a). Late Iron Age examples include Bigberry (Thompson 1983, fig. 10.19) and Folkestone (nos 41-5, Thompson unpublished). A base, possibly from a form R46 in evaluation context 88/006 (Fig. 1.14, 25), displays a tooled cross on the exterior, probably some form of maker's mark.

Forms R18 and R26 are upright necked bowls/jars (form D1-1), of late 1st century BC-1st century AD date (Thompson 1982, 299-300). The groove of the R18 is located at the shoulder, and one example from evaluation Trench 214 (Area A) has horizontal combing on the body (Fig. 1.13, 13). Two of the R18 vessels are in a grog-tempered fabric, a third is in a non-glauconitic sandy ware. Both examples of the R26 are in a grog-tempered fabric. The neck of the vessel is grooved and has the appearance of being corrugated, and it is therefore probably related to the B2-1 and B2-2 forms.

The base of one vessel from enclosure ditch 235 of Area A (Fig. 1.13, 10) retains parts of two square, pre-firing perforations. The function of this vessel is unknown; it may have been made as a form of strainer.

Form R33 (Fig. 1.13, 9) is an upright-necked cordoned vessel with beaded rim, the upper part of which is very similar to Thompson form D1-1. However, a flat pedestal base found in the same context, and of the same fabric (glauconitic sand Q5), appears to be from the same vessel and suggests that this is in fact a pedestal urn, probably a copy of a grog-tempered example, with a crudely formed base. Pedestal urns, which occur from the late 1st century BC through to the post-Conquest period, and are often seen in burial contexts (Thompson 1982). The West Malling example may be a copy of a Thompson type A8.

The storage jars were identified in a range of fabrics: two grog-tempered vessels, two glauconitic sandy ware vessels, one non-glauconitic sandy ware and one shell-tempered. The R44 vessels are



Table 1.7 Correlation of later prehistoric fabric and vessel form

	FL	FG	GR	QU	GLQ	QF	QG	SH	VF	Total
<i>Bead-rim jars</i>										
R1	-	-	-	-	1	-	-	-	-	1
R16	-	-	2	-	4	2	1	1	-	10
R17	-	-	-	-	-	-	-	1	-	1
R20	-	-	-	-	1	-	-	-	-	1
R21	-	-	1	-	-	-	-	-	-	1
R23	-	-	-	-	-	-	1	-	-	1
R27	2	-	-	-	-	-	-	-	-	2
R34	-	-	-	-	-	-	-	2	-	2
R37	-	-	-	-	1	-	-	-	-	1
R38	-	-	1	-	1	-	-	-	-	2
R42	-	-	-	-	1	-	-	-	-	1
<i>Storage jars</i>										
R6	-	-	2	1	1	-	-	-	-	4
R44	-	-	-	-	1	-	-	1	-	2
<i>Vessels with corrugated shoulders (B2-1)</i>										
R3	-	-	1	-	-	-	-	-	-	1
R4	-	-	6	-	1	-	-	-	-	7
R7	-	-	4	-	-	-	-	-	-	4
<i>Vessels with corrugated shoulders (B2-2)</i>										
R8	-	-	1	-	-	-	-	-	-	1
R9	-	-	1	-	-	-	-	-	-	1
R19	-	-	-	-	1	-	-	-	-	1
R30	-	-	-	-	2	-	1	-	-	3
<i>Upright-necked jar/bowl with groove or cordon at base of neck or shoulder</i>										
R18	-	-	2	1	-	-	-	-	-	3
R26	-	-	2	-	-	-	-	-	-	2
<i>Jars with externally expanded rims and groove(s) on body</i>										
R10	-	-	2	-	1	-	-	-	-	3
R11	-	-	1	-	1	-	-	-	-	2
R15	-	-	-	-	1	-	-	-	-	1
R31	-	-	1	-	1	-	-	-	-	2
R32	-	-	-	-	2	-	-	-	-	2
<i>Plain jars with internally expanded, beveled and in-turned rims</i>										
R12	-	-	-	-	1	-	1	-	-	2
R13	-	-	1	-	1	-	-	-	-	2
R22	-	-	3	-	1	-	-	2	-	6
R50	-	-	2	-	-	-	-	3	-	5
<i>S-profiled vessels</i>										
R39	-	-	-	i	5	-	-	-	-	5
R46	-	-	-	1	i	-	-	-	-	1
<i>Other forms:</i>										
R2	-	-	-	1	-	-	-	-	-	1
R5	-	-	8	8	8	-	-	-	-	24
R14	1	-	-	-	1	-	-	-	-	2
R24	-	-	1	-	-	-	1	-	-	2
R25	-	-	1	-	-	-	-	-	-	1
R28	-	1	-	-	-	-	-	-	-	1
R29	-	-	-	-	-	1	-	-	-	1
R33	-	-	-	-	1	-	-	-	-	1
R36	-	-	-	1	1	-	-	1	-	3
R40	-	-	-	-	1	-	-	-	-	1
R41	-	-	-	-	1	-	-	-	-	1
R43	-	-	-	-	1	-	-	-	-	1
R45	1	-	-	-	-	-	-	-	-	1
R47	-	-	1	-	-	-	-	-	-	1
R48	-	-	-	-	-	-	1	-	-	1
R49	-	-	-	-	-	-	-	-	1	1

Key: FL – flint-tempered; FG – flint- and grog-tempered; GR – grog-tempered; QU – sandy wares (non-glaucous);  
 GLQ – glauconitic sandy wares; QF – glauconitic sand and flint-tempered; QG – quartz and grog (glauconitic sand & non-glaucous);  
 SH – shelly wares; VF – organic- and flint-tempered

extremely large, with rim diameters of more than 400 mm or more (Fig. 1.14, 19). All vessels classified as R6 were too incomplete to measure.

The remaining rim forms are represented by only a small number of vessels and could not be grouped into coherent types. Nonetheless, these vessels are an integral part of the assemblage and a number of comments can be made. Vessels that are reminiscent of Middle Iron Age forms include the R2 slack-shouldered jar whose silty fabric contains a moderate amount of red ferric inclusions, and as such is similar to a number of Middle Iron Age fabrics from Beechbrook Wood. Forms R14 (Fig. 1.14, 22) and R43 (Fig. 1.14, 20) are both vessels of neutral profile, much like Middle Iron Age saucepan pots, executed in glauconitic sandy or flint-tempered wares. Perhaps some of the latest forms include the R24, R25, R41, and R47. Form R25 (Fig. 1.14, 24) is unique, a grog-tempered small bowl or cup with straight sides and everted rim. The vessel is highly irregular and is very much a one-off. Form R47 (Area J, Trench 140) is a grog-tempered platter with rounded wall (Thompson form G1-10), a copy of a Gallo-Belgic form (Cam. 16), dated to the 1st century AD, post-Conquest. The R24 represents a small, high-shouldered jar with everted rim, one of which was found in a fine grog-tempered fabric, the other in a sand and grog-tempered ware. Fire-clouding was visible on the exterior of the former (Fig. 1.14, 23). Too little of the R41 beaded rim was recovered to ascertain the form of the vessel but it is thin-walled and burnished.

Form R40 is round-bodied, with a short, slightly out-turned rim, and burnished lattice decoration on the exterior (Fig. 1.14, 21). The orientation of the vessel is uncertain, but the interior is burnished and indicates it may have been a bowl, similar to a Late Iron Age example from Folkestone (Thompson unpublished, no. 62).

### Surface treatment

Surface treatments are not commonly seen in the assemblage, but this is more likely to be due to abrasion of vessel surfaces rather than a true absence. Sixty instances of burnishing were recorded, predominantly on the exterior of the vessels, with one example of burnishing present only on the interior, 10 examples of burnishing on both surfaces, two on the exterior and upper interior and one on the upper interior only (although the upper exterior is smooth and may once have been burnished).

Smoothing was recorded on 27 examples, and in some instances these surfaces demonstrated slight traces of burnish but this is now too abraded to distinguish. Like the burnishing it tends to be the vessel exterior that has been better finished, although seven of the records relate to smoothing on both

surfaces and two to the interior. Burnished, and/or smoothed surfaces, were recorded on a wide range of vessels, namely the bead-rim jars (R1, R16, R37, R38); jars with corrugated shoulders (R30); jars with externally expanded (R11, R32) or internally expanded (R12, R13, R50) rims; the pedestal urn (R33); S-profiled vessels (R39, R46); jars with upright rims (R36) or upright neck (R41); an everted rim bowl (R41); a jar with internally-bevelled rim (R2) and the platter (R47). Additionally, one R16 vessel has been wiped on the exterior.

A small number of vessels displayed rustication on their exterior surfaces and one could only be classified as roughened. The most striking example is a bead-rim jar (R1) from enclosure ditch 220 of Area A (Fig. 1.12, 5). The external neck zone has been smoothed and may once have been burnished as tiny patches are still visible. The interior neck zone is burnished. Beneath the smoothed neck area on the exterior glauconitic clay has been applied to the surface, creating an extremely rough texture. Towards the base of the vessel this rustication stops and the area is left simply unsmoothed. Creating such a rough surface may have been designed to create a less slippery surface for handling. Rustication is a technique of Continental origin that is seen on pottery from Kent during the Iron Age. The combination of burnishing/smoothing and rustication is present on vessels from a number of sites including Dumpton Gap during the Early/Middle Iron Age (Bryan 2002), Highstead where it is introduced during the Late Bronze Age/Early Iron Age, becoming dominant during the early Iron Age (Macpherson-Grant 1992a, 41–2); Ebbsfleet during the Early/Middle Iron Age (Macpherson-Grant 1992b, 289), and Middle Iron Age Eyhorne Street, Hollingbourne (G.P. Jones 2006b). The Eyhorne Street vessels had been made from a glauconitic clay and were recovered from a pit dated to 400–260 cal BC (NZA-22594).

The West Malling vessel is unusual for two reasons. Firstly, rustication tends to be seen in the east of the county and rarely west of the Medway (Macpherson-Grant 1992a, 43; P. Couldrey, pers. comm.). Secondly, rustication is uncommon during the Late Iron Age (P. Couldrey, pers. comm.), yet typologically the form of the bead-rim jar does not appear to be any earlier than the 1st century BC.

### Decoration

Decoration was recorded for 150 of the 742 pottery records. A range of techniques was employed, the most commonly occurring being scoring of the vessel surface (36 examples). This technique was used by potters from the Middle Iron Age through to the Romano-British period. Corrugation of the vessel walls, in particular the neck/shoulder zone, and the

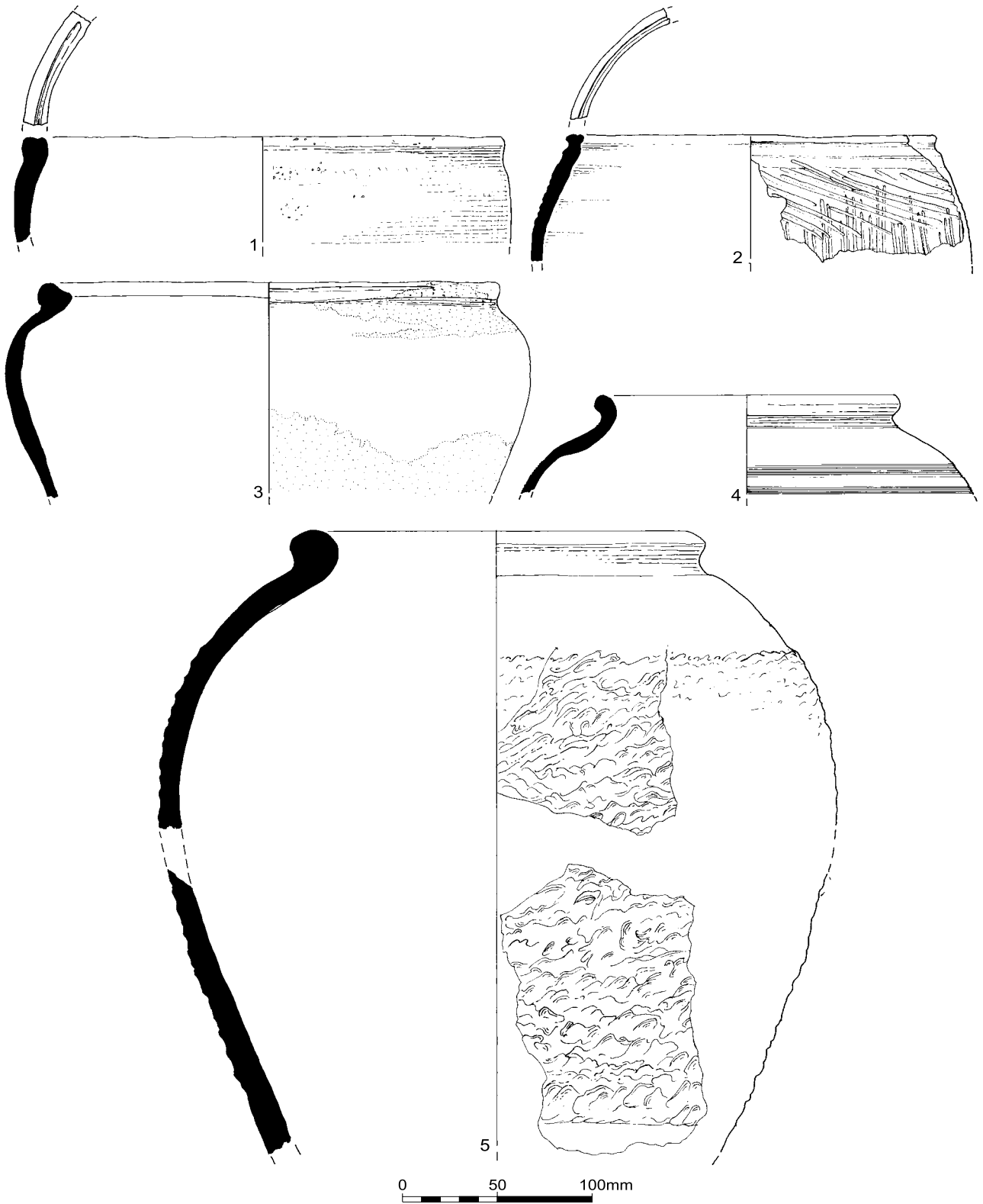


Figure 1.12 Late prehistoric and Roman pottery

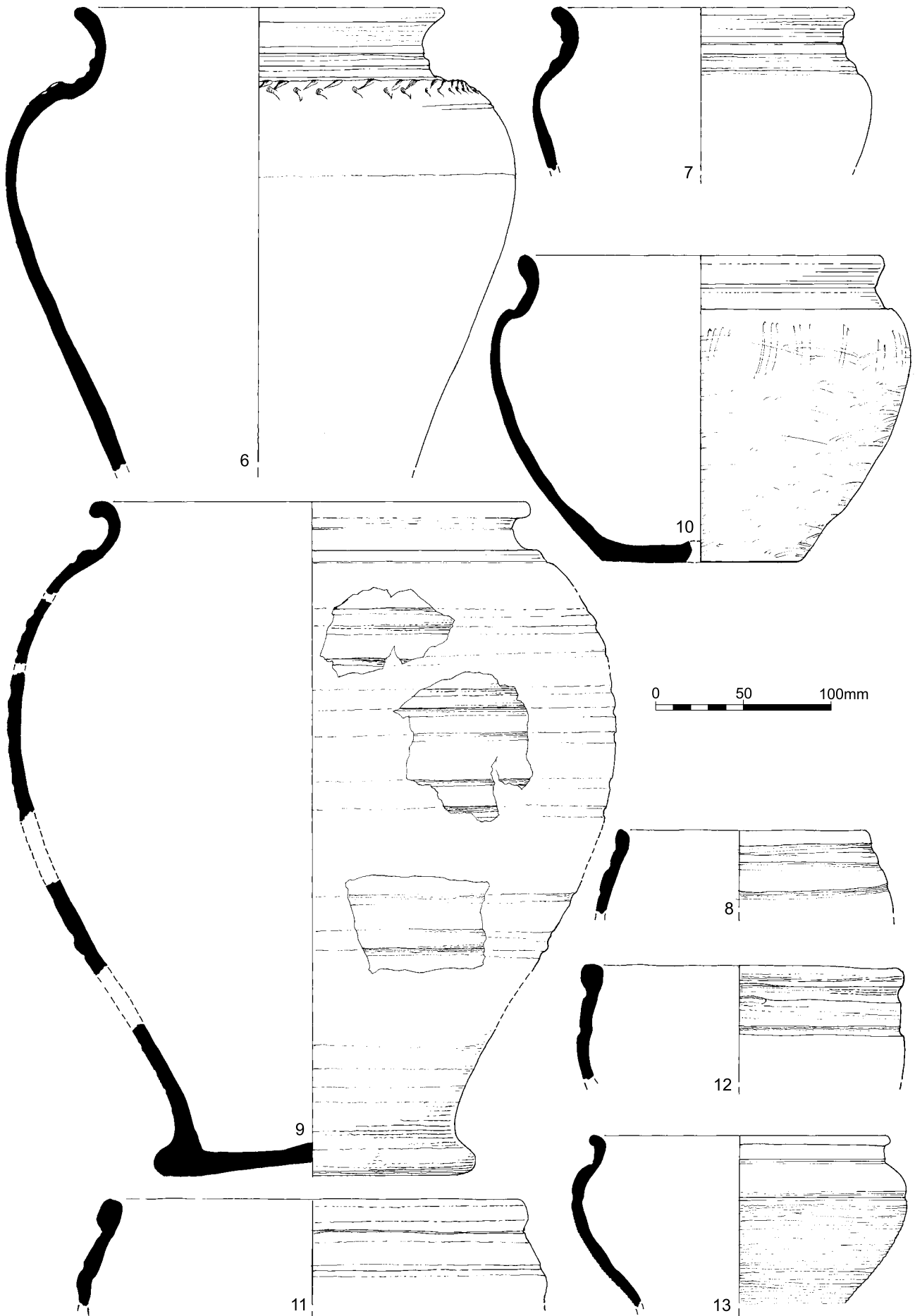


Figure 1.13 Late prehistoric and Roman pottery

presence of cordons were also recorded (23 and 19 examples respectively). These forms of decoration are typical of the Belgic repertoire. The corrugation mostly occurs on grog-tempered vessels. Other techniques, such as tooling (16 examples), impressing (19 examples), incising (9 examples), combing (9 examples), stabbing (4 examples), and rouletting (4 examples) were utilised to create a range of motifs, often horizontal or vertical lines. There are five recorded instances of burnished lattice. With the exception of the corrugation, used mostly on grog-tempered vessels, no trends were seen between the types of decoration and fabric types.

### **Evidence for use**

Very little evidence for use was visible on the vessels. Eight examples of external sooting were noted, two vessels displayed burnt residue on their interior walls, and one had pitting on the interior, indicative of a reaction between the contents of the pot and its inclusions. The burnt residues and sooting suggest that vessels were used for cooking, and these include the R1 bead-rim jar with rusticated exterior. Single examples of the R4 (Thompson B2-1), R16 bead-rim jar, R43 saucepan-pot style vessel, and R48 carinated jar also displayed evidence for use as cooking vessels.

### **Vessel size**

The vessel rim diameters ranged from 80 mm to more than 400 mm, although most are between 120 mm and 260 mm. Only five vessels are smaller, comprising two B2-2 vessels with corrugated shoulders (R9 and R30), two bead-rim jars (R16 and R38), and two high-shouldered jars (R24). The largest vessels are an S-profiled jar (R39; 400 mm diameter) and a storage jar (R44, >400 mm diameter).

### **Distribution on site**

#### *Area A*

This area produced the largest pottery assemblage, a total of 1301 sherds (50% of the route-wide count), 19,972 g (58%). The average sherd weight is 15.4 g, higher than the overall average of 13.0 g. The highest number of Late Bronze Age/Early Iron Age sherds was recovered from Area A (50 sherds, 557 g), although most were residual, recovered from Late Iron Age features (enclosure ditches 220, 235, and small pit/post-hole 225/005). Pit 132 contained only earlier material, comprising 11 sherds of a flint- and grog-tempered ware of Late Bronze Age/Early Iron Age date, including a long-necked vessel of uncertain profile (Fig. 14, 28).

The Late Iron Age fabrics occur in much the same proportions as the percentages presented for the route overall (Table 1.6). A wide range of Late Iron Age and Romano-British form types were present, including 15 bead-rim jars, five jars with externally expanded

rims, three jars with internally expanded rims (Thompson C3) and 12 vessels with corrugated shoulders (Thompson B2-1/B2-2).

All five of the upright-necked cordoned jars (Thompson D1-1) from the route were recovered from Area A. S-profiled jars, of which six occur across the sites, are absent. Of note from this area are three vessels: R1, R33, and R100. The R1 is a bead-rimmed jar with rusticated body, from ditch 220. As discussed above this form of surface treatment is unusual, although not unheard of, in the Late Iron Age, however the form is unlikely to be earlier in date than the 1st century BC. This vessel therefore displays one of the latest known examples of rustication from the region. The R33 (ditch 240) probably represents a pedestal urn (discussed above). The pedestal urn is a typical Belgic form, often found in burial contexts of late 1st century BC–1st century AD date (Thompson 1982). The West Malling example had been made in a glauconitic sandy fabric rather than the more commonly occurring grog-temper.

A small number of vessels are of post-Conquest date, including the R24 (small, high-shouldered jar). Part of a whiteware butt-beaker, form CAM 113 (R100), recovered from enclosure ditch 235 (224). This form is no later in date than the third quarter of the 1st century AD, and may have arrived on site just before AD 43. Other Roman pottery from Area A comprises 31 body sherds from a probable whiteware flagon from enclosure ditch 169. This vessel is of 1st century AD date (post-Conquest).

#### *Area B*

A total of 179 sherds (845 g) of pottery was recovered from Area B. This comprised 83 sherds, mostly from evaluation trenches; 27 sherds from Area B1 and 69 sherds from Area B2. Although this is a much smaller assemblage than those from Areas A and E, it is noteworthy for the high quantity of grog-tempered pottery (63% by count and 73% by weight) and the almost complete absence of glauconitic sandy wares (0.7% by count and 1.3% by weight). Too few identifiable forms were present for any trends to be recognised. The vessels include two Thompson C3 forms, one B2-2, a bead-rimmed jar, an S-profiled jar, and a carinated jar with a long neck.

Nine sherds of Late Bronze Age pottery were present in the subsoil of this area, including a lid decorated with fingernail impressions (Fig. 1.14, 29). A further four sherds were present in features: two small body sherds from evaluation Trench 44, and two from ditch 531 (Group 571, Area B1). No later pottery was recovered from these features. Five sherds of Roman greyware and one Roman oxidised sherd were also present in the subsoil, but no Roman material was stratified in features.

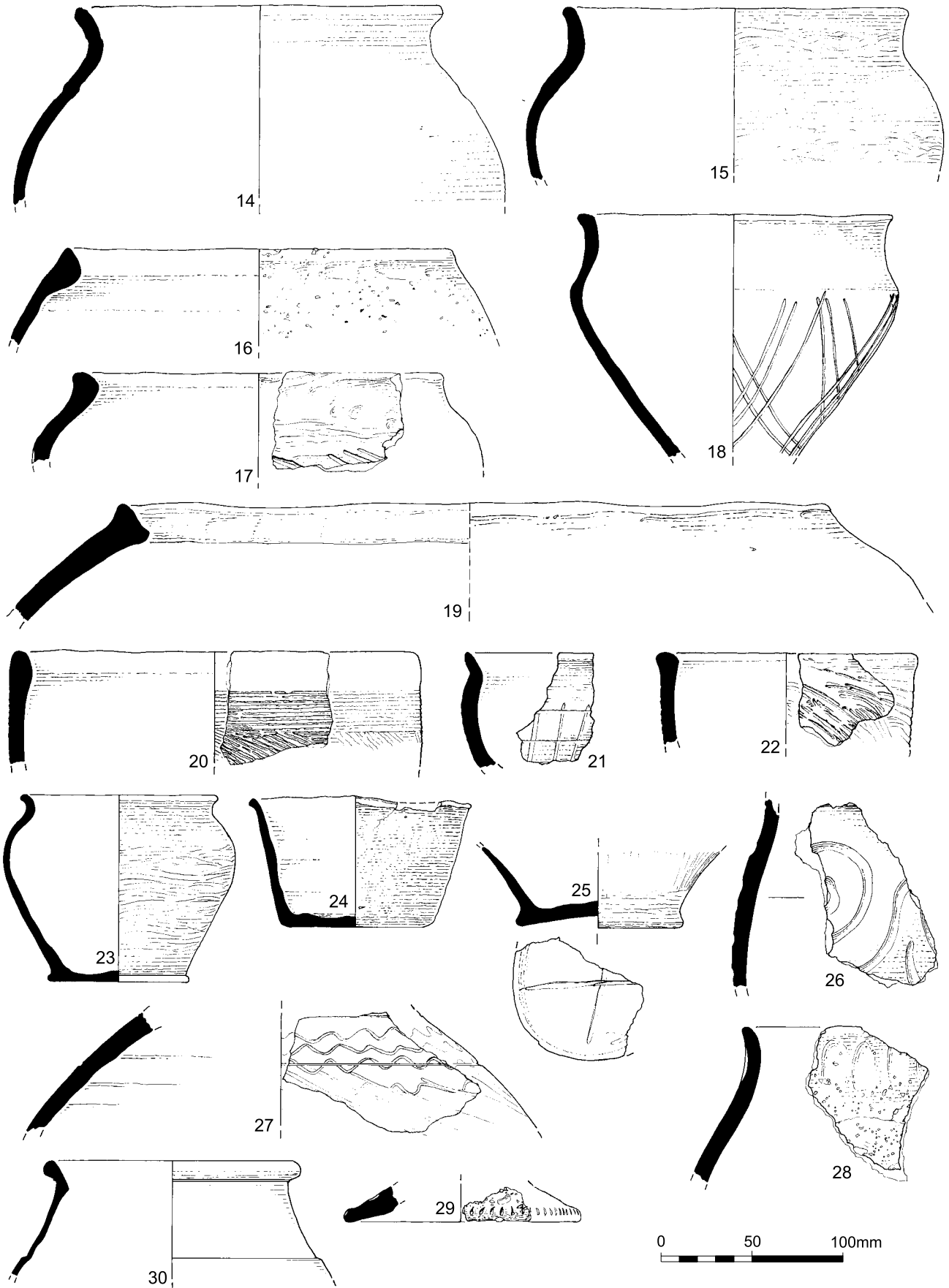


Figure 1.14 Late prehistoric and Roman pottery

### *Area C*

Only two sherds of pottery were recovered from this area, a Roman greyware sherd (6 g) from the post-medieval leat channel and a small (1 g) grog-tempered fragment from a natural layer.

### *Area E*

This area produced 938 sherds (10,885 g) of pottery. Of this, 17 sherds were from the evaluation trenches (240/248/252), seven are from Area E1 and the remaining 914 from Area E2. The Area E1 sherds are all of Romano-British date and are from the topsoil, with the exception of one oxidised sherd (3 g) from pit 2024. Pottery from the evaluation trenches comprised body sherds in a range of Late Iron Age fabrics, and one small and abraded Romano-British colour-coated sherd.

A wide range of fabric types was identified in the Area E2 assemblage, but the dominant fabric type is the glauconitic sandy ware, accounting for 35% of the count and 44% of the weight. This contrasts with 24% for grog-tempered fabrics (count and weight). Where sand and grog are used together as filler, glauconitic sands are more commonly used than non-glauconitic (9.7% of the count compared with 1%). Single sherds of Late Bronze Age flint-tempered ware were residual in ditch 2504 (Group 2652) and pit 2538. A range of Late Iron Age forms were present, however these occur in low numbers and no trends could be recognised. A single sherd from a post-Conquest 1st century AD samian platter (form 15/17) was recovered from ditch 2674 (Group 2602), with two sherds of Late Iron Age pottery. This is of southern Gaulish origin and the only import that could be positively identified from the assemblage.

### *Area I*

This area produced a small assemblage of Late Iron Age pottery (42 sherds, 390 g) from eight evaluation trenches. They are mostly glauconitic sand- and flint-tempered wares, with very small quantities of flint-tempered, grog-tempered, and shelly wares. No identifiable forms were present.

### *Area J*

The small number of sherds from the subsoil in Area J are Late Iron Age (7 sherds, 73 g) or Roman (7 sherds, 52g) in date. A further three sherds (6g) from evaluation Trench 142 are undated. Of interest is a grog-tempered platter (Thompson G1-10) from Trench 140. This is a copy of a Gallo-Belgic form (Cam. 16), and dates to the 1st century AD, post-Conquest.

## **Discussion**

The West Malling assemblage is predominantly of Late Iron Age date, and significant groups of material were recovered from Areas A, B2, and E2. Small quantities were also recorded from Areas B1, C, E1, I, and J. Pottery of Late Bronze Age/Early Iron Age date from Areas A, B1, B2, and E2 was mostly residual in later features or recovered from the subsoil, with the exceptions of pit 132 (Area A) and ditch 531 (Group 571, Area B1). Little Romano-British pottery was encountered; identifiable vessels include a butt-beaker and flagon from Area A and south Gaulish samian platter from Area E2, none of which is later in date than the late 1st century AD.

The Late Iron Age material displays many of the characteristics of the Aylesford-Swarling or 'Belgic' style of pottery. Thompson (1982, 4–5) has argued that the term 'Belgic' is a useful way to define a certain style of pottery from south-east England, based on curves, corrugation, and cordons, utilising grog-tempered fabrics, and often wheelmade, a technological advance that allowed for a new range of decorative techniques. Combed or furrowed decoration is also frequently seen on this style of pottery (Pollard 1988, 30). The West Malling vessels display many of these traits but most are handmade, perhaps suggesting the assemblage represents an earlier phase of this style of potting. The dominance of vessels with corrugated shoulders over cordoned vessels also indicates an early focus for the pottery.

A range of fabrics is present in the assemblage, although the most commonly occurring are grog-tempered and glauconitic sandy wares. As noted above, the grog-tempered fabrics are typical of 'Belgic' pottery, and here represent 38% of the assemblage by count, compared to 26% for the glauconitic fabrics. The latter are characteristic of sites in the Medway Valley, and were utilised throughout the Middle and Late Iron Age, but did not apparently survive the Conquest. During the Late Iron Age they were used for both handmade and wheelthrown 'Belgic' forms in this region. At West Malling this includes a pedestal urn from Area A (ditch 240, Group 235). There appears to be some chronological significance in the relative proportions of these fabric groups, with the groups dominated by grog-tempered pottery being slightly later in date than those containing higher quantities of sandy wares. This suggests that the material from Area E is relatively early, with a focus on glauconitic sandy wares. The Area A assemblage is typical of the route-wide assemblage taken as a whole with a high quantity of grog-tempered wares but still a significant glauconitic sand component. The Area B group has a very high percentage of grog-tempered wares, and virtual absence of glauconitic wares and is therefore

probably the latest group. At a feature level, the quantity of grog-tempered material from enclosure ditch 235 (Area A), suggests it is later in date than enclosure ditches 220 and 169, containing 73%, 28%, and 42% of grog-tempered pottery respectively. This is borne out by the stratigraphic relationships. On this basis, material from ditches 240 (Group 235, Area A) and 2643 (Group 2652, Area E2) and pits 2540, 2677, and 2678 (Area E2) are relatively early in the assemblage and pottery from pit 2620 (E2) is slightly later.

A range of forms is also present, including a number clearly associated with the 'Belgic' style. Vessels with corrugated shoulders are a dominant theme in the assemblage, and are mostly present in grog-tempered fabrics. This style of vessel dates from the 1st century BC into the post-Conquest period, however the handmade nature of the West Malling examples suggests they are typologically early.

Other typically 'Belgic' forms include bowl/jar forms with grooves or cordons at the base of the neck/shoulder. These are again mostly present in grog-tempered fabrics and are typologically later than the rippled forms, of late 1st century BC–1st century AD date. Of note is the base of one of these vessels which displays two pre-firing perforations (ditch 235, Area A). The upper part of a pedestal urn from Area A is similar to these vessels, but the exaggerated base suggests it is akin to Thompson (1982) form A. The West Malling vessel is rather crudely formed in a glauconitic sandy ware and may be a copy of a better produced, possibly wheelthrown, grog-tempered vessel, a type often seen in funerary contexts (*ibid.*). The latest of the 'Belgic' style vessels is a platter, of post-Conquest date, recovered from the subsoil of Area J.

The assemblage does appear to have its origins in the Middle Iron Age and includes three vessels which are similar to saucepan pots. Six S-profiled jars are also present, and are seen from Middle and Late Iron Age assemblages in the region. They occur here only in sandy wares, mostly glauconitic, and represent an early component of the assemblage. A tooled cross on one of these vessels from Area E (ditch 88/005 – Group 2652) may represent a maker's mark. The other five vessels are from Area E2.

The most commonly occurring form is the ubiquitous bead-rim jar. These vessels are present in a range of fabrics and display varying rim forms, indicating a date range from the early 1st century BC to the later part of the century. Of particular interest is a well-developed bead-rim jar with a rusticated body, recovered from enclosure ditch 220 (Area A). This form of surface treatment is rarely seen west of the Medway, and there is very little evidence of this it being utilised much beyond the Middle Iron Age. The

clear association with a 1st century BC form at West Malling is therefore of regional importance.

#### List of illustrated sherds (Figs 1.12–14)

1. Form: R17, proto-bead rim jar with channel-topped rim, fabric S1. PRN 1059, Area A, context 51, intervention 48, ditch 220.
2. R16, barrel-shaped jar with proto-bead rim, scored exterior, fabric Q3. PRN 1043, Area A, context 22, intervention 21, ditch 136.
3. R27, bead-rimmed jar with internally-bevelled rim, sooted exterior, fabric F1. PRN 1122, Area A, context 104, intervention 102, ditch 235.
4. R37, bead-rim jar, incised line decoration on lower exterior, fabric Q3. PRN 1542, evaluation context 214/015.
5. R1, bead-rim jar with flattened rim top, burnished on upper interior, smoothed upper exterior, rusticated body, roughened lower exterior, traces of burnt residue on interior, fabric Q4. PRN 1000, Area A, context 006, intervention 004, ditch 220.
6. R4, everted rim jar with corrugated neck, stabbed diagonal lozenge decoration on shoulder, fabric G1. PRN 1147, Area A, context 150, intervention 146, ditch 235.
7. R4, everted rim jar with corrugated neck, smoothed upper exterior, scored exterior, fabric G1. PRN 1101, Area A, context 92, intervention 91, ditch 235.
8. R19, vessel with undifferentiated rim and corrugated exterior surface, fabric Q3. PRN 1561, context 53.
9. R33, upright necked cordoned jar, burnished exterior, fabric Q3. PRN 1185, Area A, context 142, intervention 141, ditch 169.
10. R26, high-shouldered necked bowl with everted thickened rim, grooved around base of neck, perforated base, fabric G1. PRN 1118, Area A, context 104, intervention 101, ditch 235.
11. R10, bowl/jar with externally thickened rim and two horizontal grooves on upper body, possibly carinated, fabric G2. PRN 1024, Area A, context 11, intervention 10, ditch 10.
12. R32, externally expanded, almost beaded rim, with groove at base of rim and raised, roughened band below smoothed neck zone, fabric Q3. PRN 1413, Area E2, context 2648, ditch 2643.
13. R18, round-bodied bowl with short, upright neck and beaded rim, combed lower exterior, incised line on neck/body join, fabric G4. PRN 1533, evaluation context 214/015.
14. R39, rounded, S-profiled jar with everted rim, fabric Q3. PRN 1342, Area E2, context 2581, ditch 2580.
15. R46, round-bodied vessel with everted rim, possible bowl form, burnished exterior, fabric Q8. PRN 1482, evaluation context 88/006.
16. R22, plain jar with internally bevelled and in-turned rim, fabric S2. PRN 1315, Area E2, context 2548, pit 2540.



17. R2, slack-shouldered jar with internally-bevelled, proto-bead rim, fabric Q1. PRN 1001, Area A, context 006, intervention 004, ditch 220.
18. R48, carinated jar with long, upright neck and flat-topped rim, burnished lattice on lower exterior, fabric QG3. PRN 1535, evaluation context 214/015.
19. R44, storage jar with heavy internally bevelled triangular rim, fabric Q3. PRN 1427, Area E2, context 2679, pit 2676.
20. R43, saucepan pot style vessel with thickened rim, scored exterior, sooting on exterior, fabric Q3. PRN 1407, Area E2, context 2647, ditch 2643.
21. R40, round-bodied bowl with everted rim, burnished lattice on exterior, fabric Q2. PRN 1380, Area E2, context 2632, pit 2620.
22. R14, undifferentiated flat-topped rim, out-turned, from neutral or open profiled vessel, possible saucepan pot style, scored exterior, fabric Q4. PRN 1036, Area A, context 11, intervention 10, ditch 169.
23. R24, small, high-shouldered jar with everted rim, burnished exterior, fabric G4. PRN 1112, Area A, context 98, intervention 97, ditch 235.
24. R25, small bowl or cup, straight-sided, with irregular rim, fabric G1. PRN 1116, Area A, context 103, intervention 102, ditch 235.
25. B8, base with tooled X on exterior, fabric Q8. PRN 1483, evaluation context 88/006.
26. Sherd decorated with tooled concentric circles, fabric Q9. PRN 1439, context 2681, pit 2677.
27. Sherd decorated with incised lines and tooled zigzags, fabric G5. PRN 1255, context 2520, ditch 2521.
28. R28, long-necked vessel with out-turned rim, probably Late Bronze Age, fabric FG1. PRN 1129, Area A, context 135, pit 132.
29. R45, lid with fingernail impressions, fabric F4. PRN 1474, evaluation context 58/002.
30. R100, CAM 113 butt-beaker, fabric Q102. PRN 1172, Area A, context 226, enclosure ditch 224.

### *Post-Roman Pottery* by Lorraine Mephram

The post-Roman assemblage amounts to 844 sherds (8538 g), including material of Early/Middle Saxon, medieval and post-medieval date. The post-medieval material (35 sherds; 618 g) is not discussed further here.

#### **Saxon**

The 32 sherds of Early/Middle Saxon pottery fall into three fabric types: organic-tempered, flint-tempered, and sandy/shelly (see Table 1.8). The organic-tempered fabrics (EMS4) contain varying levels of fine sand. The flint inclusions are predominantly patinated and sub-angular, characteristic of gravel-derived fragments. Diagnostic sherds are confined to two small rims, both in EMS4, and vessel forms cannot be determined. A date range somewhere between the 5th and 7th centuries can be suggested.

All but one of the Saxon sherds came from Area E2, and most were recovered from a single feature – SFB 2673 (25 sherds). This includes three sherds found during the evaluation, recovered from the unexcavated surface of 2673 (context 252/006). The 25 sherds from 2673 included examples of all three fabric types, and one of the rim sherds. Elsewhere in Area E2, six organic-tempered sherds were recovered from post-hole 2593, including the second rim sherd. In addition, one flint-tempered sherd came from evaluation Trench 60 in Area B.

#### **Medieval**

Most of the 777 sherds in the medieval assemblage could be assigned to existing CAT fabric types, either early medieval (EM), medieval (M) or late medieval (LM), although a few sherds in non-distinctive sandy fabrics were assigned to the ‘miscellaneous’ types M100 and LM100. Seven other fabric types were

**Table 1.8. Post-Roman pottery fabric totals**

<b>Fabric Code</b>	<b>Description</b>	<b>No. Sherds</b>	<b>Weight (g)</b>
EMS4	Early Saxon organic-tempered ware	26	105
EMS1F	Early Saxon flint-tempered ware	4	54
EMS14	Early Saxon sandy ware with fine shell	2	9
	<i>sub-total Saxon wares</i>	<i>32</i>	<i>168</i>
EM22	NW Kent fine sandy ware with sparse shell	193	1838
EM35	NW Kent shell-tempered ware	104	567
EM36	NW Kent sand and shell-tempered ware	335	3617
M1	Medieval Tyler Hill ware	4	13
M5	Fine London-type ware	2	31
M38	NW Kent sandy ware (mainly reduced)	126	1548
M100	Misc. medieval sandy wares	5	65
LM1	Late medieval Tyler Hill ware	4	40
LM100	Misc. late medieval sandy wares	4	33
	<i>sub-total medieval wares</i>	<i>777</i>	<i>7752</i>
	<b>OVERALL TOTAL</b>	<b>809</b>	<b>7920</b>

**Table 1.9. Medieval vessel forms by fabric**

Vessel Form	EM22	EM35	EM36	M38	M5	TOTAL
Jar rim, undeveloped	-	2	3	-	-	5
Jar rim, developed	4	2	11	2	-	19
Bowl rim	1	-	1	-	-	2
Jug rim	1	-	-	4	-	5
Jug handle	-	-	-	4	1	5
Skillet handle (solid)	-	-	-	2	-	2
Skillet handle (tubular)	2	-	-	-	-	2
<b>TOTAL</b>	<b>8</b>	<b>4</b>	<b>15</b>	<b>12</b>	<b>1</b>	<b>40</b>

identified (see Table 1.8), of which four fall within the local ceramic traditions of north-west Kent (EM22, EM35, EM36, M38), while the other three are regionally traded wares, two from Tyler Hill, Canterbury (M1, LM1) and one from the London area (M5). No examples of Ashford/Potter’s Corner wares were identified, although their close macroscopic similarity to the north-west Kent sandy/shelly wares may account for this. The Bypass route lies on the edge of the Hythe Beds, a band of shell-rich strata stretching from Hythe on the south coast through to north-west Kent; Ashford also lies on this route, as does Maidstone, where medieval pottery production is suspected.

The north-west Kent wares – shelly and sandy/shelly – overwhelmingly dominate the assemblage (97.7% by weight). Rim sherds indicate that these wares were used most frequently for jar forms (see Table 1.9). Where profile can be ascertained, these are either rounded or shouldered (MPRG 1998, forms 4.1.7 and 4.1.8 respectively), and most have the ‘developed’ rims, with squared or triangular profiles, which appeared c. 1200 (Fig. 1.15,

1–2). Other rim sherds derive from flared bowls, again with squared rims (*ibid.*, form 5.1.4, Fig. 1.15, 3), and jugs. In addition, four straight handles (both solid and tubular) derive from skillets. All vessels are handmade, although some of the developed rims may have been wheelfinished, or wheelthrown separately and then applied to handmade bodies. Decoration is confined to applied, thumbled strips on jars, slashing and stabbing on handles, and horizontal bands of rouletting or combed on bodies (probably jugs). None of these wares is glazed.

Finer wares were supplied by the regional industries of Canterbury (Tyler Hill) and London, although these are represented by just a handful of sherds, one of which is glazed, and two glazed over a white slip coating. These sherds are assumed to derive from jugs; there is one handle.

**Distribution**

Medieval sherds were recovered in some quantity from Areas E (600 sherds) and B (142 sherds). Occurrence in other areas was much more sporadic (1–25 sherds from Areas A, C, G, I, and J). Within Area E, all but one sherd derived from contexts in excavation Area E1, including large groups from ditches 2031 (199 sherds) and 240/005 (119 sherds). Both features produced a similar mix of shelly (EM35), sandy/shelly (EM22, EM36), and sandy wares (M38) in jar forms with developed rims, and strap-handled jugs; ditch 240/005 also yielded one sherd of glazed London-type ware (M5). A similar range of fabrics and forms was observed in the large group of 270 sherds from the subsoil.

In Area B, the largest group of pottery (85 sherds) came from bakery structure 638 (Area B1). This included a large part of a single jar (Obj. No. 952) which appeared to have been smashed *in situ*. The

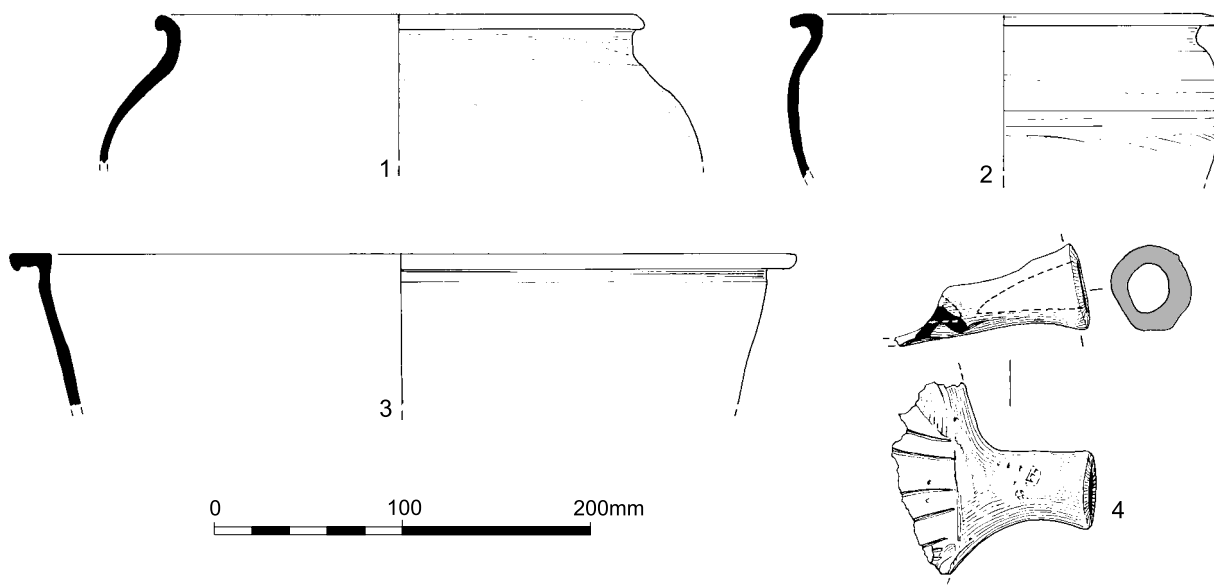


Figure 1.15 Medieval pottery

range of fabrics is virtually the same as for the features in Area E1, with the addition of a single sherd of medieval Tyler Hill ware (M1). Jar forms, however, differ slightly in that of the four examples, three have simple rims and only one a developed rim. The 31 sherds from the subsoil in Area B1 included a London-type ware jug handle, and three skilnet handles, the only instances of this vessel form on the site (Fig. 1.15, 4).

### Discussion

The medieval assemblage contains a relatively limited range of fabrics and vessel forms, all of which find good parallels in the local area of north-west Kent, for example at Rochester, Eynsford Castle (Harrison 1972; Rigold 1971; Rigold and Fleming 1973), and sites on the Channel Tunnel Rail Link at Boarley Farm and Thurnham (Barclay *et al.* 2006). The assemblage consists predominantly of coarsewares, which are likely to be of at least relatively local manufacture; regional imports from the London and Canterbury areas are present but in very small quantities.

The predominance of coarseware, utilitarian vessel forms means that close dating of this assemblage is not without difficulty. There are, however, some chronological indicators. Taken together, the combination of shelly, sandy/shelly, and sandy wares (with a relatively small proportion of the latter), the predominance of developed over simple rims, and the occurrence of skilnet forms, suggests a date range in the first half of the 13th century for the majority of the assemblage. Shelly wares died out c. 1225 in north-west Kent, the sandy/shelly wares lingering until about mid-century, augmented and gradually superseded by sandy wares. Evidence for activity beyond the mid-13th century is confined to a few late medieval sandy wares, which are not closely datable in themselves.

The scarcity of glazed or other finewares could suggest a lower status site. Vessel forms suggest little more than the standard domestic activities of food preparation and consumption, although the presence of skilnets in Area B1 could indicate some more specialised cooking activity here, and the proximity to the bakery structure is interesting.

### List of illustrated vessels (Fig. 1.15)

1. Jar rim, fabric EM36. PRN (Pottery Record Number) 33, Obj. No. 2401, context 2003, ditch 2031, Area E1.
2. Jar rim, fabric EM36. PRN 41, context 2001, subsoil Area E1.
3. Bowl rim, fabric EM36. PRN 39, context 2001, subsoil Area E1.
4. Skilnet rim and tubular handle, incised decoration on underside, fabric EM22. Context 502, subsoil Area B1.

### Metalwork

by Grace Perpetua Jones,  
with coin identifications by Nicholas Cooke

Most of the metal objects came from subsoil layers, with few stratified in archaeological features. With the exception of a small number of iron objects from Area E, most of the finds are of medieval or post-medieval date, and many are unidentifiable. Only the objects from prehistoric, Romano-British, and Saxon features, and those from other contexts which are datable to these periods, are discussed here; details of all other objects are held in the project archive.

### Late Bronze Age

A copper alloy leaf-shaped socketed spearhead (Obj. No. 162, Fig. 1.16, 1) was recovered by metal detecting, at the base of the subsoil in Area J. The socket is circular in cross-section, and has two opposed peg holes towards the mouth of the socket. It is well preserved, with traces of textile adhering to the surface, suggesting that it may have been wrapped. It belongs to the Ewart Park phase within the Carp's Tongue Complex industry of the early 1st millennium BC.

A small copper alloy ingot (Obj. No. 3322, weight 70 g) was recovered from the subsoil in Area E2. This is also likely to be of Late Bronze Age date. Although occurring apparently in isolation here, waste fragments such as these are a common feature of Late Bronze Age metalwork hoards, in which socketed spearheads such as the example from Area J also occur. They are present, for example, in the concentration of Carp's Tongue metalwork hoards recorded along the north Kent coast and in particular around the Isle of Thanet, part of the evidence of an efficient metalworking industry on both sides of the Thames estuary (Champion 1982, 37, fig. 14).

### Late Iron Age

Two unidentified iron objects were recovered from Late Iron Age enclosure ditch 169 in Area A (Obj. Nos. 461 and 469). The former is a dense, curving piece, the latter a folded strip with possible rivets.

Late Iron Age pit 2518 (Area E2) contained a curving copper alloy rod which is probably part of a bracelet (Obj. No. 3301), and part of a small copper alloy coil, possibly from a brooch (Obj. No. 3329). The bracelet fragment displays the remains of at least one incised band indicating that it was decorated.

An iron knife blade (Obj. No. 3317, Fig. 1.16, 2) was recovered from Late Iron Age pit 2678 (Area E2). This is of a type identified at Danebury, 'knife blades with rivet holes either through the blade or tang, designed for the attachment of handle plates' (Sellwood 1984, 349). Flanges would presumably have been present on the tang, however only very

slight evidence of one remains. The blade is curved, the back dips slightly before rising to the tip, similar to a Manning Type 1 cleaver (Manning 1985, 120) or Danebury blade form c (Sellwood 1984, 349).

Middle/Late Iron Age pit 2620 (Area E2) contained an iron hooked cutting tool (Obj. No. 3306, Fig. 1.16, 3). The cutting edge of this object is on the concave inner side. The flanges at the base of the blade would have been beaten around a wooden handle, and held by a rivet, still present, passed through the handle and then bent at right angles over the handle to secure it (Cunliffe and Poole 1991, fig. 7.9, 2.206). Sellwood (1984, 346) has divided such objects at Danebury into small and large sizes; the West Malling example at 100 mm in height and 80 mm wide falls into the latter category but at the smaller end of the group. The function of such objects is probably related to their size, with smaller objects used in the preparation of wattle poles or stripping branches for hurdle or basket work. Larger curved tools may have been used for harvesting corn (Cunliffe and Poole 1991, 341; Sellwood 1984, 346).

Ditch 2504 (Group 2652, Area E2) contained an iron nail shank and part of an iron object of U-shaped section (Obj. No. 3335). This object is possibly a strip of binding from a copper alloy vessel or shield. Ditch 2684 (Group 2637, Area E2) produced an iron ring of c. 77 mm diameter. The function of this object is unknown, however it may be part of a bridle bit. Seven small iron nails from shallow, sub-rectangular pit 2624 (Area E2) displayed some traces of mineral-preserved wood. Four fragments of copper alloy sheet from large, Late Iron Age, pit 2677 (Area E2) could not be identified (Obj. No. 3308).

To these objects can probably be added an iron knife from the subsoil in Area A (Obj. No. 3330, Fig. 1.16, 4). This is a narrow, tapering blade, 90 mm in length. It had been deliberately folded almost in half,

causing the blade to break, a practice which is seen, for example, during the Iron Age, although the knife itself is undatable.

#### Romano-British

Two late Roman coins were recovered. One is a follis of Gratian, minted 364–378, from the subsoil in Area E (Obj. No. 3323). The second coin, from subsoil in Area A (Obj. No. 470) is a silver antoninianus or siliqua of the late 3rd or 4th century, too worn and corroded for close dating.

#### Anglo-Saxon

Sunken-featured building 2673 produced 11 fragments of copper alloy sheeting, one with a possible rivet. They probably originate from a single object, the form of which could not be identified.

#### Medieval

The only stratified coin (Obj. No. 951), was from medieval ditch 672 (Area B1). A cut silver penny of Stephen, dated 1145–1150. This is badly worn, and damaged, being in two pieces. Coins of Stephen are not common as site finds, but need not be significant. Although this coin is in two fragments it does not appear to have been deliberately cut and may have broken through use – it is minted on an extremely thin silver flan.

#### List of illustrated objects (Fig. 1.16)

1. Copper alloy leaf-shaped socketed spearhead (Late Bronze Age). Obj. No. 162, context 3603, Area J subsoil.
2. Iron knife blade, Late Iron Age. Obj. No. 3317, context 2683, feature 2678, Area E2.
3. Iron hooked cutting tool, Late Iron Age. Obj. No. 3306, context 2633, pit 2620, Area E2.
4. Folded iron knife blade. Obj. No. 3330, context 2502, Area E2 subsoil.

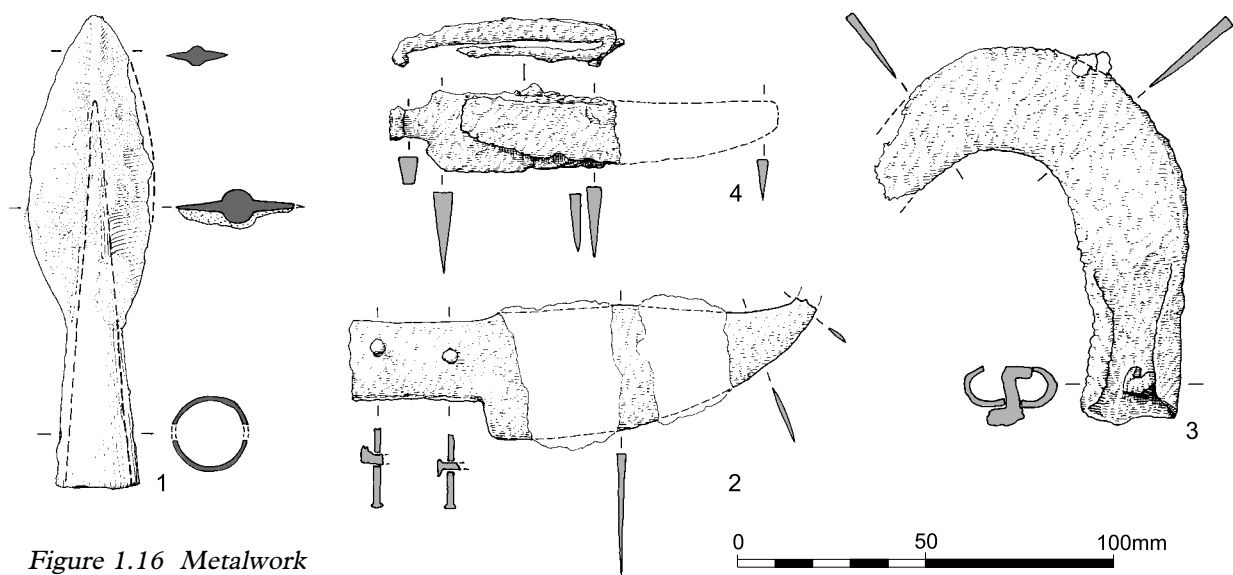


Figure 1.16 Metalwork

## Ceramic Building Material, Fired Clay, and Stone Objects

by Grace Perpetua Jones

The ceramic building material (CBM) assemblage comprises 241 fragments weighing 8748 g. A single piece of *tegula* roof tile came from medieval ditch 3615 in Area J. Only one other piece of CBM was tentatively dated as Roman, from enclosure ditch 169 in Area A.

The remainder of this category comprises fragments of roof (peg) tile and brick. The brick (all post-medieval) was almost entirely confined to Area B1. Tile fragments, most of which are in softer-fired, poorly-wedged fabrics characteristic of the medieval period (a few fragments are glazed), were concentrated in Area E1, with a few fragments from B2 and one from J.

Fired clay occurred only in Areas A and E2. A total of 439 fragments, weighing 17,414 g, was retained. While much of this material is featureless and abraded, its structural nature is indicated by the presence of wattle impressions on a number of pieces.

Large groups were present in Area E2, in particular from Late Iron Age pits 2518 and 2678. Samples of the ceramic material from these features were retained for processing, amounting to 7.9 kg from pit 2518 (context 2519) and 3.5 kg from pit 2678 (context 2683), the latter representing a sample of the 7 kg found on site.

### Pit 2518

This pit contained eight triangular loomweights, seven of which are in fired clay fabrics while one is chalk. Four of the fired clay loomweights were made from the same fabric, a fine, silty clay with occasional detrital inclusions and a sparse amount of organic material. The loomweights are mostly oxidised, although the two most complete examples (Obj. Nos 3310/3311 (Fig. 1.17, 1) and 3302 from context 2519) are completely unoxidised on one surface which is probably indicative of the firing method, suggesting that the object was laid on this side during firing. Fragments recorded as Object Nos 3310 and 3311 join to form a nearly complete triangular loomweight, 1006 g in weight, 80 mm thick, with sides of c. 120 mm (Fig. 1.17, 1). The corners of this object are worn, completely exposing one perforation and leaving only a thin 'bar' across a second. Cracks at each end of this bar indicate that this was a weak point and would have been prone to breakage if used. Object 3302 is larger, 1389 g in weight, 80 mm thick, with sides of c. 150 mm length. Two corners are again very worn, leaving only traces of two of the perforations. The two other triangular loomweights in this fabric (Obj. Nos 3300 and 3338) are less complete, weighing 698 g and 393 g respectively. A

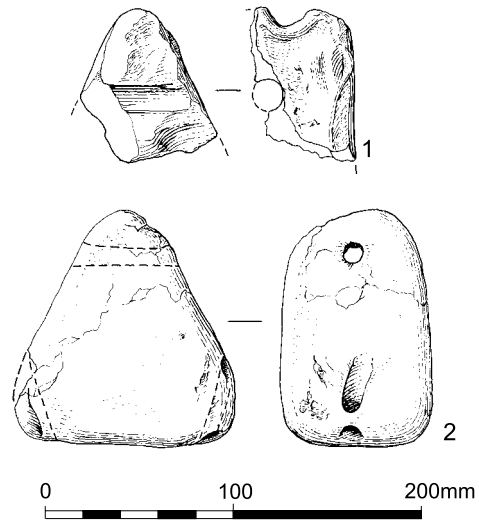


Figure 1.17 Loomweights

horizontal perforation survives through object 3300, and part of a perforation through 3338.

The remaining three fired clay loomweights from this pit are all in different fabrics. Object 3313 (264 g) is unoxidised, in a silty, marly fabric with frequent organic inclusions. Part of one perforation is still present. Object 3314 (299 g) is partly oxidised; the fabric contains abundant organic inclusions in a coarse sandy clay matrix. Object 3339 (493 g) is oxidised with the exception of one face. This is again thought to relate to the firing conditions. The fabric contains coarse-grained sand and a sparse amount of organic inclusions. The length of the sides is unknown, the extant thickness is 65 mm. One triangular loomweight (Obj. No. 3315) from pit 2518 is made from chalk. The six remaining fragments, weighing 270 g, could not be reconstructed.

A further 51 fragments (2703 g) of fired clay were recovered from pit 2518. Many display at least one surface and traces of a perforation were noted on several, suggesting that some at least derived from loomweights. Although there is no clear evidence for any structural debris, such as wattle impressions, the similarity between the fabric of 15 of the fragments (608 g) and the daub from pit 2678 (see below) suggest that these, at least, are probably daub.

### Pit 2678

This pit produced two triangular fired clay loomweights. Object Numbers 2307 and 3318 joined to form a largely complete example weighing 780 g. The sides are c. 150 mm long and the object is 60 mm thick. All three perforations are present. This loomweight was made from the same fabric as that used for objects 3310/3311, 3302, 3300, and 3338 (see above).

Two further fragments (Obj. Nos 3319 and 3340) also displayed partial perforations and are likely to originate from one or two triangular loomweights. Both fragments share a buff-coloured fine sandy fabric with oxidised surfaces and an unoxidised core. The fabric contains occasional red ferric inclusions. This context also contained 35 fragments (1701 g) of daub and 28 amorphous, featureless fragments weighing 560 g. These all consisted of a friable, silty, oxidised fabric with occasional organic inclusions.

#### Ditch 2580 (Group 2652)

Fragments from a further possible loomweight were recovered from ditch 2580 (Obj. Nos 3303 and 3304 from contexts 2582 and 2581 respectively). The fragments shared a medium-grained sandy clay matrix with a sparse to moderate amount of sub-rounded to rounded coarse-sized quartz grains, but no cross-context joins could be made. A single perforation was visible in each of the objects, but Object 3303 showed a firmly impressed finger indentation in the top (Fig. 1.17, 2) and the identification of this object is therefore in doubt.

#### Discussion

The fired clay assemblage is suggestive of textile manufacture in Area E2. Eight loomweights recovered from pit 2518 are likely to have been designed for use on a warp-weighted loom (Wild 2003) or similar. All are triangular in shape, suggesting an Iron Age date. This is supported by 248 g of Late Iron Age pottery also recovered from the pit. Seven of the weights are of fired clay and one of stone. Of the seven ceramic loomweights, four shared a single fabric type and had been fired in a similar manner. This indicates that four were produced at the same time, probably on site. The other three clay loomweights were also probably manufactured on site or locally. The level of abrasion is such that no wear marks were visible on the weights, and it is therefore impossible to tell whether they were actually used. There is some evidence of burning and it is uncertain when this occurred, whether this was at the manufacturing stage, was a result of burning *in situ* or post-deposition action. A number of the pottery sherds from the same context are also burnt but there is no obvious evidence of pottery production or wasters.

At least two other baked clay triangular loomweights were identified from pit 2678 in Area E2. One largely complete object shared the same fabric type as four of the loomweights from pit 2518 and may have been manufactured at the same time. Two further loomweight fragments may originate from one or two objects, and two fragments from ditch 2580 (Group 2652) may also form a single loomweight.

#### Human Bone

by Jacqueline I. McKinley

Human bone was recovered from two deposits. These included an undated (probably prehistoric) cremation-related deposit (35/004) recorded during the evaluation of Area B (Fig. 1.1), and the remains of a probable Late Iron Age inhumation burial made in ?pit grave 2572 in Area E2 (Fig. 1.4).

There appears to have been limited, if any, disturbance to the inhumation burial (2589) made at the base of the grave cut (2572), which survived to a depth of 0.44 m. The inclusion of several large Kentish ragstone fragments in the upper fill (2574) had resulted in some damage to the underlying fragile bone.

Pit 35/004 contained the single charcoal-rich deposit 35/005 and survived to a depth of c. 0.33 m. The small amount of bone recovered (47.8 g) appears to have been homogeneously distributed throughout the fill, consequently some could have been lost to truncation. It is unlikely, however, that much, if any, bone was removed either by this mechanism or as a result of the moderate root disturbance to the feature.

The unburnt bone is generally in good condition, showing only slight signs of surface erosion. Few complete skeletal elements were recovered, with c. 57% skeletal recovery overall, but fragmentation of the surviving bone was limited to the fragile skull vault. The cremated bone is in good visual condition, the small assemblage being inclusive of both compact and a small amount of trabecular bone.

The unburnt remains represent those of an almost full-term foetus (38–40 weeks)/neonate. The cremated remains represent those of an adult (>18 yr), most likely female. No pathological lesions were observed in the remains of either individual.

The surviving cremated remains are universally white in colour indicative of a high level of oxidation of the bone (Holden *et al.* 1995a; 1995b). The bone is generally heavily fragmented, most (80.7%) being recovered from the 5 mm sieve fraction with a maximum fragment size of 24 mm. The proportion of the assemblage identifiable to skeletal element (c. 35%) included fragments from all four skeletal areas with a near normal distribution other than the commonly observed over-representation of the morphological distinctive skull elements and an under-representation of the less robust trabecular bone of the axial skeleton.

Pit 35/004 was excavated in a part of the road-scheme not subject to later excavation. The form of the deposit, a charcoal-rich fill of substantial depth containing a small amount of bone distributed throughout, suggests it did not represent the remains of a burial but a formal deposit of pyre debris (McKinley 2000b, 41–2). Such deposits are generally

made within the vicinity of both the pyre and the burial, the remains of which probably lay within the adjacent unexcavated area. It is also possible that further cremation-related deposits were present in this part of the evaluated area, such small dispersed features easily being missed in archaeological investigations of this type. The small size of the surviving bone fragments may reflect a higher level of manipulation of the remains during tending and recovery from the pyre site than is often seen, which would inevitably lead to increased fragmentation of the brittle cremated bone.

The inhumation grave (2572) formed one of a number of pits containing dumped deposits of material associated with domestic activity, located within the confines of a D-shaped, Late Iron Age enclosure (2637). The recovery of isolated burials within settlement areas is a common characteristic of Iron Age mortuary deposits (Whimster 1981, 5). Although few pit burials have yet been found in Kent, the isolated nature of such finds does, to some extent, mitigate against their discovery (*ibid.*, fig. 4). Kentish burials of Middle Iron Age date as a whole are sparse (Parfitt 2004, 16), Mays and Anderson citing a minimum number of individuals of fewer than five in their 1995 review (380–1). Although a few additional – mostly cremation – burials have been found in the last decade, the numbers remain very low (McKinley 2006). With the exception of Mill Hill, Deal, most of the known Late Iron Age graves from the county contained the remains of cremation burials, also made as singletons or parts of small groups (Parfitt 1995; 2004, 16–17).

### *Animal Bone*

by Jessica M. Grimm

This report concentrates on the Late Iron Age/Romano-British animal bone which largely derived from two enclosure groups in Areas A and E2 respectively. Animal bone from other phases of activity (Late Bronze Age/Early Iron Age, Anglo-Saxon, medieval, and post-medieval) is fairly minimal and is not reported on here (see Table 1.10).

### **Taphonomy**

The overall condition of the Late Iron Age/Romano-British bones is fair with some newly occurring breaks. Whenever possible, bones were pieced together with masking tape in order to be able to take the necessary measurements. The majority of bones are in fair (79%) to good (1%) condition, with a fifth in poor (16%) or very poor (4%) condition. The poor to very poor preserved bones were distributed evenly over the features.

**Table 1.10 Number of animal bone fragments by Area and by phase**

Period	Area						Total
	A	B1	B2	C	E1	E2	
LBA/EIA	11	-	-	-	-	-	11
M/LIA-RB	361	-	-	-	-	630	991
Saxon	-	-	-	-	-	289	289
Medieval	-	12	-	1	48	-	61
Post-medieval	-	-	17	-	-	1	18
Undated	-	-	-	-	-	11	11
Total	372	12	17	1	48	931	1381

A total of 35% of the material has root-etched surfaces, mainly affecting bones from Area E2 but also one from the subsoil of Area A. This implies that the bones in the features of Area E2 were in general closer to the surface. Gnawing by canids has marked only 1% of the bones. However, it is likely that the marks are obscured by the bad preservation of the bone surface (ie, root etching) and scavenging cannot be excluded as a biasing factor. The bones affected derive from cattle, horse, and sheep/goat and there is an overall strong preference for the joints.

The proportion of loose teeth (14%) is quite substantial and, together with the absence of loose but matching epiphyses and the small number of articulating bones, indicates that part of the assemblage was reworked and/or badly preserved. However, none of the assemblages seems particularly affected. The overall percentage of identified bones (40%) is rather low. The assemblage is highly fragmented with only 9% complete bones. This includes small compact bones like tarsalia and teeth.

A large proportion of the bones show signs of burning (28%). As the burnt fragments are all very small or undiagnostic, most bones were assigned to the large or medium sized mammal categories, although burnt fragments of cattle, pig, sheep/goat, and red deer were identified. Burnt bones were mainly found in the pits of Area E2, although the contents of ditch 136 and a burnt out tree-throw (197/005) from Area A were mainly burnt as well. Most burnt bones were calcined which indicates temperatures of 700–950°C (bone does not discolour when meat is cooked or roasted). This means that the discoloured fragments are the result either of throwing bones deliberately in the fire (ie, burning waste) or of bone protruding during roasting and so making direct contact with the fire.

The identifiable remains were only of mammals. Most belong to domesticates: cattle, horse, sheep/goat, pig, and cat. Where possible, a distinction between sheep and goat was made, indicating that both species are present (Table 1.11). The wild species consist of red deer and a shrew or mouse.

**Table 1.11 Animal bone species list**

Species	LIA/RB Animal Bones		NISP		BW		MNI	
	n	%	g	%	n	%		
Cattle ( <i>Bos Taurus</i> )	189	19	4042	61	5	28		
Horse ( <i>Equus caballus</i> )	33	3	1642	25	2	11		
Sheep ( <i>Ovis aries</i> )	6	0	38	0				
Goat ( <i>Capra hircus</i> )	1	0	10	0	6	33		
Sheep/Goat ( <i>Ovis / Capra</i> )	98	10	244	4				
Pig ( <i>Sus domesticus</i> )	10	1	130	2	2	11		
Cat ( <i>Felis catus</i> )	1	0	1	0	1	6		
Red deer ( <i>Cervus elaphus</i> )	2	0	139	2	1	6		
Mouse/Shrew	1	0	0	0	1	6		
Classes								
Large mammal	140	14	312	5	-	-		
Medium mammal	497	51	97	1	-	-		
Total	978	98	6655	100	18	101		

The Number of Identified Species (NISP) method shows that cattle bones were most commonly identified to species. The Bone Weight method (BW) is based on the fact that bones comprise c. 7% of the carcass weight (Kubasiewicz 1956) and here indicates that cattle contributed most to the diet (Table 1.11). However, the Minimum Number of Individuals (MNI) shows that sheep/goat were also important. Horse and pig played only a minor role. However, the assemblage is likely to be biased towards the less resilient bones of pig.

As red deer is only represented by antler it is quite possible that they were not hunted. The mouse/shrew might be of a later date as it is a burrowing animal. The absence of edible wild species suggests that the Late Iron Age/Romano-British inhabitants relied mainly on their livestock for their protein needs.

**Husbandry**

*The sheep/goat assemblage*

Analysis of the representation of different anatomical elements shows that not all skeletal elements are present. Notably the elements of the first part of the spinal column and the pelvis are missing (Fig. 1.18). The small size of the database might account for this observation.

The low number of vertebrae is suspicious as this is a serial element in the vertebrate body and should be numerous. Instead, the high number of mandibles

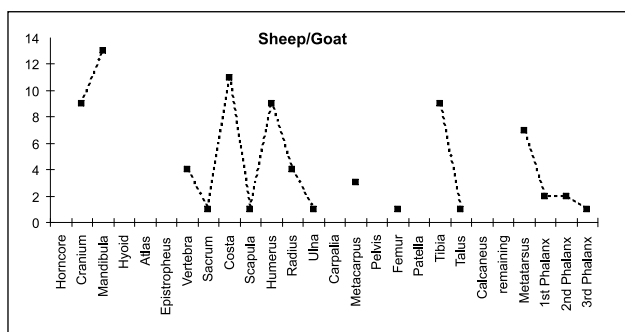


Figure 1.18 Sheep/goat: representation of different anatomical elements

and elements of the more resilient, meatless lower legs suggests that the assemblage is biased by taphonomic processes and was not formed by specific preferences of people for particular parts of the animal body. If this had been the case, meat-rich parts like the upper legs, shoulder, hip joint and ribs would have clearly dominated.

Age analysis classification of just three mandibles (cf. Habermehl 1975; Table 1.12) indicates two animals aged 7+ years and a lamb jaw. The latter is noteworthy as other observations indicate that the assemblage is biased towards less resilient bones (ie, younger animals). Wear stage analysis shows that the 1st molars had wear stages E and H, the 2nd molar had G and J and the 3rd molar, G. This indicates adult but not aged animals. Soil and fodder type determine the wear rate, with sandy soils and silicate-rich short grass being the most abrasive (Silver 1969, 290).

The material contained the left metacarpus of a foetal/neonate sheep/goat (ditch 235, Area A). The total length indicates a foetus 136–45 days after conception (birth 145 days). According to Reichstein (1994, 448) the presence of foetus bones is an indicator of animal keeping on the spot as meat of foetuses is generally not eaten but discarded. Foetal remains could also get into the assemblage when animals with young are slaughtered. This is uneconomical and would only take place in case of an emergency, such as famine or the unexpected death of the mother perhaps through disease. However, a ritual meaning cannot be excluded.

The epiphysial fusion data for sheep, though few (n=14) are consistent with the age analysis based on the jaws as they show the presence of juvenile, sub-adult, and adult animals. Mortuary graphs, however (archive), are able to supply data for sheep/goat older than two years, showing that some of the remains belong to aged animals. This means that meat might have been equally important as wool and dairy products.

No skull fragments that could inform on horn bearing/sex were found. A left metacarpus from the subsoil in Area A provided a height at the withers of

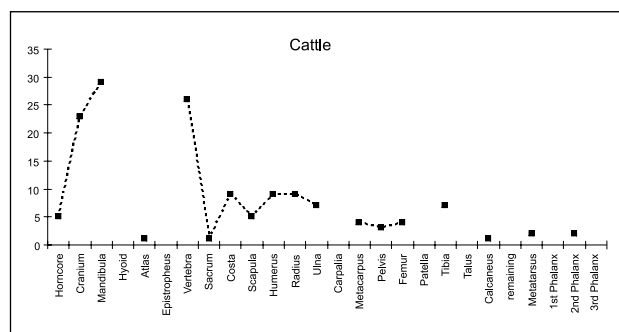


Figure 1.19 Cattle: representation of different anatomical elements



0.569 m. Although the bone might be of a younger date, the withers height is average for Late Iron Age/Romano-British sheep (ABMAP search). Although none of the bones shows pathological changes, this does not mean that the animals were healthy. As the surrounding soft tissues and cartilage where the lesions possibly originated have disappeared, only the reaction of the bone to an illness can be analysed.

The accumulation of cut and chop marks on particular skeletal elements point to the use of the carcass (eg, Uerpmann 1977; Lauwerier 1988; Ewersen 2004) but the fact that no butchery marks were seen does not mean that the animals were not butchered as a skilled butcher will try to avoid hitting the bone.

**Cattle**

Analysis of the representation of different anatomical elements shows that most elements are present in the cattle bone assemblage (Fig. 1.19). The high number of crania is misleading as this element tends to get broken into many pieces. As seen in the sheep/goat assemblage, the resilient mandibles are over-represented, which means that the assemblage is probably biased by taphonomic factors.

To give a more detailed picture of the age at death of the cattle, the jaws were classified using the data provided by Habermehl (1975; see Table 1.13), which suggests a preference for older animals (Fig. 1.20). Wear stage analysis shows that the wear stages on the 1st molar run from B to M; range from A–L for the 2nd molar, and the 3rd molar shows stages from F to M, suggesting adult but not aged animals. The epiphysial fusion data of cattle (Fig. 1.21) underlines this observation, as only sub-adult and adult bones are present. The complete absence of the bones of juvenile cattle might reflect preferences and husbandry strategies rather than taphonomic processes (eg, foetal sheep/goat bone was found which is probably even less resilient than juvenile cattle bones). The age data suggest that secondary products like traction and milk production were equally as important as meat and hides.

**Table 1.12. Stages of tooth eruption in sheep (after Habermehl 1975)**

Sheep		
Group	Tooth eruption stadium	Age (months)
0	Milk premolars in eruption	0–4 weeks
1	Milk premolars have erupted	1–2
2	M1 in eruption	3
3	M1 has erupted	4–8
4	M2 in eruption	9
5	M2 has erupted	10–17
6	M3 in eruption, P2–P4 changing	18–24
7	M3 and P2–P4 have erupted	24
7+	M3 medium worn	>24
7++	M3 significant worn	>24
7+++	M3 heavily worn	much >24

**Table 1.13: Stages of tooth eruption in cattle (after Habermehl 1975)**

Cattle		
Group	Tooth eruption stadium	Age (months)
1	Milk premolars in eruption	0–3 weeks
2	Milk premolars have erupted	<3
3	M1 in eruption	5–6
4	M1 as erupted	7–14
5	M2 in eruption	15–18
6	M2 has erupted	19–24
7	M3 in eruption, P3 changing	24–28
8	P2 & P4 changing	29–34
9	M3 & P2–P4 have erupted, hardly worn	>36
9+	M3 medium worn	>36
9++	M3 significant worn	>36
9+++	M3 heavily worn	much >36 months

Ditch 2652 (Area E2) contained a piece of horn core indicating that the major cattle breed was horned. A left metatarsus from Saxon context 252/006 produced a height at the withers of c. 1.095 m, indicating a typical small animal. The few (four) butchery marks identified are mostly caused by a cleaver or a knife and involved disarticulation, skinning, and filleting.

**Pig**

The small size of the assemblage precluded analysis of the representation of different anatomical elements. Classification of the pig mandibles and maxillae (cf. Habermehl 1975; Table 1.14) indicated that the only

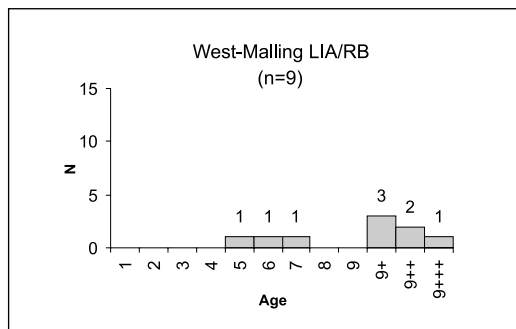


Figure 1.20 Classification of cattle maxillae and mandibles

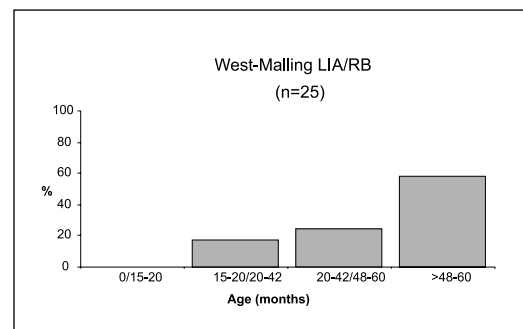


Figure 1.21 Mortuary graphs based on the epiphysial fusion data of cattle

**Table 1.14 Stages of tooth eruption in pig (after Habermehl 1975)**

Pig		
Group	Tooth eruption stadium	Age (months)
0	Milk premolars in eruption	0–7 weeks
1	Pd4 has erupted	>7 weeks
2	M1 in eruption	4–6
3	M1 has erupted, I3 and C changing	6–10
4	M2 in eruption, I3, C and I1 changing	10–12
5	M2 has erupted, P2–P4, I1 and I2 changing	12–16
6	M3 in eruption, I2 changing	16–24
7	M3 has erupted	>24
7+	M3 medium worn	>24
7++	M3 significant worn	>24
7+++	M3 heavily worn	much >24

ageable jaw belongs to an adult (M3 wear stage D) pig of more than 24 months. A fused pelvis acetabulum and a fused distal humerus indicate animals of at least 12 months when they died.

The age of 24 months is a common and ideal age for butchering. Varro (cited by Benecke 2003, 72) records that the Romans used sows for breeding from 20 months up to 7 years. According to Columella (book 7, chap. 9; Ahrens 1972, 238) a boar can serve at the age of 6–12 months until it is four years of age. Sows can be served twice a year from the age of one year until seven years. Müller (1973, 436) states that it was customary in the 19th century to use sows aged 2–8 years and boars until four years for breeding. This could mean the pigs could have been used at least once for breeding before being slaughtered. The sex of the pigs was estimated using the canines of the maxillae and mandibles. The form of these teeth differs in boars and sows with those of boars being larger with roots that stay open all their lives whereas they close with advanced age in sows. The assemblage contained one female and possibly one male canine and might indicate on-site pig breeding.

### Horse

As part of the material is dated after the Roman Conquest, the assemblage might contain ass, mule, or hinny and it is therefore more correct to define the remains as being Equid. Equid remains were mainly found in the ditches of Areas A and E2. In particular, enclosure ditch 2652 (Area E2) contained many equid remains spread over several contexts: ulna, three metatarsi, three splint bones, 2nd and 3rd

phalanx, indicating the disposal of the lower meatless legs. Ditch 235 (Area A) contained the remains of at least two equids represented by two femora and a tibia. Other fragments include a splint bone from ditch 136, right tibia from ditch 169, splint bones from pits 2540, and 2541 (Area E2), a right mandibula from ditch 2637 (Area E2) and 12 upper teeth, two rib fragments, and the proximal part of a left femur from ditch 88/005 (Group 2637, Area E2).

On average, equid bones are far less fragmented (average wt 55 g) compared to cattle (21 g). This indicates that equids were not generally exploited for meat and their bones certainly not cracked for marrow extraction.

A left tibia from ditch 235 (Area A) permitted the estimation of a height at the withers of 1.172 m indicating a very small individual. A left metatarsus and a right metatarsus from ditch 2652 (Area E2) revealed height at the withers of 1.231 m and 1.327 m; indicating small and rather small animals respectively. The differences might reflect different types of horses, different equids or chronological differences (ie, before and after the Conquest). All of these values are normal for the period (ABMAP data).

### Cat

The complete right humerus of a young cat (distal epiphysis not fused) was found in ditch 2504 (ditch 2652, Area E2).

### Wild species

The right femur of a juvenile mouse/shrew was not further identified, as it is a possible result of bioturbation. It was recovered from sample 3430 of pit 2620 (Area E2).

Pit 2518 (Area E2) contained two pieces of burnt red deer antler. The larger piece was clearly worked before it was exposed to fire. It consists of the beam with part of the brow tine of a right antler. The beam was sawn and last part broken-off to separate it from the bulb. Fine horizontal cut marks could be observed on beam and base of brow tine.

### Disposal patterns

In order to detect disposal patterns within the Late Iron Age/early Romano-British assemblage, the material was divided into ditches and pits. It becomes apparent from Table 1.15 that horse, cattle, and pig bones were mainly found in the ditches, whereas the sheep/goat bones were mainly found in the pits. This difference is likely to reflect a difference in disposal practice as no difference was observed in preservation between the two feature groups. The average fragment weight for the material in the pits is only 5 g (mainly sheep/goat) compared to 6.5 g (mainly horse/cattle) for the ditches.

**Table 1.15 NISP by species and by feature group**

Species	Ditch		Pit	
	n	%	n	%
Horse	15	83	3	17
Cattle	139	82	30	18
Sheep/Goat	40	44	50	56
Pig	7	78	2	22
Total	522	73	191	27

The representation of the different anatomical elements per feature group shows only minor differences (Fig. 1.22). Taking the above into account, it is assumed that the pits and ditches were used to dispose of butchery waste and kitchen refuse as no over-representation of particular elements, other than caused by taphonomic factors, was seen. However, the dominance of sheep/goat remains in the pits compared with the dominance of horse and cattle remains in the ditches makes it clear that some sort of waste management was taking place.

### Discussion

Although the assemblage might be biased towards the smaller sheep/goat and pig bones and the bones of young animals, the results fit well with the normal pattern for the Late Iron Age where sheep/goat and cattle dominate (Maltby 1981, 159; King 1991, 16; Yalden 1999, 102). The keeping of poultry was probably not widespread during this period (Maltby 1981, 161; King 1991, 16). After the Roman Conquest, the more Romanised a site became the lower the proportion of sheep/goat and the higher that of pig (King 1991, 17). The low proportion of pig bones from this site could thus indicate native Late Iron Age settlement activity that continued into the Romano-British period and was subsequently little influenced by Roman eating habits. However, the scarcity of Romanised pottery indicates that settlement activity on the site ceased before the Conquest.

Cattle, sheep and goat can provide, besides meat, a range of other products like manure, milk, and after death, hide, bone, horn, etc. Cattle can provide traction as well. In large assemblages, it might be possible to detect an emphasis on particular products by analysing the kill-off patterns. It is however likely that Late Iron Age husbandry did not focus on one particular strategy but was based on a mix of two or more products. As the assemblage from West Malling is rather small and probably biased towards young animals, it is difficult to interpret the kill-off patterns. However, the presence of young sheep/goat might reflect a strategy based on milk, wool, and meat production, whereas the absence of very young cattle might indicate that meat, milk, and traction were important. The latter would underline the cultivation of crops such as wheat, barley, flax and Celtic bean of which charred remains were found (see Stevens, below).

Generally, wild mammals and birds did not contribute much to the diet, an observation made for most sites in north-western Europe. It is difficult to assess how much fish contributed to the diet. The overall taphonomic factors on the site would not have been beneficial to the preservation of the small and fragile fish bones. As the site is close to the river Medway and the Leybourne stream as well as not too

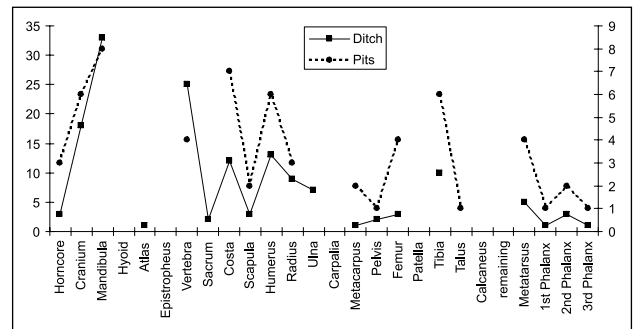


Figure 1.22 Representation of different anatomical elements by feature group

far from the sea, it seems likely that people would have exploited these resources as well.

The presence of a worked and subsequently burned piece of antler suggests that bone working was occasionally practised on site during the Late Iron Age/Romano-British period. The working of the antler involved the use of at least two tools: saw and knife. Why the antler was discarded after being carefully sawn, is unknown. The piece was found in pit 2518 (Area E2) which was filled almost exclusively with calcined, and a few carbonised, bones of sheep/goat, cattle, medium and large mammal and another piece of red deer antler. The assemblage might reflect the burning of waste and its subsequent disposal.

The head (caput) of a cattle femur from ditch 214/014 (Group 220, Area A) had a central drilled hole (diameter 10.4 mm). The piece probably represents a spindlewhorl.

### Charred Plant Remains by C.J. Stevens

A total of 96 samples was taken and assessed. From these 23 were chosen for detailed analysis (Table 1.16–18). Most came from Late Iron Age features in excavation Areas A, B1, B2, and E2. Further samples of probable prehistoric date came from an undated cremation-related feature (35/004) in Area B, and a Late Bronze Age/Early Iron Age pit (132) in Area A. The latest material examined came from Saxon SFB 2673 in Area E2, medieval bakery 638 in Area B1 and oven 679 within the bakery structure.

#### Undated cremation-related feature

The sample from feature 35/004 (Area B) contained cremation-related deposits and numerous tubers of onion couch grass (*Arrhenatherum elatius* var. *bulbosum*), and over 1,500 grass rootlets and basal culm nodes. Most of the recorded seeds are predominately from species of arable or disturbed

Table 1.16 Charred plant remains from early prehistoric features

	Area	B2	B1	A
	Period		BA?	LBA/EIA
	Feature Type	pit	cremation	pit
	Feature No.	1004	35/004	132
	Context No.	1006	/005	135
	Volume	3.5	30	40
	Flot	50	1000	60
	Roots	10	1	25
<i>Cereals</i>		<i>Common Name</i>		
<i>Hordeum vulgare</i> sl (hulled grain)	barley	-	-	1
<i>H. vulgare</i> sl (grain)	barley	-	-	1
<i>Triticum dicoccum</i> (glume base)	emmer wheat	-	-	6
<i>T. spelta</i> (glume bases)	spelt wheat	-	-	cf.4
<i>T. dicoccum/spelta</i> (spikelet fork)	emmer/spelt wheat	-	-	2
<i>T. dicoccum/spelta</i> (glume bases)	emmer/spelt wheat	-	-	22
Cerealia indet. (grains)	cereal	-	-	2
Cereal frag. indet. (est. whole grains)	cereal grains from frags	-	-	3
<i>Species</i>		<i>Common Name</i>		
<i>Corylus avellana</i> (frags)	hazel	8	-	7
Chenopodiaceae /Caryophyllaceae	goosefoot/campion	-	2	-
<i>Chenopodium album</i>	fathen	-	13	-
<i>Spergula arvensis</i>	corn spurrey	-	1	-
<i>Persicaria lapathifolia/maculosa</i>	persicaria	-	13	-
<i>Polygonum aviculare</i>	knot grass	-	1	-
<i>Fallopia convolvulus</i>	black bindweed	-	8	-
<i>Vicia / Lathyrus</i> sp.	vetch/pea	-	2	-
<i>Trifolium</i> sp.	clover	-	9	-
<i>Stachys/Galeopsis</i>	woundwort/hemp-nettle	-	1	-
<i>Plantago lanceolata</i>	ribwort plantain	-	2	-
<i>Galium aparine</i>	cleavers	-	-	1
Poaceae (basal culm node)	grass root nodes	-	1571	4
<i>Arrhenatherum elatius</i> var. <i>bulbosus</i>	false oat-grass	-	63	cf.1
<i>Avena</i> sp. (awn)	oat awn	-	1	-
Seed indet.	-	-	3	1

soils; fat-hen (*Chenopodium album*), redshank/pale persicaria (*Persicaria maculosa/lapathifolia*), knotgrass (*Polygonum aviculare*), and black bindweed (*Fallopia convolvulus*). Others were associated with both arable habitats and grassland; clover (*Trifolium* sp.), vetches/wild pea (*Vicia / Lathyrus* sp.), and plantain (*Plantago lanceolata*).

Of some interest is a single seed of corn spurrey (*Spergula arvensis*), a species associated with arable crops grown on drier, sandier soils. Despite the predominance of species associated with arable fields the sample contained no cereal remains.

#### Late Bronze Age/Early Iron Age

The sample from pit 132 (Area A) produced several glumes of emmer wheat (*Triticum dicoccum*) and some of possible spelt (*T. spelta*), as well as fragments of hazelnut (*Corylus avellana*) and a single seed of cleavers (*Galium aparine*). There are a few tubers and rootlets of onion couch grass.

#### Late Iron Age

Cereal remains were common in these samples, comprising mainly glume bases of spelt and emmer wheat. While remains of spelt predominate over emmer in the samples from Area A, remains of emmer are dominant in several of the Late Iron Age pits in Area E2. Grains of barley (*Hordeum vulgare* sl) were

present in most of the samples, but generally less dominant than hulled wheats, making up on average a third of most samples. Barley rachis fragments were recorded in several samples. Where identification is possible the barley appears to be of the hulled six-row variety.

The only other crop represented is a single seed of flax (*Linum usitatissimum*). Most samples produced some fragments of hazelnut shell. A single charred cone bract of pine is of some interest, given that pine is thought to be generally absent from much of southern England at this time. While it was not identified to species, given its small size it seems more likely to be of the native pine (*Pinus sylvestris*) rather than imported stone pine (*P. pinea*).

Two pits (2677 and 2678) in Area E2 were very rich in cereal grains and are worthy of more detailed description. They contained numerous grains of emmer and spelt, in approximately equal proportions, along with barley, where the grains are still clearly in their hulls. The two pits are inter-cutting, the deeper pit (2677) being cut by the shallower feature (2878). The charred assemblages are similar enough to suggest that they are from a single charring event. However, the assemblage from the deeper pit (2677) is richer in remains and appears to have a slightly greater proportion of wheat to barley, about 70%. Finally, glumes are more abundant in the deeper pit

(2677) with a ratio of grains to glumes close to 5:1, while the ratio is slightly greater than 10:1 in the shallow pit 2678.

Weed seeds were relatively common in most of the samples, and with the exception of two features, seeds of larger seeded species dominate. In the two exceptions; ditch 214/014 (Group 220) and pit 2540 (Area E2), seeds of fat-hen predominate. The dominant larger seeded species are all typical arable weeds, such as vetches/wild pea, oats (*Avena* sp.), brome grass (*Bromus* sp.), cleavers, knotgrass (*Polygonum aviculare*), and black bindweed.

Species of damp and wet soils, buttercup (*Ranunculus acris/repens/bulbosus*), blinks (*Montia fontana* ssp. *chondrosperma*), sedge (*Carex* sp.), and spikerush (*Eleocharis palustris*), were rare in the samples. Species more commonly associated with circum-neutral to calcareous soils, such as plantain and field madder (*Sherardia arvensis*), were more common in most samples than those associated with neutral to acidic soils, eg, blinks and sheep's sorrel (*Rumex acetosella*). Few other species are ecologically specific to any particular soil types.

### Anglo-Saxon and medieval

Only three samples were examined from these periods. The Saxon SFB (2673) was poor in charred plant material, with only a few grains of barley and several fragments of hazelnut shell being recovered.

The sample from the medieval bakery structure (638) in Area B1 yielded grains and many rachis fragments of free-threshing wheat (*Triticum aestivum* sl). The sample contained some grains of barley and possible rye (*Secale cereale*), and two seeds of broad bean (*Vicia faba*). This same sample was rich in weed seeds, and while seeds of smaller seeded species are present, seeds of larger seeded species predominate, vetches/wild pea, oats, with occasional seeds of cornflower or knapweed (*Centaurea* sp.), redshank/pale persicaria (*Persicaria maculosa/lapathifolia*) and capsules of runch (*Raphanus raphanistrum*). The presence of two ecologically specific species in this sample is of some interest in that they have conflicting ecologies. Stinking mayweed (*Anthemis cotula*) is an indicator of the cultivation of heavier clay soils while corn spurrey is associated with crops grown on sandy soils. The remaining medieval sample from oven 679 (inside bakery structure 638), contained very little material, but did produce evidence for the cultivation and utilisation of rye.

### Discussion

While the feature with cremation-related deposits (35/004) was undated, it is notable that tubers of false oat-grass are most commonly found in Middle-Late Bronze Age cremation burials (Stevens 2006a; 2008);

Romano-British cremation burials, such as that seen at Kingsborough Manor, Sheppey (Stevens 2008), and the large cemetery at Pepper Hill (Davies 2006), often fail to produce any such tubers.

Finds of charred tubers of false oat-grass and rootlets have been interpreted as tinder from the cremation pyre (cf. Hillman 1982a; Robinson 1988). The tubers can be pulled-up when the grass is hand-pulled; however, it is more probable that they were collected after the creation of a fire break then used as tinder in the pyre (cf. Stevens 1997; 2008). The seeds of other species present in the assemblage are likely to have come from the landscape in which the pyre was constructed (cf. Hillman 1982a) and suggest mainly long grassland with some elements of arable farming.

### Late Iron Age

#### *Cereals, other crops and utilised species*

The predominant crops are spelt and emmer wheat, that appear to have been cultivated and consumed in approximately equal proportions. Across much of southern England spelt gradually replaced emmer as the predominant crop during the Late Bronze Age into the Iron Age (Robinson and Wilson 1987; Jones 1996; Campbell 2000; Campbell and Straker 2003). In certain parts of eastern England emmer appears to persist alongside spelt; examples from Kent include Sheppey (Stevens 2008), Saltwood Tunnel, near Ashford (Stevens 2006a), and White Horse Stone (Giorgi 2006). From Essex it is notable that emmer is found in reasonable quantities at Asheldham (Murphy 1991), while in Cambridgeshire it is found alongside spelt at a number of sites (Ballantyne 2004; Murphy 2003a). Finally, in north-east England it continues to have been cultivated in the Iron Age in the area to the north of the Tyne (van der Veen 1992).

Barley appears to have been commonly cultivated and utilised during the Iron Age in this part of Kent and, while barley grains form, on average, only a third of the identified grains, it may be that taphonomic processes in the way it is processed may skew this figure (cf. Stevens 2003a). Unlike other sites in Kent there is no evidence for the cultivation of leguminous species (cf. Pelling and Campbell, cited in Campbell and Straker 1999; Stevens 2008) although, as with other sites in the region, flax is represented (Stevens 2006a; 2008).

The find of pine is of particular interest as these trees are thought to be largely absent from the British Isles after the Early Neolithic, although pine stumps thought to be Bronze Age in date were recovered from the fenlands (Godwin 1975), until their reintroduction in the 18th century.

It is notable that many of the Iron Age assemblages contain fragments of hazelnut shells. While it must be assumed that wild food resources were exploited in the Iron Age, remains of hazelnut are rarely as





Table 1.18 Charred plant remains from Anglo-Saxon and medieval contexts

	Area	E2	B1	B1
	Period	Saxon	Medieval	
	Feature Type	SFB	bakery	oven
	Feature No.	2673	638	679
	Context No.	2596	678	697
	Volume	37	40	1
	Flot	200	1700	100
	Roots	25	1	5
<i>Cereals</i>	<i>Common Name</i>			
<i>Hordeum vulgare</i> sl (grain)	barley	2	2	-
<i>Avena</i> sp./ <i>T. cf. monococcum</i>	eincorn/emmer	-	cf.5	-
<i>Triticum cf. aestivum</i> sl (grain)	bread wheat	-	230	-
<i>T. cf. aestivum</i> sl (rachis frag.)	bread wheat	-	est.41	-
<i>Secale cereale</i> (grain)	rye	-	cf.18	cf.3
<i>S. cereale</i> (rachis frag.)	rye	-	-	2
Cereal indet. (grains)	cereal	3	20	4
Cereal frag. indet. (est. whole grains)	cereal grains from frags.	-	20	4
Cereal indet. (culm node)	cereal	-	7	-
<i>Species</i>	<i>Common Name</i>			
<i>Corylus avellana</i> (frags)	hazel	16	25	-
<i>Chenopodium album</i>	fathen	-	est.20	-
<i>Stellaria media</i>	stitchwort	-	est.10	-
<i>Spergula arvensis</i>	corn spurrey	-	est.20	-
<i>Persicaria lapathifolia/maculosa</i>	persicaria	-	est.10	-
<i>Rumex acetosella</i> group	sheeps sorrel	-	est.40	-
<i>Raphanus raphanistrum</i> (capsule)	runch	-	5	-
<i>Prunus spinosa</i>	sloe	-	6f.	-
<i>Vicia /Lathyrus</i> sp.	vetch/pea	-	est.201	-
<i>Vicia faba</i>	broad bean	-	cf.2	-
<i>Trifolium</i> sp.	clover	-	est.10	-
<i>Medicago/Lotus/Ornithopus</i> type	clover, medick, bird's foot	-	-	1
Asteraceae seed head	-	-	2	-
<i>Centaurea</i> sp.	knapweed	-	est.20	1
<i>Anthemis cotula</i>	stinking chamomile	-	est.320	-
<i>Tripleurospermum inodorum</i>	scentless mayweed	-	est.10	-
<i>Avena</i> sp. (grain)	oat grain	-	est.392	4
Seed indet. large	-	-	1	-

Note: est – estimated counts from 10% sub-samples from the 1 mm and 0.5 mm fractions

prevalent on Iron Age sites as they are on Neolithic and Bronze Age ones (cf. Robinson and Wilson 1987; Grieg 1991). That hazelnut shells are reasonably abundant may then point to the possibility of local stands of these shrubs in the region.

#### *Pits 2677 and 2678 (Area E2)*

In interpreting the assemblage from pits 2677 and 2678 it is worth considering the proportion of grain and glumes. Glumes generally are destroyed more readily than grain, especially in more aerated environments (Boardman and Jones 1990; cf. Robinson and Straker 1991). So, for example, at Danebury, Hampshire (Jones 1984), where spikelets were burnt *in situ* in the relatively anaerobic conditions of a grain storage pit, the ratio of grains to glumes is 2:1. It is notable at Ham Hill, Somerset, where whole ears appear to have been burnt in a large rectangular and more aerated pit, that no glumes were found at all (Ede 1999). Hence the burning of whole spikelets will generally lead to grain-rich assemblages (Stevens 2003a), and as such it is probable that the

charred assemblage represents the burning of the stored crop (eg, whole spikelets).

As stated above the material from the two pits is likely to come from a single event. That the ratio of glumes and density of charred material is higher in the deeper pit 2677 is likely to be due to the depth of the feature, as closer to the active soil horizon charred material is more readily destroyed, especially more fragile material such as glumes (Limbrey 1975, 304; Monk and Fasham 1980; Monk 1985, 113). While glumes are slightly less prevalent, the high state of preservation suggests that the assemblage was most likely charred in an anaerobic environment such as a storage pit. Indeed, such assemblages are most commonly recovered from storage pits. For example at Danebury, Hampshire (Jones 1984) and Lechlade, Gloucestershire (Stevens 2003b) comprising mainly spelt wheat with about 15% hulled barley; Wandlebury, Cambridgeshire (Ballantyne 2004) where emmer and spelt predominated with some barley, and Gravelly Guy, Oxfordshire (Moffett 2004), with a relatively pure assemblage of hulled



barley. Mark Robinson records a pit from Twywell, Northamptonshire, in which spelt and barley appear to have been stored in different parts of the same pit (Robinson and Wilson 1987; Jackson 1975), with two-thirds spelt to one-third barley. At Fifield Bavant, Wiltshire, a similar charred deposit in a storage pit contained two-thirds barley to one-third spelt (Helbaek 1952; Biffen 1924).

Pit 2677 is certainly of a size and shape that provides a distinct possibility that it may have been used for grain storage and so a possible candidate for where the assemblage became charred. If this is the case then, given the nature of the pits' stratigraphy, it would seem probable that some considerable reworking has taken place, including the possible emptying of some of the pit's original contents, as opposed to the material being left *in situ*.

#### *Cultivation practices*

It is probable that many of the more ecologically specific species were removed prior to the assemblage being charred. There is some indication that at least some fields extended onto wetter or seasonally flooded soils. The presence of both emmer and spelt may indicate the practise of both spring, in the case of the former, and autumn cultivation in the latter. Alternatively it may be that emmer was still favoured as it generally grows better on drier soils than spelt.

The presence of at least some seeds of relatively low growing species, attaining heights of 0.40 m or less, such as field madder and clover indicates that crops were probably reaped relatively close to the ground probably with a sickle. After harvest the crop would have undergone some processing prior to be stored upon the settlement.

It is probable that most of the crops were stored in above ground granaries, and at least one four-post structure was recorded from the Iron Age enclosure (phase 3) in Area A. However, as noted there is at least some evidence for the storage of both hulled wheats and barley within underground storage pits.

With the exception of those samples from pits 2676 and 2677 (Area E2), the majority of the other charred material can be related to the processing of crops, as they were taken from storage for daily consumption throughout the year. Most of the samples are glume-rich, typical of British assemblages, being derived from the discarding of glume waste onto the hearth after the spikelets had been pounded and sieved to separate the glume chaff from the grain; operations most probably carried out within the house (*cf.* Stevens 2003a, Hillman 1981).

For emmer and spelt, the crop appears to have been stored in the spikelet, for barley within the hulls. Given the predominance of seeds of larger seeded species in most samples, it is probable that the crops had been winnowed, threshed, and coarse and fine-

sieved, operations probably carried out in the field in mid- to late summer after harvest and prior to the crop being brought back to the settlement and stored in the granary.

#### **Anglo-Saxon and medieval**

The samples from Anglo-Saxon and medieval features reflect the general changes seen between the end of the Romano-British and the early Anglo-Saxon period in the region, with the abandonment of the cultivation of emmer and spelt in favour of free-threshing wheat, barley, and to a lesser extent rye. The finds of hulled wheats emmer or spelt in the sunken-featured building may possibly be related to the cultivation of these crops, as recorded for the Thames Valley (Pelling and Robinson 2000). More probably, however, such material is residual from the early phases of Iron Age occupation (*cf.* Greig 1991).

The medieval sample from the bakery structure 638 (Area B1) shows some indication of the mixing of assemblages, either prior to charring, or at least to deposition. The appearance of stinking mayweed is to be associated with the cultivation of free-threshing wheat on clay soils. The species first appears in the Romano-British period, becoming more common in the Anglo-Saxon and medieval periods (Greig 1991), and can be associated with changes in tillage from the use of the ard to the use of the mouldboard and ploughs with courtiers that facilitated the cultivation of heavier clay soils (Jones 1981; Stevens with Robinson 2004). The seeds of corn spurrey are indicative of the cultivation of sandier soils. While it is not unfeasible they are associated with the cultivation of free-threshing wheat it is more probable that rye and/or broad bean was grown on such soils.

The high numbers of free-threshing rachis fragments and seeds of stinking mayweed are indicative of the waste from coarse sieving. Usually in the medieval period crops were stored as relatively clean grain after processing, and many samples in the region are more indicative of such storage practices, containing a few grains and large weed seeds as seen from the oven (679) sample. While this type of sample predominates on other sites in Kent (Stevens 2006a), it is not uncommon to find occasional samples in which rachis fragments and small weed seeds are highly numerous.

It is possible that the assemblages derive from the processing of sheaves, perhaps representative of cases in which crops were stored as sheaves in wetter years (Tusser 1580). However, given the context of the finds it is possible that earlier processing waste was specifically kept for use as fuel within the bakery ovens. Such fast burning fuel can be favoured for baking, alternatively it may indicate the shortage of fuel for baking in the region in which chaff became a valuable by-product.

## Wood Charcoal

by Catherine Barnett

Ten samples were chosen from a range of Bronze Age, Iron Age, and medieval features from five areas, as detailed in Table 1.19. An eleventh was chosen to address the specific question of possible pine presence and age of the deposit. The analysis of wood charcoal has the potential to reveal the selection of fuels and utilisation of woodland resources. Contexts with highest potential due to presence of rich charcoal assemblages include pit 1004 (Area B2) which contained a Pot Beaker, for which wood charcoal analysis may provide an insight into its use. The remaining two features for which analysis has the potential to reveal specialised selection of wood for use as fuel are the medieval bakery 638 and medieval oven 679.

As shown in Table 1.20, a wide range of wood types was exploited, with defined differences between features of different periods and types. Mature roundwood and twigwood from both trees and large shrubs are represented in varying proportions, all from native deciduous types. Only a single fragment of wood of an evergreen type, holly (*Ilex aquifolium*) was found and no coniferous types were represented. Oak (*Quercus* sp.), hazel (*Corylus avellana*), and Pomoideae (pomaceous fruits, including here hawthorn (*Crataegus monogyna*), apple (*Malus*) and pear (*Pyrus*) were particularly important in many

assemblages. The large number of growth rings and small stem diameters suggest the fragments are of hawthorn. Charcoal from all features examined was generally in good condition, firm and fresh but with slight mineralisation in some contexts leading to friable fragments.

### Pit 1004 (Pot Beaker)

Pit 1004 (Area B2) was particularly restricted in terms of species represented, with 98% of the sample associated with the Pot Beaker being of mature oak and only a single fragment of hazel wood.

### Late Bronze Age/Early Iron Age

The earliest assemblage comes from pit 132 (Area A). This small, fragmentary sample was the most degraded but nevertheless contained a minimum of six taxa, including the only representation of ash (*Fraxinus excelsior*) in this study. Oak, alder (*Alnus glutinosa*), and Pomoideae were important. Exploitation of local types for small-scale domestic fuel use is indicated. The presence of alder indicates that damp, probably wetland edge, resources were used early on as well as trees and shrubs of open woodland and/or hedgerows.

### Late Iron Age

Samples from two Late Iron Age enclosure ditches of Area A were analysed. That from ditch 141 (Group 169) was again relatively small, yet contained one of

Table 1.19 Charcoal samples analysed by area and phase

Context No.	Sample No.	Area	Period	Feature type	% sample >2 mm identified	Comments
135	407	A	LBA/ EIA	Pit 132	50	Small sample, few >2 mm, several degraded &/ or too small for safe ID
142	409	A	LIA	Enclosure ditch 141, (Group 169)	50	Small, fragmented but good condition
212	5	A	LIA	Ditch 212/004 (Group 220)	50	Small, fragmentary
227	421	A	LIA	Enclosure ditch 264 (Group 136)	15	Large, well preserved, dominated by roundwood, lesser mature & twigwood
678	929	B1	Med	Bakery structure 638	20 (of 4 mm only)	Exceptionally large sample, fresh good condition, scan of remaining sample indicates oak dominates, some twigwood
697	930	B1	Med	Oven 679 (within 638)	50	Moderate size sample, dominated by large rough flaky fragments scan of remaining sample indicates oak dominates
35/005	2	B1	Undated (? prehist.)	Pit with cremation-related deposits 35/004	<10	Large fragmentary sample, scan of remaining sample indicates oak dominates
1006	1402	B2	BA	Pit 1004	50	Small sample but contains several frags >10 mm. scan of remaining sample indicates oak dominates
2549	3408	E2	LIA	Pit 2540	30	Moderate sample, most mature, rare roundwood, no twigs
2596	3412	E2	AS	SFB 2673	35	Moderate sample, v. fresh, numerous frags >10 mm
2632	3430	E2	LIA	Pit 2620	70	Sample moderate, includes burnt bone & roots, fresh some large frags

Table 1.20 Wood charcoal identifications

Identification	(135) <407>	(142) <409>	(212) <005>	(227) <421>	(678) <929>	(697) <930>	(35/005) <2>	(1006) <1402>	(2549) <3408>	(2596) <3412>	(2632) <3430>
<i>Acer campestre</i>	2	4	-	8 (1V)	-	-	-	-	4 (1V)	-	-
<i>A. campestre</i> rwd	-	-	-	-	1	-	-	-	1	-	-
<i>Alnus glutinosa</i>	4	-	4	-	-	-	-	-	-	-	-
cf. <i>A. glutinosa</i> twd	1	-	-	-	-	-	-	-	-	-	-
<i>Betula pendula/pubescens</i>	-	1	-	-	-	-	-	-	-	-	-
cf. <i>Betula</i> sp.	1	-	-	-	-	-	-	-	-	-	-
<i>Corylus avellana</i>	-	9	-	9	1	-	2	1	-	13	3
<i>C. avellana</i> rwd	-	-	-	2 (4 yrs)	-	-	-	-	1	-	-
Twigwood cf. <i>Corylus avellana</i>	-	-	2	-	-	-	-	-	-	-	-
<i>Fagus sylvatica</i>	-	1	1	-	34	1	-	-	5 (3V)	-	-
<i>F. sylvatica</i> rwd	-	-	-	-	8*	-	-	-	-	-	-
<i>Fraxinus excelsior</i>	-	-	-	-	-	-	-	-	2	-	-
twd cf. <i>Fraxinus excelsior</i>	1	-	-	-	-	-	-	-	-	-	-
<i>Ilex aquifolium</i>	-	-	-	-	-	-	-	-	2	-	-
Pomoideae <i>Craetagus</i> grp	4	2	-	8	1	-	-	-	4	46* (6V)	3
Pomoideae twd	-	-	-	1	-	-	-	-	-	-	-
<i>Prunus</i> sp.	-	-	-	-	-	-	-	-	1	-	-
<i>Prunus</i> sp. Rwd	-	-	-	2 (2yr)	-	-	-	-	-	-	-
<i>Prunus</i> cf. <i>avium</i>	-	-	-	-	-	-	-	-	2	-	-
<i>Quercus</i> sp.	6	14	9 (3V)	26*	52	98	96	59	42*(2V)	-	46
<i>Quercus</i> sp. juvenile/ rwd	1	1	1	-	1	1	-	-	-	-	14 (c.10 yr)
cf. <i>Salix/Populus</i> type	-	1	-	-	-	-	-	-	-	-	-
<i>Tilia</i> sp.	-	-	-	-	-	-	-	-	2	-	-
<i>Sambucus nigra</i>	-	1	-	-	-	-	-	-	-	-	-
<i>Ulmus</i> sp.	-	1	-	-	-	-	-	-	-	-	-
<i>Ulmus</i> sp.	-	1	-	-	-	-	-	-	1 (1V)	1	5
Knorwood cf. <i>Ulmus</i> sp.	-	1	-	-	-	-	-	-	-	-	2
<i>Ulmus</i> sp. rwd	-	1	-	28*	-	-	-	-	-	-	1
<i>Ulmus</i> sp. twd	-	-	-	11 (1yr)	-	-	-	-	-	-	-
unidentifiable	-	-	1	-	1	-	2	-	2	-	2
Unidentifiable twd	-	-	-	5 (1yr)	1 (1yr)	-	-	-	-	-	-
Total no.	20	37	18	100	100	100	100	60	70	60	75
Other	1 bark	-	-	2 bark	-	-	-	1 stem	1 parenchyma	-	2 bark
Comments	-	-	-	Elm <5 yr 10 mm, dom 2 yr oak 5 (-<10) yr 10-12 mm	*all <10 mm c.4 yr	-	-	-	*Several with wide rings, quick grown	*Mature, many growth rings 18 yr+,	All frags >4 mm oak

V – vitrified      rwd – roundwood/juvenile      twd – twigwood

the greatest ranges of types with at least nine taxa. Field maple (*Acer campestre*), hazel, and oak were most important but single or small numbers of fragments of downy or silver birch (*Betula pendula/pubescens*), beech (*Fagus sylvatica*), elm (*Ulmus* sp), and Pomoideae were recovered. The only representations in this study of elder (*Sambucus nigra*) and willow/aspen (*Salix/Populus* type) were found in this context. Again exploitation of a wide range of local types from open woodland and/or hedgerows for domestic use is indicated.

The second enclosure ditch sample from Area A (ditch 264, Group 136) contained a much larger assemblage (>650 fragments) including substantial quantities of roundwood and twigwood, often complete with bark. Elm, field maple, oak, hazel, and hawthorn occurred in similar proportions with lesser numbers of one or more members of the cherry group (*Prunus* sp.) which includes blackthorn, wild cherry, and bird cherry. The types represented and the presence of substantial quantities of young stems and twigs is highly suggestive of a natural assemblage, a hedge, perhaps trimmed or cut and burnt in the immediate area and dumped into the ditch. The importance of young roundwood (dominantly 1–5 years old) particularly of elm (dominantly 2 years old), might be interpreted as the hedge having previously been maintained or cropped by coppicing or pollarding.

Three contexts of Late Iron Age date were analysed from two pits and one enclosure ditch. Ditch 212/004 (part of Group 220) was chosen because of the presence of a possible pine (*Pinus sylvestris*) bract in the plant macrofossil assemblage (see Stevens above). No pine was found among the wood types identified, instead a small assemblage of deciduous types including alder, oak, beech, and possible hazel twigwood, most likely used as domestic fuel.

The wood charcoal assemblages from the two Late Iron Age pits were of moderate size and all heavily dominated by oak. Pit 2620 (Area E2) contained only small quantities of elm, hazel, and Pomoideae, with 80% oak, including some large (>10 mm) fragments. In this case 25% of that oak was juvenile roundwood (c. 10 years old when cut), which indicates use of a coppiced source. During extraction, small quantities of burnt animal bone, including a possible bird bone, were found and it is suggested this wood was used in cooking.

The remains from pit 2540 (Area E2) were quite different. It contained a much broader range of wood charcoal types and included both mature trunk or branch wood and younger roundwood. Field maple, hazel, beech, Pomoideae, cherry (including bird cherry), ash, elm, and the only representations of holly and lime (*Tilia* sp.) were all identified in this sample but oak again heavily dominates at 60%.

Wider exploitation or clearance of the local tree/shrub vegetation is indicated, and this sample is useful in highlighting the range of available types growing locally together during the Late Iron Age. Many of the fragments were vitrified indicating the heat generated in burning was high, suggesting the cut wood was allowed to dry before burning. The wood charcoal indicates these Late Iron Age pits, thought to be broadly contemporaneous, were put to different uses or at least the waste material in them came from differing sources.

### Anglo-Saxon

Wood charcoal was analysed from the fill of SFB 2673 (Area E2). This proved to be a large but restricted assemblage heavily dominated by Pomoideae (77%), seemingly mature but narrow wood of the *Crataegus* group, 18 or more years old when cut. The remainder of the assemblage comprises hazel (22%), and a single fragment of elm. The nature of this assemblage is unusual, these are unlikely to be wooden objects since the full diameter of the wood was noted for several fragments and the assemblage is large. Hawthorn is a hard spiny wood and difficult to work (Taylor 1981), its main use is normally as a living hedge (Edlin 1949), it might be that another member of this group such as apple or pear is represented, none of which is likely to be used structurally, for instance in wattling. There is little supporting macrofossil evidence with only a few grains of barley and charred hazelnut shells. The nature of this deposit remains elusive but it might simply be the number of tree types available and/or targeted as fuel had waned during the Saxon period locally, with only open-loving shrubs growing nearby or that the prunings of fruit and nut trees grown at the site were used as fuel in this instance.

### Medieval

The medieval bakery structure 638 (Area B1), contained wood charcoal dominated by beech (42%) and oak (53%) with a little hazel, hawthorn, and field maple used as fuel. Roundwood of all types is present, that of elm having been cut at c. 4 years. Management of stands of elm and other deciduous types to provide fuel of sufficient quantity and quality for domestic/commercial use is indicated locally for the medieval period. The wood charcoal of oven 679 (within bakery structure 638), is almost solely of mature oak however, indicating it was either deliberately targeted as a fuel or that it was originally part of the structure which subsequently burnt down.

### Undated (?Bronze Age)

Pit 35/004 (Area B), with cremation-related deposits, contained 96% oak with a little hazel; similar proportions to the assemblage from Pit 1004 (see

above). Clearly oak formed the main body of the pyre. It is difficult to ignite oak, even cut and dried, and the presence of Poaceae stems and probable *Arrhenatherum* tubers is testament to the use of fine tinder.

### Conclusions

The local availability and exploitation of a wide range of tree and shrub types has been demonstrated from the Beaker to medieval periods, with a minimum of 14 types represented in the wood charcoal assemblages. Collection for domestic fuel demonstrates the use of locally available types in the Late Bronze Age–Late Iron Age from both damp carr/wetland edge (alder) and drier open deciduous woodland and/or hedgerows. The wood charcoal assemblage from part of the Late Iron Age enclosure ditch 136 has been interpreted as clearance of a hedgerow, one which had perhaps been previously coppiced. That assemblage demonstrates that elm, field maple, oak, hazel, and hawthorn and cherry grew in the immediate environs of the site during that period. Further vegetation clearance shown by the assemblage from the Late Iron Age pit 2540 (Area E2) adds lime, elder, beech, and ash to the types thought to have grown directly on the site, again probably within hedgerows or as small stands. All will grow on a variety of soil types but well-drained conditions are indicated.

The reason for the presence of a wood charcoal assemblage heavily dominated by mature Pomoideae wood with only a little hazel in the Anglo-Saxon SFB (Area E2) is more elusive. As described these are unlikely to be used as objects or structures. It may be they represent the pruning of trees managed for their fruit and nuts or alternatively that the number of tree types available and/or targeted as fuel locally had reduced during the Anglo-Saxon period. More targeted selection of wood for specific uses has also been demonstrated with the near exclusive use of oak for the pyres represented in the undated, though possibly Bronze Age, pit with cremation-related deposits (35/004). Mature oak was also used solely in the medieval oven 679 (as fuel or as part of the oven structure), while beech and oak were favoured as fuel in the bakery structure. The latter, and a number of other contexts, demonstrated the use of wood from a managed, coppiced source, with narrow rods cut at 1–5 years important. Some may have been transported to the site but local growth and management of stands is indicated in late prehistory to historic times.

## Discussion

### *Mesolithic to Early Bronze Age*

Mesolithic and Neolithic activity is represented by small scatters of worked flint recovered from the topsoil/subsoil horizons or from later archaeological features. In many cases the material is undiagnostic debitage. The low density and number of unstratified single finds or small scatters are redolent of general ‘background’ activity in the landscape. This is not at all surprising for the Bypass route due to the well-drained, sandy soils in this location.

Perhaps it is not surprising to find diagnostic Late Mesolithic material mainly from the Area A excavation in the north of the route. The site is on higher ground alongside the West Malling stream close to its junction with the River Medway. From this location a hunter-gatherer community could readily exploit a wide variety of riverine, marine, and woodland resources. River valleys would also have been important corridors of movement and communication for hunter-gatherers and this is borne out by lithic distributions in Kent (Scott 2004, 9).

The Neolithic/Early Bronze Age material comprised the greater part of the worked flint assemblage and was found in small quantities at a number of locations along the route (Areas A, E, I, J) although the greatest quantity was recovered from Area A, including scrapers and a transverse arrowhead. Again, the assemblage represents ephemeral evidence of Neolithic activity in this part of the Medway valley. It is surprising maybe, given the importance of the Medway valley in the Neolithic as indicated by a number of megalithic tombs (Ashbee 2004, 10), that so little activity of this date has been recorded. However, the potential ephemeral nature and relatively short duration of settlement sites of this period, if on the sandier, well-drained soils, would have no doubt been heavily impacted upon by millennia of ploughing.

Aside from a few residual, worked flint pieces of Early and Middle–Late Bronze Age date in Area A, Bronze Age activity was not well represented from the Bypass route which continues a pattern already discernible. An important find of an almost complete Pot Beaker within a small pit in Area B2 is therefore of some importance and can be added to a growing body of British style Pot Beakers, although it is without close parallel either in this country or from the Continent (see Barclay above).

There was an increasing importance of Kent and the Thames as a gateway of socio-economic interaction with the Continent during the Bronze Age, specifically the trade in metalwork and increasingly during the 1st millennium BC. This is reflected in the number and distribution of metalwork

finds as well as possibly high status settlement sites involved in this inter-continental exchange network, particularly along the north coast of Kent (Wantsum Channel area) and the Medway and East Stour valleys (Yates 2004).

### *Late Bronze Age/Early Iron Age*

Overall, there is a low density of Late Bronze Age/Early Iron Age activity in many areas along the Bypass route (A, B, C, E, I, and J) but particularly in Areas A and E and in the mid-south of Area B (mainly between excavation Areas B1 and B2). This is in contrast to the total lack of previously known sites of this date in the local area. The activity is predominantly represented by a small pottery assemblage of usually small and abraded residual sherds in the topsoil/subsoil horizons but also within Late Iron Age and medieval features.

Two pieces of metalwork, a socketed spearhead of the early 1st millennium BC (Area J subsoil) (Fig. 1.16,1), and a copper alloy ingot, probably also of this date, (Area E2 subsoil) reflect the general pattern of single finds of this time, a number of which have been recorded along the Medway valley (Yates 2004, 14). These may have been casual losses or possibly 'votive' offerings, singular or originally parts of hoards (Bradley 1990) but this is impossible to tell. Overall, the very low density and character of the Late Bronze Age/Early Iron Age assemblage from the route precludes further interpretation.

The lack of Early and Middle Iron Age material or sites along the route is not surprising, given the general pattern for Kent during these periods although this pattern may be more apparent than real if ceramic chronologies for Kent are at fault (Champion 2007). There is, however, a concentration of settlements in the east of the county, particularly along the east coast and the Isle of Thanet (Parfitt 2004, 16). There is a dearth of Middle Iron Age sites in the county generally.

### *Late Iron Age/Early Romano-British Period*

The first, and most significant settlement evidence recorded along the Bypass route, were the two minor Middle–Late Iron Age/early Roman settlements in Areas A and E2. A small number of archaeological features were also recorded at other locations (B2 and J). Both settlements, probably farmsteads, were ideally situated, being on slightly higher ground on well-drained sandy soils adjacent to the West Malling stream, only c. 2.5 km west of the River Medway.

The pottery assemblage from both settlements indicates a 2nd century BC date for their inception

with possibly the Area E2 settlement developing from open to enclosed between the 2nd–1st centuries BC. The predominantly Belgic forms of the pottery assemblage, as well as the very small number of imports, point to the increasing importance of Continental trade at this time. A widespread phenomenon seen across Kent, and represented not only by the introduction of ceramic imports and their local copying, but also urned cremation burial practices and the production of local coinage (Cunliffe 1982, 44).

Although no evidence of pottery production was recorded, the location of the farmsteads close to water, clay and timber resources and the assemblage being comprised of predominantly locally made wares, suggest the pottery was probably domestically produced as required.

The whiteware vessels and southern Gaulish samian platter recovered respectively from Areas A and E2 point to a minor degree of regional or continental imports but also the demise of these farmsteads in the third quarter of the 1st century AD or slightly later. This is supported by the radiocarbon dates. Though poor overall they do indicate that the farmsteads were contemporaneous and also had similar lifespans of c. 200 years or more, suggesting that they were in some way related – but with the slight evidence further speculation is not possible.

This ceramic and radiocarbon dating evidence points to an abandonment of the Area A and E2 settlements, probably as part of a landscape reorganisation in this part of the Medway valley in the late 1st century BC/early 1st century AD. Such reorganisation is seen in the south-eastern counties generally (Timby *et al.* 2007) with different settlement hierarchies necessitating the abandonment of some settlements and the construction of new ones, to better exploit the new socio-economic milieu brought about by the Roman invasion of Britain.

Palaeoenvironmental and faunal evidence point to mixed farming practices utilised by both farmsteads with the cultivation of spelt and emmer wheat and, to a lesser degree, barley. They suggest the exploitation of more clayey soils as well as the more prevalent sandy soils in the local area. Evidence for seasonal flooding of fields could indicate the exploitation of the nearby 'valley' of the West Malling stream that runs between the two farmsteads. Storage of grain in pits certainly occurred in Area E2, but may also have occurred in above-ground facilities such as the four-post structure in Area A.

Indirect evidence suggests locally cleared areas for fields, with open woodland of mixed young and mature tree charcoal assemblages present, resulting in a predominance of oak as a fuel. Other remains show the exploitation of a wide range of wood species for fuel including the cutting and trimming of hedges on

the sites, composed of lime, elder, birch, beech, and ash. The presence of hazelnuts with the correlated lack of hazel charcoal might suggest stands of hazel available locally. The use of wild faunal and floral resources is relatively restricted in the Iron Age possibly for socially or culturally significant reasons (Hill 1995, 104). A partially worked red deer antler from Area E2 might indicate sporadic hunting or alternatively the working of a shed antler.

Although fish remains were not recovered from either farmstead, the soil conditions would preclude their survival. Bearing in mind the location of these settlements within the Medway valley, close to watercourses and access to the open sea, it is difficult to believe that marine and riverine resources such as fish, shellfish, and wildfowl were not exploited.

The mixed dietary and animal husbandry patterns of the farmsteads reflect patterns seen generally for the Late Iron Age. Sheep/goat were predominant, with cattle, pig, and horse exploited to a lesser degree. Culling patterns suggest a mixed approach to sheep/goat indicating meat was important, but less so, than wool or milk. The cattle remains suggest their importance for secondary products. As is usual, pigs were culled before 24 months.

The spatial patterning of faunal remains within the farmsteads also followed widespread Iron Age patterns with the recovery of large fauna from the enclosure ditches and smaller fauna from the pits (Maltby 1985a; 1985b). A number of discrete pit and segments of the enclosure ditches contained dumps of charcoal, pottery, and burnt bone but no 'special' or 'structured' deposits or 'associated bone groups' (Hill 1995, 95) of bone or other finds groups were discernible from either site.

Few internal features were identified within the enclosed settlements apart from some pits and post-holes; however few structures could be identified from the pattern of the latter. The only possible four-post structure was recorded, in Area A (Fig. 1.2), and may represent a granary but may have also had a number of other storage functions. The material residue of the inhabitants is represented by the dumps of pottery, animal bone, and fired clay which suggests a range of on-site domestic and farming activities as one would expect. Curiously, although crop processing occurred on or near the sites no greensand quernstones were recorded even though the rock source would have been available locally.

By far the greatest indication of on-site activity is the textile production represented by the number of fired clay loomweights from Area E2 and the spindlewhorl from Area A. This supports the evidence from the faunal assemblage of the importance of sheep/goat and secondary products to the Late Iron Age farmsteads. It is surprising that worked bone needles and awls were absent though a spindlewhorl

from Area A was made from a cattle skull fragment and a red deer antler from Area E2 had been partially worked. The iron tools are general workaday knife blades, a ring that might indicate horse handling and a hooked cutting tool (Fig. 1.16, 4), which could have been used to gather crops of alternatively for cutting reeds and fodder or for cutting/working small coppiced material. There is no indication that smelting was carried out on the sites though the recovery of 408 g of slag from a single context of the Phase 2 ditch section at Area A suggests that smithing work was carried out somewhere close by.

### *Romano-British*

There was very little Romano-British material recovered from the Bypass route overall. Aside from the early Roman (post-Conquest) pottery from Areas A and E2, very little was recorded. Residual Romano-British pottery was recorded at Areas B1, C, E, and E1 and a possibly Roman tile fragment was recorded from Area A. Roman coins have been recorded in the West Malling area and at least two Romano-British cremation burials have been recorded to the south-east of West Malling, suggesting possible low-level settlement within the local area.

Although the Medway valley was a major topographical access point from the north Kent coast and the Thames Estuary through the North Downs and the Chart Hills to the Weald region in the south it does not seem to have been on a major Roman route. The Bypass route lies just to the south of Rochester (*Durobrivae*), itself on the River Medway crossing of the major Roman arterial road of Watling Street as it made its way to London (*Londinium*).

A Roman road heads south from Rochester but utilising the high ground to the east of the Medway valley. Although a small number of villas have been recorded in the Medway valley there seems to be little exploitation of this part of the River Medway valley in the Romano-British period. Perhaps this part of the valley was particularly under-exploited for reasons not now readily apparent.

### *Anglo-Saxon*

Very little of Anglo-Saxon date was recorded and this reflects the general dearth of finds of this date from the local area. There were only two recorded features, a post-hole and a sunken-featured building, both in Area E2. However, residual Saxon pottery was recorded from Areas B, C, and E during the evaluation phase of fieldwork. The small pottery assemblage, including material from the two features, was Early or Middle Saxon in date (5th–7th century).

The presence of a single sunken-featured building is anomalous, and it is more likely that additional structures are probably present in the vicinity but lie outside the Area E2 excavation.

The environmental evidence from the SFB might suggest the growing of emmer and spelt but these may well be residual from the Late Iron Age settlement activity which surrounds the structure. Charcoal from within the structure is dominated by Pomoideae from mature stands of fruit and hazelnut trees possibly indicating a predominantly open landscape with few choices with regard to fuel available. The small faunal assemblage reflects farming of the usual species for this period, including sheep/goat, cattle, and pig and the use of dogs.

### Medieval

It is surprising that so little medieval activity was recorded considering the close proximity of medieval settlements at West and East Malling and Leybourne, well established by the 11th century, as well as the early market at Malling (Lawson 2004, 50).

Residual medieval pottery, along with small quantities of medieval roof tile, was recorded in Areas A, C, E, G, and H. However, the only medieval features were recorded in Areas B1, E1, and J which generally represent 12th–13th century field boundaries. The slight palaeoenvironmental evidence suggests that free-threshing wheat could have been cultivated on the heavier clayey soils with rye and broad bean being cultivated on the predominantly sandy soils of the route.

The medieval pottery assemblage suggests the use of predominantly locally produced wares though imports from Canterbury and London in small quantities were noted, no doubt derived from trading and movement of goods along the still very important Watling Street.

The only other feature of note is represented by a possible bakery structure of 13th century date from Area B1 which seems to have been respected by the poorly dated, but probable 12th/13th century rectilinear field boundaries at this location. These may have been part of the manorial estate of the de Leybourne family who owned and developed Leybourne Castle from the early 13th century and which lies c. 350 m to the east. The bakery structure is almost identical to others described later in this volume and discussed in Chapter 5. Crop processing waste seems to have been used for fuel within the structure though oak and beech wood as well as smaller quantities of hazel and hawthorn were also used. Roundwood pieces of c. 4 years age suggest the presence of managed stands of deciduous species to provide fuel.

### Post-Medieval

The only feature of this period worthy of note was a watermill leat in Area C. Although the feature is poorly dated it would have carried water to the mill race and watermill at Leybourne which existed at its present location from at least the mid-16th century onwards. The waters of the West Malling stream were further exploited, just a little upstream. Here a number of fish ponds which were owned by St Mary's Abbey, West Malling are clearly visible on 18th century maps.

## Appendix 1.1. Pottery Fabric Descriptions

All fabrics are Late Iron Age unless otherwise stated.

### Flint-tempered fabrics

- F1: Soft; moderate (15%) angular, calcined flint, <5 mm, poorly sorted, silty clay matrix.
- F2: Soft, sandy; sparse (5–7%) angular, calcined flint, <5 mm, poorly sorted, v. fine sandy clay matrix, occasional coarse-sized quartz grains.
- F3: Soft but harsh; v. common (30%) angular flint, <2 mm, poorly sorted, silty clay matrix (no quartz grains visible at x10 power). Late Bronze Age.
- F4: Soft, sandy; common (20%) angular flint, <5 mm, poorly sorted. Late Bronze Age.
- F5: Soft, silty; moderate (10%) angular, calcined flint, <3 mm, poorly sorted, v. fine sandy clay matrix.

### Flint-/Grog-tempered fabric

- FG1: Soft; common (20–25%) angular, calcined flint, <3 mm, poorly sorted; moderate (10%) angular grog, <2 mm, moderately sorted. Later prehistoric.

### Grog-tempered fabrics

- G1: Soft, soapy; common (20–25%) sub-angular to angular multi-coloured grog, <2 mm, moderately sorted.
- G2: Soft, soapy; common (25%) angular grog, <2 mm, moderately sorted; sparse–moderate (7–10%) sub-rounded to rounded quartz & glauconite, <1 mm.
- G3: Soft, soapy; moderate–common (15–20%) angular grog, <2 mm, moderately sorted.
- G4: Soft, soapy fineware; common (20–25%) angular grog, <1 mm, poorly sorted. Silty clay matrix, individual grains not visible at x10 power.
- G5: Soft, soapy; abundant (50%) angular grog, <2 mm, moderately sorted.
- G6: Soft, soapy; common (20%) angular grog, <3 mm, moderately sorted; sparse (3–5%) angular flint, <1 mm, poorly sorted; rare rounded ferrous inclusions, <1 mm, fine, sandy clay matrix. Some grog contains coarse-sized rounded quartz.
- G7: Soft, soapy; moderate–common (15–20%) sub-angular–angular grog, <2 mm, moderately sorted, v. fine sandy clay matrix.
- G8: Soft, soapy; abundant (40%) angular grog, <2 mm, moderately sorted.



**Sandy fabrics**

- Q1: Soft, silty; common (20%) angular quartz, <0.1 mm, poorly sorted; moderate (15%) sub-rounded-angular iron, 0.5–5 mm.
- Q2: Soft, sandy; abundant sub-angular fine quartz, well sorted; v. common (30%) fine glauconitic, well sorted.
- Q3: Soft, granular; abundant (50%) rounded, medium-grained glauconite; sparse (5–7%) angular, coarse-sized quartz, moderately sorted; rare rounded, red ferrous inclusions, <1 mm.
- Q4: Soft, soapy; common (20%) angular greensand and rounded glauconite grains, <3 mm, poorly sorted; sparse (5%) sub-angular, coarse-sized quartz, moderately sorted. Inclusions difficult to ascertain, does seem to be a grog component, <10% sub-rounded grog, <2 mm.
- Q5: Soft, sandy; sparse (7%) sub-rounded-rounded coarse-sized quartz grains, moderately sorted, fine, sandy clay matrix. No glauconite noted.
- Q6: Soft, granular-textured; abundant (50%) fine-medium-grained sub-rounded quartz; sparse coarse-sized grains; rare (2%) red sub-angular ferrous inclusions. Not glauconitic.
- Q7: Soft, sandy; abundant (50%) sub-angular-angular quartz, poorly sorted, dominated by v. fine/fine-sized grains with frequent medium-sized and occasional coarse grains.
- Q8: Soft, sandy; abundant (40%) rounded fine-medium-grained quartz and glauconite, well sorted; sparse (7%) sub-rounded coarse-sized quartz grains, well sorted.
- Q9: Soft, soapy; sparse (5% each) sub-angular coarser-sized quartz and sub-rounded red ferrous inclusions, fine, glauconitic sandy clay matrix.
- Q10: Soft, sandy; abundant (40%) angular fine-coarse-sized quartz, poorly sorted; rounded fine-grained glauconite, well sorted; sparse (3%) sub-angular red iron oxides, <1 mm; occasional burnt out organic inclusions.

**Sandy/Flint-tempered fabrics**

- QF1: Soft, sandy; moderate (10%) calcined, angular flint, <9 mm, poorly sorted, matrix of abundant fine-medium-sized rounded-sub-angular quartz and glauconite, well sorted; sparse (5–7%) coarse-sized sub-angular-angular quartz grains.
- QF2: Soft, granular; abundant (50%) rounded fine-medium-grained glauconite, well sorted;

sparse (5%) coarse-v. coarse-sized rounded quartz grains; sparse-moderate (7–10%) angular flint, <5 mm, poorly sorted; rare (1%) rounded red ferrous inclusions, <1 mm.

- QF3: Soft, sandy; abundant (50%) rounded, medium-grained glauconite & quartz, well sorted; abundant (40%) angular flint, well sorted, <1 mm.
- QF4: Soft, sandy; v. common sub-rounded-rounded quartz & glauconite, fine-coarse-grained, poorly sorted; sparse (3%) angular flint, <5 mm, poorly sorted.

**Sandy/Grog-tempered fabrics**

- QG1: Soft, sandy; v. common (30%) sub-rounded fine-coarse-sized quartz, moderately sorted; common (20%) sub-rounded-sub-angular grog, <1 mm, poorly sorted.
- QG2: Soft, sandy; v. common (30%) rounded, fine-medium-grained glauconite and quartz, well sorted; common-v. common (25–30%) sub-angular-angular grog, <1 mm, poorly sorted; rare (1%) rounded red ferrous inclusions, <1.5 mm.
- QG3: Soft, soapy; moderate (10–15%) sub-angular grog, <3 mm, moderately sorted; moderate (15%) fine-medium-grained rounded quartz and glauconite, well sorted; rare-sparse (2–3%) sub-rounded-rounded red ferrous inclusions, <2 mm, moderately sorted.
- QG4: Soft, soapy; v. common (30%) sub-rounded-rounded quartz, mostly fine-medium-grained, but coarse-sized grains also present, poorly sorted; common (25%) angular grog, <1 mm, well-rounded.

**Shell-tempered fabrics**

- S1: Soft, soapy; abundant (40%) angular voids, <8 mm, poorly sorted, from leached shell inclusions.
- S2: Soft, soapy; common (20–25%) angular shell, <4 mm, poorly sorted.

**Organic-/Flint-tempered fabric**

- VF1: Soft, silty; moderate-common (15–20%) linear voids from organic inclusions, <10 mm, poorly sorted; sparse (5–7%) calcined, angular flint, <3 mm, poorly sorted, fine sandy clay matrix. Late Bronze Age.



## 2. Thanet's Longest Excavation: Archaeological Investigations Along the Route of the Weatherlees–Margate–Broadstairs Wastewater Pipeline

by Kirsten Egging Dinwiddy and Jörn Schuster

The excavations reported here were undertaken in advance of the Margate and Broadstairs Urban Wastewater Treatment Scheme (UWTS) on the Isle of Thanet, Kent. The scheme comprised the refurbishment, improvement and extension of the existing wastewater treatment facilities, including a two-branch underground pipeline originating at the Margate Headworks (Southern Water Services Ltd 2005). The pipeline route extended to the south into the Weatherlees Hill Wastewater Treatment Works, Ebbsfleet (WTW; NGR 633250 162920) and to the south-east to the Broadstairs Headworks; overall, the two branches extend over a distance of c. 13 km (Fig. 2.1). Three phases of major archaeological investigations were undertaken, two as part of the UWTS, and one as part of the Sandwich Bay Wastewater Treatment Scheme (Hearne *et al.* 1995), the majority in advance of the construction of the pipeline in 2004–2006, and those prior to the construction of the Wastewater Treatment Works with the help of the Trust for Thanet Archaeology in 1992 (only those results with relevance to the Late Bronze Age Ebbsfleet Hoards are referred to in this report).

The programme of archaeological works consisted of an integrated strategy of desk-based assessment utilising aerial photography analysis, and field evaluation incorporating geophysical survey, machine cut trenches, boreholes, and hand dug test pits. Following evaluation, excavations were undertaken where appropriate, and a watching brief was maintained during the pipe installation in particular locations along the route.

During the course of the pipeline investigations, 13 'sites' or 'areas' of archaeological significance were identified and excavated (Table 2.1), of which nine sites were selected for inclusion in this report.

### Location and Geology

The pipeline comprises two branches crossing the district of Thanet from the Margate Headworks on Foreness Point (NGR 638400 171600). The twin pipeline extends towards the Weatherlees Hill WTW (NGR 633250 162920) to the south-west, and a single pipeline continues towards the Broadstairs Headworks (NGR 640109 1698170) to the south-east (Figs 2.1–2). The easement for the pipeline

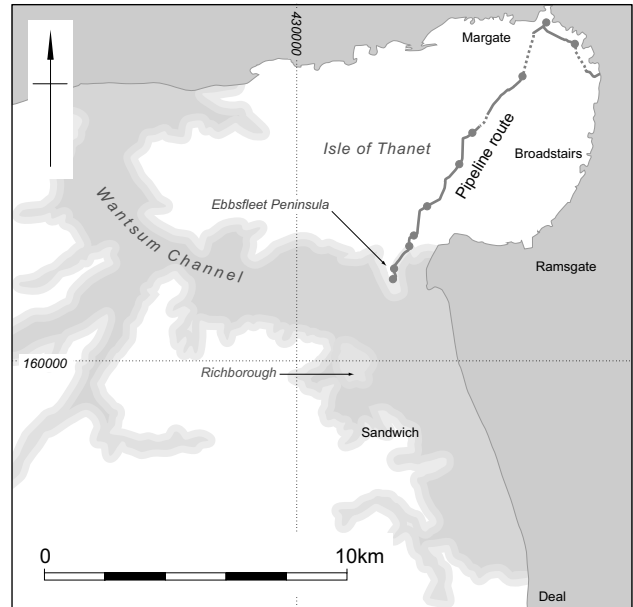


Figure 2.1. Location of the Weatherlees–Margate–Broadstairs Wastewater Pipeline

construction was approximately 13 km long and usually 20 m wide. Thus the project was effectively a narrow slice through Thanet, touching numerous sites of varying dates and in a range of environments.

The District of Thanet was formerly an island, separated from the North Kentish Plain by the Wantsum Channel. The island is now a promontory as c. 2000 years ago the Wantsum Channel began to silt-up by natural processes. This was progressively compounded by human agency, notably by the Monks of St Augustine's in Canterbury, when they began 'inning' the channel in the medieval period. In 1485, a bridge was allowed to be built by an Act of Parliament to replace the ferry at Sarre which could no longer operate because of the silting of the channel. By the time the final draining of the area was brought about in the 17th century, it had been impossible for any type of vessel to take the short-cut up the Wantsum Channel into the Thames Estuary (Perkins 2007).

The topography of Thanet generally slopes down from the cliffs along the (southern) North Sea coastline at Margate and Broadstairs, towards the low-lying marshlands around Pegwell Bay near Ebbsfleet, and to the Channel/Dover Strait coast.

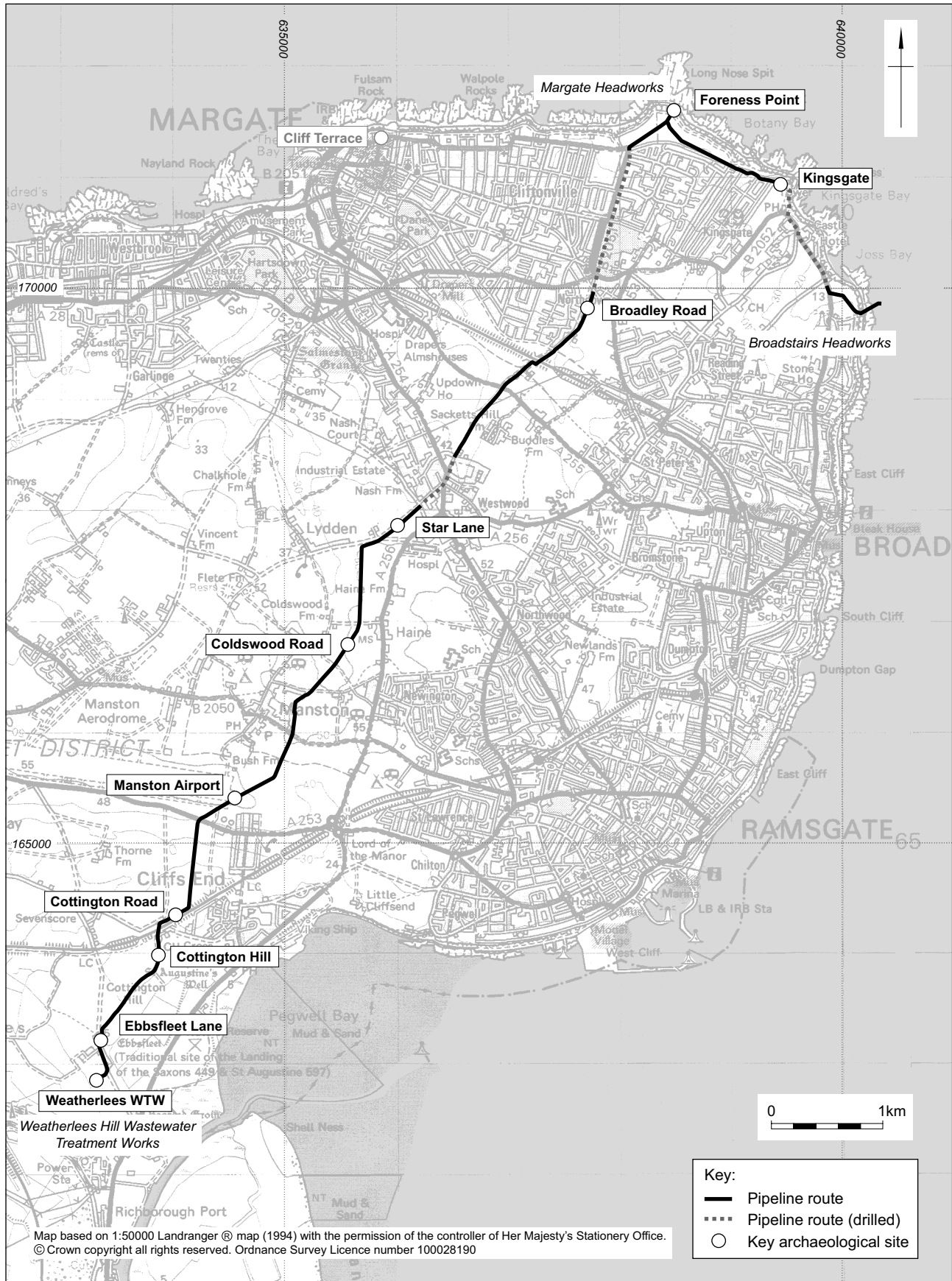


Figure 2.2 Location of key excavation areas

Three low hills rise above the flat alluvial plain at Ebbsfleet, namely Cottington, Ebbsfleet, and Weatherlees (Figs 2.2, 2.8). The former two would have formed a sea-girt peninsula jutting south-east into the Wantsum Channel, with Weatherlees Hill an offshore island. This peninsula would have afforded two natural havens, that to the east giving protection from the prevailing south-westerlies, whilst that to the west was sheltered from the easterly gales of mid-winter. The advantages provided by this location support the case for Ebbsfleet's role as an entrepôt to east Kent in antiquity and into the medieval period (Perkins 2007, 259).

The underlying solid geology of Thanet is Cretaceous Upper Chalk, exposed in the high cliffs along the North Sea coast and stretching from Margate, down along the east coast past Broadstairs and around to Ramsgate. The chalk syncline at Ebbsfleet is evinced by the cessation of the chalk cliffs at the aptly named village of Cliffs End. The resulting flat plain, containing the later Thanet Beds (Tertiary – Palaeocene), extends inland from Pegwell Bay towards the west, past Minster and Monkton. Localised patches of Thanet Beds and later drift

deposits of Head Brickearths and alluvium silts are present along the route of the pipeline, the latter occurring within the limits of the Wantsum Channel, either side of the present River Stour. Where relevant, site specific locations and descriptions are discussed in further detail in the following chapters.

## Archaeological and Historical Background

An extensive synthesis of the archaeological and historical background of the site and the surrounding landscape has been produced in previous desk-based assessments, evaluations, and assessment reports for this project, and for other projects in the immediate vicinity (Wessex Archaeology 1992; 1998; 2004a; 2004c; 2005a–c). The more than 500 finds and sites recorded within an area of approximately 34 km<sup>2</sup> examined for these studies range from the Palaeolithic to modern times. It is beyond the scope of this publication to reproduce such detailed information; therefore, the following is a summary of the archaeological and historical background, with relevance to the topics of discussion.

**Table 2.1 Archaeological sites along the pipeline route, arranged from north to south**

Ref. in this report	Fieldwork Area Codes	NGR	Site/features	Date	Civil parish
Foreness Point	1-D	638400 171400	World War II defences	Modern	Margate
Kingsgate	D	639277 171006	Flint	Mixed, (discussed in Bronze Age chapter)	Broadstairs and St Peter's
Broadley Road	3	637697 169796	Mortuary enclosure (and ring-ditch)	Neolithic (& Bronze Age)	Margate (Northdown)
Star Lane	8	636007 167857 636073 167915	Bakery - Sunken Featured Building Vessel 'burial' – mortuary-related?	Early medieval (12th–13th centuries) Late Bronze Age	Manston Manston
Coldswood Road	9	635585 166828	Casket cremation cemetery	Late Iron Age–early Romano-British	Manston
Cottington Road	14	634011 164328 633997 164324 634072 164367	Dual-rite cemetery Saxon sunken featured building Pits	Romano-British Anglo-Saxon Neolithic	Minster Minster Minster
Cottington Hill	15	633845 164106 633851 163986	Inhumation graves Ditch terminus burial	Romano-British Anglo-Saxon	Minster Minster
Ebbsfleet Lane	16	633372 163331	Ditches & burials	Late Iron Age–early Romano-British	Minster
Weatherlees WTW (Ebbsfleet Lane)	Compound 16	633325 163082 633334 163088 633360 162976 633360 162976	Ditches and burials 'Midden deposit' Ebbsfleet hoards	Late Iron Age–early Romano-British Late Bronze Age Late Bronze Age	Minster (Marshes) Minster (Marshes) Minster (Marshes)

### *Palaeolithic (500,000–10,000 BC) and Mesolithic (8500–4000 BC)*

Surprisingly little Palaeolithic material has been found in Thanet, and none comes from the study area itself. Finds include a flint handaxe from Broadstairs and an assemblage of Palaeolithic artefacts from Bishopstone Glen to the west of Reculver.

Mesolithic findspots are known at Cliffs End and Ramsgate where two Thames picks probably represent stray losses, while a worked flint scatter may indicate possibly *in situ* activity at Ramsgate Road, Broadstairs (Moody 2008, fig. 23). Furthermore, it is possible that the deep soil profiles at Foreness Point, Margate, may contain palaeoenvironmentally and archaeologically significant horizons.

### *Neolithic (4000–2400 BC)*

Sites of this date remain fairly uncommon on Thanet (Perkins 2004, 80; Moody 2008, fig. 24), but 15 Neolithic sites were identified in the vicinity of the pipeline route. Early Neolithic sites include the first causewayed enclosure to be identified in Kent at Chalk Hill, Ramsgate (Dyson *et al.* 2000), and scant evidence for settlement in the south-west of Ramsgate is known from Cliffs End and Manston Road, some of which may possibly be related to further causewayed enclosures (Healy 2007). Sites of Late Neolithic/Early Bronze Age date are known from Manston where a ring-ditch and crouched burial with a Beaker, jet button, and flint knife were found during the excavation of a cropmark associated with a ring-ditch, and a henge monument and later burial are recorded at Lord of the Manor, Ramsgate. At Oaklands nursery, Ramsgate, some ditches and pits contained Late Neolithic material. Of general Neolithic date are inhumation burials, flint, and pottery recovered at Nethercourt, Ramsgate, and Chilton Farm, Chalk Hill, as well as features indicative of occupation at Northdown School, Margate. Other finds from within the study area include a polished stone axe from Weatherlees Hill, Minster, pottery from St Peter's, Broadstairs, and worked flint from Margate and Cliffs End.

### *Bronze Age (2400–700 BC)*

Thanet is exceptionally rich in sites from this period, and more than 50 have been identified within the study area. Furthermore, it is likely that many unidentified cropmarks date to this period (Moody

2008, figs 34, 45). The sites are mainly associated with mortuary activity, while only eight provide evidence for settlement. The distribution and types of site reflects the geographical importance of Thanet as a gateway to the Thames Estuary and inland waterways of southern England. Groups of Early/Middle Bronze Age ring ditches/round barrows had been excavated at Margate and Manston; and individual monuments at St Peter's, Broadstairs and the Ebbsfleet Peninsula; additionally, there are at least 20 unexcavated examples within the study area, identified from aerial photographs. Individual burials apparently not associated with ring-ditches (flat graves) are recorded at Cliffs End, Nethercourt, Ramsgate, and Ebbsfleet. Hengiform monuments, which are unusual in the south-east, have been found at Northdown, Margate, and Lord of the Manor, Ramsgate. Late Bronze Age settlements (*cf.* Yates 2004, 15) are known from Foreness Point; St Peter's, Broadstairs; Manston Road, Ramsgate; Cliffs End; Ebbsfleet/Weatherlees Hill and Northdown, Margate. Bronze Age metalwork hoards are a common feature of the period in Thanet (Perkins 1991a, 259–61; Yates 2004, 14). With regards to the pipeline route, those of the Ebbsfleet Peninsula are of especial interest (Fig. 2.8B).

### *Iron Age (700 BC–AD 43)*

There is likely to have been continuity of sites between the Iron Age and the pre- and post-dating periods, and it is also likely that many of the undated enclosures identified from aerial photographs date to this period. Evidence for settlement (some enclosed, some structures identified, middens, and pits) in the vicinity of the pipeline route has been forthcoming Foreness Point; Northdown and Drapers Mill Schools and Millmead Road, Margate; St Peter's, Broadstairs; Manston Airport; Canterbury Road; Nethercourt; Cliffs End; Weatherlees and Cottington Hills (Fig. 2.12; *cf.* Parfitt 2004, 17–8; Moody 2008, fig. 66). Evidence for burial is scant with only one site so far identified in the study area, at Cliffs End, Ramsgate (Fig. 2.12, 28).

### *Undated*

Numerous sites and features were identified from the aerial photograph analysis and geophysical investigations. These included ring-ditches and enclosures, barrows, graves, pits and trackways. Many of these are likely to date to the later prehistoric period.

### *Romano-British period (AD 43–410)*

The southern end of the pipeline route is only 2 km north of the important Roman port and supply base at Richborough. Located opposite the Isle of Thanet across the Wantsum Channel, Richborough afforded a strategic vantage point as a gateway to the Thames along long established trade routes (Millett 2007, 141–6). However, whether it was here that the Claudian invasion fleet of AD 43 landed remains the focus of much scholarly debate (eg, Salway 1981, 75; Frere and Fulford 2001; Sauer 2002; Bird 2002; Hind 2007), but it might well be from Richborough that the last Roman military presence was withdrawn to Gaul in AD 406 (Millett 2007, 143).

A gazetteer of the Roman archaeology of Thanet was published by D. Perkins in 2001. Additional sites of relevance to the pipeline route have been included from the SMR data (Fig. 2.12). At least 16 sites in the vicinity of the pipeline route may provide evidence for settlement during the Romano-British period, but there is at present no evidence for a major settlement in this part of Thanet. Evidence for settlements and farmsteads including structural remains are known at Foreness Point; Manston; Nethercourt, Ramsgate; Sacketts Hill and St Peter's, Broadstairs; Cottington Hill; Northdown School, Margate; Ramsgate and Lydden, Manston. Unidentified structural remains, some possibly of substantial masonry buildings or villas, were recorded at Drapers Hill School, Margate; Weatherlees Hill, Ebbsfleet; Lydden; Ramsgate and Margate. A number of enclosures, probably related to farmsteads, were found at Manston; Margate; Cliffs End; Cottington Hill and Ramsgate. Two deep pits, known as Dene holes, have been found on the foreshore at Broadstairs; and smaller pits and midden deposits at Cottington Hill, and possible quarries at Spratling Court Farm and Lord of the Manor, Ramsgate. Cremation burials are known from Nethercourt, Cliffs End and Ramsgate, Palm Bay in Margate, and inhumation burials from Manston; Northdown, Margate; Ramsgate; Cliffs End and Lord of the Manor, Ramsgate.

### *Anglo-Saxon (5th–11th Centuries)*

East Kent, and Thanet in particular, is remarkably rich in Early Anglo-Saxon cemeteries, both in terms of the number of examples and the assemblages of grave goods (Richardson 2005, vol. 2, maps 8–9; Riddler 2004a, 27; Welch 2007, 196, fig 6.5). Evidence for contemporary settlement has proved more elusive, although aerial photographs indicate some further structural evidence (Welch 2007, 197, fig. 6.6; Moody 2008, fig. 95). Apart from the recent

discovery of shell-filled pits at Cliffs End (Leivers *et al.* in prep.), Middle Saxon evidence is lacking from the vicinity of the route. There are no Late Saxon sites or finds recorded in the study area, all 17 sites dating to the Early Anglo-Saxon period (Wessex Archaeology 2004c).

### *Medieval (late 11th–15th Centuries)*

No major settlements have been identified from this period, probably largely due to the fact that the main foci are those which persist today. The evidence suggests villages and farmsteads, with a number of manor houses. Widespread, non-intensive, and probably shifting occupation on the Ebbsfleet peninsula has been suggested. Within the study area (Wessex Archaeology 2004c) evidence for settlements has been forthcoming from Cottington Hill; Manston (enclosures with causeways; sunken-featured buildings); Kingsgate Avenue, Margate (possible manor); Northdown School, Margate; St Augustines Well (spring) at Cliffs End. Manor house sites are known from Manston Road, Ramsgate (moated orchard); Nash Court, between Margate and Manston; two sites near St Peter's, Broadstairs; Ebbsfleet farm, Ramsgate; and Weatherlees Hill. Other medieval masonry structures were excavated at Ozengall Grange between Manston and Ramsgate; Cliffs End and Chilton Farm, Ramsgate. Other remains of medieval date include a burial found at Ramsgate; the 'Boarded Groin', an earthwork constructed as a sea-defence between Cliffs End and the Ebbsfleet peninsula c. 1365; the medieval trackway 'Dunstrete' which ran between Sarre and St Lawrence, Ramsgate; and the Abbots Wall which encloses the Minster Marshes.

### *Post-medieval (16th–19th Centuries)*

The character of the landscape in Thanet in the post-medieval period is illustrated by the Drury Map of 1769 which depicts various settlements and prominent buildings, some of which are extant. Features with maritime associations comprise beacons; paths cut into chalk cliffs at Foreness and along the north-east coast, the so-called sea-gates or 'stairs' (hence *broadstairs*) and North Foreland Lighthouse. The agricultural aspect of the local economy is marked by a series of farms, including East Northdown Farm (conservation area), Grove Farmhouse; Manston Court; Haine Farmhouse; Rose Farm and Ozengall Grange, to name but a few. Industrial related sites, mainly identified from maps, include chalk and clay pits; brickworks and rubbish

dumps. Other sites include an architectural folly, Whitfield Tower, built by Lord Holland near Broadstairs around 1760. The strategic importance of Thanet during the Napoleonic era and after is exemplified by the ‘municipal coast defence batteries’ at both Margate and Ramsgate.

### *Modern (1900–present)*

#### **World Wars I and II**

Thanet was of continuing strategic importance during both World Wars and many records exist for this period, although archaeological recording of the remnants of activity is limited. For instance, both Manston and Westergate airfields already operated in World War I (Brooks 1990; RAF Manston History Club 1998, 7), and drill holes were already established in both Margate and Ramsgate in the very early years of the 20th century (Osborne 2006, 197; 214). A rifle range, firing range and targets on Thanet were precursors to the appreciable military activity on this part of the Thanet coast in World War II. Clear air photographic evidence shows wartime/post-war activity on Foreness Point recorded as an extensive, well-defended type two chain home low radar station as well as buildings, earthworks, emplacements and roads, and additional structures outside the perimeter including ditches and posts as anti-glider defences. A zig-zag trench is known near Ebbsfleet Farm Cottages.

#### **Present**

Today Thanet is characterised by sprawling housing and light industrial development, although much of southern part is still open arable land, whilst some scrub exists around part of the coast at Pegwell bay and Manston Airport. The main towns still operate as popular resorts and golf seems to be a thriving pastime on Thanet, with at least two major golf clubs (Kingsgate and Cottington) in the immediate vicinity of the pipeline route. A public pitch and putt course was first seen in aerial photographs of the early/mid 20th century at the Margate Headworks.

### **Research Aims and Objectives**

The aim of the archaeological fieldwork was to establish the location, identify, investigate, and record the presence/absence, extent, condition, character, quality, and date of any archaeological features or deposits within the easement area potentially affected by pipeline construction and to preserve them by record (Wessex Archaeology 2005c). While each archaeological feature and site was of interest in itself, the overall significance of the archaeological deposits

in an area is augmented by consideration of the relationships between the deposits and the surrounding topographical and palaeo-environmental features. In this respect, the aim of the excavations and the subsequent analysis was to record the archaeology and understand it in its wider context as a series of past landscapes.

As the entire length of the pipeline route was subject to archaeological monitoring it can be stated with reasonable certainty that the lengths of the pipeline between excavated areas were found to be devoid of archaeological features.

Based on the results of the evaluations and excavations, the original research aims and objectives were amended and can be summarised as follows:

- Analyse the character, date and setting of the possible mortuary enclosure at Broadley Road;
- Publish material assemblages of intrinsic interest recovered along the pipeline route;
- Analyse the type of deposition, components, date range and setting of the hoards discovered on the Ebbsfleet peninsula;
- Establish the character of the mortuary-related deposit at Star Lane and compare this with similar features in southern England;
- Fully describe and analyse the burials and cemeteries recovered along the pipeline route, compare their range of burial rites, and consider these in the wider context of occupation evidence in Thanet;
- Publish a plan of the Saxon sunken featured building Cottington Road and consider its relation to Romano-British features in the vicinity, especially the dual-rite cemetery;
- Analyse the possible bakery structure at Star Lane and how it relates to the medieval food economy.

### **Methods of Excavation and Recording**

Initial investigations along the pipeline route comprised a desk-based assessment detailing the archaeological potential and its significance in the immediate vicinity of the route (Wessex Archaeology 2004c). It was used to plan a programme of archaeological investigations, beginning with a series of trial trenches leading to works of varying intensity from watching brief to full scale excavation.

Trial trench investigations at the Weatherlees Wastewater Treatment Works (WTW), Ebbsfleet Lane in 1992–94, before the initial construction of the WTW, and in May to June 2004 prior to the expansion of the WTW, lead to a later, larger excavation within the Weatherlees WTW. During the main phase of works in 2005–6 prior to any



archaeological works, a c. 20 m wide easement was fenced-off and the topsoil was removed. Investigations began with a series of trenches excavated along the route of the pipe trench, effectively a rolling evaluation, unless the subsoil depth was inadequate for the protection of the archaeology in which case the full easement width was stripped.

All excavation and recording utilised Wessex Archaeology's established system both in the field and during post-excavation analysis. All relevant guidelines, codes of practice and legislative procedures were followed during all stages of the investigations, assessment and analysis. All archaeological features were hand-excavated, suitably sampled, and those of particular interest were excavated fully. All graves were wholly excavated and sampled in the appropriate manner. Single context recording was employed in the excavation of stratigraphically complicated features. All specialist methodologies are detailed at the beginning of this volume (p. xxi) and are therefore not repeated. Summaries are provided in the specialist sections within each section below.

## Archaeological Results

The excavations along the pipeline route between Margate, Broadstairs and Weatherlees exposed over 650 archaeological features within 13 concentrations scattered along its length. The most archaeologically profuse region was between Manston Airport and the Weatherlees Waste Water Treatment Works to the south. The features represent a wide spectrum of past activities, the most common were ditches and pits mainly related to agricultural activity, while some were associated with settlement.

Findings and features revealed along the entire route ranged in date between the Palaeolithic – a small handaxe from the subsoil at Star Lane – and World War II, with activity represented by air-raid shelters at Manston Airport and military structural remains between Foreness Point and Whiteness (Area 1-D).

Because of the extensive nature of archaeological material found only a selection of the most interesting and significant discoveries from a range of periods has been chosen for inclusion in this volume. For each archaeological period discussed a summary is included to illustrate the distribution and nature of the archaeology encountered during the investigations. A more detailed discussion of the archaeological results not addressed in this volume can be obtained from the archive (Wessex Archaeology 2004a; 2006c). When considering the results, it should be remembered that the excavations were limited to the compounds and narrow easement established during pipeline construction across

private land. Thus, only a narrow section of the archaeological resource was revealed and available for investigation. The sites and features chosen for discussion in this report, along with their location and date are listed in Table 2.1 from north to south. They are marked on Figure 2.2 and on insets on most other figures.

## Neolithic

*by Kirsten Egging Dinwiddy and Alistair Barclay*

A small number of Neolithic features and material were recorded in several locations along the route of the 2005/2006 excavations. These include the remains of a potential early Neolithic mortuary structure and subsequent ring-ditch (Bronze Age round barrow) at Broadley Road, small pits at Cottington Road, and stray finds from Ebbsfleet Lane, Weatherlees WTW and Area D.

### *Broadley Road*

An area of 0.26 ha to the east of Broadley Road, Northdown, (Figs 2.2–3) was referred to during the archaeological works as Area 3. This area sloped gently down to the south from c. 45 m (aOD) in the north to c. 41 m (aOD) in the south, occupying a high point within the immediate vicinity. Approximately 0.20–0.30 m of topsoil overlay a subsoil of red-brown silty clay, generally 0.10 m thick, becoming thicker downslope (south) where colluvial deposits had accumulated to a thickness of over 1.0 m. The natural geology comprised chalk and clay-with-flints. The features recorded in the area included ditches (field systems with a 'thoroughfare'), post-holes and tree-throw holes. Most were undated, although elements of the field systems dated to the Romano-British and medieval periods were encountered regularly across the area on a north-west to south-east alignment.

Of particular interest was a partially revealed rectilinear enclosure, probably the remains of an Early Neolithic mortuary structure of a type that is often associated with earthen long barrows (discussed below). This was cut by the ring-ditch, of a probable Early Bronze Age round barrow. The enclosure and ring-ditch were located along the south-western side of the 45 m contour line, the land sloping down to the south-west.

### **Broadley Road: probable Early Neolithic mortuary structure**

The rectilinear enclosure (8928; Fig. 2.3) at Broadley Road was partially exposed in a narrow section of easement (10–15 m), with the observable components consisting of three enclosing ditches, two internal

post-holes, and internal linear features (ditches/ beamslots and a gully). The enclosure's northern corner was obscured by the ring-ditch, whilst the south-western section extended outside the easement for probably c. 20–50 m.

*The enclosure*

The enclosed area was trapezoidal, narrowing towards the south-west and measured more than 20 m (north-east to south-west) by 10 m (north-west to south-east). The southern flanking ditch comprised three intercutting ditch segments (0.52–0.76 m wide by 0.14m–0.29 m deep, with U-shaped profiles) with rounded termini, the central segment (7452) of which was potentially inserted to close a former entrance. The eastern side of the enclosure (7436) was less substantial and comprised at least two stages of construction to different depths (0.13 m and 0.65m), indicating that this section was also excavated in

segments. The northern flanking ditch (7433) was not obviously created in segments though the termini appeared to have been constructed in two phases. The fills of the flanking ditches were very dark, indicative of *in situ* decomposed organic material such as wood; if so, the fairly shallow depths would not have supported posts or fencing, suggesting that there has probably been a moderate degree of truncation and/or disturbance across the area, probably beginning in the Bronze Age with the building of the round barrow (see below). The eastern side of the northern ditch may have shown evidence for a low bank to the north, ie, outside the enclosure, perhaps representing the remnants of a long barrow mound or revetment.

*The entrance and antechamber*

The northern flanking ditch (7433) was constructed in two sections, with distinct opposing terminals. The earliest phase of the eastern terminal was only 0.05 m

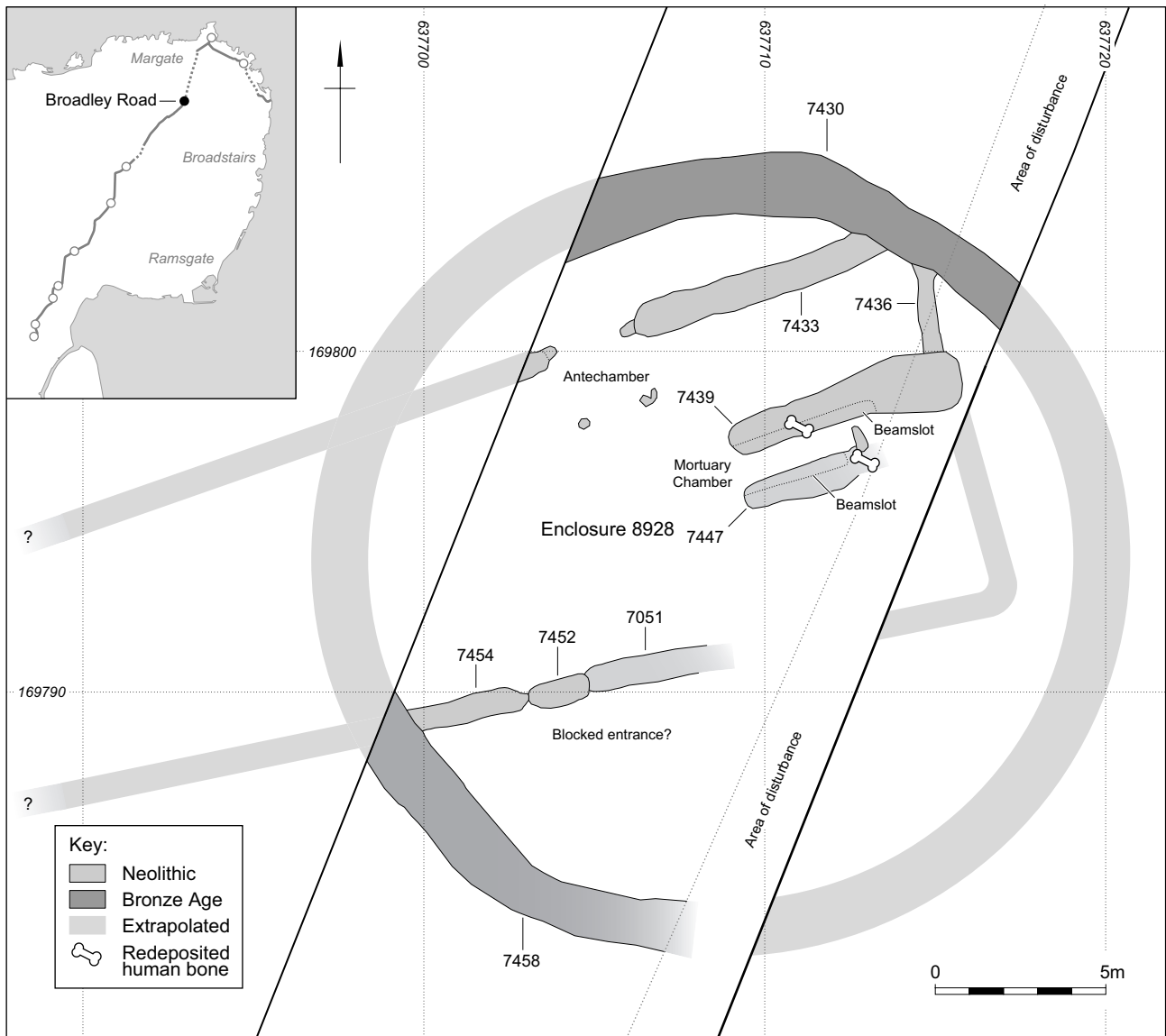


Figure 2.3 Broadley Road: Neolithic and Bronze features

deep, while the second ditch was up to 0.31 m deep and commenced c. 0.5 m from the western terminal end of the earlier cut. The western end also had a small, narrow projection at the terminal somewhat symmetrical with the eastern terminal. The terminals probably represent a c. 2 m wide north-north-west entrance, with the shallow terminals representing sites of posts or markers. Again, the dark colour and the texture of the fills suggest the presence of organic material such as wood, rotted *in situ*. Set back into the enclosure by c. 2 m and parallel to the terminals were two distinct post-holes, also c. 2 m apart. Essentially this combination of features suggests an entrance structure approximately 2 m square, interpreted as an antechamber.

#### *Linear mortuary chamber*

At the wider 'façade' end of the mortuary enclosure was an axially aligned mortuary chamber. This consisted of two parallel linear features (7439 and 7447), c. 7.10 m long and on average 1.00 m wide, enclosing an area c. 0.86 m wide. A gully-type feature (7107), at 90° to the probably truncated eastern end of linear feature 7447, may represent an internal division or 'end'; perhaps creating an enclosed area c. 3.40 m long; however, the eastern end of the enclosure was only partially observable. The linear features were 0.60 m to 0.71 m deep, with distinct backfills indicating the insertion of large wooden beams against the internal sides, packed tightly on the external sides with chalk rubble. Evidence for material banked on the external sides was also noted during excavation. The wooden beams were evidenced by a rich dark deposit, c. 0.45 m wide, indicative of decomposed *in situ* beams (see below) running along the length of the ditches/beamslots (Pl. 2.1). The fills of 7439 and 7447 also contained fired clay and a few pieces of disarticulated human bone (possibly charred). However, radiocarbon dating of the bone from 7439 provided an unexpected Middle/Late Bronze Age date (1260–900 cal BC; see Appendix 2.5) for the bone and, therefore, the assumption has to be made that it is intrusive.

Remodelling and later use of the subsequent monument would have resulted in a certain degree of disturbance, followed by damaging agricultural practices in more recent times. Certainly, the truncation and the complete absence of a mound indicate that there has been substantial, potentially deliberate clearance of the monument that could well have penetrated into the soft fills of the negative features.

It is likely that the internal features represent a focal point such as a timber lined mortuary structure or chamber, c. 3.40 m x 1.00 m wide (1.60 m outside edges), of moderate height (indicated by truncated beamslot depth) and supported by external



*Plate 2.1 Margate pipeline: Broadley Road Neolithic mortuary enclosure: decomposed remains of probable beam*

banks/revetments of chalk. The function of this chamber may be inferred by comparison with similar monuments (eg, Kinnes 1992, 90–1, fig 2.4.1); unfortunately, the human bone recovered appears to be of much later date and therefore cannot be used as a support for this interpretation or for the possible practice of excarnation that is often assumed to have taken place at such sites (Scott 1992). The environmental samples from the enclosure ditches/beamslots contained only a few, potentially intrusive grain fragments (see Stevens below).

#### *Absence of a mound and flanking ditches*

There was no convincing evidence for a substantial long mound and no trace of flanking ditches that would be expected if a long barrow had been constructed. This suggests that the mortuary structure had only existed as a free-standing structure. It can be noted that not all mortuary structures are covered by long mounds (see Kinnes 1992), some were never transformed in this way, while others such as Aldwinckle, Northamptonshire, Whiteleaf, Buckinghamshire, and Loftus Road, Cleveland (Jackson 1976, Gill Hey pers. comm.; Vyner 1984) had round or oval barrows constructed over them.

#### **Ring-ditch**

Post-dating the mortuary enclosure was a ring-ditch, c. 20 m in diameter, that encircled the north-eastern end of the rectilinear enclosure. The ditch was only partially revealed in the narrow easement as two curvilinear fairly substantial ditches (7430 and 7458, Fig. 2.3). The ditch had a U-shaped profile with a concave to flat base and contained between two and four fills, involving varying degrees of chalk and silt weathered from surrounding surfaces. Animal bone, shell, and a single sherd of possible Peterborough Ware pottery were recovered from the ditch fills.



Plate 2.2 Broadley Road mortuary enclosure: redeposited human bone of Middle/Late Bronze Age date



Plate 2.3 Cottington Road: Neolithic pit 6247

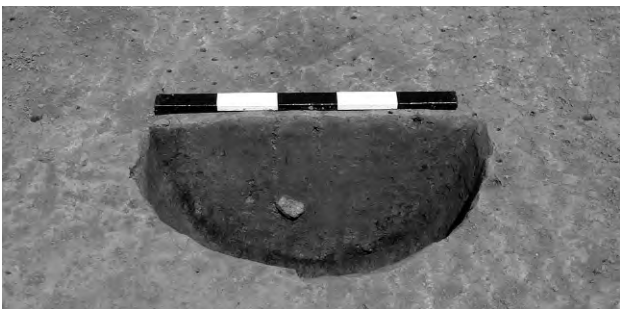


Plate 2.4 Cottington Road: Neolithic pit 6219

#### Associated material

As mentioned above, the two parallel beamslots, probably part of the mortuary chamber, contained disarticulated human bones, a sample of which provided a radiocarbon date of 1260–900 cal BC (NZA-29152; 2867±65 BP). This date is later than expected and its significance is discussed below. However, it suggests that the barrow was significant as a place of repeated mortuary activity spanning perhaps 2500 years. The fragmentary remains represent at least one individual (subadult/adult >16yr), comprising parts of the right upper limb (probably articulated when interred) and very fragmented lower limb. The surface condition of the bone was somewhat unusual: some were blue/grey, eroded fragments, whilst others were more complete, irregularly stained or charred black and partially coated with a smooth grey deposit (Pl. 2.2). The latter were also ‘crazed’ with a rectilinear network of fine fractures organised transversely around the shaft surface. Such changes were not typical of cremated material, implying that heating, charring, and/or staining had occurred when the bone was in a dry state (J. McKinley pers. comm.). The staining may

also be attributed to the dark, organic nature of the beamslot fill.

#### Comparisons and discussion

The Broadley Road enclosure has characteristics common with the mortuary structures found beneath earthen long barrows and some round barrows (Kinnes 1992): these include the crest of slope positioning, the east/north-east orientation, the timber and earthen construction, the trapezoidal layout, the axially aligned linear mortuary zone, the post/fenced palisade and the wooden mortuary chamber. The placing of a round barrow over the façade finds parallels in other regions. However, there is no direct evidence that this monument was covered by a later mound and this would not be unusual either. It has been concluded from previous studies that although the layout of mortuary structures was quite formalised, very few, if any examples had an identical parallel (Kinnes 1992).

If the Broadley Road enclosure was covered by a long barrow mound, then the apparent transformation of a long barrow into a round barrow may reflect a change in focus from the group to the individual, which becomes more distinct in the Bronze Age (Thorpe 1984, 58). The detection of regional differences in Neolithic mortuary monuments, however, causes a problem with a single time argument for general change, with round barrows in some areas being present from the early Neolithic (examples quite common in upper Thames valley (Bradley *et al.* 1984, 130), some contemporary with and some slightly later than long barrows (Woodward 2000, 36).

It is possible that the ring-ditch at Broadley Road is Neolithic, but in the absence of evidence this is uncertain. In the south-east only a few doubtful examples of pre-3000 BC round barrows are known, eg, three ring ditches from Kent and Barrow 3 at Blackpatch flint mines (Drewett *et al.* 1988). The presence of Middle–Late Bronze Age human bone indicates renewed use of the monument for mortuary activity some 2500 years later.

The Broadley Road mortuary structure and ring-ditch would be of regional significance as the first long barrow recorded for the Isle of Thanet though there is no clear evidence that it was. Only a dozen examples of long barrows are known from the county, none of which has been the subject of modern excavation (Ashbee 2004, 10–11; Bewley *et al.* 2004, 72; Champion 2007, 77 fig. 4.6). Other excavated barrows in the south-east, for instance at Badshot, Surrey, Alfriston, East Sussex, and Julliberrie’s Grave, Kent (Kinnes 1992) do not contain such structures. In fact, and with the exception of the megalithic structures of the Medway valley, the parallels for similar structures are more distant (eg. Wessex, Midlands, East Anglia, and Yorkshire (*ibid.*, fig. 1A.4).

### Other Neolithic features and material

Four small pits (6219 (Pl. 2.3), 6232, 6330, and 6247 (Pl. 2.4) were excavated at Cottington Road, and attributed to the Middle Neolithic period. The pits did not have any discernible associations (other than proximity) with any other features in this multi-period site. A fifth pit was probably destroyed by the construction of Late Iron Age/Early Romano-British ditch 6394, suggested by comparable, but undoubtedly residual, environmental material within one of the fills.

The pits were circular or sub-circular in plan, with steep, concave sides and bases. Widths ranged between 0.38 m and 0.58 m; lengths between 0.57 m and 0.69 m, and depths between 0.19 m and 0.34 m. They contained 1–3 fills, the second deposit generally being rich in cultural material, which included Mortlake style pottery (in all pits), flintworking debris and tools, burnt flint, a hammerstone, charcoal (mainly oak and hazel), and charred hazelnut shells. The artefacts are likely to have been deliberately chosen and placed near to the bottom of the pits. Such a pattern is characteristic for deposits of this period.

Foreness Point, Star Lane, and Cottington Hill/Ebbsfleet Lane also had features and/or finds of Neolithic–Early Bronze Age date, discussed in the finds section below, along with the summaries and explanations of the artefactual and ecofactual remains and their significance.

### Finds

#### Pottery

by Matt Leivers

#### Middle Neolithic

Fragments of up to five Mortlake style bowls were recovered from four pits (6219, 6330, 6232, and 6247) at Cottington Road (Area 14). Most came from pit 6247, consisting of a vessel represented by a single small rim sherd, 16 rim and body sherds without evident decoration, and 102 sherds forming approximately 25% of the rim of a large bowl, with portions of the upper body but no base and very few undecorated sherds. The form and decorative scheme of this vessel can best be seen in Figure 2.4, 1.

Seven abraded sherds from a vessel with fingernail impressions on the body, on top of the rim, and in the cavetto came from pits 6330 (one rim and five body sherds) and 6219 (a single rim); while 41 sherds of a further vessel were spread between pits 6219 (39 body

sherds, two with twisted cord impressions) and 6232 (two body sherds, again with twisted cord).

A further two sherds of possible Peterborough Ware came from context 7783 at Foreness Point. These sherds bear a single line of twisted cord with oblique stabs above and below it. A further possible Peterborough Ware sherd came from the upper fill of ring ditch 7430 at Broadley Road, the ring-ditch overlying the mortuary enclosure.

In north-east Kent Mortlake and Fengate-type wares are not common. A pit on Chalk Hill contained portions of three Ebbsfleet or Mortlake vessels (Cleal 1995), while 1.25 km to the west, at Cliffs End Farm, portions of a Fengate-type jar were recovered from an Early Bronze Age ring-ditch (Leivers in prep.) only 1 km east of Cottington Road (Area 14). Further Peterborough Ware sherds have been recovered from slightly west in Cottington Road (Perkins 1998), at Laundry Road, Minster (Boast and Gibson 2000), and on the route of the Monkton Gas Pipeline (Perkins 1985). Some of these sherds were found in small pits, others in secondary contexts. Fengate material was recovered from the causewayed enclosure at Chalk Hill, Ramsgate (Gibson 2006). Stray sherds were recovered from a barrow at Manston (Perkins and Gibson 1990).

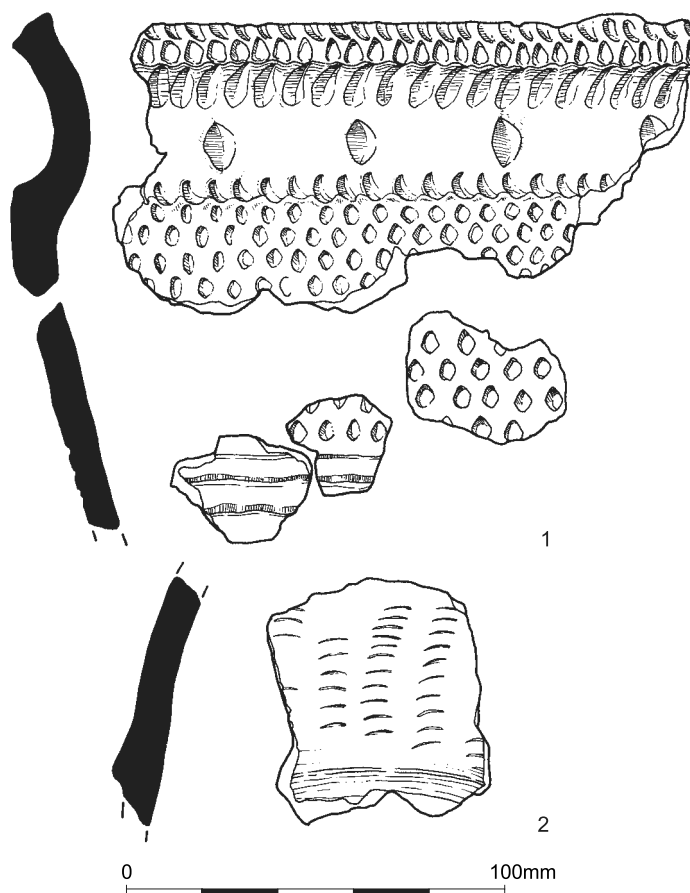


Figure 2.4 Cottington Road and Weatherlees WTW: Mortlake ware and Collared Urn

### *Late Neolithic/Early Bronze Age*

Only 38 grog-tempered sherds weighing 172 g were recovered, in two groups. The first, from Ebbsfleet Lane (Area 16), comes from what may be part of a small enclosure with a south-east facing entrance, and two pits c. 22 m apart, with undated ditches either side possibly forming a larger enclosure (pit 1407, ditch 1545, and pit 1476; not illustrated). The assemblage consists of 22 small fragmentary sherds, without form or decoration with the exception of a single fragment of a flat base. It is impossible to identify such a small assemblage to type, or to comment on its significance.

The remaining 16 sherds came from ditch 8902 at Weatherlees WTW, and derive from the collar of a single Collared Urn. Five sherds have irregular vertical columns of closely-spaced fingernail impressions (Fig. 2.4, 2).

### **Flint**

*by Matt Leivers*

An assemblage of 337 pieces of debitage and 14 tools was recovered from Cottington Road, mostly from a group of four Middle Neolithic pits containing Mortlake-type wares. Relative proportions of lithics echoed that of ceramics, with only small quantities in pits 6219, 6232, and 6330; much larger quantities came from pit 6247.

Pit 6219 contained four flakes (one utilised) and a large flint hammerstone; pit 6232 a single platform blade core on a nodule of Bullhead flint, two flakes, and a broken bladelet; and pit 6330 eight flakes, three broken blade-like flakes and three chips, all possibly derived from the same knapping episode. With the exception of the broken bladelet from 6232, all are fresh and unrolled, suggesting that they were placed in the pits deliberately.

The assemblage in pit 6247 was rather different in character and consisted of eight cores, 52 flakes, a broken bladelet, a broken blade, a burin spall (perhaps fortuitous), a fragment of a retouched implement (perhaps an edge-flaked knife), a flake struck from the corner of the blade of a ground flint axe, two chips, and five pieces of thermally-fractured debitage.

The entire range of raw materials present in all four pits is represented in the cores. Two are multi-platform flake cores on beach/gravel cobbles; there is some platform abrasion but no rejuvenation; the pieces were abandoned due to flaws, inclusions, and edge angle regression. A third is a flake core with two opposed platforms, without apparent abrasion or rejuvenation; the piece was abandoned because of a large cherty inclusion. Two further examples are blade cores with two opposed platforms; both are on chalk

nodules; platform preparation is apparent, but no abrasion or rejuvenation; both were abandoned because of flaws. A sixth piece is a single platform flake core on a thermally split cobble, which is probably nothing more than a trial/casual piece. The core assemblage is completed by a flake core fragment and a blade/let core fragment of very good quality black flint, rather like that from the Early Bronze Age assemblage at Cliffs End Farm (Leivers and Harding in prep.). No platforms survive, but the piece is bi-polar. Core faces were refreshed by platform-struck *flanc de nucléus* (six instances) to remove flaking errors (four remove step/hinge fractures) or to rejuvenate platforms (two instances).

Amongst the flake debitage are 14 broken flakes, all with unidirectional dorsal scars. Twenty-three complete flakes have broad, thick platforms: 11 of these are primary or very small, while five have bi-directional dorsal scars, five have unidirectional dorsal scars, and two have thermal dorsal surfaces; two are utilised, one has gloss on one edge. A further six flakes have narrower, thinner or punctiform platforms; two of these appear to be thinning flakes from core tool manufacture.

The assemblage does not represent the waste from a single knapping episode but rather contains elements from a number of such episodes and as such is secondary material. It is possible that the material in the pit is domestic refuse, but arguments can be made for the deliberate selection and deposition of materials, and for some sort of depositional grammar in the four pits concerned.

Further significant assemblages of flint artefacts were found at the Ebbsfleet Lane and Weatherlees WTW sites and Area D. These are discussed in conjunction with the Bronze Age material on pp. 89–90.

### **Igneous and metamorphic stone**

*by Kevin Hayward*

One piece of rubble from Middle Neolithic Pit 6247 at Cottington Road was submitted for petrological analysis. It is a Syenite – a white, coarse, feldspar-rich, igneous rock ('*Aplite*'; Baden-Powell 1942) of unknown geological age. With regards to the suggested provenance of the piece, it has to be said that there are no metamorphic or igneous deposits in the south-eastern part of the British Isles. It is probable that it comes from the local Stonar shingle ridge. This was quarried out for gravel working along the southern loop of the River Stour near Sandwich and contained a proportion of igneous erratic pebbles of northern origin (Hardman and Stebbing 1940; 1941; 1942; Baden-Powell 1942). The position of this shingle ridge would have been

very different in prehistory with the Wantsum Channel dividing the Isle of Thanet from the rest of Kent.

### Human Bone

by Jacqueline I. McKinley

The original location and form of mortuary deposition of the minimum of one individual represented within the small Late Bronze Age (radiocarbon dated) assemblage of redeposited bone is a matter of conjecture. The bone was recovered from within the confines of the Neolithic mortuary enclosure and Early/Middle Bronze Age round barrow, but the monument had been extensively and heavily plough damaged and the bone could have been redeposited from another feature in the vicinity. Inhumation appears to have been the primary mode of deposition and the subsequent burning to the bone could either have been deliberate as part of a secondary rite, or incidental following disturbance of the bone and a failure to recognise it as human (see online report). Most of the surviving evidence for Late Bronze Age activity uncovered in the investigations in this area was for occupation. The number of burials of this date from Kent is relatively small (c. 60), with disposal by cremation or inhumation and burial remains recovered as singletons or small groups predominantly from sites close to the east coast (eg, O'Connor 1975; Cruse 1985; Mays and Anderson 1995; McKinley 2006).

### Environmental Evidence

#### Charred plant remains

by Chris J. Stevens

Three samples were examined from three of the Middle Neolithic pits (6219, 6330, and 6247) at Cottington Road, associated with Mortlake Ware. The most prominent remains from all the pits are hundreds of shell fragments of hazelnut (*Corylus avellana*), particularly in pits 6219 and 6330, with less in 6247. Additionally, the pits also produced evidence of sloe (*Prunus spinosa*) from pit 6247, and crab apple (*Malus sylvestris*) from pit 6330.

There were few remains of cereals in pit 6247, and these included two glume bases of spelt wheat (*Triticum spelta*). It is highly unlikely that spelt was introduced to Britain until the Middle Bronze Age (Pelling 2003) and, as such, these remains should be regarded as intrusive. A single grain of wheat (*Triticum* sp.) was also recovered from pit 6330, which again might be intrusive.

The remains are in keeping with the general impression of Neolithic subsistence in which wild foods play an important role in subsistence (Moffett *et al.* 1989) and notably none of the later periods displays this amount of evidence for the exploitation of wild foods. Cereals are considered to have played a role in the general Neolithic diet (Robinson 2000; Stevens 2007). Good evidence for early Neolithic cereal cultivation is present for a number of sites in Kent, Kingsborough (Stevens 2008), Westward Cross (Wessex Archaeology 2006b), and Whitehorse Stone (Giorgi 2006; Allen *et al.* 2006). However, given the possibility that all the cereal remains may be intrusive, the evidence for cereal agriculture at this Middle Neolithic date should be considered inconclusive.

### Charcoal

by Dana Challinor

Two samples from Neolithic pits 6330 and 6247 at Cottington Road (Area 14) were analysed (Table 2.2). The charcoal almost certainly represents the remains of domestic fuel dumped with other hearth debris, including waste from food preparation (charred hazelnut shells). The samples produced similar assemblages, dominated by oak and hazel with rare fragments of other species. The absence of a strong hedgerow component, which is quite common at other sites of this period (eg, Gale 2005; Challinor forthcoming a), makes it probable that the firewood was collected from mixed deciduous woodland. The woodland must have been open to some degree, however, since hazel only fruits in light conditions. The presence of alder buckthorn (*Frangula alnus*) indicates some wet ground since this species prefers damp soils. Assemblages of oak and hazel charcoal are fairly typical of Neolithic pit samples in southern England (Smith 2001).

**Table 2.2 Charcoal from Neolithic contexts, Cottington Road**

	Feature type	Pit	Pit
	Feature number	6247	6330
	Context number	6248	6331
	Sample number	863	870
	% flot identified	25	100
<i>Quercus</i> sp.	oak	62hs	34rh
<i>Corylus avellana</i> L.	hazel	49	89
Maloideae	hawthorn, pear, apple	1	1
<i>Frangula alnus</i> Mill.	alder buckthorn	-	1
Indeterminate		3	2
Total		115	127

r – roundwood    s – sapwood    h – heartwood

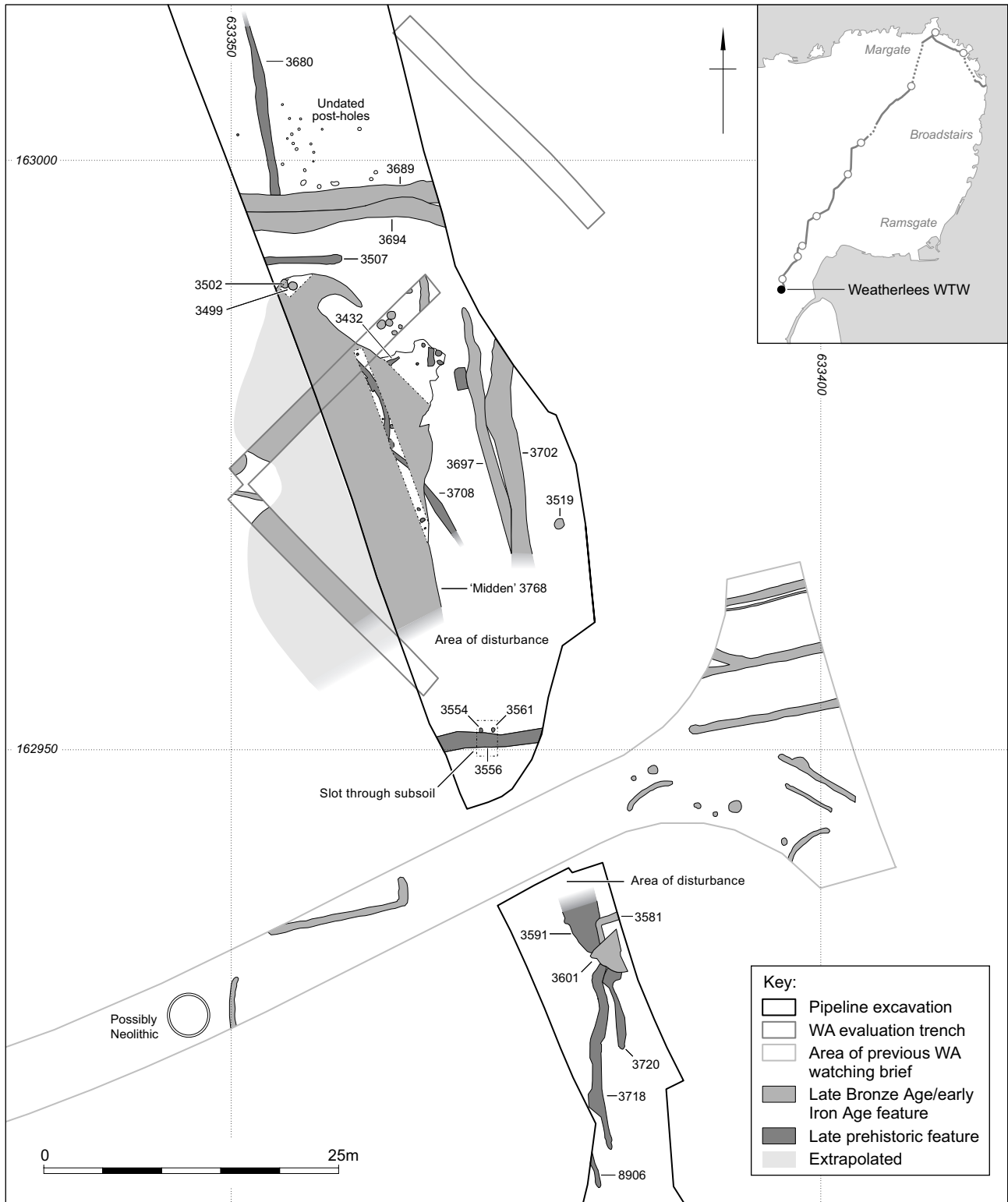


Figure 2.5 Weatherlees WTW: Bronze Age features



## Hoard and ?Cenotaphs – Evidence for Bronze Age Activity along the Pipeline Route

Bronze Age features and finds were encountered in several areas but were most abundant towards the southernmost end of the pipeline route:

- *Weatherlees WTW*: ditches, pits, post-holes and spreads/middens with metalwork hoards on the Ebbsfleet peninsula;
- *Star Lane*: pit with mortuary-related deposit in vessel;
- *Broadley Road*: ring-ditch (overlying the Neolithic mortuary enclosure, discussed above);
- *Ebbsfleet Lane*: ditch and pits (part of a BA/late prehistoric field enclosure system north-east of extensive Iron Age and Romano-British activity);
- *Cottington Road*: ditch (corner of field boundary).

Of particular regional importance are the material spreads and features related to the Carp's Tongue hoards recovered on the Ebbsfleet peninsula. Recovery in a modern controlled excavation allowed the character of their deposition and wider landscape setting to be analysed and allows comparison with other hoards discovered in Thanet in recent years, for instance at Cliffs End (Wessex Archaeology 2005b, Leivers *et al.* in prep.).

The enclosed spreads/middens and the metalwork hoards from Weatherlees WTW will be discussed first, followed by a section on the potentially mortuary-related deposit from Star Lane. The ditches and pits at Ebbsfleet Lane do not in themselves require further discussion and are, therefore, only mentioned in the discussion of the finds recovered from them. A number of the features along the route dated as 'prehistoric' and some 'undated' features could feasibly belong to the Bronze Age, such as the above-mentioned ditch at Cottington Road; in the scope of the excavation of the narrow pipeline easement their function and relation to other features in the landscape could not be clarified, and they are thus not further discussed.

### *Ebbsfleet Peninsula: Bronze Age Discoveries at Weatherlees WTW*

The Weatherlees WTW site (NGR 633348 163032) comprised a rectangular area of 0.30 ha, lying to the west of Ebbsfleet Lane. It was bisected by the east–west entrance road into Weatherlees WTW (Figs 2.5 and 2.8, inc. additional information from the

2004 evaluation). The north-west of the area lay at 4.74 m (aOD) and the south-east at 3.84 m (aOD). Approximately 0.32 m of topsoil overlay 0.20 m of red–brown silty clay subsoil. The natural geology in this area was pale yellowish–brown brickearth. During the course of the fieldwork this area was under a substantial depth of water for several weeks following the soil stripping, making the identification of smaller features problematic.

The complex archaeology in this area included ditches, spreads, inhumation burials, pits, and post-holes. The ditches ranged in date from Late Bronze Age/Early Iron Age to post-medieval. The pits and post-holes were dated to the late prehistoric period, with some more specifically as Late Bronze Age. Radiocarbon analysis of the two inhumation burials returned dates around the time of the Roman Conquest (Appendix 2.5). The spreads ranged in date from Late Bronze Age to early Romano-British. The Late Iron Age/Romano-British results are discussed further below.

### **Enclosure**

The southern section of the Weatherlees WTW site revealed at least three phases of later Bronze Age activity. The earliest phase comprised a series of fairly shallow, insubstantial ditches, probably domestic and/or agricultural in nature (eg, 3680; Fig. 2.5). These ditches were aligned in a north–south direction and presumably enclosed a Late Bronze Age settlement, some of which was located at the base of the archaeological sequence (eg, 3513, 3708; Fig. 2.6).

The second and third phases were represented by substantial ditches forming a large enclosure which measured c. 42 m north–south and at least 22 m east–west (3689, 3694, 3697, and 3702; Fig. 2.5), the third phase being the re-establishment of those ditches. The northern and eastern components had been recut slightly to one side, whereas the southern limit, where two post-holes (3554 and 3561) were found on the internal side, was recut on the original line. The later two phases were more substantial than the first; however, they broadly respected the orientation of the earlier ditches. The alignment is likely to have been determined by the landscape topography of the Ebbsfleet peninsula which projected to the south–south–east (see Fig. 2.8).

The ditches can be compared to the much more substantial boundary ditches of the Iron Age–Romano-British periods, only c. 80 m to the north. These ditches had also been recut on a number of occasions within a fairly narrow time period, indicating rapid infilling and a need for re-establishment. The location close to the shore meant that the site may have been liable to inundation from the sea (spring tides and storms for example), and the

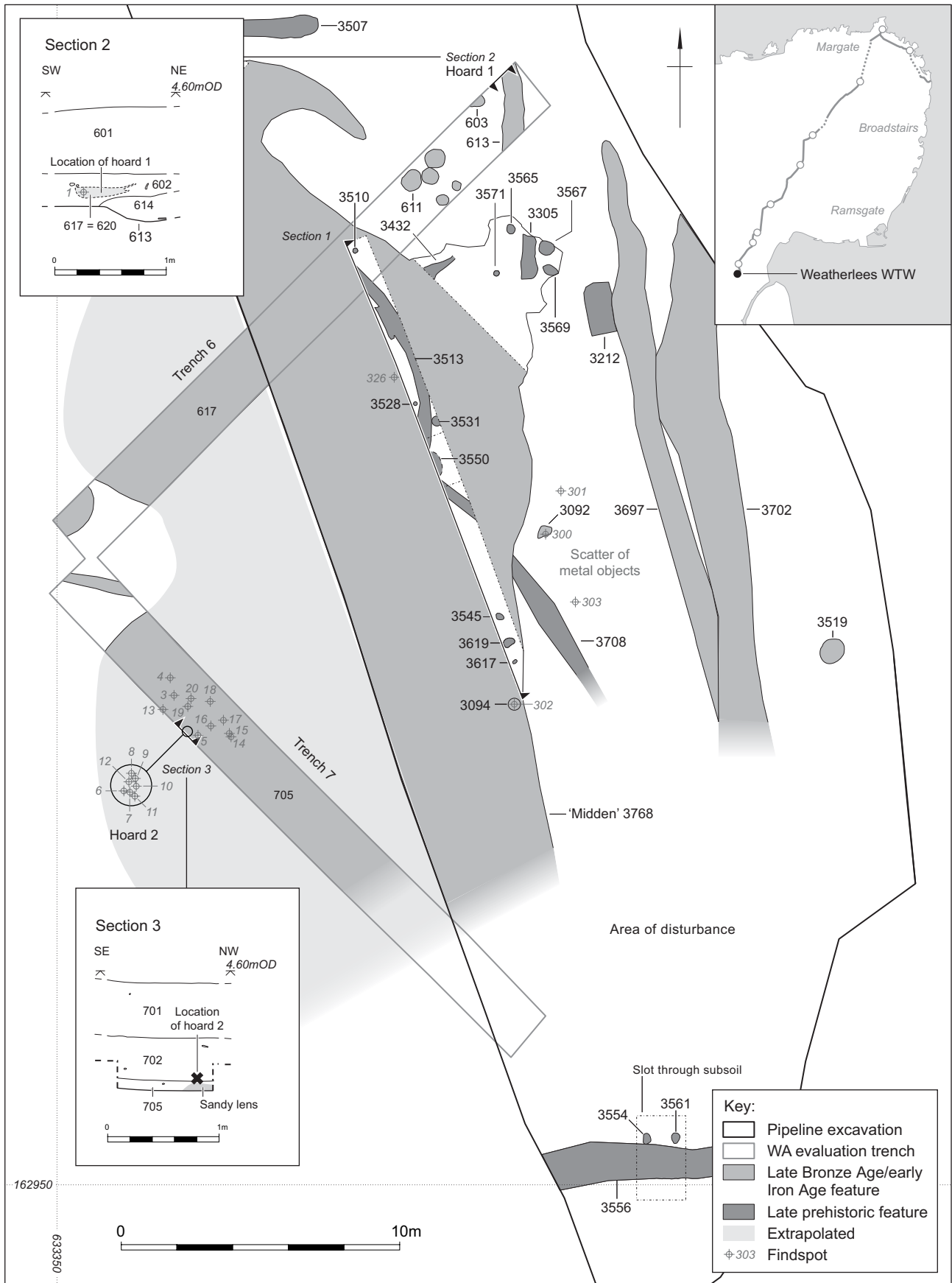


Figure 2.6 Weatherlees WTW: location and distribution of Bronze Age hoards 1 and 2

brickearth geology was predisposed to rapid erosion and redeposition of the silty sediments.

### Other features and finds

A total of 45 post-holes was recorded in the area; several were identified below the Late Bronze Age/Early Iron Age spread 3768 and are of a similar date, as were two curvilinear ditches or gullies (3513 and 3708). A larger group of 21 post-holes was immediately to the north of the enclosure but no coherent patterns could be discerned. Most post-holes of this group were devoid of finds, although a few small fragments of pottery suggest a late prehistoric date. Based on this scanty evidence their inclusion here remains very uncertain.

Also of note was a band of rammed chalk (3432) underneath spread 3768, towards the northern end of the spread (Figs 2.5, 2.6, Pl. 2.5). The chalk is likely to have been imported, and it may represent a form of boundary marker, but its extent is uncertain. Similar spreads of comminuted chalk were found at Potterne, Wiltshire, where they were interpreted as 'the remnants of materials imported and incorporated in floors' (Lawson 2000, 256; 22, fig. 11), an explanation equally feasible here.

Large sherds of pottery of Late Bronze Age date appear to have been deliberately placed in another two pits (3502, cut by 3499), seemingly covered by spread 3768 (Fig. 2.5; see Jones below).

### Midden spread

The enclosure contained a large, dark spread of pottery-rich soil (617, 705, and 3768; Figs 2.5–6), interpreted as a midden spread. This overlay the earlier settlement evidence, indicating a change in function, perhaps environmentally instigated.

Midden spread 3768 was a dark brownish–black, silty clay loam of Late Bronze Age date. This extensive spread measured over 31 m by 11 m, extending to the west where it was first recorded in the 2004 evaluation (contexts 617 and 705; see Fig. 2.6; Wessex Archaeology 2004a). It coincided with a natural hollow, suggesting the deposit may have extended over a wider area, now lost through agricultural practices. However, context 705 was recorded as being slightly paler in colour, which may indicate that it lay towards the periphery of the spread.

A number of sondages revealed two distinct layers of the midden spread (Figs 2.6–7), the earliest being a pale greyish–brown spread (3515) of alluvially reworked material, c. 0.15 m thick, with little occupation material comprising small, abraded, and burnt pottery sherds similar to those found in the overlying deposit. Overlaying this was a darker deposit (3509, dark brownish–black, silty clay loam) with very large quantities of pottery, burnt flint, and some animal bone. Both deposits thinned towards their

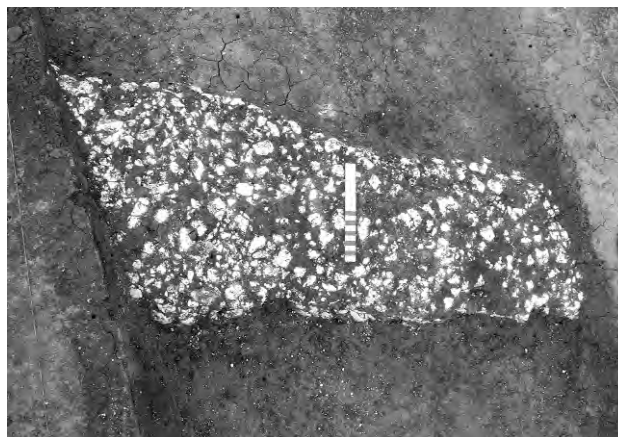


Plate 2.5 Weatherlees WTW: band of rammed chalk 3432

peripheries. The pottery was mostly Late Bronze Age in date, with a few Middle Bronze Age sherds. A sample of the midden deposit taken from an area of c. 26 m<sup>2</sup>, up to 0.24 m deep, produced over 1000 sherds of pottery (see Jones, below). The animal bone mainly comprised sheep/goat and cattle. Unfortunately, the amount of bone was sparse and its condition generally poor, most probably a reflection of taphonomic processes rather than a true lack. A number of bronze objects, belonging to at least two distinct deposition events, were also recovered from the midden spread.

### Comparisons

The Weatherlees WTW spread displays several deliberate refuse disposal events, of which some, like pit 3499, contain fresh as well as probably derived material. It is thus clearly not a single-phase dump. However, some of its material might well derive from a midden elsewhere in the vicinity.

It bears certain similarities to other spreads of a comparable date found across the south of England, often referred to as 'middens'. The term 'midden' (Needham and Sørensen 1988, 124; Needham and Spence 1996, 25–6) has been the focus of much scholarly debate in recent years, triggered by excavations of sites such as Runnymede, Egham, Surrey (Needham and Spence 1996; 1997), and East Chisenbury (McOmish 1996; McOmish *et al.* 2002, 73–4), Potterne (Lawson 2000), and Westbury, Wiltshire (Wessex Archaeology 2004b). Other sites include All Cannings Cross, Wiltshire; Innova Park, Enfield, Essex (Ritchie *et al.* in press), and Wallingford, Oxfordshire (Cromarty *et al.* 2006).

While it is possible to point out several characteristics of the Weatherlees WTW spread that find parallels among these sites, it has to be emphasised that the spread itself, with an estimated maximum extent of probably not more than 500 m<sup>2</sup> and a depth not exceeding 0.3 m, is much smaller

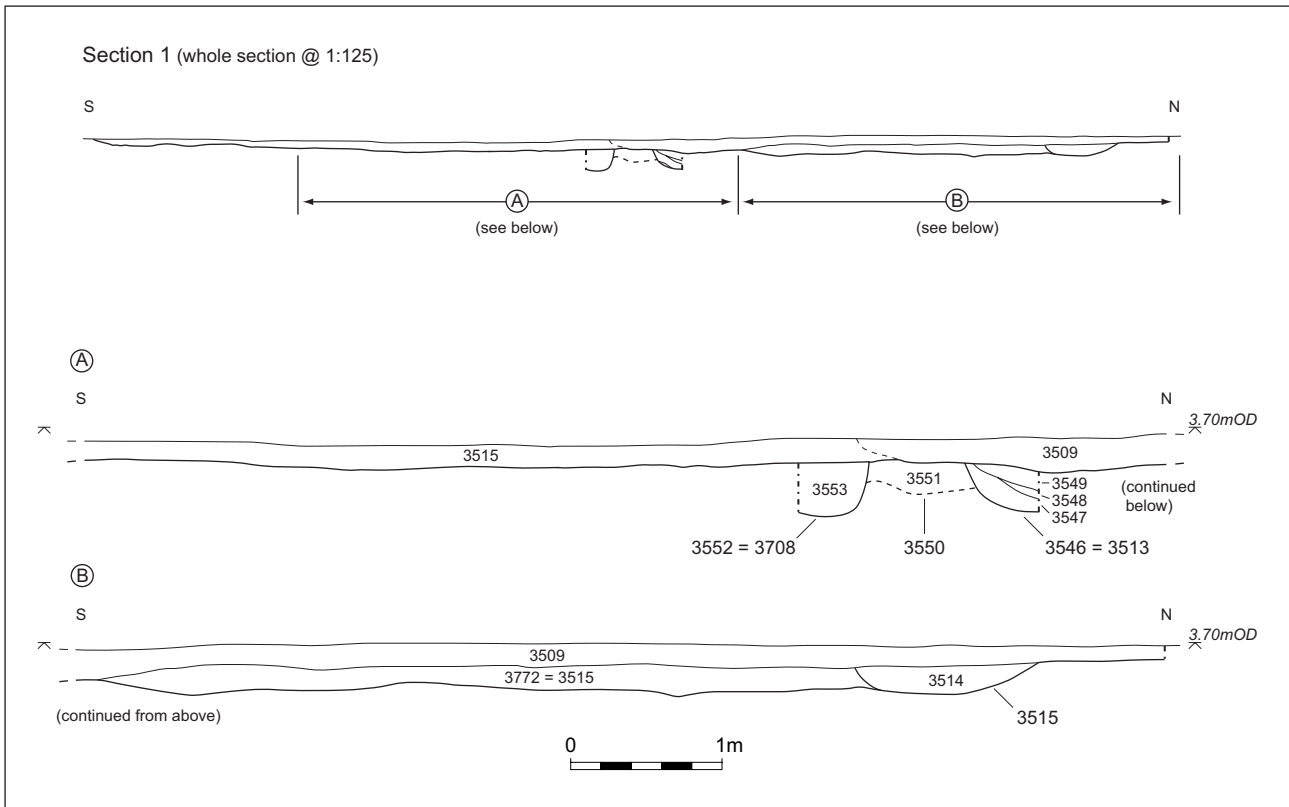


Figure 2.7 Weatherlees WTW: section through Late Bronze Age 'midden' 3768

than those at Potterne or East Chisenbury, which extend over c. 3.5 ha, with depths of up to 2 m. More comparable in size is a midden from Houseledge West, Northumberland, extending intermittently over at least 225 m<sup>2</sup> and containing 2000 artefacts (McOmish 1996, 73), or those found at Innova Park and Wallingford.

At Runnymede the deposits comprised a thick, rather homogeneous layer rich in cultural material, with only limited features cut into it. The lower zone was darker, with less fragmented remains and distinct groups of *in situ* material. No clear stratigraphic horizons were observed. As at Weatherlees these were only discernible in localised patches (Needham and Sørensen 1988, 115). The analysis possible on the Runnymede material allowed comparisons of the treatment and preservation of finds and faunal remains between different events; however, the Weatherlees WTW deposits do not lend themselves to such scrutiny because of the preservation conditions and disturbance.

Needham and Sørensen (*ibid.*, 117) suggested that the settlement activity at Runnymede may have cut through the midden deposits, but poor definition of features made interpretation problematic. Burnt flint concentrations, pottery 'floors', and some oven bases at Runnymede provide evidence for activity zones within the midden deposits. At Potterne it was possible to distinguish a sequence of structures and

uses within the deposit, including cattle pounding, building, industrial activity, abandonment, dumping, etc, interpreted as the shifting of activity areas within the site limits (Lawson 2000, 258). The settlement evidence at Weatherlees was clearly below the midden deposits and no later features appeared to be cut through them, perhaps with the exception of the two pot-filled shallow pits 3499 and 3502 at the northern limit of the midden spread (Fig. 2.5; see Jones below); but while some of the larger sherds in these pits appear to have been placed deliberately they did not form pottery 'floors'. There is thus no indication of activity zones within the area of the midden spread; however, it should be noted that the two hoards appear to have been placed on top of or in the surface of it.

A peripheral palisade at Runnymede, with an outer row superseded by an inner row (Needham and Sørensen 1988, 115), may have a parallel at Weatherlees WTW where two post-holes along the inner (northern) side of the southern enclosure ditch 3556 were observed in a slot (the external edge was not observable).

Of interest at Westbury was the presence of a chalk platform, as also observed early in the 20th century by Maud Cunnington at All Cannings Cross and more recently at East Chisenbury (McOmish 1996, 73). On both these sites chalk surfaces or platforms of limited extent and free from artefactual debris were observed

within the layers of the middens. Recent augering has confirmed their presence at All Cannings Cross (J. Gardiner, pers. comm.). Feature 3432 at Weatherlees WTW appears to be a thinner feature, better described as a chalk 'band' rather than a platform though this may be the result of different preservation conditions at this site (Fig. 2.6, Pl. 2.5).

The shoreline of the Ebbsfleet Peninsula during the Late Bronze Age was situated only about 100–150 m from the midden spread at Weatherlees. None of the midden sites considered above is close to the sea, but Runnymede was an island or eyot sited within the floodplain of the Thames, and further upstream at Wallingford, a midden spread extended along the side of the eyot in the middle of the river channel (Cromarty *et al.* 2006). Their location near water courses sets these sites apart from others on dry land though the sites mentioned occupied conspicuous nodal points in an inter-regional communication network: in the case of Weatherlees WTW the sea route from the Thames to the Continent, at Runnymede the confluence of the Thames and the Colne Brook, and at Wallingford a river crossing. The sites in Wiltshire are in ecotonal locations lying below the chalk escarpment of Salisbury Plain and the Marlborough Downs where they may well have provided inter-regional foci for trade and exchange between communities living on the chalklands to the east and the clay vales to the west, producing larger amounts of refuse than at sites lower down the settlement hierarchy. However, after consideration of differential survival, the quantity of refuse at Weatherlees WTW may indicate nothing more than a difference in activity scale not necessarily site status.

### *The Hoards on the Ebbsfleet Peninsula* by Phil Andrews, Grace Perpetua Jones, and Jörn Schuster

Two discrete hoards of Late Bronze Age metalwork were recovered during evaluation in June 2004 (Fig. 2.6). Further elements, either part of one of the hoards, an additional but dispersed hoard, or the results of several depositional events, were found during subsequent excavation in June 2005. The findspot of hoard 2 lay outside the area investigated in 2005, and it is very likely that other elements remain unexcavated. A skilled metal-detectorist, Roger Richards, was involved in the discovery and recovery of both hoards at evaluation and excavation stages. The hoards continue the sequence of three earlier hoards found on the Ebbsfleet peninsula and their alternative names Ebbsfleet IV and V are therefore used alongside their excavation-specific names. Both conform to Needham, Lawson and Green's (1985, vi)

1a context category, as 'a primary account exists which specifies the discovery of two or more objects together in a confined space'. Summary details of the two hoards and the scatter of metalwork are presented in Table 2.3. Their contexts are discussed further below and a typological discussion and catalogue can be found in the following finds sections and Appendix 2.1 respectively.



Plate 2.6 Weatherlees WTW: Late Bronze Age Hoard 1



Plate 2.7 Weatherlees WTW: Late Bronze Age Hoard 2

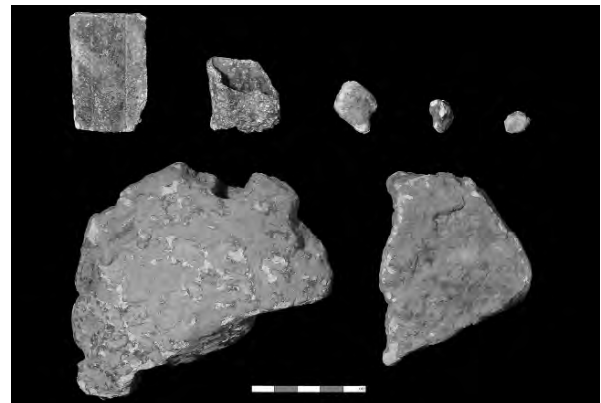


Plate 2.8 Weatherlees WTW: Scatter of copper alloy metalwork

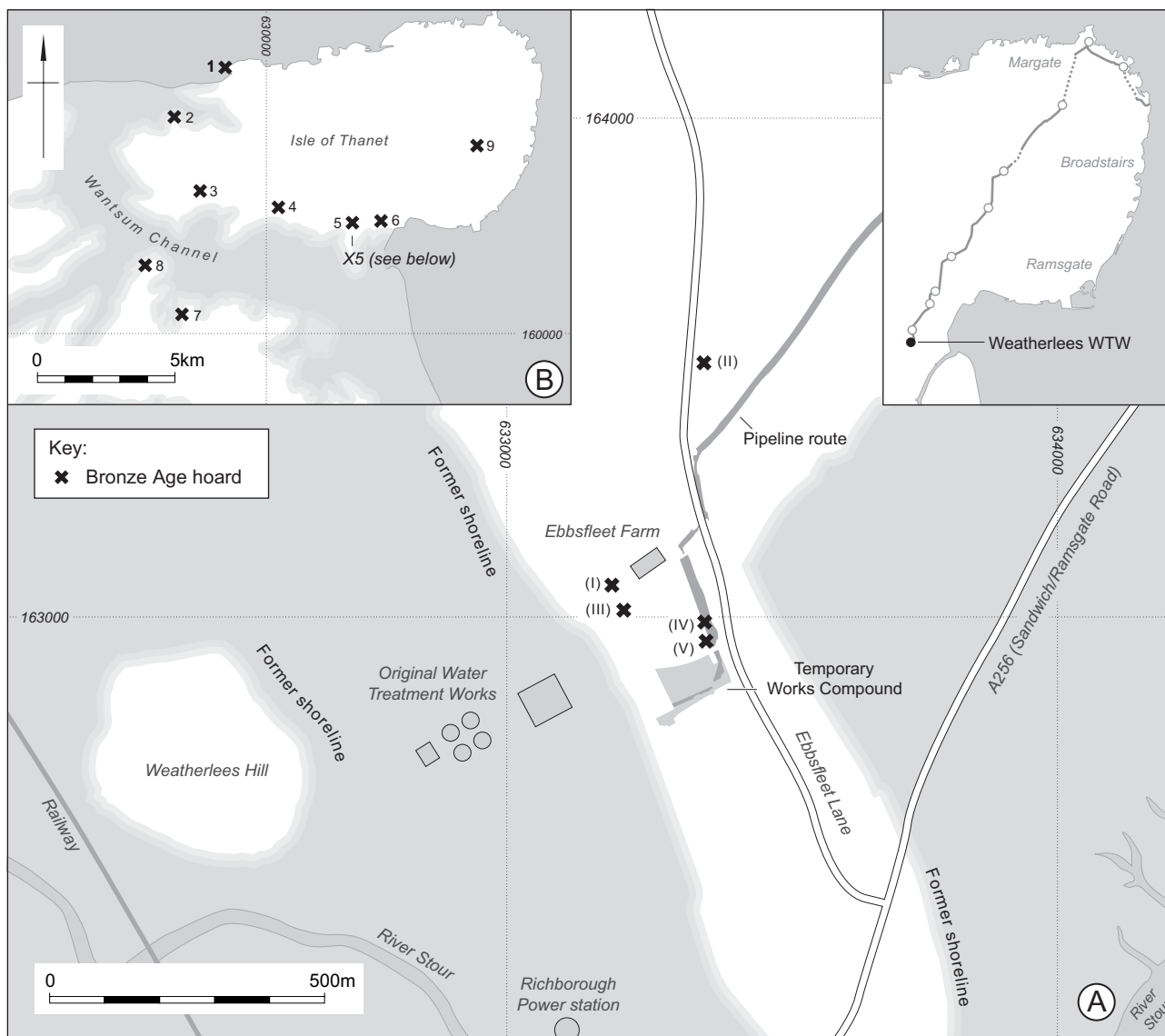


Figure 2.8 Weatherlees WTW: distribution of Late Bronze Age hoards and former shoreline in: A: the Ebbsfleet Peninsula (Hoards I–V); B: Thanet and along the Wantsum Channel: 1. Minnis Bay, Birchington; 2. Shuart, St Nicholas-at-Wade; 3. Monkton Court Farm, Minster; 4. Abbey Farm, Minster; 5. the Ebbsfleet hoards; 6. Cottington; 7. Hoaden, Elmstone; 8. Stourmouth; 9. Ellington School, Ramsgate

#### Hoard 1 (Ebbsfleet IV)

Hoard 1 (Fig. 2.9; Pl. 2.6), comprising seven objects, is the smaller of the two groups, and was found during machining (Fig. 2.6). Only one object – a socketed axe (ON 1) – was found *in situ*, within a thin layer or lens of dark soil (620, probably the same as midden spread 617 and 3768) towards the base of the subsoil (602) in Evaluation Trench 6. Three further objects (two socketed axes: ON 21–2; and a small lead-rich copper alloy object, possibly part of an axe: ON 23) were recovered from the associated spoil, and two objects (a copper alloy rivet or anvil: ON 24, and a small perforated lead object: ON 25) from the general area of the hoard. A fragment of copper alloy plate from the subsoil may also be associated (ON 2). The circumstances of discovery unfortunately do not allow complete certainty for each object's association with the hoard; in particular the material of the small

perforated lead object (ON 25) stands out among the other elements of the assemblage.

#### Hoard 2 (Ebbsfleet V)

Hoard 2 (Fig. 2.10; Pl. 2.7) was found towards the north-west end of Evaluation Trench 7, at the base of the subsoil (702; Fig. 2.6) and c. 7 m west of the later excavation area. Following its investigation, the remaining subsoil was removed in shallow spits by machine over a length of 9 m, exposing either natural brickearth or 'midden deposit' 705 sealed below. It is likely the components of hoard 2 were found more or less *in situ* or at least very close to where they were originally deposited; no further objects from this hoard were found, despite thorough metal-detecting. Hoard 2 contained 18 objects (three complete socketed axes: ON 5, 10, 13, and fragments of two, possibly three, others: ON 12, 16, 19; a punch: ON 4;

a gouge: ON 6; two spearhead fragments from separate objects: ON 7–8; and eight ingot or waste fragments: ON 3, 9, 11, 14–5, 17–8, 20; see Table 2.3). Seven of the objects (ON 6–12) were found in a group on the western edge of the trench and had clearly been deposited together (Fig. 2.6). However, no cut in which they may have been placed could be discerned in plan or section. This group of objects comprised an axe (ON 10), an axe fragment (ON 12), a gouge (ON 6), two spearhead fragments (ON 7–8), and two fragments of bun ingots (ON 9, 11). The remaining objects comprising hoard 2 were found within 3 m of the main group and are likely to represent scattered components, perhaps disturbed by ploughing. The majority comprised fragments of bun ingots (ON 3, 14–5, 17–8, 20), but there were two axes (ON 5, 13), two axe fragments (ON 16, 19), and a punch (ON 4). Some of these objects lay at the base of the subsoil (702) and were surrounded by a darker ‘halo’, probably a result of chemical weathering and discoloration of the subsoil, but some (ON 17–20) lay at the interface of the subsoil and the underlying ‘midden deposit’ 705.

#### Scatter of metal objects from or near to the area of the midden

The subsequent excavation in 2005 produced eight further items (six ingot or waste fragments: ON 300–1, 303–5; one sword fragment: ON 302, and a possible axe fragment: ON 326) (Fig. 2.9; Pl. 2.8). It was initially assumed that these objects derived from hoard 1 but, considering the fact that they were found more or less equidistant from the two hoards, it is not possible to decide whether individual items initially formed part of either. Based on their spatial distribution it would be just as feasible that they may relate to several depositional events. Two of the objects belonging to the scatter, ON 300 and 302, were found in or on top of post-holes 3092 and 3094 recognised near or below the midden spread. At least in these two cases separate deposition provides a more likely explanation, unless the objects were accidentally incorporated into the fills of these post-holes when they were dug. It is regrettable that neither feature could be excavated because of persistent flooding in this area. Taken as a whole, the scatter is also distinguished from the hoards in that it only contains fragments and lacks complete or near complete objects; it appears highly fortuitous that only fragments would have been dispersed if one of the hoards had been disturbed.

#### Discussion: the Ebbsfleet Hoards and the Late Bronze Age occupation on the Ebbsfleet peninsula

The archaeological evidence in the vicinity of Weatherlees WTW appears to be restricted to a well-defined area perhaps covering little more than

**Table 2.3 Summary details of hoard 1 (Ebbsfleet IV), hoard 2 (Ebbsfleet V) and the scatter of metalwork**

ON	Context	Description	Weight (g)	Dimensions (mm) LxWxD
<i>Hoard 1 (Ebbsfleet IV)</i>				
1	620	Socketed axe	247	88 x 37 x 32
<i>From spoil associated with Hoard 1</i>				
21	0 (620)	Socketed axe	120	106 x 43 x 40
22	0 (620)	Socketed axe	136	88 x 38 x 33
23	0 (620)	Socketed axe frag.	23	27 x 17 x 13
<i>Objects from general area of Hoard 1</i>				
24	U/S	Anvil / rivet	9	25 x 15 x 12
25	U/S	Perforated lead sheet	4	18 x 17 x 1.5
<i>Subsoil find, possibly associated with Hoard 1</i>				
2	602	Plate fragment	10	45 x 32 x 1.5
<i>Hoard 2 (Ebbsfleet V)</i>				
3	702	Ingot	310	60 x 40 x 23
4	702	Socketed punch	36	82 x 13 x 5.5
5	702	Socketed axe	132	101 x 50 x 31
6	702	Socketed gouge	57	90 x 21 x 22
7	702	Spearhead frag.	29	39 x 38 x 10
8	702	Spearhead frag.	11	12 x 15 x 10
9	702	Lump, possible waste frag.	23	20 x 19 x 16
10	702	Socketed axe	314	116 x 56 x 41
11	702	Possible ingot	48	33 x 26 x 12
12	702	Socketed axe frag.	29	56 x 28 x 2
13	702	Socketed axe	329	113 x 49 x 45
14	702	Ingot	318	60 x 55 x 19
15	702	Ingot	147	40 x 30 x 25
16	702	Socketed axe frag.	20	33 x 26 x 2
17	702	Possible ingot	45	35 x 25 x 15
18	702	Ingot	206	48 x 50 x 25
19	702	Socketed axe frag.	12	27 x 27 x 3
20	702	Lump, possible waste frag.	13	24 x 16 x 13
<i>Scatter of metal objects, more or less equidistant from hoards 1 and 2</i>				
300	3093	Ingot	1165	120 x 80 x 30
301	3016	Ingot	675	80 x 70 x 25
302	3095	Sword fragment	59	57 x 36 x 10
303	3016	Lump, possible waste frag.	12	22 x 15 x 10
304	3016	Lump, possible waste frag.	3	15 x 10 x 10
305	3016	Two lumps, possible waste frags	17	22 x 16 x 10
			3	12 x 9 x 7
326	3509	?socketed axe fragment	34	30 x 29 x 10

(all objects are copper alloy unless stated otherwise)

2500 m<sup>2</sup> on the more sheltered, eastern side of the Ebbsfleet peninsula, and the nature and density of pits, gullies, and the ‘midden deposit’ indicate a small settlement. This conclusion is further borne out by the results of the watching brief at the eastern end of the access road in 1992, which recorded several (unexcavated) pits, ditches, and two curvilinear gullies perhaps representing the locations of round-houses (Hearne *et al.* 1995, 247–50) (Fig. 2.5).

The Late Bronze Age/Early Iron Age activity has a potential span of 1100–400 BC, but in all probability was confined to a shorter length of time within this overall period. Detailed analysis of the late prehistoric pottery from the enclosure and the midden spread indicates a likely date range of c. 950–750 cal BC for the Late Bronze Age/Early Iron Age part of the assemblage (but see caveats under pottery, below).



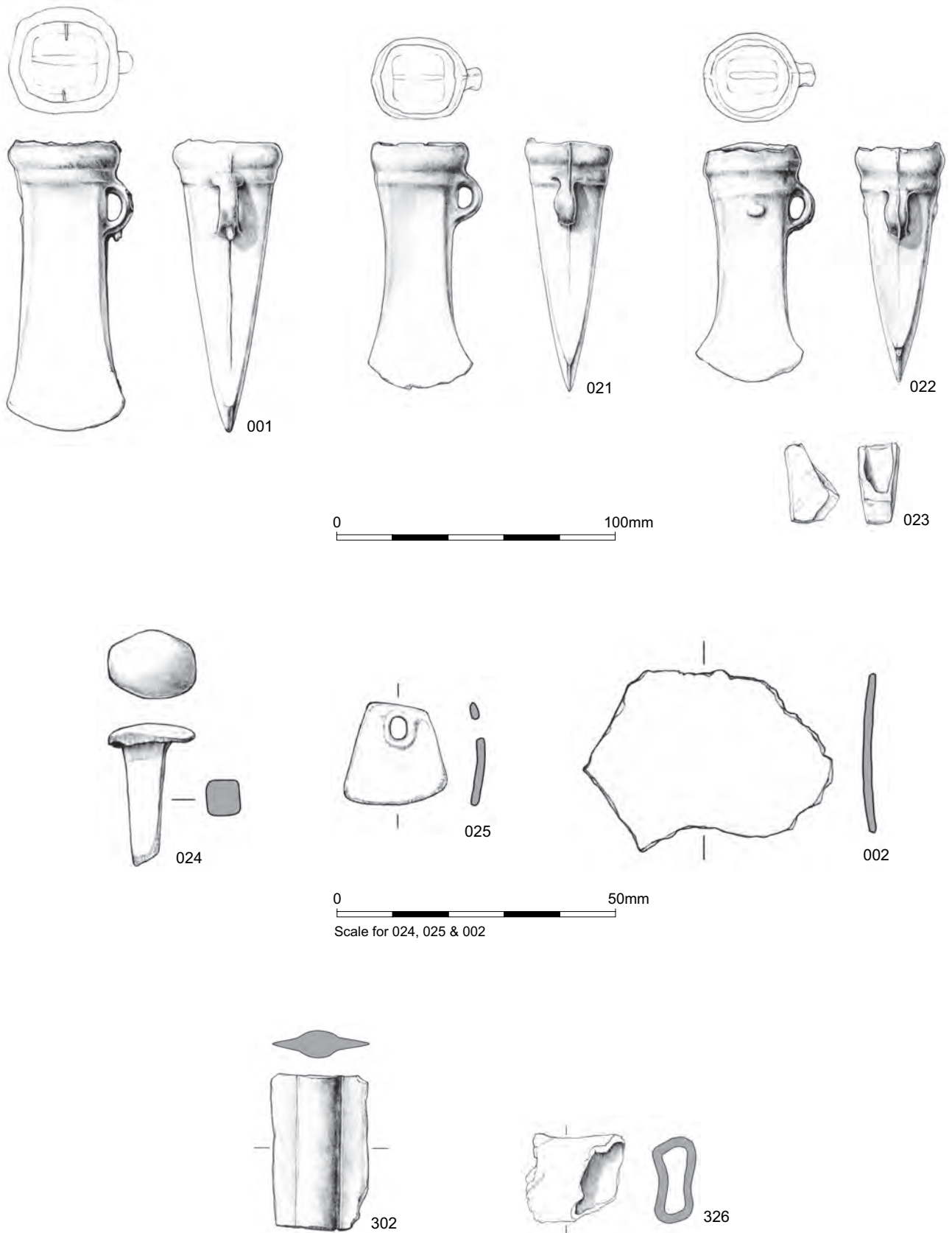


Figure 2.9 Weatherlees WTW: selections of objects from Late Bronze Age hoard 1 (Ebbfleet IV) and scatter



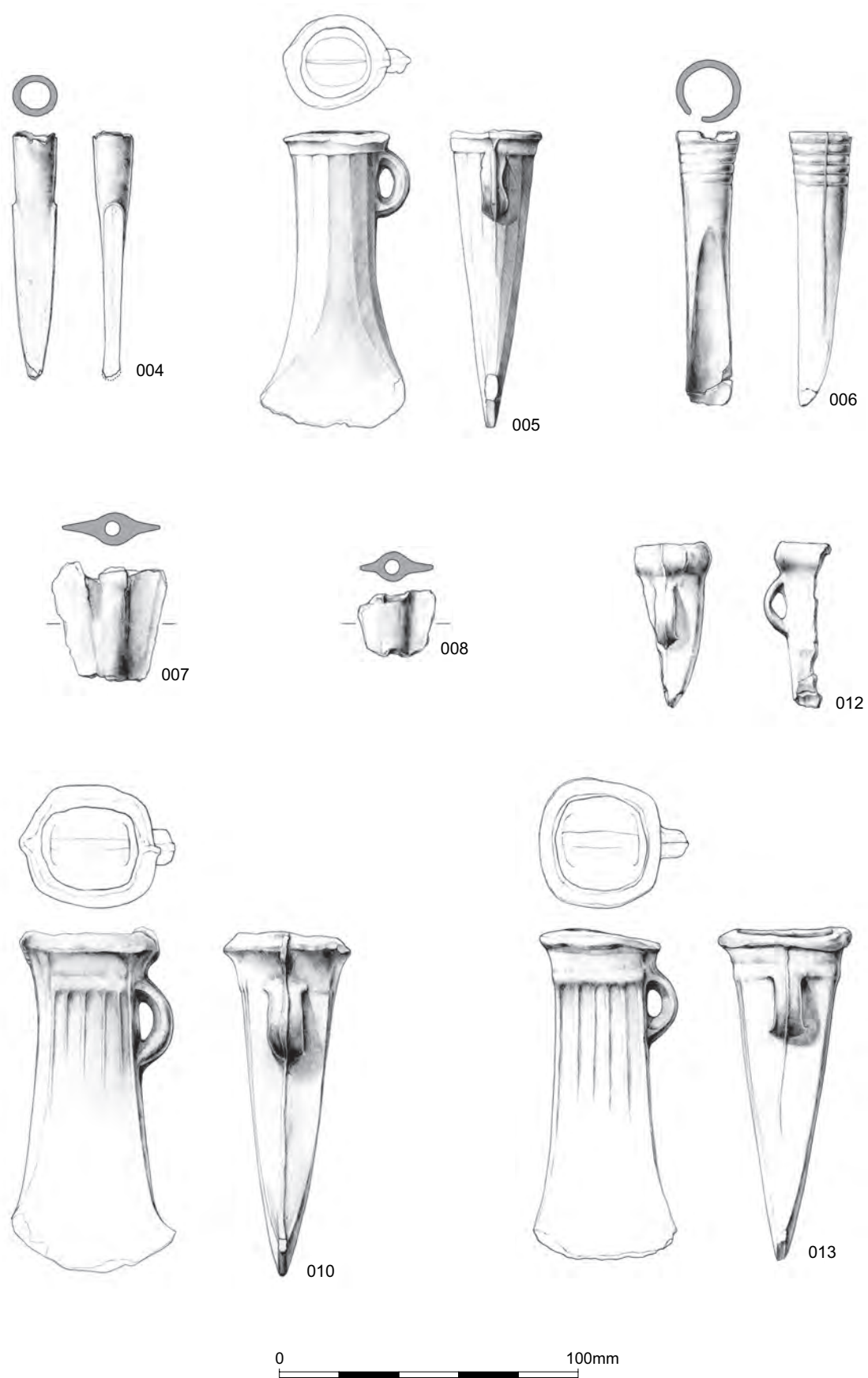


Figure 2.10 Weatherlees WTW: selection of objects from Late Bronze Age hoard 2 (Ebbfleet IV)

The two hoards can be added to the significant concentration of Late Bronze Age Carp's Tongue metalwork hoards already recorded around the Isle of Thanet and the former Wantsum Channel (Lawson 1995, 277; Fig. 2.8B). At least three other Late Bronze Age hoards of the Ewart Park tradition are known from Ebbsfleet. They include the 1893 discovery (Ebbsfleet I) of at least 181 objects at Ebbsfleet Farm (Payne 1895, L), just c. 200 m to the north-west of the site, comprising fragments of Carp's Tongue swords, a socketed hammer, and bun ingots (Lawson 1995, 277). The second was discovered during evaluations at Cottington Hill and Ebbsfleet Farm, described by Perkins (1992; Ebbsfleet II). This included two fragments from a possible small knife, a socketed axe, similar to an example in the Swalecliffe hoard (Needham pers. comm.; Perkins 1992, 303), and a ribbed socketed axe which contained 42 hemispherical objects, all cast with a cross-bar and interpreted as possible decorative studs for clothing. A third hoard (Ebbsfleet III), also found near Ebbsfleet Farm, contained five objects: a Carp's Tongue sword fragment, a socketed hammer, a cylindrical bead, a flat ingot fragment, and a bun ingot fragment (Lawson 1995, 277). The Ebbsfleet III hoard is thought to represent a discrete deposit, but the possibility that the objects were remnants of the Ebbsfleet I hoard could not be discounted (Hearne *et al.* 1995, 251). It was argued that as 'none of the objects would be out of place in a Late Bronze Age context, it would seem reasonable to assume that they were probably deposited simultaneously as a hoard (context category 1a...)' (Lawson 1995, 267–7).

Other Late Bronze Age hoards from Thanet have been summarised by Perkins (1991a, 259–61; Fig. 2.8B). More recently, a substantial Ewart Park phase hoard was discovered during excavation at Ellington School, Ramsgate (Fig. 2.8B, 9). This hoard was unfortunately illegally removed by a metal-detectorist but is now held by the British Museum (Boden 2007, 28). It contains 'over eighty implements including socketed axes, spear-heads, gouges, sword fragments and other implements together with copper and bronze ingots' (*ibid.*). The discovery of this hoard further adds to the pattern of the deposition of objects close to the water's edge around the coastline of Thanet. On the southern side of the Wantsum Channel, Carp's Tongue hoards are also known from Hoaden, Elmstone, and Stourmouth (Perkins 1991a, 260–1; Fig. 2.8B, 7–8).

The range of objects present in hoards 1 and 2 (Ebbsfleet IV and V), as well as the metalwork scatter, finds good parallels within south-east England (and, indeed, on the other side of the Channel), although some objects (notably the small possible 'anvil') are less common. Many of the Thanet hoards contain ingots and provide evidence for an efficient industry

producing quantities of weapons and tools but also recycling scrap metal, probably from both sides of the Channel. A date range at or towards the end of the Late Bronze Age, probably during the 8th century BC, is indicated by the poor quality casting and the presence of more massive axes; the two hoards and the scatter are indistinguishable in terms of date.

The findspots of these hoards provide some interesting information as to the nature of their original deposition. In each case they appear to overlie Late Bronze Age features and deposits and thus may post-date settlement in this area. Neither of the hoards appears to have been buried in a pit and the evidence is particularly clear in the case of hoard 2. Here, a concentration of objects was found together at the base of the subsoil, at or just above the interface with the midden, with further, generally smaller elements scattered around and others overlying, or in the surface of, 'midden deposit' 705. The inference might be that the objects were placed on the ground surface (perhaps in a bag?) and perhaps covered with a small mound of soil; subsequently, they may have suffered some minor disturbance as a result of ploughing. The precise findspot of hoard 1 is less clear in this respect, but again there is no indication of the objects having been buried in a pit. The significance of the lens of dark soil in which at least one of the axes was found is uncertain; it may have been 'ploughed off' the top of a feature (ie, the midden) or represent an *in situ* deposit.

The situation is even more ambiguous with the scatter of metal objects found towards and beyond the eastern side of the midden. While some objects may have been dispersed, perhaps originating from the hoards in the immediate vicinity, at least two items appear to have been individually placed in or on top of post-holes or small pits.

It may be relevant to note that the Ebbsfleet III hoard found in 1992 (Lawson 1995) lay within an area of 1 m<sup>2</sup> in a uniform mixture of reworked natural sand at a depth of approximately 0.8 m. No stratigraphy could be distinguished and, in particular, no pit in which they were buried. More extensive stripping around the hoard revealed no further objects, suggesting only very limited dispersal through ploughing. The Ebbsfleet II hoard was found at a depth of 0.35 m, but the objects appeared to have been disturbed by a drainage pipe and may have been brought up from a depth of 1 m (Perkins 1992, 303).

With the exception of three objects, the entire Monkton Court Farm hoard was recorded in an area of 0.78 x 0.5 x 0.15 m. In this case, the apparent lack of order has led Perkins to suggest they were deposited in a pit that appeared to be cut through an occupation horizon consisting of a floor or possible working yard (Perkins 1991a, 259). Much of the lithic material from this floor had been calcined, which

Perkins has tentatively suggested could be indicative of casting. The burial of ash-slag nodules with the bronzes provides further hints of metalworking. Containing a mix of scrap, moulds, and tools, the hoard was not thought to represent a votive offering. What may be particularly significant about hoard 1 and 2, apart from their context, is the apparent absence of any evidence for metalworking on the site. Despite careful searching, no fragments of crucibles, moulds, or bronze droplets were found. There is therefore no evidence that these are founders' hoards.

Perkins (*ibid.*, 262–3) has commented on the positioning of so many Late Bronze Age hoards on either side of the Wantsum Channel, a waterway that 'offered a protected way into the Thames', 'the doorway to the Continent'. Thanet, an island located at the eastern limit of the Thames estuary, may have played an important role in the travel of objects between Britain and the Continent, with Ebbsfleet a 'major entrepôt to Thanet' (Perkins 1992, 269). The discovery of the two new hoards adds further support to this suggestion.

### *A Potentially Mortuary-Related Deposit at Star Lane, Manston*

by Kirsten Egging Dinwiddy and  
Jacqueline I. McKinley

The Star Lane site (Fig. 2.2) covered approximately 0.5 ha and ran alongside Star Lane, between Nash Road and Manston Court Road, Manston. It was aligned approximately north-east to south-west, with the north-east end at c. 42 m (aOD) rising gently to the south-west to c. 48 m (aOD). Topsoil, around 0.30 m thick, overlay a red-brown silty clay loam and subsoil c. 0.15 m deep. The underlying natural geology was typically degraded chalk and clay-with-flints.

Towards the north of the easement was a circular pit (7187; NGR 636073 1679150) with a concave base and unclear sides (Pl. 2.9). It measured 0.33 m in diameter, 0.29 m in depth and contained a pottery vessel (ON 502) with a diameter of c. 0.20 m. The vessel with applied, finger-impressed cordon was deposited complete, in an upright position and dates to the Middle-Late Bronze Age (Jones, below). The rim is missing, probably truncated by agricultural activity. The vessel contained a dark reddish-brown/black, soft clay silt deposit with a substantial charcoal component, initially interpreted as a cremation burial. Other inclusions comprised worked and burnt flint.

No bone was recovered from the vessel, but the charcoal was analysed. Challinor (below, Table 2.4) suggests that the species recorded (mostly hawthorn/pear/apple) are consistent with pyre debris from cremation-related assemblages, particularly one



Plate 2.9 Star Lane: vessel containing potentially mortuary-related deposit in pit 7187

from a Late Bronze Age/Early Iron Age unurned cremation burial from Saltwood Tunnel (Alldritt 2006). Recent work on charcoal assemblages from Heathrow Terminal 5 and Eton Rowing Lake/Dorney, to the east of London, where it was possible to examine the context-related variation on domestic and funerary deposits for the general Bronze Age and Middle-Late Bronze Age respectively, demonstrates that domestic deposits tended to be more diverse than the funerary deposits (Challinor forthcoming b; in prep.). Of special interest with regards to the Star Lane deposit are a couple of the Eton cremation burials (generally of Middle Bronze Age date) which contained Maloideae-dominated assemblages.

Although there is no contemporaneous material from other forms of fire from the excavated sites to confirm a distinctive range of species were being used for pyre construction at Star Lane, evidence from elsewhere suggests that the material from this vessel is likely to represent pyre debris. The apparent isolation of pit 7187 may be misleading due to the narrow excavation area. The only feature within the vicinity of the pit was a small ditch (7479), oriented north-south

**Table 2.4 Charcoal from later Bronze Age potentially mortuary-related vessel deposit at Star Lane**

Phase		Later Bronze Age
Feature type		Pot
Feature no.		7187
Context no.		7202
Sample no.		619
% flint identified		50
<i>Quercus</i> sp.	oak	2
Maloideae	hawthorn, pear, apple	113r
Indeterminate		7
Total		122

r – roundwood    s – sapwood    h – heartwood

and c. 5 m to the west of the pit. This ditch was concave-sided and flat-based (c. 1.00 m wide and 0.17 m deep) and contained only a single piece of undiagnostic worked flint. Its position in the stratigraphic sequence suggests only a date before the medieval period. Cropmarks representing enclosures (of unknown date) just to the north and two round barrows c. 700 m to the south-west (Wessex Archaeology 2004c) may be of some significance here.

### Discussion

The Star Lane vessel (Pl. 2.9) may have contained a later Bronze Age mortuary-related deposit of a type for which there is increasing evidence. Ceramic vessels, devoid of or including only a few grams of cremated bone but containing large quantities of charcoal and/or burnt flint (others may be entirely empty), have been recorded in numerous locations. Several have been found within or in the general vicinity of Bronze Age cremation cemeteries and monuments such as round barrows; the connection is, however, not universal. It cannot be stated with confidence that these deposits are all related to cremation. Their frequent association with other deposits and features linked to the mortuary rite and the occasional recovery of very small quantities of cremated bone (not all confidently confirmed as human) suggests this may be the case, but the interpretation remains open to debate. Some may represent a form of cenotaph, a deposit made in lieu of a burial either because the body has been disposed of elsewhere or because no body was available for cremation (McKinley 2000b; 2006). Other forms of fire could be associated with mortuary rites, such as funeral feasts, as well as other potential ritual activities.

With specific reference to Collared Urns, Longworth (1984, 47) laments the failure of many early excavation reports to record the precise contents of what he denotes as 'urn burials'. A random selection from Longworth's catalogue of sites where such vessels clearly did not contain, or were not associated with human remains, includes Chippenham, Wiltshire; Linton Heath, Cambridgeshire; Moorsholm, Herd Howe, Cleveland; Harrold, Bedfordshire; and Ibsley Common, Hampshire. Other more recently excavated sites where similar deposits occurred are Twyford Down (Walker and Farwell 2000, 21–2; 29, 117), Ports Down (Corney *et al.* 1967, 21), and Langstone Harbour, all in Hampshire (Allen *et al.* 1994, 8–10), and Cippenham in Berkshire (McKinley 2003). The example from Ports Down ridge, overlooking Portsmouth and Langstone Harbours, did not appear to be in direct association with any features, although a Late Bronze Age urned

cremation burial was found in the immediate vicinity, and there is a group of barrows in the general area (Ashbee in Corney *et al.* 1967, 26–7, 30). The charcoal from this vessel consisted mainly of oak sapwood fragments with single fragments of hazel and blackthorn, all typical inclusions in cremation burials of Late Bronze Age date (see above, and Challinor, below).

That this practice may have its roots in the Middle Bronze Age is suggested by similar vessel 'burials' referenced by Nicholls (1987) and including Wrecchlesham, Surrey, where Middle Bronze Age domestic pots were filled with burnt flints and charcoal and deposited in an upright position (Oakley *et al.* 1939), and similarly at Durrington Walls, Wiltshire (Stone *et al.* 1954, 164). A further example, also of Middle Bronze Age date, has recently been recorded at Harefield, Uxbridge, Greater London, where one of three urns, deposited on its side, contained only a fleck of bone with what may have comprised pyre debris (Brayne 2008 and pers. comm.).

More extensive and detailed study, which would go beyond the scope of this report, is needed to improve our understanding of these enigmatic Bronze Age vessel deposits.

### Finds

#### Metal objects found in the Late Bronze Age hoards

by Grace Perpetua Jones

The components of the hoards are listed in Table 2.3 and selected finds are illustrated in Figures 2.9–10 and Plates 2.6–8.

#### Socketed axes

The socketed axes are classified following Needham 1986.

##### Class A: South-eastern type

There are three axes of the 'south-eastern type' (ON 1, 21–2) first defined by Butler (1963, 84 cited in Needham 1986, 41). Two of the Ebbsfleet examples are plain (ON 1, 21, Class A1) and one is decorated with 'a single pellet in relief placed in the centre of either face just below the mouth-moulding' (ON 22, Class A2; Needham 1986, 41). All three have worn blades. ON 1 and 22 are the smallest from the hoards, each measuring 88 mm in length. The third is 106 mm in length. Needham describes this type as belonging to a wider tradition recorded from northern France and the Low Countries, found in Ewart Park/Carp's Tongue contexts in Britain and equivalent 'Bronze Final III hoards' in France (*ibid.*).

#### *Class B: Southern English ribbed axes*

Two of the Ebbsfleet axes, ON 10 and 13, are of the southern English ribbed type (Class B), 'ornamented with three or more longitudinal ribs on either face', frequently seen in Ewart Park hoards in England and Wales (Needham 1986, 42). Both have four ribs on each side but different body sections. The ribs on ON 10 are slightly irregularly placed, with the outer ribs on one side closer to the edge of the body than those on the other side. On both sides they fade out approximately halfway down the body. The ribs on ON 13 are more regularly spaced but are still slightly irregular. They are also much more pronounced than those on ON 10. Both axes are of a similar length and the largest from the hoards (110 mm, ON 13; 112 mm, ON 10). The body of ON 10 is hexagonal, whilst that of ON 13 is rectangular. The upper mouth moulding of ON 13 is much more irregular than that of ON 10, being almost beaded. In both examples the blade is worn.

#### *Class D: faceted axes*

Socketed axes with faceted body angle are widespread in the British Late Bronze Age (Needham 1986, 44). ON 5 appears to belong to this class, but varies slightly in that it has five facets on each face, with the two sides creating a total of 12 facets. The loop is trilobate in cross-section; traces of the casting are present on this side but not on the other. The type is a D1, trumpet moulding with flat top, and has an oval mouth (*ibid.*). The type is essentially British, although examples occur in northern France and Ireland (*ibid.*, 45, after O'Connor 1980, 166–7, cited in Needham 1986, 45). Most come from Ewart Park hoards, although there is evidence for earlier origins. Other parallels include examples from the Meldreth hoard, Cambridgeshire (*Inventaria Archaeologica* GB 13:3(3), 31).

#### *Unclassified fragments*

A number of fragments could not be classified with certainty (ON 12, 16, 19, 23, 326). Fragments from at least two, possibly three, other socketed axes were present in hoard 2. ONs 12 and 16 are both represented by upper fragments, each with part of the mouth and a single loop present. Both are from small axes with a single mouth moulding; no trace of ribbing was visible on either. Casting flaws are present on ON 12, however smoothing of casting flashes was still carried out. ON 19 appears to be from the body of a plain socketed axe. One possible fragment was also present in the scatter (ON 326) and another in the spoil associated with hoard 1 (ON 23). The former is a heavily corroded, rectangular-sectioned piece of copper alloy. Qualitative XRF-analysis confirmed that ON 23 is a lead-rich copper alloy.

#### *Sword*

One Carp's Tongue sword blade fragment (ON 302) was found in the area of the scatter (Needham 1986,

Class B sword, fig. 35.16, blade variant 2 'the midrib curves down to the level of the blade wings, a groove as usual separating the two elements'). The edges are worn and damaged, but an edge bevel is visible. This class of sword is associated with Ewart Park phase hoards in Britain and with equivalent 'Bronze Final III hoards' in northern France, currently dated 1000–860 cal BC and 880–750 cal BC (Needham 1986, 49; Needham *et al.* 1997, 80, table 8).

#### *Spearheads*

Two spearhead fragments (ON 7 and 8) are present from hoard 2, both from leaf-shaped blades. ON 7 appears to have failed during casting: the socket cavity is off-centre towards the tip, as the blade widens this hole veers more towards the edge of the midrib and becomes much narrower, causing the socket wall to become increasingly thin. Cracking is present along the edges of the midrib on both sides and across the middle on one side. An edge bevel is visible on both edges of one blade and the edge is worn; the other blade is damaged and incomplete. ON 8 is a smaller fragment and both edges are missing. No trace of decoration is present on either fragment.

#### *Socketed gouge*

A socketed gouge (ON 6) formed part of hoard 2. The mouth is circular and defined by five horizontal mouldings, the most substantial of which is at the top. The mouth has a longitudinal crack which appears to be a result of use, but may reflect a casting flaw. A lesser transverse crack is also present across the tip, this again may be the result of use or casting. Most socketed gouges in datable contexts belong to Ewart Park assemblages (Needham 1986, 111), although examples with multiple mouth-mouldings can be earlier, as for example the socketed gouge from the Isle of Harty hoard, Kent (*Inventaria Archaeologica* GB 18:3(3), no. 26).

#### *Socketed punch*

An elegant socketed punch (ON 4) is from hoard 2. The socket is tubular and the shouldered blade of rectangular section. The tip is worn. Parallels include an example from the Meldreth hoard (*Inventaria Archaeologica* GB 13:3(3), no. 44).

#### *Anvil/rivet*

A small anvil or rivet (ON 24), 25 mm in length, was recovered from the area of the scatter. The shaft is square-sectioned and tapering, with a maximum thickness of 7 mm. The head is approximately oval in shape, measures 12 x 15 mm. The edges of the head partly curl over suggesting the object had been repeatedly hit.

*Metalworking debris*

*Ingot and waste material*

At least six, possibly eight ingot fragments were present (Pls 2.6–8; ON 3, 11, 14, 15, 17, 18, 300, 301; ON 9, 20, 303–5). The two largest were from the scatter (ON 300, 301), while all the others come from hoard 2 (ON 3, 14, 15, 18). All were probably from larger cakes, 19–30 mm thick. The most complete example is ON 300 which appears to represent just over half of a cake, c. 120 mm in diameter. It is bun-shaped, plano-convex in section, and both surfaces are rough and dimpled. Two other waste fragments from hoard 2 may also be from ingots (ON 11 and ON 17). These have one or two flat surfaces, but both are much thinner than the other ingots, measuring 12 mm and 15 mm in thickness respectively. Most of the fragments appeared to be from bun-shaped ingots, a type common in Late Bronze Age hoards (Lawson 1995, 277). Six small, amorphous lumps of copper alloy were present, four from the scatter (ON 303–305, the latter

in two fragments) and two from hoard 2 (ON 9 and ON 20). All are waste fragments.

*Plate/sheet fragment*

A plate fragment of copper alloy (ON 2), measuring 45 x 32 x 1.5 mm, may be associated with hoard 1. All edges appear broken.

*Lead object*

A piece of perforated lead sheet (ON 25; Pl. 2.6) was recorded from the general area of hoard 1; however, it is possible that the object is later in date, perhaps Romano-British. Although frequently used for alloying tin-bronzes in the Late Bronze Age, lead finds are rare in that period (Gingell in Lawson 2000, 201–2); the recovery of only one lead item despite the consistent use of a metal detector during the excavation at Weatherlees WTW only emphasises this fact.

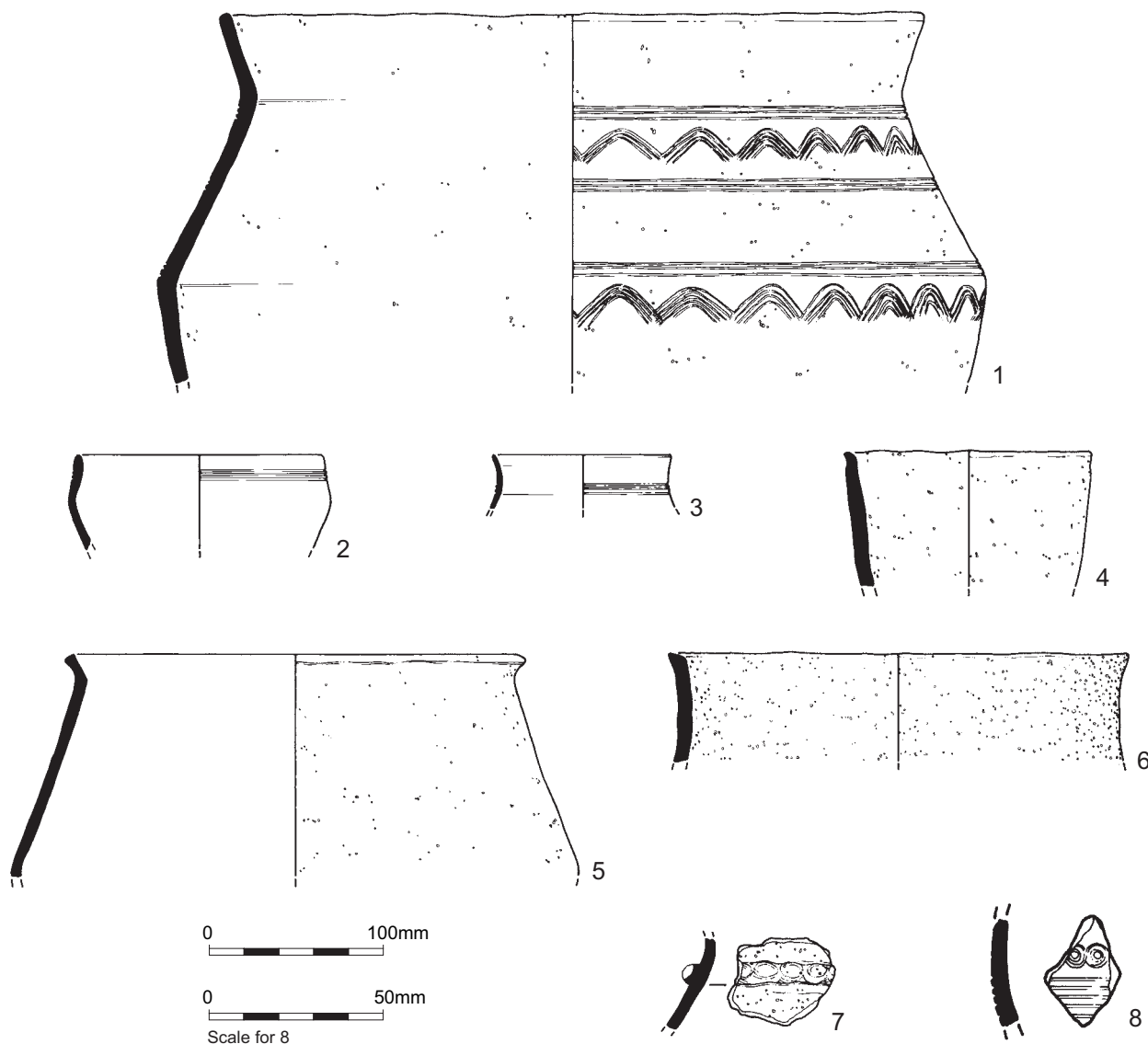


Figure 2.11 Weatherlees WTW: Late Bronze Age pottery

## Later Bronze Age pottery

by Grace Perpetua Jones

Key groups of Late Bronze Age pottery came predominantly from features at Weatherlees WTW, and one pit at Star Lane. Two fabrics (F5 and F15) were identified as possibly being slightly earlier, of Middle–Late Bronze Age date. A single form was recorded in the F15 fabric, an undifferentiated rim (R25) whose orientation is uncertain; however, it appears to be from a neutral form, probably a tub-like vessel (ditch 3678, Weatherlees WTW). The F5 fabric was represented by a single vessel (ON 502) with applied, finger-impressed cordon from Star Lane, and two other body sherds.

### Fabrics

The Bronze Age fabrics are dominated by flint-tempered wares, which account for 97% (by count and weight) of all sherds positively identified as belonging to this period (a list of fabric descriptions can be found in Appendix 2.7). Sandy wares account for only 2% and grog-tempered for 1%. Ten flint-tempered fabrics were identified (LBAF1–F3, F4–F6, F13–F16), containing sparse (7%) to abundant (30–40%) quantities of flint, although common amounts (20–25%) were most frequently recorded. The vast majority also contain sparse quantities (3–7%) of burnt-out organic inclusions, represented by voids in the fabric, and many also contain rare amounts (1–2%) of iron oxides. The clay matrices for all the flint-tempered fabrics are silty or contain very fine or fine-sized quartz grains. The F15 fabric is characterised by very common to abundant flint (30–40%), with poorly sorted fragments up to 4 mm in size. It was utilised for thicker-walled vessels than the other flint-tempered fabrics, with walls of approximately 13 mm thickness, and may be slightly earlier than these, of Middle–Late Bronze Age date. The F5 fabric may also be of this date, it contained a moderate amount (15%) of poorly sorted flint, up to 7 mm in size, and had been used for a vessel with applied, finger-impressed cordon (ON 502). All other fabrics are of Late Bronze Age date.

The single grog-tempered fabric (G1) found in contexts dating to this period contains sparse to moderate amounts (7–15%) of medium to coarse grog. Three sandy wares were also identified. Q1 is a fine fabric, containing a common amount of medium to coarse-grained quartz in a fine sandy matrix, with additional sparse fine flint and rare iron oxides. Q2 contains only an abundance of very fine to fine-grained quartz, and Q4 is characterised by the addition of a common amount of organic inclusions and sparse amounts of flint to a fine sandy matrix.

The inclusions in the later Bronze Age vessels indicate local procurement of resources. The pipeline

route sits on the Upper Chalk of the Cretaceous period, passing through drift deposits of Head Brickearth. Flint for temper would have been widely available from the Chalk, and the clay was probably procured from the Brickearth. The dominant use of flint-tempering during this period is well documented. For example, at Monkton Court Farm, Thanet, 2558 sherds out of 2651 were flint-tempered; the remaining fabrics include sandy wares (Macpherson–Grant 1994, 253). At Highstead, near Chislet, the Late Bronze Age/Early Iron Age pottery was again nearly all flint-tempered. Sandy wares did not appear until c. 500 BC, and were rare even then; heavily grog-tempered pottery became common from the Late Iron Age (Couldrey 2007, 102–3).

### Forms

Thirteen rim types have been assigned a Bronze Age date; however, the actual vessel form of many of these is unknown, as sherds were often broken at the neck. Most forms were represented by a single example, with the exception of R9 (21 recorded), R10 (2), R11 (4) and R22 (2).

- R8: Tripartite decorated fineware bowl, decorated phase of the Late Bronze Age (Fig. 2.11, 1).
- R9: Upright or slightly everted rim on coarseware vessel of unknown profile (Fig. 2.11, 7).
- R10: Upright or slightly everted rim on vessel with concave neck. Fineware jar or bowl (Fig. 2.11, 3).
- R11: Plain, rounded rim, uncertain orientation or vessel form.
- R12: Small vessel of neutral profile, almost straight sides and undifferentiated rim. Rim slightly pinched around top on the exterior (Fig. 2.11, 4).
- R18: Hemispherical fineware bowl. Rim is very slightly everted, upper part of wall is otherwise straight, lower part curves under. Decorated phase of the Late Bronze Age (Fig. 2.11, 2).
- R19: Upright rim, squared, creating a slight internal bevel. Pulled gently on exterior. Probably from a shouldered vessel (Fig. 2.11, 6).
- R21: Everted rim, unknown vessel form.
- R22: Plain rounded rim that appears to be everted, but the orientation, form and date are uncertain.
- R23: Slightly everted rim, concave neck, from coarseware jar.
- R24: Short, squared, everted rim on long-necked vessel, possibly bipartite. Fineware jar (Fig. 2.11, 5).
- R25: Undifferentiated rim, orientation unknown. From bucket-shaped jar or neutral profile tub-like vessel. Middle–Late Bronze Age.
- R27: Everted rim with internal bevel. Two strong finger grooves on interior, creating a rib.

The earliest form is R25, an undifferentiated rim from a neutral-profile tub-like vessel. Less than 5% of

the rim is present, and its orientation is therefore uncertain; however, it is probably from a vessel similar to the R4 or R6 forms from Beechbrook Wood, Hothfield (G.P. Jones 2006a). The Beechbrook R6 was recovered from a Middle Bronze Age feature, whilst the R4 is a Late Bronze Age form. The fabric of the Margate pipeline vessel (F15) stands out from the other flint-tempered fabrics as it contains a greater concentration of flint and was used for thicker walled vessels. However, this was the only rim recorded in this fabric, and due to its incomplete nature cannot be dated more closely than Middle–Late Bronze Age. All other rims have been dated to the Late Bronze Age.

The most obviously diagnostic forms are the tripartite fineware bowl (R8, Fig. 2.11, 1) and carinated bowl (R18, Fig. 2.11, 2), both of which can be placed in the decorated phase of the Late Bronze Age (after Barrett 1980). Form R8, in a flint-tempered fabric and recovered from spread 3768, finds parallels in at Aylesford (*ibid.*, fig. 6.10). Although the vessel walls are relatively thick (8–9 mm), the care and attention paid to smoothing and decorating the exterior suggests it may be placed in a fineware (Barrett class IV) rather than coarseware (class III) category. Form R18 is in a fine sandy fabric (Q1), and was present in ditch 3702 at Weatherlees WTW. It has a slightly everted rim, the upper part of the wall is otherwise quite straight, and the lower wall curves under. The upper part of the vessel was decorated with three incised horizontal and parallel lines. Similar vessel forms from Highstead, Kent include the F5 and F40 forms (Couldrey 2007, fig. 78.235 and fig. 73.212, periods 2–3A). Hemispherical bowls have also been identified from the Late Bronze Age site at Mill Hill, Deal (Champion 1980, 236–7, fig. 6. 10–12). Form R10 (Fig. 2.11, 3) is an upright or slightly everted rim from a fineware vessel with a concave neck, and is probably of the same date as R8 and R18. Two R10 rims were recorded, both from midden spread 3768, in a sandy fabric (Q1) with well-finished surfaces, decorated with incised horizontal lines. Possible parallels for this form include F28 from Highstead, a fine shouldered bowl, or F39, fine cup or bowl with S-shaped profile (Couldrey 2007). This type of rim may also originate from a vessel similar to a fineware bowl from Monkton Court Farm (Macpherson-Grant 1994, fig. 9.24).

Forms without decoration were also identified. Form R12 (Fig. 2.11, 4) is a small vessel of neutral profile, with almost straight sides and an undifferentiated rim with slight pinching on the exterior. One example was recorded, in a flint-tempered fabric, from spread 3768. Similar vessels have been recorded from Highstead (Couldrey 2007, F44–5), Beechbrook Wood (G.P. Jones 2006a, R4) and Broomfield, Chelmsford, Essex (Brown 1995, fig. 7, 17; fig. 8, 25, 32). Form R24 (Fig. 2.11, 5) is a

short, square, everted rim from a long-necked fineware jar, possibly bipartite. It is similar to a carinated jar from White Horse Stone, Kent (Morris 2006, R15, fig. 1.9, 27), described as having a ‘long (40–60 mm) upper half of vessel to neck zone’. It is also comparable to a vessel from Highstead (Couldrey 2007, fig. 73.205, period 2) and one from the 10th–8th century BC Queen Mary’s Hospital site, Carshalton, Surrey (Adkins and Needham 1985, 31, fig. 10.318), described as a handled jar which ‘with its strong low carination is best accommodated in this class even though no handles survive’.

The other rim forms are less diagnostic. Form R9 is a catch-all category for vessels with an upright or slightly everted rim. All vessels classified as R9 have broken at the neck, and it is now impossible to tell if they originated from jar or bowl forms. Vessels with similar rim forms from Highstead include F26 and F33 bowls or F30 jars (Couldrey 2007). The post-Deverel-Rimbury shouldered jars from Iwade, Kent also have comparable rims (Hamilton and Seager Thomas 2005, fig. 33. 2–7). Forms R21 and R23 are again everted rims, as may be R22 (orientation uncertain). Form R27 is an everted rim, characterised by an internal bevel with two grooves on the interior. Form R11 is a plain-rounded rim, but the orientation of the vessel is uncertain as only the top survives. The rim probably comes from plain convex vessel forms such as Highstead forms F1–6 (Couldrey 2007). Four examples were present at Weatherlees WTW, three in flint-tempered fabrics and one in a sandy ware. Form R19 is an upright, squared rim with slight internal bevel (Fig. 2.11, 6). It is probably from a shouldered vessel but is too incomplete to tell. Parallels include jars with concave neck from Highstead (Couldrey 2007, F57, fig. 57.6 and F58).

#### *Decoration*

Decoration on the Late Bronze Age vessels is dominated by the use of fingertip impressions, sometimes with fingernail marks. These tend to be applied to the body of the vessel, often the shoulder, however, three rims recorded as R9 were decorated with fingernail impressions on the top of the rim, and one vessel from midden spread 3768 displayed a finger-impressed applied cordon (Fig. 2.11, 7). Tooled and incised horizontal lines also occur.

The earliest style of decoration can be seen on two small sherds decorated with tooled horizontal lines and stamped circular impressions (Fig. 2.11, 8), the latter of which may have been made using a bone, possibly that of a hare or wild cat (J. Grimm, pers comm.). This form of decoration, employing two concentric rings in association with parallel grooves, is very similar to the motif on the Middle Bronze Age Birchington bowl. Five other examples of sherds decorated with two or three concentric rings have



been reported from Middle Bronze Age sites on Thanet (Hart 2006); however, the find from Weatherlees WTW is from Late Bronze Age enclosure ditch 3694. Three small sherds from this vessel were recorded, the fabric was sufficiently similar to the most commonly occurring Late Bronze Age flint-tempered fabric (LBAF2) to be allocated the same code. Although small, they are well-preserved and in this instance the motif appears to have been used on a Late Bronze Age vessel. Instances of tooled/incised lines include the aforementioned fineware bowl (R8, Fig. 2.11, 1), decorated with incised lines and combed wavy lines. A comb with six teeth was used for the lower band of wavy lines and a comb with four teeth for the upper wavy line. Two sets of bands with three incised lines were also used.

### *Surface treatment*

#### *Basal flint*

Four base sherds were heavily gritted with coarse flint, and another two with fine flint, presumably from being stood on a base of crushed flint during manufacture. Flint-gritted bases occur in both decorated and undecorated assemblages (Hamilton and Seager Thomas 2005, 33) and have been recorded from a number of Late Bronze Age sites across the region, including Monkton Court Farm (Macpherson-Grant 1994) and Highstead (Couldrey 2007, 158).

#### *Red-finishing*

There was only one example of red-finished pottery (body sherd in fine flint-tempered fabric F4, context 1045 at Ebbsfleet Lane). This technique dates from the transitional Late Bronze Age/Early Iron Age into the Middle Iron Age.

#### *Smoothing and burnishing*

Surface treatments occur infrequently, perhaps a reflection of the difficulty in working with flint-tempered fabrics. Nonetheless, instances of burnishing, smoothing and rough wiping occur on both the flint-tempered and sandy fabrics.

### *Distribution*

Pit 7187 (Area 8) at Star Lane produced 176 sherds (1298 g) of flint-tempered pottery. The sherds come from a single vessel (ON 502), represented by body and base sherds, the rim is missing. The base is plain; most of the body sherds are also plain, with the exception of a small number with a finger-impressed applied cordon. Although discovered *in situ*, the vessel was in a very poor state and had shattered prior to excavation. Attempts to reconstruct it proved unsuccessful, however, the on-site photograph suggests a convex, probably shouldered vessel (Pl. 2.9). The use of applied cordons decorated with fingertip impressions is frequently seen on Middle Bronze Age vessels of the Deverel-Rimbury tradition, and the possibility that this is a coarse bucket urn style

vessel cannot be entirely eliminated; however, the fabric, with a moderate amount of poorly sorted flint-temper, and the relatively thin walls (10 mm), suggest that this vessel might be slightly later in date. Middle-Late Bronze Age 'transitional' pottery which demonstrates a change from the Deverel-Rimbury tradition but does not entirely fit with a Late Bronze Age assemblage has previously been recorded from other sites in Kent, most recently across the route of the Channel Tunnel Rail Link (Morris 2006). All other later Bronze Age pottery was recovered from Weatherlees WTW (Compound 16).

### **Pits**

#### *Pits 3499 and 3502*

Pit 3499 contained a large deposit (442 sherds, 2798 g) of Late Bronze Age pottery, all from a single fill (context 3500). Nine large sherds (563 g) join and are from a shouldered vessel with a concave neck and a band of fingertip impressions around the shoulder, but the remaining 433 are mostly very small, with many measuring 25 x 25 mm or less. During excavation it was noted that the larger sherds may have been deliberately placed. The remainder of the material may have been curated for some time or perhaps moved from a midden deposit elsewhere. No vessels were complete when deposited. A small number of sherds were decorated with fingertip and fingernail impressions. Pit 3502, which was cut by pit 3499 and contained a much smaller assemblage of 63 sherds (365 g), is characterised by featureless body sherds with only one plain, rounded rim fragment and one shouldered sherd decorated with an incised horizontal line.

#### *Pit 3519*

This pit contained 128 sherds (880 g) of Late Bronze Age pottery. The assemblage mostly comprises flint-tempered body sherds, with only two undiagnostic rim fragments, one of which comes from a very small, thin-walled vessel, possibly a cup. The material includes the lower part of a fineware jar or bowl with smoothed surfaces. Evidence of slab-building is provided by a long, thin sherd (140 x 50 mm).

### **Midden**

#### *Midden spread 3768*

Contexts 3424 (not illustrated but close to 3305), 3564 (feature 3305; Fig. 2.6) and 3509 (Fig. 2.7) were all part of one midden spread of alluvially reworked deposits that filled a natural depression. It contained a very large collection of Late Bronze Age pottery (1056 sherds, 9428 g), most of which was recorded from context 3424. Flint-tempered fabrics dominate the assemblage, with only 26 sandy ware sherds (178 g) and one grog-tempered sherd (28 g). Nineteen rims are present; however, 13 of these are of the undiagnostic form R9, coarseware vessels with upright or slightly everted rims but unknown profile. Equally undiagnostic is a plain, rounded rim of uncertain

orientation (R11). More diagnostic are three vessels with well-finished surfaces and incised linear decoration (R10), a small vessel of neutral profile (R12), and a tripartite decorated fineware bowl (R8), the latter typical of the later decorated phase of the Late Bronze Age. Decoration is present on a number of sherds throughout the rest of the assemblage and includes fingertip impressions on the tops of rims and the body, a 'pie-crust' cordon, and incised, tooled, and combed lines. Surface treatments comprise smoothing and burnishing. Flint-gritting is also a feature of six of the base sherds.

This spread appears to represent a midden deposit as the size and condition of the sherds is highly variable. For context 3424 the size of all sherds was recorded. It can be divided into the following size groups: 10 x 10 mm: 63 sherds, 60 g, mean sherd weight (MSW) <1 g; 15–25 mm: 282 sherds, 658 g, MSW 2.3 g; 30–40 mm: 16 sherds, 131 g, MSW 8.2 g; 40–50 mm: 320 sherds, 2164 g, MSW 6.8 g; 55–80 mm: 63 sherds, 1211 g, MSW 19.2 g; >80 mm: 5 sherds, 323 g, MSW 64.6 g. Pottery record numbers (PRN) 199–204 represent sherds that all appear to be from a single vessel (R8). They total 68 sherds, weighing 1949 g, with an MSW of 28.7 g. The sherds are in good condition with little surface or edge abrasion and vary in size from 15 x 15 mm to 100 x 100 mm. Other sherds are extremely small and abraded and appear to have been lying around for some time. A total of 78 sherds had been burnt.

Context 3515 of the midden spread (Fig. 2.7) contained 93 sherds (495 g) of Late Bronze Age pottery. These are mostly abraded flint-tempered body sherds with a few fine sandy examples. Most are from coarseware vessels, with a small amount of finer fabrics. The sherds range from 15 x 15 mm to 30 x 45 mm, and many show some degree of burning.

### Ditches

#### *Ditch 3677*

The earliest of the later prehistoric features appears to be ditch 3677 (oriented east–west and located c. 20 m north of the detail shown in Fig. 2.5), of which three contexts produced 86 sherds (616 g) of Middle–Late Bronze Age pottery, including 61 sherds of flint-tempered pottery from one fill (context 3484). The sherds are thicker walled than most of the Late Bronze Age material from Weatherlees WTW. Only two are rim sherds, probably from the same vessel, but too little is present to ascertain the form (R25). It appears to be an undifferentiated rim from a neutral-profile vessel; similar vessel types are known from Beechbrook Wood, Hothfield in both the Middle and Late Bronze Age phases (G.P. Jones 2006a). Eleven sherds from context 3488 are in the same fabric. The material from context 3279 appeared to be slightly later, of Late Bronze Age date, but no diagnostic sherds are present and one small sandy sherd was intrusive.

#### *Enclosure 3689/3694/3697/3702*

All four ditches (Figs 2.5–6) produced 507 sherds (3804 g)

of Late Bronze Age date. The assemblages are all dominated by coarse, flint-tempered body sherds. Identifiable forms include a fineware sandy bowl (R18) decorated with horizontal incised lines (ditch 3694). This bowl falls into Needham's (1996) period 7 and Barratt's (1980) decorated phase of the Late Bronze Age. It finds parallels at Highstead (Couldrey 2007, fig. 73.212), in a context dated 900–600 BC. A long-necked Late Bronze Age vessel with short squared, everted rim, probably a fineware bipartite jar (R24), was recovered from ditch 3702. Few other rims were recorded, one is an upright rim, probably from a shouldered vessel (R19); there is also a rim from a coarseware jar with concave neck (R23) and two upright or slightly everted rims from vessels of unknown profile (R9). Decoration is present on a small number of sherds, consisting predominantly of fingertip and fingernail impressions; however, tooled, and incised lines were also recorded. Of particular interest are two small sherds decorated with tooled horizontal lines and stamped circular impressions, a motif more commonly associated with Middle Bronze Age vessels.

#### *Ditch 3556*

Ditch 3556 produced 30 sherds (314 g) of Late Bronze Age pottery. These are all flint-tempered, from thin-walled vessels, and most are burnt. One displays external wiping and one is an everted rim fragment with internal bevel (R27).

### Discussion

With the exception of the single Middle–Late Bronze Age vessel (ON 502) deposited in pit 7187 at Star Lane (Area 8), all pottery identified as being of Late Bronze Age date was recovered from the southern part of the pipeline route at Weatherlees WTW (Compound 16). However, this does not exclude the possibility that other features of Late Bronze Age date existed in other areas. It has been extremely difficult to date the flint-tempered sherds from the site, as calcined flint grits were used as an opener in pottery fabrics in this region from the Neolithic through to the 1st century AD. Whilst the earlier prehistoric fabrics were usually more readily distinguishable, the Late Bronze Age–Late Iron Age fabrics proved much more difficult to divide chronologically. For example, many of the flint-tempered sherds from Late Bronze Age ditch 3702 and Late Iron Age ditch 3733, both at Weatherlees WTW, were almost indistinguishable in terms of fabric and firing. Therefore, features that contained only a small group of flint-tempered body sherds could often not be dated more closely than to the prehistoric period. Such material was encountered across the route, from features in Area 1-D, Area D, Broadley Road (Area 3), Manston Airport, Joss Bay, Coldswood Road (Area 9), Cottingham Road (Area 14), and Cottingham Hill (Area 15). A large group (41 sherds, 130 g) of abraded, featureless flint-tempered and grog-tempered body sherds from ditch 1545 at

Ebbsfleet Lane (Area 16), appear out of character with the later prehistoric fabrics and may date to the Late Neolithic/Early Bronze Age.

Although relatively large in terms of number of sherds, the Late Bronze Age assemblage includes a limited number of recognisable forms. Nonetheless, the presence of vessels typical of Barrett's (1980) decorated phase of the Late Bronze Age from the enclosure ditch and the spread (3768) it contains, suggests a date in the 8th century cal BC for at least part of the assemblage (Needham 1996, period 7 950–750 cal BC, with the proportion of decorated pottery increasing at around 800 cal BC). Other features contained less diagnostic material and can be only broadly dated to the Late Bronze Age, although an earlier date within this period is entirely possible. The pottery from these groups was largely plain, decoration consisting of fingertip impressions, where it occurs. On the whole, earlier Late Bronze Age assemblages tend to be largely undecorated, although fingertipping does occur. During the later, decorated phase, decoration becomes more widely used and includes tooled and incised linear decoration. The spread appears to represent a midden deposit, containing a range of pottery from very small and abraded sherds to much larger, fresher sherds, which may have accumulated over some time. Similar deposits have been recorded from other Late Bronze Age/Early Iron Age sites in southern England, such as Potterne, Wiltshire (Lawson 2000). The forms draw parallels from other sites in Kent, the south-east, and the Continent. Couldrey (2007, 168) has noted of the Highstead assemblage that 'it is clear that the pottery reveals familiarity with the styles and techniques found across the Channel and some degree of contact is evident'.

#### Catalogue of illustrated pottery (Fig. 2.11)

1. Tripartite fineware bowl (R8) with incised decoration; PRN 199, LBAF1, context 3424, midden spread 3768.
2. Carinated bowl (R18); PRN 389, Q1, context 3298, ditch 3702.
3. Upright or slightly everted rim from a fineware vessel (R10); PRN 236, Q1, context 3424, midden spread 3768.
4. Small vessel of neutral profile (R12); PRN 273, LBAF2, context 3509, midden spread 3768.
5. Long-necked fineware jar, possibly bipartite (R24); PRN 457, F4, context 3197, ditch 3694.
6. Upright, squared rim with slight internal bevel (R19); PRN 403, LBAF2, context 3302.
7. Sherd with finger-impressed applied cordon (R9); PRN 284, LBAF2, context 3509, midden spread 3768.
8. Sherd with tooled horizontal lines, stamped circular impressions; PRN 455, LBAF2, context 3160, enclosure ditch 3694.

#### Late Mesolithic–Bronze Age flint

by Matt Leivers

##### *Ebbsfleet Lane and Weatherlees WTW*

More than a quarter of the entire assemblage (822 pieces of debitage and 64 tools; including 276 pieces of debitage and 17 tools from Weatherlees WTW, Compound 16) was recovered from this area. The vast majority is residual in later features (predominantly Late Iron Age and/or Romano-British pits and ditches), many of which contained a small number of pieces of debitage which are not chronologically distinctive. Chronological mixing is apparent in a large number of cases where diagnostic pieces are present, but there are some distinctive elements and some apparently *in situ* groups.

The earliest element is Late Mesolithic–Early Neolithic: at Weatherlees WTW a broken bladelet with a marginal notch appears to be a failed attempt at making a microlith using the microburin technique; a second blade has microdenticulate retouch; some of the debitage derives from cores designed to produce bladelets and blades. There is no pattern to the distribution of these pieces.

The earliest element in the Ebbsfleet Lane (Area 16) assemblage is Early Neolithic. The only recognisable pieces of this date are a fragment of an axe thinning flake with much edge damage and a secondary notched blade from a bladelet core of Bullhead flint with microdenticulate retouch on the right margin. Both came from the upper fill of a large Romano-British post-hole (1624). The blade is well-made, with an abraded butt indicating that considerable attention was paid to core platforms and flaking angles. Dorsal scars indicate a single platform core. Technologically similar debitage occurs throughout the assemblage but cannot be securely dated.

More common are Late Neolithic–Early Bronze Age pieces, although again the majority of these occurred in later features. At Ebbsfleet Lane (Area 16) however, two groups came from pits which also contained Late Neolithic–Early Bronze Age pottery and no later material (pits 1407 and 1476). The former contained a small collection of seven flakes (two broken); a blade-like flake with an area of very low angle retouch on the distal end of the left dorsal margin, microdenticulate edge damage opposite, and some small areas of gloss; and an irregular multi-platform flake core, abandoned because of the quantity of inclusions present. The flakes do not seem to derive from the core: one is Bullhead, the others a greyish–brown flint that is much paler than the core. The latter feature contained four unretouched flakes. In both instances, technology is hard hammer and flake butts show no sign of preparation or maintenance of core platforms. Dorsal scars indicate

that the majority of flakes were struck from cores with at least two platforms and it seems that, in this period, the usual means of rectifying platform errors was to rotate the core and begin afresh.

A third group of material came from tree-throw 1461. Although this feature contained no other datable material, the lithics (30 flakes and blade-like flakes, nine broken, and a crude pyramidal core) are probably later Neolithic in date. This small collection includes a number of different raw materials (Bullhead flint, pebble flint probably from a beach, better quality flint from chalk) and probably represents knapping waste. The make up of the assemblage does not suggest either a complete *in situ* knapping scatter or collected waste (unless the collection was very desultory), but rather material which collected in the empty tree-throw naturally, if from no great distance and over no great time.

Technologically similar material from Ebbsfleet Lane was recovered from Iron Age, Romano-British, and undated ditches 1014, 1423, 1435, 1473, 1444, 1490 and 1497; pits 1476, 1658 and 1675; palaeochannels 1040 and 1073; and colluvial layer 1125; and modern drain 1050. This material consisted mostly of cores and flake debitage, but included a small number of scrapers and utilised pieces.

At Weatherlees WTW, flake debitage from the skilled reduction of good-quality (often Bullhead) flint is probably Late Neolithic–Early Bronze Age; a number of end or end-and-side scrapers probably belong to this group. Again, there is no discernible pattern.

Ditch 1574 at Ebbsfleet Lane, securely dated to the Middle Bronze Age by its associated pottery, contained a significant group of material consisting of 16 flakes (three broken; two burnt), 11 fragments and flakes used as cores, and 11 tools (all scrapers or variations on the scraper form – one may double as a piercer). Middle Bronze Age lithic reduction sequences are not well understood and there is often a degree of uncertainty regarding residuality but the limited work that has been undertaken (for instance Ford *et al.* 1984; Ford 1987; Brown 1991) has suggested that identifiers may be a low proportion of conventional cores, thick flakes with a low occurrence of feathered terminations, and a predominance of scrapers among the retouched tool element – all features of the group in question.

The tools divide into two types (both scrapers). First there are six reasonably well-made examples: two are end scrapers on regular flakes which would not be out of place in Late Neolithic–Early Bronze Age assemblages and may therefore be residual; one is an end scraper/edge-flaked knife combination on a secondary Bullhead flake which may be similarly dated; one is a small side scraper on a tertiary flake;

and two are end-and-side scrapers on large secondary flakes, all three of the latter struck from previously patinated raw materials and more likely contemporary with the Middle Bronze Age ditch. Secondly, there are five much cruder pieces which can best be described as expedient: all have more or less coarse chipping to one or more margins (which can be concave, straight, or irregular as often as convex) of varied and irregular blanks. These pieces are undoubtedly Middle Bronze Age.

Again it is difficult to determine what activity this material represents. It hardly justifies consideration as a midden deposit (as, for instance, the material from the Middle Bronze Age ditches at Firtree Field, Dorset (Brown 1991)), but the make up of the assemblage does not suggest a casual collection of secondary knapping waste. The proportion of ‘cores’ and tools to debitage is very high, which suggests that there may have been some intention to the disposal, or alternatively some natural process that selectively sorted assemblage elements according to size/weight.

Putatively Later Bronze Age material was recovered in some quantity from both Ebbsfleet Lane and Weatherlees WTW. In both cases, material was identified as the much less carefully-worked component, including a quantity of very irregularly worked cores (some utilising earlier pieces), often using poor quality raw materials, and showing much less control over the reduction process (frequent mis-hits, step and hinge terminations, crushed and fractured platform edges) as is typical of lithic technology of that period.

At Weatherlees WTW much of the material was recovered from features and spreads of probable Late Bronze Age date, suggesting relatively intensive settlement. At Ebbsfleet Lane, diagnostically late lithics came primarily from later prehistoric ditches and alluvial/colluvial layers, as well as from mixed assemblages which occurred throughout the excavated areas. Although these multi-period assemblages have clearly undergone a degree of post-depositional movement and mixing, the condition is on the whole very good, with edges still sharp and fresh, suggesting that the material has not moved very far from the location of its original deposition.

#### *Kingsgate (Area D)*

At this site, at the northern end of the pipeline route, 318 pieces of debitage and 18 tools were recovered. Of these, 245 pieces were recovered from the subsoil. Analysis of form and technology suggests that the assemblage is chronologically mixed, most probably deriving from the Early Neolithic on the one hand, and the Late Neolithic–Early Bronze Age on the other. Diagnostic tool forms are almost entirely absent, so these categorisations are tentative and based entirely on technology. There is a small blade

element (very few true blades, but including a blade core and a number of secondary and tertiary trimming flakes with dorsal scars from regular controlled blade removal); the majority of flakes were struck from cores with single or opposed platforms. Most of these flakes are longer than they are broad. A second element consists of shorter, broader flakes (often broader than they are long) struck from cores with three or more platforms.

The composition of the assemblage (predominantly larger flakes, a small number of cores, very few formal tools) and its condition (heavily patinated, with common blotchy iron stains and edge damage) suggests that it is derived from a topsoil and has undergone significant post-depositional movement.

#### *Comparanda*

It is difficult to place the earlier lithics (pre-Late Bronze Age) in a meaningful local context. Early elements are sometimes recovered from within later assemblages (as at Ringlemere; Butler 2006), but these do not form a pattern that resolves into a meaningful picture of life in those periods. Late Neolithic and Early Bronze Age remains (mainly ring-ditches) are known to cluster above the former south coast of Thanet, from Ramsgate westwards broadly along the line of the A253 at least as far as Monkton. Two sites within this group have been recognised as Early Bronze Age settlements: Laundry Road, Minster (Boast and Gibson 2000) and Oaklands Nursery, Cliffs End (Perkins 1998). It is possible, then, to envisage a dispersed linear barrow cemetery on the higher ground behind a zone nearer the coast within which more sites of domestic character remain to be discovered. The Middle Bronze Age group is currently without published local parallels. Perhaps future excavation will confirm that some of the cropmarks recorded in this area of Thanet relate to contemporaneous activity.

The majority of the Late Bronze Age lithics appear to derive from the casual disposal of undifferentiated domestic waste or from the infilling of later features. Over the last 20 years Bronze Age lithic technologies across Britain have become firmly established and understood and this assemblage fits comfortably within this scheme. In general terms there seems to be little variation between assemblages from across Britain and, consequently, it is not surprising that a number of very close local parallels can be found in terms of both technology and depositional context. Small groups of flakes from features of various types were recovered on Chalk Hill, Ramsgate (Harding 1995, 282) which seem to typify deposition in the immediate area. At Kent International Business Park, a small assemblage of 175 pieces included a similar range of material (a piercer, a knife, four scrapers, six

retouched flakes) and a small residual component (Wilson 1998). Other similar assemblages come from Cliffs End Farm, Ramsgate (Leivers and Harding in prep.), East Northdown, Margate (Smith 1987), and Monkton Court Farm (Perkins *et al.* 1994). At these sites, the flint assemblages tend to be very similar with raw materials that include Bullhead, good quality brown–grey, and pebble flint, probably collected from local brickearth and including previously corticated material. Technology is generally random, with no specific ends in mind and an expedient selection of blanks. Hinge terminations and edge recession on cores are typical. There is an element of better flaking, and the scarce tools consist mainly of scrapers with denticulate retouch, piercers and hammerstones.

#### *Environmental Evidence*

##### **Charred plant remains**

by Chris J. Stevens

A single probable Late Bronze Age sample was examined from Weatherlees WTW (Compound 16, feature 3294 in ditch 3702) and three from probable Late Bronze Age/Iron Age features at Ebbsfleet Lane (Area 16). The discussion also includes seven samples from the evaluation, including five from four Late Bronze Age pits (603, 611, 3499, and 3502) and two from the midden (617 and 705).

These samples all contained a general mixture of remains of both emmer and spelt wheat (*Triticum dicoccum* and *T. spelta*), mainly glumes and spikelet forks, but also grains. Grains of barley (*Hordeum vulgare* sl.) were present in all the samples. The Late Bronze Age sample from ditch 3294 contained a probable remain of sloe (*Prunus spinosa*), as well as several seeds and fragments of celtic bean (*Vicia faba* var. *minor*), the latter was also recovered from pit 603. Pit 1274 from Ebbsfleet Lane also contained a few fragments of hazelnut (*Corylus avellana*).

The samples contained a variety of weed seeds, generally those of larger seeded species are slightly better represented, in particular oats (*Avena* sp.), vetches/wild pea (*Vicia/Lathyrus* sp.), brome grass (*Bromus* sp.), and black bindweed (*Fallopia convolvulus*). The ecology of the recovered species is generally unspecific, although sheep's sorrel (*Rumex acetosella*) prefers sandier, drier, acid soils, and in general there is little indication of cultivation extending onto wetter soils, apart from a single seed of sedge (*Carex* sp.). Chenopodiaceae are quite common, especially from pit 603, and can be related to crops grown on well-manured and generally fertile soils that may relate indirectly to the midden itself.

A single seed of stinking mayweed (*Anthemis cotula*) from Late Bronze Age ditch 3702 should be

considered as probably being intrusive, as the species is generally considered a Roman introduction (Godwin 1984) and is unrecorded from secure deposits prior to the 1st–2nd century AD (Stevens 2006b).

The samples mainly appear to represent waste from the processing of crops stored as more or less clean grain or, in the case of emmer and spelt, semi-cleaned spikelets. The assemblage from pit 611 was slightly more grain rich and may well represent the burning of the stored crop itself.

### Charcoal from the potentially mortuary-related vessel deposit at Star Lane

by Dana Challinor

The deposit from the Late Bronze Age pot ON 502 (pit 7187) was, in all probability, related to cremation activities. There is a good assemblage of charcoal, entirely dominated by Maloideae (hawthorn group; Table 2.4). The dominance of a single taxon is common in Bronze Age cremation assemblages where a single species, or even a single tree, seems to have been selected as the primary fuel for cremating bodies (Thompson 1999). It was not possible to determine which genus of the Maloideae group is represented but it appears that only one taxon was present. The dominant taxon in Bronze Age cremations varies considerably but the most frequent species used is oak. The use of Maloideae is less common, possibly because many of the group are thorny hedgerow trees or shrubs and a significant quantity of the wood would be required to provide the heat necessary to cremate a human body. Since the charcoal from pot ON 502 is not directly associated with human remains it is not possible to confirm that this is in fact pyre debris. Nonetheless, it is worth noting that the assemblage is consistent with other pyre debris from comparable sites, in particular a Late Bronze Age/Early Iron Age unurned cremation burial from Saltwood Tunnel (Alldritt 2006), which was also dominated by Maloideae.

### Iron Age and Romano-British

Of the features encountered during the 2005/6 excavations along the pipeline route, c. 38% (c. 245 of 650), were dated to the Iron Age and Romano-British periods (including late prehistoric), with the Romano-British material being the most frequent. In summary the archaeology of these periods comprised (Fig. 2.12):

- *Field systems*: thinly scattered in the north; more extensive at Coldswood Road and

increasingly more towards Ebbsfleet Lane;

- *Enclosure ditches*: substantial at Ebbsfleet Lane and Weatherlees WTW; enclosing cemeteries at Coldswood Road and Cottington Road;
- *Cremation burials*: Coldswood Road and Cottington Road;
- *Inhumation burials*: Cottington Road, Cottington Hill, Ebbsfleet Lane and Weatherlees WTW;
- *Pits*: concentrations at Kingsgate (Iron Age) and Ebbsfleet Lane (Iron Age and Romano-British), the latter indicate settlement activity, otherwise thin scatters;
- *Other features*: post-holes (Cottington Road and Ebbsfleet Lane); quarry at Manston Airport, spreads at Kingsgate (Iron Age), and an oven base (Romano-British) at Cottington Hill.

The northern section of the investigations (up to Manston Airport) exposed a general low frequency of archaeological features dating to these periods with only two small concentrations. The southern section from Manston Airport to Weatherlees WTW revealed a much greater quantity and more consistent distribution of Iron Age and Romano-British archaeology. The most common feature types were ditches, most representing field systems and enclosures. Numerous pits were also encountered in significant concentrations at Kingsgate and Ebbsfleet Lane. Of particular interest were a Conquest period enclosed cremation cemetery (Coldswood Road), a Romano-British mixed-rite cemetery (Cottington Road), as well as inhumation burials at Cottington Hill, Ebbsfleet Lane, and Weatherlees WTW, the latter two being closely associated with large ditch sequences of possible strategic relevance to the Ebbsfleet peninsula.

### Coldswood Road: Cremation Cemetery, Field Systems, and Related Features

The Coldswood Road site (c. 0.50 ha) lay between Manston Court Road and Spratling Street, Manston. The agricultural land was generally flat and varied from 49 m (aOD) in the north to 50 m (aOD) in the south. Approximately 0.30 m of topsoil overlay red-brown silty clay subsoil; the natural geology consisted of degraded chalk, clay, and flint.

Archaeological remains at Coldswood Road consisted primarily of ditches dated to the Late Iron Age/Early Romano-British and medieval periods (Fig. 2.13). The Late Iron Age–early Romano-British landscape in this area was dominated by a rectilinear field system, including a c. 5–6 m wide, east–west aligned ‘thoroughfare’ running between boundary

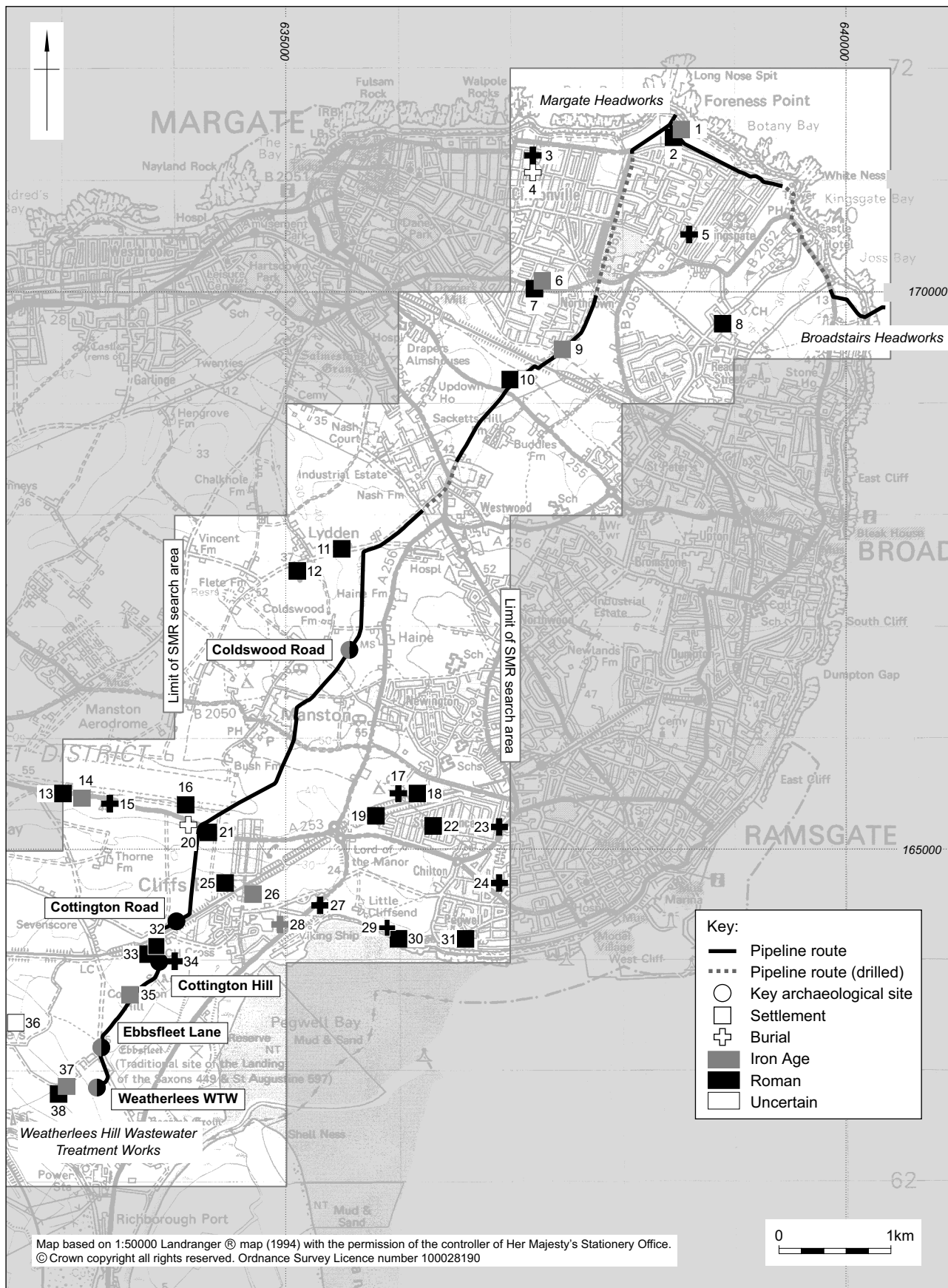


Figure 2.12 Distribution of Iron Age and Romano-British settlement and burial sites (see Appendix 2.2)



Figure 2.13 Coldswood Road: early Romano-British cremation cemetery and associated features



ditches. The enclosed fields measured c. 20–30 m (north–south) by 10–15 m (east–west). This field system extended north–south for at least 85 m, with associated ditches continuing north intermittently for at least another 150 m. Other features included a hollow-way, pits, post-holes and tree-throw holes. The most significant discovery was a Conquest period cremation cemetery.

#### **Hollow-way**

A large spread deposit (8457), probably representing a hollow-way, was situated adjacent to and slightly overlapping the cremation cemetery enclosure. This material accumulated in a hollow next to the cemetery, in an association repeated at Cottington Road (see below). Romano-British cemeteries were frequently located outside settlements, alongside a road or thoroughfare (Niblett 1999). The spread contained medieval artefacts, suggesting the route was used less frequently during this period, allowing debris to accumulate and finally completely fill the hollow.

#### **The cemetery enclosure**

One enclosure, delineated by Late Iron Age/Early Romano-British ditches, did not always have an agricultural function. It contained triangular internal sections divided by two insubstantial gullies, one (8278) running between the north-west and south-east corners and a second, segmented, gully (8286 and 8461) situated between the northern half of the eastern boundary and the southern half of the western.

#### **The cremation graves**

Enclosed within the cemetery boundary were the remains of seven early Romano-British unurned cremation burials situated in two of the internal divisions: four in the north-eastern section (8195, 8202, 8206, and 8198) and three in the south-western section (8199, 8208, and 8273; Fig. 2.13).

The grave depths ranged between 0.07 m and 0.38 m, averaging 0.2 m. Both the shallowest (8199) and the deepest (8273) graves were in the south-western division. The cremation burials were slightly to moderately disturbed or damaged, but generally minimally, with slight movement from decay and soil pressure accounting for most displacement. Two of the shallowest graves (8195 and 8198) were, unsurprisingly, the most disturbed. The majority of cremated bone deposits survived comparatively intact while the accessory pottery vessels were the most disturbed grave constituents. Most of the damage was caused by later agricultural activity. None of the burials was disturbed or graves truncated by another or by later features, nor did any encroach into or disturb any earlier features or boundaries.

Details of the burials are in the grave catalogue (Appendix 2.3) and are therefore only summarised here. Five graves were approximately circular in plan, some being slightly more oval or irregular. Two graves in the southern division were approximately rectangular. The circular graves were 0.42–0.80 m in diameter; the rectangular graves 0.83–0.85 m long by 0.64–0.69 m wide. The longest sides were generally in an east–west orientation. The graves were reasonably distinguishable from the surrounding natural geology and, where observable, had moderate to steep sides and approximately flat bases.

The two smallest graves (8195 and 8198) contained the least complex burial deposits consisting of a small pottery vessel and an unurned deposit of cremated bone. However, it did not follow that the largest grave had the most complex burial deposit. Other than graves 8195 and 8198, no combination of grave and burial style or contents was repeated (Figs 2.33–38 and Appendix 2.3).

Only one grave (8206) contained enough charcoal for analysis, suggesting that very little, if any, pyre debris was included in the burials. The fuel for the cremation of the individual in grave 8206 was probably almost exclusively oak, which contrasted with the mixed wood charcoal in the domestic debris from a pit of a similar date excavated nearby. The inclusion of non-local pine in the burial assemblage is significant and is also likely to be from the pyre (Challinor, below).

All the burials were made unurned; all but one (8198) probably originally in an organic container. The simplest form of container may have been a bag or similar, as indicated in graves 8195 and 8273, where the bone deposits were globular in plan with no associated fittings. This is commonly the case. Caskets were recorded in four graves (8199, 8202, 8206, and 8208) but these were utilised in various ways. Graves 8206 and 8208 had sub-rectangular deposits of bone with metal casket fittings in at least two corners, the bone completely filling the base of the casket (with accessory vessels placed either on or beside it). The bone deposits in graves 8199 and 8202 appeared to be hexagonal in plan. In grave 8199 a deposit of cremated bone was clearly placed in the centre of a large casket, indicated by metal fittings on one side of the grave cut (a pair of hobnailed shoes was also located next to the casket, with two pottery vessels placed between them). Mineral-preserved organic remains from a corner brace and three nails showed that the casket was made of ash (*Fraxinus excelsior*). In grave 8202 the casket did not contain any human bone which, instead, formed a clearly separate, hexagonal deposit. The small casket was indicated by metal corner fittings and clearly contained the burnt but articulated remains of a suckling pig (Grimm, below).

### Burial customs, rites and patterns

There does not seem to be any clear pattern to the style and contents of burial between the two divisions; however, the graves in the south-western division appear to be slightly richer than those in the north-eastern division (Fig. 2.13). Of the latter, grave 8202, containing the remains of a male, appears to be one of the richer graves. The sex of the occupants of the equally complex grave 8206 was possibly female, as was that of plainer grave 8195. In the south-eastern section, only the burial made in grave 8273 of a c. 20–28 year old adult was determined as female, which concurs well with its three rosette brooches.

Four of the seven (c. 57%) burials included caskets. While the sample size is perhaps too small to make too much of these figures, it is nevertheless remarkably high when compared to other cemeteries in south-east England (Philpott 1991, 13, table 1). Philpott (*ibid.*, 12; 400, fig. 3) knew of only 39 examples of casket burials in Roman Britain, distributed in an arc from Hampshire to Cambridgeshire. They remain rare in Kent, with a late example from Canterbury and unstratified casket fittings from graves at Faversham and Southfleet (Borril 1981, 321, table 46,C), but numbers for the county have recently been increased by the CTRL excavations at Pepper Hill, Southfleet, where 26 box/casket burials were found (Biddulph 2006, 57, table 11). A cemetery at Alton, Hampshire (44.4%; 4 of 9 burials) has the highest incidence of casket burials and, like Coldswood Road, it also features both human bone filled and non-bone filled caskets (Philpott 1991, 13).

At Coldswood Road one casket burial contained remains of a suckling pig (burnt) rather than human bone. A similar situation, of grave goods rather than cremated remains deposited in a casket, was seen at Baldock, Hertfordshire, site D, grave 5, where only a brooch (possibly originally on a dress) was contained within the casket which accompanied the separately deposited cremated human bone (Stead and Rigby 1986, 61–4 fig. 27). In the adjacent, contemporaneous grave 6 (*ibid.*, 65, fig. 28) the human remains were in the casket. Some casket burials also contained cinerary urns, eg, at Ramsgate Road, Canterbury (*ibid.*) or Cliffs End (Perkins 2001, 58, list 2, no. 79); however, no bone was found in the accessory vessels at Coldswood Road.

Based on the pottery and the three brooches the cemetery at Coldswood Road can be dated to the Claudio-Neronian period, thus placing the casket burials among the earliest from Britain, while the burial from Ramsgate Road, Canterbury, is the latest known, dating to the later 2nd/early 3rd century (Philpott 1991, 13).

Fragments of animal bone were deliberately included in four cremation burials as part of the

mortuary rite. In only one case (grave 8195) was the animal bone mixed with the human. In most other incidences it was included in the grave backfill or in a separate casket. Most of the assemblage comprises pig with a few fragments of medium and large mammal and several fish bones, all from grave 8273. Most of the animal bone bears evidence for burning, including the neonatal pig from the casket, suggesting that the animal remains were placed on the pyre with the body, but kept separate from the human remains.

Evidence for settlements in the vicinity that may have been associated with the cemetery include potential buildings, cropmarks and finds to the north near Lydden (Fig. 2.12, 11–12).

### *Cottington Road: Field Systems and Mixed-rite Cemetery*

The site at Cottington Road (0.6 ha) lay in an arable field between Cottington Road and Canterbury Road West (Fig. 2.14). The area sloped steeply from Canterbury Road West at 36 m (aOD) to the south, where it turned west and along the base of the slope at 10 m (aOD). A c. 0.30 m deep topsoil overlay a mid-red-brown silty clay subsoil, 0.15 m deep at the northern end, increasing in depth with deposits of colluvium downslope. The natural geology comprised chalk with clay and flint to the north and red-brown sandy clay at the southern end.

A large number of features were recorded in this area, all concentrated in the southern part of the site. They included ditches, pits, post-holes, tree-throw holes, a mixed-rite cemetery, and a sunken-featured building (SFB). Elements of the ditches dated to the Middle/Late Bronze Age and late prehistoric–Anglo-Saxon period. Four pits dated to the Late Neolithic (see above) with others from the Late Iron Age–Romano-British periods. The cemetery dates from the 2nd century AD onwards. An Anglo-Saxon SFB was immediately adjacent to the cemetery (see below).

### **Late Iron Age–early Romano-British field systems and tree-throw holes**

*by Kirsten Egging Dinwiddy, Jessica M. Grimm, and Jörn Schuster*

At least two phases of late prehistoric/Late Iron Age–Romano-British rectilinear field systems were observed at Cottington Road. One was oriented approximately east–west and a second north–west to south–east incorporating a hollow-way and cemetery enclosure. These ditches varied in size from 0.7 m to 1.05 m wide and 0.20 m to 0.46 m deep with steep concave sides and flat bases; some were much smaller gullies, no more than 0.26 m wide by 0.15 m deep.

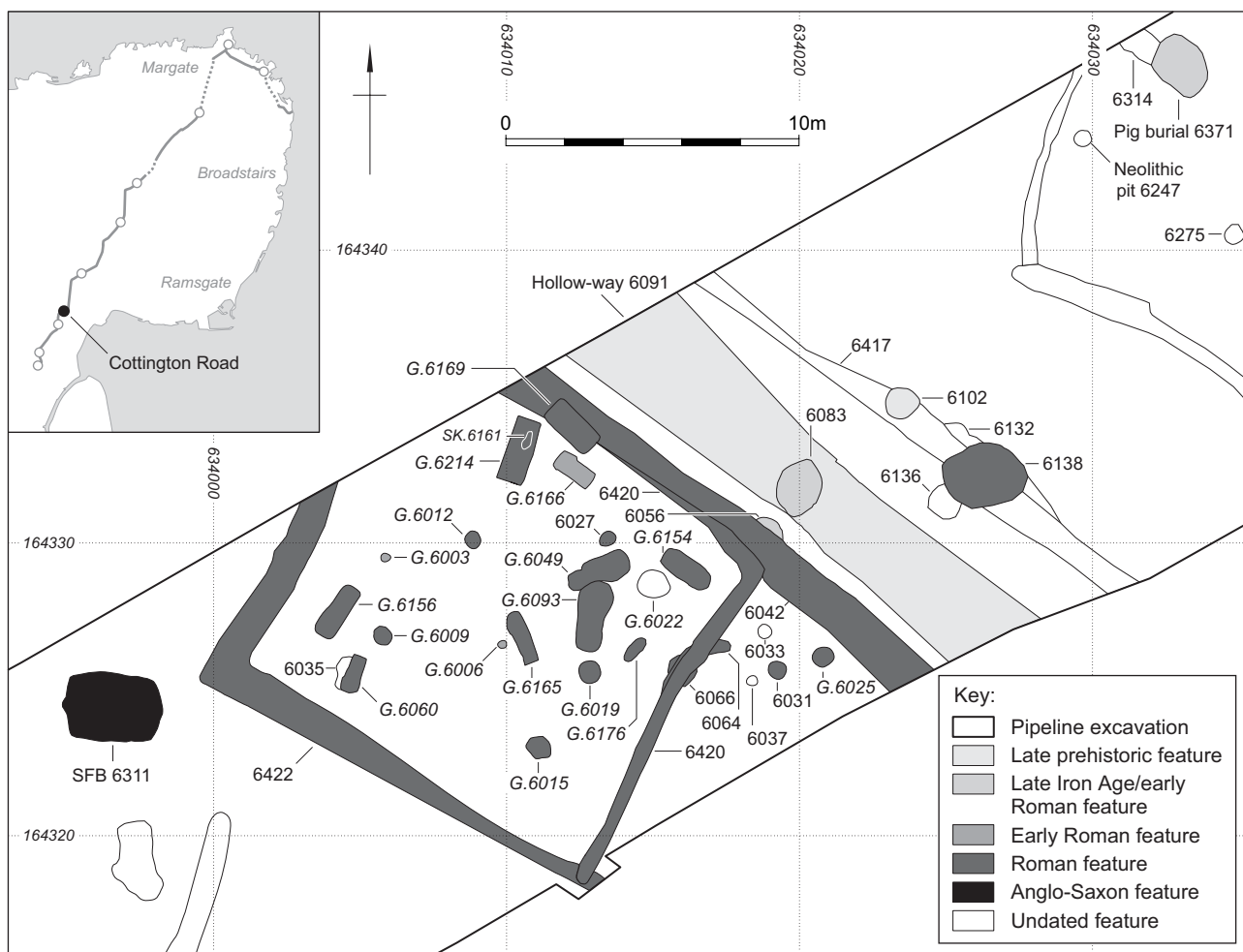


Figure 2.14 Cottington Road: enclosed dual-rite Romano-British cemetery and associated features

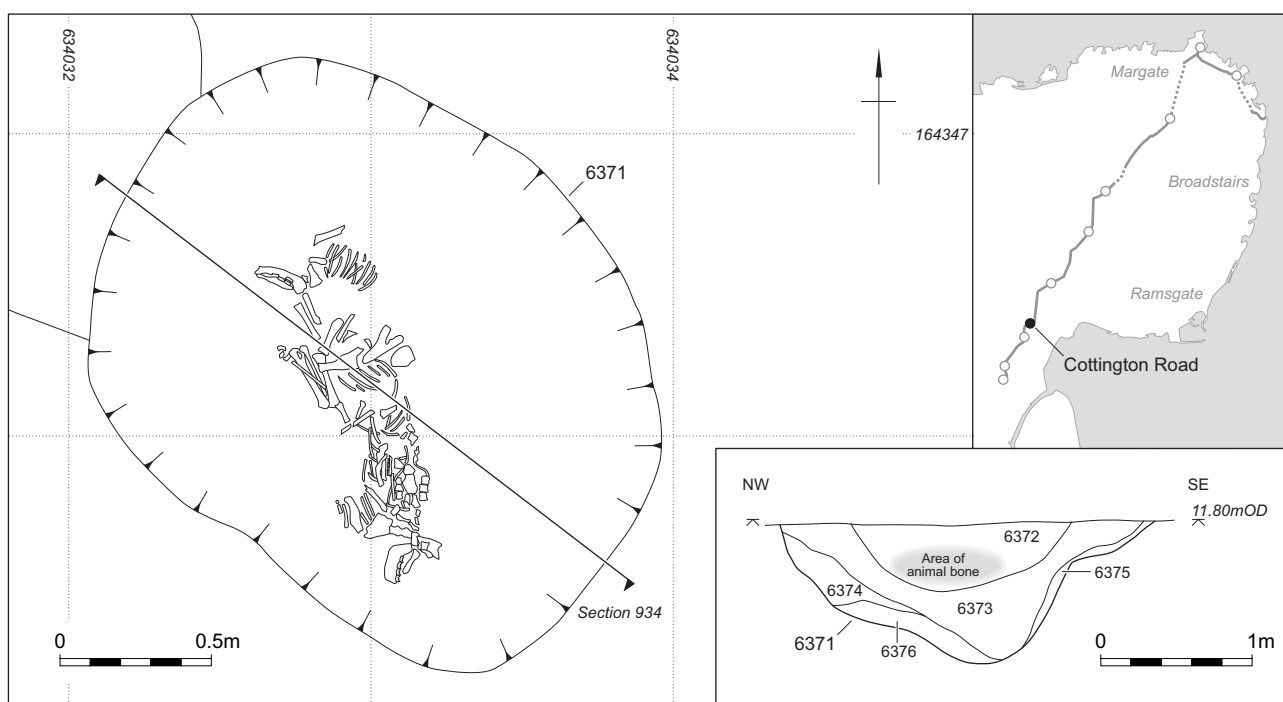


Figure 2.15 Cottington Road: pig burial

Of the 13 tree-throw holes investigated only 6371 produced diagnostic finds. Pottery from its fills is of Late Iron Age/early Romano-British date. The upper fill contained a placed deposit of possibly four partial pig skeletons (Fig. 2.15), of which two or three individuals were 10–16 months old and were accompanied by a mature sow. No butchery marks were seen on any of the pig skeletons.

The animals were placed partly on top of each other. The mature pig was probably orientated south–north, lying on its left side, its bones mainly concentrated in the southern corner of the tree-throw. Parts of the right hind limb (pelvis, fibula, and talus) were found in the north-west corner. A pair of mandibles and other juvenile bones were mainly found in the middle and in the northern part of the tree-throw hole indicating that the skeletons were no longer completely in anatomical order when deposited. The nature of this context remains uncertain but could be as profane as burying diseased animals in a convenient hollow.

#### **The sequence of events in the vicinity of the cemetery**

The sequence of events, especially the relationship between the track/hollow-way and enclosure ditches, was difficult to establish due to the nature of the geology and colluvium deposits, but it can be broadly interpreted as follows:

- *Pre-cemetery phase*: a thoroughfare, represented by an infilled hollow-way, crossed the easement in a north-west to south-east direction as shallow feature 6091. This was 0.20 m deep with concave sides and a flat base. The field system was probably established at this time.
- *Pre-cemetery/early cemetery phase*: pits were excavated in an approximately north-east to south-west alignment slightly to the south-east. Most dated to the Late Iron Age–early Romano-British periods or, more generally, to the late prehistoric and Romano-British periods. These pits were possibly contemporaneous and varied in form and size; three were 1.3–2.5 m in diameter and at least one may have been a bell or beehive pit. The creation of some of these pits (6083 dated tentatively Late Iron Age/early Romano-British) would have hindered the passage of traffic along the hollow-way. The pits appeared to have been rapidly backfilled. Their function was not determined but they may represent tree clearance, which would suggest that the hollow-way had been out of use for some time. Two ditches (6053, only observed in section, and 6417) flanked either side of the hollow-

way, one of which pre-dates the cemetery enclosure ditch 6050 (see below; not illustrated, stratigraphically below 6042). The resulting thoroughfare would have been c. 7 m wide.

- *Cemetery phase*: The western corner, 6422, was the first element constructed, followed by 6420 and 6050, creating the southern and eastern corners. It is possible that the latter represent a later internal division within a larger enclosure, particularly as 6422 continued to the south-east beyond the confines of the easement. The western flanking ditch appears to have been re-established, positioned slightly further to the north-east (6042). In plan this was recorded as later than the enclosure ditch 6050, although it is possible that they were almost contemporaneous. The flanking ditch probably continued as part of the enclosure and thoroughfare for some time but was outlived by the cemetery, illustrated by inhumation grave 6169 which clearly cut the backfilled ditch.

There were substantial deposits of colluvium along the southern section of the Cottington Road site, the accumulation of which in the larger features may have necessitated their re-establishment over a relatively short space of time. It was necessary to remove c. 0.3 m of colluvium mechanically during the excavations of the cemetery enclosure in order to clarify the layout of the inhumation graves. The ambiguity was possibly exacerbated by the reworking of the cemetery soil. It is possible that the cemetery extends below the adjacent railway embankment or was destroyed during the construction of the line.

#### **Cottington Road mixed-rite cemetery**

Eleven inhumation burials in 10 graves, seven mostly urned cremation burials and five possible cenotaphs were excavated within the south-west to north-east oriented cemetery enclosure (Fig. 2.16). The inhumations and most of the cremation burials were in an area of approximately 210 m<sup>2</sup>, enclosed by ditches 6420, 6422, and 6042. The cremation graves were encountered first, clearly cut through colluvial deposits, while most of the much deeper inhumation graves only became evident after the removal of this deposit. Three inhumation graves (6166, 6169, and 6214) were, however, clearly cut through the colluvium. Full descriptions of each grave, the contents and their dispositions can be found in the grave catalogue (Appendix 2.3).

#### *Cremation graves*

The seven cremation burials were quite different to those excavated at Coldswood Road: they are later in

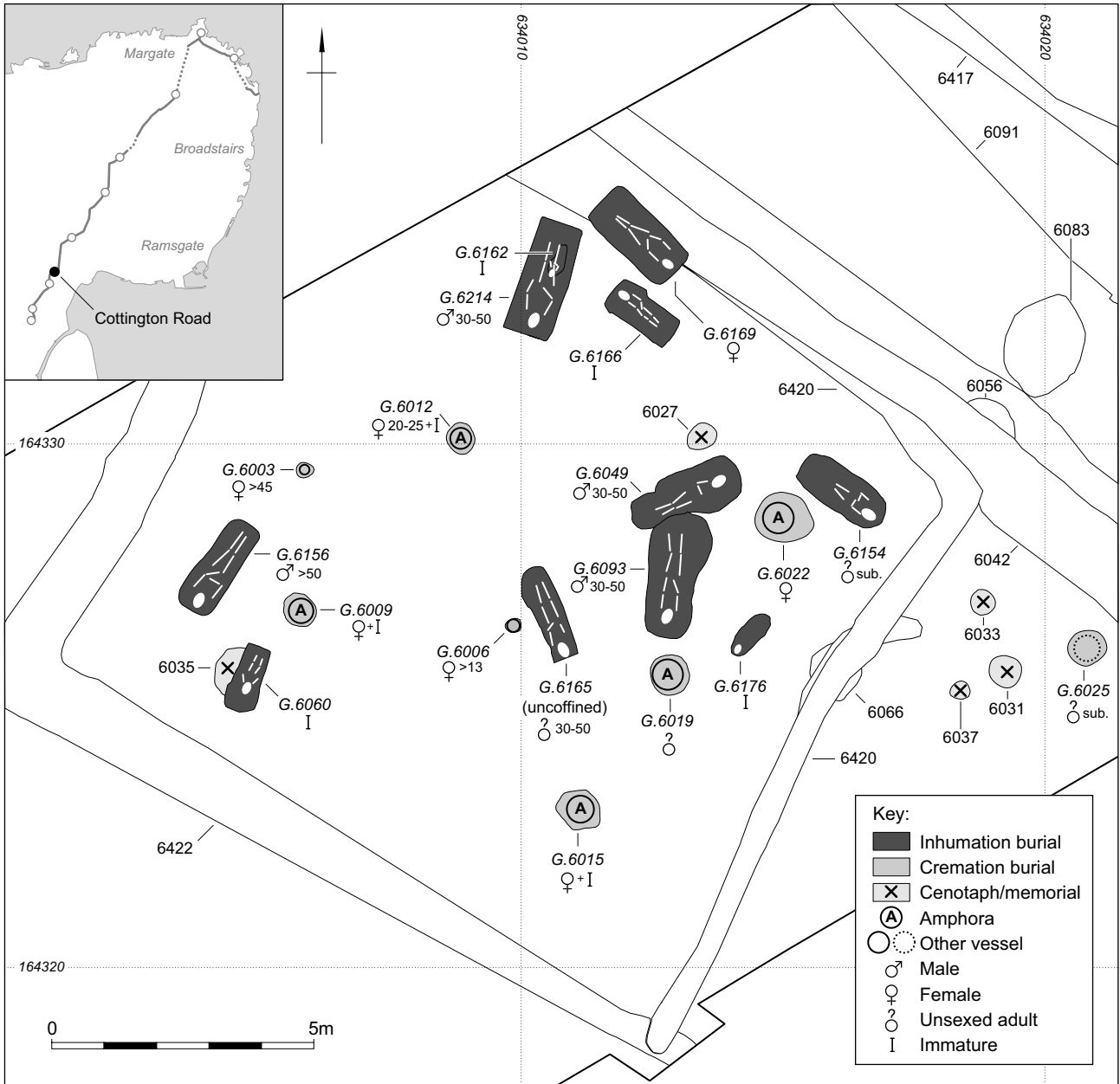


Figure 2.16 Cottington Road: enclosed dual-rite Romano-British cemetery and associated features

date and made within cinerary urns. The upper portions of the graves had been disturbed with several found to be badly damaged by ploughing. The location of the cremated bone towards the bases of the urns meant that it remained fairly intact where the urn bases were undisturbed. Unfortunately, grave 6025 was so badly damaged that only a small portion of the burial remained; it is uncertain whether this represented the remains of a redeposited burial and has, therefore, not been included in the total.

Five graves were sub-circular and two circular with steep sides and predominantly concave bases. Grave cuts could not often be seen, unless pyre debris had been included. Five graves were 0.61–1.06 m in

diameter (average c. 0.7 m) and 0.20–0.28 m deep. The two further graves (6003 and 6006) were significantly smaller (c. 0.34–0.37 m diam., 0.18–0.22 m deep).

Five graves contained pyre debris in the backfill (6003, 6009, 6012, 6015, 6019), a sixth (6022) contained a small quantity of cremated bone. Iron nails suggest that wooden structures, perhaps coffins or biers, may also have been placed on the pyre.

Two rows of fairly regularly-spaced graves in a north-east to south-west alignment followed the orientation of the enclosure and comprised five amphora burials (Fig. 2.16). The rows were spaced c. 5 m apart, and the graves in them c. 2.5–3.7 m apart.

A group of three inhumation graves (6166, 6169, 6214) occurred where a further, northernmost cremation grave, might have been expected. The two smallest and potentially earliest cremation graves (6003 and 6006) lay towards the centre of the enclosure, perhaps part of a row following the thoroughfare and/or enclosure orientation. The location of the potential grave 6025 indicates that a third row may have existed to the south-east, although this would have been outside the enclosure/internal division ditch 6420.

Each amphora contained the remains of an adult female, of which three were accompanied by an infant/juvenile. None of the remains was identifiably of males, although two did contain adult individuals of undetermined sex. Six (four securely sexed) of the seven cremation burials were, therefore, of females.

Non-amphora cinerary urns were observed in three graves, including the two smallest (6003 and 6006) and one (6025) outside a possible internal division. The first two contained similar late 1st–early 2nd century AD wide-mouthed jars, that in grave 6003 associated with an early 2nd century samian plate/bowl. The fragmentary urn in grave 6025 could not be closely identified although it contained an abundance of quartz inclusions and is likely to be of early Romano-British date (see Jones, below).

Dressel 20 amphorae were used in the amphora burials. This large (40–80 litres) globular vessel type with two handles was mainly used to contain olive oil and occasionally preserved olives and is most probably of south Spanish origin (Sealey 1985, 74; Philpott 1991, 22–5; Callender 1965, 25–6). The use of these amphorae reflects their abundance in Britain following the Conquest and they occur in large numbers in both urban contexts. Sites with amphora burials are concentrated in the south-east, where Philpott (1991, 22; 403, fig. 4) counted 64 examples in Kent alone. It is also noted that amphora burials are rarely found in cemeteries where casket- or box burials are present in some numbers (*ibid.*). In the case of the Cottington Road and Coldswood Road cemeteries, where the types do not occur together, a more reasonable explanation of the disparity might be one of date rather than mutual exclusivity. It is interesting to note, however, that amphora burial was an established ritual north of the Thames by the time of the Conquest, moving into London in the 1st century AD, with examples recorded at Bank Station, Warwick Square, and the Eastern Cemetery (Barber and Bowsher 2000, 108). Most of the amphora burials in the south-east date to the mid–late 2nd century AD, with a few extending into the 3rd century. Large sites include Ospringe (Philpott 1991, 22).

In typical amphora burials, the neck and handles were removed, the vessel being closed by other

material such as quernstones or other pottery vessels (*ibid.*, 23). At Cottington Road, none of the amphora necks or handles was recovered. Even though the upper portions of the graves were disturbed the material was generally dislodged rather than removed, suggesting the typical pattern was followed.

Pottery vessels as accessories to the amphora burials were recorded in three of the five examples. Fragmented remains included small greyware jars or beakers and possible everted rim jars but later disturbance meant that it was not possible to tell if they were used to seal the amphorae. Even though it is possible that some of the large pottery sherds were used as ‘lids’, they could equally be derived from post-depositional damage of another vessel.

Other than pottery vessels, the only items found in the graves were a few animal bones (Grimm, below) that had been deposited on the pyre and burnt along with the body before being placed in the grave. The composition of the burials in the Cottington Road cemetery appear to contrast with other amphora burials in Kent where many are deemed richer than average and significantly more likely to contain two or more vessels. Philpott (1991, 23) points out that amphora burials from London and other urban sites (eg, York and Lincoln) tend to be poorly furnished; Cottington Road certainly did not serve an urban population and, as already suggested, the lack of grave goods might be a function of its early date.

The suggested practical use of an amphora as a receptacle to protect its contents and a desire to keep the soil from the burial and accompanying vessels (Philpott 1991, 25) was evidently unsuccessful in the Cottington Road cremation burials. Equally, Philpott’s interpretation of amphorae as ‘low cost communal tombs’ does not serve as an explanation for these burials where the amphorae function as primary cinerary vessels, even though three examples contained the remains of two individuals.

Continental examples of amphora cremation burials include several sites in Gaul and Philpott (1991, 25, with note 10) associates the rite in south-eastern England, and Kent in particular, with huge imports of commodities from southern Spain as well as the influx of immigrants introducing continental rites. The vicinity of the port and supply base, with its major storage facilities, at Richborough has to be emphasised in this context (eg, Millet 2007, 141–2) and might also provide an explanation for the possible early date of the amphora burials at Cottington Road.

#### *Inhumation graves*

Ten graves contained the remains of 11 individuals of Romano-British date. The preservation of the bone was highly variable even within a single grave and it was difficult to verify the levels of post-depositional disturbance; nevertheless, in most cases it appears

that there was very little disturbance with elements having decayed rather than been moved. The deepest graves tended to have the best bone preservation.

There was only one incidence of intercutting graves (6049 cut slightly by 6093), although the contents remained undisturbed. No cases of intercutting between the cremation and inhumation graves were observed, although it is possible that residual fragments of cremated bone and sherds of amphora in some inhumation grave fills (eg, 6060) are the result of disturbance to the cremation burials. Inhumation grave 6169 clearly cuts the backfilled ditch 6042, probably a flanking ditch for a thoroughfare, suggesting the boundaries of the cemetery changed over time, if only slightly.

Grave 6214 contained the remains of an adult male buried in a substantial wooden coffin. A c. 3 year old infant was buried in its own coffin a little way above the adult's right leg. In the backfill of the grave, tucked neatly around the head end and sides of the coffin, were the disarticulated remains of two further individuals, a subadult/adult and a juvenile, not attributable to any other burials. The relative lack of disturbance, accidental or otherwise, and care afforded the earlier remains suggests that it was undesirable to disturb these remains. Previous graves were likely to have been evident to those positioning new graves (perhaps mounds, markers, or records) and attempts were made to avoid them.

All the inhumation graves were approximately rectangular in plan, some with a rounded end (or ends). The sides were steep to vertical and the bases flat. Sizes and depths varied although it was only possible to ascertain the depths of half the graves from the top of the colluvium, the rest only being revealed after removal of c. 0.3 m of colluvium.

The dimensions of adult graves were 1.78–2.36 m long, average 2 m; 0.4–0.98 m wide, average 0.75 m and 0.47–1.14 m (true depths; 0.22–0.62 m below colluvium) deep, average 0.91/0.38 m respectively. Those of immature individuals were 1.05–1.55 m long (average 1.3 m); 0.42–0.74 m wide (average 0.54 m), and 0.55–0.72 m (true depth; c. 0.05 m below colluviums) deep, average 0.64 m.

There does not appear to be any pattern to the orientations of the graves, except that the heads were predominantly placed at the southernmost ends. Position and orientation appear to have been at least partly determined by the enclosure ditches. All of the burials were made extended supine. The hand bones tended not to survive but it appears that most individuals had the hands and/or arms over the pelvis and/or abdomen.

All inhumation graves contained wooden coffins, evidence for which was mainly in the form of iron nails and coffin stains. Nails are generally of the flat-headed Manning type 1B (Jones, below), with 4–20



Plate 2.10 Cottington Road: impressions of timbers projecting from base of coffin in grave 6166

per grave. Nail distribution generally fitted into three broad patterns:

- One or more in each corner, with regularly spaced nails along sides, fewer in smaller graves;
- Numerous at head and foot end, sometimes double rows and occasional nails along sides;
- Three in a row, with one perpendicular – clustered next to upper body on one side.

Some clearly suggest a structural use, whereas others are less easily interpreted. No other coffin fixtures were present.

The coffins were generally represented by an outline of pale grey clay c. 20–40 mm wide; the stain in grave 6214 was much darker, more extensive and irregular. Of particular interest was the grave of an infant/juvenile (6166, c. 4–5 years). It had a distinct rectangular stain and large iron nails, showing that the burial was made in a coffin or similar wooden structure placed against the northern side of the grave, with the foot end slightly more central. Linear depressions at either end of the grave, c. 40 mm below the burial remains, were 250–300 mm long, c. 40 mm wide, and up to 50 mm deep (Pl. 2.10). These

corresponded with the stain and nail evidence, suggesting that the coffin end timbers formed 'feet' projecting at least 50 mm from the base of the coffin.

Although at Lankhills, Winchester, some coffins had planks up to 56 mm thick (Clarke 1979, 337), correlating with the dimensions of the impressions in grave 6166, there are no direct comparisons for these impressions at Lankhills or other major Romano-British cemeteries in Britain (eg, Poundbury, Dorset (Farwell and Molleson 1993), where the majority of the extended late Romano-British burials were in coffins). Equally, no such observations were reported from London Eastern Cemetery (Barber and Bowsher 2000), located on geology very similar to Cottington Road.

Evidence for cross beams was found at the Merovingian cemetery of Meerveldhoven in the Dutch province of North Brabant, where 39 grave chambers had been constructed with the base planks of the chambers each resting on two cross beams, mostly measuring 100 x 100 mm (Verwers 1978, 252–4, fig. 3). Chamber grave 46 contained the traces of a wooden coffin placed diagonally in the chamber and the coffin's eastern end appears to have a wider plank, reminiscent of the 'feet' from Cottington Road (*ibid.*, 255, fig. 4; 297, fig. 49). Cross beams have also been found in many graves of the Merovingian period Alamannic cemetery of Oberflacht, Lkr. Tuttlingen, Germany, where waterlogging perfectly preserved the wooden components of many graves. While there were many grave chambers of similar construction to that found at Meerveldhoven, it was possible to see that in a great number of graves the coffins themselves were also resting on cross beams (Paulsen 1992, 13 Abb. 2; Schiek 1992, 79, Abb. 19).

The cross beams presumably made it easier to create a level floor for the chambers but the beams under the coffins can perhaps best be explained as an aid for the placement of the coffin within the grave, ie, to allow retrieval of ropes used to lower it into the grave. The possible end feet on the Cottington Road coffin would have helped to prevent the ropes from slipping off the ends. Alternatively, it is possible that the impressions in grave 6166 were those of a couch or similar structure used for carrying the remains or displaying them before burial (J. McKinley, pers. comm.).

Only four of the graves contained discernable grave goods:

- grave 6060 (infant): wearing an organic (bone or ivory?) bracelet on the left wrist; glass beads (necklace) near right side of skull; small pottery vessel on top of the feet, within the coffin (mid-2nd to 3rd century);

- grave 6166 (infant/juvenile): organic bracelet/armlet overlying copper alloy bracelet with expanding fastening by left side of the head; small pottery vessel between thighs; wearing hobnailed shoes (early Romano-British);
- Grave 6049 (adult, possible male): Rheinzabern jug (Fig. 2.40, Pl. 2.13) above the head, to the left; wearing hobnailed shoes; ?pyre debris/token deposit, right side of head and upper body (late 3rd/mid-4th century).
- Grave 6093 (adult male): copper alloy buckle on the right side above the head, within coffin (late 4th/early 5th century).

Single chalk lumps were found above the feet of the individual in grave 6169, the only female (adult) inhumation burial, and in the same location in the immediately adjacent grave 6214 (male adult). It is important to note that the natural chalk was not reached during the excavation of these graves, although natural chalk is closer to the surface uphill next to Canterbury Road West, c. 800 m to the north. While amuletic objects known from other sites include flints, fossils, and pebbles, no chalk pieces have been reported as deliberate grave goods (Philpott 1991, 163–4). However, the deliberate placement of a chalk lump was also found in a Late Bronze Age female burial at Cliffs End Farm, less than 1 km to the east, that was found holding a piece of chalk in her left hand next to her mouth (Leivers *et al.* in prep.).

The small number of graves precludes in-depth spatial analysis, consequently few patterns were discernable. Unlike the cremation burials, all the inhumation graves lay within the square enclosure. Most graves respected the layout of the enclosure and did not encroach on previous burials, but one grave (6169) clearly cut a backfilled enclosure/roadside ditch. There appear to be two clusters of graves; the one to the north may be a family group.

The inhumation graves could be interpreted as clustering near to remains of certain cremation graves. It is possible that the grave locations and their occupants were known and influenced the positioning of the later graves. Although there was no clear intercutting, the presence of small fragments of cremated human bone and the inclusion of broken amphora sherds within the graves might indicate that one or two cremation burials were disturbed or even completely destroyed by the later graves. The same could also be said for at least two inhumation burials, only indicated by the inclusion of the bone in a later grave. The accurate positioning of a cenotaph (6035) above the inhumation grave of a child also suggests a knowledge of the earlier burial.



### *Cenotaphs*

Five small sub-circular pits were excavated, none of which contained a cremation burial although residual or random fragments of cremated bone were observed within the fills. The pits were of similar dimensions to the cremation graves (0.37–0.98 m diameter; 0.10–0.53 m deep) with steep, concave sides and concave bases. Within the enclosure were two possible cenotaphs, pit 6027 contained late 2nd/early 3rd century pottery, including much of a highly abraded samian platter and the remains of what may have been a wooden box. Very little cremated bone was recovered. Pit 6035 was poorly defined as it was cut into the backfill of inhumation grave 6060, which was, in turn, cut into a large tree-throw hole. This pit contained a small quantity of subadult/adult (>13 years) cremated bone together with abraded Romano-British oxidised pottery sherds including a footring base and Dressel 20 amphora flakes. It is probable that this feature contained the remains of a disturbed earlier cremation burial. To the east of the boundary 6420 and to the west of cremation grave 6025 was a group of three pits. Pit 6031 contained only a number of hobnails, perhaps an offering of footwear. Only a few fragments of burnt bone (subadult/adult >10 years) were found in pit 6033, and pit 6037 contained no artefacts or inclusions. None of the pits included animal bone.

These pits have been tentatively interpreted as cenotaphs or votive offering pits. Such features are not uncommon in cemeteries of any date and can frequently be identified as empty graves or grave-like features containing no or only very small quantities of pyre debris and/or cremated bone (McKinley 2000b, 42–3). A more substantial form of offering pit is represented by a neckless amphora, buried in walled cemetery structure 1 on Watling Street in Southwark, London. The vessel contained nails and organic material, but no cremated bone, and was interpreted as a receptacle for libations by the living for the dead (Mackinder 2000, 14). Such rites would be performed during the burial itself or at festivals like the *parentalia* in February, the festivals of the *dis manibus* in August, October, and November or perhaps the anniversaries of the death (Henig 1984, 193–5).

### *Burial customs at Cottington Road mixed-rite cemetery*

During the 2nd century AD, inhumation burial gradually replaced cremation as the favoured mortuary rite in Rome, with the transition occurring between c. AD 120 and c. 190. By the mid-3rd century inhumation burials were common throughout the provinces. In Britain and, in particular, the south-east and in Romanised towns, cremation was

practised into the second century of occupation, when Roman inhumation rites became established and remained in place until the end of the Roman period (Philpott 1991, 53, 57–9). Like Crundale, south-west of Canterbury, the cemetery at Cottington Road conforms well to the general trend, although the dating evidence for the two earliest inhumation graves does not enable the dating of the transition more closely within the 2nd century. In contrast, at Northbourne in east Kent, c. 12 km to the south, the transition is later, as the entire cemetery of 11 inhumation and three cremation burials dates to AD 240–320 (*ibid.*, 103).

The scarcity of ancillary vessels or other grave goods accompanying the cremation burials, especially those employing an amphora as an urn, contrasts with other such burials in Kent but is more commonly encountered in Buckinghamshire, Bedfordshire, and Berkshire. It may partly be due to their earlier date (*ibid.*, 23) and is clearly set off from the more elaborate amphora burials at Pegwell, close by, and Richborough (late 2nd century) across the Wantsum Channel. At Pegwell the bones were placed in an urn inside the amphora, which also contained a samian dish and a glass bottle (*ibid.*, 255, tab. 6; Perkins 2001, 44, fig. 1,79); at Richborough, the amphora contained the bones as well as a samian dish, a Castor ware hunt cup, and a small clay unguent bottle (Cunliffe 1968, 27, 242–3). However, an amphora burial (grave 6) discovered at Thorne Farm, Ramsgate, containing the cremated remains of an adult and a ‘very young child’, is equally lacking in ancillary vessels and, as at Cottington Road, the bone fragments were intermixed with many iron fragments (Perkins 1985, 54). Nails found in the cremation burials at Cottington Road were interpreted as indicating the presence of biers or other constructions placed on the pyre. The usual pattern for Kentish amphora burials is clearer at Ospringe, where only six out of 37 amphora burials have no associated pottery, while beyond Kent, and to a lesser extent Essex and north of the Thames, ‘amphora burials are not notable for the provision of additional vessels’ (Philpott 1991, 24, tab. 6).

The character of the inhumation burials with very few grave goods suggests a predominantly late Romano-British horizon. Only three out of ten inhumation graves contain pottery vessels and of those two are early to middle Romano-British infant or juvenile burials. In Kent, only late 2nd and 3rd century cemeteries have around 50% of graves furnished with pottery, thereafter the number of vessels declines, and the burial with the Rheinzabern jug from Cottington Road is among other graves from the county containing pottery which cannot be more closely dated than the late 3rd–mid-4th century

(Philpott 1991, 103; N. Cooke, pers. comm.). The position of the unworn late Roman belt in grave 6093, to the right of the skull, finds a parallel in grave 283 at Lankhills, Winchester, where a D-shaped buckle with an oval plate, dated to the decades around AD 400, was placed to the left of the skull (Clarke 1979, fig. 57).

### *Cottington Hill: Inhumation Graves and an Oven*

The excavation area at Cottington Hill (0.34 ha) lay on the southern side of Cottington Road, running south along Cottington Lane, parallel to St Augustine's Golf Club on the eastern side (Fig. 2.2) at a height of 8.88 m (aOD) in the north, rising to 10.94 m (aOD) in the south. Approximately 0.25 m of topsoil overlay c. 0.15 m of subsoil. At the northern end the natural geology consisted of red-brown silty clay, at the southern end of much paler brown sandy clay.

A variety of features was observed, including five pits, two tree-throw holes, two palaeochannels, and a

Romano-British oven, but the most common features were ditches of varying functions and date, ranging from the late prehistoric to medieval periods. Three inhumation burials were also recorded in this area, two of Late Iron Age-early Romano-British date and one of Middle Anglo-Saxon date. Only the two Romano-British burials and the oven are discussed here (Fig. 2.17).

### **Inhumation graves**

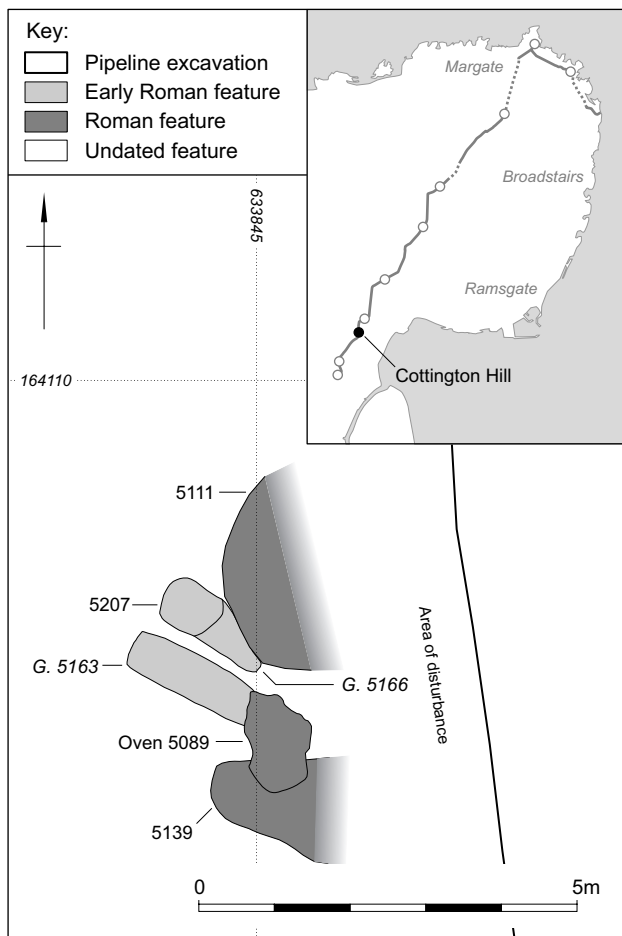
The two Late Iron Age-early Romano-British inhumation graves (5166 and 5163) were found in the northern half of the site, close to the golf course. Large sondages were inserted in this area but the dark deposit into which the graves were cut made their recognition very difficult. Large numbers of ditches of various dates crossed the northern part of this area causing a large degree of reworking and loss of definition. Based on alignment, only two ditches, one 10 m to the south and another 32 m to the north, may have been associated with the burials. Both ditches are of broad Romano-British date. Otherwise no evidence was recorded to suggest that the graves were placed within an enclosure.

Both graves were cut into the dark alluvial deposit representative of previously or periodically marshy ground. The more complete grave (5163) was later overlain by an oven, whilst the damaged grave (5166) was cut by a later Romano-British refuse pit (5111), another pit of unknown function (5207), and a modern pipe trench. The backfills of the graves were very similar to the material into which they were cut, consisting of dark brownish-grey to yellowish/greenish brown silty clay, with inclusions of chalk flecks, flint pebbles, charcoal, and baked clay flecks.

The graves were rectangular/sub-rectangular in plan, 5166 with a rounded head end. The sides were steep to vertical and bases fairly flat. They lay c. 0.15 m apart and on the same alignment, suggesting that they were cut within a short time period. The intact burial (5164, Fig. 2.51) was aligned south-east to north-west, while it is likely that the truncated burial (5209) was the reverse.

Both burials were made extended, supine. The intact burial was that of a male over 50 years old, the other of an infant/juvenile c. 4-5 years of age. Neither had any evidence for a coffin, although the position of the feet and leg bones of the adult suggest that the body was securely shrouded. The arms, whilst asymmetrically positioned, were also tight against the body.

Pottery vessels accompanied both burials; the adult had a complete small flask, dated to around the time of the Roman Conquest, situated above the left shoulder close to the left ear (Fig. 2.51, 227). The younger individual was accompanied by two early Romano-British vessels: a carinated bowl and a small



**Figure 2.17** *Cottington Hill: early Romano-British inhumation burials and other Romano-British features*

globular beaker (Jones, below). These may have been situated at the upper end of the body but were probably relocated during the later disturbance.

The graves lie immediately east of an alleged villa site, just south of the railway line, where Romano-British occupation material has been recovered (Fig. 2.12, 21). It is not clear whether the graves represent part of a larger cemetery; so far, remains of only a single burial of Romano-British date has been recorded just south of St Augustine's cross (Fig. 2.11, 34). It is likely that they represent a small family cemetery, perhaps associated with nearby settlement. The two graves at Cottington Hill were only c. 300 m south of the Cottington Road mixed-rite cemetery which is possibly a successor and therefore equally likely to be associated with the settlement.

### **Romano-British oven**

A single probable oven (5089) overlay grave 5163 and also cut a large, late Romano-British refuse pit (5139). On the eastern side it was partially destroyed by a modern pipe trench. The irregular oval oven was represented by a layer of flint cobbles over which a series of burnt deposits of fired clay and charcoal lay *in situ*. Pottery recovered from the top fill of the oven indicated a late Romano-British date. There was no indication to suggest that the oven was used for activities involving cereals or food preparation, although evidence for malting was recovered from a ditch 11 m south of it (Stevens, below). Charcoal analysis revealed that the fuelwood consisted mainly of blackthorn shrub, an uncommon choice also encountered at Ebbsfleet Lane (Challinor, below); thus the function of the oven remains inconclusive.

### ***Late Iron Age/Romano-British Occupation at the Head of the Ebbsfleet Peninsula (Ebbsfleet Lane and Weatherlees WTW)***

The southern end of excavation Area 16 is here referred to as Ebbsfleet Lane and lies at 2.70 m (aOD). From the north-east the pipeline easement changes direction and runs parallel to Ebbsfleet Lane then crosses the road after 75 m into Weatherlees WTW (Fig. 2.18).

The soil sequence consisted of c. 0.25 m of topsoil overlying a c. 0.15 m thick deposit of mid-brown silty clay subsoil. The underlying geology is red-brown silty sandy clay. None of the features was discernible until the subsoil had been stripped. At the southern end of the slope was an alluvial deposit, through which a number of the archaeological deposits were cut (see Bronze Age section above for further details).

A number of ditches were identified at the northern end of the Weatherlees WTW site. Many were on a south-west to north-east alignment and

varied in date from the Iron Age to medieval periods. Very similar ditches were also identified along the Ebbsfleet Lane site to the north-east. These also comprised a series of intercutting, substantial ditches of the same date and nature as those mentioned below; probably a return to the north-east of the same boundaries (Fig. 2.18). Four inhumation burials and some redeposited human bone were placed in these ditches. Settlement activity, indicated by pits, ditches, and gullies was identified along Ebbsfleet Road, and a carefully arranged Iron Age dog burial was made just north of the large ditches at Weatherlees WTW.

### **Weatherlees WTW and Ebbsfleet Lane inhumation burials**

As in earlier periods, Weatherlees WTW and the site beside Ebbsfleet Lane lay at the boundary between mainland Thanet and the Ebbsfleet peninsula during the Iron Age and Romano-British periods (see above, *cf.* also Moody 2008, fig. 19). The presence of very substantial Iron Age and Romano-British period ditches in these areas suggests that the peninsula was effectively cut off from the mainland, as discussed below.

Cut into the top fills of three of these ditches were four inhumation graves. The ditch fills included silts and clays with varying amounts of domestic waste. Bone preservation is good, particularly at Weatherlees WTW. Two graves (3121 and 3308) were dug into the roughly east-west oriented boundary ditch sequence at Weatherlees WTW, and a further two graves, 1110 and 1931, were made in the north-south aligned ditches east of Ebbsfleet Lane (Figs 2.18-19).

The bones of three burials were well preserved and minimally disturbed, cut deeply into the backfilled boundary ditches (Figs 2.19-20, 53-5). The fourth (skeleton 1033), at Ebbsfleet Lane, was clearly semi-articulated and rested on the slope of ditch 1892 (fills 1029 and 1032). No grave cut was identified for this burial during excavation but later analysis suggests a shallow grave (1931; Fig. 2.19) was used; this proved inadequate in this area which was subject to periodic inundation.

Grave 1110 was sub-oval and 0.5 m deep. The graves at Weatherlees WTW were both rectangular and 0.6 m (3121) and 0.72 m (3308) deep. Both were aligned along the axis of the ditch: 3121 with the head to the north-east, 3308 to the south-west.

The two burials at Weatherlees WTW were both made in an extended supine position. Across the road at Ebbsfleet Lane, the fully articulated burial (grave 1110) had been made in a flexed position. All three burials were those of adult males, all probably over c. 50 years old. The burial of the subadult in grave 1931 was probably originally made with the body on its side but the remains have been disturbed by subsequent slumping of the ditch fills (see online report). No

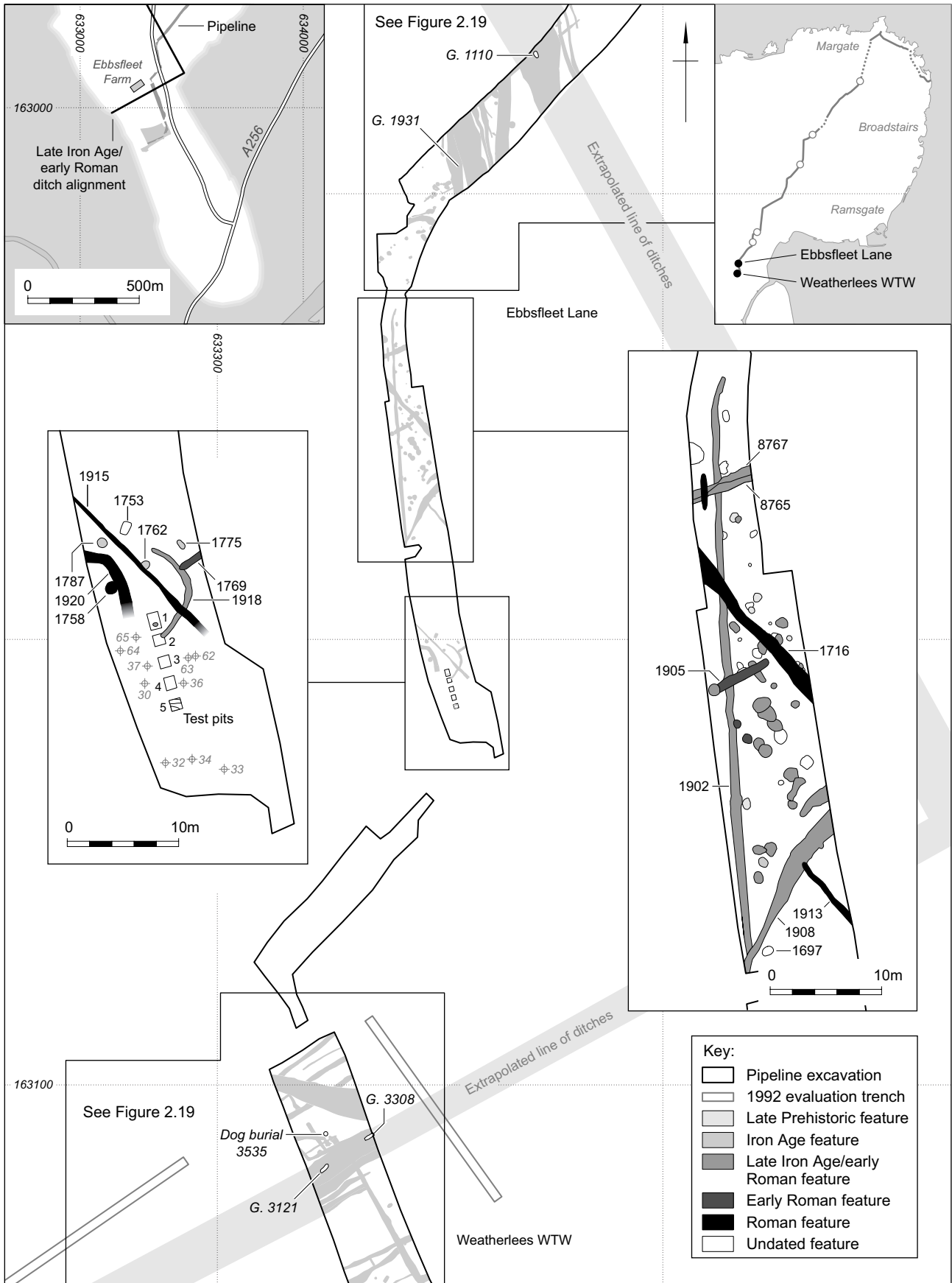


Figure 2.18 Ebbsfleet Lane and Weatherlees WTW: Ebbsfleet Lane and Weatherlees WTW: location and plan of Late Iron Age/early Romano-British enclosure ditches and pits and artefacts from the subsoil and test-pits. Ebbsfleet Lane: 30. copper alloy saucepan handle (Romano-British; Fig. 2.24); 32. coin (late Roman); 33. cast copper alloy buckle (post-medieval); 34. copper alloy stud (Romano-British; Fig. 2.24); 35. copper alloy stud (Romano-British; Fig. 2.24); 36. ring (iron, undated); 37. sword (Middle Iron Age; Fig. 2.23); 62. partial copper alloy armlet (Romano-British); 63. chalk bead; 64. potin coin, 2nd–1st century BC; 65. part of a sprung bolt from a box

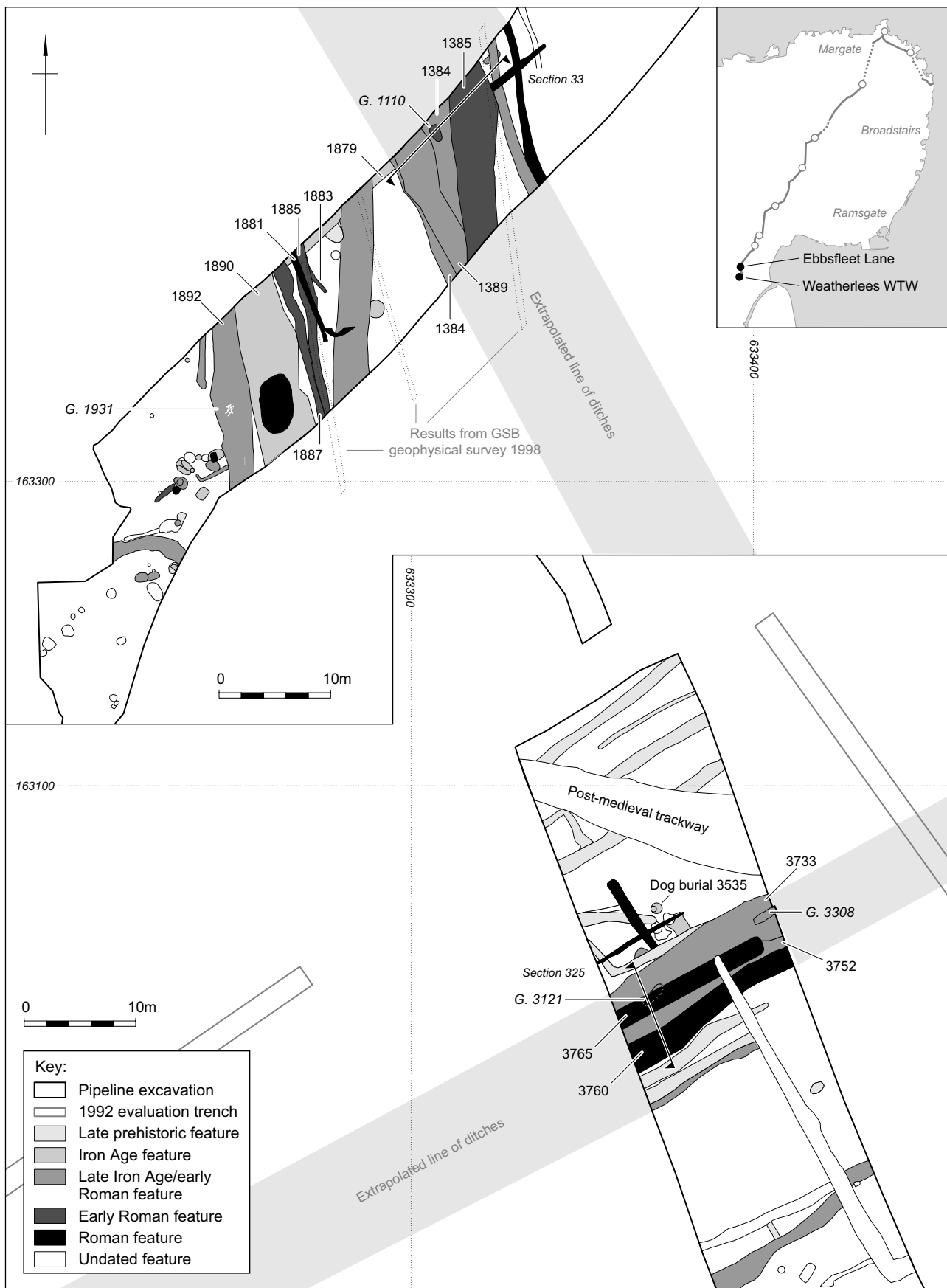


Figure 2.19 Ebbfleet Lane and Weatherlees WTW: phased plan of large Iron Age/Romano-British enclosure ditches; inhumation graves (1110, 1931, 3121, and 3308); and an Iron Age dog burial (3535), (see Pl. 2.11)

grave goods were found with any of the burials nor had any shown evidence for burial within a coffin. Radiocarbon dating (see Appendix 2.5) places them around the time of the Roman Conquest.

The remains of at least two adults, one male and one probably female, were included in the small assemblage of Middle/Late Iron Age bone recovered as redeposited fragments from various ditch fills at Ebbsfleet Lane (Appendix 2.3; online report). These probable boundary ditches were subject to recutting and replacement across a broad temporal range from the Middle–Late Iron Age to the Romano-British period and appear to have related to a settlement or number of occupation sites situated to the west. The human remains probably derived from graves in the immediate area destroyed by later recutting or replacement of ditches. Late Iron Age/Early Romano-British graves dispersed amongst the same group of ditches are testament to a continuum in the mortuary use of the area, which probably formed a liminal or boundary zone in relation to the settlement(s) from which the dead derived.

**Iron Age to Romano-British boundaries and settlement (Weatherlees WTW and Ebbsfleet Lane)**

*Weatherlees WTW ditches*

Four major ditches were identified crossing the site on a south-west to north-east alignment; (Figs 2.18–20). The sequence comprised early pits or ditches, a late prehistoric/Iron Age ditch (3733), followed by Conquest period inhumation graves (3121 and 3308 see above), early Romano British ditch 3752, and ditch 3765 (Romano-British).

The earliest features probably represent the bases of ditches or pits (3127, 3124, and 3348 (not illustrated); Fig. 2.20, section 325). These are both highly truncated, but clearly contained a number of fills – mainly natural, waterlain, and collapse deposits. Pottery from these deposits suggests a late prehistoric date.

The largest ditch (3733) was next in the sequence, cutting away the underlying features considerably. It was c. 5 m wide and c. 1.8 m deep and extended outside the easement (> 20 m) on both sides. It was flat based with moderate sides and contained 14 fills: a combination of natural deposits (some waterlain), collapse/erosion, and dumps containing domestic debris. Fills 3137 up to 3139 contained a few disarticulated human bones.

Another several deposits accumulated before graves 3121 and 3308 were cut for inhumation burials; radiocarbon dating of the skeleton in grave 3121 returned a date of 100 cal BC–cal AD 60 (NZA-28976; 2016±30 BP), somewhat earlier than expected.

A tertiary deposit accumulated above the ditch and graves, prior to the insertion of another ditch. Ditch group 3752 at the south of ditch 3733 clipped its upper edge. It was a wide ‘v’ shape and extended outside the easement. The initial three fills were silty and naturally deposited, probably through water action. The subsequent fills resulted from the stabilisation and final silting of the depression. The latest pottery date from this ditch was early Romano-British, suggesting a fairly rapid process of accumulation.

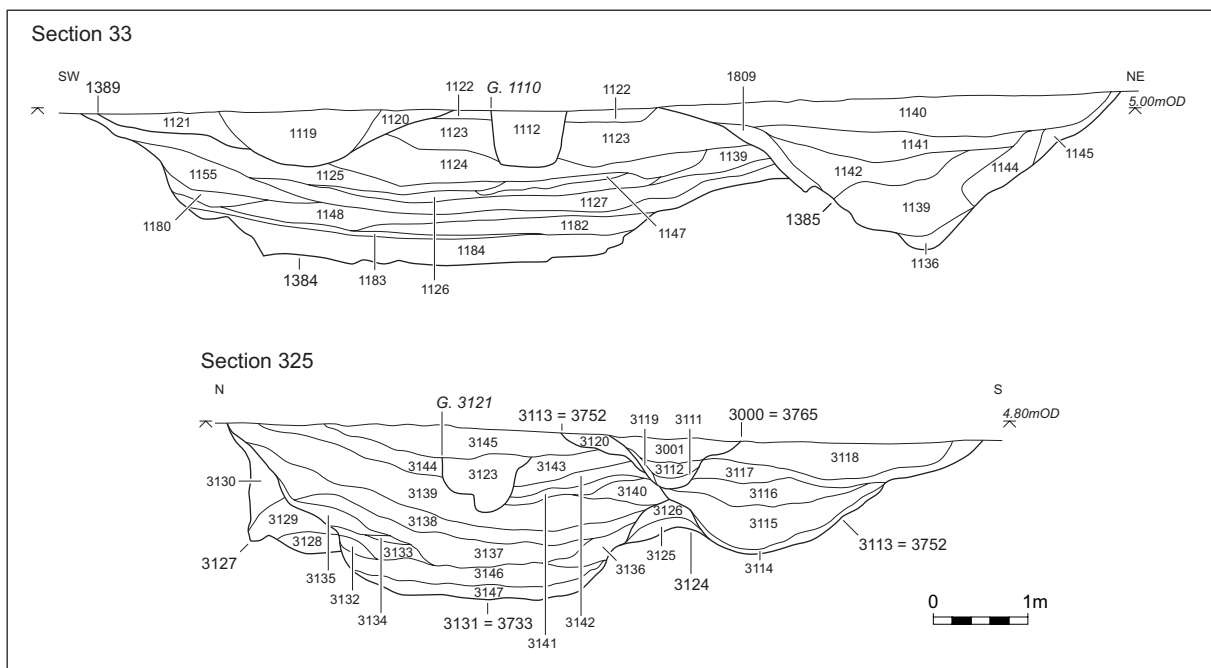


Figure 2.20 Ebbsfleet Lane and Weatherlees WTW: sections through enclosure ditches

A much smaller ditch (group 3765) was the final ditch to be cut prior to the medieval period. It had a moderate 'u' shaped profile and was cut into the top of ditch 3752, on the northern edge where the two earlier ditch also intercut. The pottery from the naturally accumulated fills dates to the Romano-British period; a cow skull was found in the top fill.

#### *Ebbfleet Lane ditches*

A similar sequence of events took place c. 235 m to the north-east, in an approximately north-west-south-east direction across the whole width of the easement (c. 20 m) (Figs 2.18–20). There appears to have been a shift to the east over time, with two distinct bands of ditches. The major elements of the ditch bands are summarised below.

#### **Westernmost series**

Earliest was group 1890, a wide, fairly shallow (0.2 m deep) probable palaeochannel dating to the Middle/Late Iron Age; it was more like a spread for most of its width. The next ditch in the sequence was 1885, cut on the east by ditches 1881 and 1883 (all early Romano-British). Aligned at 90° to the rest of the ditches was small ditch or gully 1879, 0.15 m deep. Cutting 1879 was large ditch 1887, 0.6 m deep, containing early Romano-British material including a Late Iron Age–early Romano-British bowl (ON14 Fig. 2.22).

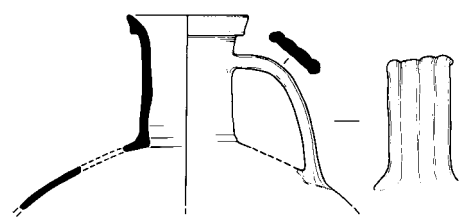
Possibly contemporaneous with 1887 was ditch 1892, 0.90 m deep. The semi-articulated subadult inhumation burial (grave 1931) was recovered from the edge of this ditch. Aligned north-south between the bands of ditches was possible palaeochannel 1138. It was c. 1 m deep and contained a large quantity of pottery of late prehistoric–early Romano-British date, most of the earlier pottery being residual.

#### **Easternmost series**

The earliest feature here comprised a large ditch or palaeochannel (1395, not illustrated) dated to the Late Iron Age/Early Romano-British period and up to 0.6 m deep. This was cut by c. 1.7 m deep ditch 1384, the largest ditch in this area, with fills of generally natural sediments deposited through water action (Barnett, below and Appendix 2.6). The base was fairly flat, with shallow to moderate sides. Disarticulated human bone from this ditch was recovered from three deposits which contained Middle-Late Iron Age material.

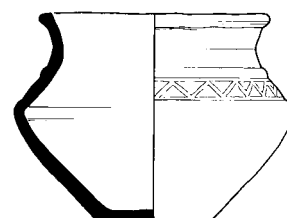
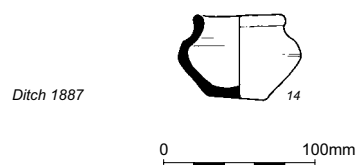
Large ditch 1158 (not illustrated) was cut into larger ditch/channel 1384. The profile of ditch 1384 suggests that 1158 probably continued to the north, the upper fills of 1384 potentially being fills of 1158. An Iron Age saw with an antler handle (Fig. 2.23, 25) was recovered from one of these ditches (context 1127). The same context also contained a worked human femur shaft (Appendix 2.3).

A second large ditch (1385) truncated ditch 1384 to the north-east. This was c. 1.6 m deep with a wide 'v' shaped profile. The eight fills (one of which contained an early



Context 8261 Ditch 8455

Figure 2.21 Coldswood Road: white ware collared flagon



Context 1104 Ditch 1385

Figure 2.22 Ebbfleet Lane: pottery vessels from large ditches



Plate 2.11 Weatherlees WTW: Iron Age dog burial made in pit 3535





Plate 2.12 *Ebbsfleet Lane: intercutting pits from the north-west*

Romano-British bowl (Fig. 2.22)) were thicker than in ditch 1384 but also deposited through water action. Ditches 1384 and 1385 can be directly compared with ditches 3733 and 3752 at Weatherlees WTW to the south, and are likely to be the same features.

Cut into the top fill of ditch 1384 was grave 1110, containing Late Iron Age–early Romano-British flexed burial 1111 (see above), comparable to graves 3121 and 3308 at Weatherlees WTW. To the east, ditch 1389 was cut to a depth of c. 0.6 m. This had quite shallow sides and a concave base; it is potentially the same ditch as 3765 and of Romano-British date.

### Ritual deposits

At the southern end of the Ebbsfleet Lane site was a hollow (unfortunately under several centimetres of water for most of the excavation). Five test-pits were inserted into the dark, material culture-rich deposits including 1785 (Barnett, below). These deposits represent a series of midden-type material reworked and combined with waterlain deposits, probably

resulting from periodical inundation. A number of finds may indicate deliberate deposition; alternatively, they may simply have been included as part of the midden deposition. These comprise a Middle Iron Age sword (Fig. 2.23) and a Romano-British copper alloy armet fragment but also some much later material, such as a 16th/17th century buckle (Jones, below) indicative of subsequent, probably agricultural disturbance (Figs 2.18 and 2.24).

Considerable numbers of Iron Age coins and Romano-British brooches have been reportedly found at Ebbsfleet Farm to the west of the pipeline easement (Perkins 1992, 273, with note 5 and fig .1). While it is feasible that these objects were associated with the general settlement activity in the vicinity, another possibility for their deposition might be related to ritual practices linked to water. In this context it is worth noting that on the 1775 Boys Map the line of the high water at spring tide is marked about 800 m east of Weatherlees Hill (Hardman and Stebbing 1940, map between pp. 68–9), placing it in the vicinity of Ebbsfleet Farm and the pipeline easement.

In the same area at the neck of the peninsula was a Late Iron Age dog burial in pit 3535, (Fig. 2.18–19; Pl. 2.11), within a few metres of the south-eastern extent of the boundary/enclosure ditches at Weatherlees WTW. Dog burials are not unusual on Iron Age or Romano-British settlement sites (Smith 2006). The positioning of this pit close to the ditches might be interpreted as sacrifice in and/or protection of a liminal or boundary zone (Esmonde Cleary 2001, 138).

### Settlement at the neck of the Ebbsfleet Peninsula

Seventy-four pits were recorded at Ebbsfleet Lane, most dating to the late prehistoric–Romano-British periods. Most were in the north–south section of the

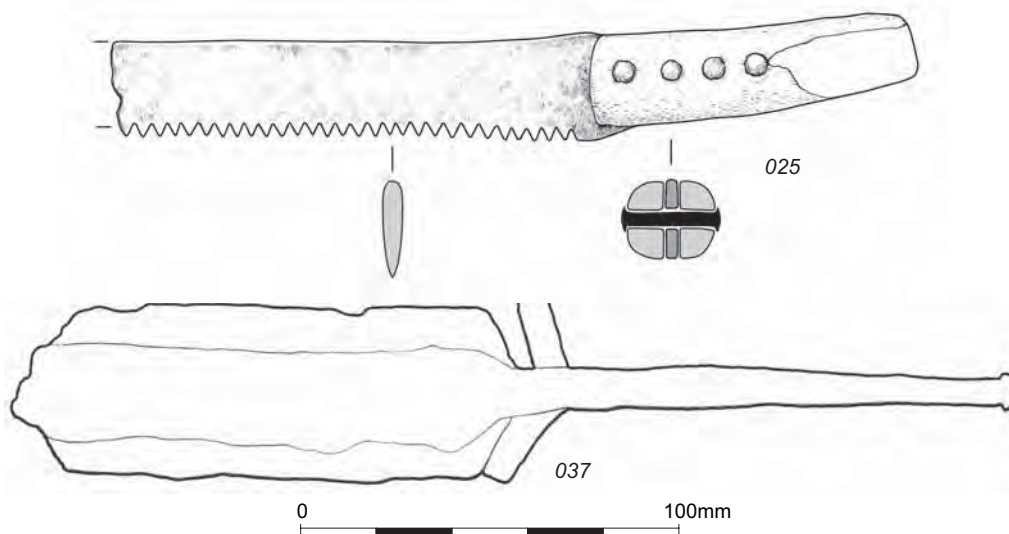


Figure 2.23 *Ebbsfleet Lane: saw and Iron Age sword*



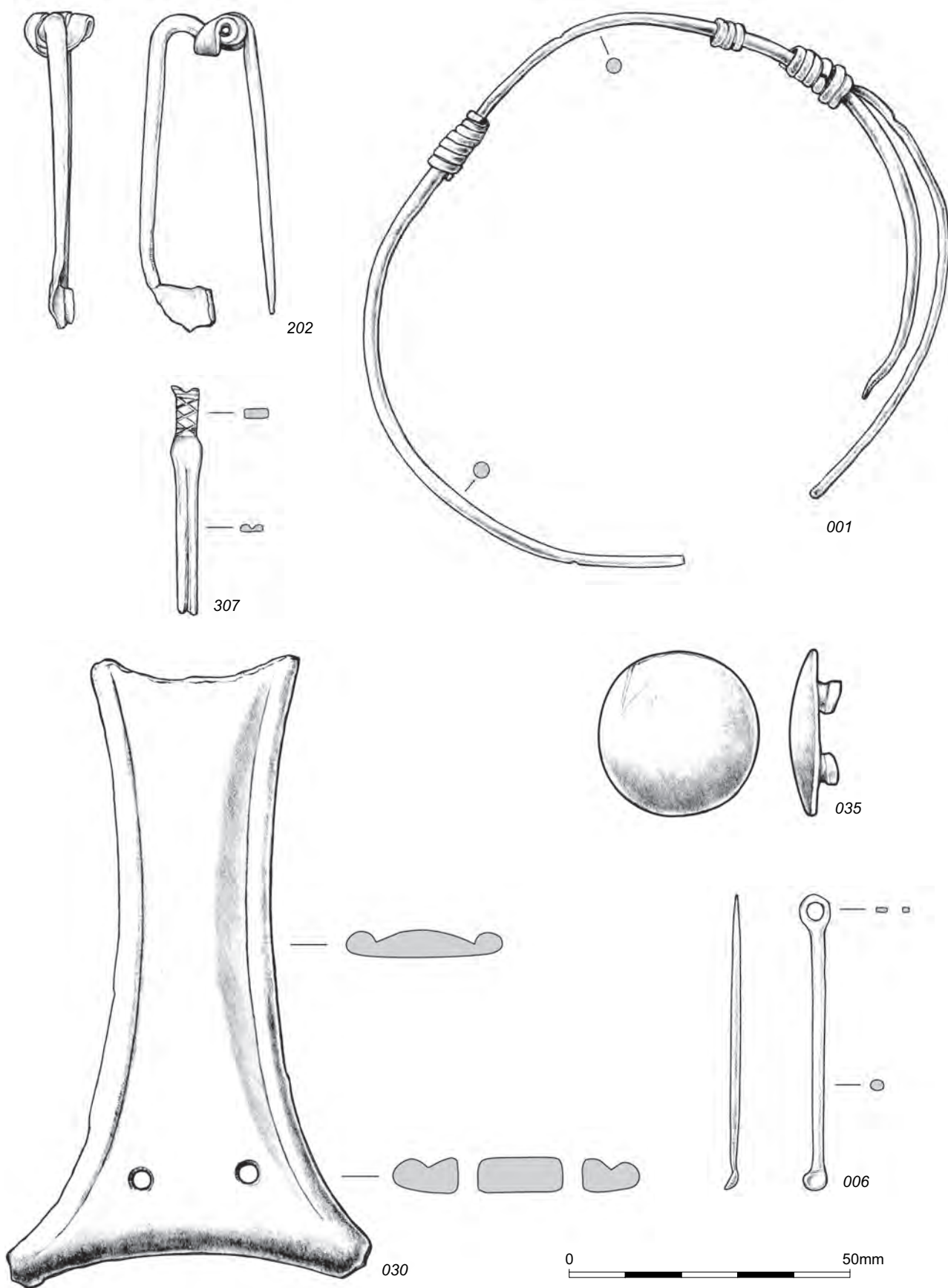


Figure 2.24 Romano-British metalwork

site, apparently arranged in linear ‘chains’, suggesting that they heeded some kind of boundary (Pl. 2.12). Dimensions ranged between 0.96 m and 2.18 m in diameter and 0.11 m to 0.53 m deep. The pits appear to be bounded by ditch 1908 to the south and one of the many ditches to the north, described above.

Further evidence of settlement in this period included a number of post-holes, particularly in association with the pits, and a ring-gully (1918). It is likely that these features are associated with the settlement discovered previously at Ebbsfleet Farm, immediately opposite on the western side of Ebbsfleet Lane.

### Discussion

The two contemporaneous series of large boundary ditches at Ebbsfleet Lane and Weatherlees WTW appear to represent the south-eastern corner of an approximately square enclosure or boundary. No entrances or gateways were revealed in the pipeline easement. Residual Late Bronze Age or more generically late prehistoric pottery, evident in the lower deposits but mixed with Iron Age material, suggest that the ditches were erected in an area of long-established settlement activity. The enclosure ditches were first dug during the Middle–Late Iron Age and re-established several times until the early Romano-British period. The enclosure (Fig. 2.18) would have stretched at least 160 m north-east to south-west and over 210 m north-west to south-east. It would have effectively cut off access from or onto the Ebbsfleet peninsula at its neck as well as the ancient coastline of Pegwell Bay to the east. The settlement activity was clearly restricted to the land side of the boundaries, suggesting that the ditches provided some degree of protection from the sea and weather (and perhaps potential ‘invaders’?). The location of a possible Romano-British building on the slightly higher ground at Ebbsfleet Farm, and the preceding Iron Age settlement, could have a multiple purpose: the land would be drier and less liable to flooding, and at the same time offered a slight vantage point from which both Pegwell Bay and the haven to the west may be watched. This would be advantageous in a number of ways, including access restriction, trade, and protection or at least advance warning. While the main connection from Thanet to the mainland is considered to have been between Sarre and Upstreet, joining Watling Street at Canterbury (Perkins 2001, 46–7, fig. 1), it is possible that the Ebbsfleet peninsula was a subsidiary connection point, the closest place on the opposite side of the Wantsum Channel being Richborough.

Whether the alleged enclosure simply served the more settlement related, profane purposes outlined above, or whether there may also be a more ritual or religious aspect to it, remains to be established by

future investigations in its interior. Possible indicators of ritual activities could be the inhumation burials found in the ditches of the enclosure as well as the dog burial near the southern segment and perhaps some of the objects found in the test pits along Ebbsfleet Lane, within the enclosure. Ritual or ceremonial enclosures where burials have been found in the surrounding ditches are known, for instance from the mid-1st century AD ceremonial enclosure at Folly Lane, *Verulamium*, St Albans (Niblett 1999, 19–20) or the enclosure ditch around the ritual complex at Springhead, Kent (Andrews *et al.* forthcoming). However, burials in ditches, while possibly exploiting their liminality, are by no means confined to ditches around religious or ritual areas (Esmonde Cleary 2001, 138).

After the Romano-British period there seems to be a distinct lack of human activity in the area of the Ebbsfleet peninsula until a number of field boundary ditches were established during the medieval period.

### *Iron Age and Romano-British Cemeteries and Enclosures and their wider Landscape setting*

by Jörn Schuster and Kirsten Egging Dinwiddy

#### **Cemeteries and burials**

There is rather little Iron Age mortuary evidence from Kent and Parfitt (2004, 16) describes it as so far being dominated by small groups of individual burials, the only known larger Iron Age cemetery in the region being Mill Hill, Deal (Parfitt 1995). The Late Iron Age/early Romano-British singleton burials at Weatherlees WTW, Ebbsfleet Lane, and Cottington Hill reinforce this picture for the east of the county. Together, they also provide well-dated evidence for a native strand of inhumation burial continuing into the Romano-British period. This concurs with the evidence from Mill Hill where extended inhumation became the standard form of burial during the 2nd century BC and the rite continued into the Romano-British period, although from at least the second half of the 1st century BC cremation took over as the predominant burial rite (Parfitt 1995, 155–7; 2004, 16).

In a recent synopsis of the Romano-British archaeology of the Isle of Thanet, Perkins (2001, 45) counted 22 Romano-British cemeteries and 13 ‘single finds’. The excavations along the pipeline route, and a small excavation on the West Cliff at Ramsgate (Moody and Boast 2007, 3) have now increased the number of cemeteries to 25 (Fig. 2.12). In contrast, the Late Iron Age/early Romano-British singleton burials from the pipeline excavations were never really isolated but occurred in groups of two. Whether the latter is a real pattern, or simply a fortuitous sample

of larger groups resulting from the narrow strip excavated for the easement, remains to be clarified by future investigations.

What is interesting about the cremation cemetery at Coldswood Road and the earlier cremation burials of the mixed-rite cemetery at Cottington Road is their apparent distinctiveness compared to other cemeteries on the Isle of Thanet (though there are some from St Dunstons', Canterbury, J. McKinley pers. comm.). As far as can be gleaned from the published evidence (Philpott 1991; Perkins 2001), casket burials are so far unknown among the Romano-British burials on Thanet. They are equally rare for Kent as a whole, as discussed above. Equally, the concentration of five amphora burials at Cottington Road stands out amongst the Romano-British cemeteries of Thanet where, hitherto only two such burials were known, from Cliffs End and Thorne Farm (Fig. 2.12, 15 and 34; Perkins 2001, List 2, nos 59 and 79). However, in terms of burial custom the burial at Thorne Farm appears to be closely comparable in that it contains the cremated remains of an adult and infant with metal remains probably of a bier placed on the pyre, while the burial from Cliffs End, found c. 1870, conforms better to the usual picture known from Kent, with richer amphora burials containing one or more ancilliary vessels as well as an urn for the cremated human remains (Philpott 1991, 23).

The small overall number of burials in both cemeteries is commensurate with their having served family groups or limited social groups of communities who lived in nearby farmsteads or settlements. The apparent isolation of the casket burials at Coldswood Road, together with the imported pottery and brooches of Gaulish origin, could suggest that the deceased were of Continental origin, but it is equally possible that they represent a Romanised stratum of society (Philpott 1991, 15).

Both cemeteries were located next to north-west to south-east running hollow-ways. A recent reappraisal of funerary activity at Ramsgate indicates that funerary groups and cemeteries 'once lined the trackways that intersected at the three valleys forming the sea gate at Ramsgate' (Moody and Boast 2007, 3). Coldswood Road and Cottington Road cemeteries add to this picture, with the former possibly lying on the route of one of the projected trackways, while the direction of the hollow-way near the latter suggests it was situated on an ancilliary route to the road alleged to have skirted the southern coastline of Thanet into Ramsgate (Perkins 2001, 44, fig. 1).

### **Trade**

In the south around the Ebbsfleet Peninsula, Cottington Hill, and Pegwell Bay, the lack of steep chalk cliffs and the presence of safe havens in weather

prevailing from either direction allowed easy access to and from the sea (Perkins 1997, 13). It is conceivable that the neck of the Ebbsfleet peninsula was used as a trading or 'customs' station, simultaneously allowing the bay activity to be monitored. Perhaps for this reason, during the Middle and Late Iron Age, less so in the early Romano-British period, a series of massive ditches was cut and recut, effectively controlling traffic to and from the peninsula. The pipeline excavations provided ample evidence for close links with other provinces of the Roman Empire, notably both Germanias, Gaul, and Baetica, adding further weight to Perkin's thesis of Thanet's role as a 'gateway community' which 'depended for their being on inter-regional control of trade and communication' (Perkins 2001, 47).

Immediately south of the peninsula, on the other side of the Wantsum Channel, was the Roman fort of Richborough, built on a site with little evidence of occupation in the century or so before AD 43 (Cunliffe 1968, 232; Millett 2007, 142). The fort's installation, when considered in the light of the dating evidence for the ditches and other Late Iron Age/early Romano-British features at the neck of the Ebbsfleet peninsula, may be directly related to the latter's demise as a central entrepôt, a function taken over by the Roman fort in the course of the second half of the 1st century AD.

### **Boundary/defence**

Of course the ditches may also have had a defensive function, particularly during and following the Conquest. Certainly, the repeated re-establishment suggests a very significant function, probably more than simply drainage. The boundary marking nature of the ditches is emphasised by the presence of human remains within the ditches. Three of the four burials, dating to around the time of the Roman Conquest, were adult males older than 50 years.

### **Ritual activity**

As in earlier periods the peninsula appears to have had ritual significance, indicated by deliberate deposits of metalwork such as the Bronze Age hoards found in large, enclosed 'midden' deposits. Possible continuation of this ritual of watery deposition is indicated by the scatter of metal finds including a sword and a saucepan-handle. The area may also have acted as a convenient place to dump waste.

### **Environmental control and landscape connections**

The large ditches clearly carried water, and were frequently backfilled by natural agencies, such as rapid inundation associated with spring tides and storms. They may well have aided the preservation of the settlements within its bounds but were not always successful. During the Middle and Late Iron Age, the

south-east corner of the enclosed area was repeatedly flooded, covering earlier settlement evidence and probably causing the re-assignment of the area to waste disposal (and possibly ritual activity; see above).

### *Finds from Iron Age and Romano-British Contexts*

#### **Pottery**

by Grace Perpetua Jones

#### *Funerary pottery from Coldswood Road cremation cemetery*

Pottery vessels were found in all of the unurned cremation graves at Coldswood Road (Figs 2.33–8; Pls 2.14–16). Twelve accessory vessels were recorded. Where vessels can be dated, all are of 1st century AD date and appear to be very close to, but just after, the Conquest, c. AD 43–60/70. The vessels comprised two flagons, five platters, two butt-beakers, two cups, and one unidentified beaker, from seven graves (Figs 2.34–8). Three burials were accompanied by a single vessel, a flagon in graves 8195 and 8198 and a stamped samian platter (form 15/17) in grave 8206 (Pl. 2.15). A further three burials each contained two vessels: a platter and butt-beaker in grave 8199, a platter and cup in grave 8202, and platter and possible beaker in grave 8208. One grave (8273) contained three accessory vessels: a cup, a platter, and a beaker. In other words, graves with only one vessel

contain a flagon or platter, whilst those with more than one vessel all contain a plate and one or two drinking vessels (cup or beaker). Flagon were not associated with other vessels in any of the graves. A collared flagon with ribbed handle, possibly complete, had also been placed at the terminus of the enclosure ditch surrounding the cemetery (ditch 8455; Fig. 2.21). At least two of the vessels are imports (two stamped samian platters), a possible third represented by an incomplete butt-beaker in a very fine whiteware fabric. Three platters are grog-tempered imitations of samian form 15/17 and CAM form 7/8. The two cups are imitations of Terra Nigra CAM 56 vessels, and one butt-beaker was also locally produced.

These vessels demonstrate either the ability to obtain fine, imported wares or a desire to imitate them. Philpott (1991, 35) has commented on the preference for the inclusion of jar (usually as a cinerary urn), flagon, beaker, and dish forms in cremation graves across south-east England. He adds that this combination of vessels ‘probably represented the usual Romano-British table setting’; ‘a meal set out for the deceased’ (*ibid.*, 112) and that it represents ‘an appropriate level of furnishing for the deceased’ (*ibid.*, 35).

Where the rims were present or could be reconstructed, it was evident that one or more chips had been taken from the rim during antiquity. Philpott (*ibid.*, 36) has noted that ‘there appears to have been no stigma attached to the use of imperfect or used vessels as grave goods’. In the Eastern Cemetery of London 23% of the 3rd century vessels in graves were damaged in some way, suggesting that ‘when choosing vessels for burial, damaged pieces were chosen fairly frequently’ (Barber and Bowsher 2000, 122). The frequency that damaged rims are present on vessels from the Coldswood Road cemetery suggests that such modification may represent deliberate alteration rather than damage through the original use of the vessel, perhaps a ritual ‘killing’ of the vessel, implying ‘that the pot itself rather than the contents was offered as a gift to the deceased’ (Philpott 1991, 112).

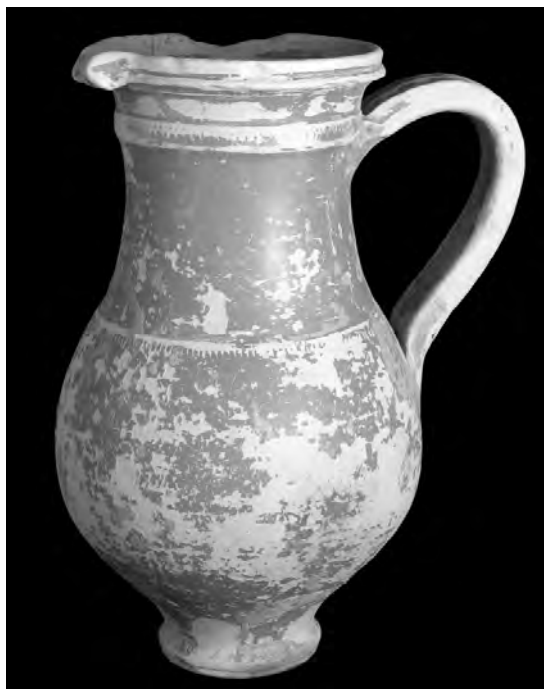


Plate 2.13 Cottington Road: jug of late Rheinzabern samian from grave 6049



Plate 2.14 Coldswood Road: copy of samian Ritterling 5 cup from grave 8202

*A late samian jug from Cottington Road  
mixed-rite cemetery*

*by Joanna Bird*

The samian jug found in inhumation grave 6049 is apparently a unique find from a British site (Fig. 2.40; Pl. 2.13). The jug stands 210 mm high, with a tall wide neck and rounded body; the rim diameter is 91 mm externally and 86 mm internally. The collar and rim are neatly modelled and the foot has a double moulding; there are three narrow bands of simple rouletting, on the base of the collar, on the shoulder, and on the lower body. The spout has been formed by turning out part of the rim and carefully squaring it off; the generous handle is decorated with a narrow plain rib. The fabric is fine, with no obvious inclusions on the surface, and is orange-red; the slip is glossy, somewhat darker than the fabric, and has been partially abraded by contact with the soil.

The fabric, slip and the moulding of the foot are characteristic of samian made in the workshops at Rheinzabern, although jugs and flagons are rare among the Rheinzabern repertoire (*cf.* Ludowici 1927). The East Gaulish samian flagons that do occur rarely in Britain are of a distinctive form with a conical rim and date from around the middle of the 3rd century; they were probably all made at Trier (Bird 1993, fig. 4). What is apparently the closest parallel for the Margate jug is a flagon from Neustadt an der Weinstraße. This vessel is biconical in profile with a more elaborately shaped collar and rim and the handle terminates in a snake's jaws grasping the rim. It does, however, share the narrow bands of rouletting, the double moulding of the foot, and decoration on the handle, in this case shallow barbotine scrolls marking the snake's back. The snake element suggests that it was made for a ritual purpose (Thomas 2004, fig. 6; Roller 1965, Abb. 15).

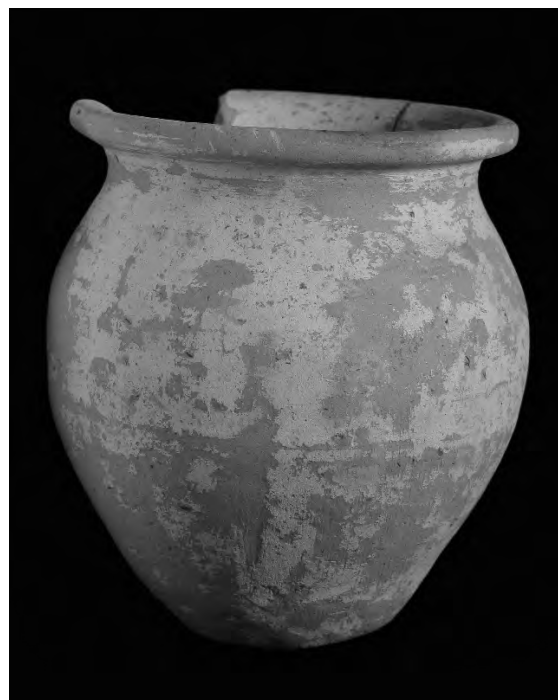
The absence of any associated datable finds or of a dated parallel makes it difficult to suggest any close dating for the jug, but there are other related vessels which provide some helpful evidence. Jugs of similar shape, though lacking the rouletted decoration and fine detailing, were made in wares imitating samian, and have been found in 4th century graves at, for example, Krefeld-Gellep (Pirling 1966, Typentaf. 3, no 44) and Worms (Grünewald 1990, Grab 7), Germany. The narrow bands of rouletting decorating the jug and the Neustadt flagon are characteristic of Rheinzabern ware dating from the late 3rd to the middle of the 4th century (Bernhard 1990, 537), and such decoration is found, for example, on a series of Rheinzabern bowls and dishes from a late settlement site at Kindsbach (Bernhard 1987, nos 2, 6–10, 14). The evidence from the kiln site itself suggests that pottery production at Rheinzabern ceased around the middle of the 4th century (Bernhard 1990, 537). Taken together, this all suggests a date for the



*Plate 2.15 Coldswood Road: ?South Gaulish platter FORM 15/17 from grave 8206*



*Plate 2.16 Coldswood Road: South Gaulish platter, FORM 15/17 from grave 8208*



*Plate 2.17 Cottington Road: very small everted rim jar from grave 6060*



Plate 2.18 Cottington Hill: small flask in fine grog-tempered fabric from grave 5163

Cottington Road jug between the late 3rd century and the middle of the 4th.

The presence of such a late Rheinzabern piece on a British site is of considerable interest. Imports of Rheinzabern samian ceased in the decade AD 250–60 (Bird 1993, 2), and after the Alemannic invasion of 259/260 production at the site was greatly reduced, its repertoire limited, and its distribution much more localised. It is possible that the jug was brought into Britain as a personal possession, but there is evidence for relatively small-scale trade in pottery between Britain and the Rhineland during the late 3rd and 4th centuries. The wares identified consist of jugs and flagons in Lower Rhineland Marbled Ware, so far recorded from Kent and London (Bird and Williams 1983), and jars and bowls in Mayen ware, which have a wider distribution concentrated either side of the Thames estuary and along a coastal strip between East Anglia and Hampshire (Fulford and Bird 1975; Redknap 1995). It is entirely possible that the occasional late Rheinzabern vessel found its way to Britain in such a cargo.



Plate 2.19 Cottington Hill: flat-rimmed carinated bowl and small globular beaker from grave 5166

### *Pottery from non-funerary contexts*

The Late Iron Age and Romano-British pottery (Figs 2.21–2) from the various sites along the pipeline route is extensively discussed by site and context groups in the online archive.

### **Metalwork**

by Grace Perpetua Jones

#### *Coldswood Road cremation cemetery*

Six of the seven cremation graves from Coldswood Road contained metal objects (Figs 2.36–8). Three of these graves (8199, 8206, and 8208), were burials in caskets or boxes with metal fittings. The burnt articulated remains of a suckling pig were also contained in a casket in grave 8202. Philpott (1991, 12) defines caskets as small, on average no more than 0.30 x 0.35 x 0.15 m, and frequently decorated with bronze fittings. Boxes and chests are larger and ‘less elaborately decorated and they contain all or most of the grave deposit which usually includes a pottery or glass vessel containing the cremated bones’, whereas caskets probably accompanied rather than contained the bone. Where identified, boxes are usually made from oak.

The outline of the casket/box from grave 8199 was recorded in plan, but the depth could not be ascertained. Copper alloy brackets were present at the four corners. Mineral-replaced wood remains from the corners were identified as ash. Eighteen decorative iron studs with copper alloy heads were located on and around the corner brackets. In spite of these details, interpretation is still problematic. The size of this receptacle and its role as a container for the human remains suggests that it is more appropriately interpreted as a box rather than a casket. However, decorative bronze fittings were clearly applied and the grave goods (two ceramic vessels and two shoes) had been placed outside of the box. One shoe (ON 619), attested by 66 hobnails and at least 170 mm long, lay at the western side of the box. The second shoe (ON 629), at least 205 mm long, was immediately south of the box and in line with its eastern side. Its remaining 102 hobnails were worn and had been burnt. This is the only burial from Coldswood Road with hobnails.

It was not possible to reconstruct the boxes in graves 8206 and 8208; however, their fittings were of iron rather than copper alloy, again suggesting these were boxes rather than caskets. The positions of the fittings from grave 8208 suggest a box of 0.4 x 0.35 m, with stud 617 recorded 0.3 m to the east.

Graves 8195 and 8202 contained little metal. Grave 8202 was thought to contain a casket but there is little trace of this amongst the objects. However, it is possible that fittings of materials other than metal were used for such a container. ON 633–6 consist of very tiny fragments and flakes of copper alloy, held in



a soil matrix with traces of wood. Four iron rod/shank fragments were also recorded from this grave (ON 620), but these were found to the west of the pig remains. A single iron rod/shank fragment was recorded from the fill of grave 8195.

Three copper alloy rosette brooches (ON 654a–c) had been placed in grave 8273. Two are of the same form with rhomboid plate (Riha 1979, type 4.5.7). The moulding on the bow is of a stylised lion. The backing plate is decorated with two parallel rows of stamped dots; traces of this decoration were also noted on the spring cover. This form of brooch is recorded from Colchester (Hawkes and Hull 1947, pl. xciii: 75–6, type X, class B), dated as Augusto-Claudian, but none of the British examples is a pre-Conquest import (*ibid.*, 315). However, an example from grave 218 at King Harry Lane, *Verulamium*, is from phase 2, Tiberian–early Neronian (Schuster in Andrews *et al.* forthcoming). The third brooch is a related type, a rosette brooch, Riha (1979) type 4.7.2, Feugère (1985) type 20b. The examples from Coldswood Road are probably of post-Conquest date but unlikely to go into the fourth quarter of the 1st century AD.

#### *Metalwork from non-funerary contexts*

Two objects of Middle–Late Iron Age date were identified: a sword and a saw (Fig. 2.23), both from Ebbsfleet Lane. The sword is incomplete but is part of Stead's Group C, 'long swords and scabbards with campanulate mouths', dating from the 'second half of the 2nd century BC to the first half of the 1st century BC' (Stead 2006, 41). It was found in an alluvial layer (group 1785) at the southern end of Ebbsfleet Lane (Fig. 2.18). The recovery of this object from a watery deposit suggests it may have been a votive offering (Fitzpatrick 2007). Other metal objects from this deposit are wide ranging in date and include a potin coin of 2nd–1st century BC date (ON 64); and Romano-British finds consisting of a coin (ON 32); a saucepan handle (Fig. 2.24, 30); a bracelet fragment (ON 62); two copper alloy studs (ON 34–5; Fig. 2.24), an iron ring (ON 36), and a sprung bolt from a box (ON 65). A post-medieval buckle (ON 33) and a chalk bead were also recorded in this area (ON 63).

The saw may be of a similar date to the sword; comparable examples from Danebury, Hampshire are found in contexts dated 300–50 BC (Cunliffe and Poole 1991, 342). It was recovered from ditch 1384 (context 1127, intervention 1195); a radiocarbon date from grave 1110, cut into the backfill of this ditch, has been calibrated to 50 cal BC–cal AD 80 (NZA-28975; 1974±30 BP). The pottery is of later Middle–Late Iron Age date; no 'Romanised' fabrics were present.

Few personal items were recovered. They comprise a copper alloy armlet and two copper alloy Nauheim

derivative brooches, both of 1st century AD date, of which one (ON 2), from the subsoil at Ebbsfleet Lane, has a bow of flat cross-section, whilst the example from ditch 5331, Cottington Hill, has a rod bow (Fig. 2.24, 202). Brooch fragments, including two pins, part of a spring, and possible bow fragments, were recorded from pit 1026 (ON 15) and ditch 1389 (ON 24) at Ebbsfleet Lane, and the subsoil at Cottington Road (ON 423). The armlet (Fig. 2.24, 001), from the subsoil at Ebbsfleet Lane (Fig. 2.18), is incomplete. It is formed from wire to create an internal diameter of 95 mm, with expanding clasps, one of seven turns and one of ten. A small coil of copper alloy wire (ON 62) from group 1785, from the same site, may be part of another such clasp. Only two toilet/medical items are present, a spoon, possibly an ear-scoop, from the subsoil at Ebbsfleet Lane, and a copper alloy nail cleaner from ditch 3752 at Weatherless WTW (Fig. 2.24, 006 and 307).

Other Roman objects of note are a saucepan handle and spearhead. The saucepan handle (Fig. 2.24, 030) is incomplete and the terminal is missing; two holes near its base suggest it had been repaired before it was finally separated from its pan. It was recovered from an alluvial deposit at Ebbsfleet Lane (group 1785; Fig. 2.18). The narrow socketed iron spearhead with leaf-shaped blade (Fig. 2.25, 659) is probably of late Romano-British or Early Saxon date;

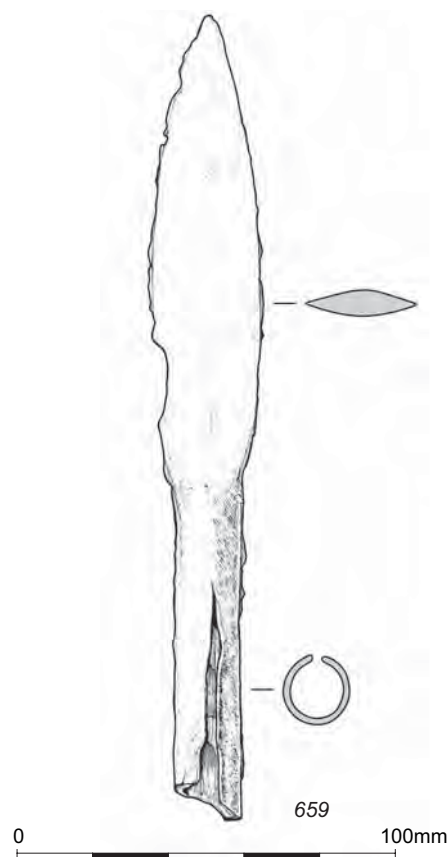


Figure 2.25 Coldswood Road: iron spearhead

however, it was not securely stratified (subsoil, Coldswood Road) and an early Romano-British date cannot be ruled out. The blade is 120 mm long and up to 30 mm wide; no midribbing is present.

All other Roman objects from non-funerary contexts have been classified as fittings or are unidentified. The fittings are predominantly of iron and are dominated by nails. Fourteen nails of Manning type 1B were recorded, as well as eight nail shanks, one rivet, and one small nail or hobnail. Other nail fragments are likely to be present amongst the unidentified rod/shank fragments. Of interest are three joining fragments that are probably part of a sprung bolt from a box (*cf.* Stead and Rigby 1986, fig. 31: 27), from alluvial deposit 1785, Ebbsfleet Lane (ON 65, context 1799). No boxes were present from non-funerary contexts. The copper alloy fittings comprise three studs (ON 7, 34, 35), all from the subsoil at Ebbsfleet Lane. ON 35 was disc-shaped, 29 mm in diameter, with a convex surface and two rivets on the underside. Continental parallels indicate a 2nd–3rd century date. Similar objects from Wange, Belgium, had an ornamental glass coating covering the entire surface, although no trace of this is present on the disc from Margate. It may have been used as a decorative element, perhaps on leather or textile, or to ‘adorn horsegear’ (Lodewijckx *et al.* 1996, 7).

## Coins

by Nicholas Cooke

Twenty-one coins were recovered from the fieldwork (Appendix 2.4). With the exception of two post-medieval examples, the coins date to the Late Iron Age or Romano-British periods. In general, their condition is poor, with many showing signs of corrosion as well as wear.

### *Iron Age coins*

Three Late Iron Age coins were recovered (identified by David Holman). All are cast potin (a tin-rich copper alloy) and are of the Kentish Primary Series (Thurrock type) datable to the later 2nd century BC. Two (ON 18, 64) were recovered from layers of alluvial silting on Ebbsfleet Lane, whilst the third (ON 322) was found within the fills of a Romano-British ditch on Weatherlees WTW. The recovery of three potin coins from these neighbouring sites points to some activity in the vicinity in the Late Iron Age.

### *Roman coins*

Sixteen Roman coins were recovered. All but two come from Cottington Road and Cottington Hill, Ebbsfleet Lane, and Weatherlees WTW, the majority from Cottington Hill.

*Coldswood Road:* Two Roman coins (ON 660, 661) were recovered from subsoil layer 8001 – an *As/Dupondius* of Marcus Aurelius, and a badly corroded *As/Dupondius* of the 1st–3rd centuries.

*Cottington Road:* Two coins were recovered from layer 6185, separating the burials of an adult and an infant in the same grave (ON 421, 422). Both are small copper alloy issues of the House of Valentinian (AD 364 and 378). It is not clear whether these were accidental losses, or disturbed grave goods from the primary burial.

*Cottington Hill:* Seven of the 11 coins from the site were unstratified (ON 206–209, 211, 215, 217; layer 5001). All seven are 4th century issues and comprise two ‘Gloria Exercitus’ issues of the House of Constantine (ON 207, 211), two contemporaneous copies of ‘Fallen Horseman’ issues (ON 206, 208), a ‘Securitas Reipublicae’ issue of the Emperor Valentinian I (ON 217), and two ‘Victoria Auggg’ issues of the House of Theodosius, minted between AD 388 and 402.

The four stratified coins comprise an *As* of Faustina II (ON 224) in the fill of a Romano-British ditch, an irregular radiate copy (ON 201) from layer 5262, the fill of a cultivation trench, a coin of the House of Constantine (ON 228; ditch fill 5152) and a ‘Securitas Reipublicae’ issue of Valentinian I (ON 216; ditch fill 5237).

*Ebbsfleet Lane:* One coin was found (ON 32, subsoil layer 1001), a contemporary copy of a ‘Fallen Horseman’ issue of the House of Constantine.

### *Discussion*

The Roman coins attest to activity throughout the period. The two coins from Coldswood Road suggest activity on the site in the 2nd and 3rd centuries, whilst those from adjacent sites from Cottington Road to Ebbsfleet Lane (Areas 14–16) clearly demonstrate continued activity during the late Romano-British period, perhaps continuing into the 5th century. All of the coins recovered are small denomination copper alloy issues and almost certainly represent accidental losses. The two coins recovered from a grave fill (ON 421, 422) may have been deposited deliberately and disturbed later. The two coins of the House of Theodosius belong to the last groups of coins dispatched to Britain before the province was urged to look to its own defences by an edict of Honorius in AD 410 (effectively an admission of the empire’s inability to continue to maintain the province), and may have remained in circulation into the 5th century.



## Glass beads

by Talla Hopper

Six glass beads were found in late Romano-British grave 6060 at Cottington Road which contained the confined remains of a 2–3 year old infant. The colourless beads are of a blown, drawn, and segmented type and are translucent and globular in shape. Such beads are frequently found in late Romano-British or post-Roman graves (Brugmann 2004, 28; Guido 1978, 91).

### Catalogue of illustrated finds (Figs 2.21–5)

Whiteware collared flagon; 1st century AD. Coldswood Road: cemetery enclosure ditch terminus 8455.

Late Iron Age–early Romano-British small biconical bead-rimmed bowl; ON 14 (R59). Ebbsfleet Lane: ditch 1887, context 1104.

Early Romano-British, bead-rimmed, wide-mouthed, necked, cordoned bowl (R49). Ebbsfleet Lane: ditch 1385.

ON 025 saw with iron blade and antler handle; late 1st century BC. Ebbsfleet Lane: ditch 1384, context 1127, intervention 1195.

ON 037 iron sword, Stead's Group C; later 2nd–earlier 1st century BC. Ebbsfleet Lane: alluvial layer 1785.

ON 202 copper alloy rod bow brooch. Cottington Hill: ditch 5331.

ON 001 copper alloy wire armlet. Ebbsfleet Lane: subsoil.

ON 307 copper alloy nail cleaner. Weatherlees WTW: ditch 3752.

ON 035 copper alloy stud, for leather or textile. Ebbsfleet Lane: subsoil.

ON 030 copper alloy saucepan handle Ebbsfleet Lane: subsoil.

ON 006 copper alloy ?spoon or ear-scoop. Ebbsfleet Lane: subsoil.

ON 659 iron narrow socketed spearhead with leaf-shaped blade; ?early Romano-British. Coldswood Road: subsoil.

## Human Bone and Aspects of the Cremation Rite

by Jacqueline I. McKinley

The following comprises a summary of specific sections of the full publication report which can be found in the online reports.

### Coldswood Road

The small, 1st century AD Romano-British cremation cemetery included the remains of seven unurned cremation burials, a minimum of two probably made in caskets. Other contexts included one deposit of redeposited pyre debris from a grave fill and material from grave fills probably derived from the related burials (Table 2.5).

Although some graves had been truncated (surviving depths 0.07–0.38 m, most being over 0.20 m deep), the shallow extent to which the remains of the burials extended above the base of the graves meant that five of the seven were totally undisturbed (Figs 2.34–8; Table 2.5). However, a substantial proportion of the bone is slightly worn and chalky in appearance, indicative of the acidic (brickearth) burial environment, and it is probable that some trabecular bone has been lost from many of the cremation burials as a result of poor preservation.

The remains from all the graves represent those of adults (one female, two ?females, one ?male) with the exception of one subadult/adult (Table 2.5). At least one adult female was over 30 years of age, with only very broad age ranges being attributable to the rest. The cemetery seems to conform with most others of this date from the county both in terms of its size and choice of mortuary rite, and the lack of immature individuals amongst its numbers (eg, Anderson 1999; Bowden *et al.* 1998; Hammond *et al.* 2003). Comparison of the demographic data from this cemetery with that from others along the pipeline route and within the wider region suggests that different members of the population may have been subject to differential mortuary treatment dependent on their age and/or sex in the early Romano-British period.

### Cottington Road

The small, mixed rite cemetery included 21 cremation-related deposits and 12 deposits of unburnt bone. The former comprised the remains of a minimum of seven 2nd century urned burials (five made in amphorae), one redeposited ?urned burial, one possible cenotaph, one possible token deposit made within an inhumation grave, and four grave fills containing redeposited pyre debris. Other contexts comprised redeposited material from a variety of feature types. The unburnt bone (mostly mid-2nd–4th century) was recovered from the remains of 11 *in situ* burials (mostly made confined); the remaining context representing redeposited bone from a grave fill.

The cremation graves were generally slightly deeper than those from Coldswood Road (0.17–0.28 m and all except one over 0.20 m deep) but due to the different type of deposit (urned as opposed to unurned) the burial remains had suffered slightly greater disturbance. Only one of the urned burials was fully intact, but a further five were largely so; in many cases the amphora in which the burial had been made had sagged outwards post-depositionally and collapsed (demonstrating that the grave fill was not packed around the vessel on backfilling). With the possible exception of grave 6025 it is highly unlikely that bone was lost from any of the graves as a result of

disturbance. As noted at Coldswood Road, however, a substantial proportion of the cremated bone is slightly worn and chalky in appearance and it is probable that some trabecular bone has been lost from many of the burials as a result of poor preservation. The condition of the bone from the inhumation burials – mostly made in graves cut through and backfilled with brickearth – is generally poor, and this is the primary factor affecting the low levels of skeletal recovery from the graves; as is often observed, trabecular bone was commonly subject to preferential loss.

A minimum of 13 individuals were identified within the unburnt bone assemblage and 12/13 from the cremated bone assemblage (Table 2.5). The cremated remains show a broader demographic mix than at Coldswood Road with a minimum of two

infants, one juvenile, three or possibly four subadult/adults (one ?female) and six adults (four female, one ?female). The juvenile was represented by only a tooth crown amongst the remains of a young adult female and may indicate an intrusive fragment incorporated, for example, from an inefficiently cleared reused pyre site, or a deliberate ‘token’ deposit, the rest of the remains having been buried elsewhere. No other individual of this age is represented within the assemblage, however, consequently this has been included in the minimum number count. Similarly, the small amount of cremated bone recovered from the ceramic jar deposited as a grave good in inhumation grave 6049 may represent a deliberate ‘token’ deposit made with the inhumation burial. Similar inclusions of

**Table 2.5 Summary of results from analysis of cremated bone**

Context	Cut	Deposit type	Bone weight (g)	Age/sex	Pathology	Pyre/grave goods
<i>Coldswood Road</i>						
8196	8195	urned burial	211.3	adult c. 40–60 yr. ??f	osteoarthritis – T/L	u/b pig teeth
8197	8198	urned burial	113.9	subadult/adult >13 yr		
8200	8199	grave fill	2.8	= 8211		
8201	8208	rpd grave fill (+ part of burial)	143.1	= 8212		
8203	8202	grave fill + part of burial **	88.6	= 8205	mv – mandibular tori	u/b animal (immature) & cu alloy ring
8204 (inc. 8211)	8199	casket burial**	471.1	adult >30 yr	mv – wormian bones	0.6g cu alloy
8205	8202	urned burial**	549.9	adult c. 21–45 yr. ?m		worked ab, 0.1 g ?ab
8207	8206	grave fill + part of burial *	32.0	= 8223		
8209	8273	grave fill, most from burial**	28.0	= 8272		0.1 g ?u/b fish bone
8212	8208	casket burial**	276.7	adult c. 35–60 yr	enthesophytes – femur	
8223	8206	urned burial** (?casket)	227.5	adult >25 yr. ??f		
8272	8273	urned burial**	329.7	adult c. 20–28 yr. f	osteophytes - atlas	0.7 g ab; cu alloy frags.; FAS
<i>Cottington Road</i>						
6004	6003	rpd grave fill	27.2	= 6005		0.2 g ab
6005	6003	urned burial **	769.8	adult >45 yr. f	osteoarthritis – left patella; osteophytes – distal ulna, metatarsal	66.7 g ab
6008	6006	urned burial*	201.3	subadult/adult >13 yr. ??f		0.1 g ab
6010	6009	?rpd grave fill	13.4	= 6011		<0.1 g ab
6011	6009	urned burial* (amphora)	284.2	1) infant c. 3–5 yr 2) adult c. 20–40 yr. ??f		1.5 g ab
6013	6012	rpd grave fill	17.6	= 6018		
6016	6015	rpd grave fill	27.2	= 6017		
6017	6015	urned burial * (amphora)	821.5	1) adult c. 40–60 yr. f 2) infant c. 0.5–3 yr	?amtl; osteophytes - atlas	1.5 g ab; fused Fe nail
6018 (inc. 1614)	6012	urned burial (amphora)	623.6	1) adult c. 20–25 yr. f 2) ?juvenile c. 7 yr		5.2 g ab
6021 (inc. 6020)	6019	urned burial* (amphora)	501.7	adult >30 yr		0.6 g ?ab. Cu alloy frags
6023	6022	grave fill	19.3	= 6024		
6024	6022	urned burial* (amphora)	1371.0	adult c. 30–50 yr. f	caries; hypervascularity – skull vault	8.4 g ab
6026	6025	redep.?urned ?burial	199.4	subadult/adult >13 yr		Fe nail
6028	6027	?cenotaph	0.1			
6034	6033	?redep.	3.2	subadult/adult >10 yr		
6036	6035	?redep.	19.6	subadult/adult >13 yr		
6048	6049	?token in inh. grave	21.7	subadult/adult >13 yr		0.1 g ab
6063	6060	redep. ?=6036	1	subadult/adult >13 yr		
6072	6060	redep. ?=6036	3.8	subadult/adult >13 yr		

\* burial remains largely undisturbed    \*\* burial remains undisturbed    mv – morphological variation  
T – thoracic    L – lumbar    u/b – unburnt    ab – animal bone

individual bones or very small ‘token’ quantities of bone from a second individual have been observed in Romano-British cremation burials elsewhere, eg, Hyde Street, Winchester (McKinley 2004c); the quantities are not sufficient to indicate dual cremations/burials and the deliberate or incidental nature of the inclusion is generally uncertain. The bone from 6048 (inhumation grave 6049) is not sufficiently distinctive to be able to state with any confidence that this individual is not represented in one of the deposits from elsewhere on the site; hence the questionable inclusion of these remains within the minimum number of cremated individuals. The redeposited bone from inhumation grave 6060 and the possible grave 6025 is likely to have derived from disturbed burials made within those immediate vicinities. The very small amount of cremated bone from cut 6033 is likely to be redeposited, possibly from the neighbouring disturbed grave 6025.

This small, multi-rite cemetery appears demographically balanced within both parts of the assemblage, although the apparent imbalance between the sexed adults (male inhumed, females cremated; Table 2.5) was also noted in the earlier Coldswood Road cemetery remains. The cemetery reflects the national trend which by the middle part of the 2nd century saw a change in mortuary practice from cremation to burial by inhumation of an unburnt corpse. Although a higher proportion of the unburnt assemblage fell within the immature age ranges than did those within the cremated bone assemblage (38% v. 25%) there is no longer the suggestion that age may have affected the form of mortuary treatment as may be the case for the earlier period as indicated at Coldswood Road (see above). The predominance of females amongst the adults from the cremation burials (five of six, one unsexed) compared with that of males amongst those from the inhumation graves (four of six, one unsexed) is odd and may reflect a temporal change in the demographic make-up of the population – presumably the occupants of one farmstead or small settlement – who buried their dead within the confines of this one square enclosure (but see online report for more detailed discussion). A similar proportion of individuals from the cremated and unburnt bone assemblages were over 30 years of age (33% and 38%), with a minimum of 17% and 15% respectively being over 40 years; the proportion of adults of less than 25 years were also closely comparable. There is, therefore, little evidence to suggest a variation in the death rate between the sexes, and the presence of several infants within the assemblage of later date indicates women must have been present within the later population, though apparently being buried elsewhere.

With the notable exceptions of Pepper Hill (Boston and Witkin 2006) and a few other sites (Cameron 1985; Frere *et al.* 1987; McKinley 2008), most osteologically recorded Kentish burials of Romano-British date comprise singletons or small groups, similar to that recorded at Cottington Road, distributed in dispersed clusters across the northern half of the county (Mays and Anderson 1995, 381; McKinley 2006).

Two of the urned (amphora) cremation burials (28.6%) contained the remains of two individuals, both comprising the most frequently encountered combination of an adult and a young immature individual (McKinley 1994, 100–2; 2000c, 272). Numerous contemporaneous cemeteries have been found devoid of multiple burials, eg, Derby Racecourse (Harman 1985, 279), Walls Field and Walls Common, Baldock (Stead and Rigby 1986), and none was recovered from the smaller burial groups within the Kentish CTRL project (McKinley 2006). Elsewhere, between 2% and 8% of burials have been found to contain the remains of, generally, two individuals (Wells 1981; McKinley 2000c, 272), including 2.7% of graves at Pepper Hill (Boston and Witkin 2006). Although Philpott (1991, 25) states that amphorae were ‘frequently’ used for the deposition of multiple cremation burials, his table of ‘amphora burials’ (which includes amphorae used as graves goods as well as containers for the cremated bone; *ibid.*, 254–8) shows that the remains from such burials have rarely been subject to analysis, and gives only one example, from Cranmer House, Canterbury, as containing the remains of more than one individual (two adults; Garrard 1987). It may lend some support to his contention, however, that two of the five burials made within amphorae at Cottington Road included the remains of two individuals; though the age of those individuals and low bone weights recovered would not have necessitated a large vessel to hold them.

The possible nature of the two potential ‘token’ deposits from the 2nd century cemetery at Cottington Road have been discussed above. They represent quite distinct forms of deposition from one other feature/deposit type which has often in the past been referred to as a ‘token burial’ (due to the extreme paucity or absence of cremated bone) but which the writer believes should more correctly be interpreted as a ‘cenotaph’ (McKinley 2000b; 2004d; 2006). Such features have many of the characteristic of cremation graves within a burial group – size, shape and fill often inclusive of pyre and/or grave goods – but containing either no bone or very small quantities. One such possible feature was recorded at Cottington Road (6027), though the interpretation is inconclusive and the fill may represent redeposited pyre debris.

Table 2.6 Summary of results from analysis of Iron Age/Romano-British unburnt human bone

Context	Cut	Deposit type	Phase	Quantification	Age/sex	Pathology summary
<i>Cottingham Road</i>						
6048	6049	coffined burial	RB	c. 6 s.u.l.	adult 25–35 yr. ?m	calculus
6063	6060	coffined burial	RB	c. 15 s.u.l.	infant c. 2–3 yr	hypoplasia
6158	6156	coffined burial	RB	c. 25	adult >50 yr. ?m	amtj; abscess; hypoplasia; calculus; oa – r. femur head; mv – extra cusp – 2nd max incisors
6161	6214	<i>in situ</i> burial	RB	c. 20 s.a.	infant c. 3 yr	hypoplasia/enamel malformation
6164	6093	coffined burial	LRB	c. 85	adult c. 30–40 yr. m	amtj; abscess; calculus; caries, hypoplasia; periodontal disease; op – 1st Mt-T & IP joints; cortical defects – 1st Mt-T; mv – man. M3 5 cusps
6168	6166	coffined burial +	RB	c. 35	infant c. 4–5 yr	hypoplasia
6171	6169	redeposited	RB	<1 s. c. 90	adult >45 yr adult c. 30–40 yr. f	caries
6172	6154	coffined burial	RB	c. 8	subadult/adult c. 15–25 yr	amtj; abscess; calculus; caries; hypoplasia; periodontal disease; periosteal new bone – l. ribs; oa – femur heads; op – 4L, S1, r.elbow; enthesophytes – tibiae, fibula caries, calculus, hypoplasia; mv- max. r.M3 5 cusps, man. M3s 5 cusps, max. l.I1 shovelled, max. l.I2 accessory tubercle
6174	6176	coffined burial	RB	c. 1 s.	infant c. 4–5 yr	calculus
6177	6165	coffined burial	RB	c. 3 s.u.l.	adult >40 yr	calculus
6185	6214	redeposited	RB	1) c. 10 s. 2) c. 36 u.l.	subadult/adult c. 15–20 yr juvenile c. 6–8 yr	calculus; caries
6186	6214	coffined burial	RB	c. 85	adult c. 35–45 yr. m	amtj; abscess; calculus; caries; hypoplasia; <i>cribra orbitalia</i> ; oa – l. hip, 1 r. & 1 l. Mt-T
<i>Cottingham Hill</i>						
5134	layer	redeposited	LIA/ERB	1 bone l.	adult >18 yr	amtj; caries; abscess; hypercementosis; hypoplasia; degenerative disc disease – 2T;
5164	5163	<i>in situ</i> burial	LIA/ERB	c. 80	adult >50 yr. m	oa – 4C, r. hip; Schmorl's node – 1T; op – 6C, 10T, shoulders, wrists, carpals, Mt-C & IP joints (hands), knees, tarsals; enthesophytes – calcanea
5208	5166	redeposited	LIA/ERB	c. 10 s.a.u. (= 5209)	infant c. 3–5 yr.	
5209	5166	<i>in situ</i> burial	LIA/ERB	c. 10 l.	infant c. 4–5 yr	
<i>Weatherlees WTW</i>						
3122	3121	?coffined burial	LIA/ERB	c. 99	adult >50 yr. m	amtj; abscess; calculus; caries; fracture – l.nasal; ankylosis – C6-7; degenerative disc disease – C3-6, L1-3; Schmorl's node – L2-3; oa – C2-3, T2-12, L2-3, costo-vertebral; op – shoulders, elbows, carpals, MtC & IP joints, hips, knees, tarsals, MtT & IP joints; enthesophytes – iliac crests, femora, calcanea; exostoses – l. humerus; calcified cartilage – rib, thyroid; mv – wormian bones, palatine torus, <i>os acromiale</i> (bilateral)

3137	3131	redep.	LIA/ERB	1 frag. a. (= 3138)	adult >45 yr. ?m	op - L5, S1; degenerative disc disease - S1; mv - sacralised L5/lumbarised S1
3138	3131	redep.; ditch fill	LIA/ERB	6 frags. a.	adult >25 yr.	
3139	3131	redep.	LIA/ERB	1 frag. l. (= 3138)	adult >18 yr.	
3309	3308	<i>in situ</i> burial	LIA/ERB	c. 97	adult >50 yr. m	amtl; calculus; hypoplasia; periodontal disease; vertebral body collapse - T11 (osteoporosis); periosteal new bone - l. maxilla, tibiae, fibula; DISH - L3-5 & S1; degenerative disc disease - C4-6, T1-4, 7-9, L2; Schmorl's nodes - T8, L1-12; oa - 5T, L3-4, right shoulder; l.wrist, r. knee; op - 5C, 12T, ribs, shoulders, elbows, carpals, Mt-C & IP joints, hips, knees, tarsals, Mt-T & IP joints; ankylosis - C2-3; enthesophytes - femora, calcanei, tibiae, fibula; mv - metopic suture, <i>os acromiale</i>
<i>Ebbsfleet Lane</i>						
1029	1028	redep.	LIA/ERB	c. 5 a.u. (=1033)	subadult c. 14-17 yr.	
1032	1028	redep.	LIA/ERB	3 frags. u.l. (=1033)	subadult c. 15-17 yr.	
1033	1931	<i>in situ</i> burial	LIA/ERB	c. 25 a.u.l.	subadult c. 15-17 yr.	enthesophytes - fibula
1088	1208	redep.	M/LIA	c. 3 s.	adult c. 20-45 yr. ?f	amtl; caries; calculus; abscess; periodontal disease; hypoplasia; fracture - rib, L5 (spondylolysis); infection - sinusitis, L5 & S1; degenerative disc disease - L4-5;
1111	1110	<i>in situ</i> burial	LIA/ERB	c. 98	adult c. 45-55 yr. m	Schmorl's node - 4T, 3L; oa - costo-vertebral, C6, 4T, r. acetabulum; op - C3 & 7, 11T, 4L, carpals, r. 1st & 2nd Mt-Cs, knees, tarsals; mv - wormian bones
1127	1195	redep.	M/LIA	1 frag. l.	adult >18yr	
1148	1195	redep.	M/LIA	1 frag. l.	adult >18 yr	
1184	1195	redep.	M/LIA	c. 25 s.l.	adult c. 18-30 yr. m	calculus; hypoplasia; mv - wormian bones
amtl - ante mortem tooth loss			oa - osteoarthritis	op - osteophytes	mv - morphological variation	C - cervical
T - thoracic	L - lumbar		bsm - body surface margins	dl - destructive lesion	Mt-T - metatarsal	Mt-C - metacarpal

### **Cottington Hill**

The remains of two inhumation burials, that of an adult male and an infant were recovered (Table 2.6).

### **Weatherlees WTW**

Two inhumation graves each contained the remains of elderly adult males one of which (from grave 3121) had a well-healed fracture to the left half of the nasal bone (Table 2.6). The inferior-lateral portion of the bone has shifted medially, with slight depression of the superior portion and an upward shift in the lateral-inferior portion (online report fig. HB 2). The changes suggest a blow to the left side of the nose, possibly accidental but more likely deliberate using a blunt implement. Facial fractures are uncommon in the archaeological record, though accidental and deliberate blows to the face must have occurred. Poor skeletal survival is likely to be the main reason; the facial bones in general tend to be relatively thin and fragile, and are particularly prone to damage and loss whilst in the burial environment.

A third individual, an adult over 45 years of age and probably also a male, was represented by redeposited bone recovered from the fill of ditch 3131.

### **Ebbsfleet Lane**

As also noted at Weatherlees WTW, the remains from Ebbsfleet Lane are in slightly better condition than those from other sites along the pipeline route, probably due to the more varied and slightly organic burial matrix. The remains from grave 1931 also show longitudinal splitting and cortical flaking, probably reflective of the frequent waterlogging and drying of the burial environment in this location.

A minimum of two adults, one male and one probably female, were included within the small assemblage of Middle/Late Iron Age bone recovered as redeposited fragments from various ditch fills. These ditches, forming probable boundaries, were subject to recutting and replacement across a broad temporal range from the Mid-Late Iron Age to the Romano-British period, and appear to have related to a settlement or number of occupation sites situated to the west. The human remains probably derived from graves in the immediate area destroyed by later recutting or replacement of ditches. Two Late Iron Age/Early Romano-British graves dispersed amongst the same group of ditches are testament to a continuum in the mortuary use of the area, which probably formed a liminal or boundary zone in relation to the settlement(s) from which the dead derived. Kentish burials of Early-Middle Iron Age date are very rare, though examples of both cremation and inhumation graves have been recovered (Parfitt 2004, 16; Mays and Anderson 1995, 380-1; McKinley 2006). Most of the known later Iron

Age/early Romano-British burials from the county comprise cremation burials made as singletons or within small groups, with the notable exception of Mill Hill, Deal (42 inhumation burials and five cremation burials: Parfitt 2004, 16-17; 1995; McKinley 2006).

### *Animal Bone*

*by Jessica M. Grimm*

Pyre goods encountered in the cremation burials at Coldswood Road include suckling and juvenile pig. The remains of the suckling pig from grave 8202 are stained indicating that they were in contact with a copper alloy object. Several fragments of copper alloy were found in this grave. The cremation burials at Cottington Road contained juvenile pig, domestic fowl, and possibly corvid, duck, and heron. The dominance of pig and domestic fowl as pyre goods does not reflect species proportions as seen in the 'normal' domestic waste. The small quantities of bone and the fact that only certain parts of the animals are present (ie, pig head, chicken thigh) makes it unlikely that complete animals were burnt on the pyre.

The animal bone from the cremation burials found at the cemetery east of the fort and *vicus* at Brougham, Cumbria (3rd century AD) include horse, cattle, sheep/goat, pig, domestic fowl, and goose (Bond and Worley 2004). The remains represented sacrifices and food offerings; it is less likely that they had a totemic function, as they are all domestic animals. Both men and women were given (parts of) animals. However, they are almost absent from children's graves. A wide range of species was present at the Eastern cemetery of Roman London. Pig and domestic fowl clearly dominated, but the other domesticates, birds, and fishes were also present. Again, adults were more likely to be accompanied by animal remains than were children. About half of the burials contained cremated animal bone (McKinley 2000a).

The occurrence of special deposits like dog and pig burials (Pl. 2.11 and Fig. 2.15) as well as the placement of skulls of horse, cattle, and dog is quite common in the Iron Age and Romano-British period. Research by Fulford (2001) showed that the burial of dogs in a settlement context was quite common. The presence of inhumation and cremation cemeteries along the pipeline route makes it probable that some of these deposits (tree-throw with pigs (Fig. 2.15), pig and birds in grave) are associated with grave rituals.

On the whole, the Late Iron Age/Romano-British assemblage is characteristic of rural settlement. The people were engaged in arable farming and stock raising. In order to spread risks and be largely self sufficient with possibly some meat trade, they

practised mixed husbandry regimes, which would have maximised the yield in primary and secondary products. Pig and domestic fowl had roles beyond that of manure and meat supplier as they featured also as pyre goods (see online report).

## *Environmental Evidence*

### **Charred plant remains**

by Chris J. Stevens

Eight Iron Age–Late Iron Age/Romano-British samples came from Ebbsfleet Lane and Weatherlees WTW. The earlier samples came from dog burial 3535 at Weatherlees WTW, and ditch 1195 at Ebbsfleet Lane (see online report). Cereals are fairly well-represented in the burial and to a lesser extent in the ditch. While most of the cereal remains comprise glumes of both emmer and spelt wheat it is notable that spelt wheat is far better represented than in the Late Bronze Age samples discussed above. Grains of barley were also present in the sample from the burial along with rachis fragments suggesting that hulled six row barley (*Hordeum vulgare* subsp. *vulgare*) was the only form present.

Weed seeds are generally poorly represented and comprise mostly larger-seeded species, in particular vetches/wild pea (*Vicia/Lathyrus* sp.) and oats (*Avena* sp.). The range is otherwise similar to that seen in earlier samples. Seeds of field madder (*Sherardia arvensis*) and ribwort plantain (*Plantago lanceolata*), seen in the animal burial, tend to indicate the cultivation of drier, more calcareous soils and no seeds of wet-land species were seen in these samples.

### *Early Romano-British: Coldswood Road to Ebbsfleet Lane*

Several samples were examined from seven cremation burials at Coldswood Road, probably all dating to within a few decades around the Roman Conquest. The samples were not rich in cereal remains, but all contained good evidence for glumes of both emmer or spelt wheat. Generally a mixture of emmer and spelt was seen, although most of the glumes are poorly preserved, probably a result of reworking, and not identifiable. As with the previous periods, barley is still reasonably well represented.

Weed seeds are very poorly represented but generally the range of species is highly similar to that from Ebbsfleet Lane. Two samples produced single seeds of stinking mayweed (*Anthemis cotula*) but given that both samples were quite rooty, and the presence of medieval activity in this area, they may be intrusive.

A further four samples were examined from four ditches (1286, 1007, 1028, 1118) at Ebbsfleet Lane.

These samples were generally much richer in cereal remains than those from the previous periods, in particular those from ditches 1007, 102, and 1118. The samples comprised mainly glumes of spelt although all yielded evidence for emmer wheat as well. The samples also provided a limited amount of evidence for malting in the form of germinated grain and coleoptiles. As with previous periods, 6-row hulled barley was still quite well represented.

A few fragments of hazelnut (*Corylus avellana*) were also recorded and several pinnules of bracken (*Pteridium aquifolium*) in ditch 1118. The range of weeds is again similar to the previous periods, particularly vetches/wild pea and oats. Seeds of fat-hen (*Chenopodium album*) are very common from ditch 1118, numbering into the thousands. Again field madder and sheep's sorrel (*Rumex acetosella*) are reasonably well represented. While few seeds of wetlands are present, species such as buttercup (*Ranunculus acris/repens/bulbosus*) and runch (*Raphanus raphanistrum*) are common in wetter fields, in the case of the latter, usually on sandier soils. A single seed of corn-spurrey (*Spergula arvensis*) was also seen, a species highly characteristic of crops grown on sandy soils.

### *Romano-British: Cottington Road and Cottington Hill*

Fifteen samples were analysed from Cottington Road, the majority coming from cremation-related deposits and/or graves. Most of these samples produced glumes of spelt wheat and, to a lesser extent, emmer. Grains of spelt and some of barley were also present in many of the samples. The samples from grave 6049 were particularly rich in glumes and additionally produced a number of germinated grains and coleoptiles indicative of malting waste. There is also good evidence for the presence of 6-row hulled barley, in particular a reasonable number of rachis fragments.

Fragments of hazelnut were present in a number of the samples, while cremation burial 6015 contained a large *Prunus* stone (12–15 mm) of a size more suggestive of domestic plum (*P. domestica*) than sloe (*P. spinosa*). A few of the samples also contained thorns of sloe/hawthorn, as well as fruits of hawthorn. The range of weed species is similar to those in earlier deposits, being dominated by seeds of vetches and oats with few or no seeds of species indicative of wet or flooded soils.

Samples were analysed from three ditches (5201, 5079, and 5157) at Cottington Hill. Ditch 5201 (group 5323) contained little material and much of it is extremely deteriorated but it did yield several grains of barley

Glumes of spelt wheat are by far the most dominant remain. As with ditch 1118 at Ebbsfleet Lane, and grave 6049 at Cottington Road, the sample

**Table 2.7 Charcoal from Romano-British contexts at Coldwood Road (Area 9), Cottington Road, Cottington Hill (Areas 14 & 15), and Ebbsfleet Lane (Area 16)**

	Area 9		Area 14				Area 15		Area 16		
	Feature type	Pit	Crem. b.	Cremation burial		Oven		Ditch			
Feature number	8243	8206	6009	6011	6016	6017	5094	5097	5096	1158	1389
Context number	8244	8207	6010	6011	6016	6017	5097	5096	1160	1119	
Sample number	772	743	516	576	507	577	405	406	24	23	
Spit number				3		2					
% flint identified	25	25	50	100	100	50	50	25	25	25	12.5
<i>Species</i>	<i>Common name</i>										
<i>Quercus</i> sp.	oak	39hs	151hs	100hs	134hs	64hs	2	-	-	6h	-
<i>Corylus avellana</i> L.	hazel	26r	-	2	-	-	-	-	-	1	-
<i>Alnus/Corylus</i>	alder/hazel	-	-	-	1	1	-	-	-	-	-
<i>Prunus spinosa</i> L.	blackthorn	11r	-	31r	2	23r	-	98r	93r	42r	82r
<i>Prunus</i> sp.	cherry type	-	-	-	-	-	2r	-	-	2r	-
Maloideae	hawthorn, pear, apple	21r	-	-	-	-	-	-	-	48r	35r
<i>Prunus</i> /Maloideae		-	-	-	-	-	-	-	-	-	5r
<i>Hedera helix</i> L.	ivy	-	-	-	-	-	-	-	-	-	3r
<i>Fraxinus excelsior</i> L.	ash	3	-	-	-	15	95r	-	-	-	-
cf. <i>Sambucus nigra</i> L.	elder	-	-	-	-	-	-	-	-	1	-
Indeterminate		3	-	1	6	3		5	4r	7	5r
Total		103	151	134	143	106	99	103	97	107	130

r – roundwood    s – sapwood    h – heartwood

**Table 2.8 Charcoal assessment data from cremation spit samples from Cottington Road and Coldwood Road**

Grave	Context	Sample	Spit	<i>Quercus</i>	<i>Alnus/Corylus</i>	<i>Prunus</i>	<i>Fraxinus</i>	<i>Pinus</i>	
<i>6009</i>	6010	<i>516</i>	-	X	-	x	-	-	
		517	-	X	-	-	-	-	
		518	-	X	x	x r	-	-	
		519	-	X	-	-	-	-	
	6011	576	1	X	x	-	-	-	
		576	2	X	x r	-	-	-	
		576	3	X	x	x r	-	-	
		576	4A	X	-	x	-	-	
		576	4B	X	-	-	-	-	
		576	5	X	-	-	-	-	
	<i>6015</i>	6016	505	-	x	-	x r	-	-
			506	-	-	-	-	X	-
			507	-	x	x	-	x	-
			508	-	x	-	-	x	-
509			-	x	-	-	x	-	
515			-	-	-	-	x	X	
520			-	x	-	-	-	x	
521			-	-	-	-	-	X	
530			-	X	-	-	-	-	
531			-	x	-	-	-	x	
6017		577	1A	x r	-	-	-	X	
		577	1B	x r	-	-	-	X	
		577	2	x r	-	-	-	X	
		577	3	-	-	x r	x	-	
<i>8206</i>	8207	727	S q	X	-	-	-	-	
		728	S q	X	-	-	-	-	
		729	E q	X	-	-	-	x	
		730	E q	X	-	-	-	-	
		731	S q	X	-	-	-	-	
		742	N q	X	-	-	-	-	
		743	N q	X	-	-	-	-	
		744	N q	X	-	-	-	-	
		745	W q	X	-	-	-	-	
		746	W q	X	-	-	-	-	
747	W q	X	-	-	-	-			
748	E q	X	-	-	-	-			

(samples highlighted in *italics* are fully recorded in Table 2.5)

X denotes dominant species    x – species present    r – roundwood    q – quad



from the probable late Romano-British ditch (5157) was very rich in cereal remains, in particular glumes of spelt and also produced evidence for malting in the form of germinated grain and several hundreds of coleoptiles. More so than the previous two samples, this sample appears to be a relatively pure dump of waste from the processing of malted spikelets. The sample produced some limited evidence for emmer, although at 2% it is questionable whether it was still grown as a crop in its own right. Some barley is also present including some germinated grains and several rachises of 6-row barley.

Ditch 5139 produced some evidence for shrub, including a seed of elder (*Sambucus nigra*), a stone of sloe and thorns of hawthorn (*Crataegus monogyna*)/sloe. The range of weed species is again similar to that seen for the samples described above, with seeds of vetches and oats being most prevalent, while there were no real indicators of wet or flooded soils.

All of these samples also produced evidence for stinking mayweed, especially the sample from the later Romano-British ditch (5157). Stinking mayweed is generally seen as an indicator of heavier clay soils and often only occurs on more Romanised settlements (cf. Pelling 2002; Clarke 1971; Hall and Kenward 1990; Huntley in Buxton *et al.* 2000). In Kent it has been recovered from Bower Road (Stevens 2006b) and Northfleet Villa (Smith in Andrews *et al.* forthcoming). The species has been associated with a change from ards to asymmetrical ploughs with iron coulter (cf. Jones 1981), more suitable for the working of clay soils, which may explain the more frequent occurrence of this species on more Romanised settlements.

A fourth sample, from a pit (5139) below oven 5089, contained hulled wheats which concurs well with its Romano-British date.

#### *Roman agriculture and malting*

The Romano-British samples, in particular those from Ebbsfleet Lane (ditch 1389), Cottington Road (grave 6049), and Cottington Hill (ditch 5157, not illustrated), are all potentially related to the production of malt. Evidence for malting is now available for a number of sites in England and especially Kent. These are generally recovered from more Romanised sites, including towns and small towns/roadside settlements (cf. Campbell 2006; Colledge 1989; Stevens 1999; Straker 2006), villas (Pearson and Robinson 1994; Smith and Davies 2006; Smith in Andrew *et al.* forthcoming) and Romanised farmsteads (Hillman 1982b; Murphy 2003b). In Kent similar rich deposits have come from Springhead and Northfleet Villa, while smaller quantities of malting waste have been seen at Bower

Road (Stevens 2006b) and also at The Mount Roman Villa at Maidstone (Robinson 1999).

The richness of the samples hints at the existence of a probable settlement within the area and it might be noted that the existence of a possible villa in this area has been speculated (Perkins 2001, 48–9 fig. 2, 3).

#### **Charcoal**

by Dana Challinor

##### *Coldswood Road*

The charcoal from pit 8243 (Table 2.7) was associated with rich charred plant remains and almost certainly represents the fuelwood from domestic waste. The assemblage is very mixed, producing similar quantities of oak and hazel, with blackthorn and Maloideae. The picture that emerges is that fuelwood for domestic purposes was collected from marginal woodland and/or hedgerow areas in the vicinity. The charcoal from the cremation burial 8206 contrasts with 8243, and is entirely dominated by oak, both heartwood and sapwood (Table 2.8). One fragment was confirmed as pine, (*Pinus sylvestris*), a native British species. It is the only occurrence of this species in the charcoal record from the pipeline route and is unlikely to have been gathered in the area for fuelwood. Its presence in a cremation context is significant and suggests that it may have entered the assemblage as part of a pyre good.

The other burials in this area had been cleaned of pyre debris prior to burial so there are no other results for comparison in Coldswood Road. On the basis of this area alone it appears that there is a distinction in the selection of fuelwood for domestic and funerary activities.

##### *Cottington Road*

Only two of the eight cremation burials in this area produced enough charcoal for analysis (Fig. 2.26). Grave 6009 produced typical charcoal assemblages, with both contexts dominated by a single taxon, oak, with some blackthorn roundwood and a couple of hazel fragments (Table 2.7). The other spit samples are consistent with this picture (Table 2.8), indicating that oak was used as the primary fuelwood and pyre structure, with small branches of hedgerow species used for kindling. Similar results were found at the cremation cemetery at Pepper Hill, Kent (Challinor 2006), where several cremation deposit types were analysed, revealing remarkable consistency in the selection of oak wood for fuel and pyre structure.

The second cremation grave from Cottington Road (6015) is not as straightforward since the

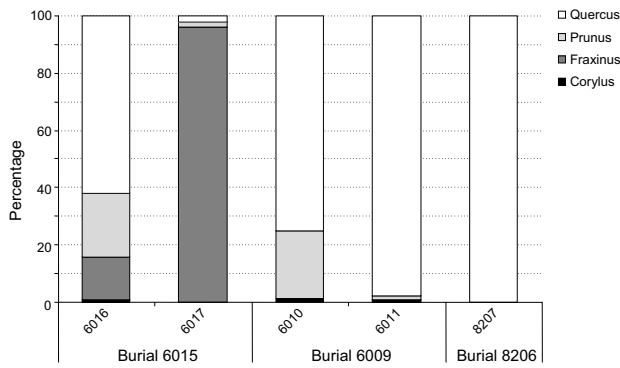


Figure 2.26 Charcoal composition from Romano-British cremation burials

samples from the burial show greater variation. Sample 577 from context 6017 is clearly dominated by ash (*Fraxinus excelsior*), in contrast to the other Romano-British cremation graves 6009 and 8206. In itself this would not be so significant since the analyses from comparable sites show that ash was often used for cremations during the Romano-British period, as well as oak, within the same cemeteries and/or the same cremation (Challinor 2007). What is interesting about 6015 is the apparent inconsistency in the burial as a whole since the urn burial (6017) is dominated by ash, while the grave backfill (6016) is more mixed, but with a large component of oak. The assessment data show that some of the spit samples were dominated by oak, some by ash and some were mixed (Table 2.8). This is unusual in the context of Romano-British burials, which tend to show consistency within spits of the same context and, indeed, within the same burial (Challinor 2006). One possibility is that the grave backfill includes redeposited pyre debris from more than one cremation – the urn (ON 420) contained the remains of a c. 40–60 year old adult and a 0.5–3 year old infant.

*Cottingham Hill*

Oven 5094 produced two samples entirely dominated by blackthorn of which the majority of fragments were from small diameter branchwood. The function of the oven is unclear and the choice of the thorny blackthorn shrub as a primary fuelwood seems curious, although this species was also recovered in quantity from the Romano-British ditches at Ebbsfleet Lane. It seems to have been quite favoured for domestic fuelwood. It is also possible that the wood was gathered along with the fruit (sloes) as part of the food-gathering process.

*Ebbsfleet Lane*

Samples from two Romano-British ditches (1158 and 1389; Table 2.7) were examined. The deposits were associated with charred cereal remains (probable crop processing in the fields) so the charcoal represents either the fuelwood from this activity or dumped domestic hearth waste. Both produced mixed assemblages with strong hedgerow characteristics, (mainly sloe and Maloideae) composed of small diameter roundwood, which may have come from the trimming of hedges in the vicinity (although the full range of species which might be expected in a mature hedge is not represented).

It is interesting that there is a marked preference in the use of hedgerow species in the non-cremation deposits – which seems to be consistent across the sites along the pipeline and confirms a distinction in the fuelwood selection between domestic and ritual activities. This could indicate pressure on woodland resources – increased clearance leading to the increased utilisation of light-demanding species such as sloe. Certainly, the use of mature woodland trees such as oak and ash are largely limited to ritual purposes. Whether this reflects a significant change in woodland resources or one in management practices, however, it is not possible to determine. The use of fuel may have been constrained by class – those who gathered the fuel for the ovens, for example, may not have had access to the best fuel resources.

*Weatherlees WTW*

Charcoal associated with a complete dog skeleton from feature 3535 was analysed. There was very little identifiable charcoal in this sample, so it is not unlikely that the material was included accidentally in the backfill to the burial. There is nothing unusual or exceptional in the assemblage which is mostly oak, with a couple of hedgerow/scrub species (Table 2.9). Indeed, there is nothing in the charcoal to provide any insight into the burial, except to say that the charcoal was appropriate for domestic hearth remains which were probably not deliberately deposited.

Table 2.9 Charcoal from Iron Age dog burial (Weatherlees WTW)

	Feature type	Animal Burial
	Feature no.	3535
	Context no.	3534
	Sample no.	320
	% flor ident.	100
<i>Quercus</i> sp.	oak	10
<i>Prunus spinosa</i> L.	blackthorn	1
<i>Acer campestre</i> L.	field maple	1
Indeterminate		3
Total		15

## Soil and sediment analyses of samples from Ebbsfleet Lane

by Catherine Barnett

Monoliths of undisturbed sediment collected during excavation at Ebbsfleet Lane were examined. The surface was cleaned prior to recording and standard descriptions followed Hodgson (1976).

### *Test pit 4*

This sedimentary sequence, described in Appendix 2.6, is of the heavily bioturbated modern soil profile formed on a sequence of slightly calcareous colluvium (or hillwash) reworked and relain by water (possibly seasonal flow, eg, in a gully or heavy run-off). This is suggested by the mixed nature of the sediments and the inclusion of rare angular gravel resulting from colluvial input and conversely the relatively consistent, homogeneous particle size. The deposit is consistent with the site's topographic location at the base of Cottington Hill and adjacent to lowland marsh at Pegwell Bay. The sediments have collected in this area within a low-lying hollow and subsequently stabilised and dried out allowing soil (brown earth) formation. Artefacts within this profile (occasional pottery, bone, and struck flint were noted in context 1794, common in 1795), particularly the lower profile, are likely to be reworked, rather than *in situ*.

### *Ditch 1195*

A longer sequence was collected as two overlapping monoliths from a deep Iron Age–Romano-British Age ditch (1195, cut 1372 in group 1384) at Ebbsfleet Lane. A total of 1.64 m of fine sediments are described in Appendix 2.6. A large number of individual contexts were defined on site, indicating a number of in-wash events (each potentially rapid). They can however be grouped and summarised with the sequence comprising the following:

The basal fill (context 1365, 1368) is of waterlain in-washed sediment, most probably alluvium (fine overbank sedimentation from local flooding of the River Stour), and the sediments are fine sand and silt with low clay content, ultimately deriving from the underlying Tertiary Thanet Beds and more directly from weathering of Thanet Beds through which the ditch was cut. Some stabilisation and weathering is indicated in the basal fill by formation of granular-small blocky structure but no defined stases were observed. Context 1364 interrupts the waterlain sequence and is a more mixed deposit, comprising clay silts with small fragments of chalk and likely represents the slump or dump of mixed site material into the ditch. The overlying band of greasy clay of context 1362 is alluvial but finer grained than the primary fill, indicating relatively low energy flow; the

abrupt boundary indicates this alluviation either eroded or rapidly sealed the underlying.

The further subsequent secondary fills (contexts 1357–1362, 1370) are of soft friable silts and very fine sands. Weak ped formation was noted throughout although no individual stases were discerned. Relatively rapid accumulation with regular input of water sorted colluvial and perhaps alluvial wash is indicated, with all displaying characteristics of the natural (Thanet Beds) from which they derive.

## Anglo-Saxon

by Kirsten Egging Dinwiddy

Only a few features of Anglo-Saxon date were recorded along the pipeline route. These comprised ditches, a classic sunken-featured building (SFB) at Cottington Road and an inhumation burial at Cottington Hill. All were found within an area of c. 360 m x 160 m, bisected by Cottington Road, Pegwell Bay. Anglo-Saxon archaeology on the Isle of Thanet is so far heavily biased towards mortuary activity of the late 5th to early 8th centuries (Richardson 2005, vol. 2, maps 8–9; Riddler 2004a, 27; Welch 2007, 196, fig 6.5), with groups and isolated burials and some relatively rich cemeteries at Ozengell, Broadstairs, St Peter's, and the recently discovered cemetery at Cliffs End Farm (Stoodley in Leivers *et al.* in prep.). Evidence for settlement is rarer, with only ten excavation sites revealing SFBs (including Cottington Road, and Manston Road, this volume), although aerial photographs indicate some further structural evidence (Welch 2007, 197, fig. 6.6; Moody 2008, fig. 95). Many of Thanet's modern towns and villages have Anglo-Saxon origins, with some churchyards in use today containing very early burials; indeed, some of the churches have Anglo-Saxon predecessors. It is this continuity that has likely masked or removed more Anglo-Saxon settlement evidence.

### *The Cottington Road sunken-featured building*

Within a few metres of the Cottington Road dual-rite cemetery in Area 14 (described above) were the remains of a c. 7th century Anglo-Saxon SFB, or *Grubenhäus* (Fig. 2.27). It lay immediately west of the cemetery enclosure's south-west corner, whilst a hollow-way ran only c. 20 m to the north-east. A small ditch, also dating to the Anglo-Saxon period, lay c. 46 m to the north-east of the SFB, respecting the alignment of the hollow-way.

SFB 6311 was represented by an approximately rectangular pit, slightly bulging to the east and west. The pit measured 3.21 x 2.34 m and was up to 0.31 m

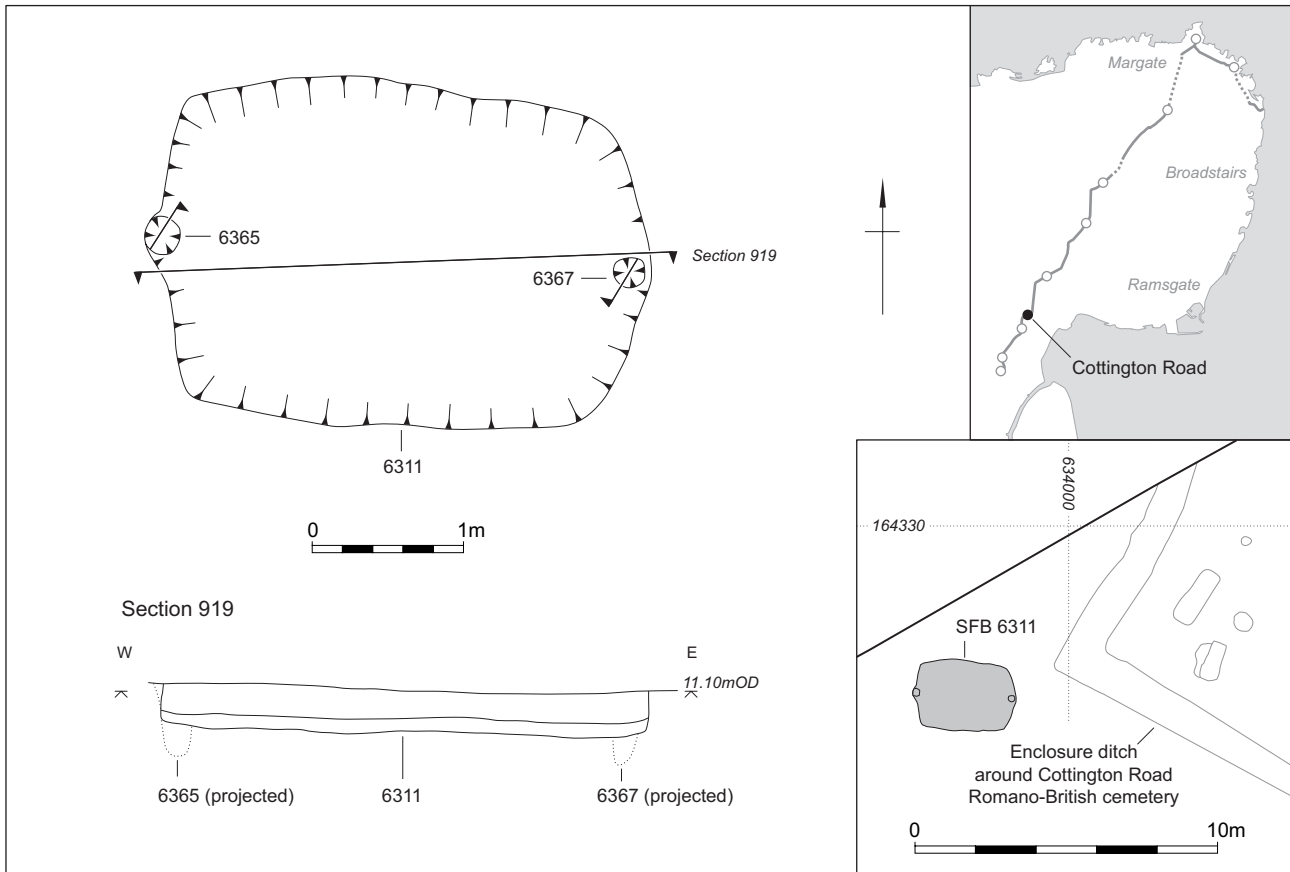


Figure 2.27 Cottington Road: SFB 6311

deep. Two post-holes occurred, midway along either short end, coinciding with the bulges. The post-holes were 0.22 m and 0.24 m in diameter and 0.16 m and 0.2 m deep.

In the north-east corner of the base of the pit was a sub-circular dark, blackish discoloured patch, approximately 0.5 m in diameter. The initial fill (6312) of the SFB pit was only 0.1 m thick and incorporated animal bone, shell, pottery, charcoal, and an iron nail. Overlying it was a very similar deposit (6313), 0.22 m thick, with slightly more silt content combined with dumps of domestic waste material. Deliberate disposal of domestic refuse and natural silting are indicated. Several objects of iron and three glass beads were recovered from this deposit (see below). Similar material to both these layers was also found within the post-holes, which were not observable until both deposits had been removed.

### Discussion

The Cottington Road SFB was of a typical sub-rectangular, two post-hole form, the most common form of SFB in Anglo-Saxon England, Scandinavia, and northern Germany as far south as the northern Elbe-Weser Triangle (Zimmermann 1992, 158; Tipper 2004, 68, 70). The dimensions of the Cottington Road SFB fit neatly into the range

suggested for the majority: 3 x 2 m–5 x 4 m, although the largest so far measured is 10 x 6 m; the larger examples are generally later (Tipper 2004, 66). In some instances evidence for post replacement and pit-lining was observed, as well as numerous stake-holes around the pit periphery probably indicating a mode of wall construction (*ibid.*, 74–81). However, no evidence for side walls, remodelling, or lining was encountered at Cottington Road.

The location of SFB floors, either in the base of the pit or suspended above it, continues to be a contentious and problematic issue (*ibid.*, 84–7). The presence of a hearth on the base of an SFB pit has often been suggested to be indicative of a floor surface at this level. The dark patch in the corner of the base of the Cottington Road SFB was more likely to have derived from a dump of cold, charcoal rich material rather than a hearth as no *in situ* burning was present and the charcoal content was low (restricted to a stain). Cottington Road lies at the bottom of a slope and a raised floor could have mitigated against water run-off into the pit but no features directly supporting this assumption were observed.

Most SFBs have either two or three distinct fills; the Cottington Road SFB was bipartite, the fills consistent with many of the examples and descriptions given by Tipper (2004, 102–7). There

were no indications of decayed *in situ* wooden posts. Instead, the post-hole fills were very similar to that of the pit. This implies that the posts had been deliberately removed, either because they were never a permanent part of the structure (as suggested above), or as part of a demolition process. Tipper concludes that there is rarely a direct relationship between the fill of most SFBs and their initial function, given that in most cases the backfilling occurred after the structure went out of use. The contents are likely to be more of an indication of activity within the immediate vicinity. Furthermore, SFBs were probably multi-functional and not necessarily built for specific or specialised functions (*ibid.*, 185).

Typically the most frequent and abundant artefacts from SFBs comprise pottery and faunal remains (*ibid.*, 107), which was also the case at Cottington Road. There were no spindle whorls or any evidence to suggest bone working; however, the presence of slag suggests some metal working in the locality. Charcoal analysis revealed evidence for spent fuelwood, and potentially burnt structural elements, dumped as waste into the pit. The complete assemblage is indicative of mainly domestic dwellings with less industrial activity in the vicinity.

The close proximity of the 7th century Cottington Road SFB to Romano-British activity is of some interest. It lay only 1.5 m from the boundary of the late Romano-British dual-rite cemetery and c. 20 m from a hollow-way, which was probably in use during the Romano-British period and potentially later. The settlement site of Mucking, Essex, was close to a Romano-British cemetery that was out of use by the late 4th century, with settlement beginning around the 5th century; however, there appears to be a short hiatus of occupation between the two (Going 1993, 21; Hamerow 1993). West Heslerton, North Yorkshire, is on the site of a late Romano-British shrine and temple complex (Tipper 2004, 55). The late Romano-British settlement of Icklingham,

Suffolk is only 1 km from West Stow and the knoll on which the West Stow site sits was previously occupied by 1st/2nd century pottery kilns (*ibid.*, 53). In each case there is quite likely to have been some indication of previous activity on the sites, indeed some settlements may have been deliberately placed with the earlier sites as a focus.

Sunken-featured buildings are not restricted to the Anglo-Saxon period, as exemplified at Monkton, Thanet, where a settlement of approximately two dozen SFBs was found, dating from the 1st–3rd centuries AD (CAT and TTA 1996; Millet 2007, 162–3). These buildings are rare among the building stock of Romano-British period settlements in Britain and only a small number is known; from Godshill, Hampshire; Dalton Parlours, West Yorkshire, and Welton Wold, East Yorkshire. While these structures appear superficially similar to early Anglo-Saxon SFBs, their structural details suggest that they belong to a different building tradition, possibly linked to the agricultural diversification taking place during the later Romano-British period (Tipper 2004, 7–9).

### *Cottington Hill: an unaccompanied inhumation burial in a ditch*

The remains of a human skull were encountered during investigation of the sequence of events involving a ditch terminus with two recuts. It soon became apparent that an inhumation burial (5135) was placed near the base of the first cut of terminus 5143 (Fig. 2.28).

#### **The ditches**

The ditches were all aligned east–west, clearly reestablishing the same boundary. The earliest ditch terminus (5144) was c. 1.2 m wide, 1.42 m deep, with steep straight sides and a flat base, and filled with natural silt deposits. The first recut was cut along the northern edge of the initial ditch and was revealed to

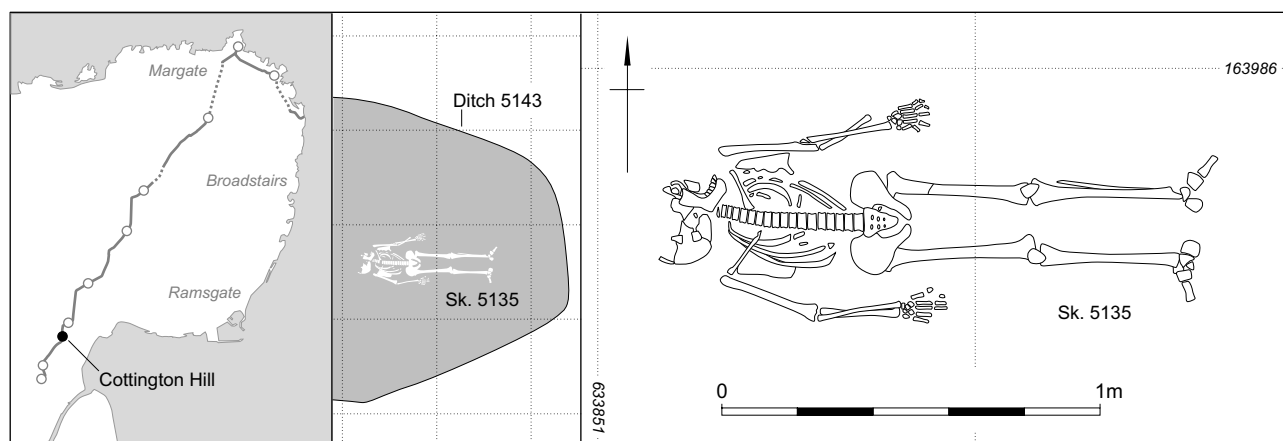


Figure 2.28 Cottington Hill: inhumation burial 5135

a length of c. 5.8 m. It was c. 3.2 m wide, with a rounded, moderately steep-sided terminus. The northern side of this cut was noticeably more shallow and less defined, perhaps a result of people accessing and egressing the ditch during the burial process. A final recut of the ditch (5122) followed the backfilling of the second ditch by a combination of natural and deliberate deposits, the latter containing lenses of charcoal and shell. This cut was c. 2.5 m wide and 0.71 m deep and ran along the centre of the second ditch. The sides were moderate, increasing in gradient towards the base, the upper half being convex, the lower straight. The base was slightly concave and significantly narrower than the second ditch, and more comparable to the first. A small refuse pit was cut into the final ditch during the back-filling process.

The ditches were fairly substantial and appeared to have been re-established in a fairly short space of time. In this way, they are similar to the potentially defensive/excluding ditches in the two excavation areas at Ebbsfleet Lane. The ancient shoreline was much closer to Cottington Road and Cottington Hill than today and the land investigated along Ebbsfleet Lane and Weatherlees WTW lay within a few hundred metres of the water's edge (Fig. 2.8; Perkins 2007; Moody 2008, fig. 19).

### The inhumation burial

It is likely that grave 5400 (Fig. 2.28) was cut into the ditch fills and was immediately backfilled, rendering it invisible. It contained the remains of burial 5135 in a thin silty deposit. The head was to the west and the feet hard against the eastern terminus. No grave goods accompanied the burial and no coffin stain or metal fittings were found. A few disarticulated skeletal elements were recovered from later fills including one from the ditch recut which refitted neatly with the original burial.

The individual was a male >50 years old and c. 1.7 m tall. He had moderately poor dental health, porotic hyperostosis on the skull (a condition that has been linked to heavy infestation of headlice – see online report) and a small cut mark on his humerus.

### Date and discussion

No datable artefacts were retrieved from the ditches although an environmental sample from a deposit near the bottom of ditch 5143 indicated a Saxon or possibly later date (see Stevens, below). A radiocarbon date on the left femur places the burial and ditch firmly in the middle of the Saxon period (670–860 cal AD at 95% confidence; NZA-28977; 1263±30 BP).

The orientation of the burial and the fact that it was not accompanied by grave goods might suggest a Christian burial or at least Christian influence in the

burial rite. By the time it took place, the Christian mission would certainly have made its influence felt. While no early church or monastery is recorded for the Roman fort at Richborough (although there may have been a late Romano-British church), there are early Anglo-Saxon foundations in the region. Land was granted by King Egbert in 669 for a monastery in Reculver fort (Welch 2007, 236; 242) and, around the same time, for one at Minster-in-Thamet. Minster is also mentioned as one of the 'old churches' of Canterbury diocese in *Doomsday* (Carder 2004; Riddler 2004b), with Monkton also being a 'Minster' or 'primary mother church' (Sweetingburgh 2004).

The Cottington Road SFB was dated to to the 7th century. It is therefore possible that the individual in grave 5400 may have been an inhabitant/visitor of the settlement indicated by the SFB which lay only c. 370 m to the north-east of his final resting place.

## Finds

### Early Anglo-Saxon pottery

by Lorraine Mephram

Saxon pottery derived from four features, two at Cottington Road – nine sherds from ditch 6407, and 48 sherds from sunken-featured building 6311. Two further sherds came from Weatherlees WTW – one residual in medieval ditch 3265 and one from ditch 3345. These sherds are in two fabric types; the majority (54) organic-tempered (Canterbury Archaeological Trust [CAT] type series, fabric code EMS4), with five sherds in sandy fabrics (EMS1, also containing some sparse organic material). Five small rim sherds are insufficient evidence from which to discern any vessel forms, and there are no other 'featured' sherds (Table 2.10).

Early Anglo-Saxon sandy wares are found from the 5th century until the later 7th century in Canterbury, organic-tempered wares becoming significant from the mid-6th century and peaking in use in the later 7th, declining thereafter (Macpherson-Grant and Mainman 1995, 852). The small group from Cottington Road and the two sherds from Weatherlees WTW, then, would fit best within a date range of later 6th/7th century.

**Table 2.10 Post-Roman pottery fabric totals**

Fabric Code	Fabric	No. sherds	Weight (g)	Date range
EMS1	Early Saxon sandy ware	5	62	450–700
EMS4	Early Saxon organic-tempered ware	54	292	550–725
Total		59	354	

**Table 2.11 Summary of results from analysis of Anglo-Saxon unburnt human bone from Cottington Hill**

Context	Cut	Deposit type	%	Age/sex	Pathology summary
5123	5122	redep.	c. 1 s. (= 5135)	subadult/adult >15 yr	
5135	5350	<i>in situ</i> burial	c. 80	adult 45–60 yr. m	calculus; periodontal disease; hypoplasia; hyperostosis; ?trauma – humerus; op – 6T, carpals, 1st Mt-C & IP joints, tarsals, elbows, knees; enthesophytes – patellae, femur, calcaneum

op – osteophytes

T – thoracic

Mt-T – metatarsal

IP – inter-phalangeal

### Glass beads

by Talla Hopper

Three monochrome glass beads were found in the secondary fill (6313) of SFB 6311. The two drawn and segmented beads are small, opaque, dark cylinders, one of them green (ON 820). These small dark beads are found throughout the Romano-British period (Guido 1978, 92). ON 819 is a fragment of a large, deep blue, melon bead probably of the 1st–2nd century AD (*ibid.*, 100). However, this fragment shows signs of wear and may have been curated for some time and discarded when it broke.

The SFB is believed to be Anglo-Saxon but much of the material recovered from it is prehistoric or Romano-British in date and can be regarded as residual. This could be true of the beads, although there is also the possibility that these items may have been deliberately collected in the Anglo-Saxon period.

### Human Bone

by Jacqueline I. McKinley

The human bone report is available online; summary information is provided in Table 2.11.

### Animal Bone

by Jessica M. Grimm

The Anglo-Saxon bones from Cottington Road all come from the backfill of the SFB and consist of cattle, sheep/goat, pig, and chicken, none of which has any sign of working.

### Environmental Evidence

#### Charred plant remains from Cottington Road and Cottington Hill

by Chris J. Stevens

Four samples were examined from features of Anglo-Saxon date. Two earlier Anglo-Saxon samples came from the 7th century SFB at Cottington Road. Two samples from Cottington Hill were from Middle

Anglo-Saxon/early medieval ditches (5143, and 5057, c. 10 m south of 5143, not illustrated).

The earlier samples contained several grains of hulled barley and glumes of hulled wheats (emmer or spelt (*Triticum dicoccum/spelta*)). Emmer was identified from the glumes but no spelt was seen. No grains were recorded of free-threshing wheat (*T. aestivum* sl) but the samples did contain a few grains of barley (*Hordeum vulgare*).

For most of England free-threshing wheats are seen to replace hulled wheats in the Anglo-Saxon period, bringing into question whether remains of glumes from Anglo-Saxon sites are likely to be residual from earlier Romano-British activity (see Greig 1991). More recently, however, hulled wheats have been dated from Middle Anglo-Saxon sites in the Thames Valley (Pelling and Robinson 2000) and from Early Anglo-Saxon Kent (early 5th century to mid-6th century; Smith in Andrews *et al.* forthcoming).

There were very few weed seeds in the earlier Anglo-Saxon samples from Cottington Road, although again vetches/wild pea dominated along with barley, with a few seeds also of stinking mayweed. A slight possible indication of the cultivation of wetter soils was provided by a single capsule fragment of rush (*Juncus* sp.).

The later Anglo-Saxon samples from Cottington Hill were dominated by grains of hulled barley, but also had quite a number of grains of free-threshing wheat. In the case of ditch 5143, cereal grains were very well represented, and the sample also produced a number of rachis fragments of free-threshing wheat. In addition both samples also produced some evidence for rye (*Secale cereale*) in the form of both grain and rachis fragments.

A number of seeds and fragments of pea (*Pisum sativum*) and broad-bean (*Vicia faba*) were also recorded in the sample from ditch 5143, along with thorns of hawthorn/sloe (*Crataegus monogyna/Prunus spinosa*) and a fruit stone of hawthorn. The most dominant weed seeds in the samples were those of oats and stinking mayweed (*Anthemis cotula*), the latter, as discussed above being an indicator of the cultivation of heavier clay soils. The sample also contained a large number of seeds of common/grey club-rush (*Schoenoplectrus lacustris/tabernaemontani*) and several of wild mustard (*Brassica nigra/oleracea*).

**Table 2.12 Charcoal from Early/  
Middle Anglo-Saxon SFB at Cottington Road**

	Area	Cottington Road	
		Feature number	6311
	<b>Context number</b>	<b>6312</b>	<b>6313</b>
	<b>Sample number</b>	<b>871</b>	<b>872</b>
	<b>% flot identified</b>	<b>50</b>	<b>100</b>
<i>Species</i>	<i>Common name</i>		
<i>Quercus</i> sp.	oak	55hs	23
<i>Corylus avellana</i> L.	hazel	3	3
<i>Alnus/Corylus</i>	alder/hazel	3	-
<i>Prunus spinosa</i> L.	blackthorn	-	5r
Maloideae	hawthorn, pear, apple	18r	-
<i>Ilex aquifolium</i> L.	holly	1	-
<i>Rhamnus cathartica</i> L.	buckthorn	4	-
<i>Acer campestre</i> L.	field maple	8	8
<i>Fraxinus excelsior</i> L.	ash	3	6
Indeterminate		3	2
Total		98	47

r – roundwood      s – sapwood      h – heartwood

Those commonly seen in the previous periods, including fat-hen, dock, and vetch/wild pea were also well represented.

The seeds of club-rush may have come into the sample from other sources such as cutting for fuel, although it is not uncommon to see seeds of wet-land rhizomatous perennials, such as spike-rush, in wetter fields. Such species are common weeds in rice fields, for instance, under minimal tillage, where their ability to reproduce from roots make them hard to eradicate (Rich and Fitzgerald 2002).

It is notable that seeds of either black-mustard (*Brassica nigra*) or wild cabbage (*Brassica oleracea*) were also present in the samples and both are most commonly found as weeds of sandier soils within near-coastal fields. The sample suggests that the assemblage may come from fields both situated in near-coastal sandier areas, perhaps prone to flooding and drier heavier clay soils.

The Anglo-Saxon (and medieval; see below) samples show the classic changes that are seen across much of southern England and serve to distinguish Romano-British agriculture from that of the Anglo-Saxon and medieval periods. The main change is that spelt and emmer are generally replaced with the cultivation of free-threshing wheat, with some limited cultivation of rye coming in probably in the Late Anglo-Saxon to medieval period. Perhaps more unusually barley seems to have been favoured to a greater extent than free-threshing wheat. While it is probable that heavier clay soils came under increasing cultivation during this period, perhaps facilitated by the introduction of the mouldboard plough, sandier and lighter soils still appear to have been cultivated.

## Charcoal from the sunken-featured building at Cottington Road

by Dana Challinor

The samples from SFB 6311 (Table 2.12), in contrast to those from the c. 12th century bakery (7250, see below), cannot be directly associated with a specific activity and probably represent spent fuelwood debris or burnt structural remains from the surrounding area, which was dumped into the feature after its abandonment. Both samples produced a greater component of oak, including heartwood which indicates maturity, than those from 7250, suggesting structural remains might be present. Of course, the presence of species such as holly (*Ilex aquifolium*) and buckthorn (*Rhamnus cathartica*) in the same sample (6312) attests that the assemblage cannot be composed of purely structural wood since these species would not be appropriate. Certainly, there is nothing in these samples to indicate a change in the availability of woody resources at this time.

## Medieval

Medieval features were found in most areas along the pipeline route, mainly comprising field boundary/drainage ditches and features of generally agricultural nature. Others included a pen/croft or garden wall in Area 7 (not illustrated), north of Star Lane, near Flete, and a hollow-way and pits at Coldswold Road to the south. A cobbled surface was revealed at Manston Airport, whilst at Cottington Hill a few pits and a track were found. The most significant medieval discovery found during the excavations was a 12th–13th century sunken-featured structure, revealed together with enclosure ditches and pits at Star Lane.

### *The Medieval Site at Star Lane*

At Star Lane, medieval activity was represented by several rectilinear enclosures which overlay earlier (undated) slightly curving ditches, indicating a history of agricultural land use and the repositioning of field boundaries (Fig. 2.29). Towards the south-west were two virtually identical enclosure ditches, with corners to the north-east and south-west, the southernmost corner being less acute. The latest ditch (7536) overlay the first (7514), with the north-east corner offset by c. 6.5 m to the west. The ditches enclosed an area c. 31–7 m in length, and continued beyond the easement width. Very similar ditches, in scale, form, date, and with occurrences of re-establishment, were also observed at Weatherlees WTW.



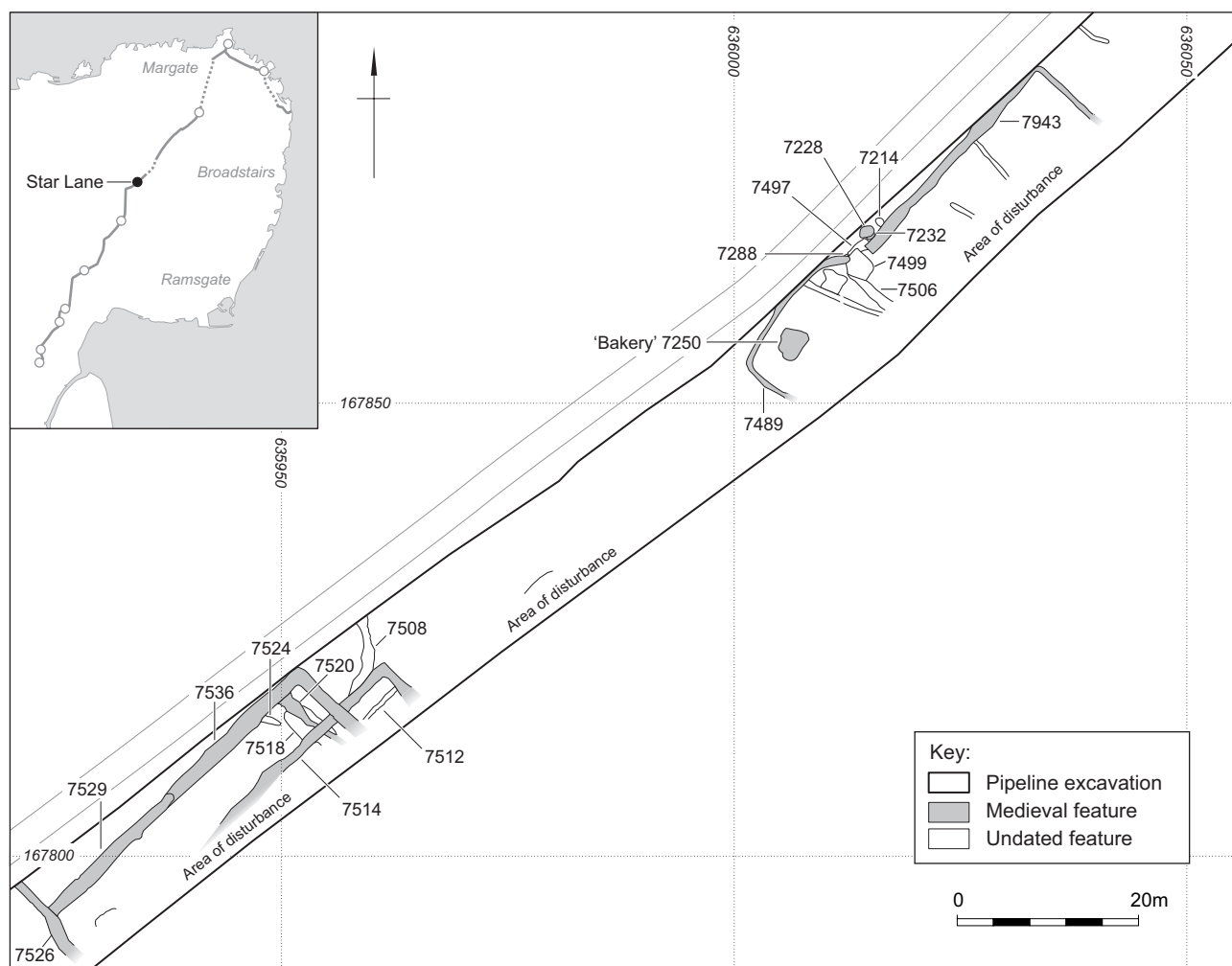


Figure 2.29 Star Lane: medieval enclosures and bakery structure 7250

Approximately 60 m further north-east, a rectilinear enclosure (7489) with rounded corners was observed. This appeared to have been an addition to the south-west of a field with similar characteristics to those described above, with an entrance to the north. This entrance was completely blocked by the insertion of a large deep pit, potentially a waterhole (7499). A potential entrance to the main enclosure 7493, immediately north of the previously described entrance, is found in the area of a short section of ditch (7497) which pre-dates the later ditch 7493 running on the same alignment.

### Star Lane bakery

#### *Location and initial observations*

In the south-western corner of the enclosure extension was a large sub-rectangular feature (7250; Fig. 2.30). It was approximately 3 m from enclosure ditch 7489 and measured 3.60 m by 2.90 m, c. 0.30 m in depth and was oriented north-east to south-west. When first discovered during stripping it was rather poorly defined and the fills difficult to distinguish. Once excavation commenced, it became clear that the

feature was a sub-rectangular shallow pit with a possible entrance at the eastern end of the northern side, indicated by the slightly stepped and worn edge. Structurally it was reminiscent of an Anglo-Saxon SFB.

#### *Internal structures*

Inside rectangular pit 7250 were the partially extant remains of two ovens, together with a pit, post-hole, and a moderately defined entrance.

#### **Large oven**

The most impressive feature was the large oven 7314 (Pls 2.20–1) which was set into the south-eastern corner of the pit, creating a 'bulge' towards the south-west. The oven was represented by a sub-circular feature, measuring c. 1.6 x 1.8 m with a slight projection at its mouth (north-east). The flat-based construction cut was inserted into the base of the sub-rectangular pit (7250). Towards the north-east of the oven, two parallel large stones had been erected, c. 0.50 m apart, creating the supportive structure for the stoke-hole. Pits 7416 and 7422 are the depressions of the stones which were found *in situ* (Fig. 2.30; Pl. 2.22). Next a flint cobble

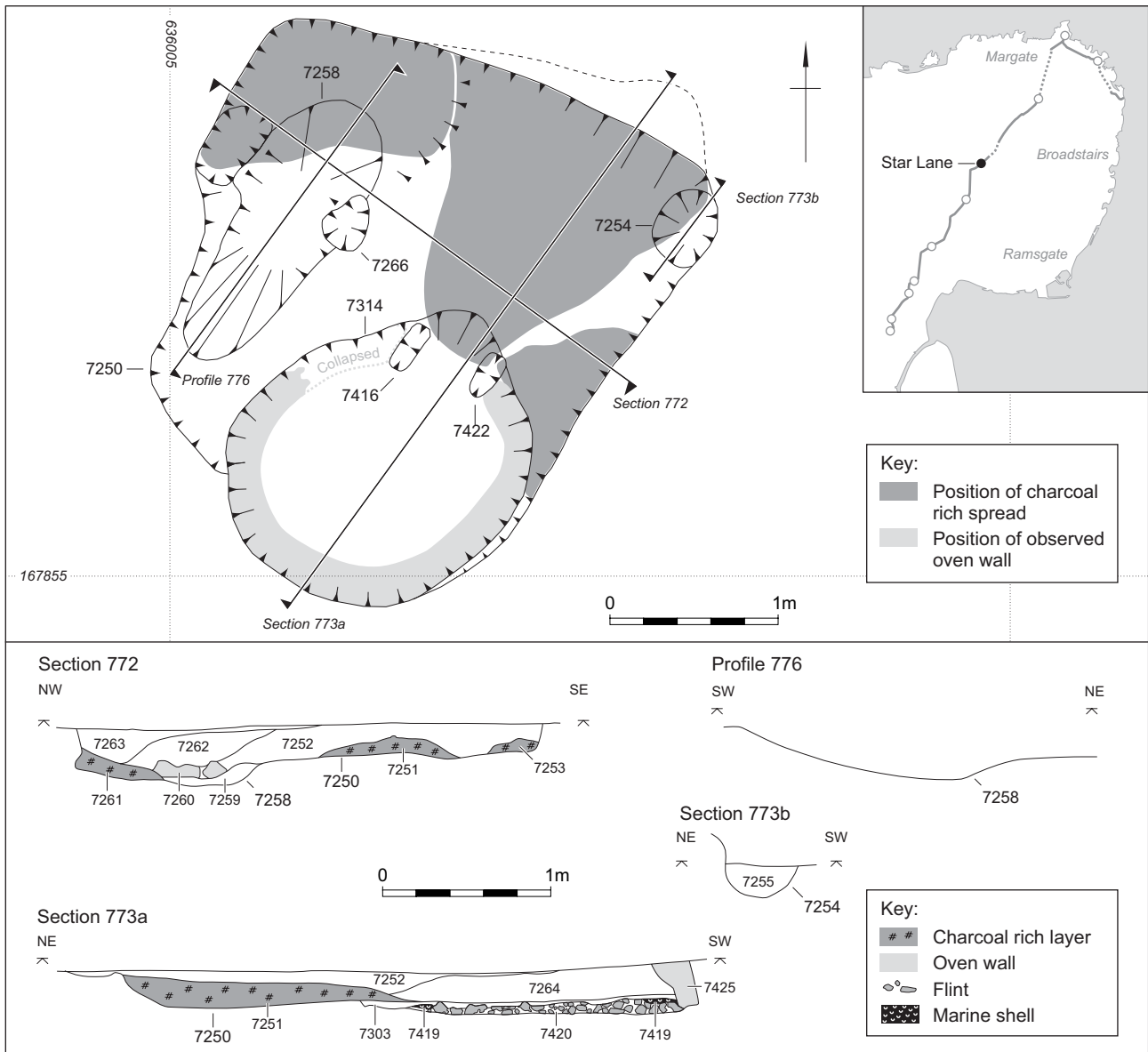


Figure 2.30 Star Lane: bakery structure 7250

layer (7420) was laid, filling the base of the construction cut. The outer c. 0.35 m of the cobble layer was then covered by a layer of complete and crushed marine shells (7419). The next stage of construction was the building of the oven base (7303) and walls (7425), made directly on top of the cobble and shell deposits. The presence of extant walls, about 0.26 m high and 0.22 m wide, indicated that the oven superstructure was originally a classic vaulted dome. The construction material was *clunch*, a cob-like material of compacted crushed chalky silt, and clay, with inclusions of shell, fired clay, and flint (J. Rady, pers. comm.; the term *clunch* has varying meanings in different parts of the country).

Pinkish-red discoloration of the inside of the walls and the outer edge of the base (which was 50 mm thick) was undoubtedly the result of *in situ* burning. The lack of heat alteration at the centre of the base coincided with the lack

of the shell layer that underlay the outer edge. The analysis of charcoal and charred plant remains from around the edge of the base and lying within the stoke-hole (probably remnants of ‘rakings’) indicate food processing. Such an interpretation was supported by the lack of smithing or smelting waste material and evidence for intense heating associated with metal working or other pyrotechnical crafts such as pottery or glass production. The charred plant remains from post-hole/pit (7254) associated with the structure also appear to represent oven rakings. The high amount of grain could indicate waste from food processing used as fuel or that it was strewn on the base of the oven to prevent loaves from sticking; grain-drying is a less likely explanation as this requires a different kind of oven which permits warm air to circulate (Beresford 1977, 241–2; 245, fig. 25) rather than heat to radiate from the floor and the oven walls.

The uppermost deposits (7264) of this oven represented the collapsed superstructure, which had occurred without an intervening period of silting. The lack of silting may be the result of a number of factors: the oven may have been sealed after its last use, the sunken-featured structure may have remained intact until the collapse of the oven and therefore protected the internal features, or perhaps the oven was deliberately demolished.

#### Small 'keyhole' oven

A smaller, elongated, keyhole-shaped oven (7258) lay c. 0.30 m to the north-west of the large oven, protruding further into the empty space in the northern part of pit 7250. This was on the same north-east to south-west alignment and measured 1.70 x 0.66 m. The construction of this oven was less complicated. The first stage comprised the insertion of the 'keyhole' construction cut into the floor of the sunken-featured structure. The oven mouth to the north and a small ledge were observed around the inside of the cut on which the oven structure (represented by a small quantity of cob-like material) was built, probably as a domed structure (Pl. 2.21).

Reddening of the natural brickearth edges of the construction cut suggests that heat was applied directly; therefore it is assumed that, in contrast to the large oven, no lining was present. A charcoal-rich deposit (7261) at the north-eastern end was probably the remnants of rakings, implying that the oven entrance was positioned there, as expected, for all other sides of the oven would have been inaccessible.

It appears that the stage immediately following the end of the use of this oven was different to that of the larger one. Under the collapsed oven structure was a silty accumulation in the base (7259), suggesting that the entrance and/or flue was left open once the oven went out of use. It is likely that the silting was fairly rapid and possibly water deposited. This suggests that the sunken-featured structure and the oven were not weatherproof at this time. The subsequent collapse or destruction was followed by a further episode of silting.

#### *Other features associated with the sunken-featured structure*

##### **Inside the sunken-featured structure**

A small pit (7254), 0.36 x 0.43 x 0.18 m, with steep, concave sides and base, was positioned in the north-eastern corner of the base of the sunken-featured structure. The fill was moderately compact and fairly mixed with patches of brickearth, chalk, and flints. There were some ashy patches throughout, charcoal flecks, and burnt flint. It is more likely that this pit was associated with the activity within the structure rather than being a structural component.

#### **Pits**

A number of refuse pits was identified immediately to the north of the enclosure ditches, at the entrance blocked by ditch 7497. Pit 7228 was probably associated with the



*Plate 2.20 Star Lane: medieval sunken-featured bakery 7250 from the north-east*



*Plate 2.21 Star Lane: detail of oven walls of medieval sunken-featured bakery 7250 from the west*



*Plate 2.22 Star Lane: detail of medieval sunken-featured bakery 7250*

bakery building. It measured 0.64 x 0.24 x 0.53 m and was oval with steep concave sides. It contained three deliberate fills which incorporated early medieval pottery, bones, and burnt and struck flint. The pottery was similar to that from the bakery and so it is likely that the two are associated. This pit cuts an earlier pit (7232) which in turn partially cut into the adjacent enclosure ditch 7493.

### *Discussion*

The large spreads of charcoal-rich deposits in the north-eastern half of bakery 7250 are consistent with it having been a domed oven used for baking. In this instance, it appears that the fuel comprised predominantly small twigs and branches which would be lit in the oven to heat up the structure. Once they had burnt down, the remaining ashes would be raked out and baking could begin. The authors are not aware of any English recipes for cakes or breads, similar to the Alsatian *Flammekueche*, that would take the first, strong heat of the oven before the baking of the bread would commence. Perhaps, the oven was simply left to cool down for a while until the right temperature was reached. Alternatively, a number of grains could be thrown into the oven, and if they burst open would indicate the right temperature was reached (A. Powell, pers. comm.). This might also account for the presence of grain in the oven at Star Lane where a large amount of fragmented grain was found, at least some of which might be the remains of such burst grains, although another explanation for the grains in the oven suggests they were meant to prevent the loaves from sticking to the oven floor (see below and Chapter 5 for a discussion).

### *Medieval Features and Assemblages from Cottington Hill*

The medieval archaeology discovered at Cottington Hill comprised a network of field boundaries and/or deliberately cut ditches for drainage running from the slope to the west. The ditches ranged in width from 0.57 m to 2.80 m and in depth from 0.25 m to 1.25 m and appeared to form a north-east to south-west field system, with a number of possible bedding trenches (eg, 5339 and 5337, not illustrated). The bedding trenches were notable for their chalk rubble content. It appeared that chalk was incorporated into the dark deposits of black clayey, boggy ground into which the features were cut. Seaweed was traditionally collected to use as fertiliser in coastal areas around the British Isles, but because of its acidic nature, crushed chalk was often mixed in to neutralise it (Bell 1981; Russell 2004; Fenton 2008). The fills of the ditches were mainly naturally formed, although large quantities of pottery and shell were found indicating that they were within an area of human activity. Land snail evidence suggests that the possible bedding trench 5337 contained water at least semi-permanently (Wyles, archive report).

An area of rammed chalk and flint was recorded at the northern end of the Cottington Hill site. This surface was probably placed to consolidate an area of boggy, marshy, and wet ground. Two rut marks (5261) were apparent, suggesting this was used as a

track for wheeled vehicles. Two ditches were found beneath this rammed chalk surface, probably positioned here to aid drainage. All the features at the north of the site were of medieval date. The pottery was fairly uncommon, including Beauvais-type ware, indicating the possibility of occupation of slightly elevated social status in the vicinity (Mephram, below).

### *Medieval Enclosures and Land-use: 12th–13th Century Thanet and the Wider Region*

The 12th and 13th centuries were times of great social change and complexity. The competition for common land and growing specialisation of trades and industries paved the way for more radical social changes following the massive population decline in the 14th century.

#### **Population and agriculture**

In the period before the famine and the Black Death in the first half of the 14th century the population of England was increasing rapidly and land was becoming scarce, resulting in more marginal land being utilised. This was compounded by a growing trend towards pastoral agriculture and investment in stock (Dyer 1988, 19). Wool was a strong market force and indirectly increased the demand for meat. This being so, there was an increased need for more enclosure, buildings, and fencing.

Thanet was no exception; indeed it was ideally suited and situated with large flat expanses of land and good links to both London and the Continent. By 1334–5 Thanet had one of the highest population densities in Kent according to Edward III's lay subsidy rolls (Lawson and Chalklin 2004).

The demand for more land is indicated by land reclamation undertaken during the 13th century by individual tenants from Brooksend to Sarre and by the monks at Minster and Monkton. Certainly the Abbotts Wall in the Minster marshes, built to facilitate large scale reclamation, was well underway in 1280, substantiated by historical documents reporting the theft of embankment materials by the people of Sandwich in order to repair their quays (Perkins 2007, 257).

#### **Economy and trade**

By the 13th century both monastic and lay estates frequently sold grain from their manors, while buying supplies at their convenience in markets near to the household. No-one was entirely self-sufficient. The 'peasantry' had to raise cash to pay rents and taxes; their dues were determined by ancient custom but their obligations had increased. All forms of produce were sold, including the rights to fold animals

Table 2.13 List of medieval manors/farms in vicinity of Star Lane bakery and enclosure

Medieval name	Modern name/site	Location
<i>Manor of Minster owned by St Augustine's Abbey; directly held land at</i>		
Salmanston	Salmestone	c. 1.5 km N of bakery
Hengreve	?Hengrove Farm, Garlinge	c. 2 km NNW
Newlond	Newlands Farm	c. 2 km SE
Caleys	Callis Court, Broadstairs	c. 3 km E
<i>also had rights over manors at</i>		
Nash Court	Nash Court	c. 750 m from bakery, Nash farm only 200 m
Thorne	Thorne Farm	c. 3–4 km SW
Manston Court	Manston Court Farm	c. 1.75 km SW
Ozengell Grange	Ozengell Grange	2.5 km S

on arable or to pasture animals on commons (Dyer 1988, 25; 32).

From the 13th century the aristocracy, whilst still using estate produce, purchased not only luxury goods but also basic commodities; better-off peasants also purchased cloth and the services of skilled labourers. Poorer individuals sold their own labour and participated in industrial work such as spinning and brewing, albeit on a part-time basis due to their obligations. Pertinent to the Star Lane bakery, it is recorded that produce was often sold in processed form to increase the profit margin, eg, ale, bread, and candles (Dyer 1988, 33; Hinton 1990, 143–4).

Trade over long distances remedied the disproportionate distribution of the resources available in different areas. The increasing town populations inflated the demand for processed goods because of the lack of opportunity for individuals to grow their own produce. In c. 1300 the population of London was around 80,000, which understandably attracted large portions of agricultural surpluses from a wide hinterland, and timber was imported from Scandinavia to East Anglia while the region's surplus of grain was traded in the reverse direction (Dyer 1988, 33). At the same time, Thanet also acted as a granary for Calais.

Local markets will have played an important role in the economy of Kent, as elsewhere. The population growth and ambitions of landowners initially caused a reduction in available land for peasants, particularly the poorest, to grow food and raise stock. The growth of specialised crafts was allowed by, and depended on, the purchasing of food and other goods from markets (*ibid.*, 32).

Boast (2006) suggests that much of the network of roads and lanes in Thanet today was created during the medieval period to connect the villages, ports, and markets. The bakery in the enclosure at Star Lane lies within a few hundred metres of some of these roads, providing links to the north to Nash and Margate, south to Ozengell and Ramsgate, south-west to Manston, and east towards Broadstairs and St Peter's. Table 2.13 gives an overview of the location of the bakery in relation to land owned or with connections to St Augustine's Abbey (Quested 2001, 22; cited in Boast 2006).

Further analysis, beyond the scope of the present report, is needed to examine whether a location within easy reach to a multitude of other farms and manors, thus able to provide a centralised service, is a determining aspect of the type of bakery found at Star Lane. However, from the number of known examples from Thanet alone (possibly now as many as a dozen: one each at Star Lane and Kent International Business Park, Manston; possibly 9–10 at Brooksend near Monkton) their services may have been more localised than the milling of grain. *Doomsday* only mentions two mills for Thanet: one at Monkton belonging to the Archbishop, and another, held by the abbots of St Augustine's, at Minster. Considering the practise of forcing tenants to have their grain ground at the lord's mill, upon which he could then levy a toll or tax, and at the same time prohibiting the use of hand querns for home milling (Rahtz 1981, 2; Hinton 1990, 153–4), it is worth asking whether the Star Lane-type bakeries were yet another attempt to introduce centralised amenities for the exaction of dues. If this were the case, it must have been a development that is more recent than *Doomsday*, as bakeries – in contrast to mills – are not mentioned in it. Furthermore, the locations of the bakeries at Fulston Manor near Sittingbourne, in an enclosure close to the later medieval manor house (Chapter 5), and Ickham Court Farm, close to the church (Linklater and Sparey-Green 2003), would support the possibility of seigneurial ownership of the facilities. On the other hand, the larger number of bakeries from Brooksend near Monkton (CAT 2008), could mean that such bakeries were far more common and perhaps not exclusive to manorial or ecclesiastical farms. Certainly, the existence of separate bake- or brewhouses is implied by a number of implements listed in the *Gerefa* (List B), an 11th century guideline to the reeve on the efficient running of the lord's farm. The various implements mentioned in List B appear to be grouped according to where they would be found in the farm. Those grouped at the end of the list, fire-guard, meal-hopper, curfew, oven-rake and mash-shovel, seem to belong in the bake- or brewhouse (Gardiner 2006, 266; and pers. comm.).

## *Finds from Medieval Contexts*

### **Medieval pottery**

by Lorraine Mephram

Ten medieval fabrics were identified, all of which are coded within the CAT type series; totals by fabric type are given in Table 2.14. The medieval fabrics include early medieval (EM), medieval (M), and late medieval (LM) wares, all of which are local or regional wares with known or likely sources in Kent or East Sussex, with the exception of one early medieval continental import.

Amongst the early medieval assemblage, the most common fabric type is Canterbury-type sandy ware (EM1), indicating that the primary source of supply to the site from c. 1050 was Canterbury. These sandy wares appear to occur exclusively in plain, handmade jar forms, with undeveloped rims – everted and thickened or slightly beaded, or everted and internally bevelled. Apart from one small, simple dish rim, no other diagnostic vessel forms could be identified.

Shelly (EM2) and shelly-sandy wares (EM3A) are present in smaller quantities. Such wares were used and probably made throughout Kent during the medieval period, utilising resources incorporating both coastal shell and fossil shell. In north Kent, fossil shell occurs within the Woolwich Beds, which outcrop to the west of Thanet, although shelly wares in Canterbury and east Kent often include shell of probable contemporary coastal origin, and could have originated from workshops along the banks of the Wantsum (Cotter 2001a).

Jars are again the most common vessel form found in these fabrics, and these include examples with both undeveloped (externally-thickened, beaded, or flattened and internally bevelled) and developed (squared) rims. The simpler rims include forms which are dated in Canterbury as pre-c. 1100 (internally bevelled) and later 11th/12th century (externally

thickened or beaded; Cotter 2001b, 242–3), while the developed rims appear c. 1200. There is also one straight-sided bowl with a horizontal looped handle applied on the rim. One body sherd has an applied thumbled strip, but otherwise vessels appear to be undecorated.

Other wares of early medieval date comprise a few sherds in coarse quartz-tempered and (patinated) flint-tempered wares, including one undeveloped jar rim in the latter. Of particular interest, however, are four body sherds of Beauvais-type red-painted ware (EM11.RP), all from Cottington Hill. The sherds came from four separate contexts (subsoil, layer 5137, ditch 5181, ditch 5194), but possibly derive from a single vessel. This ware has a source at Beauvais or in the Beauvaisis area, and has a relatively restricted date range of late 11th/12th century, which provides good dating evidence at least for the two ditch contexts in which sherds were found.

Pottery from the Canterbury area continued to supply the site later in the 13th and 14th centuries, in the form of Tyler Hill ware (M1). A few of these sherds are glazed, and may derive from jugs, and there are four jug handles; the only other diagnostic sherds are three developed jar rims, two with stabbed dots on top of the rim. The latter decorative technique is a common feature of Tyler Hill wares (Cotter 1992, 52).

Thirteen sherds of Late Medieval Tyler Hill Ware (LM1), as well as single sherds of Canterbury-type earthenware (LM2) and Wealden Buff Sandy Ware (LM4), indicate a continuation of activity into the later medieval period, but the small quantities involved, and the scarcity of post-medieval wares, suggest that activity on the site beyond the later 14th century was at best sporadic.

The only other medieval ware identified comprises a few sherds of Surrey whiteware (M53), of which most came from one feature, pit 7382 (and probably from a single vessel).

**Table 2.14 Medieval pottery fabric totals**

<b>Fabric Code</b>	<b>Fabric Name</b>	<b>No. sherds</b>	<b>Weight (g)</b>	<b>Date range</b>
EM1	Canterbury-type sandy ware	193	2160	1050–1225
EM2	Early Medieval shelly ware	23	259	1075–1225
EM3A	Early Medieval shelly-sandy ware	37	359	1075–1225
EM100	Miscellaneous Early Medieval wares	20	199	1050–1225
EM11.RP	Beauvais-type red painted ware	4	16	1075–1200
M1	Medieval Tyler Hill ware	65	648	1225–1375
M53	Surrey/Wealden ware	18	85	1250–1450
LM1	Late Medieval Tyler Hill ware	13	111	1375–1550
LM2	Canterbury-type fine earthenware	1	1	1475–1550
LM4	Wealden buff sandy ware	1	1	1450–1550
	Total	459	4608	

Table 2.15 Medieval pottery totals by Site/Area (count and weight in g)

Fabric	Joss Bay	Broadley Road	Area 7	Star Lane	Coldswood Road	Manston Airport	Cottington Hill	Ebbsfleet Lane/Weatherlees WTW
EM1	-	-	-	17/159	56/645	-	115/1346	5/10
EM2	-	-	-	-	3/14	1/31	19/214	-
EM3A	-	-	-	12/85	1/8	-	22/254	2/12
EM11.RP	-	-	-	-	-	-	4/16	-
EM100	-	-	-	-	6/118	-	4/16	10/65
M1	2/13	4/25	5/129	1/2	2/3	3/77	20/292	28/107
M53	-	-	-	16/76	-	-	2/9	-
LM1	-	-	-	-	5/49	-	-	8/62
LM2	-	-	-	-	-	-	-	1/1
LM4	-	-	-	-	-	-	-	1/1
TOTAL	2/13	4/25	5/129	46/322	73/837	1/108	186/2147	82/679

### Distribution and chronology

The overall distribution of medieval pottery is relatively sparse across the pipeline route (Table 2.15). The largest concentration came from Cottington Hill (186 sherds), where it was distributed amongst 20 stratified features (pits, ditches, tree-throws) and a few miscellaneous layers. No context produced more than 26 sherds.

Other areas yielded much smaller quantities, and the distribution amongst features was similarly sparse. The potential for any further discussion of the nature of activity on any one site, and its chronological sequence, is therefore very limited. The chronological focus seems to be in the 11th/12th century, with activity concentrated at Cottington Hill and, to a lesser extent, Star Lane (Table 2.16), Coldswood Road and Weatherlees WTW. At Cottington Hill, features which could be dated as later than 12th century, on the basis of the presence of developed jar rims, and/or medieval wares (M1, M53), include ditches 5113, 5188, 5269, and 5270, and pit 5214. Single occurrences of jar rims or sherds of M1 or M53 in ditches 5325, 5337, and 5339 could be intrusive.

Table 2.16 Pottery totals for features at Star Lane (count and weight in g)

Feature	EM1	EM3A	M1	M53	Total
Pit 7228	1/14	-	-	-	1/14
Construction cut 7250	6/66	-	-	-	6/66
Oven 7314	3/21	-	-	-	3/21
Ditch 7356	-	-	1/2	-	1/2
Pit 7382	-	-	-	16/76	16/76
Ditch 7489	-	2/19	-	-	2/19
Ditch 7493	1/8	-	-	-	1/8
Pit/water hole 7499	6/50	-	-	-	6/50
Ditch 7514	-	1/44	-	-	4/44
Ditch 7520	-	1/2	-	-	1/2
Ditch 7536	-	5/20	-	-	5/20

Star Lane and Coldswood Road show a similar chronological breakdown to Cottington Hill but wares from Ebbsfleet Lane/Weatherlees WTW show an emphasis on the medieval Tyler Hill wares, suggesting that activity on this site was sporadic before the 13th century. On all four sites a chronological sequence extending into the 13th century and possibly beyond is indicated by the presence of medieval Tyler Hill wares, albeit at no significant level.

Finds from other sites are merely incidental, but at least the fact that sherds from these sites (Broadley Road and Area 7, Joss Bay, Manston Airport) consist almost entirely of medieval Tyler Hill wares suggests that there was no activity there before the 13th century.

On a functional level, there is little within the medieval assemblage to suggest more than a strictly utilitarian interpretation, and sources of supply are almost exclusively local. The presence of imported Beauvais-type ware, however, is of interest, and indicates that the site (Cottington Hill) had contacts ranging beyond the immediate area of north-east Kent. The site may, then, have had some pretensions to status.

### Post-Roman metalwork

by Grace Perpetua Jones

The post-Roman metalwork assemblage is small. It includes several copper alloy personal items: a single loop buckle of 16th–17th century date (ON 33, subsoil, Ebbsfleet Lane); a post-medieval strap or shoe buckle (ON 658, subsoil, Coldswood Road); and one lace-end (ON 500, ditch 7456, Broadley Road). Lace-ends were used to join hose to doublet (Crummy 1988, 12). The Broadley Road example is a Crummy Type 2, dating to 1542–1620. Other aspects of medieval and post-medieval life are only hinted at



through a number of objects: a side-link from a bridal bit (pit 8107, Coldswood Road); a small lead shot (subsoil layer 1096, Ebbsfleet Lane); two lead bullets (subsoil, Foreness Point); and a lead token (subsoil layer 8501, Kingsgate).

Three lead weights from Cottington Hill are of uncertain date. They comprise a circular weight from ditch 5122 (ON 200, 306 g) and two cone-shaped weights (ON 204, 337 g, ditch 5335; ON 219, 257 g, subsoil).

### Medieval grindstone

by Jörn Schuster and Kevin Hayward

A rare, good quality, complete circular grindstone (Pl. 2.23) was found in the deliberate 11th/12th-century backfill (8128) of pit 8123 in a medieval enclosure (8415; not illustrated) at Coldswood Road. It measures 300 x 300 x 50 mm thick and has a square spindle-hole (65 x 65 mm). It is made from a dark-grey fine grained quartz-felspathic sandstone with some mica flakes and quartz grains (max. 10 mm). Fragments of similar grindstones have been found in a mid-Saxon pit in a smithing complex at *Hamwic* (Southampton; Andrews with Phillips 1997, 241) and in an early medieval ditch fill at Redcastle Furze, Thetford, Norfolk (Andrews 1995, 98, 75). Their use for sharpening swords or knives is illustrated in Carolingian and medieval manuscripts, eg, the *Utrecht* and *Luttrell Psalters* (Roth 1986, 120, Abb. 83; Margeson 1993, 125, fig. 91). A grinding wheel more than twice the size of the Coldswood Road stone was found, together with its wooden mount, in the

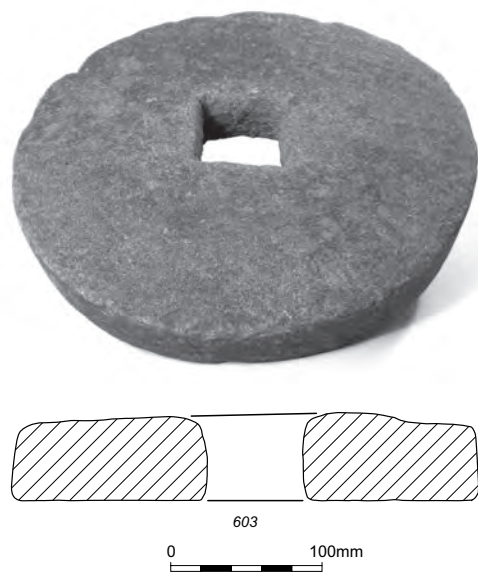


Plate 2.23 Coldswood Road: medieval grindstone ON 603

wreck of the *Mary Rose* which sank in 1545 (Gardiner 2005, 340–1, fig. 8.38).

The presence of a grindstone suggests a smithy in the vicinity. However, no iron slag or other indicators for the presence of such an installation have been found in the vicinity of enclosure 8415.

The suggested provenance for the stone is the Lower Greensand of Kent (Folkestone–Maidstone) where various outcrops are known. The closest part to Thanet of the south-east to north-west trending Lower Greensand belt is at Folkestone (30 km due south). Two units within the formation (Hythe Beds and Folkestone Beds) contain sandstones coarse and hard enough for use as grindstones.

### Environmental Evidence

#### Charred plant remains from medieval contexts

by Chris J. Stevens

Six samples were analysed from Star Lane associated with the medieval bakery. All but that from oven 7314 were rich in cereal remains. As with the Anglo-Saxon samples all were dominated by grains of hulled barley with lesser number of grains of rye (*Secale cereale*) and free-threshing wheat (*T. aestivum* sl.). Rachis fragments of rye are also well represented with some also of free-threshing wheat. In contrast, barley rachis fragments by comparison with the number of barley grains are poorly represented. Generally all the samples were similar in composition apart from that from pit 5146 at Cottington Hill, which contained high numbers of barley grains, but few other cereal remains.

Seeds of pulses come mainly from pit 5146 where at least broad-bean is present, with possibly also pea. Three seeds of flax (*Linum usitatissimum*) were also recovered from 7261. The samples also yielded a few fragments of hazelnut and some seeds of elder (*Sambucus nigra*).

The range of weed seeds is similar to the preceding period with high numbers of fat-hen (*Chenopodium album*), *Brassica* sp., vetch/wild pea, stinking mayweed (*Anthemis cotula*), and oats (*Avena* sp.). There are, however, few seeds of wetland species, while probable seeds of perennial rye-grass (*Lolium perenne*) are well represented. There are a few seeds of narrow-fruited cornsalad (*Valerianella dentata*) that, like *Brassica*, is found on lighter sandier soils.

#### The bakery at Star Lane

The high presence of cereal grains is typical of bakeries but, given that in this period grain would have been ground into flour prior to arriving at the bakery, the presence of grain requires explanation. At Stafford it was suggested from experiments



(Cane and Cane cited in Moffett 1994, 61–2) that grains associated with Late Anglo-Saxon bread ovens were used to prevent loaves from sticking to bars and that such usage could explain the high proportions of grains accompanying weed seeds often seen in samples from Late Saxon and medieval bakeries.

This raises the question of how or whether the grain in the ovens relates to the bread that was being baked. The grains comprise mainly barley, with lesser amounts of rye and some free-threshing wheat. Generally bread baked with wheat can be considered higher-status, while loaves baked with barley and rye can be seen as lower status. If the grain in the oven reflects the general pattern of loaves baked there, then it might be argued that it was used more frequently for baking lower status breads, or in areas where free-threshing wheat was not available (*cf.* Greig 1988). It may be that barley was deliberately kept for such purposes, although it is notable both in the preceding and later periods, that barley dominates the assemblages in general, as it does the contemporaneous pit at Coldswood Road. The high presence of barley suggests that it was the dominant crop grown in the area at this time and certainly would be well suited, along with rye, to the local sandier soils that are most common in the region. However, clay soils do occur on Thanet, and it may be that free-threshing wheat was grown locally.

#### *Samples from medieval/post-medieval contexts at Coldswood Road and Cottington Hill*

Four samples dated to this phase were examined from Coldswood Road, along with a single possible medieval sample from Cottington Hill. As with the previous period, barley is the dominant cereal, in particular from pit 8243 at Coldswood Road, that contained over 1000 grains. Free-threshing wheat is better represented than rye, although rye rachis fragments were highly numerous in pit 8243, compared to rye grain. This sample also produced numerous fragments of hazelnut shell and several large but poorly preserved seeds of possible bean or pea.

The weed assemblage is similar to that seen in the previous periods and is dominated by seeds of oats, vetch/wild pea, and stinking mayweed, with lesser numbers of seeds of fat-hen, dock, *Brassica* sp., and, more unusually, red bartsia (*Odontites vernus*).

#### **Charcoal**

*by Dana Challinor*

Two samples from structure 7250 provided rich charcoal material for analysis (Table 2.17). The association of these samples with the medieval bakery

**Table 2.17: Charcoal from medieval SFB at Star Lane**

	Feature no.	7250	
	Context no.	7276	7251
	Sample no.	604	610
	% flot identified	50	50
<i>Species</i>	<i>Common name</i>		
<i>Ulmus</i> sp.	elm	25r	32r
<i>Fagus sylvatica</i> L.	beech	15r	13r
<i>Quercus</i> sp.	oak	-	14rs
<i>Corylus avellana</i> L.	hazel	3r	2r
<i>Prunus</i> sp.	cherry type	2	-
Maloideae	hawthorn, pear, apple	52r	41r
<i>Fraxinus excelsior</i> L.	ash	10r	-
Indeterminate		3	3
Total		110	105

r – roundwood      s – sapwood      h – heartwood

in Star Lane provides a likely provenance for the charcoal as spent fuelwood from the ovens. The samples produced a range of mixed taxa (five or six per sample), and many narrow roundwood fragments. There is a mix of tree species such as oak, ash, elm, and beech and hedgerow/scrub type species such as blackthorn, hazel, and the Maloideae group. While the samples may represent several burning events, it is nonetheless apparent that some woodland resources were being utilised, in contrast to the assemblage from West Malling where a waning in the tree resources available is suggested (Barnett, Chapter 1). The charcoal remains are consistent with the general medieval practice of supplying faggots of firewood from underwood species and the branches of timber trees. The presence of small roundwood fragments is also appropriate for use in bakers ovens, which used narrow-gauge faggots that were swept out of the oven partially charred when the oven had reached baking temperature.

#### **World War II Activity along the Pipeline Route**

The Isle of Thanet was strategically important during World War II due to its close proximity to London and its location at the south-eastern tip of England opposite the Continent. It was a convenient base for allied forces, particularly airborne, and as such was a target for ‘enemy’ attack. It was ideal for some of the decoy systems developed during this period. Historical evidence is extensive and will not be repeated here; it has recently been the focus of an English Heritage initiative (*cf.* Dobinson *et al.* 1997; Dobinson 2001; Schofield 2004). The accurate

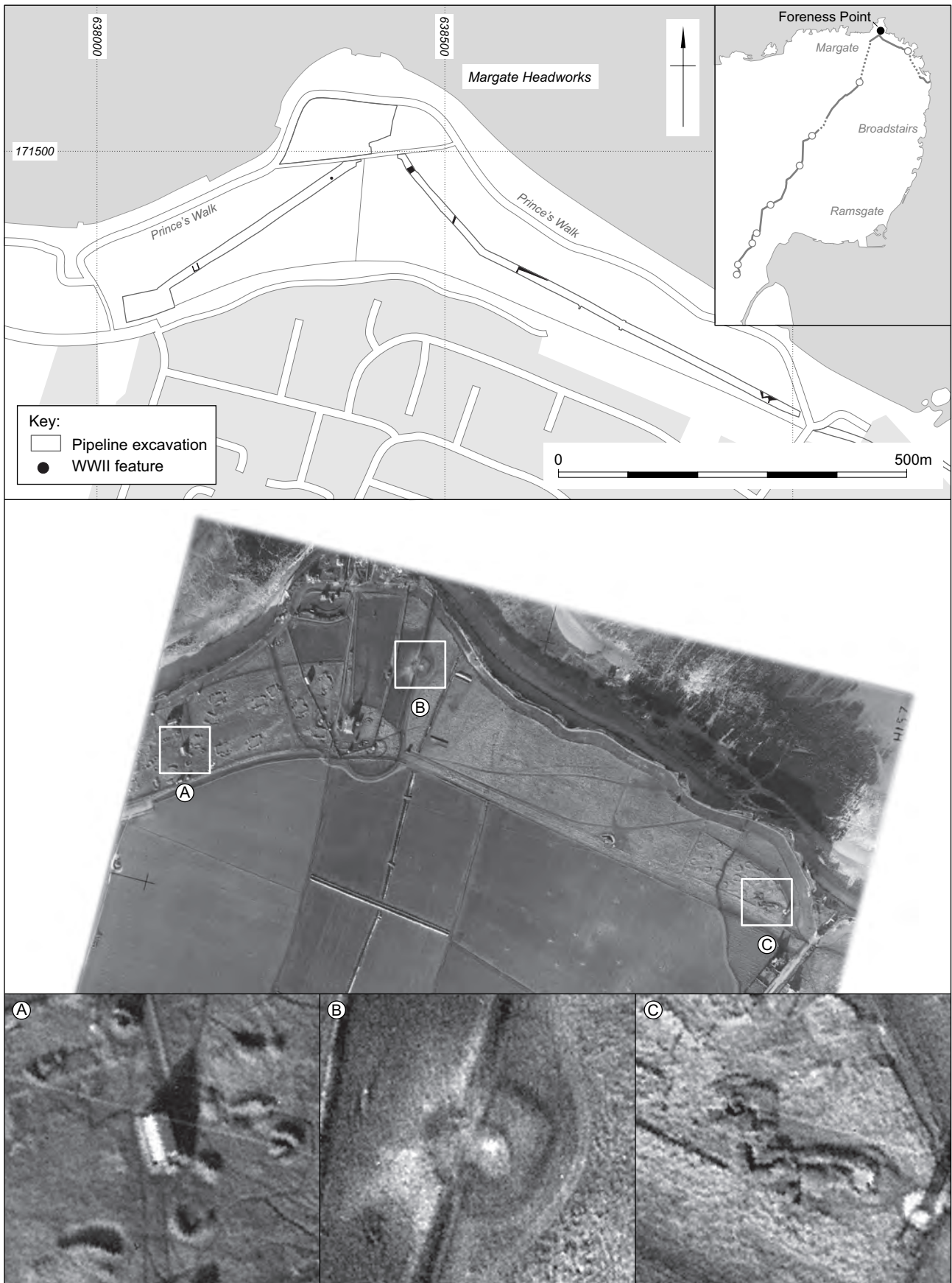


Figure 2.31 Foreness Point: World War II features at the northern end of the pipeline route. Aerial photograph reproduced with kind permission from English Heritage NMR (RAF/HLA/380, frame 907 taken 15 December 1941)

location and archaeological recording of the remains of military installations in this era contributes to some of the objectives concerning historic defences of the research framework for the Greater Thames Estuary (Williams and Brown 1999, 34 eg, 3.6.3.2).

### *Northern End of the Route*

Several features likely to be associated with wartime activity and installations were identified around Foreness Point, close to the Margate Headworks (Fig. 2.31). Most can be correlated with features on aerial photographs from the period 1941–1952, predominantly part of a military installation: an extensive, well-defended type 2 chain home low radar station. Approximately 350 m to the south-west of the headworks were the footings of a modern brick built rectangular structure, measuring approximately 8.0 x 9.0 m (7949). Its function was not obvious, although suggestions may include a public seaside facility such as a pavilion or simple shelter, or perhaps part of the 1940's military activity. Approximately 225 m north-east of structure 7949 and 50 m south-west of the Headworks was a large circular feature, c. 3.5 m in diameter. It contained dark, burnt debris, modern bricks, and a variety of sheet iron fragments. This is likely to have been the result of activity in the 20th century, probably for military purposes during World War II.

At Foreness Point, projecting south-east from the Headworks, were the remains of structures of reasonably modern date. These comprised platforms of rammed chalk and brickearth to the north (7816), various foundation trenches with fills of chalk, brick rubble and/or very coarse gravel/pebbles. Depths varied, with some over 1.5 m. Metal fence posts with lattice wire fencing attached were sunk deep into the foundations and remnants of service trenches were recorded. Some of the larger features (7810–22) can clearly be related to the structures in the 1940's aerial photographs.

An air-raid shelter along Cliff Terrace was partially revealed c. 2.5 km due west of the Headworks (NGR 635863 171349) during further works on the water network in Margate. The observable elements of the shelter implied a structure measuring c. 30 m south-west to north-east, 8 m north-west to south-east and 3.0 m wide. The form was linear with a projection near the western end of the northern edge, in the middle of which was an access shaft. Entrances were positioned at either end on the northern side, revealing the concrete slab construction. The shelter was an example of a classic 'Trench' air-raid shelter (Brown *et al.* 1995, 68, fig. 29).

### *Southern End of the Route*

The poorly preserved remains of a possible air-raid shelter were observed during the Manston Airport watching brief. The sub-rectangular pit (2016) was approximately 4.0 x 2.0 m, oriented east-west (NGR 634721 165486).

A large modern feature comprising a central circular cut with a concentric outer ring was recorded at Ebbsfleet Lane (NGR 633392 163346), only a few hundred metres from the shore at Pegwell Bay (Fig. 2.32). The external diameter of the feature was c. 9.0 m, and the central cut (1098) was 4.8 m in diameter. The initial fill was an even deposit of cinders and/or clinker, followed by a loose mixed deposit, possibly deriving from a bank. A modern yellow-ware pottery sherd was also collected from this deposit.

The original suggestion that this could be a gunning emplacement is doubtful as it is rather insubstantial and general dissimilar to known standard forms (Dobinson *et al.* 1997). The remains are more likely to be those of a searchlight position whose design did indeed include a circular, recessed operating platform which was usually c. 30 ft (9.14 m) in diameter (Brown *et al.* 1995, 62–3; Dobinson 2001, 183–5, fig. 15). Furthermore, Dobinson records a searchlight position in the general area of this feature on a distribution map of AA defences in east Kent in operation in August 1940 (*ibid.*, 215, fig. 18). A coastal battery of 6 in breech-loading guns was located to the north-east in what is now the St Augustine's Golf Club near Cliffs End (CBA 2006, S0009114), although its distance of c. 900 m to the searchlight position call into question any operational relation between the two installations.

### **Excavations Along the Weatherlees–Margate–Broadstairs Wastewater Pipeline Route and their contribution to the Landscape History of Thanet – a Summary**

*by Kirsten Egging Dinwiddy*

The Isle of Thanet is renowned for its rich archaeological and historical resources. It has a long tradition of local interest in all things archaeological, and as a result there is a wealth of archaeological and historical resources available for research.

Hearne *et al.* (1995) eloquently demonstrated the benefits and rewards of linear archaeological investigation that might potentially be dismissed as too restricted to be of significance. The Margate and Broadstairs Wastewater Improvement Scheme extended the archaeological transect across the Isle of

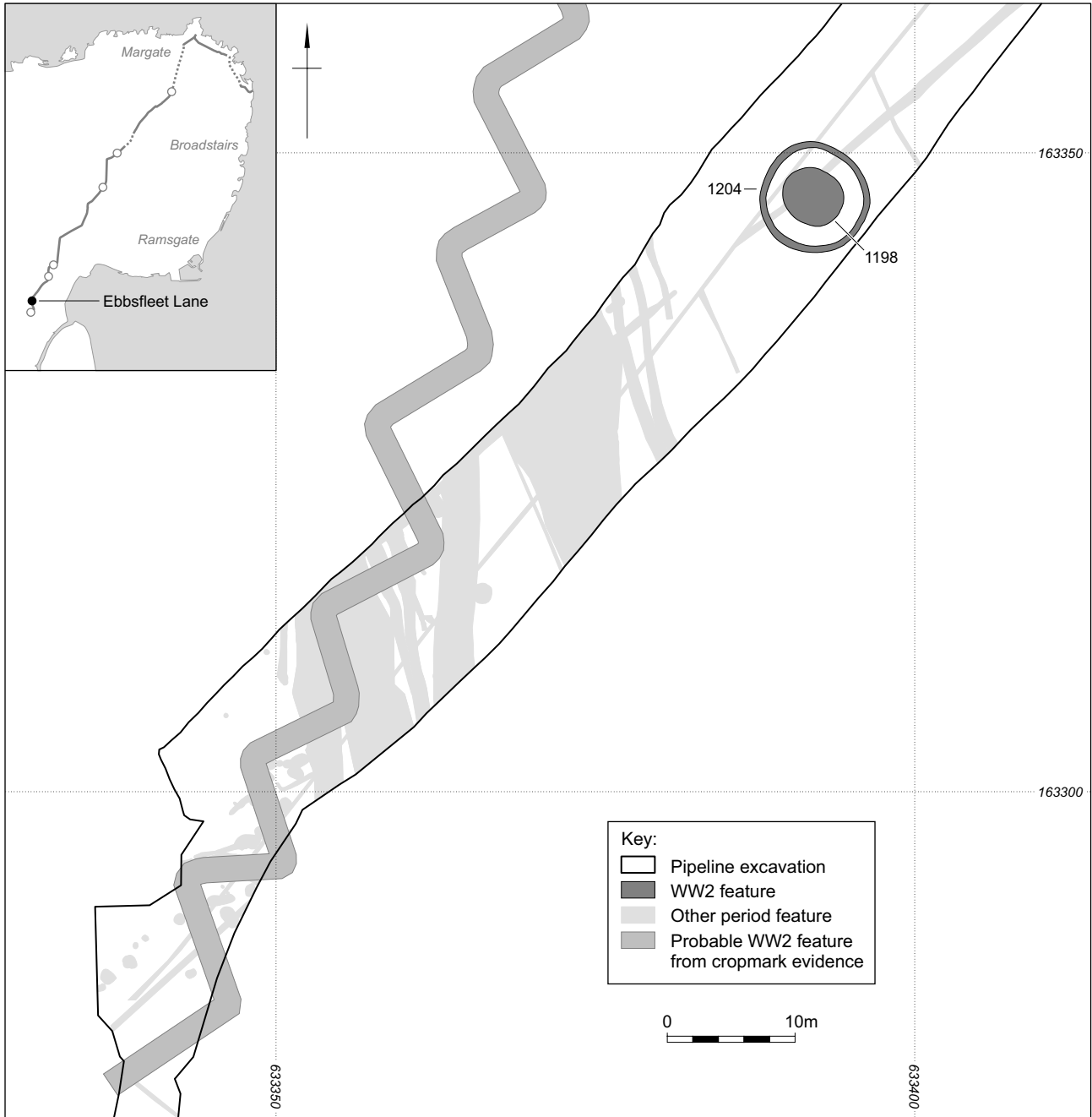


Figure 2.32 Ebbsfleet Lane: location of cropmarks and probable searchlight emplacement

Thanet initiated by the Sandwich Bay Archaeological Project (Hearne *et al.* 1995), where archaeological and geological investigations of the former Wantsum Channel and its margins contributed significantly to the understanding of the past local landscape and associated human activity.

The Margate and Broadstairs scheme allowed further archaeological exploration of landscape zones including the Ebbsfleet peninsula and Pegwell Bay which were strategically important locations for millennia at the southern mouth of the Wantsum Channel. At its southern end, the pipeline route traversed the episodically marshy land of the coastal

margins, extending north-northeast, up towards the chalk ridge now dominated by Manston Airport. The route continued across fertile chalk upland, undulating up to the high chalk cliffs of the north-east coast.

The excavations described here have increased assemblages and augmented the knowledge of known sites and/or types of sites including those indicated by aerial and geophysical surveys. More significantly, important archaeological discoveries have been exposed in areas without previous signs of their presence.

## *How Has this Series of Archaeological Investigations Contributed to the Archaeological Knowledge of the Isle of Thanet?*

### **Neolithic**

The archaeology of this period comprised a mortuary enclosure and small ritual pits situated on the chalk upland towards the north of the Isle of Thanet. Although this position would be typical for a long barrow, there is no direct evidence that the enclosure was ever so embellished. The pits were in the low-lying region to the south of the chalk ridge now occupied by Canterbury Road, at the southern end of the route. The reason behind the placement of the pits was not so obvious, perhaps their proximity to the shore and also the ancient thoroughfare now occupied by Cottington Road was of some significance. The function of such pits is often thought to be ritual and may be associated with mortuary and/or feasting activities related to important aspects of life such as changes of season, fertility, and, more widely, religion.

A significant aspect of the excavations along the pipeline route is the demonstration of the possibility that large monuments can still be found, even when no other signs of their existence are at all visible above ground or from the air. This point is especially pertinent when considering the large corpus of ring-ditches known from Thanet (*cf.* Moody 2008, fig. 45). The evidence for the continuity and changes in the use of certain monuments between the Neolithic to Late Bronze Age is similarly noteworthy. The Neolithic environmental and finds assemblages from the excavations provide important additions to as yet still fairly uncommon data and material.

### **Bronze Age**

The most significant discoveries of this period include the Middle Bronze Age ring-ditch, enclosures, and midden spreads with the Ebbsfleet hoards, and the possible cremation-related urn burial. The most abundant features were simple field boundaries, indicating that agricultural activity was scattered across much of Thanet during this period.

The presence of Late Bronze Age human bone in association with the mortuary enclosure and superimposed Early/Middle Bronze Age round barrow indicates a continuation of the significance of monuments in mortuary rituals and an implied bond with the rituals of 'the ancestors'. Other possible mortuary-related activity was indicated by the urn burial which contained only charcoal. This combination of components is comparable to cremation-related deposits; a suggestion supported by discoveries elsewhere with direct associations with true cremation burials.

The Ebbsfleet peninsula was one of the most significant areas revealing archaeology of this period. Within a large enclosure, palisaded to the south, were the remains of a small, short-lived (perhaps seasonal) settlement. This was sealed below two midden deposits rich in domestic debris, particularly pottery. It seems that the settlement was abandoned after a second enclosing attempt failed because the area became too wet for permanent occupation. The area was then used for the deposition of large quantities of midden material, frequently waterlogged and/or inundated. Immediately preceding or during this period, at least two bronze hoards were deposited, apparently onto small platforms rather than into pits. The reasons for such depositions remain the focus of debate, with explanations including practical and functional as well as 'ritual' aspects. It is tempting to suggest that rituals involving fire (cremation) and water (hoards) were of particular significance in this period. Certainly the deposition of the hoards coincides with the abandonment or relocation of settlements, potentially as a result of climatic change.

The archaeology of this period provided detailed evidence on the deposition of Bronze Age hoards, using modern archaeological techniques. The results of the analysis support an interpretation of social change from egalitarian to a focus on the individual and less communality, exemplified by the transition from mortuary enclosure to round barrow but also an increase in the number of boundaries. The south-west of Thanet, the mouth of the Wantsum Channel in particular, was ritually important, and as in other periods also likely to have been significant as an entrepot for trade.

### **Iron Age and Romano-British**

The Iron Age and Romano-British periods were by far the most frequently represented archaeologically, the most abundant features being field systems. These were typically very regular and organised, often covering large areas and incorporating thorough-fares and access routes. Other features included inhumation and cremation burials, pits, ditches, and gullies of a domestic nature, and also the occasional oven. Much of the Iron Age and Romano-British activity observed during the excavations were inextricably linked, the most complex at Ebbsfleet Lane and Weatherlees WTW and also some of the mortuary activity.

Burials were found in two cemeteries, as a pair and as four singletons ranging in date from the Late Iron Age to late Romano-British periods. The differences in burial rites, even within the same cemetery, were of particular significance, detailing levels of continuity and change over time as well as the differential treatment of particular individuals and groups across

the Isle. Such evidence has also highlighted the strong influence from the rest of the Romanised world.

The area close to the Ebbsfleet peninsula and Cottington was ideally suited to communication with the Continent and to mainland Britain. Roman traits were seen clearly in the early cemeteries and burials, indicating that if the populations they represented were not themselves of Roman or provincial-Roman descent, they were at least strongly Romanised long before the Conquest.

More than one reason for the construction of the large ditches at the neck of the Ebbsfleet peninsula have been discussed, including protection from the sea and water management, control of people and goods into and out of this part of Thanet. The location certainly provided an excellent location for a 'look-out' and a good place for small vessels to run ashore, the peninsula providing shelter on either side and consequently a good opportunity for trade. It is possible that the decline of this location towards the end of the 1st century AD is related to the setting up of Richborough Roman fort on the other side of the Wantsum Channel.

The environmental analysis clearly showed that Ebbsfleet peninsula was prone to inundation from the sea, sometimes on a large scale, and probably more regularly with less impact as indicated by the recutting of ditches, abandonment of settlements, and accumulation of mixed midden and alluvial deposits.

The possible ritual activities which may be indicated by the burials in the ditches, the dog burial, and the deposition of objects in wet areas might have origins in the Late Bronze Age when the hoards and middens were deposited. However, at least the deposition of objects may equally have been caused by redeposition through water action, which would explain the presence of later material.

### Anglo-Saxon

Perhaps surprising was the general lack of Anglo-Saxon archaeology along the route. Only at its southern end was evidence of this date encountered. Despite the numerous Anglo-Saxon cemeteries dotted across the Isle, only a single burial was discovered, and it was not a typical example, buried in a ditch terminus and radiocarbon dated to the late 7th to mid-9th centuries. There is a dearth of Anglo-Saxon settlement evidence on Thanet, the single sunken-featured building and a ditch at Cottington Road only slightly increasing the evidence. The simple two-post building of Early Anglo-Saxon date lies less than 2 m from a late Romano-British cemetery and associated thoroughfare, perhaps suggesting that the cemetery and route were still observable or known at the time of construction. Perhaps the 6th/7th-century individuals from the cemetery c. 500 m to the east at Cliffs End, or perhaps the 8th/9th-century

community that participated in the shellfish feasting represented by the numerous pits at the same site (Stoodley in Leivers *et al.* in prep.), were the occupants of the settlement at Cottington Road.

### Medieval

Amongst the medieval agricultural and domestic activity found scattered along the route, the most important feature was a small bakery structure. Its specific layout, featuring a sunken floor, a domed oven and a smaller hearth/oven next to it appears at present to be a type of building confined to Kent. Not least because of the environmental results, the excavation of this feature is of significance to the archaeology of Thanet and beyond, as this bakery provided an insight into the food economy of the 11th–13th centuries, when the Abbot of St Augustine's held large expanses of land on Thanet. It illustrates how markets and craft specialisation were increasing with the population expansion prior to the devastation of the famines and Black Death in the 14th century.

### Modern

The archaeology of this period was dominated by structural remains and other features associated with activity of a mainly military nature. These included features associated with the military installation near the Margate Headworks and a probable searchlight position at Ebbsfleet Road (Pegwell Bay). They were part of the World War II defences at either end of the Isle, which ran diagonally toward the Medway and were vital for the protection of military installations on Thanet itself (eg, RAF Manston) as well as the London docks and the shipping routes along the Channel and into the Thames. The archaeological evidence provided by these excavations are an important addition to the historical record, particularly as secrecy during their construction and use, followed by demolition, meant that data would otherwise be lost.

### *The Agricultural Perspective*

by Chris J. Stevens

The samples serve to provide snap-shots for several periods into the agricultural history and prehistory of the region. While evidence from other sites indicates at least the cultivation of emmer (*Triticum dicoccum*) in the earlier Neolithic (Wessex Archaeology 2006b), there is less conclusive evidence as to whether such agriculture survived into the Middle Neolithic, a time when the exploitation of wild foods, including hazelnuts, apples, and sloe seem to have provided most of the plant dietary needs.

There is ample evidence from other sites in Kent and on Thanet itself for the cultivation of cereals in the Middle and later Bronze Age (Pelling 2003; Stevens 2006a; Wessex Archaeology 2005b; 2006b). These show the cultivation of both emmer and spelt with some cultivation of hulled barley and also broad-bean, as also seen at Ebbsfleet Lane and Weatherlees WTW.

The weed flora indicate the cultivation of generally local drier, light sandy-silty, probably circum-neutral to slightly calcareous soils. At this date it is probable that most cultivation would be undertaken by ard, and such soils would be relatively easy to work.

There is no evidence for Early–Middle Iron Age agricultural activity, and the later Iron Age samples from Ebbsfleet Lane indicate that by this period spelt is more dominant than emmer and six-row hulled barley, although there is no reason to suspect that emmer was not still cultivated at this date. The weed assemblage is very similar to the previous period, with slightly more indication of the cultivation of calcareous soils.

In the immediate early Romano-British post-Conquest period there is still evidence to suggest the cultivation of emmer wheat at Coldswood Road, but it is probable that within the century following the Conquest emmer was largely dropped in favour of spelt, although barley was still cultivated. The range of weed species again seems very similar and it is interesting to note that while a single seed of corn-spurrey was recovered this and other species highly characteristic of more acidic sandy soils, such as corn-marigold and field penny-cress, are all but absent. Some of the Romano-British samples, at least in one case of a late date, indicate the cultivation of heavier clay soils.

A number of the Romano-British samples also indicate the production of malt for brewing at Ebbsfleet Lane, Cottington Road, and Cottington Hill. While no clear settlement was associated, there are two possible villas and also a Romano-British settlement within a kilometre of Cottington Road, and the activity seen in the excavation trenches can be seen as lying in close proximity to such settlement.

The Anglo-Saxon and medieval samples show the classic changes that are seen across much of southern England and serve to distinguish Romano-British agriculture from that of the Anglo-Saxon and medieval periods. The main change is that spelt and emmer are generally replaced with the cultivation of free-threshing wheat, with some limited cultivation of rye coming in probably in the Late Anglo-Saxon to medieval period. Perhaps more unusually barley seems to have been favoured to a greater extent than free-threshing wheat. While it is probable that heavier clay soils came under increasing cultivation during this period, perhaps facilitated by the introduction of

the mouldboard plough, sandier and lighter soils still appear to have been cultivated.

## Archive

The archives for the projects undertaken by Wessex Archaeology for the various stages of the Wastewater Treatment scheme are currently stored at WA Head Office in Salisbury until a suitable storage facility in Kent, preferably on Thanet, is identified for permanent storage.

The Wessex Archaeology project codes of the various stages of work on the Wastewater Treatment scheme are listed below:

- 34986 *Weatherlees Hill Wastewater Treatment Works, Evaluation, 1992*
- 42992 *Margate and Broadstairs WTW Enhancement Scheme, Desk-based assessment, 1998*
- 54746 *Weatherlees Wastewater Treatment Works, Evaluation, 2004*
- 59480–1 *Margate and Broadstairs Urban Wastewater Treatment Scheme, Excavation, 2005–6*

## Appendices

### *Appendix 2.1. Catalogue of Bronze Age Metalwork from Area of Midden Spread at Weatherlees WTW (Ebbsfleet hoards IV and V)*

*by Grace Perpetua Jones*

- ON 1: Socketed axe (Fig. 2.9), complete, Class A1 (after Needham 1986), casting webs present at sides, small blob of metal present on loop. Internal rib on interior of each face. Heavily pitted surfaces, blade edge worn, green/brown patina. Weight: 247 g. Hoard 1, context 620, evaluation 2004.
- ON 2: Copper alloy plate frag. (Fig. 2.9), max. 45 x 32 x 1.5 mm, all edges broken. Green/brown patina. Weight: 10 g. Context 602, appeared to be associated with Hoard 1.
- ON 3: Copper alloy ingot frag., derived from larger cake. Both surfaces rough but relatively flat, cross-section approx. rectangular. Max. 60 x 40 x 23 mm; weight: 310 g. Hoard 2, context 702, evaluation 2004.
- ON 4: Socketed punch with tubular socket and rectangular-sectioned blade (Fig. 2.10). Sides of blade are shaped. Tip worn. Length: 82 mm, length blade: 59 mm, max. width blade: 13 mm, 5.5 mm thick; weight: 36 g. Hoard 2, context 702, evaluation 2004.

- ON 5: Socketed axe (Fig. 2.10), complete, Class D1 (Needham 1986), casting traces on one side. 12 facets creating dodecahedron cross-section. Loop has trilobite cross-section. Damage to mouth edge, blade worn, green/brown patina. Weight: 132 g. Hoard 2, context 702, evaluation 2004.
- ON 6: Socketed gouge (Fig. 2.10), complete, mouth-moulding consisting of 5 rings. Longitudinal crack from mouth, runs for 26 mm, also transverse crack across tip (5 mm from edge). Tip worn. Casting traces on both sides. Surface in relatively good condition with minor pitting, green/brown patina. Length: 90 mm, mouth: 21 mm ext. diam.; weight: 57 g. Hoard 2, context 702, evaluation 2004.
- ON 7: Spearhead frag. (Fig. 2.10), from leaf-shaped blade, socket hole off-centre at narrower end, veering towards edge of midrib and narrowing as blade widens, suggesting casting failure. Cracking along edges of midrib on both sides and across middle on one side. Edge bevel visible on both edges of one side and edge worn, other side damaged and incomplete. Pitting on edges, green patina. Max.: 39 x 38 x 10 mm; weight: 29 g. Hoard 2, context 702, evaluation 2004.
- ON 8: Spearhead frag. (Fig. 2.10), from leaf-shaped blade, both edges missing. Surface condition good with little pitting, green patina. Max.: 12 x 15 x 10 mm; weight: 11 g. Hoard 2, context 702, evaluation 2004.
- ON 9: Amorphous copper alloy lump, 20 x 19 x 16 mm, 23 g, possible waste frag. Hoard 2, context 702, evaluation 2004.
- ON 10: Socketed axe (Fig. 2.10), complete, Class B (Needham 1986), casting webs present at sides and on loop. Four moulded longitudinal ribs on each surface, slightly variable positioning on each face, fading out c. halfway down object. Hexagonal body section. Good condition, green/brown patina, blade edge worn. Weight: 314 g. Hoard 2, context 702, evaluation 2004.
- ON 11: Copper alloy waste frag., possible ingot. Relatively flat surfaces, one more smooth and even than other. Max.: 33 x 26 x 12 mm; weight: 48 g. Hoard 2, context 702, evaluation 2004.
- ON 12: Socketed axe frag. (Fig. 2.10), single collar mouth-moulding, loop present, casting webs visible on side, and to a lesser extent on loop but have been partly smoothed. Other patches of smoothing also visible on frag. Weight: 29 g. Hoard 2, context 702, evaluation 2004.
- ON 13: Socketed axe (Fig. 2.10), complete, Class B (Needham 1986), casting webs present on sides and loop. Four clearly moulded longitudinal ribs on each surface, fading out c. halfway down object. Some pitting on surface, green/brown patina, blade edge worn. Upper mouth moulding irregular and slightly bulbous. Weight 329 g. Hoard 2, context 702, evaluation 2004.
- ON 14: Copper alloy ingot frag., one edge slightly curved, appears to be part of larger cake. Max.: 60 x 55 x 19 mm; weight: 318 g. Hoard 2, context 702, evaluation 2004.
- ON 15: Copper alloy ingot frag., probably from larger cake. Max.: 40 x 30 x 25 mm; weight: 147 g. Hoard 2, context 702, evaluation 2004.
- ON 16: Socketed axe frag., part of mouth and loop present. Single mouth moulding. Weight: 20 g. Hoard 2, context 702, evaluation 2004.
- ON 17: Copper alloy waste frag., possibly from ingot. One face relatively flat, all others undulating. Max.: 35 x 25 x 15 mm; weight: 45 g. Hoard 2, context 702, evaluation 2004.
- ON 18: Copper alloy ingot frag., one surface relatively flat, other slopes, appears to be part of larger cake. Max.: 48 x 50 x 25 mm (narrows to 14 mm); weight: 206 g. Hoard 2, context 702, evaluation 2004.
- ON 19: Copper alloy frag., probably from body of plain socketed axe. 27 x 27 x 3 mm; weight: 12 g. Hoard 2, context 702, evaluation 2004.
- ON 20: Amorphous copper alloy lump, possible waste frag., 24 x 16 x 13 mm; weight: 13 g. Hoard 2, context 702, evaluation 2004.
- ON 21: Socketed axe, complete (Fig. 2.9), Class A1 (Needham 1986), casting webs present at sides, edge of mouth worn, cracking present on upper mouth moulding and loop, pitted surfaces, particularly towards blade. Blade edge worn and damaged. Green/brown patina. Weight 120 g. From the spoil associated with Hoard 1, evaluation 2004.
- ON 22: Socketed axe (Fig. 2.9), complete, Class A2 (Needham 1986) with single pellet in relief below mouth moulding on both faces, casting webs present on sides and loop, edge of mouth worn, blade worn. Green/brown patina. Weight 136 g. As ON21.
- ON 23: Possible socketed axe frag. (Fig. 2.9), appears to be a lead-rich copper alloy. 27 x 17 x 13 mm; weight: 23 g. As ON21.
- ON 24: A small anvil or rivet (Fig. 2.9), 25 mm in length, square-sectioned tapering shaft, up to 7 mm wide. Head approx. oval, 12 x 15 mm. Edges of head partly curl over from use. Weight: 9 g. As ON21.
- ON 25: Slightly curved frag. lead sheet (Fig. 2.9), 4 mm diam. perforation. Max.: 18 x 17 x 1.5 mm; weight: 4 g. Recovered from general area of Hoard 1, but may be later in date, evaluation 2004.
- ON 300: Copper alloy ingot frag., approx. semi-circular, plano-convex section, both surfaces rough. 120 x 80 mm, 30 mm thick in centre, narrowing to 12–14 mm at ends. Weight: 1165 g. Edges marked



- by depressions/cavities. Appears to represent approx. half of a bun-shaped cake. Context 3093, post-hole 3092, Compound 16.
- ON 301: Copper alloy ingot frag. appears to be from larger bun-shaped cake. Currently almost triangular, one edge rounded, cross-section rectangular. 80 x 70 mm, thickness tapers from 25 mm to 18 mm, becoming thicker towards the rounded edge, weight: 675 g. Both surfaces rough. Context 3016, subsoil, Compound 16.
- ON 302: Blade frag. from a Carp's Tongue sword (Fig. 2.9; Needham 1986, Class B sword, fig. 35.16, blade variant 2). Edges damaged, edge bevel is visible. Weight: 59 g. Context 3095, post-hole 3094, Compound 16.
- ON 303: Amorphous copper alloy lump, possible waste frag. 22 x 15 x 10 mm; weight: 12 g. Context 3016, subsoil, Compound 16.
- ON 304: Amorphous copper alloy lump, possible waste frag. 15 x 10 x 10 mm; weight: 3 g. Context 3016, subsoil, Compound 16.
- ON 305: Two amorphous copper alloy lumps, possible waste frags. 22 x 16 x 10 mm; weight: 17 g and 12 x 9 x 7 mm; weight: 3 g. Context 3016, subsoil, Compound 16.
- ON 326: Frag. rectangular-sectioned socketed object (Fig. 2.9), poss. axe frag., 29 mm wide, 10 mm deep, surviving length is 30 mm; weight: 34 g. Faces are slightly concave. Heavily corroded, pitted surface, green patina. Context 3509, part of context group 3768, alluvial spreads in natural deposit, Compound 16.

## Appendix 2.2. List of Iron Age and Romano-British sites in the vicinity of the pipeline route

Fig. 2.12	Locality	Period	Description	NGR		KSMR	NMR
1	Foreness Point, Margate	IA	Settlement	638500	171400	TR37 SE46	469742
2	Foreness Point, Margate	RB	Settlement	638500	171400	TR36 SE46	469742
3	Margate	RB	Burials	637200	171200	TR37 SE75	469771
4	Margate	?	Burial	637200	171060	TR37 SE30	469714
5	Northdown, Margate	RB	Burials; Ditches	638600	170500	TR37 SE38	469732/639641
6	Northdown School, Margate	IA	Settlement	637250	170050	TR37 SE43	660260
7	Northdown School, Margate	RB	Settlement	637250	170050	TR37 SE43	660260
8	Broadstairs	RB	Settlement	638900	169700	TR36 NE113	469023
9	Broadstairs	IA	Settlement	637470	169470	TR36 NE138	469058
10	Sacketts Hill	RB	Settlement	637000	169200	TR36 NE134	639624/469052
11	Lydden	RB	Cropmark: Building; Finds	635500	167700	TR36 NE169	469091
12	Manston	RB	Cropmark: Enclosures; Building; Finds	635100	167500	TR36 NE175	469097
13	Manston Airfield	RB	Settlement; Industrial site	633000	165500	TR36 NW50	469260
14	Minster	IA	Settlement	633170	165460	TR36 NW185	469395
15	Manston	RB	Cemetery	633420	165410	TR36 NW187	469397
16	Manston Airfield	IA	Settlement	634100	165400	TR36 NW35	469217
17	Ramsgate	RB	Burials	636000	165500	TR36 NE177	469099
18	Manston Road, Ramsgate	RB	Settlement	636170	165500	TR36 NE27	1044839/ 468869/468872 1001644/ 469041
19	Nethercourt, Ramsgate	RB	Settlement	635800	165300	TR36 NE127	469399
20	Minster	?	Burial	634120	165220	TR36 NW189	469400
21	Minster	IA	Settlement	634300	165150	TR36 NW190	468908
22	Nethercourt, Ramsgate	IA	Settlement	636310	165210	TR36 NE40	469101
23	Ramsgate	RB	Burial	636900	165200	TR36 NE179	4694622
24	West Cliff, Ramsgate	RB	Burial	636900	164700	TR36 SE13	469613
25	Ramsgate	?	Burial	634450	164700	TR36 SW106	1193954
26	Cliffsend, Ramsgate	IA	Settlement	634700	164600	TR36 SE335	469564
27	Ramsgate	RB	burial	635300	164500	TR36 SW24	469488
28	Cliffsend, Ramsgate	IA	Burials; Pottery	634940	164330	TR36 SE38	469503
29	Ramsgate	RB	Burial and assorted finds	635900	164300	TR36 SE29	469490
30	Ramsgate	RB	Settlement	636000	164200	TR36 SW74	469628
31	Ramsgate	RB	Building	636600	164200	TR36 SW71	469628
32	Minster	RB	Occupation site. Alleged villa	633800	164100	TR36 SW8	469532
33	Cottingham Hill, Minster	RB	Settlement	633800	164100		1001597/ 1001611
34	Cliffsend, Ramsgate	RB	Burial	634000	164000		915903
35	Cottingham Hill, Minster	IA	Settlement	633600	163700		915903
36	Weatherlees Hill, Minster	?	Burials	632450	163450	TR36 SW103	
37	Weatherlees Hill, Minster	IA	Settlement	633000	162850		
38	Weatherlees Hill, Minster	RB	Building	633000	162850		

### Appendix 2.3. Grave Catalogue

(including miscellaneous contexts producing human bone and cenotaphs)

† object illustrated

#### Coldswood Road (Area 9)

##### Grave 8195 (burial and grave fill 8196) (Fig. 2.33)

NGR 635588 166833. Circular cut, moderate sloping sides, flat base. 0.55 x 0.55 m, 0.10 m deep (base at 50.42 m OD). Unurned cremation burial. Bone deposit on north side, accessory vessel (ON 606) on south side. Single fill: mid-brown silty clay with cremated bone. Cuts natural (8002); below subsoil (8001).

*Burial: human bone:* 211.3 g, adult c. 40–60 yr ?female;

*Animal bone:* burnt molar teeth: juvenile pig

*Accessory vessel:* ON 606: almost complete coarse sandy oxidised globular-bodied flagon

*Backfill: human bone:* ON 607–609 = 8196; 1 iron rod/shank frag., 15 mm long (sample 703 (NW)); pottery (?residual): 2 sherds, similar to vessel 610 in 8197, RB unspc.



Figure 2.33 Coldswood Road: cremation grave 8195

**Grave 8198 (burial and grave fill 8197)** not illustrated  
NGR 635585 166830. Sub-circular cut, concave sides, concave base. 0.42 x 0.45 m, 0.13 m deep (base at 50.43 m OD). Unurned cremation burial. Pottery vessel (ON 610) on eastern side, cremated bone on western side, just above base, below pot. Single fill: orange brown silty clay. Cuts natural (8002); backfill below subsoil (8001).

*Burial: human bone:* 113.9 g, subadult/adult >13 yr

*Accessory vessel:* ON 610: 50 sherds oxidised ware flagon, grog in fabric (different fabric to the flagon in 8196; ?ring-necked flagon? RB unspc.

*Backfill: pottery (residual):* 1 flint-tempered sherd and 1 RB ox

##### Grave 8199 (burial 8204; casket fill 8211; grave fill 8200) (Fig. 2.34)

NGR 635579 166819. Rectangular cut, E–W. Steep straight sides, flat base. 0.83 x 0.64 m, 0.07 m deep (base at 50.28 m OD), top truncated by evaluation trench. Casket cremation burial. Rectangular with staining and copper alloy corner fittings on northern side of cut. Small circular concentration – cremated human bone (8204), centre of casket, ?originally in an organic container. Fill of casket: – greyish-brown silty clay. Jar and plate to south (outside) of casket, under were 2 large iron handles, perhaps from a tray or belonging to the casket? Single backfill: greyish-brown clay silt with sparse rounded flint gravel. Cuts natural (8002); backfill below subsoil.

*Burial: human bone:* 471.1 g, adult >30 yr (incl. 8211); animal bone: unburnt mandibular pig tooth

*Grave goods/pyre goods:* 0.6 g copper alloy

†ON 611: nearly complete grog-tempered platter (CAM 7/8). Diam. 175 mm, int. diam. 165 mm, height 30 mm. ‘V’-shaped chip in rim, but (20% missing) Footring base

†ON 612: incomplete whiteware butt beaker, no rim; fine fabric, ?imported, mid-1st century AD

ON 613: casket: copper alloy sheet fragments (corner brackets) 14 g. 4 samples mineral-preserved organic remains = ash (*Fraxinus excelsior*); 18 iron studs, head: copper alloy coating, 8–15 mm diam. Assoc. with corner brackets; 1 iron nail, Manning 1B; 1 iron ring

Outside casket: 214 iron hobnails: sample 878 from ON 619 contained 66 hobnails, sample 877 from ON 629 had 102 of which 4 set in an arc, 3 in cluster and 12 pairs; remainder from grave fill. Worn, many burnt

*Back fill: human bone:* 2.8 g = 8204

##### Grave 8202 (burial 8205; casket fill 8210; grave fill 8203) (Fig. 2.35)

NGR 635588 166835. Circular cut, steep straight sides, flat base. 0.60 x 0.60 m, 0.20 m deep. (base at 50.28 m OD). Unurned cremation burial. Cremated bone in southern half, probably originally in organic container/bag apparently hexagonal. Two complete pottery vessels (ONs 620 and 625), polished bone (ON 623), probable box or casket (ON 633–636) containing articulated suckling pig burnt remains (8210) and residual worked flint (ON 624). Larger vessel

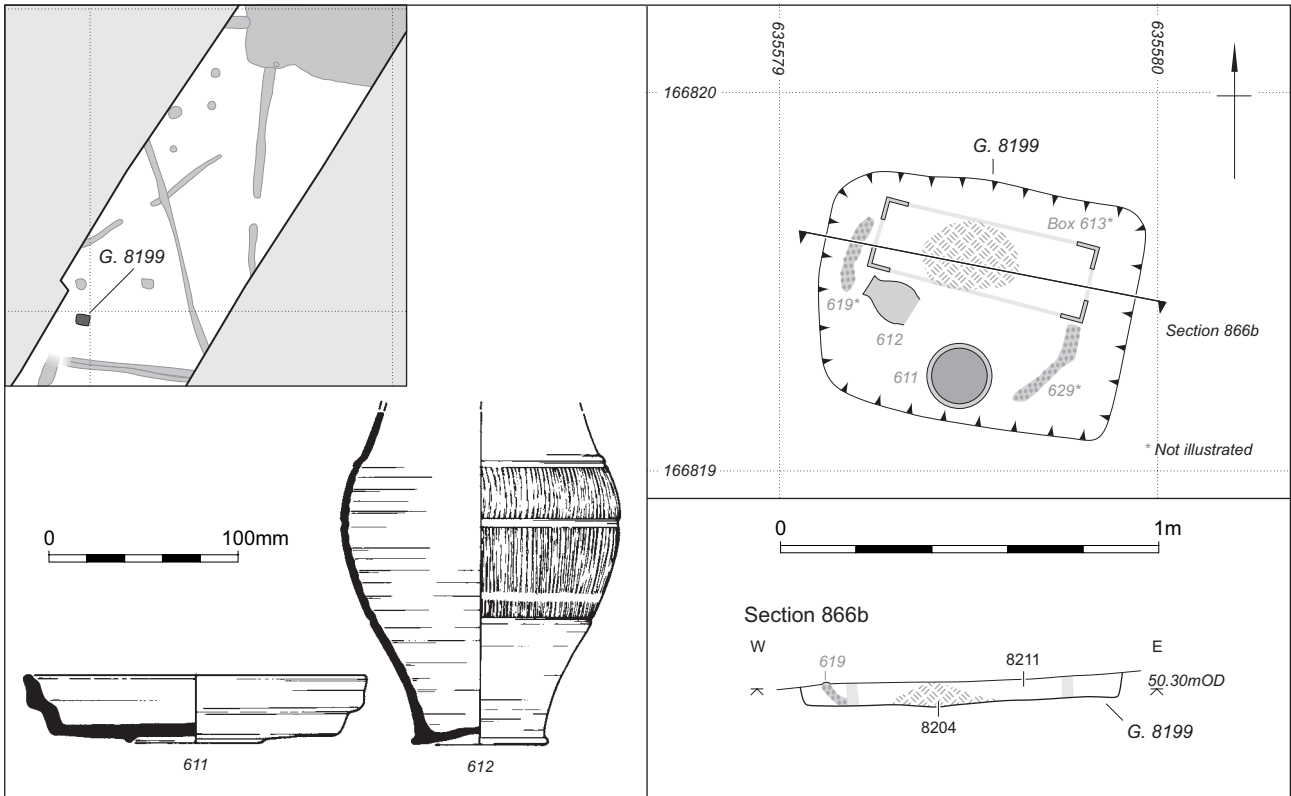


Figure 2.34 Coldswood Road: cremation grave 8199

associated with human burial, smaller with pig. Single backfill: mid-brown slity clay with rare pebbles. Cuts natural (8002); backfill below subsoil (8001)

**Burial:** human bone: 549.9 g, adult c. 21–45 yr ?male; animal bone: suckling pig: in separate casket, burnt; greenish bronze stain; worked animal bone and 0.1 g ?animal bone

**Grave goods/pyre goods:**

†ON 620: 16 sherds. Native copy samian form 15/17 (compare grave 8208). Grog-tempered. 195 mm diam. 454 g. AD 40–50/60

Within ON 620: 4 iron rod/shank frags < 20 mm long

†ON 625: copy of samian Ritterling 5 cup. Rim diam. 80 mm, int. 74 mm. 49 mm high, base 35 mm diam. (ext.) square stamp on base, fine grey ware. AD 40–50/60 (Pl. 2.14)

ON 633 to 636: fragments of copper alloy

**Backfill:** human bone: 88.6 g = 8202

**Grave 8206 (burial 8223; grave fill 8207) (Fig. 2.36)**

NGR 635585 166833. Sub-circular (oval) cut, moderate straight sides, flat base. 0.80 x 0.70 m, 0.23 m deep (base at 50.25 m OD). Casket cremation burial. Cremated bone and samian vessel possibly inside wooden casket with metal fittings. Single backfill: Mid-brown silt with rare pebbles and frequent charcoal. Cuts natural (8002); backfill below subsoil (8001).

**Burial:** human bone: 227.5 g, adult >25 yr female

†ON 649: complete, highly abraded samian FORM 15/17 platter, ?South Gaulish Stamped (abraded) S.....IVS. Chipped rim (Pl. 2.15)

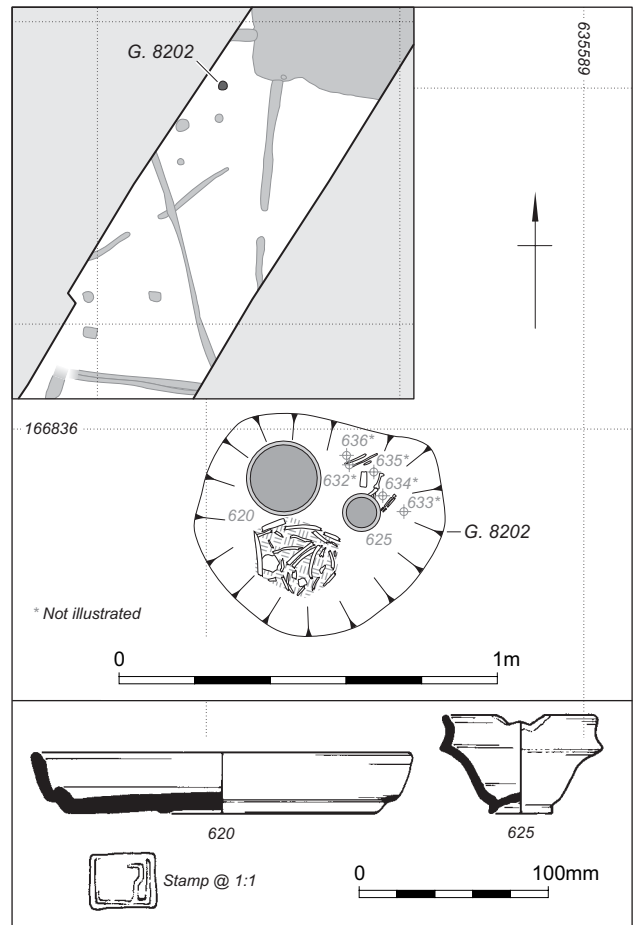


Figure 2.35 Coldswood Road: cremation grave 8202

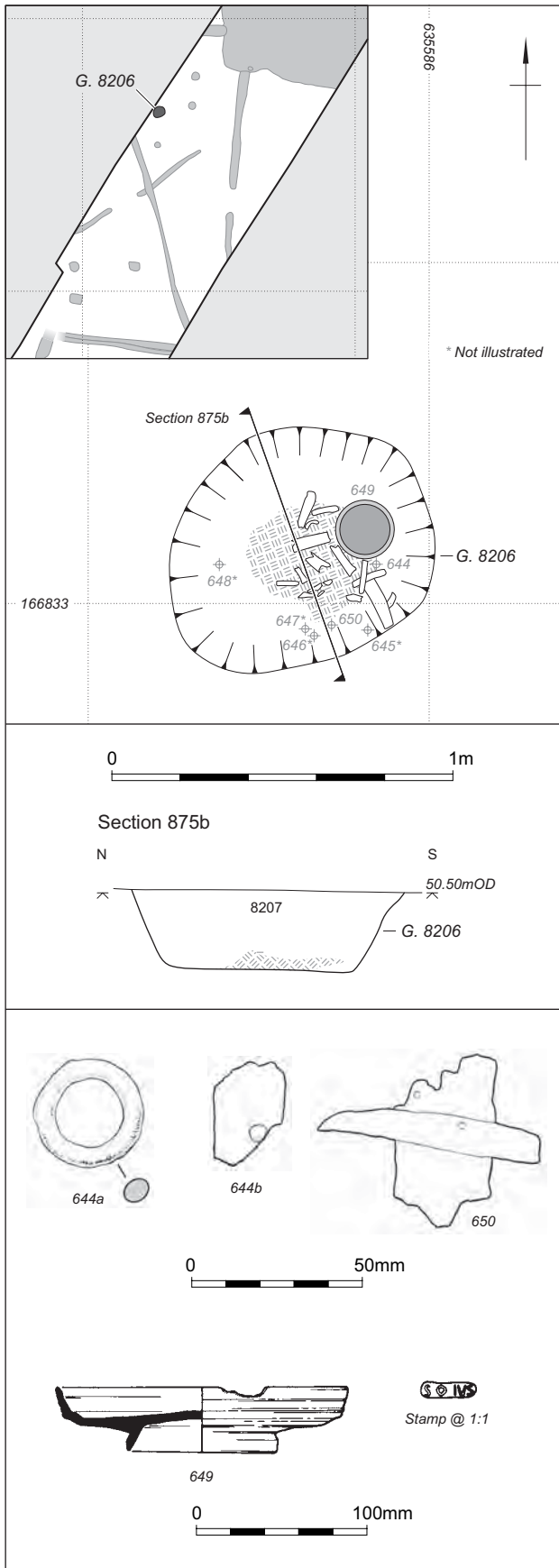


Figure 2.36 Coldswood Road: cremation grave 8206

**Box/casket:**

†ON 644: A) complete iron ring, int. diam. 20 mm, ext. diam. 31 mm; B) iron plate, rectangular, curving one end, 31 x 21 mm, at least 1 rivet

ON 646: Iron rod/bar; rectangular cross-section, curving at one end, 25 x 4 mm

ON 647: 2 iron ring frags, 30 x 8 mm and 17 x 10mm

ON 648: tapering iron shank fragment, 13 mm long

†ON 650: flat, rectangular strip, 54 x 10 x 2 mm, riveted to rectangular iron plate, 53 x 29 x 1 mm; small curving rod frag., 10 x 5 x 2 mm

**Backfill: human bone:** 32.0 g = 8223; 9 iron sheet frags; half iron ring, 34 mm diam., c. square cross-section, rounded corners, 6–7 mm thick; 1 frag. iron rod, 13 mm long

**Grave 8208 (burial 8212; grave fill 8201) (Fig.2.37)**

NGR 635583 166821. Sub-rectangular cut, c. E–W, vertical sides, flat base. 0.85 x 0.69 m, 0.31 m deep (base at 50.27 m OD). Casket cremation burial (c. 0.43 x 0.40 x 0.30m). Cremated bone in patch, probably within organic container, 2 accessory vessels to east, all within casket (metal fittings). Single backfill: light greyish-brown silty clay with v. occasional flint gravel, cremated bone, charcoal, and pot. Cuts natural (8002); backfill below subsoil (8001).

**Burial: human bone:** 276.7 g, adult c. 35–60 yr

**Box fittings (context 8201)**

†ON 614 and 615: ?hinge; 2 strips iron, 1 flat, 1 curves at one end. ON 614: 69 x 15 x 1 mm; 29 mm in length and tapers 11–7 mm; ON 615: 63 x 16 x 1 mm; 19 mm in length tapers 10–6 mm; Traces of wood

†ON 616: Thin iron rectangular strip, ?lock plate, 49 x 29 x 1 mm; smaller piece (rod end) riveted to strip. Rod end 12 mm beyond end of strip

†ON 617: Iron stud/boss, discoidal head, 35 mm diam., ?decorative, square-sectioned shaft, broken, shaft 17 mm long. Wood adheres to underside of head. Manning Type 7

ON 621: Flat, rectangular-sectioned iron object, curved end, ?part of brace or hinge, 22 x 9 x 2 mm

ON 622: nail shank frags; max 25 mm long

ON 630: incomplete Manning type 1B; head diam. 15–16 mm, <32 mm long

ON 631: nail shank frags; max. 25 mm long

ON 632: incomplete Manning type 1B; head diam. 15–16 mm, <32 mm long

ON 637: Small iron rod, 12 x 4 mm

ON 638: Iron rod/bar, rectangular cross-section, curving end, 28 x 8 mm

ON 639: 120 sherds, 1 oxidised ware vessel, orange surfaces, core unoxidised and grey. ?butt-beaker copy. Mid–late 1st century AD; (107 g, MSW 0.89 g)

†ON 640: complete South Gaulish platter, FORM 15/17, stamped *TERTIVS.FE.* (c. AD 45–60) abraded and chipped.; 216 g, 162 mm ext diam., height 35 mm, base 84 mm ext diam.. (Pl. 2.16)

ON 641: incomplete Manning type 1B; head diameter 15–16 mm, <32 mm long

ON 642: Flat, rectangular-sectioned iron bar, 20 x 13 mm,

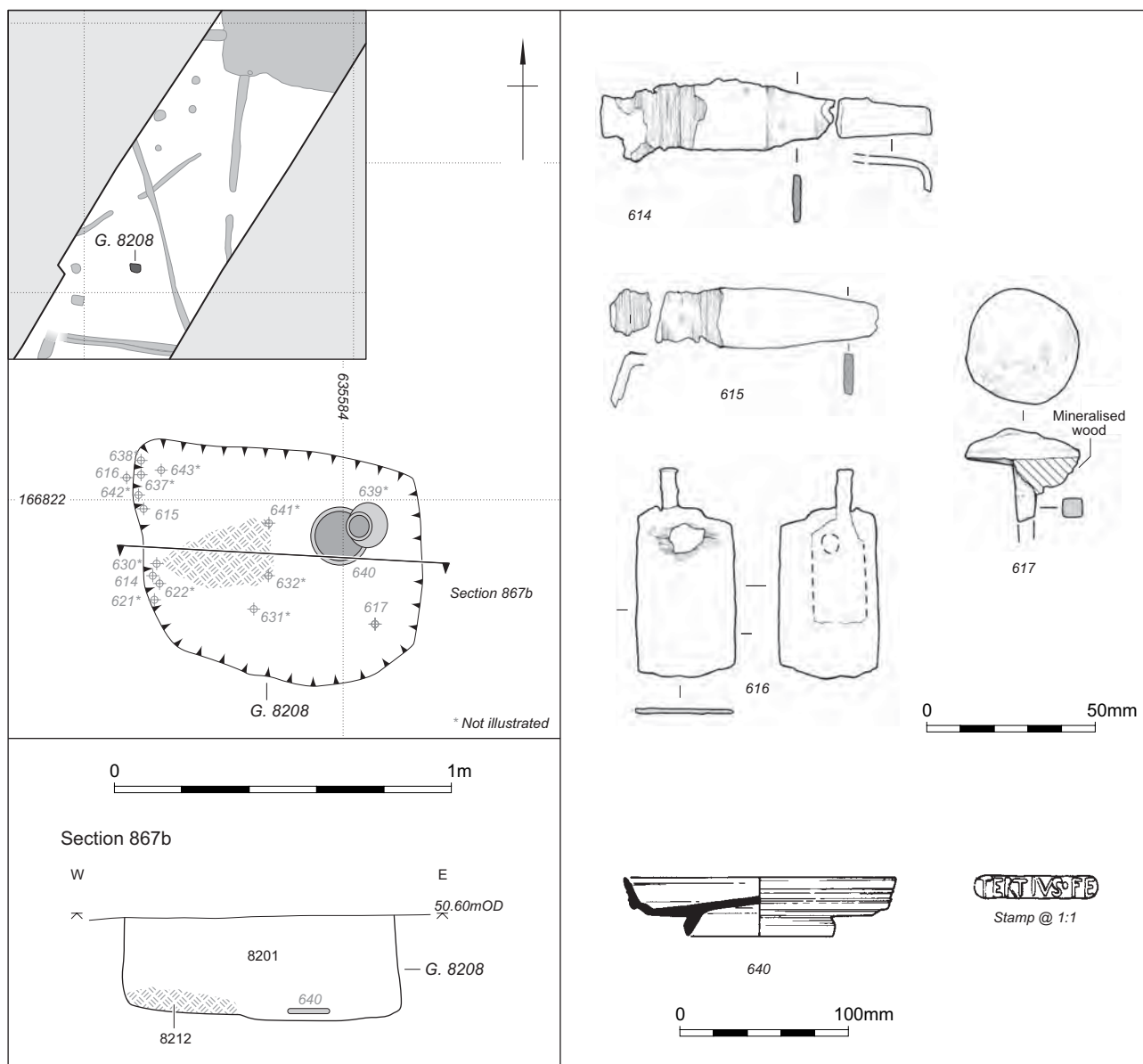


Figure 2.37 Coldswold Road: cremation grave 8208

?part of a hinge strap

ON 643: iron rod/bar nail shank, curving end, 24 x 7 mm;  
1 rod/bar frag., 31 mm long

*Backfill: human bone:* 143.1 g = 8212; 2 iron nails,  
Manning type 1B, 1 = 30 mm long; 1 small nail or possible  
hobnail, 8 iron rod/shank frags

**Grave 8273 (burial 8272; grave fill 8209)** (Fig. 2.38)

NGR 635579 166821. Sub-circular cut, steep-vertical  
sides, flat base. 0.78 x 0.78 m, 0.38 m deep (base at 50.17  
m OD). Unurned (but bone contained) cremation burial.  
Cremated human bone patch on west side. Three accessory  
vessels to south-east. Single backfill: mid-dark brown clay  
silts with rare flint gravel, cremated bone, and charcoal.  
Cuts natural (8002); backfill below subsoil (8001).

*Burial: human bone:* 329.7 g, adult c. 20–28 yr female;  
*animal bone:* 0.7 g. ?unburnt fish bone. only small unburnt

bone splitters attributed to large and medium mammals;

*Grave goods/pyre goods:* copper alloy frags; FAS

†ON 651: CAM 56 cup, Terra Nigra type ware, 7 sherds. A  
body chip, 10% rim missing. Rim diam. 90 mm, 87 mm.  
Height 51 mm. Footring base, stamp on interior – square-  
shaped, √I

†ON 652: complete, grog-tempered platter (CAM 7/8).  
Diam. 160 mm (150 mm int.) height 39 mm. One sherd  
missing. 2 ‘V’-shaped nicks out of rim (about 7% each) and  
1 very small V. Also area on rim eroded

†ON 653: whiteware butt beaker. Int. rim diam. 75 mm,  
ext.l 85 mm. 150 mm high. sandy fabric, ?locally made

†ON 654a: similar to 654b – (Feugère 1985, type 19f1,  
Riha 1979, type 4.5.7) much of base plate and foot missing  
Similar brooch from Springhead, Kent (Schuster in  
Andrews *et al.* forthcoming, cat. no. 35, object 50988)

†ON 654b: similar to 654a – incomplete copper alloy

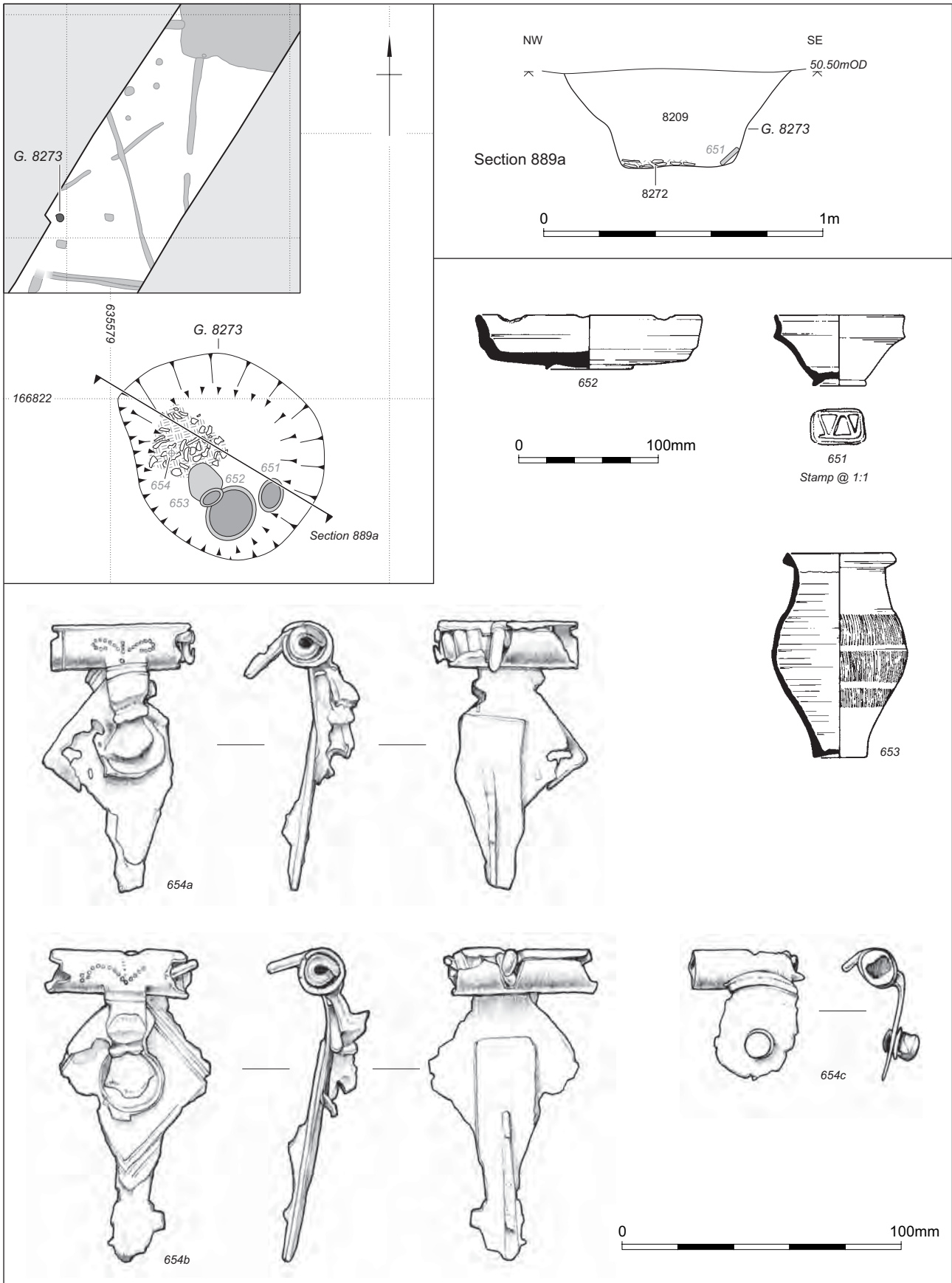


Figure 2.38 Coldswood Road: cremation grave 8273



brooch, cylindrical spring cover, leontomorph bow on thistle plate, attached to rhomboidal, flat backing plate, edges decorated with two parallel rows of stamped dots, traces of stamped dot decoration also visible on spring cover. Incomplete foot. Only upper part of pin survives

†ON 654c: rosette type copper alloy brooch (Feugère 1985, type 20b; Riha 1979, type 4.7.2), only part of the cylindrical spring cover, part of backing plate and central decorative stud filled with orange-red enamel (confirmed by XRF-analysis to be enamel rather than coral; D. Dungworth, pers. comm.)

*Backfill: human bone:* 28.0 g = 8272; *animal bone:* 0.1 g; ?fossilised shark tooth (ident: S. Hamilton-Dyer); *pottery (residual):* 1 oxidised sherd, 1 flint-tempered crumb

### Cottingham Road (Area 14)

**Grave 6003 (burial 6005; grave fill 6004)** not illustrated  
NGR 634005 164329. Sub-circular cut, steep straight sides, concave base. 0.37 x 0.37 m, 0.22 m deep (base at 11.11 m OD). Urned cremation burial. (Urn ON 400) in centre, c. 0.08–0.1 m from grave sides. Fill (urn): light silty clay with cremated human bone, samian vessel in upper urn fill. Fill (grave): redeposited pyre debris around urn.

*In urn: human bone:* 769.8 g, adult > 45yr female; *animal bone:* 66.7 g (burnt back of cranium: young pig; unident. burnt bird bones)

†ON 400a: Cinerary urn. nearly complete wide-mouthed jar with short upright neck and everted rim ERO version of Q6; 1st–2nd century AD (Fig. 2.39)

†ON 400b: samian plate/bowl (form 18/31); Central Gaul; AD 120–150 (Fig. 2.39)

4 iron nails, Manning type 1B, 11–20 mm long

2 shank frags

ON 402–404, 408: small flecks iron, ?corrosion products

ON 409–411: 4 iron rod/shank frags

ON 415: 2 unident. iron objects, 1 ?part of an L-shaped fitting

*Backfill: human bone:* 27.2 g = 6005; *animal bone:* 0.2 g; small quantities iron; small iron nails Manning type 1B, 30 mm long; 2 shank frags

**Grave 6006 (burial 6008; grave fill 6007)** not illustrated  
NGR 634010 164326. Sub-circular, concave sides and base; 0.36 x 0.34 m, 0.18 m deep (base at 11.17 m OD). Urned cremation burial. Urn (ON 406). Fill (urn): Mid-brown silty clay; cremated human bone. Urn leant to north, badly damaged by plough.

*In urn: human bone:* 201.3 g, subadult/adult >13yr ?female; *animal bone:* 0.1 g

†ON 406: sand- and grog-gritted large (rim diam. 240 mm) plain everted rim jar with wide mouth (similar form to that from context 6605). ?wheel-thrown. Late 1st–early 2nd AD (Fig. 2.39)

**Grave 6009 (burial 6011; grave fill 6010)** not illustrated  
NGR 634005 164327. Sub-circular cut with steep, concave sides; concave base. 0.74 x 0.65 m, c. 0.25 m deep (base at

11.03 m OD). Urned cremation burial. Urn (ON 418) in centre of cut, max. 0.08 m from cut sides, on base. Fill (urn): mid-greyish to yellowish-brown firm clay silt with cremated human bone. Fill (grave): dark greyish-brown firm silty clay with charcoal, cremated bone, pottery, and iron nails on southern side. Pyre debris, packed around urn.  
*In urn: human bone:* 284.2 g. 1) infant c. 3–5 yr; 2) adult c. 20–40 yr ?female; *animal bone:* 1.5 g burnt frags: possible young pig cranium; pig right tibia and ?domestic fowl femur  
ON 412: 1 sherd RB ox (in backfill 6010)

ON 418: Urn. 0.6 x 0.55 x c. 0.25 m. 421 sherds, 6395 g of Dressel 20. MSW of 15.2 g. Also with ON 418: 6 sherds, 16 g oxidised RB fabric, 1 small flat-topped rim (2 g) flint-tempered fabric; 30 hobnails; 10 iron rod/shank frags <32 mm long

ON 407: 3 hobnails

ON 414: 2 iron nails, Manning type 1B, 22–5 mm long and 1 iron rod/shank

ON 413, 416: 2 unident. amorphous lumps iron

*Back fill: human bone:* 13.4 g = 6011; *animal bone:* <0.1 g

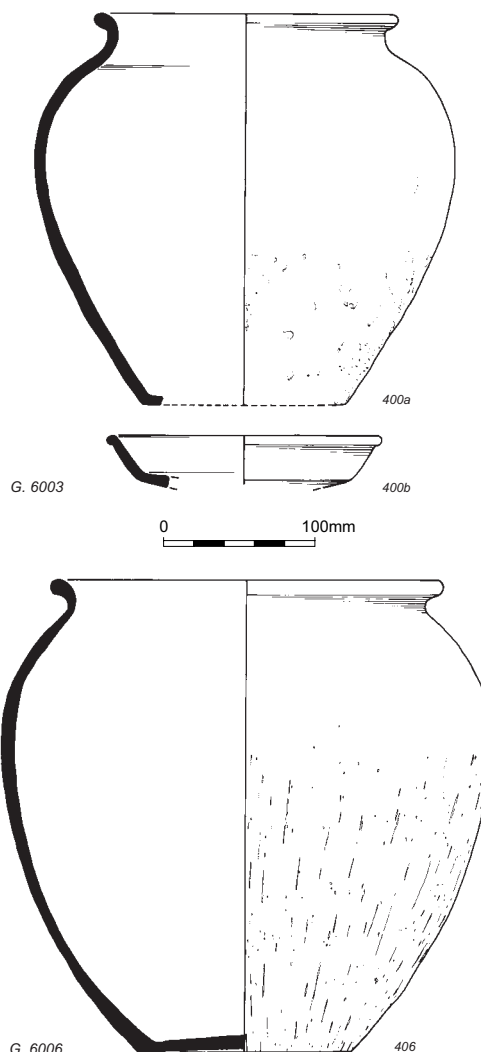


Figure 2.39 Cottingham Road: pottery vessels from cremation graves 6003 and 6008

**Grave 6012 (burial 6014 and 6018; grave fill 6013)**

not illustrated

NGR 634008 164330. Sub-circular cut with steep, straight sides, concave base. 0.61 m diam., 0.22 m deep (base at 11.18 m OD). Urned cremation burial. Urn ON 424 and 417 (latter broken and overlay burial). Urn in centre of cut, c. 0.09 m from sides. Upper fill (urn): dark silty clay; no burnt bone or charcoal. Lower fill (urn): Mid/dark brown silty clay with cremated bone and charcoal. Grave fill: mid-greyish-brown silty clay with cremated bone, charcoal, and iron nail. Redeposited pyre debris around urn.

*In urn: human bone:* 613.2 g +10.4 g. 1) adult c. 20–25 yr female; 2) juvenile c. 7 yr; *animal bone:* 5.2 g calcined frags: right femur and tibiotarsus domestic fowl

ON 417: 15 sherds, 477 g, all Dressel 20 = ON 424

ON 424: 175 sherds (6511 g) Dressel 20. Very abraded and fragmentary. Includes base of vessel but not rim. 1 sherd displays four large finger-impressions on int.; 5 sherds (58 g) recorded under this object number from context 6013; 2 sherds (2 g) from sample 512

Within ON 424: 35 hobnails

*Backfill: human bone:* 17.6g = 6014; 2 hobnails and iron shank

**Grave 6015 (burial 6017; grave fill 6016)** not illustrated

NGR 634011 164323. Sub-circular cut with irregular concave sides and base. 0.9 x 0.82 m, 0.23 m deep (base at 11.08 m OD). Disturbed to north. Urned cremation burial. Urn ON 420 in centre, c. 0.15–0.2 m from cut sides, leant to north. Urn fill: mid-brown clay silt with cremated bone, pottery (ON 427), and charcoal. Grave fill: mid-brown clay silt, with pottery, cremated bone, and charcoal. Redeposited pyre debris packed around urn.

*In urn ON 420: human bone:* 821.5 g, 1) adult c. 40–60 yr female; 2) infant c. 0.5–3 yr; *animal bone:* 1.5 g, poss burnt frag. right carpometacarpus: small corvid; calcined frag.: lumbar vertebra of medium mammal

ON 420: Dressel 20. base but not rim, 103 sherds, 17,959 g (MSW 174.4g). 0.6 x 0.55 x 0.25 m. 1 sandy sherd recorded from context 6015 as part of object 420, also some from 6016

Within ON 420: 2 iron nails, Manning type 1B, 35 mm long; 2 iron rod/shank frags

ON 427: 6 greyware sherds (with fine grog) from very round bodied vessel, probably small jar or beaker;

*Backfill: human bone:* 27.2 g = 6017; pottery (residual?): 40 g from greyware vessel ?containing fine grog. 5 greyware sherds (fine grog, inc. little everted rim from small jar or beaker. All same?); 4 iron nails, 9 iron shanks

**Grave 6019 (burial 6021; grave fill 6020)** not illustrated

NGR 634012 164325. Circular cut, steep straight sides, flat base. 0.7 m diam., 0.2 m deep (base at 11.09 m OD). Urned cremation burial. Possible plough damage. Urn (ON 425) in centre, c. 0.08–0.1 m from cut sides (unclear). Urn fill: mid-brown sandy clay with cremated bone, flint, and pottery. Grave fill: mid-brown silty clay with cremated bone and iron nails.

*In urn and backfill: human bone:* 501.7 g, adult >30 yr; *animal bone:* 1.5 g, unident., burnt; bird and medium mammal

*Grave goods/pyre goods?:* Copper alloy frags

ON 425: Dressel 20, base but no rim. 0.58 m diam., 0.18 m deep

Within ON 425: 6 iron nails, Manning type 1B, 25 mm long, 7 iron rod/shank frag, 2 unident. frags

ON 426: 2 iron nails, Manning type 1B, <50 mm long

ON 428: 1 small curving iron rod, 20 mm long; 1 tiny frag. (1 g) F99; 1 sherd, (1 g) Q101; 11 WT grog-tempered (142 g), 2 have a cordon or are corrugated; 1 grog-tempered rim frag, ?everted rim jar; 3 iron rod/shank frags

**Grave 6022 (burial 6024; grave fill 6023)** not illustrated

NGR 634014 164328. Sub-circular cut, moderate concave sides, concave base. 1.06 x 0.91 m, 0.28 m deep (base at 11.11 m OD). Urned cremation burial. Urn (ON 429) in centre, c. 0.15 m from unclear cut sides. fill (Urn): brown silty loam with cremated bone and charcoal. fill (grave): pale brownish-orange silty clay with rare flint and cremated bone, packed around urn.

*In urn: human bone:* 1371.0 g, adult c. 30–50 yr female; *animal bone:* 8.4 g, burnt frags: ?chicken clavicle and tibiotarsus; ?duck (Anatidae) femur and tibiotarsus; heron mandibular. Also calcined frags medium mammals

ON 429: Dressel 20, 16,002 g c. 0.58 m diam., 0.28 m deep. poorly made, laminated. Context 6023 contained 66 tiny frags Dressel 20 (79 g)

Within ON 429: 2 iron nails, Manning type 1B, 25 mm long; 2 rod/shank frags; pottery (residual) 3 small abraded sherds ?Late Iron Age

*Backfill: human bone:* 19.3 g = 6024

**Grave 6025 (burial and grave fill 6026)** not illustrated

NGR 634020 164326. Circular cut, moderate, straight sides, concave base. 0.7 m diam., 0.2 m deep (base at 11.16 m OD). ?Redeposited urned cremation burial. Urn (ON 437). Grave fill: mid-brown silty clay with urn frags and cremated bone.

*Backfill: human bone:* 199.4 g, subadult/adult > 13 yr

*Grave furniture/pyre debris?:* iron nail; ON 437: 56 body sherds from single vessel containing abundant detrital material esp. quartz; 8 greyware sherds inc. small frag. from everted rim jar

**Grave 6049 (burial 6048; grave fill 6047 and 6059)**

(Fig. 2.40)

NGR 634013 164329. ENE–WSW aligned, sub-rectangular cut, steep, straight sides, flat base; 1.78 x 0.4 m, 0.47 m deep (base at 10.81 m OD). Coffined, extended supine. Pottery vessel above skull to left, organic deposit (6059) to right of skull and upper body; hobnails at each foot. Grave fill: Dark greyish/orange-brown clay-silt with darker mottling. Fill 6059: charcoal rich silty clay, extended beneath skeleton, same area as vessel.

*Human bone:* c. 6%, adult c. 25–35 yr ?male



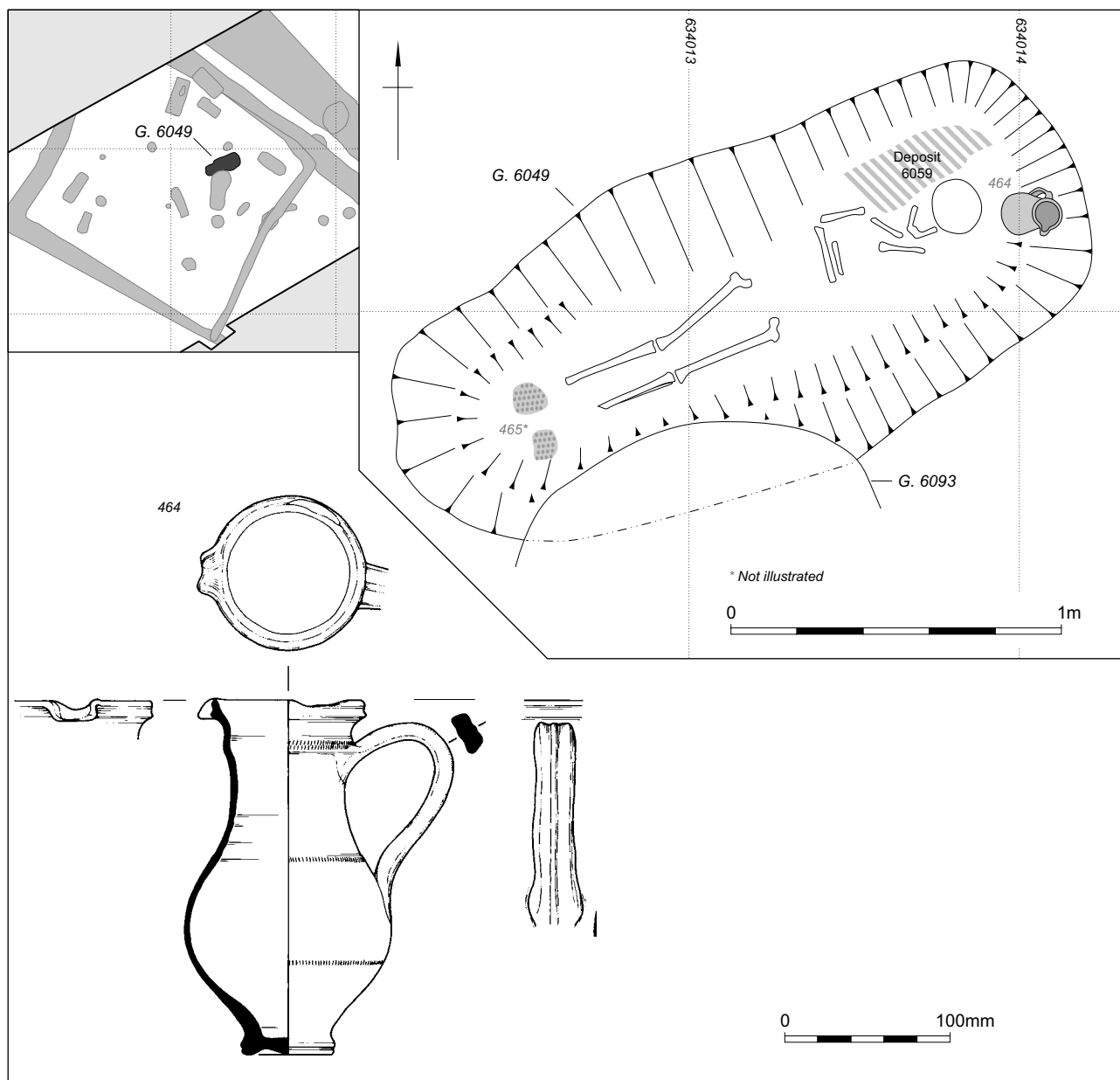


Figure 2.40 Cottington Road: inhumation grave 6049

†ON 464: Complete East Gaulish jug (*Rheinzabern*). Orange, soft and powdery. Volume 1050 ml. Late 3rd–mid-4th century AD (Pl. 2.13)

Within ON 464: Cremated human remains: 10 frags, subadult/adult >13 yr; hobnails; 0.1 g bird/animal bone (pyre goods)

Grave goods: ON 465: 17 hobnails; 34 hobnails

Coffin furniture: ON 465 and 466: 5 iron nails (Manning type 1B); 8 iron rod/shank frags

Fill 6059: 0.1 g bone (2 small frags)

**Grave 6060 (burial 6063; grave fills 6061-2 and 6071-2)**

(Fig. 2.41)

NGR 634004 164325. SSW–NNE aligned, sub-rectangular, steep to vertical sides, flat base; 1.3 x 0.47 m, 0.55 m deep (base at 10.32 m OD). Coffined, extended

supine, chin on right shoulder, bracelet at left pelvis (left hand?), beads right of skull (?necklace); small pottery vessel ON 470 placed at (or on) feet, within coffin. Four fills, upper fills: very difficult to distinguish. Mid-yellowish-brown sandy clay with occasional manganese flecks, concentrated at horizon with lower fill; pottery. Lower grave fills (above burial): mottled/patchy light grey and mid-brownish-grey soft sandy clay/silt, flint, and pottery. Clearer definition than upper fill. Cuts tree-throw fill 6078, cut by 6035.

Human bone: c. 15%, infant c. 3 yr

Grave goods:

†ON 467 and 472: 2 monochrome glass beads: Blown, drawn, and segmented, pale green, small, globular

†ON 470: pottery vessel: nearly complete very small everted rim jar; white-slipped redware fabric. Rim diam. 72 mm,

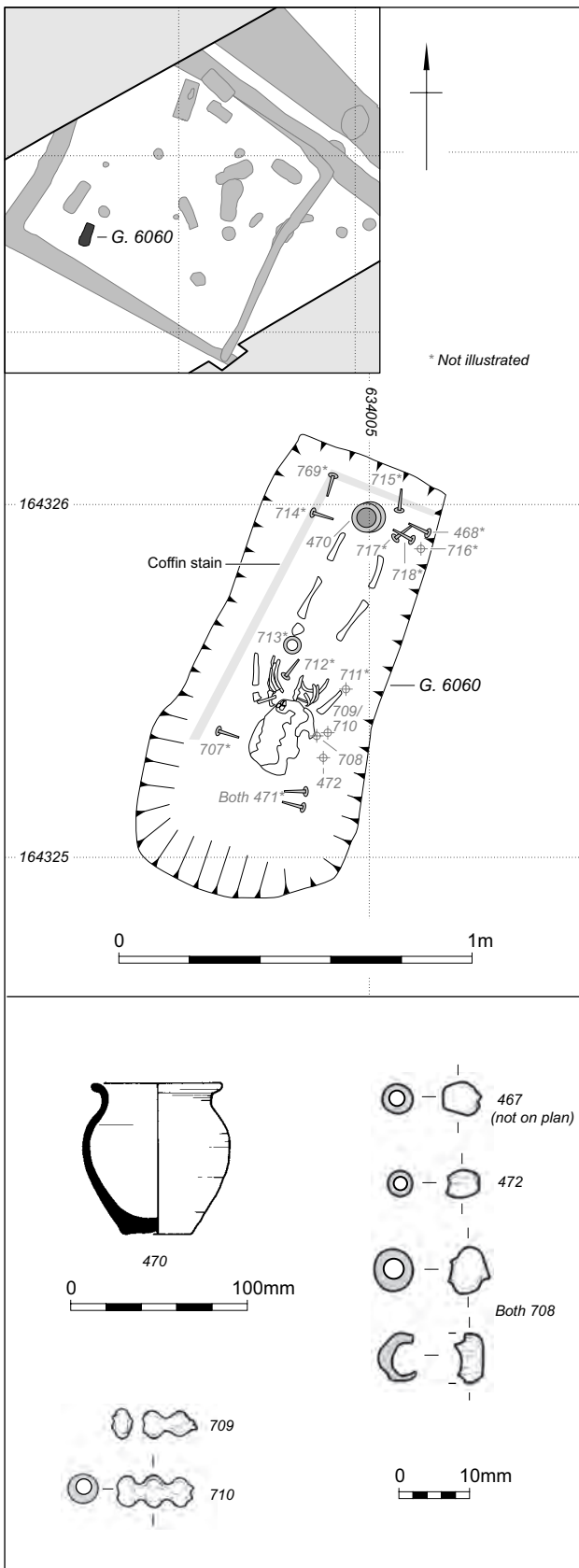


Figure 2.41 Cottington Road: inhumation grave 6060

height 90 mm, rim slightly askew and sloping. Part of rim missing, broken in antiquity. A purposeful chip taken out of rim? Unknown source. Mid-2nd–3rd century AD (Pl. 2.17)  
 †ON 708: monochrome glass bead: Blown, drawn, and segmented, frag., pale green, small globular. ?bracelet  
 †ON 709 and 710: 3 monochrome glass beads: Blown, drawn, and segmented, colourless, small, globular. ?bracelet  
 ON 713: small bracelet, extremely fragile, organic material (?bone/ivory), 35 mm int. diam., approx. rectangular section, 7 mm wide

*Coffin furniture:*

- ON 468: tapering iron rod, 60 mm long, ?nail shank
- ON 469: iron nail; Manning type 1B
- ON 471, 707, 714, 718: iron nail; Manning type 1B; 30–80 mm long
- ON 711: rod/bar frag. ?curving ends
- ON 712: small rod frag., 17 mm long
- ON 715: rivet, 25 mm long
- ON 716: iron nail shank
- ON 717: L-shaped rod, 25 x 20 mm

*Backfill:* cremated human bone: 5 frags. subadult/adult (around skull and in general backfill) – see also 6036; pottery (residual): 6 flinty frags, two groggy, 2 RB ox, very abraded, small; 2 pieces Dressel 20

**Grave 6093 (burial 6164; grave fills 6094-5 and 6099)**  
 (Fig. 2.42)

NGR 634012 164327. SSW-NNE aligned, sub-rectangular cut, steep to vertical sides, undulating base; 2.33 x 0.9 m, 0.62 m deep, (base at 10.26 m OD). Coffined, extended supine with arms crossed over thorax, hands probably in pelvis. Copper alloy buckle to right of skull. Three fills: upper fills 6094 and 6095: very mottled, mixed, mid-yellowish-brown sandy clay. Worked and burnt flint, pottery. Lower fill 6099: surrounds burial, very soft, mid-greyish-brown silty clay, small gravel and sparse pottery. Cuts natural 6002, backfill cut by grave 6049.

*Human bone:* c. 85%, adult c. 30–40 yr male

*Grave goods:*

†ON 722: Copper alloy buckle, kidney-shaped, 60 x 19–26 mm ext. (53 x 11–18 mm int.), no rest for pin; pin: 24 mm long, 5 mm wide, 3 incised lines towards plate end, faceted section ?octagonal; rectangular plate, 50 x 29 mm, 2 rivets, traces of linear decoration at one edge. Plate folded around axis. Mid-4th century AD date or later (Schuster 2006, 63). Comparable to Marzinzik (2003) Class II, Typegroup II.6. Loop more similar to Type II.4 or II.5, but without decorative plates

*Coffin furniture:*

- ON 474, 476–7, 479, 482–7, 490–1, 494–5, 498–9, 731, 733: 20 iron nails; Manning type 1B; 20–85 mm
- ON 475, 479, 482, 491–4, 732: 9 iron rod/shank frags, 25–55 mm long
- ON 481: 2 iron rod/shank frags, 1 at right angles, ?part of L-shaped hook/clamp or hinge. Lengths: 50 mm and 20 mm
- ON 497: iron rod, bent over at one end, 50 mm long

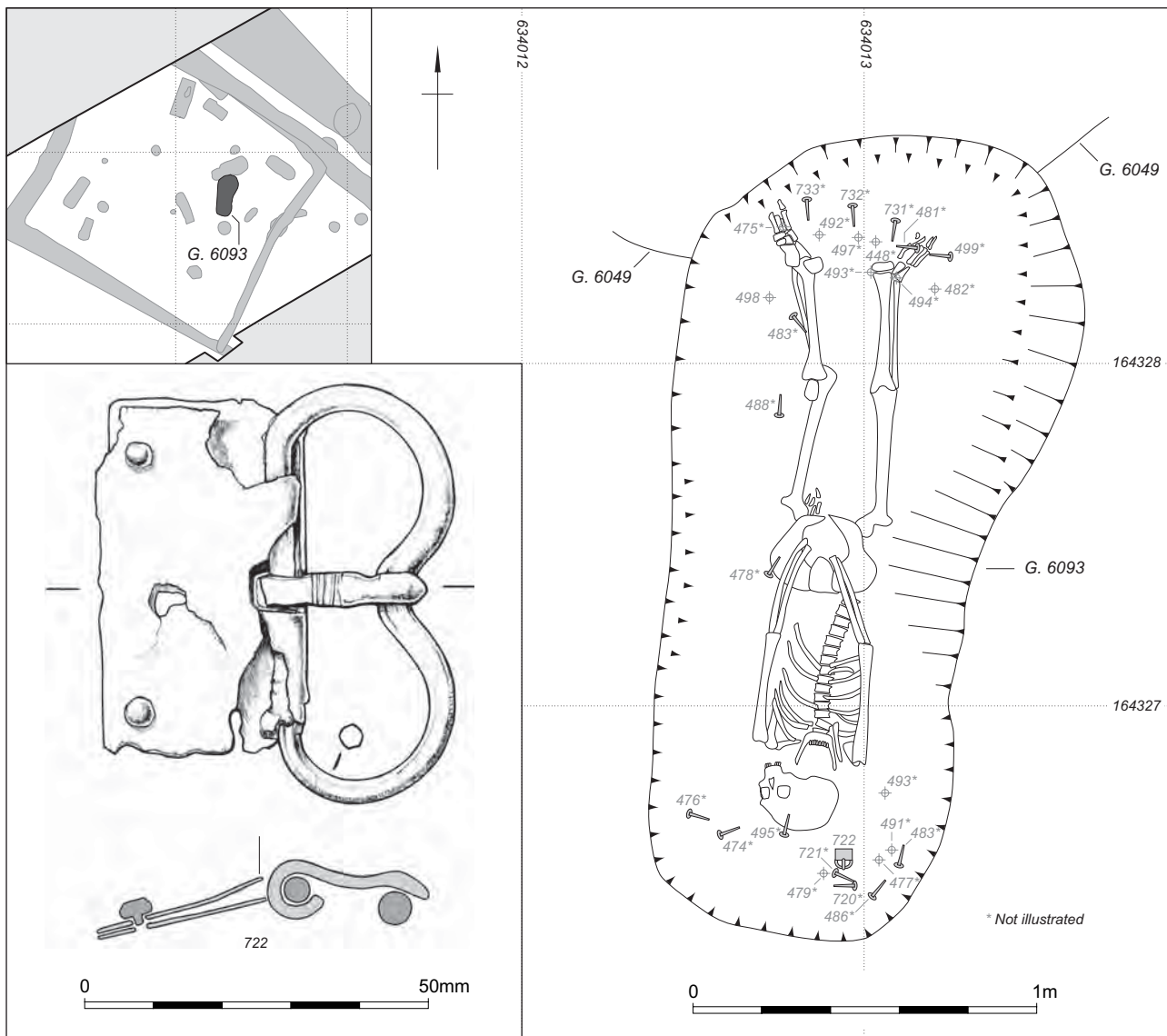


Figure 2.42 Cottington Road: inhumation grave 6093

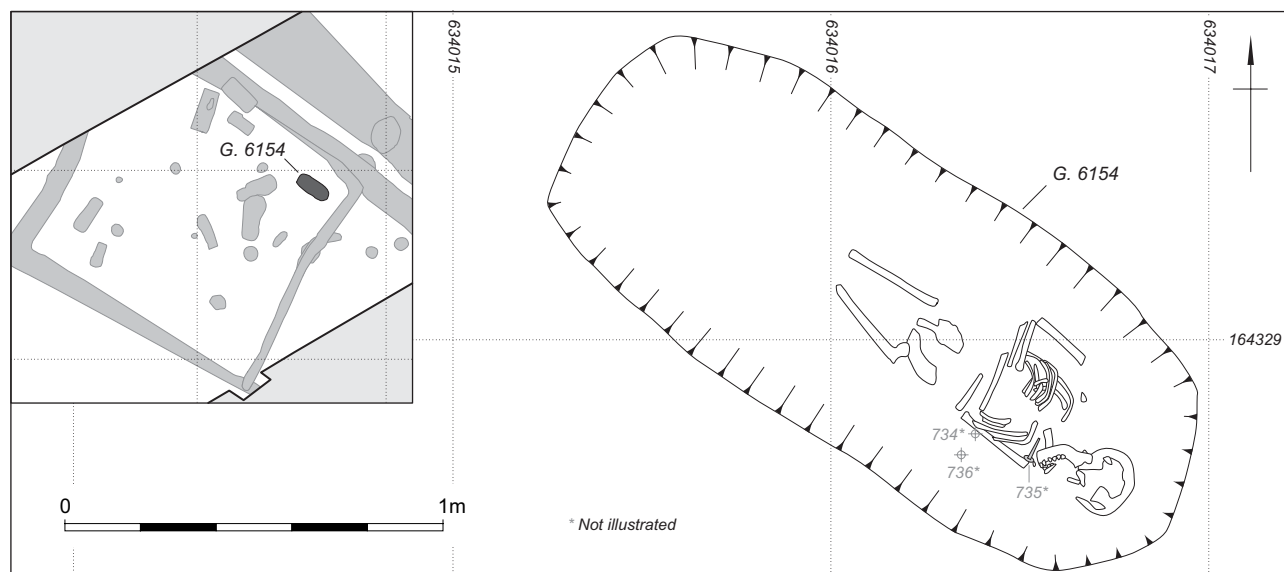


Figure 2.43 Cottington Road: inhumation grave 6154

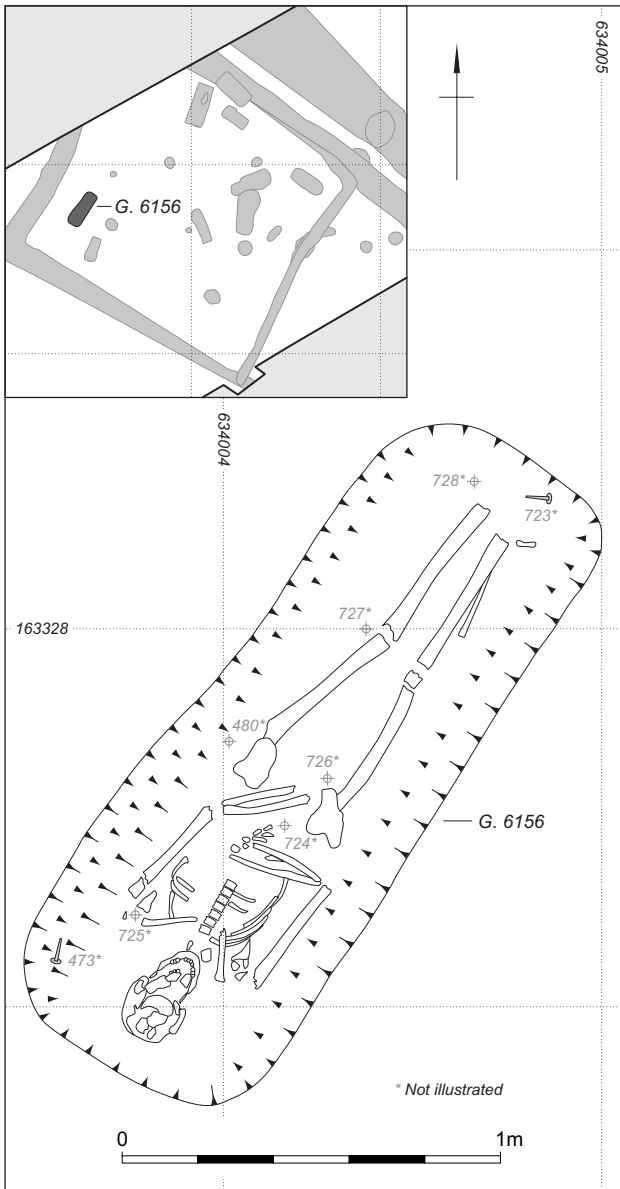


Figure 2.44 Cottington Road: inhumation grave 6156

ON 721: unident. iron object, shaft and ring, ?clamp  
 Backfill: pottery (residual): 2 sherds, base of mortaria.  
 Poorly sorted flint, medium-grained coarse in fabric.  
 Buff/orange surfaces, orange margins and grey unoxidised core. Possible Canterbury product (Canterbury fabrics 2A, 2C, 2D, 2E). Uncertain mortarium fabric. 1st–2nd century AD; 1 iron nail, 3 shank frags

**Grave 6154 (burial 6172; grave fill 6155)** (Fig. 2.43)  
 NGR 634016 164329. SW–NE aligned, sub-rectangular cut, steep to vertical sides, flat to undulating base; 1.85 x 0.78 m, 0.32 m deep (base at 10.86 m OD). Coffined, extended supine, left hand on right femur head, left hand across abdomen, some displacement of right arm bones. Single fill: mixed mid-yellowish-brown to grey, paler and more yellow at base, contrasting with coffin stain (dark grey). Peagrit. Cuts natural 6002, backfill below colluvium 6163.  
 Human bone: c. 8%, subadult/adult c. 15–25 yr

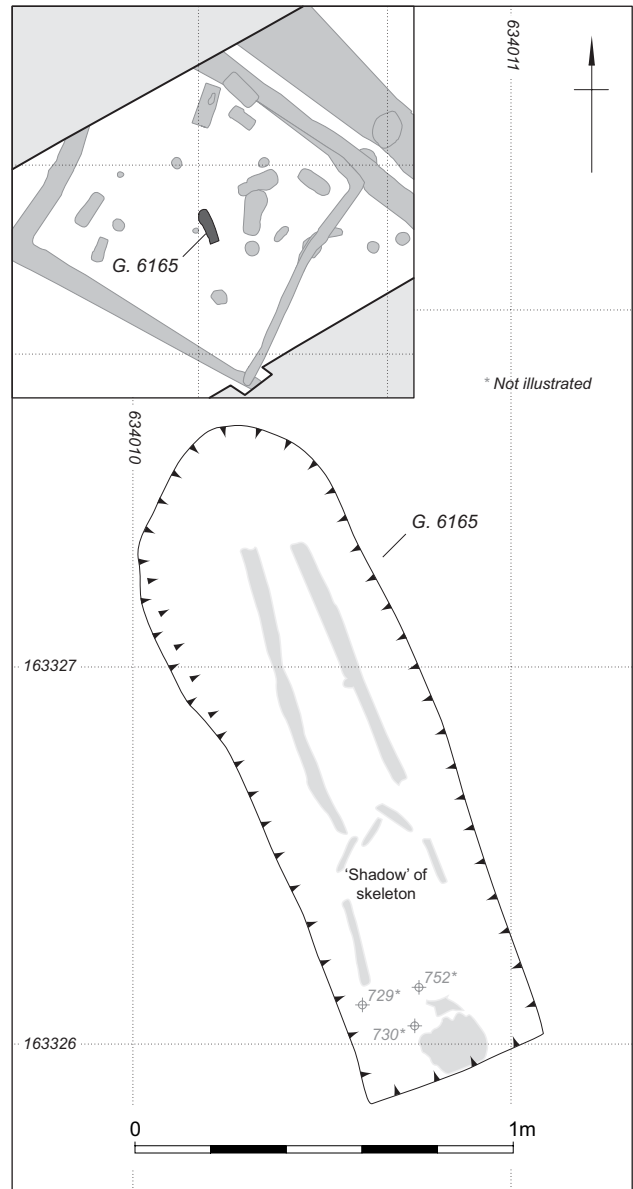


Figure 2.45 Cottington Road: inhumation grave 6165

**Coffin furniture:**  
 ON 478, 488–9, 706: rod/shank frags, ?nails, 15–70mm long  
 ON 496: 2 joining iron rod/shank frags, tapering, 80 mm long, 9 mm diam., ?punch  
 ON 735: iron rod, bent right-angles, 1 arm = 35 mm long, 1 = 15 mm, wood adhering  
 ON 736 4 tapering rods, ?nails 15–44 mm  
**Backfill:** Pottery (residual): abraded flint-tempered. Prehistoric

**Grave 6156 (burial 6158; grave fill 6157)** (Fig. 2.44)  
 NGR 634004 164327. NNE–SSW aligned, sub-rectangular cut, steep straight sides with step, flat base; 1.9 x 0.74 m, 0.34 m deep (base at 10.53 m OD). Coffined, extended supine, hands across abdomen/pelvis. Single fill: mid-greyish- brown silty clay and orange mottled patches, rare gravel, chalk and tuffa; pottery, worked, and burnt flint.

Cuts natural 6002, backfill below colluvium 6163.

*Human bone*: c. 25%, adult >50 yr ?male

*Coffin furniture*:

ON 473, 724–8, 751: iron nails, Manning type 1B, 25–80 mm, traces of wood on 751

ON 480: iron hobnail

ON 723: iron small nail shank

*Backfill: pottery (residual)*: 4 Dressel 20, 4 sandy crumbs, 1 flinty crumb. RB unspc.

**Grave 6165 (burial 6177; grave fill 6173)** (Fig. 2.45)

NGR 634010 164326. SSE-NNW aligned, sub-rectangular cut with rounded foot end. Steep sides, flat base; 1.8 x 0.55 m, 0.22 m deep (base at 10.56 m OD). Coffined, extended supine with hands crossed over pelvis. Single fill: mid-greyish-brown and orange mottles, silty/sandy clay, very rare flint gravel, pottery. Cuts tree-throw, backfill below colluvium 6163.

*Human bone*: c. 3%, adult >40 yr

*Coffin furniture*:

ON 729: 2 iron nails, 3 nail shank frags, Manning type 1B, bent, 44 mm and 53 mm long

ON 730 and 752: 2 iron coffin nails, Manning type 1B

*Backfill: pottery (residual)*: one sandy sherd. RB unspc.

**Grave 6166 (burials 6168a and b; grave fill 6167)**

(Fig. 2.46)

NGR 634012 164332. NW-SE aligned, rectangular cut, steep and vertical sides, flat base; 1.55 x 0.74 m, 0.72 m deep (base at 10.59 m OD). Coffined, extended supine, hands probably on pelvis, hobnails at feet, copper alloy bracelet to left of skull, small pottery vessel between femora, tipped towards feet. Single fill: mid-greyish-brown and mid-yellowish-brown silty/sandy clay; darker around body, within confines of coffin. Depressions in base from projecting end planks of coffin. Cuts natural 6002, backfill below colluvium 6163.

*Human bone*: Sk 6168a: c. 35%, infant/juvenile c. 4–5 yr; redep. 6168b: c. 1%, adult >45 yr

*Grave goods*:

ON 753a: 6 frags, organic armband, ?bone or ivory. Int. diam. 55 mm, 75% present. Plain, approx. oval section

ON 753b: 12 frags, copper alloy wire armband, int. diam. 50 mm, c. 80% present, wire 2 mm thick, 2 sections expanding clasp present, 1 of 3 coils and 1 of 4

†ON 754: Pottery vessel. Nearly complete jar. Rim 85 mm diam., 93 mm high, max. width 105 mm. Small, everted rim jar in grog-tempered fabric. 26 sherds, 242 g. Unoxidised, handmade. 75% of rim present. Wear: side of base and wall. Base c. 65 mm wide, ?chip out of rim (but incomplete). Thompson C3

ON 770–1: 16 hobnails and 1 iron rod/shank frag., 23 mm long

*Coffin furniture*:

ON 747 and 750: iron nails, Manning (1985) type 1B, 70 mm and 80 mm long. Traces of wood adhering

ON 749: ?iron ring

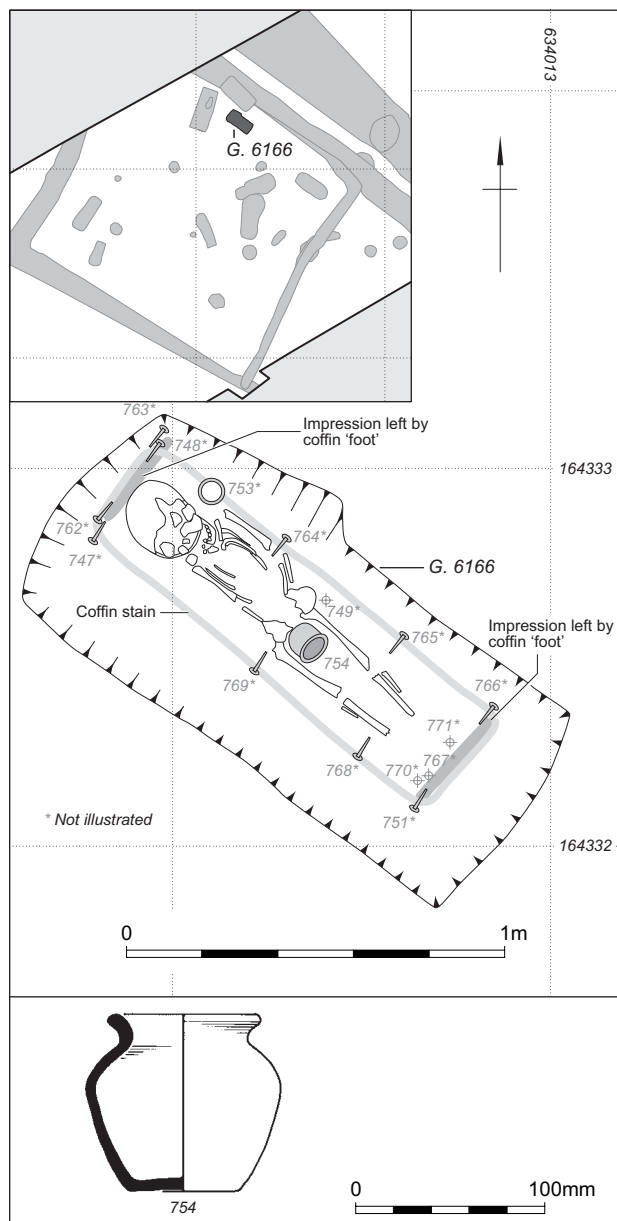


Figure 2.46 Cottington Road: inhumation grave 6166

*Backfill: pottery (residual)*: one RB ox sherd associated with skull, abraded

**Grave 6169 (burial 6171; grave fill 6170)** (Fig. 2.47)

NGR 634012 164333. NW-SE aligned, sub-rectangular, steep sides, flat base; 1.97 x 0.93 m, 1.14 m deep (base at 10.20 m OD). Coffined, extended supine, hands crossed over pelvis. Single fill: mixed orange and brown, very patchy, silty/sandy clay with rare gravel and chalk. Large chalk lump above feet, pottery, worked, and burnt flint. Cuts natural 6002, below subsoil 6001.

*Human bone*: c. 90%, adult c. 30–40 yr female

ON 745: chalk lump, above feet, not shown on grave plan

*Coffin furniture*:

ON 737–9, 741, 742, 756, 759: 7 iron nails, Manning type 1B, 35–120 mm long

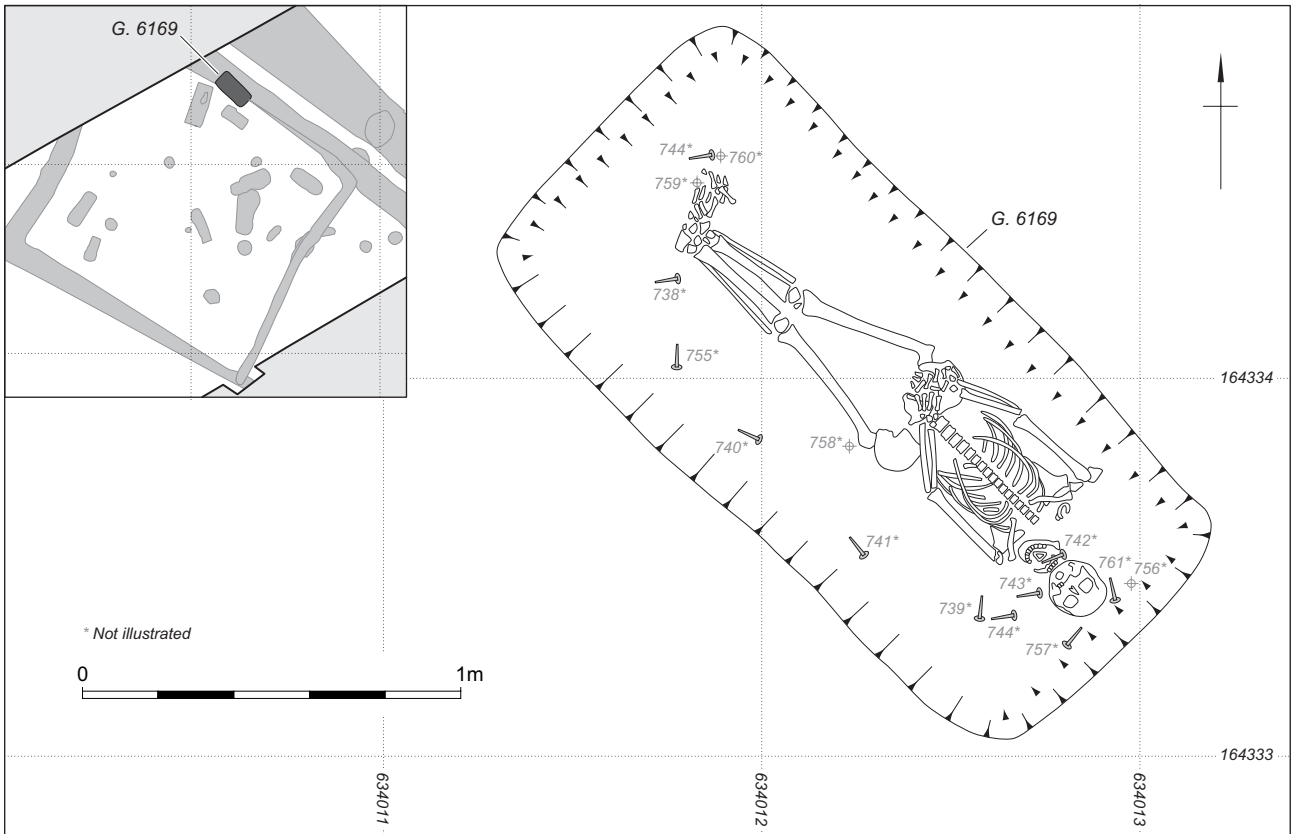


Figure 2.47 Cottington Road: inhumation grave 6169

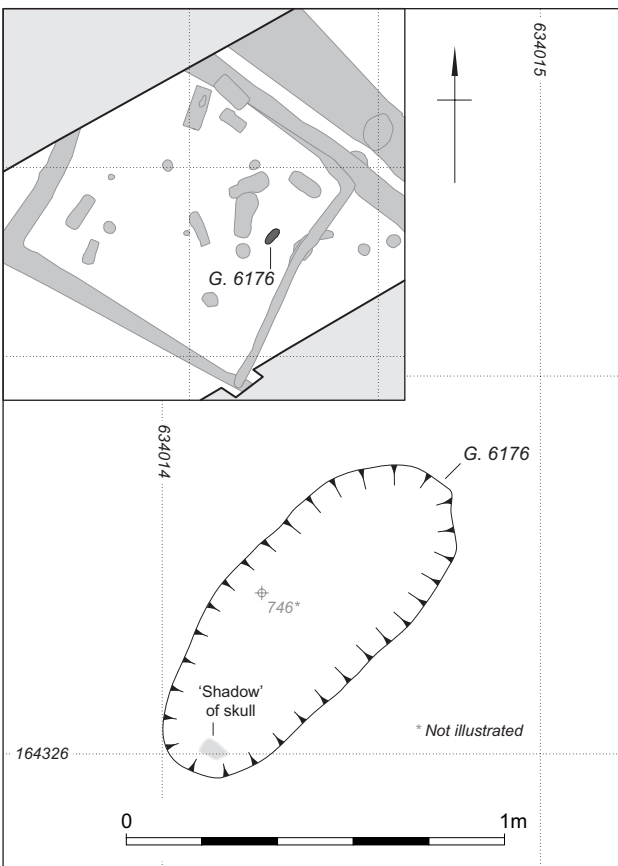


Figure 2.48 Cottington Road: inhumation grave 6176

ON 739, 740, 743–4, 757: 6 shank frags

ON 755: iron rod, curved at one end, 40 mm long, ?part of T-clamp

ON 758: iron bolt, 160 mm long, square-sectioned shaft, bends at nearly 90° at the end, head appears flat, poss. with rounded tip

ON 760: large square-sectioned nail or bolt head, 35 mm diam.

**Backfill:** pottery (residual): 2 flint bodies, 2 sandy bodies, 2 ox (1 poss. Dressel 20), 1 unident. rounded greyware rim. RB unspecified; 3 iron nail shanks

**Grave 6176 (burial 6174; grave fill 6175)** (Fig. 2.48)

NGR 634014 164326. SW-NE aligned, sub-rectangular cut with rounded head end, shallow concave sides, irregular base; 1.05 x 0.42 m, 0.05 m deep (base at 10.81 m OD). Coffined, extended supine. Single fill: loose, mottled mid-brown silty clay, rare gravel. Cuts natural 6002, below colluvium 6163.

**Human bone:** c. 1%, infant/juvenile c. 4–5 yr

**Coffin furniture:**

ON 746: iron nail Manning 1985, type 1B, 25 mm long

ON 748: iron L-shaped hook or nail, Manning type 4, 85 mm long

**Grave 6214 (burials 6161 and 6186; 6185a and b; grave fills 6159–60, 6162, 6185 and 6187)** (Fig. 2.49)

NGR 634010 164333. SW-NE aligned, rectangular cut, vertical sides, undulating – flat base, 2.36 x 0.98 m, 1.12 m



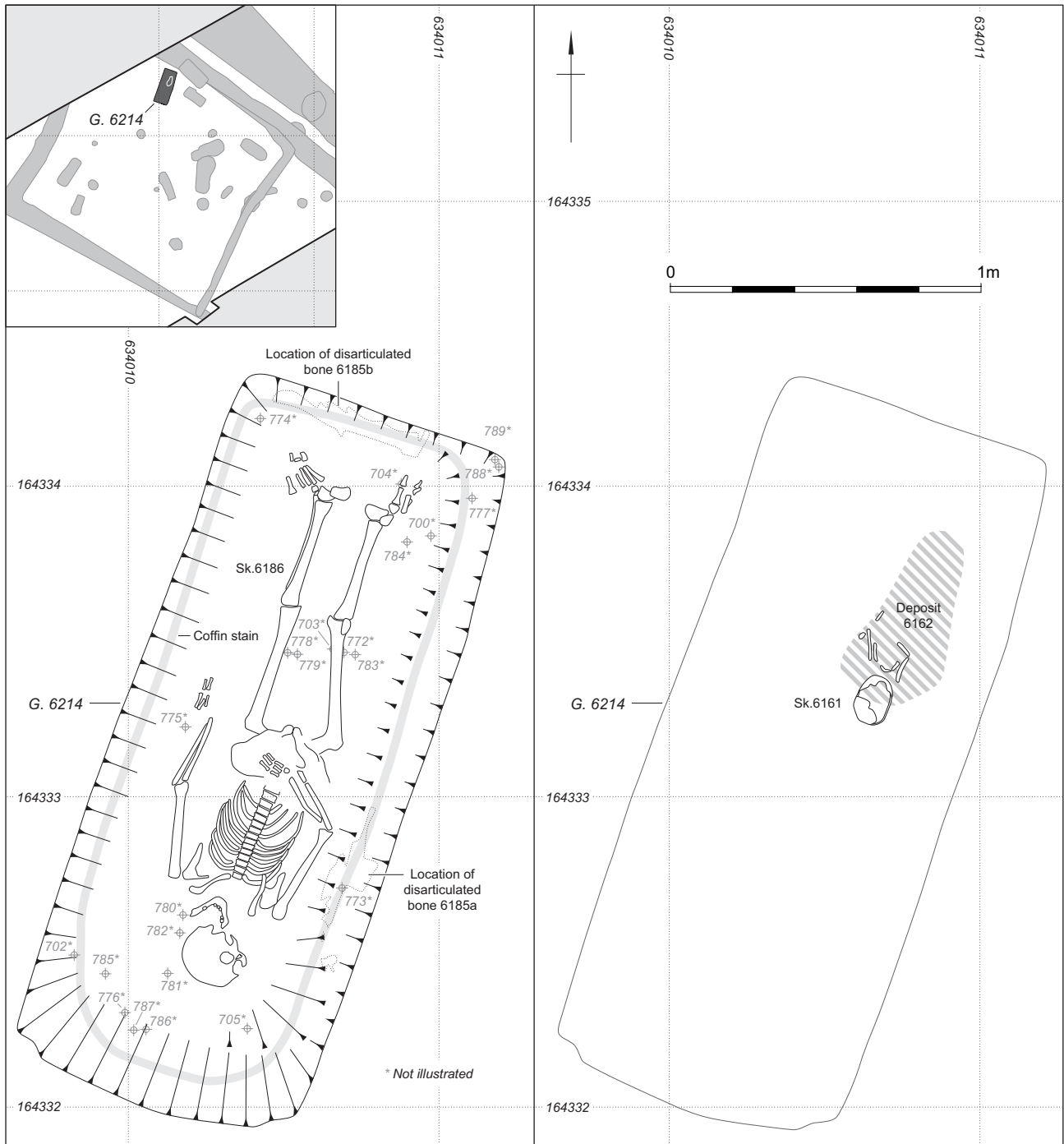


Figure 2.49 Cottington Road: inhumation grave 6214

deep (base at 9.8 m OD). Sk 6161 (= 6151) – *in situ*, flexed, on left side; Sk 6186 – coffined extended supine, hands across pelvis/thorax. Sk 6161 uppermost, 0.55 m above grave base. Sk 6186 – principle burial. Coffin very clear, substantial darker staining. Redeposited (6185a and b) – neatly and tightly packed around coffin head and sides, comingled remains of two individuals. Three fills: upper fills (6159/60 and 6185): mid-dark orange-brown clay/silt, chalk lump above feet (see also grave 6169). Base fill: represents coffin, concave around (absent above and beneath) skeleton, dark blackish grey/brown silty clay. Cuts natural

6002, backfill below subsoil 6001.

**Human bone:** Sk 6161 (incl. 6151): c. 20%, infant c. 3 yr; Sk 6186: c. 85%, adult c. 35–45 yr male; Redep. 6185a: c. 10%, subadult/adult c. 15–20 yr; Redep. 6185b: c. 36%, juvenile c. 6–8 yr

**Coffin furniture:**

ON 700–1: 3 iron nails, Manning type 1B

ON 702–4: 5 shank frags

ON 782–4, 790–2: iron nails

**Backfill:** 1 iron nail, Manning type 1B, 60 mm long, traces of wood adhering, near skull (no ON)

**Cenotaphs**

**Pit 6027 (fill 6028)** not illustrated

NGR 634013 164330 Small sub-circular pit. Steep, concave sided with a flat base. 0.93 m diam x 0.23 m deep.

*Cremated human bone*: redeposited: <0.1 g

†ON 431: 16 sherds, 209 g, much of highly abraded Central Gaulish samian dish, plain rim, curved wall, footring base, no exact Dragendorff form, closest is shallow FORM 32. Probably late 2nd century (Fig. 2.50)

ONs 430, 432, 434-436: 5 iron nails, 10 rod/shank frags

**Pit 6031 (fill 6032)** not illustrated

NGR 634019 164325 Small circular pit. Shallow concave sides and flat base. 0.60 m diam. x 0.10 m deep. Position of hobnails within suggests deposited attached to footwear rather than loose. Most in NW quadrant.

*Cremated human bone (redeposited)*: > 0.1 g

ON 438-63: 92 hobnails

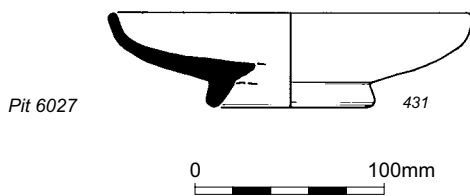


Figure 2.50 Cottington Road: pottery vessel from pit 6027

Three other pits (6033, 6035 and 6037) have also been interpreted as cenotaphs but are not listed here as they did not contain any human bone.

**Cottington Hill (Area 15)**

**Grave 5163 (burial 5164; grave fill 5165)** (Fig. 2.51)

NGR 633844 164106. SE-NW aligned, sub-rectangular cut with rounded head end, vertical sides, slightly concave base; 2 x 0.6 m, 0.3 m deep (base at 8.52 m OD). *In situ*, extended supine, left arm by side, right arm bent with hand on pelvis. Single fill: mid/dark yellowish/greenish-brown silty clay, occasional chalk flecks, rare baked clay flecks. Cut alluvial/flood deposit 5134, backfill below oven/hearth 5089.

*Human bone*: c. 80%, adult >50 yr male

†ON 227: complete small flask, fine grog-tempered fabric. Beaded rim, upright neck, low carinated waist. At least 3 cordons above waist and one band of diagonal lines, probably once burnished. 108 mm high, ext. rim 67 mm, int. rim 60 mm. ?Handmade. 1st century AD, possibly pre-Conquest (Pl. 2.18)

**Grave 5166 (burial 5209; redeposited 5134 and 5208; grave fill 5167)** not illustrated

NGR 633844 164107. NW-SE aligned, truncated (sub-rectangular?) cut, steep to vertical sides, flat base; 1.56 x 0.59 m, 0.19 m deep (base at 8.70 m OD). *In situ*, extended supine, only femora. Single fill: dark brownish-grey, clayey

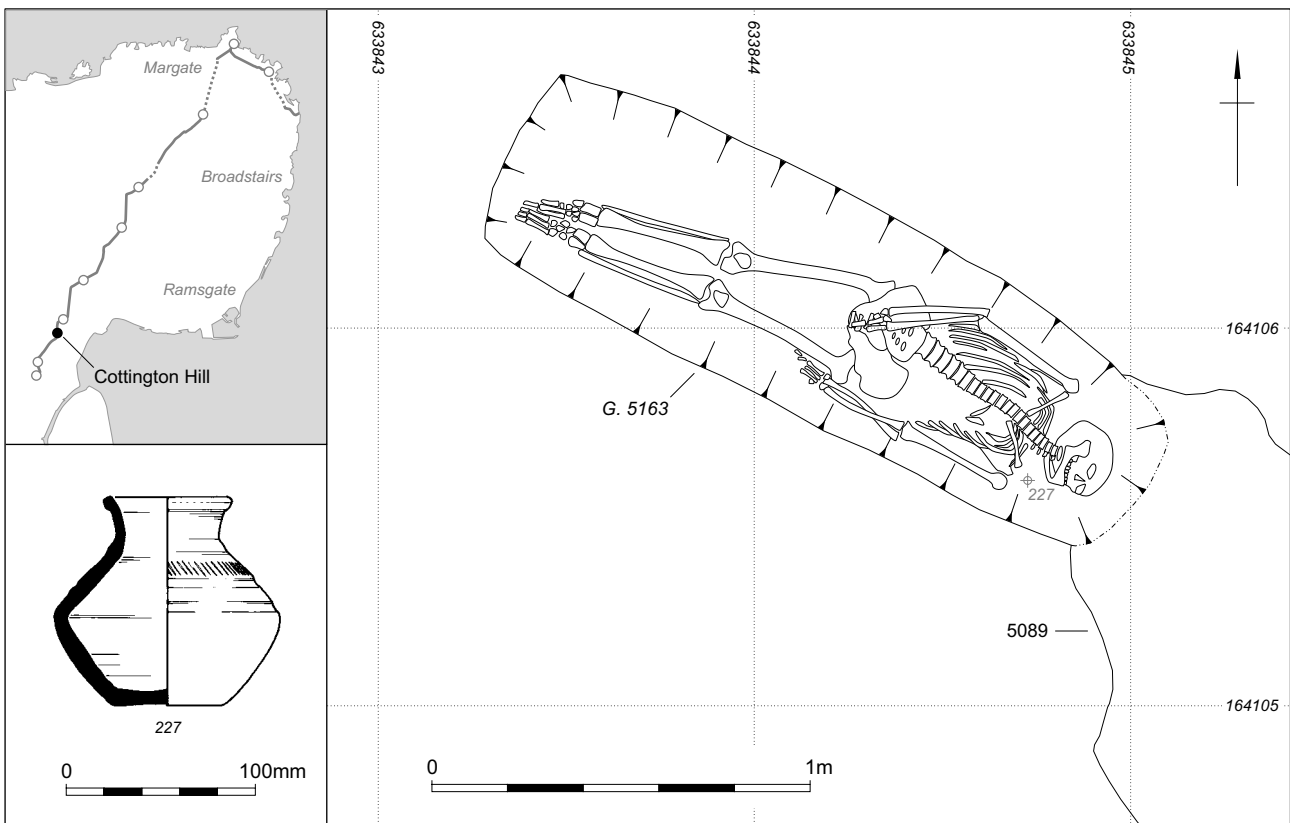


Figure 2.51 Cottington Hill: inhumation grave 5163



silt, occasional flint pebbles, chalk and charcoal flecks. Cut possible alluvial deposit

*Human bone*: Sk 5166: c. 10%, infant/juvenile c. 4–5 yr; redep. 5208: c. 10% s.a.u. infant/juvenile c. 3–5 yr (= 5209)

*Grave goods*:

†ON 225: pottery vessel: flat-rimmed cariated bowl. Diam. 115 mm ext., 95 mm int., height 60 mm. Coarse, sandy greyware fabric. Early Romano-British (Fig. 2.52; Pl. 2.19 left)

†ON 226: pottery vessel: small globular beaker with very short everted rim. Rim diam 69 mm ext. (55 mm int.), height 95 mm, max. girth 98 mm. Coarse sandy greyware fabric. Similar to CAM 105 (Fig. 2.52; Pl. 2.19 right)

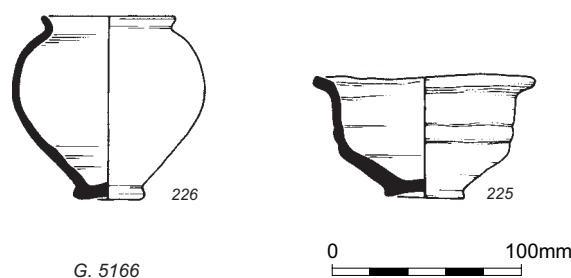


Figure 2.52 Cottingham Hill: pottery vessels from grave 5166

#### Grave 5400 (burial 5135; redeposited 5123) (Fig. 2.28)

NGR 633851 163985. W–E aligned, grave cut not identified during excavation. 0.85 m deep, (base at 8.9 m aOD). Grave cut into backfilled large boundary ditch 5143.

*In situ*, extended, supine inhumation burial. Part of this individual's skull redeposited in the ditch recut fill 5123. Radiocarbon dated to cal AD 670–860.

*Human bone*: c. 80% adult c. >50 yr male

#### Ebbsfleet Lane (Area 16)

##### Grave 1110 (burial 1111; grave fill 1112) (Fig. 2.53)

NGR 633371 163331. SSE–NNW, sub-oval cut, steep to vertical sides, flat base; 1.68 x 0.95 m, 0.5 m deep (base at 4.37 m OD). *In situ*, flexed supine, knees to left, left hand on knee, right hand by mandible. Single fill: mid-greyish-orange silty clay, occasional flint gravel, pottery and burnt flint. Cut 1122 (fill of ditch 1195), backfill below subsoil.

*Human bone*: c. 98%, adult c. 45–55 yr male

*Backfill: pottery (residual)*: 2 x flint bodies; 1 x RB ox; a soapy groggy sherd with cordon, possibly corrugated; 1 x abundant fine flint temper; 1 sandy WT; a groggy rim sherd, everted, beaded, and upright necked, probably a bowl/jar, D1-1? poss. R99, also burnt sandy bead-rim jar with squared, inturned rim (irregular bead) and sandy sherd with fine flint, tiny frag, ?Q99. Post-Conquest but unlikely to go into 2nd century AD

##### Grave 1931 (Burial 1033; redeposited 1029 and 1032)

NGR 633353 163307. ?N–S. Grave cut incomplete and only observed in post-excavation. Sk 1033 partially articulated, c. 0.35 m below surface (base at 4.45 m OD).

*In situ*, probably buried on its side. Disarray and condition suggest exposure. Elements from the same individual were redeposited in ?boundary ditch (1892, fills 1029 and 1032). Probably Late Iron Age–early Romano-British.

*Human bone*: c. 35% subadult c. 14–17 yr

#### Weatherlees WTW (Compound 16)

##### Grave 3121 (burial 3122; grave fill 3123) (Fig. 2.54)

NGR 633324 163081 NE–SW aligned, elliptical cut, irregular sides, concave base; 2.1 x 0.95 m, 0.6 m deep (base at 3.73 m OD). *In situ*, extended supine, arms along sides. Single fill: mottled greyish-brown and reddish-yellow

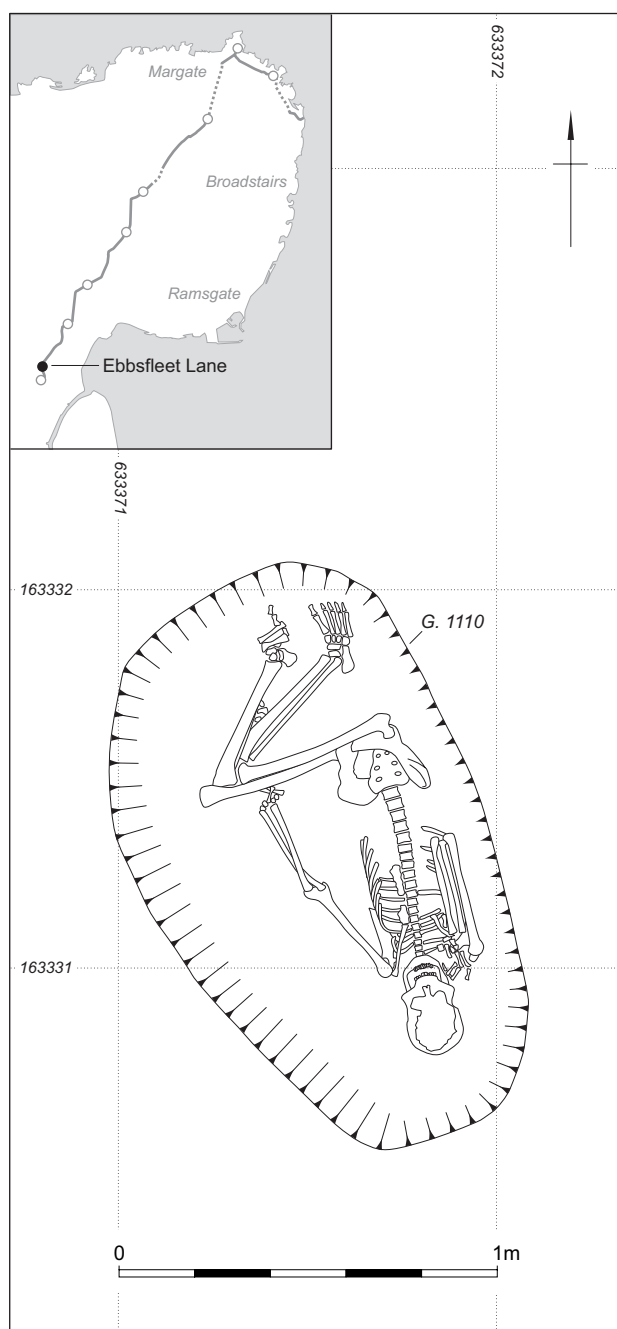


Figure 2.53 Ebbsfleet Lane: inhumation grave 1110

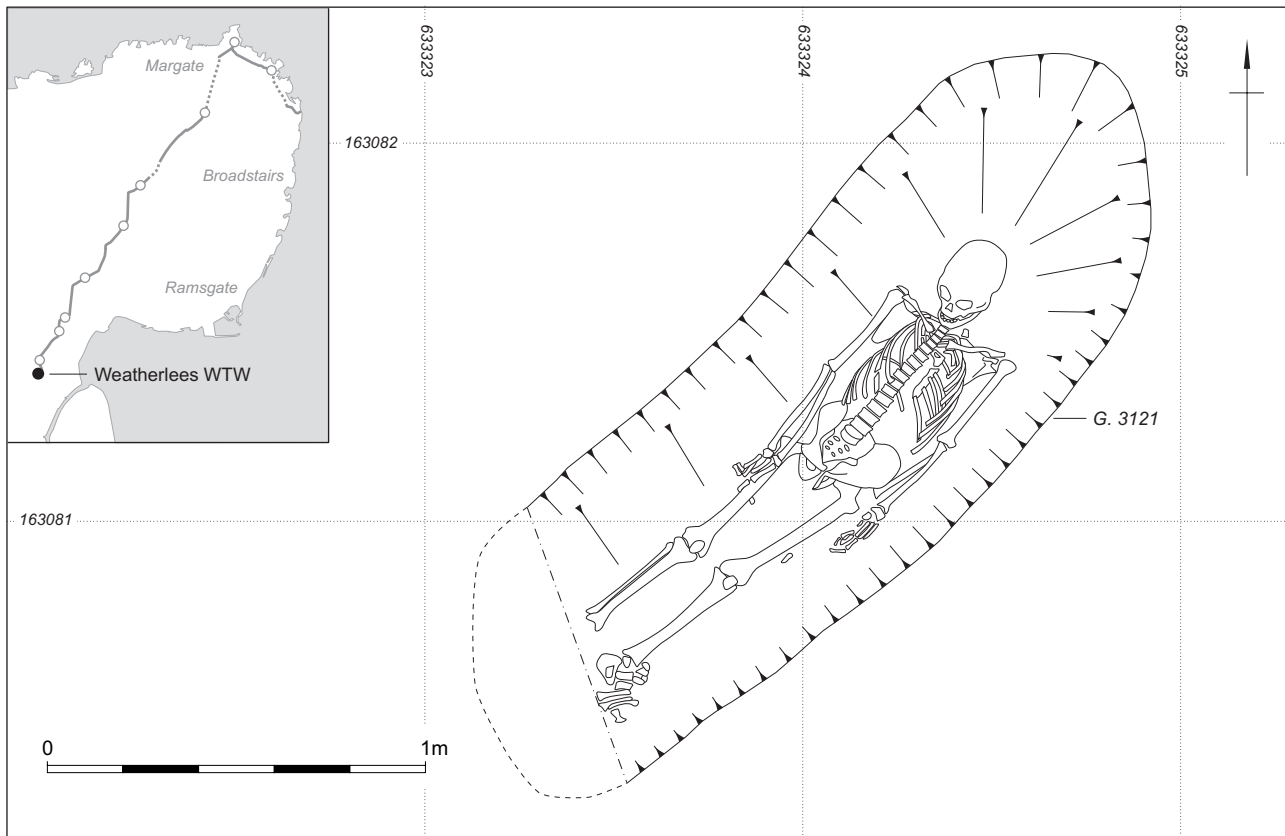


Figure 2.54 Weatherlees WTW: inhumation grave 3121

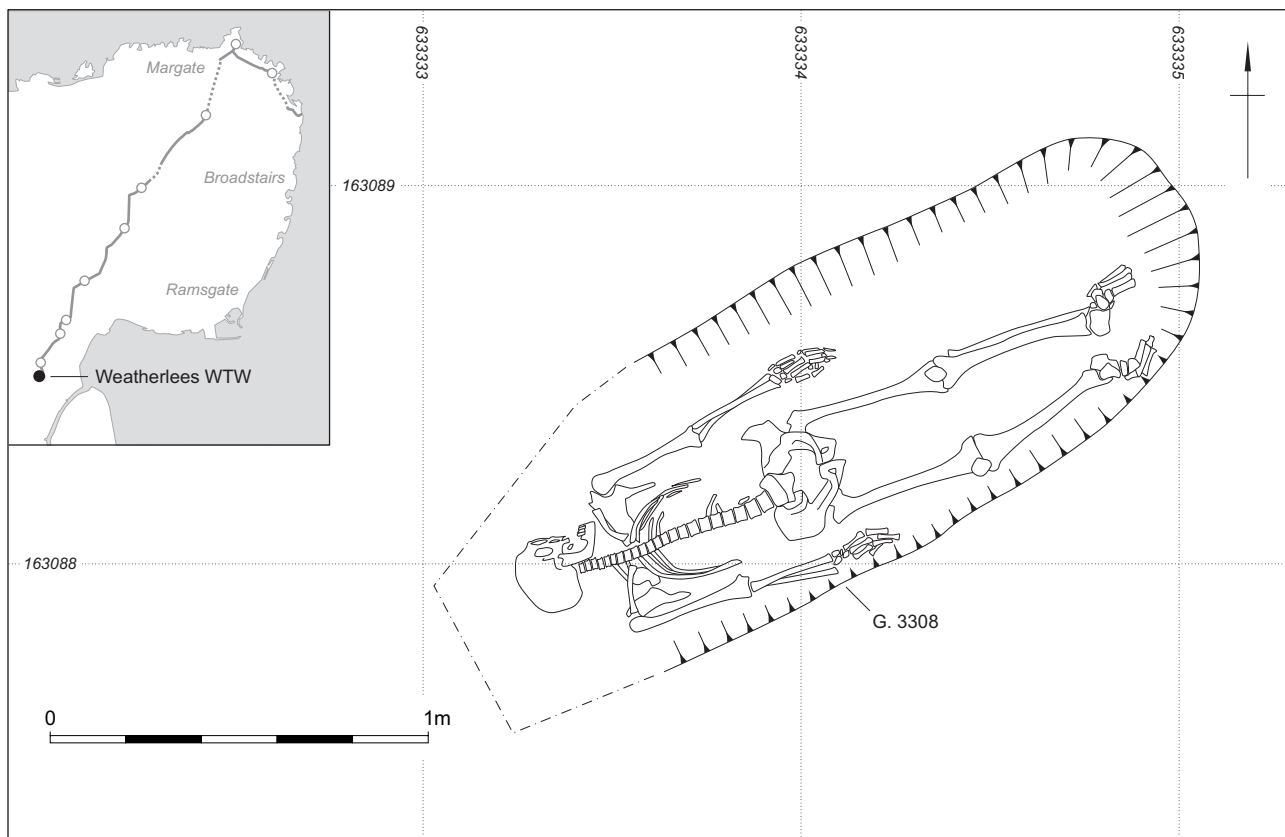


Figure 2.55 Weatherlees WTW: inhumation grave 3308

silt, occasional chalk flecks, oyster shell, animal bone, pottery, and burnt flint. Cut 3143 and 3144 (fills of ditch 3131), backfill below 3145 (tertiary fill).

*Human bone*: c. 99%, adult >50 yr male

*Backfill: pottery (residual)*: mix of flint- and grog-tempered sherds. Grog-tempered: 2 joining rim sherds from bead-rimmed jar; body sherds with horizontal combing/furrowing (prob. same vessel), most sooted, inc. rim. 2 other body sherds have scored ext. Small flint-tempered body sherd from 3122

**Grave 3308 (burial 3309; grave fill 3310)** (Fig. 2.55)

NGR 633334 163088. SW-NE aligned, sub-rectangular cut, moderate, concave sides, concave base; 2.4 x 0.85 m, 0.72 m deep (base at 3.42 m OD). *In situ*, extended supine, arms along sides, hands palm down. Feet turned out. Single fill: yellowish/grey-brown sandy silt, rare chalk flecks. Cut 3396 (fill of ditch 3335, group 3733), backfill below subsoil.

*Human bone*: c. 97%, adult >50 yr male

*Backfill: pottery (residual)*: Mostly flint-tempered body sherds. Some Late Iron Age: 2 small sherds of Q8 (BB1 type matrix and fine flint), 1 grog-tempered, and generally harder sherds ?later in date. 2 rims, 1 ext. thickened and 1 upright flat-topped rim from very large storage jar (>500 mm diam.) Shale vessel wall frag., 10 mm thick, cup or small bowl, ext. diam. c. 120 mm

**Miscellaneous contexts containing human bone**

*Broadley Road (Area 3)*

**Context 7023**

NGR 637701 169798. Redeposited on top of beamslot 7021, group 7439, part of a prob. Neolithic mortuary enclosure. Radiocarbon dated to 1260-900 cal BC.

*Human bone*: Subadult/adult c. >15 yr

**Context 7175 (ditch 7173, group 7447)**

NGR 637702 169797. Redeposited/intrusive. Beamslot 7173, parallel to 7023 and part of same structure.

*Human bone*: redeposited: 7 frags, subadult/adult >16 yr, charred/stained

*Cottingham Road (Area 14)*

**Context 6036**

NGR 634004 164325. Fill of small pit (1.0 x 0.82 m, 0.53 m deep), cut into top of backfilled grave 6060. Likely to be from same individual as redeposited cremated remains from grave 6060.

*Cremated human bone (redeposited)*: c. 11 frags. subadult/adult

*Cottingham Hill (Area 15)*

**Context 5134**

NGR 633843 164107. Waterlain deposit in natural hollow, sealed by dark layer 5200, cut by grave 5166. No correlation with known burials in vicinity.

*Human bone*: 1 bone, adult >18 yr

*Ebbsfleet Lane (Area 16)*

**Context 1088**

NGR 633374 163326. Redeposited in backfill (mid-sequence) of large boundary ditch 1208, group 1384. Deposited as complete frontal bone. Middle-Late Iron Age.

*Human bone*: c. 3% adult c. 20-45 yr ?female

**Context 1127**

NGR 633374 163326. Redeposited in backfill of large boundary ditch 1195, group 1384. Deposit also rich in domestic debris. Cut section of femur shaft (by knife) with animal gnawing and handling polishing. Middle-Late Iron Age.

*Human bone*: 1 frag, adult >18 yr

**Context 1148**

NGR 633374 163326. Redeposited in cassy backfill of large boundary ditch 1195, group 1384, 3 deposits earlier than 1127. Frags tibia shaft, eroded surface with longitudinal splitting - ie, weathered. Impossible to say if same individual as 1127. Middle-Late Iron Age.

*Human Bone*: a few frags, adult c. >18 yr

**Context 1184**

NGR 633374 163326. Redeposited in slightly cassy backfill in base of the ditch of large boundary ditch 1195, group 1384, 3 fills earlier than 1148. Most of skull, bits of upper and lower limbs. All likely to be same individual. Animal gnawing, bleaching, and cracking on limb bones. Impossible to say if same as 1127 and 1148. Middle-Late Iron Age.

*Human Bone*: c. 25%, adult c. 18-30 yr male

*Weatherlees WTW (Compound 16)*

**Contexts 3137, 3138 and 3139**

NGR 633323 163081. Redeposited in backfill of large boundary ditch 3131, several deposits below base of grave 3121. Few frags lower limb and axial skeleton. Likely to be same individual. Late Iron Age-early Romano-British.

*Human bone*: c. 8 frags, adult c. >25 yr, poss >45 yr ?male

## Appendix 2.4. Iron Age and Romano-British coins

by Nicholas Cooke

Iron Age coins are potin; Roman coins are copper alloy.

ON	Area	Ctxt	Denom.	Diam (mm)	Wt (g)	Issuer	Description	Issue date (AD)	Ref.
<i>Iron Age</i>									
18	16	1046		15	3.1				
64	16	1799		17	3.4	Unknown	Illeg. Kentish Primary Series	2nd–1st century BC	as VA 1402
322	C16	3351		17	3		potin (Thurrock type)		
<i>Roman</i>									
32	16	1001	Nummus	19	1.3	Constantius II	Fel Temp Reparatio Fallen Horseman (FH2) type. Mint uncertain. Worn	350–360	copy as LRBC II, 47
201	15	5226	Antoninianus	18	1.4	Radiate copy	Barbarous radiate copy Tetricus II, rev. uncertain. V. worn	270–296	-
206	15	5001	Nummus	10	0.6	House of Constantine	Fel Temp Reparatio Fallen Horseman (FH2) type. Mint uncertain. Worn	350–360	copy as LRBC II, 47
207	15	5001	Nummus	14	1.1	House of Constantine	Gloria Exercitus type, 2 soldiers, 2 standards. Trier. Corroded	330–345	?copy of LRBC I, 60
208	15	5001	Nummus	8	0.8	House of Constantine	Fel Temp Reparatio Fallen Horseman type. Mint uncertain. Worn	350–360	copy as LRBC II, 25
209	15	5001	Nummus	12	1.3	House of Theodosius	Victoria Auggg type. Mint uncertain. Worn	388–402	as LRBC II, 162,
211	15	5001	Nummus	15	0.9	House of Constantine	Gloria Exercitus type, 2 soldiers, 1 standards. Mint uncertain. Corroded	335–341	as LRBC I, 48
215	15	5001	Nummus	12	1.2	Theodosius	Victoria Auggg type. Mint uncertain. Worn	388–402	as LRBC II, 162,
216	15	5237	Nummus	18	1.6	Valentinian I	Securitas Reipublicae type. Trier. Worn	364–375	as LRBC II, 82
217	15	5001	Nummus	18	2.1	Valentinian I	Securitas Reipublicae type. Aquilea. V worn	367	LRBC II, 1005
224	15	5114	As	24	11.9	Faustina II	Saluti Augustae type. Rome. Worn	161–175	RIC III, Marcus Aurelius 1670
228	15	5152	Nummus	12	0.7	House of Constantine	Victoriaddauggqnn type, 2 facing victories with wreaths. Mint uncertain. Corroded	341–348	as LRBC I, 137
421	14	6185	Nummus	18	1.6	House of Valentinian	Securitas Reipublicae type. Mint uncertain. Corroded	364–375	as LRBC II, 82
422	14	6185	Nummus	12	0.7	House of Valentinian	Gloria Romanorum type. Mint uncertain. Corroded	364–375	?copy as LRBC II, 78
660	9	8001	As/Dupondius	30	13.4	Marcus Aurelius	Winged victory, shield on palm. Rome. Corroded	161–180	as RIC III, Marcus Aurelius 930
661	9	8001	As/Dupondius	24	4.4	Unknown	Illegible	1st–3rd C	-

## Appendix 2.5. Radiocarbon measurements

by Alistair Barclay

The radiocarbon results were calibrated using calibrated using OxCal v4.0.

Lab. code	Sample	$\delta^{13}\text{C}(\text{‰})$	Radiocarbon Age (BP)	Calibrated date (95%)
NZA-29152	7024, ditch 7439, Broadley Road, human bone (tibia & humerus)	-21	2867±65	1260–860 cal BC
NZA-28975	1111, grave 1110, Ebbsfleet Lane, human bone (left femur)	-19.9	1974±30	50 cal BC–cal AD 80
NZA-28976	3122, grave 3121, Weatherlees WTW, human bone (left femur)	-19.7	2016±30	100 cal BC–cal AD 60
NZA-28977	5135, ditch 5143, Cottington Hill, human bone (left femur)	-19.7	1263±30	cal AD 670–860

## Appendix 2.6. Soil and sediment descriptions

by Catherine Barnett

### Monolith 50, Ebbsfleet Lane, Test Pit 4 [1793] (Fig. 2.18)

Depth<sup>1</sup> = 0m/top of sediment in monolith and stripped ground surface/2.76 m aOD (but note monolith not marked on section and is 0.43 m empty monolith at top ie, total monolith length = 1.05 m, sediments = 0.62 m, have assumed levels taken in this case on the top of the sediments)

Depth <sup>1</sup> (m)	Sub-samples taken	Context	Description	Interpretation
0–0.28	none	1796	0–0.03 m 10YR 3/2 v. dark greyish-brown dry compacted humic silt loam, well-developed small blocky structure, abundant macropores, fine roots & common CBM 0.03–0.28 m 10YR 3/1 v. dark grey highly humic silty clay loam, well-developed granular & small blocky structure. Occasional fine rootlets, rare rounded chalk < 15 mm. Rare angular flints & specks of CBM. Clear (but bioturbated) boundary	Modern soil A horizon
0.28–0.49		1795	0.28–0.38 m As below, v abundant mottling with dark humic silt loam due to v. abundant worm burrows filled with overlying, heavily bioturbated. Well-developed medium blocky structure. Clear boundary 0.38–0.49 m 10YR 4/2 dark greyish-brown fine slightly humic silt loam. Common worm burrows filled with overlying, mixed & mottled as below. CBM <2 mm and 5 mm wood charcoal at 0.45 m. Gradual boundary	B1 horizon  B2 horizon (formed in waterlain colluvium)
0.49–0.62		1794	10YR 4/3 brown gleyed massive silt loam mottled with common fine Fe (10YR 4/6 dark yellowish-brown), abundant fine pockets Fe stained fine sand (10YR 5/6 yellowish-brown). Rare angular-sub-angular gravel <5 mm. Medium blocky structure. Few mollusc frags & fine rootlets. Abundant worm burrows filled with dark humic clay (10YR 2/2 v. dark brown) from overlying	Mixed nature & inclusions suggest slightly calcareous colluvium reworked & retain by water

### Monolith 29 A&B, Ebbsfleet Lane, LIA–RB ditch 1384, cut 1372 (Fig. 2.19)

Depth<sup>1</sup> = 0 m/top of sediment in monolith and stripped ground surface/4.18 m aOD

Depth <sup>1</sup> (m)	Sub-samples taken	Context	Description	Interpretation
0–0.07		1369	10YR 3/2 v. dark greyish-brown slightly humic silt loam-very fine sand. Friable, common macropores & few fine rootlets. No discernible structure (massive), horizontal crack at 70 mm (unit base) may indicate large blocky/columnar structure (larger than monolith). Gradual bioturbated boundary	?tertiary fill ditch, likely undergoing alteration into modern soil B horizon
0.07–0.27	0.14	1357	0.07–0.19 m 10YR 3/2 v. dark greyish-brown slightly humic fine sandy clay silt. Weak small blocky structure, numerous macropores. Common worm burrows. Clear boundary 0.19–0.27 m 10YR 4/3 brown soft clay silt-very fine sand. Common macropores & worm burrows filled with overlying. Very weak blocky structure. Gradual boundary	2ndry fill inwashed fine water sorted colluvium, heavily bioturbated
0.27–0.57	0.30 0.46	1370	2.5Y 4/3 olive brown soft friable clay silt loam. Few <10 mm pockets of pale (2.5Y 6/4) light yellowish- brown clean silt-very fine sand. V. abundant macropores & root voids. Abundant humic clay-lined worm burrows traceable to top of monolith. Weak blocky structure. Slightly Fe stained throughout. Diffuse boundary	
0.57–0.91	0.62 0.78	1358	2.5Y 4/4 olive brown with abundant faint coarse Fe mottles. Soft friable clean silt, few rounded (fluvially) small stones. Diffuse boundary	2ndry fill of inwashed & water-sorted colluvium & alluvium
0.91–0.98	0.94	1362	As above, slightly cleaner massive silt-very fine sand with few molluscs frags & faint medium Fe mottles, common macropores. Diffuse boundary	
0.98–1.21	1.02 1.10 1.18	1359	2.5Y 5/3 light olive brown friable clay silt, weak medium blocky peds. Common flecks of charcoal.	
		1361	Moderate fine Fe along common voids & macropores (10YR 5/6 yellowish-brown). Clear boundary	
1.21–1.25	1.22	1362	2.5Y 4/3 olive brown massive greasy clay, no inclusions. Abrupt (erosional/ rapid sealing) boundary	Alluvium
1.25–1.29	1.26	1364	2.5Y 5/6 light olive brown soft Fe stained clay silt with streaks & mottles of white chalk & 2.5Y 4/3 olive brown soft silt. Clear-abrupt boundary	Mixed layer, likely slump (or dump) of ditch edge material
1.29–1.41	1.34	1367	2.5Y 5/3 light olive brown, soft clean very fine sand, few faint Fe mottles, few molluscs, no other inclusions. Rare specks of charcoal. Clear boundary	Waterlain, likely alluvial.
1.41–1.64m	1.42 1.50 1.58 1.62	1368	1.41–1.49 m 2.5Y 4/3 olive brown soft moist friable massive silt-very fine sand, slightly higher clay content than overlying layer. Abundant moderate medium Fe mottles. Diffuse boundary	Waterlain primary fill, likely alluvial.
		1365	1.49–1.64 m as above but few faint medium Fe mottles, moderately well-developed large granular-small blocky structure, occasional macropores NB cut & underlying natural not collected by monolith	

## Appendix 2.7 Later Prehistoric and Roman Pottery Fabrics

Where possible, fabrics have been correlated with the Canterbury fabric/ware codes (CAT).

### Imported Finewares

- E111: Terra Rubra (type unspecified).  
 E128: Central Gaulish colour coat (CAT: R22).  
 Q111: Moselkeramik/Trier black-slipped ware (CAT: R36).  
 TN: Terra Nigra (CAT: BER12.ELG).

### Samian

- E300: Samian, source unspecified.  
 E301: South Gaulish samian, source unspecified (CAT: R42).  
 E304: Central Gaulish samian (CAT: R43).  
 E308: East Gaulish (source unspecified, CAT: R46).  
 E309: East Gaulish (Rheinabern).

### British Finewares

- E159: British colour-coat, unassigned.  
 E170: Oxfordshire colour coat (CAT: LR10).  
 E176: Nene Valley colour-coated ware (CAT: LR11).

### Amphora

- Dressel 20: Dressel 20 (CAT: R50).

### Mortaria

- E200: Mortaria, source unspecified (CAT: R99).  
 E205: Rhineland mortaria.  
 E209: Oxfordshire whiteware mortaria (CAT: LR22).  
 E210: Oxfordshire white-slipped redware.  
 E211: Oxfordshire red/brown colour coat mortaria.  
 LNVM: Lower Nene Valley buff mortaria, mid to late 3rd to 4th century AD (CAT: LR21).

### RB Reduced Wares

- E101: South-east Dorset Black Burnished Ware (CAT: R13).  
 Q100: RB greyware.  
 Q105: Hard sandy greyware with coarse-sized grains.  
 Q107: Fine greyware.  
 NKFW: North Kent fine wares, date range *c.* AD 70–150, possibly to end 2nd century.

### RB Oxidised Wares

- E126: Pompeian-red ware, 1st century AD (CAT R23).  
 RDBK: Ring-and-dot beaker fabrics (Davies *et al.* 1994, 142), buff-coloured finewares, dominates late Neronian and Flavian assemblages in London, sharp decline in early 2nd century.  
 NFSE: RB whiteware from Northern France, comes in *c.* AD 50/60–*c.* 150/160.  
 Q101: RB oxidised ware.  
 Q102: RB whiteware.  
 Q103: White-slipped redware.  
 Q104: RB oxidised ware with coarse-sized grains.  
 Q106: Verulamium-region whiteware (CAT: R15).

### Sandy wares (later prehistoric and Roman)

- Q1: Soft, sandy fineware; common (20%) medium and coarse-grained quartz, sub-angular, moderately sorted, fine sandy clay matrix; sparse (5%) flint, angular, <1 mm; rare (1%) rounded red iron oxides, <1 mm.  
 Q2: Soft, silty; abundant (50%) *v.* fine–fine-sized quartz, angular (where visible), well sorted.  
 Q3: Soft, granular; common (25%) quartz, sub-rounded–sub-angular, coarse-grained, well sorted; moderate red iron oxides, sub-rounded, <1 mm, well sorted.  
 Q4: Soft, sandy; common (20–25%) linear voids from organic inclusions; sparse calcined, angular flint (7%), <1.5 mm, poorly sorted, sandy clay matrix.  
 Q5: Soft, fine sandy; sparse (7%) red iron inclusions, rounded, <2 mm, *v.* fine sandy clay matrix. May contain <3% *v.* fine flint and/or organic material.  
 Q6: Soft sandy; abundant (40%) sub-rounded–sub-angular coarse-sized quartz grains, well sorted.  
 Q7: Soft silty; sparse (3%) argillaceous inclusions or grog, <2 mm; rare organic inclusions, burnt out, <4 mm; *v.* occasional rounded coarse-sized quartz, fine sandy clay matrix.  
 Q8: Soft, sandy; *v.* common (30%) sub-angular–angular coarse-sized quartz grains, well-sorted; moderate (10%) calcined, angular flint, <2 mm, most *c.* 1 mm, moderately sorted; rare (2%) rounded coarse-sized grains of glauconite, visible on surface. Probably LIA, very similar to Q6 but with flint.  
 Q9: Soft, smooth; rare (2%) argillaceous inclusions of ?grog, sub-angular, <1 mm, fine sandy clay matrix; moderate (10–15%) sub-rounded, sub-angular and angular quartz.  
 Q10: Soft, silty; no visible inclusions, *v.* fine sandy clay matrix. LIA.  
 Q11: Hard, sandy; *v.* common–abundant (30–40%) coarse-sized sub-angular quartz, well sorted; sparse (5–7%) platy shell, <2 mm; rare sub-rounded flint and sandstone.  
 Q12: Hard, slightly micaceous; abundant (40%) medium–coarse-grained quartz, sub-angular; sparse (7%) rounded red ferric inclusions, 0.5 mm.  
 Q13: Soft, silty; sparse–moderate (7–10%) angular sandstone frags, <2 mm, moderately sorted, fine sandy clay matrix; occasional coarse-sized quartz grains. M–LIA.  
 Q14: Hard, sandy; abundant (40%) coarse-sized sub-angular quartz grains and medium-grained rounded glauconite, well sorted; moderate (15%) sub-angular calcareous inclusions, moderately sorted. LIA.  
 Q15: Soft, sandy; fine sandy clay matrix; sparse (7%) rounded–sub-angular red iron inclusions, <2 mm, poorly sorted; occasional (<3%) rounded argillaceous inclusions, <2 mm, well sorted. AD 43–70.

**Q2/7/10: Sandy fabric of uncertain date**

- Q108: RB coarse sandy ware (where distinguishable from LIA).  
 Q109: RB fine sandy ware.  
 Q110: Hard, slightly soapy; abundant (40%) detrital quartz and other rock frags; rounded to sub-angular, v. variable size, <5 mm, poorly sorted. ERB.  
 Q99: Sandy sherds, too small to ascertain fabric.  
 QF99: Moderate-common (15–20%) sub-rounded to round quartz, coarse–v. coarse; sparse (7%) angular flint, <1 mm.  
 QG1: V. coarse, sandy; v. common (30%) sub-angular quartz, medium-coarse-grained, well sorted; sparse (7%) fine-medium-grained black inclusions, probably glauconite; common (20%) grog, sub-angular, <3 mm, poorly sorted.  
 QV1: Soft, silty; common (20–25%) linear voids from burnt out organic inclusions, <5 mm length; occasional pieces of angular, burnt flint <2 mm, fine sandy clay matrix.

**Flint-tempered fabrics** (later prehistoric and Roman)

- LBAF1: Soft, sandy; moderate (10%) calcined flint, angular, <3 mm, moderately sorted, matrix of abundant (50%) quartz, sub-angular-angular, v. fine-coarse grained, poorly sorted; rare (2%) iron oxides, <1 mm, sub-rounded-sub-angular.  
 LBAF2: Soft, sandy; common (20–25%) calcined flint, angular, <2 mm, poorly sorted, silty clay matrix; sparse (5–7%) organic voids, <1 mm, sparse (3–5%) iron inclusions, <2 mm, sub-rounded, moderately sorted.  
 LBAF3: Soft, sandy; v. common (30%) calcined flint, angular, <2 mm, poorly sorted, fine sandy clay matrix; occasional rounded iron oxides, <1 mm.  
 F4: Soft, silty; common (20–25%) calcined flint, angular, <1 mm, well sorted; sparse (3%) argillaceous inclusions (grog/clay pellets), sub-rounded, <1 mm, silty clay matrix; sparse (5–7%) burnt out organic material, <1 mm.  
 F5: Soft, harsh; moderate (15%) calcined, angular flint, <7 mm, poorly sorted; sparse (7%) burnt out organic inclusions, <2 mm.  
 F6: Soft, smooth; v. common-abundant amount (30–40%) angular, calcined flint, v. poorly sorted, frags <2 mm but most v. fine, <0.5 mm. Silty clay matrix. LBA.  
 F7: Possible LIA, similar to LBA F4. Soft, smooth; moderate-common (15–20%) calcined, angular flint, <1.5 mm, poorly sorted but mostly v. small; sparse voids from organic inclusions, <4 mm, v. fine sandy clay matrix. Quite smooth fracture.  
 F8: Soft fabric; common (20–25%) calcined, angular flint, <2 mm, poorly sorted but many pieces on larger side; sparse (3%) red iron inclusions, rounded, <1 mm, v. hackly fracture. Catch-all fabric for coarse flint-tempered sherds of probable LIA date.

- F9: Soft, silty; sparse flint (3–5%), mostly calcined and angular, fine sandy clay matrix. Probably LIA.  
 F10: Soft, slightly harsh; common–v. common (25–30%) calcined, angular flint, moderately sorted, <2 mm.  
 F11: Soft, slightly soapy, rough; moderate (10–15%) calcined, angular flint, <2 mm, well sorted; moderate (15%) organic inclusions, now burnt out.  
 F12: Soft, smooth; moderate-common (15–20%) calcined, angular flint, <2 mm, moderately sorted; moderate (10–15%) voids from burnt out organic inclusions, silty clay matrix. LIA.  
 F13: Soft, fairly smooth; moderate (10%) calcined, angular flint, <2 mm, moderately sorted; sparse organic inclusions, silty clay matrix. LBA.  
 F14: Soft, silty; sparse (7%) calcined, angular flint, <4 mm, poorly sorted; sparse (7%) burnt out organic material, <2 mm, fine sandy clay matrix; 5–7% coarse-sized sub-angular grains.  
 F15: Soft, harsh; v. common-abundant (30–40%) angular, calcined flint, <4 mm, poorly sorted, silty clay matrix, no quartz grains visible at X10. Most sherds thick walled, c. 13 mm, more than the LBA fabrics. M-LBA. Some rounded argillaceous lumps visible on ext. surfaces, not in break.  
 F16: Hard, rough; v. common sub-angular-angular flint, most grey or white ?calcined, some red and black detrital fragm, silty clay matrix.  
 F17: Soft, silty; moderate-common (15–25%) calcined, angular flint, <7 mm, coarse sandy clay matrix; sparse-moderate organic inclusions. Catch all fabric for general flint and organic-tempered fabrics of M-LIA date, v. similar to F12.  
 F2/F8: Coarse flint-tempered ware. LBA or LIA.  
 F4/F7: Fine flint-tempered ware. LBA or LIA.  
 F99: Flint-tempered fabric, too small to ascertain type.

**Grog-tempered** (later prehistoric and Roman)

- G1: Soft, soapy ; common (20%) grog, angular, <2 mm, well sorted; sparse (3%) calcined flint, <1 mm, silty clay matrix.  
 G2: Soft, soapy; common (20–25%) grog, angular, <2 mm, moderately sorted, silty clay matrix (CAT: B2).  
 G3: Soft, soapy; common (20%) grog, <3 mm but mostly <1 mm, sub-rounded, moderately sorted; sparse (7%) platy shell, <2 mm.  
 G4: Soft, soapy; common grog (20%), sub-angular-angular, oxidised with flint-inclusions and unoxidised, <4 mm, poorly sorted; sparse (7%) flint, angular, <1.5 mm. LIA/ERB.  
 G5: Soft, soapy; v. common (30%) sub-angular-angular grog, mostly 1 mm, well-sorted, sandy clay matrix; sparse (3–5%) sub-rounded-rounded quartz grains are visible.  
 G6: Soft, soapy; common (20%) sub-rounded-sub-angular grog, <1 mm, well sorted, silty clay matrix; occasional coarse rounded quartz grains. LIA/ERB.

- G7: Soft, soapy; common (20–25%), grog, sub-angular, <5 mm, poorly sorted, v. fine sandy clay matrix; occasional sub-rounded quartz grains. Sandier version of G2. M–LIA.
- G100: Grog-tempered, ?RB.
- G99: Grog-tempered fabric, sherd too small or abraded to be identified.
- GS1: Soft, soapy; common (20%) angular grog, <3 mm, some seem to be shell-tempered; moderate (15%) platy shell (<2 mm), poorly sorted, silty clay matrix.
- Calcareous wares*
- C1: Soft, silty; v. common (30%) calcareous inclusions, mostly shell, angular, <2 mm, moderately sorted; moderate (15%) calcined, angular flint, <1 mm, moderately sorted; occasional coarse-sized quartz grains and iron inclusions, silty clay matrix.
- C2: Soft silty; moderate (10%) sub-angular–angular calcareous inclusions, <3 mm, moderately sorted, silty clay matrix.
- S1: Soft, silty; common–v. common (25–30%) shell, platy and crushed frags, <2 mm, poorly sorted, silty clay matrix. M–LIA.
- S2: Soft, slightly sandy; moderate (10–15%) shell, <4 mm, poorly sorted, silty/v. fine sandy clay matrix; occasional coarse-sized quartz grains.
- S3: Soft, silty; abundant (40%) v. finely crushed shell, mostly <1 mm, well sorted; sparse (3%) angular flint, <2 mm; occasional v. coarse quartz grains, sub-angular, 2 mm, silty clay matrix.
- S100: Late shell-tempered ware, East Midlands tradition, Romano-British.
- S99: Leached shelly fabric, too abraded to describe fabric. Probably LIA/ERB.



# 3. A Medieval Enclosure and Bakery or Brewhouse at Fulston Manor, Sittingbourne

by Andrew B. Powell, Catherine Barnett, Jessica M. Grimm, Lorraine Mephram,  
Christopher Phillipotts, and Chris J. Stevens

## Background

An excavation was carried out by Wessex Archaeology on a c. 0.4 ha site at Fulston Manor on the south-east margin of Sittingbourne centred on NGR 590740 162750 (Fig. 3.1) in November 2004 – January 2005. It was part of a programme of archaeological works required by Swale Borough Council, on the advice of Kent County Council (KCC), as a planning condition for a c. 22 ha residential development by David Wilson Homes Ltd. Geophysical survey by Stratascan (1999) and field evaluations by AOC Archaeology (1999) and Wessex Archaeology (2005e) had identified features and deposits pointing to the presence of a medieval settlement in the north-west corner of the proposed development area, approximately 100 m north-east of the present Fulston Manor Farm. The excavation was carried out in compliance with a written scheme of investigation prepared by Wessex Archaeology and approved by KCC.

The site was generally flat, falling gently from 28.2 m aOD at the south to 26.5 m aOD at the north. It lay on the edge of the north Kent plain, the ground rising to the south onto the Chalk downs, and with the Swale estuary and the Isle of Sheppey to the north. The underlying geology is mapped as Upper Chalk overlain by a drift deposit of brickearth. Below the topsoil and a silty clay subsoil containing frequent flint and chalk inclusions, the natural across the site comprised areas of soliflucted chalk and flint, reddish-brown clay-with-flints, and brickearth, a combination which made it difficult in places to recognise features at the levels from which they were cut during machine stripping of the site. Prior to the excavation the site was an orchard.

Most of the archaeological remains proved to be of medieval date, with the pottery indicating a possible date range spanning the mid-11th to the 14th centuries. However, many of the features, particularly the ditches, were either undated or contained only small quantities of finds which were, in some cases, clearly residual. Moreover, some of the stratigraphical relationships between features were unclear due to similarities in their fills and the truncation to which many had been subject by cultivation. As a result, neither the phasing nor the interpretation suggested below should be considered definitive.

This report integrates the stratigraphic analysis of the excavation with the specialist finds and environmental analyses, placing the site within its historical context as provided by documentary research into the medieval and post-medieval manor at Fulston and the wider area (full reports are available in the archive).

## Prehistoric

Five sherds of late prehistoric pottery in coarse flint-tempered fabrics were recovered. Four were residual in medieval pits but the fifth, of probable Late Bronze Age/Early Iron Age date, was the only datable find from a 5m long gully (346) at the north-west (Fig. 3.2). Although this feature was cut by the extension to medieval bakery 405 (below) and is, therefore, potentially of late prehistoric date, this sherd too may be residual, the other finds from the gully – small quantities of animal bone, fired clay, and worked and burnt flint – all being found also in many medieval features.

Most of the worked flint assemblage (128 pieces) consists of flake debitage and angular shatter, some of which has been crudely retouched or simply used in an unretouched state; the raw material appears to have been pebble flint. The only formal tools are two bladelets of Mesolithic or Early Neolithic date, one of which has been notched on the proximal end of the left dorsal margin, and two penannular scrapers on thick sub-circular blanks, consistent with a Bronze Age date. Much of the burnt flint from the site is also likely to be prehistoric, although some may result from the operation of the medieval hearths, ovens, and other features using fire. Neither the worked nor the burnt flint are mentioned further in this chapter.

## Romano-British

Romano-British activity is represented solely by residual finds – a single sherd of greyware pottery, and a number of fragments of ceramic building material possibly collected from a nearby site and re-used during the medieval period. The latter includes two combed fragments probably deriving from box flue tiles (*tubuli*) and one possible *imbrex* fragment. A pin

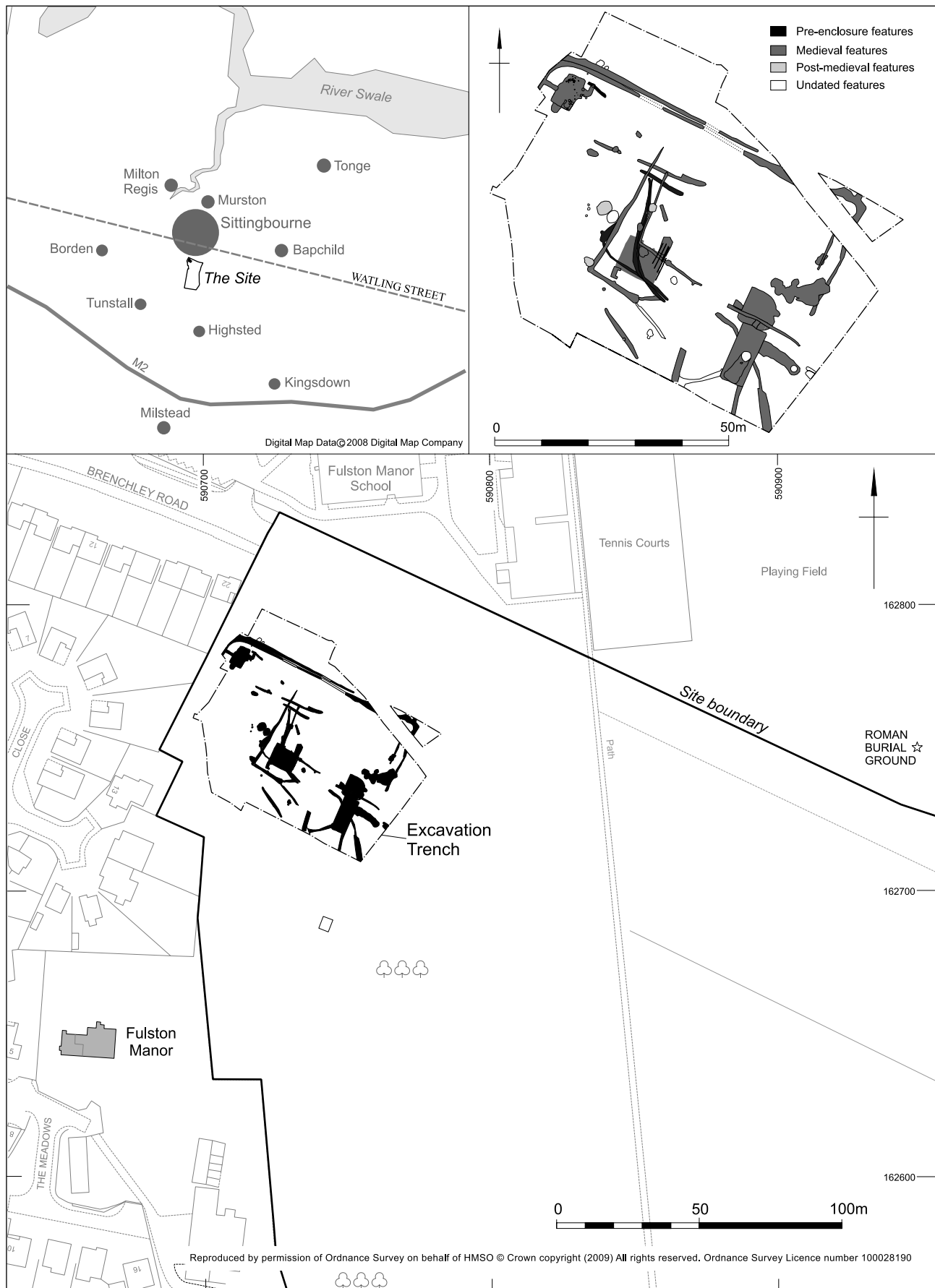


Figure 3.1 Site location, with local places mentioned in text and unphased site plan

with a faceted cuboid head recovered from a tree hollow is of a type found in late Roman contexts (for instance, at Colchester: Crummy 1983, fig. 29, 490), in Anglo-Saxon graves (eg, Shudy Camps, Cambridgeshire: Lethbridge 1936, fig. 4, C), and in later Saxon contexts (eg, *Hamwic* (Southampton): Hinton 1996, fig. 9).

The A2 trunk road running through Sittingbourne is on the line of Watling Street, the Roman road from London to Canterbury, and the village of Milton Regis to the north-west of Sittingbourne had Romano-British origins (Everitt 1986, 311). Large-scale Ordnance Survey maps have recorded the site of a Roman cemetery approximately 230 m to the east of the site (Fig. 3.1).

## Medieval

The evidence for medieval activity comprised an array of ditches forming a series of apparent enclosures, two large sunken hollows, one of them containing an oven and a hearth, a number of pits, post-holes, metallised surfaces, and a drier. Two broad phases of medieval activity – mid-11th–early 13th century and early 13th–mid-14th century – were identified on the basis of the pottery assemblage (Table 3.1) and the small number of stratigraphic relationships.

**Table 3.1 Medieval pottery wares**

Ware type	No. sherds	Weight (g)
NW Kent sandy ware	98	962
NW Kent shelly ware	313	2825
London type ware	29	521
Medieval Tyler Hill	129	1676
Total	569	5984

### *Mid-11th–early 13th century*

This period saw the construction of a large rectangular settlement enclosure containing a building interpreted as a bakery in its north-east corner (Fig. 3.2). There is evidence of a number of phases of activity, with a series of internal ditches representing either divisions within the enclosure or some reorganisation of activity. The pottery consists largely of sherds in coarse shelly fabrics deriving from necked jars with everted rims, and some sandy wares in similar forms, both types falling within ceramic traditions defined for north-west Kent (Canterbury type series, fabrics EM35, M40), with parallels for example at Rochester (Harrison 1972) and on several sites along the route of the Channel Tunnel Rail Link (Barclay *et al.* 2006).

However, a tighter date range of later 12th–early 13th century can be suggested for at least the more diagnostic pottery elements, on the basis of the jar rim forms which show some development from the simply everted rims of the Saxon-Norman period. It is possible, therefore, that the main period of activity was relatively short-lived, and weighted towards the end of the earlier medieval phase.

### Ditches and enclosures

Most of the ditches recorded across the site were aligned either north-north-east to south-south-west or west-north-west to east-south-east and appeared to form a number of rectangular enclosures of varying size (or one large enclosure containing sub-divisions), although no complete enclosure circuit was identified (Fig. 3.2). Many of the ditches had been truncated and the southern side of the largest suggested enclosure appears to have lain outside the excavation area.

A number of ditches, however, did not follow the predominant orientation and, as some of these were stratigraphically earlier than some enclosure ditches, they may have pre-dated the construction of the enclosures. They include ditch 341 which ran north-west before curving to the north where it merged with a larger feature, 1.70 m wide, 0.50 m deep and at least 5.0 m long, both features being cut by a later enclosure ditch (358). Ditch 341 was also cut at the east – by ditch 344, whose line, also curving towards the north, was followed to its immediate east, and in places cut, by ditch 343. These ditches were generally shallow (c. 0.10–0.30 m deep) and of variable width (averaging c. 0.50 m), and while they were clearly not all contemporaneous, they may indicate a phase of pre-enclosure activity, possibly representing parts of field boundaries.

The principal ditches dated to this period can be grouped into three main elements – a large enclosure (enclosure 1) of which the north side and part of the east side were identified; a number of ditches inside enclosure 1 parallel to its northern side; and a smaller enclosure or sub-division in the north-eastern part of enclosure 1, represented by parts of its southern and western sides (enclosure 2).

Enclosure 1 was c. 70 m long west-north-west to east-south-east; if its southern side lay beyond the southern edge of the excavation it would have been over 50 m wide, although no ditches were identified in the evaluation trenches which extended south of the excavation area. Its northern and eastern boundary comprised two sets of parallel ditches – 336, 1126 (unexcavated), and 338 on the outside, and 337 and possibly 800 on the inside. The outer ditches varied considerably in width – at the north-west corner, ditch 336 was at least 1.50 m wide and 0.50 m deep with an irregular concave profile but, towards the east,



Figure 3.2 Early medieval features

ditch 338 was as little as 0.30 m wide and 0.15 m deep, and it is not clear whether it ended at a terminal at the south-east or had been truncated beyond that point. Their fills produced three sherds (23 g) of mid-11th–early 13th century pottery, as well as small quantities of fired clay, animal bone, and an iron nail.

The inner set of ditches were variable in size, being 0.30–0.60 m wide and up to 0.20 m deep. While ditch 337 produced only small quantities of animal bone and oyster shell, ditch 800 contained, in addition, pottery, fired clay, an unidentifiable iron object, and a piece of lava quern. Although the pottery was dated to the mid-11th–early 13th century, the ditch cut a pit (802, below) which produced late 12th–early 13th century pottery, placing ditch 800 and possibly,

therefore, the whole inner ditch circuit, at the end of this phase and contemporary with the late 12th–early 13th century archaeomagnetic dates obtained from the oven in hollow 405, located in the corner formed by ditch 337 (below).

There were a number of gaps in both the outer and inner ditches, some of them possibly the result of truncation. Only one, a 5.40 m wide gap in inner ditch 337, lay between clear ditch terminals and the absence of a corresponding gap in the outer ditch at this location suggests that the outer and inner circuits represent different phases of construction rather than forming a double-ditched boundary. Although the outer and inner ditches abutted each other at the west, any stratigraphical relationship between them

could not be ascertained, so their relative chronology could not be determined. To the east the ditches were up to 0.70 m apart and on the eastern side of the enclosure ditches 338 and 800 were 3.0 m apart. It is assumed that ditch 800 formed part of the inner circuit, although this cannot be proved as its possible intersection with ditch 337 lay outside the excavated area.

Inside enclosure 1, parallel to its north side, were three lengths of ditch, two of them (334 and 339) on the same line, and 340 almost parallel to ditch 339, 1.20–2.20 m to its south. Ditch 339 was up to 1.50 m wide at the east, but less than 0.70 m wide and 0.20 m deep where truncated to the west, truncation possibly accounting for the 4.0 m wide gap between ditches 339 and 334. The only find from these three ditches was a single sherd of mid-11th–early 13th century pottery from ditch 334, and their relationship to enclosure 1 is unclear. However, like ditches 341, 344, and 343 (the latter two stopping just short of ditch 339) ditches 339 and 340 were cut by the ditches of enclosures 2 and 3.

Enclosure 2 was represented by ditches 358 and 719 which met at a right-angle and formed parts of the western and southern sides respectively; the ditches of enclosure 1 presumably bounded the northern and eastern sides. It measured 46 m by 36 m internally. The only dating evidence from the ditches was two sherds (4 g) of mid-11th–early 13th century pottery recovered with small quantities of animal bone, ceramic building material, fired clay, and oyster shell. Ditch 358 petered out to the north, but ditch 719 appeared to end at a rounded terminal c. 12 m from the south-west corner. No opposing terminal or eastward continuation of this ditch were recorded, giving the impression that the enclosure was open at the south-east.

A shallow, slightly curved, linear depression (457), 2.0–3.0 m wide and up to 0.15 m deep, ran for c. 10 m from a rounded terminal close to the south-eastern edge of the excavation, being cut at the north-west by a large 13th–14th century hollow (450, below). At its east end there was a compact layer of flints on the base forming a metallised surface while towards the west the metallised surface overlay a layer of gritty clay above another of stony silt. The surface produced significant quantities of mid-11th–early 13th century pottery and oyster shell, as well as tile and animal bone. The concave surface of the metallising was subsequently filled with soil (816/8304) containing further oyster shell and pottery, including seven sherds of early 13th–mid-14th century date, along with pieces of lava quern, animal bone, a wavy-edged horseshoe fragment of 12th–13th century date (Clark 1995, type 2), and an iron bar. This accumulation of material, possibly contemporary with the use of hollow 450, was cut at the east end by a shallow sub-

circular pit (817), 1.10 m in diameter and 0.30 m deep, from which no finds were recovered. The metallised surface of the linear feature suggests that it represents some form of track or pathway, possibly associated with access into enclosure 1 and/or enclosure 2. To the immediate east of its terminal were the terminals of two undated intercutting ditches (326 and 327) that continued south-east beyond the site (see below). These, too, may have been associated with the enclosures.

A short (1.50 m) length of ditch (461), cut at either end by later features (wall 349 and hollow 450, below), ran perpendicular to feature 457 to its immediate north-west. It was 1.0 m wide and 0.40 m deep with straight steep sides and a flat base, and its single fill contained three sherds of mid-11th–early 13th century pottery, animal bone, and a large number of oyster shells.

### Bakery

A large hollow (405) in the corner formed by ditch 337 in the north-west of the site, contained the remains of a hearth and an oven (Figs 3.3–4). It was up to 7.40 m long, aligned north-east to south-west, 4.80 m wide and 0.70 m deep, with steep to vertical sides and a flat base, and with an irregular L-shaped extension on its eastern side. A number of subcircular indentations in the sides of the hollow may indicate the positions of posts, but these form no consistent pattern and the form of any superstructure built over the hollow remains unclear, therefore. The hearth and the oven were situated side by side at the south-western end. The hollow cut a short ditch (949) running perpendicular from inner enclosure 1 ditch 337.

Traces of a clay floor (944), up to 0.05 m thick, survived mainly in the centre of the hollow, overlain by an extensive ‘occupation’ layer (903) of chalky silt containing charcoal, presumably derived from both the oven and the hearth. The charcoal assemblage was dominated by oak (*Quercus* sp.) (at 52%), with substantial amounts of beech (*Fagus sylvatica*), elm (*Ulmus* sp.), and holly (*Ilex aquifolium*) and lesser amounts of hazel (*Corylus avellana*), lime (*Tilia* sp.), and wood of pomaceous fruits, a group which includes taxa such as hawthorn, whitebeam, pear, and apple (Table 3.2).

The ‘occupation’ layer, which was of variable thickness, in places up to 0.20 m, produced mid-11th–early 13th century pottery, animal bone, fired clay, and an iron nail. The patchy nature of the clay floor may be due not just to wear but also to the regular clearing out of debris from the hollow. The unevenness of the base of the hollow which, in front of the oven, dropped some 0.40 m from its level preserved under the oven, suggest that this cleaning process truncated not just the clay floor but also the

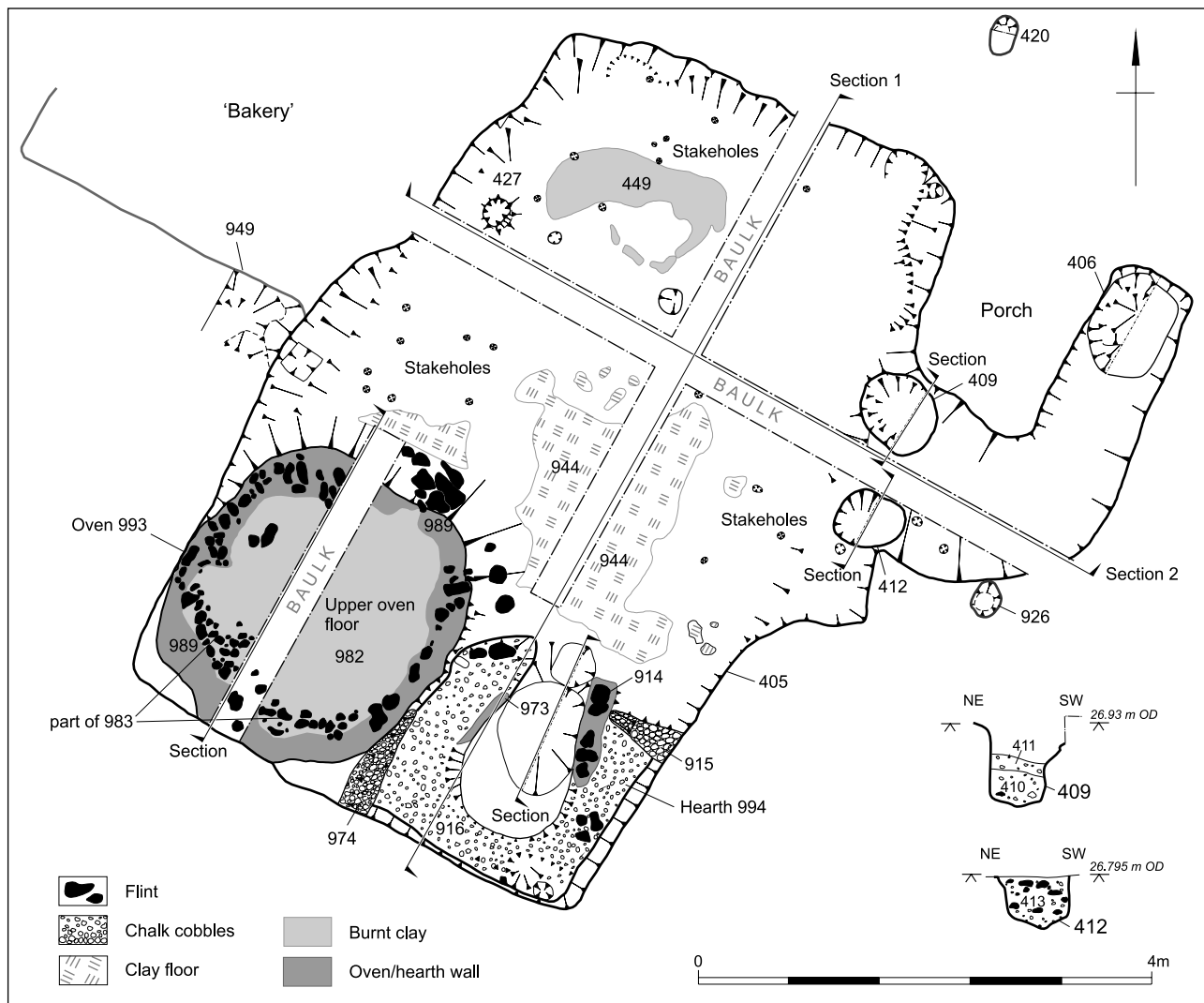


Figure 3.3 Plan of bakery

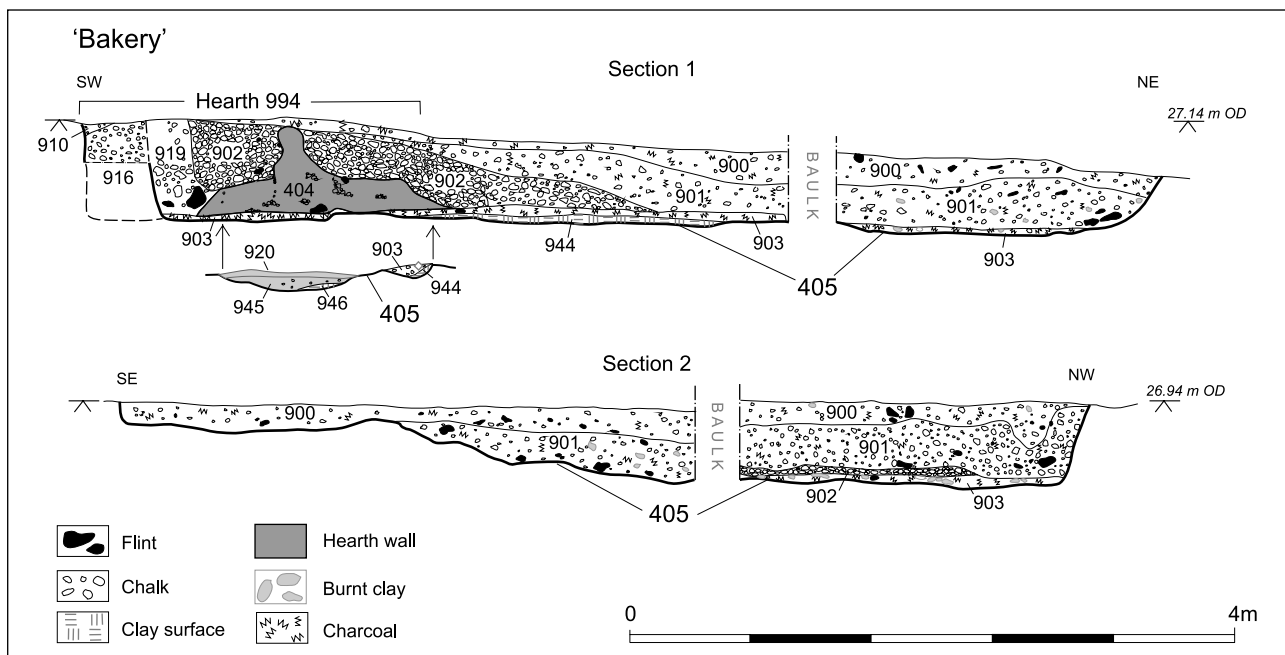


Figure 3.4 Sections of bakery hollow

Table 3.2 Charcoal from early medieval bakery and fire-pit

	Feature Context Sample	Bakery hollow 405 'Occupation' layer 903 229	Bakery oven 993 Oven floor 990 240	Fire-pit 854 Pit fill 857 222
	Weight charcoal >2 mm (g)	9	14	5
	Weight (g)	5	6	4
	% by weight	56	43	80
<i>Species</i>	<i>Common name</i>			
<i>Acer campestre</i>	field maple	-	4	-
cf. <i>Acer campestre</i>		-	1	-
<i>Betula pendula / pubescens</i>	birch	-	2	-
cf. <i>Cornus</i> sp.	dogwood	-	1	-
<i>Corylus avellana</i>	hazel	1	15	43
<i>Corylus avellana</i> twigwood		-	1	-
<i>Fagus sylvatica</i>	beech	9	40	-
<i>Fraxinus excelsior</i>	ash	-	1	-
<i>Ilex aquifolium</i> roundwood	holly	6	-	-
cf. <i>Juglans regia</i>	walnut	-	1	-
<i>Quercus</i> sp.	oak	52	15	-
cf. <i>Quercus</i> sp.		-	-	1
Pomoideae	pomoaceous fruits	4	7	-
<i>Prunus spinosa</i>	blackthorn	-	1	-
<i>Ribes</i> sp.	blackberry etc	-	9	-
<i>Tilia</i> sp.	lime	2	-	-
<i>Ulmus</i> sp.	elm	10	-	-
Unid twigwood		2	-	-
Unid twisted / knotwood		10	2	9
Total no. frags		100	100	53
Min. no. taxa		7	11	2

underlying natural. The 'occupation' layer, therefore, is likely to represent in part material that had accumulated between the last cleaning and the abandonment of the hollow.

The L-shaped extension on the north-east side appears to represent some form of external, north-east facing porch, measuring 1.10 x 1.60 m. It comprised a trench that protruded from the south-east side before turning at a right-angle and ending at a squared terminal in line with the hollow's north-east end. From a slight step at the edge of the hollow, into which were cut two subcircular post-holes (409 and 412) (Fig. 3.3), the trench rose gently towards the turn, then dropped into a third post-hole (406) at the terminal. These were all substantial post-holes – 409 was 0.65 m in diameter and 0.60 m deep, 412 was 0.50 m in diameter and 0.35 m deep, and 406 was 1.0 m in diameter and 0.40 m deep. The two on the edge of the hollow would have had a maximum gap of 0.80 m between their posts, which although considerably narrower than the 1.60 m opening to the 'porch' at the north, would have been wide enough for a doorway. It is possible, therefore, that the porch incorporated some form of double door to prevent sudden draughts affecting the operation of the hearth and oven inside, and to regulate the flow of air necessary for their operation. Two small, c. 0.30 m diameter post-holes – 926 outside the corner of the trench and 420 just beyond the north-east corner of the hollow – may be associated with the 'porch'.

#### Hearth

In the southern corner of the hollow were the remains of a small, 'pear-shaped' hearth (994), measuring 1.50 x 1.20 m and opening to the north-east (Pl. 3.1).

Patches of the hollow's clay floor (946) were recorded below the hearth's clay floor (945), but there were no traces of 'occupation' layer (903), indicating that the hearth was an original feature within the hollow (Fig. 3.4). Its structure was represented by two surviving sections of slightly outward-leaning wall (914 and 973), constructed of flint nodules bonded with clay, positioned on either side just inside the hearth mouth. That to the east of the mouth (914) was best preserved, being up to 0.20 m wide, and surviving to a height of 0.40 m. Like the upper part of the hearth floor (920), these walls displayed evidence of burning on their inner surfaces. A layer of compacted chalky clay (916) was packed around the sides and back of the hearth to a height of up to 0.60 m; to the south and east this filled in the gap between the hearth and the sides of the hollow (Fig. 3.3). Wall 914 was further supported by a short 'wedge' of compacted chalk cob (915) running from the edge of the hollow, with a similar support west of the hearth (974). Around the back of the hearth the clay and flint hearth wall had not survived, and the fact that wall 914 appeared to be partly set back into packing layer 916 suggests that the wall was thickest at the hearth mouth.

#### Oven

Immediately adjacent to hearth 994, in the western corner of the hollow, was a second, more substantial oven (993), 2.0 m in internal diameter. The built-up layers within this structure indicated at least three phases of construction and use (Fig. 3.5). Although no traces of the clay floor of the hollow were recorded below the oven, traces of 'occupation' layer 903 were, suggesting that the earliest surviving phase of the oven's construction was built some time after the

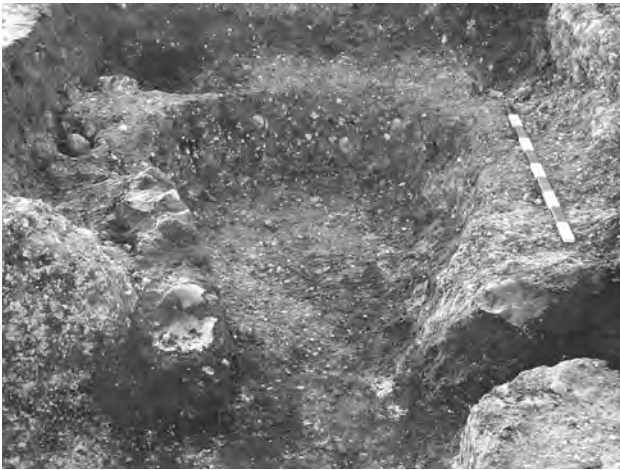


Plate 3.1 Fulston Manor: hearth 994

hollow had been in operation – possibly involving the operation of hearth 994, or an earlier, demolished phase of the oven.

Below the floor of the oven’s primary phase was 0.15 m thick layer of large flint nodules (992), laid down to retain a uniform heat within the oven after its heating. This was overlain by a 0.10 m thick floor of clay containing crushed chalk and flint (990), the surface of which shows evidence of burning, but not at very high temperatures. The base of the oven clay wall (991) surrounded and slightly overlapped the edge of the floor, abutting the sides of the hollow to the south and west and the chalk cob support (974) on the west side of hearth 994. At the north-east, in front of the oven mouth, an apron of the same clay used for the wall projected out some 0.90 m from the oven floor.

Eleven plant taxa were identified in the charcoal from the primary floor, the assemblage being dominated by beech at 40% but with field maple (*Acer campestre*), hazel, oak, pomaceous fruits, and currant (*Ribes* sp.) also being well-represented

(Table 3.2). Five further taxa were identified, including a single piece which compared favourably with walnut (*Juglans regia*). The assemblage represents a mix of hedgerow or open woodland types with domestic fruit trees, suggesting the opportunistic collection of wood to burn rather than targeting or selecting wood from a managed source, with the presence of walnut and currant indicating disposal of prunings.

The second phase of use overlay the remains of the primary structure, whose wall (991) appears to have been demolished to the level of the oven floor. The second phase wall (989), made of clay containing some large flint nodules, was built up over the remains of the primary phase wall and floor. A thin layer of redeposited heavily burnt clay (988) spread across the earlier floor may have acted as a levelling layer for the overlying second clay floor (987), whose surface was also burnt. Overlying layers of mixed fired clay and flint (984 and 986), together up to 0.15 m thick, probably represent the collapse of the second phase oven structure, leading to a third phase of construction. For this, a second layer of flint nodules (983) was laid over the levelled rubble and covered by a third clay floor (982), which was now some 0.50 m above the base of the hollow. Following the third phase of use, evident again in the burning of the floor, the oven was abandoned or demolished.

Archaeomagnetic dating of the second and third phase floors produced date ranges of 1180–1230 (sample B) and 1200–1230 (sample A), respectively (at 95% probability; Karloukovski and Hounslow 2005), consistent with the mid-11th–early 13th century dating provided by the pottery from the feature, but more precisely comparable to the late 12th–early 13th century sherds recovered from one of the stake-holes in the base of the hollow, and from demolition and backfill layers following its abandonment.

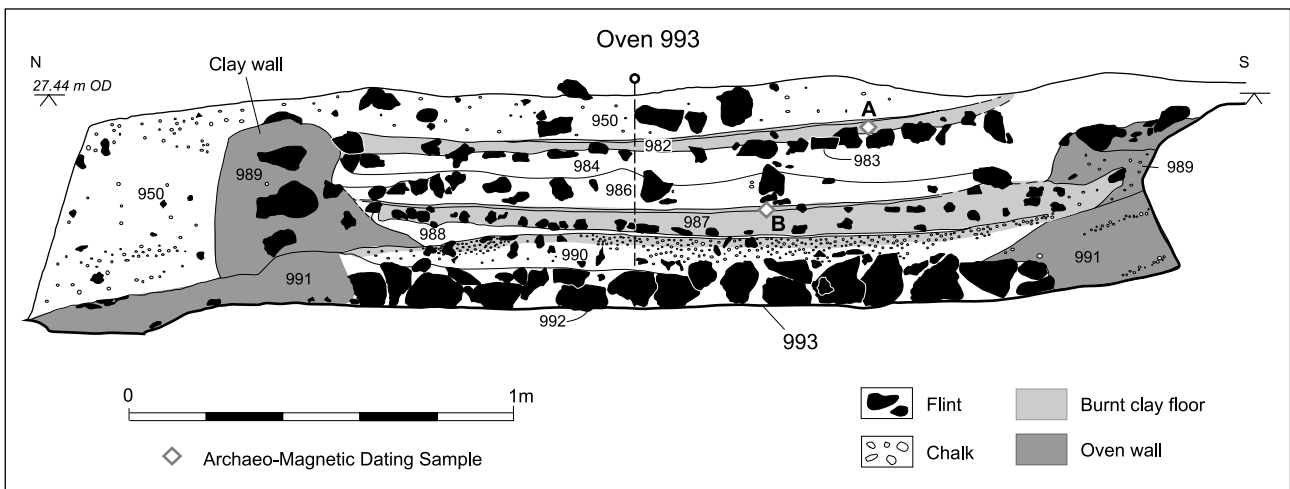


Figure 3.5 Section of oven



### *Stake-holes*

There were three cluster of stake-holes in the base of the hollow. One group of eight was recorded in front of oven 993 on its north-east side, and although they formed no clear pattern they may have served as some form of screen. A looser group of up to six was recorded along the south-east side of the hollow in front of hearth 994, with the third group of up to 11 recorded towards the northern corner of the hollow, surrounding an area of burnt clay (449) on the base, possibly an area where the clay floor had been scorched; a post-hole (427) among this latter group, c. 0.25 m diameter and 0.40 m deep, may be associated with it. As the stake-holes had been driven up to 0.15 m into the solid chalk, they may have been of iron stakes or of iron-shod wood.

### *Discussion*

Oven 993 was probably used principally for baking bread, but also possibly for smoking or drying, or any other processes requiring consistent and moderate temperatures. It is likely to have been domed in form, possibly with a smoke vent above the mouth, the clay walls being built up over a frame of thin arched poles and then fired to harden the clay; a number of small holes noted in the truncated upper surface of the wall may represent the remains of that framework (Pl. 3.2). The operation of the oven is likely to have involved burning a faggot of twigs and smallwood inside it, the heat being absorbed by the oven structure and particularly by the flint nodules below its floor. Once heated, the ashes would be swept out and the loaves placed in the oven to bake. The swept out ashes (from the both oven and the hearth) may have been moved to the other end of the hollow where the clay floor had been scorched (449). The raising of the oven floor in each phase of construction, and the gradual truncation of the base of the hollow through wear and cleaning, would probably have made the oven easier to use; the final oven floor was over 0.80 m above the base of the hollow in front of it.

Despite the oven's suggested use for baking, it is perhaps not surprising that relatively little in the way of charred cereal remains were recovered from environmental samples taken from either the oven or the occupation layer in the floor, as the grain would have been fully processed into flour before being taken into the bakery. The relatively small quantity of predominantly wheat grains found there (in contrast to the dominance of barley in fire-pit 854, below) may have been used, as suggested at the late Anglo-Saxon bakery at Stafford and discussed in Chapter 2, above, to prevent the loaves sticking in the oven (Moffett 1994, 61–2). Alternatively, grain may be thrown into the oven to test the oven temperature – when hot it will burst open. However, the fact that 5.8 kg of quernstone fragments – c. 78% (by weight) of all that



*Plate 3.2 Oven 993 wall*

material from the site – was recovered from the primary chalk rubble backfill (902) of the abandoned building, suggests that the milling of the flour took place in the immediate vicinity.

Hearth 994 was clearly different in form and the fact that similar combinations of oven and hearth have been found, for example, at Kent International Business Park (KIBP) Manston (Boast 1998), Ickham Court Farm (Linklater and Sparey-Green 2003), Westwood, Margate (this volume, Chapter 2), Leybourne, West Malling (this volume, Chapter 1), and most recently (and in significant numbers) on the Thanet Earth site near Margate (Jon Rady, pers. comm.), suggests that the two structures had distinct yet complementary functions (see Chapter 5). The outward sloping walls of structure 994 argues against it having had a domed (or otherwise) covered clay roof. Instead, its relatively small size and the building up of the chalking packing around it (found also at Manston) suggest that it was an enclosed hearth, probably open at the top. Given the frequent association in the medieval period of baking and brewing, a possible interpretation for the hearth is that it was used in the production of ale. It may have been used to boil the water used to scald the malt (mashing), as well as to boil the wort (the liquid from which the grain has been strained off).

The position of oven and hearth within hollow 405, which may have had post-holes around its edge as well as a porch structure at the north-east corner, suggest that the hollow was the floor of a timber building, probably thatched, although there would clearly have been risk of fire. Its location in the north-

west corner of the enclosure may have been to ensure a minimum risk of fire to other buildings. The similarities with the other possible medieval bakeries found in Kent are notable, that at Manston for example having an entrance feature in the same position as that at Fulston Manor. Similarly, like Fulston Manor, the structure at Ickham Court Farm structure appears to be widened along the side with the oven in order to accommodate it (see Fig. 5.1).

Following the abandonment of this building the hollow was backfilled with layers of rubble and soil (900–2) overlying the collapsed or demolished hearth and oven structures, and filling the tops of the ‘porch’ post-holes. The primary backfilled layer (902) consisted mainly of chalk rubble which may have derived from the demolition of chalk cob walls (Fig. 3.4).

### Other burnt features

#### Oven/drier

The stoke-hole, flue, and chamber of an oven, kiln, or drier (700) were recorded some 30 m south-east of the bakery. The feature was 3.60 m long and 0.80 m wide, narrowing to 0.40 m at the flue, with steep to vertical sides (Fig. 3.6). In the stoke-hole at the north, the floor sloped down gently from ground level towards the mouth of the flue where the cut was deepest (0.70 m) before rising into the flat-based chamber, which survived to a depth of 0.30 m. On the base of the flue and extending up both its sides, the natural clay (709) was heavily burnt, indicating the seat of the fire was in the flue rather than in the chamber. A level, 0.08 m thick layer of clayey silt (706) formed the floor of the chamber; this only displayed evidence of heating immediately adjacent to the flue. A block of heavily burnt clay (708) spanned the top of the flue, its convex underside matching the curve of the flue base, and although this appeared to be *in situ*, this would have given the flue a height of just 0.10 m at its inner end; it is more likely that it represents the collapsed flue roof.

A layer of rake-out material (707) at the upper end of the stoke-hole, containing charcoal and flecks of fired clay, was overlain by a more charcoal-rich layer (704/705) that extended into the chamber, visible as just a thin band on the base of the flue. The abandonment of the feature is represented by layers of relatively ‘clean’ silt clay (701–3) filling the chamber, stoke-hole, and flue respectively. The relative lack of fired clay in these fills suggests that, apart from the flue, this feature may not have had a substantial clay superstructure. Also, given the low level and localised nature of the burning recorded, it seems that it had not been designed to achieve very high temperatures, and it may have been used for drying, smoking, or curing. Its orientation, with its flue facing south-south-east, does not conform to the general

orientation of other features on the site, nor is it aligned on the south-westerly prevailing wind. Given its proximity to the bakery and possible brewery, it is possible that this feature may have played some role in the production of ale, possibly providing the low-level heat need to sprout the grain or dry the resulting malt. However, apart from burnt flint and fired clay, it produced just three small sherds of late 12th–early 13th century pottery.

#### Fire-pit

An oval fire-pit (854) was recorded in the north of the site. It measured 1.60 m by 0.90 m and was up to 0.20 m deep with steep sides that became shallower at the ends, and a flat base (Fig. 3.6). The natural into which it was cut (soliflucted chalk containing large flint nodules) was heavily burnt to a depth of at least 0.05 m. A layer of charcoal-rich soil (857) at the south-east end, possibly material raked out of the pit, produced a single sherd of late 12th–early 13th century pottery. This was overlain by a layer of silty ash (859) filling the pit to half its depth, deriving from the fire’s use and containing a piece of Romano-British brick, possibly used in the operation of the feature. Following its abandonment, the pit filled with a layer of dumped soil (858) containing charcoal (including one piece up to 0.50 m long) and numerous pieces of fired clay, some with wattle impressions, raising the possibility that this feature had some form of wattle-and-daub superstructure.

The charcoal from the pit consisted almost solely of hazel (*Corylus avellana*), indicating this had been specifically selected for fuel use, possibly from a managed (eg, coppiced) source (Table 3.2). The feature also produced the largest assemblage of charred plant remains from the site, consisting mainly of grains of hulled barley (*Hordeum vulgare*), along with free-threshing wheat (*Triticum aestivum*) and oats (*Avena* sp.) (although the latter may represent wild oat) and a wide range of weed seeds (Table 3.3).

The pit also contained much of the animal bone from the site. A high proportion (70%) of the overall assemblage showed signs of contact with fire and this came almost exclusively from this feature. The burnt fragments are all very small but many appear to belong to at least two sheep/goat (others being identifiable only as medium-sized mammal). All skeletal elements apart from the head, neck, and the feet are present, suggesting that more-or-less articulated skeletons or complete legs were burnt in this feature. If these remains represent complete animals, then one animal was less than 15–20 months old and the other was skeletally full-grown when they died. Most of the bones were calcined, indicating temperatures of 550–800°C (Wahl 1981), but lower grades of burning were also seen. As bone does not discolour when meat is cooked or roasted, the

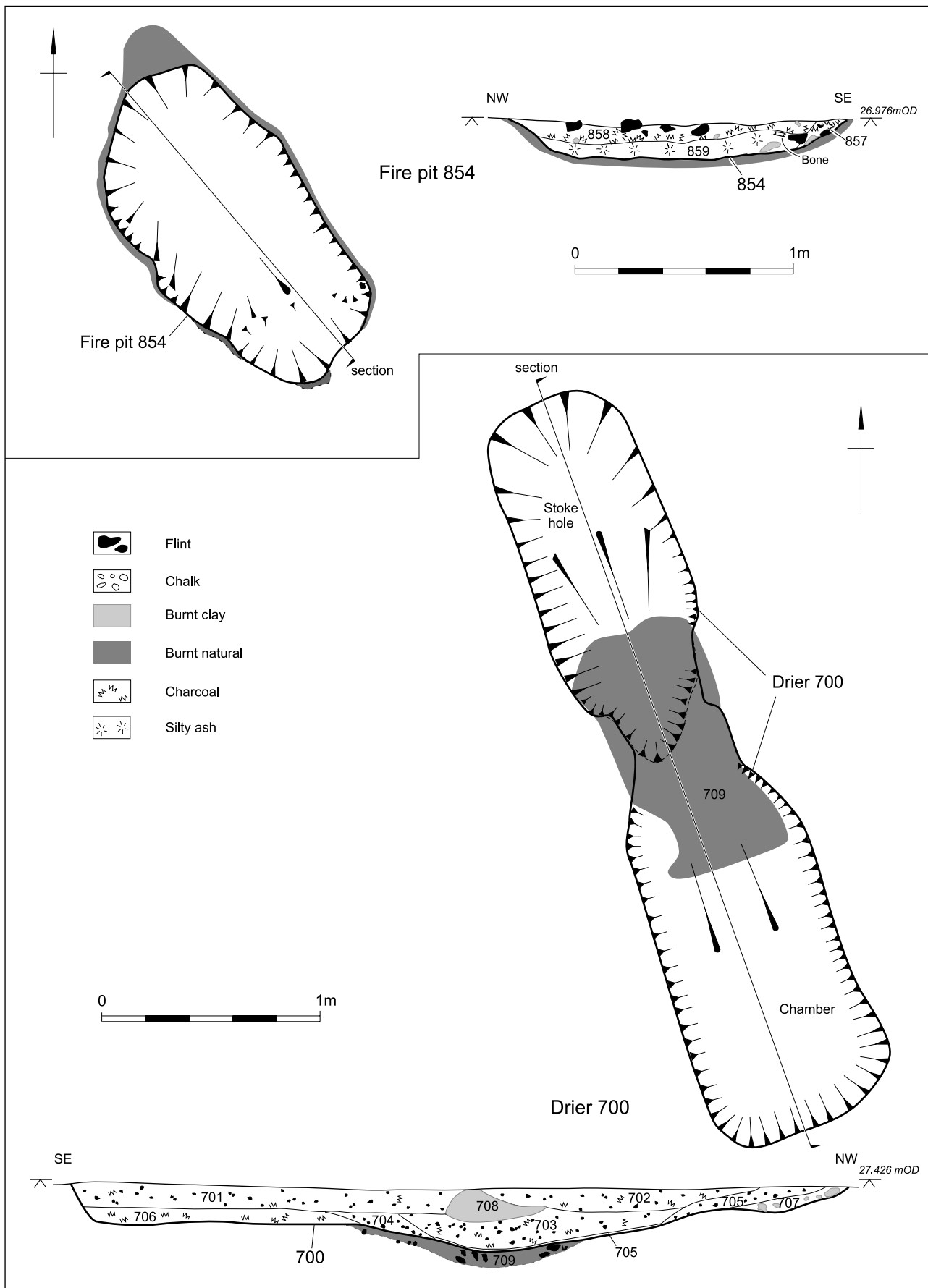


Figure 3.6 Plans and sections of fire pit and drier

Table 3.3 Charred plant remains from early medieval bakery, drier and fire-pit

Feature	Context	Sample(s)	Size (l)	Flot Size (ml)	Roots (ml)	Bakery hollow 405 'Occupation' layer 903		Bakery oven 993 Primary floor 990		Drier 700		Fire-pit 854			
						221, 229, 230, 234, 239	121	1490	290	240	207	208	222	223	224
<i>Cereals</i>		<i>Common name</i>													
<i>Hordeum vulgare</i> L. sl (hulled grain)	Hulled barley	7	3	4	2	1600	28	24							
<i>H. vulgare</i> L. sl (hulled germinated grain)	Hulled barley	-	-	-	6	3	-	-							
<i>Triticum cf. aestivum</i> L. sl (grain)	Bread wheat	62	80	-	1	615	25	33							
<i>Secale cereale</i> L. (grains)	Rye	3	8	-	6	-	-	-							
Cerealia indet. (grains)		15	20	12	1	41	-	-							
<i>Avena</i> sp. L. (grain)	Oat grain	2	-	2	6	728	13	1							
<i>Avena</i> sp. L. (floret base)	Oat grain	-	-	1	-	-	-	-							
<i>Avena</i> sp. L. (awn)	Oat grain	-	-	1	-	-	-	-							
<i>Bromus</i> sp. L.	Brome	-	-	-	-	36	-	-							
<i>Other crop species</i>															
<i>Corylus avellana</i> L. (frags)	Hazel	1	1	-	-	7	-	-							
<i>Prunus spinosa</i> L.	Sloe	-	-	-	-	1	-	-							
<i>Vicia faba</i>	Bean	2	-	-	-	-	-	-							
<i>Pisium sativum</i>	Pea	15	5	-	-	-	-	-							
<i>Linum usitatissimum</i> L.	Flax seeds	-	-	-	-	1	-	-							
<i>Weed species</i>															
<i>Urtica urens</i> L.	Small nettle	-	-	-	-	est.11	-	-							
Chenopodiaceae	Goosefoot/campion	-	-	-	-	11	-	-							
<i>Chenopodium album</i> L.	Fathen	-	-	-	3	est.145	1	-							
<i>Atriplex</i> sp.	Orache	-	-	1	-	-	-	-							
<i>Stellaria palustris</i> Retz./ <i>S. graminea</i> L.	Marsh/lesser stitchwort	-	-	-	-	est.11	-	-							
<i>Stellaria holostea</i>	Greater stitchwort	-	-	-	-	1	-	-							
<i>Agrostemma githago</i> L.	Corn cockle	-	-	-	-	38	-	-							
<i>Silene cf. vulgaris</i>	Bladder campion	-	-	-	-	est.16	-	-							
<i>Polygonum aviculare</i> L.	Knot grass	-	-	-	-	7	-	-							
<i>Fallopia convolvulus</i> L. Å. Löve	Black bindweed	-	-	-	2	4	-	-							
<i>Rumex</i> sp. L.	Docks	-	-	-	-	est.90	1	-							
<i>Rumex acetosella</i> L.	Sheep's sorrel	-	-	-	-	est.20	-	-							
<i>Rumex cf. crispus</i> L.	Curled dock	-	1	-	-	65	-	-							
<i>Brassica</i> sp. L.	Cabbage, wild mustard	-	-	-	-	30	-	-							
<i>Trifolium</i> sp.	Clover	-	-	-	-	-	1	-							
<i>Vicia</i> L./ <i>Lathyrus</i> sp. L.	Vetch/pea	2	1	2	4	45	-	2							
<i>Aethusa cynapium</i> L.	Fool's parsley	-	-	-	-	1	-	-							
<i>Apium</i> sp. L.	Fool's watercress	-	-	-	-	est.47	-	-							
<i>Torilis</i> sp. Adans.	Hedge parsley	-	-	-	-	est.65	-	-							
<i>Galeopsis</i> sp. L.	Hemp-nettle	-	-	-	-	12	-	-							
<i>Plantago major</i> L.	Greater plantain	-	-	-	-	est.10	-	-							
<i>Odontites vernus</i> (Bellardi) Dumort	Red bartsia	-	-	-	-	est.46	-	-							
<i>Galium aparine</i> L.	Cleavers	-	-	-	-	30	-	1							
<i>Veronica</i> sp.	Speedwell	-	1	-	-	-	-	-							
<i>Sambucus nigra</i> L.	Elder	-	-	-	-	2	-	-							
<i>Anthemis cotula</i> L.	Stinking chamomile	-	-	1	-	est.756	-	-							
<i>Lapsana communis</i>	Nipplewort	-	-	-	1	-	-	-							
<i>Chrysanthemum segetum</i>	Cornflower	-	-	-	-	est.10	-	-							
<i>Tripleurospermum inodorum</i> L. Sch. Bip.	Scentless mayweed	-	-	1	3	est.73	3	-							
<i>Lolium</i> sp.	Rye grass/darnel	1	-	-	-	est.226	1	-							
<i>Poa</i> sp. L.	Meadow grass	-	-	1	-	est.42	-	-							
<i>Poa cf. pratensis</i> L.	Meadow grass	-	-	7	-	-	-	-							
<i>Phleum</i> sp. L.	Meadow grass/ catstail	-	-	-	-	est.11	-	-							

discoloured fragments are the result of throwing bones deliberately in the fire. It is possible that the bones of two skinned and filleted sheep/goat were burnt in a single event in this pit as a means of waste clearance or for fuel.

#### Other features

A large irregular shallow hollow (345), up to 12.0 m east–west and 6.0 m north–south, but no more than 0.20 m deep, was recorded in the eastern part of the site, extending over enclosure ditch 338 and filled

with brown silty clay (401). A 1.0 m wide excavated slot produced mid-11th–early 13th century pottery, medieval roof tile, and oyster shell. This layer may represent a more extensive occupation soil preserved from subsequent truncation within either a slight natural depression or an area of greater traffic and erosion. It was cut by a roughly circular pit (402), 1.80 m in diameter and 0.40 m deep with an irregular profile, containing finds of a similar date, including part of a horseshoe.

The other pits of this phase all produced pottery of late 12th–early 13th century date. Pit 576, which was cut on its north edge by the ditch of enclosure 3 (below), was 1.70 m in diameter and 0.50 m deep with steep straight sides and a flat base. It was filled to almost half its depth with layers of clean grey–brown silty clay, that on the base having a green mottling, perhaps indicating cess. Above these was a layer, up to 0.07 m thick, of burnt clay. This material appeared to have been burnt *in situ*, but there was no charcoal associated with it, and it is more likely to have been a dumped deposit since it sloped down from the western edge of the pit. The overlying fills were similar to those below, although considerably disturbed by bioturbation. In addition to pottery, the pit produced small quantities of animal bone and medieval roof tile. On its south-west side it cut a smaller pit (583) containing similar finds.

Oval pit 767, which cut ditches 343 and 344, measured 1.30 x 1.90 m and was up to 0.60 m deep with moderate to steep sides and a concave base. In addition to pottery, its four charcoal-flecked fills produced small quantities of animal bone and fired clay.

To the east was a subrectangular feature (802), cut by ditch 800, measuring 1.70 x 0.90 m and 0.14 m deep, with moderately steep sides and a flat base. Its single fill produced 19 sherds of Late 12th–early 13th century pottery, animal bone, and fired clay.

The lower part (100 mm) of a late 12th–early 13th century shelly-ware jar (object 105) was found south of ditch 719. It appears to have been deliberately placed in a small pit (359) whose edge was difficult to discern as it was immediately backfilled. Many fragile bones and plant remains were preserved due to the protective conditions inside the jar. Among them are the remains of bass, cattle, chicken, flat fish, herring, pig, rabbit, sheep/goat, and possibly starling, all these species being edible. There were also charred grains of barley and wheat, and pea. It is possible that the jar was used for the collection of kitchen or table waste, a suggestion supported by the fact that butchery marks were found on the bass and the chicken remains.

### *Early 13th–mid-14th Century*

Activity in the later medieval period is represented by a collection of features which form no cohesive or readily interpretable pattern but whose general orientations suggest some continuity from the early medieval activity (Fig. 3.7). It is unclear to what extent the earlier enclosure ditches remained either visible features or recognised boundaries but none of the small quantities of pottery of this phase was found in the ditches. From the early 13th to the mid-14th century the pottery assemblage is characterised by the

superseding of earlier medieval shelly and sandy wares by new pottery types – sandy wares (both coarse and fine) characteristic of the Tyler Hill industry (Canterbury), London-type finewares, and sandy greywares from north-west Kent, and vessel types now include fineware jugs as well as basic kitchen wares (jars and bowls). The development of the Tyler Hill industry is well documented, and there are good parallels for the jar and jug forms seen at Fulston Manor amongst the 13th–14th century industry (Cotter 1992; 2003).

### **Enclosure 3**

Ditch 342 appeared to define the south-western corner (slightly wider than a right-angle) of a possible third enclosure (enclosure 3). While its northern and eastern sides might have been defined, like enclosure 2, by the enclosure 1 boundary giving it internal dimensions of c. 37 x 28 m, there is no evidence that the latter remained an extant feature in the later medieval period, so the identification of this third enclosure is uncertain. Ditch 342 was 0.30–0.50 m wide and up to 0.15 m deep, petering out at the north where it cut ditch 339.

The approximate line of the ditch appeared to be continued to the east-south-east, after a c. 7.0 m gap, by another linear feature (349). Feature 349, although surveyed during the excavation as being over 17 m long, was only excavated during the evaluation phase (E703 and E8403 in trenches 07 and 84) where it was described as a ‘flint wall’ (Fig. 3.8). Whether the flints extended for the full length of feature 349, rather than just the c. 8.0 m covered by the evaluation trenches, can not be determined. The flint layer, which consisted of a single course of unmortared flint nodules, c. 0.50 m wide and up to 0.15 m thick on the southern edge of a shallow cut or depression, is more likely to be a footing for a timber wall rather than the base of a dry-stone wall. This would suggest the presence of a building, possibly extending to the north, at this location, although there were no other foundations, beam-slots or post-holes that might indicate other walls. While a large rectangular hollow (450), aligned at a right-angle to the flint layer just 1.50 m to the south, is interpreted (below) as possibly underlying a building, the flint layer in evaluation trench 7 lay beyond its western edge.

Although feature 349 was undated, a shallow but extensive spread of mid-orange–brown silty clay (E705) containing 13th–14th century pottery, animal bone, and oyster shell, abutted the flints on their north side. Ditch 342, in contrast, produced three sherds of late 12th–early 13th century pottery, and the fact that it was not precisely aligned on feature 349 might indicate that the two features, of apparently different form, were not associated. However, the sherds from ditch 342, a stratigraphically relatively

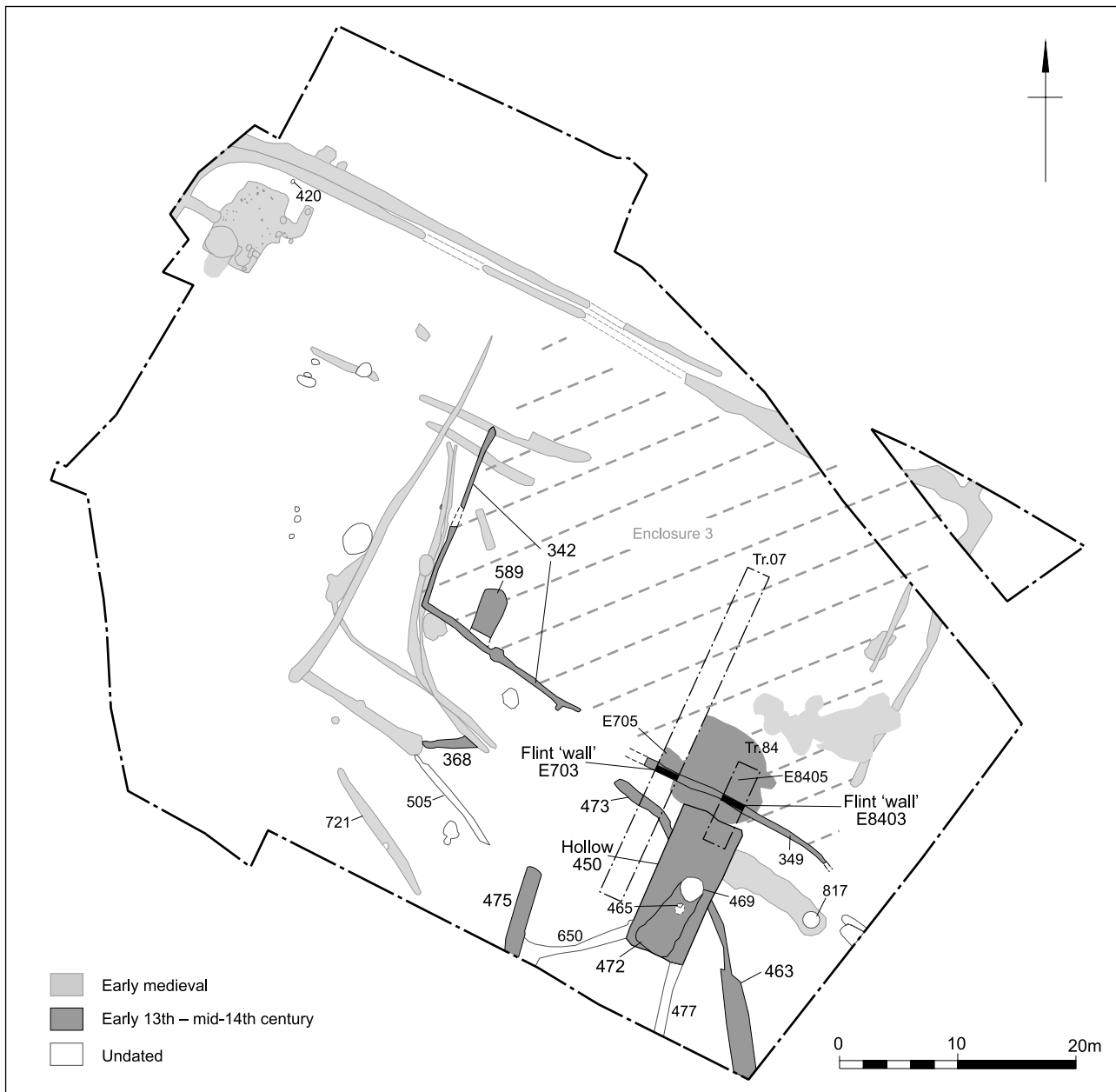


Figure 3.7 Later medieval features

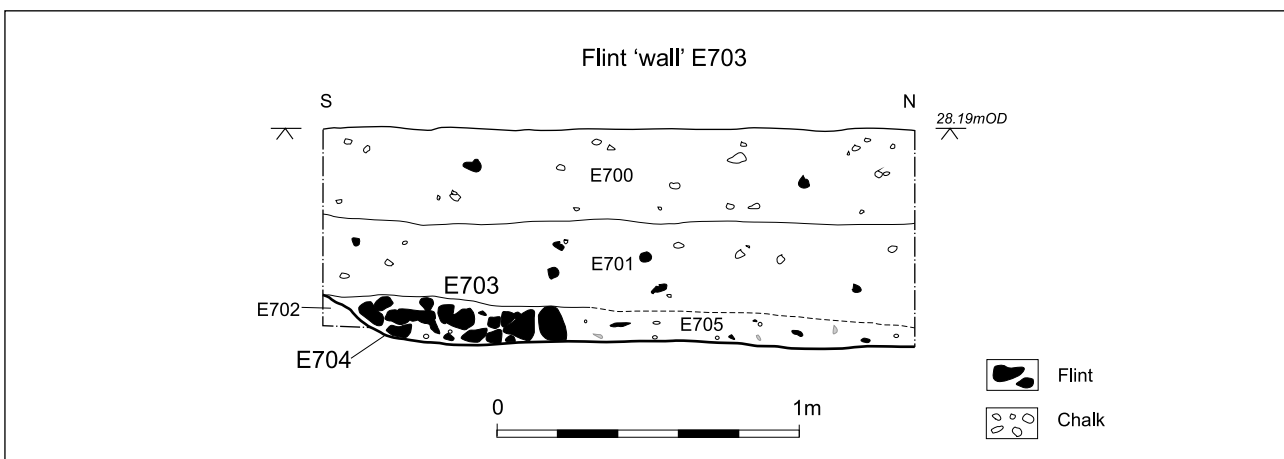


Figure 3.8 Section of flint 'wall'

late feature, were small and abraded and therefore possibly residual, allowing the possibility for both 342 and 349 to have a later medieval date.

An irregular hollow (589), measuring 3.30 x 1.20 m and up to 0.20 m deep, on the north-east side of ditch 342, also containing early 13th–mid-14th century pottery as well as Romano-British tile, animal bone and oyster shell, was comparable in its location and contents, to spread E705.

### Other ditches

As in the earlier medieval phase the phasing of the other ditches in this period is also tentative, based on limited and, in some cases, ambiguous evidence. Ditch 463, which curved north-west from the south-east corner of the site (possibly continuing as ditch 473 beyond where it was cut by hollow 450, below), produced a single sherd of early 13th–mid-14th century pottery. A shallow feature (475), possibly a hedge line, running north-north-east from the southern edge of the site, contained a large quantity of pottery, including large parts of a Tyler Hill jar (ON 110) and a north-west Kent sandy ware baluster jug, as well as medieval roof tile, sandstone building material, fired clay, nails, animal bone, and oyster shells; a sample from the jar contained charred grains of barley and wheat and fish bones. Between these features were two other possible hedge lines, both unexcavated and undated and cut by hollow 450 – feature 650 aligned east–west and feature 477 aligned north–south. It is possible that all these features were associated.

A short length of east–west ditch (368), whose western terminal cut the terminal of the enclosure 2 ditch (719), also produced a single early 13th–mid-14th century sherd. Although its eastern end was recorded as being cut by (possibly pre-enclosure) ditch 344, the shallow depth (0.10 m) of that intersection and the similarity of their fills means that this relationship is far from certain. It is possible that undated ditch 505, whose north-west terminal also cut the terminal of the enclosure 2 ditch, was contemporary with ditch 368. Ditch 721, which lay almost parallel to ditch 505 some 5.5–6 m to the south-west may also belong to this phase; it contained a single possibly residual sherd of early medieval pottery, and three fragments of clinker of uncertain origin.

### Hollow

Immediately south of linear feature 349 was a large rectangular hollow (450), c. 13 m long aligned north-north-west to south-south-east, 6.0 m wide and up to 0.90 m deep, with a flat base and moderately steep sides on three sides (Fig. 3.9). Its southern end (partly truncated during initial machine stripping of the site, but recognisable in the southern baulk and

subsequently exposed when the excavation was extended to the south) was gently sloping, as if forming a shallow ramp running down into the base. Down the centre of the ramp was a 2.40 m wide flat-based slot (472), up to 0.40 m deep, containing two layers of silty clay overlain by a layer of compacted flints (452) up to 0.10 m thick forming a metallated surface; together these layers contained iron nails, 13th–14th century pottery, tile, sandstone building material, and animal bone.

Two features were recorded in the base of the slot on the ramp, sealed by its fills. Towards the base, part of a possibly circular feature (465) c. 0.50 m in diameter, was exposed; as recorded it was 0.30 m deep (although it would have been at least 0.60 m deep if measured from the top of the slot cutting it). Immediately downslope, at the base of the ramp, was another circular feature (469), 1.60 m in diameter, cutting the floor of the hollow. The positions of features 465 and 469 on the hollow's long axis make them appear to be associated with it, although the sterile nature of the latter's fills (loose orange sand with occasional flints (471) overlain by grey/green silty sand (470)), which were excavated to a depth of only 0.40 m, indicates that this pit-like feature (which would have been at least 1.10 m deep if measured from the top of the natural), may have been a natural solution hole (Fig. 3.9).

The hollow was filled with a series of layers of mid-dark grey/brown silt. The lowest fill (456), which was well-mixed with frequent chalk and flint inclusions, covered the base of the hollow to a relatively even depth of 0.20–0.30 m and extended close to the top of the sides. It was overlain by a more sorted stone-free deposit (454), slightly domed and filling mainly the centre of the hollow although extending up the ramp at the southern end. Above this and almost filling the rest of the hollow, layer 451 was similar in composition to layer 456. Together these fills contained similar finds, including iron nails and a 14th century or later horseshoe (Clark 1995, type 4), 13th–14th century pottery, tile, fired clay, animal bone, and oyster shells. They were overlain by thin trampled layers 453 and 455 which appeared to extend beyond the hollow.

The function of the hollow is far from clear. While the material extracted during its construction is likely to have been used for some purpose within the site context, its regular shape and the metallated ramp at its southern end suggest that extraction was not the primary function. Instead, its rectangular form and dimensions are suggestive of a sunken-featured building, although apart from the ambiguous features cutting the ramp, there were no indications of any features directly associated with it that might indicate a superstructure, such as post-holes, post-pads, or beam-slots. However, this part of the site had been

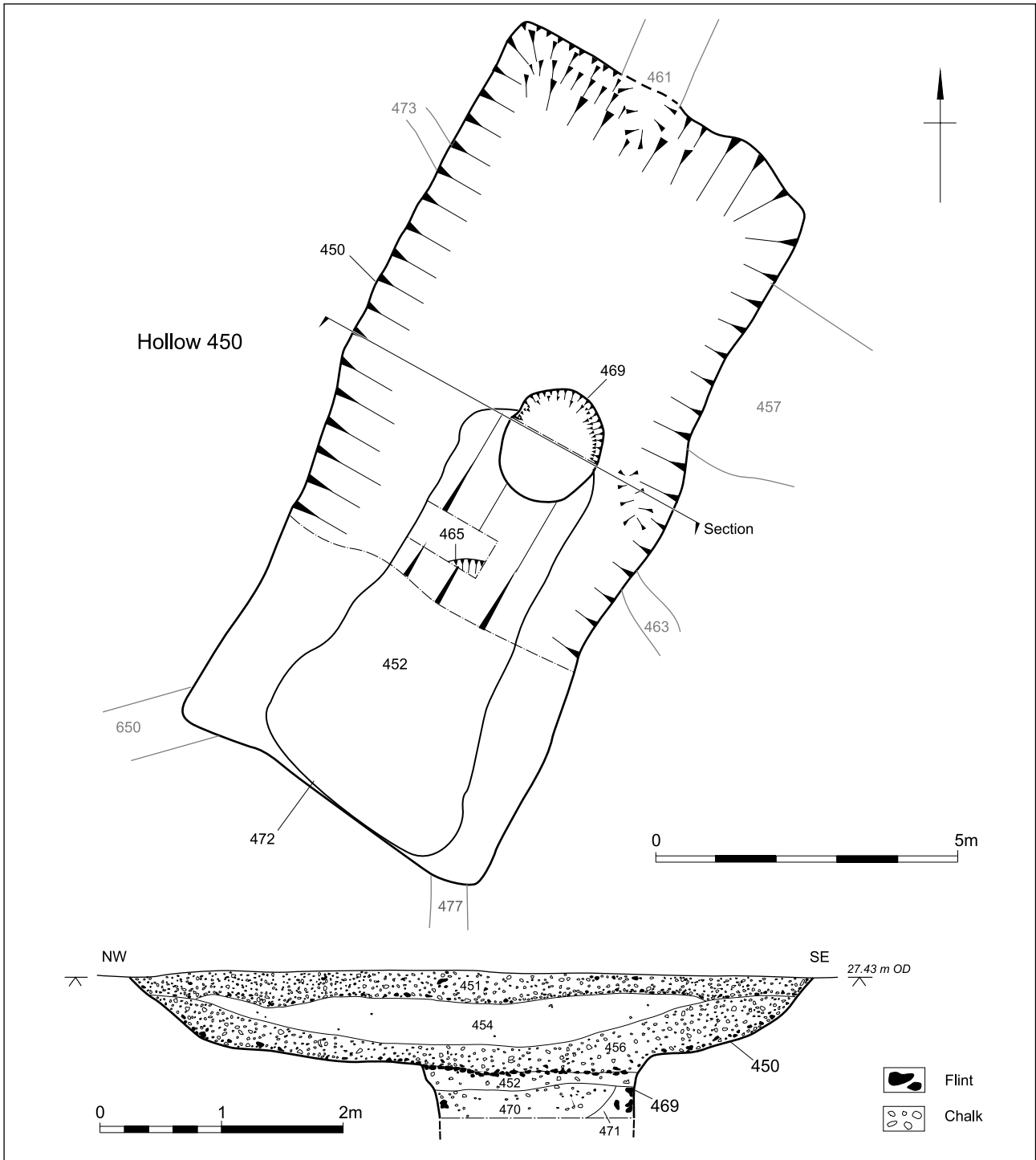


Figure 3.9 Plan and section of later medieval hollow

heavily truncated and it is possible that evidence of such features had been lost. If there was a timber building constructed over the hollow, with its floor level raised above the ground level, the ramp may have allowed access to a below-floor storage space or to an accommodation area for livestock. Given the uncertainty as to its function, it is difficult to interpret its subsequent fills in terms of either its use or its

abandonment. Although the lower and upper mixed stony layers (456 and 451) appear to have built up rapidly, perhaps having been deposited deliberately, the latter perhaps in order to backfill the hollow, the intervening stone-free layer (454) represents a more gradual accumulation of material possibly associated with its use.



## Post-medieval and Modern

### *Post-medieval*

Limited post-medieval activity is indicated by the recovery of four sherds of pottery (including coarse redwares and English stoneware), four unstratified coins (two halfpennies, one farthing, and a Norwegian 10-øre piece), and six copper alloy objects (two buttons, two buckles, a stud head, and a plain strip), again all unstratified. A number of adjacent features suggest the presence of a building.



Plate 3.3 Stone structure 315

### **Possible building**

A small stone structure (315) was recorded immediately north of enclosure 2 ditch 719 (Fig. 3.10, Pl. 3.3). It was constructed of flint nodules bonded with a pale yellow mortar containing sand and shell, and measured 2.40 x 0.90 m, with 0.50 m wide projections extending 0.60 m to the south-east from either end. It had been built in a trench at least 0.20 m deep, and it survived to a height of 0.40 m, comprising up to six randomly laid courses. A thin layer of soil (320), containing mortar fragments, re-used medieval roof tile (with mortared-over breaks), animal bone, and oyster shell, was recorded abutting the wall between the projections. To its east, a rectangular spread of chalky soil, measuring 0.80 m by 1.50 m, was aligned on the wall and appears in plan to be potentially associated with it, although it was not excavated and could simply be a variation in the natural geology as found elsewhere across the site.

Abutting the wall to the north-east, there was a large rectangular area of grey-brown silty clay (317), its western side aligned on that of the wall. It measured up to c. 8.0 m south-south-west by north-north-east and 10 m west-north-west by east-south-east, its edges being clearly defined although slightly irregular at the north-east, possibly as a result of truncation. This layer, from which no finds are recorded, sealed a number of medieval ditches and pits. At its north-east corner was a set of five shallow slots (group 369), 80 mm wide and 30 mm deep and, although their relationship with the layer is unclear, they shared its alignment and may be associated with it. They were up to 6.0 m long, extending up to 1.60 m beyond the layer (where they cut the fill of later medieval hollow 589), four of them spaced c. 0.60 m apart, the fifth being a possible addition between two of them.

Although undated and not necessarily associated, the stone structure, layer 317, and the series of slots together suggest the location of a building. The layer may represent the building's floor surface, although the slots may mark the position of joists for a raised

timber floor, at least at the north-east. The stone wall at the south-west corner has the appearance of a chimney base, giving the suggested building a post-medieval (or modern) date, although there was no evidence of an associated hearth or any burning, and it lay outside apparent footprint of the building. There were no other foundation slots or post-holes, nor evidence of any beam slots, that would indicate the building's walls and superstructure, although the absence of such features may be due to truncation by subsequent cultivation on the site.

### **Other features**

A subcircular pit 710, measuring c. 2.0 m in diameter and 0.90 m deep with vertical sides and a flat base, cut ditch 358 close to the south-west corner of enclosure 2. Its organic-rich lower fill, of soft green-brown silt, possibly indicating cess, sloped down the pit sides and contained animal bones (possibly chicken) and medieval roof tile. Further bone and tile were recovered from the overlying fills, the uppermost of which also contained two sherds of post-medieval pottery. It is possible that these sherds are intrusive, and that the pit, which was similar in many respects to medieval pit 576 and undated pit 561, is also medieval.

Some 9.0 m to its north was a large shallow feature (350), measuring 2.90 x 3.40 m and 0.35 m deep with moderately steep sides and an irregular flat base. It contained small quantities of animal bone and fired clay, as well as three sherds of post-medieval pottery from the upper (351) of its three fills, which again could feasibly be intrusive.

### *Modern*

A shallow feature (1109), 1.10 m in diameter and 0.15 m deep, cutting ditches 343 and 344, contained post-medieval and modern glass, along with residual medieval tile (Fig. 3.10).

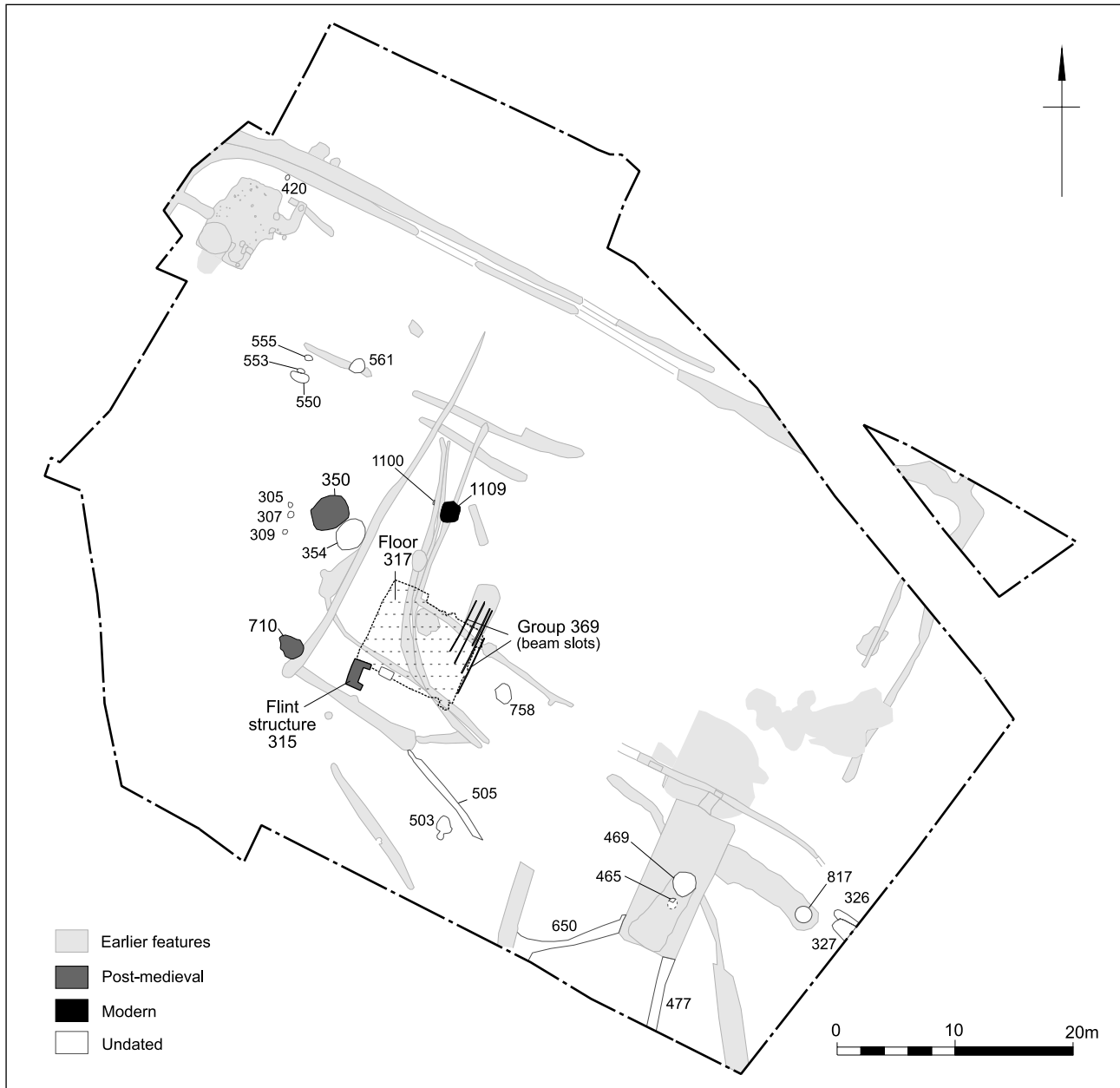


Figure 3.10 Post-medieval and modern features

### Undated

A number of features containing no datable artefacts have been described above in relation to medieval features with which they may have associated (eg, post-hole 420 north of bakery 405; features 465 and 469 in later medieval hollow 450; feature 817 cutting the metalled 'trackway' 457, and ditches 477, 505, and 650 at the south of the site).

Others undated features (Fig. 3.10) included two ditch terminals (326 and 327) extending west-north-west for 1.70 m and 2.20 m, respectively, in from the south-eastern edge of the site. Ditch 326, which was c. 0.80 m wide and 0.30 m deep with a U-shaped profile, was cut on its southern edge by ditch 327 which was 1.40 m wide and 0.40 m deep, with steep

straight sides and a flat base. Although undated, they could be associated with either phase of medieval activity; both terminated just short of metalled 'trackway' 457.

Three undated post-holes (305, 307, and 309), on a slight curving 2.50 m line, were recorded on the western edge of the area of features. They were 0.30–0.40 m in diameter with shallow U-shaped profiles up to 0.13 m deep. Another post-hole (1100) was cut by pre-enclosure ditch 344.

An undated pit (503), 1.50 m diameter and 0.50 m deep, towards the south of the site had a single fill containing small quantities of animal bone and fired clay with wattle impressions.

A subcircular feature (550) south of ditch 334, measuring 1.40 m by 0.70 m and 0.30 m deep, may have been a pit. Its lower fill contained flecks of charcoal while its upper fill contained patches of burnt earth and a number of large flint nodules. Large amounts of burnt earth were also found in two small oval features (553 and 555), 1 m apart, the former cutting feature 550. These may have been post-holes, although neither contained charcoal or evidence of *in situ* burning.

Another pit (561), 1.20 m in diameter and 0.50 m deep, cut ditch 334. Its lower fill of green-brown silty clay (565), suggestive of cess, contained the badly preserved carpometacarpi of at least eight greylag geese as well as three first phalanges of the wing. The significance of the concentration of geese wings must remain unknown. This deposit was sealed by a possibly backfilled layer, and then two layers of natural silting.

An irregular shaped pit (758), measuring 2.30 m by 1.60 m and 0.25 m deep with a shallow concave profile, contained large flint nodules in a fine silty clay on its base, some of them burnt but not *in situ*, overlain by a deposit containing a large quantity of fired clay. These were overlain by two further layers containing small quantities of fired clay and animal bone, the thin lower layer also being rich in fragmented shell. A shallow circular hollow (354), c. 2.60 m in diameter and up to 0.15 m deep, lay between enclosure 2 ditch 358 and post-medieval pit 350.

## Medieval Environment, Economy, and Society

While the characterisation of the sunken-featured building at the north-west corner of the early medieval enclosure as a bakery and possible brewery seems secure given the presence within it of a well-preserved hearth and oven, the character of the site as a whole is not so readily apparent. Despite the size and regularity of enclosure 1, much of its interior, and that of enclosure 2 in its north-east corner, appeared empty of any features, let alone other structures, that might indicate its wider function and so provide a social and economic context for the bakery.

Some comparison in terms of the form and scale of the enclosures may be made, however, with a small possible manor house complex at Manston (Perkins *et al.* 1998, 226–35) which included two sub-rectangular enclosures. The smaller enclosure (25 x 55 m), occupied from the late 12th–mid-13th century (site 18), contained a stone-built structure and an SFB almost identical to the Fulston Manor bakery. The larger enclosure (38 x 53 m), occupied in the 12th–14th centuries, contained occupation layers and

the remains of timber-framed buildings based both on sill-beams and upright posts, possibly dwelling houses and barns respectively (site 4/5). At Walsingham School, St Paul's Cray, Bromley, occupation layers and cut features indicated the presence of a medieval farmstead consisting of domestic dwelling and ancillary farm buildings, possibly an early location of Scadbury manor house, occupied from the early 12th to the early 13th centuries (Saunders 1997, 200–1, 220–3).

At Fulston Manor, however, there was limited evidence of settlement. Apart from a few pits containing domestic waste, including possibly cess, and an amorphous spread of possible settlement debris overlying the enclosure ditch in the east, the most notable early medieval features other than the bakery were a fire-pit in enclosure 1 and some form of drier in enclosure 2. Identifiable activity, therefore, appears to be dominated by processes involving the use of fire, although in distinctly different ways. While such activities may have been sited, for reasons of safety and comfort, at a distance from any dwelling houses, barns, byres, and other domestic and agricultural structures, it seems unlikely that the bakery and possible brewery would have been sited far from the domestic centre. Determining the nature of the associated settlement, therefore, relies largely on indirect evidence.

The scale of the enclosure and the investment in a stand-alone bakery suggest the presence of a settlement of some size, although there was little in the finds from the site to indicate a particularly high status. The pottery is of forms and fabrics found widely across north-west Kent and there is little in the way of metalwork. Moreover, the low level of medieval roof tile, under c. 4.5 kg (average under 30 g), suggests that any medieval buildings on or immediately adjacent to the site did not have tiled roofs; the material was probably incorporated in manure deriving from a higher status settlement focus, possibly the manor farm situated at a distance from the enclosure.

The medieval manor at Fulston was one of three in the parish of Sittingbourne (along with Bayford and Chilton); these were sub-manors of Milton Regis, a former Saxon royal estate incorporating some 20 modern parishes whose lands, extending from the River Swale in the north to the downland valleys in the south, and from Rainham in the west to Tonge and Bapchild in the east, may have been based on a Romano-British predecessor. At the time of *Domesday* in 1086, the Milton estate, still held by the crown as a manor, was one of the most valuable in Kent, its economy based largely on livestock farming. Such farming involved transhumance, with the seasonal movement of pigs (replaced later in the medieval period largely by sheep) and cattle between

the settlements to the north and the summer grazing on common downland pastures to the south (as well as on the coastal marshes), these pastures being often detached from the parent settlements. This process is still evident in many of the local place-names (Fig. 3.1), such as Tunstall (the *stall* of the *tun* of Milton), Milsted (*milk-stead*) the estate's vaccary or dairy farm, Borden (*bardenn*) the estate's boar pasture, Kingsdown (*king's dun*) the royal pastureland, and Murston (*mores tun*) the estate's moor farm on the edge of the marshes (Glover 1976). Transhumance is also evident in the courses of drove-ways surviving in the landscape, and in the shape, for instance, of Sittingbourne parish which has a narrow tongue of land extending south from Fulston, past Highsted (the high pasture place) to the downs, along the drove-way between Milton and Milstead (Everitt 1986, 317).

However, the presence of the bakery on the site indicates that enclosure 1 was not a stock enclosure, although it is possible that some of the pre-enclosure ditches may have had some function related to animal husbandry. Nonetheless, despite the fact much of the animal bone from the site came from a single, and therefore potentially unrepresentative, feature (fire-pit 854), the animal bone assemblage does provide some insight into the exploitation of farm and other animals by the local community – a community probably self-sufficient in meat and eggs. The large number of

animal species (Table 3.3) is characteristic of medieval assemblages, although the bulk of the bones (93%) derive from the usual domesticates (ie, cattle, sheep/goat, pig, and horse). While sheep/goat bones were by far the most common (positive identification of sheep only), a large number of burnt and probably articulating sheep/goat bones came from the fire-pit (854), and the MNI indicates that cattle, sheep/goat, and pig were, in fact, represented by equal numbers. Since cattle and horse represent more meat than pig and sheep, beef would have played an important role in the diet; the disarticulated nature of the horse remains indicates that they were eventually a food source as well. The presence of most skeletal elements for cattle, sheep, pig, and horse indicate that these animals were slaughtered and their products processed locally, although only five definite butchery marks were observed – on sheep/goat, pig, chicken, goose, and fish.

Although the ages of all cattle could not be established, analysis of the epiphyseal fusion data indicates that they were mature animals, probably kept mainly for traction, milk, and manure. A single height at the withers estimation of 1.31 m, quite a high value, possibly indicates a bull or oxen. The sheep/goat assemblage contains a wide range of ages from neonate to mature, suggesting that these were probably also kept for their meat. The four ageable pig bones derive from animals aged below a year and

**Table 3.4 Animal bone species according to number of identified specimen (NISP), bone weight (BW) and minimum number of individuals (MNI)**

Species	NISP		BW		MNI	
	n	%	g	%	n	%
<i>Mammal</i>						
Cattle ( <i>Bos Taurus</i> )	47	5.8	2115	52.9	3	13.0
Horse ( <i>Equus caballus</i> )	11	1.4	808	20.2	1	4.3
Sheep ( <i>Ovis aries</i> )	1	0	5	0.1	3	13.0
Sheep/Goat ( <i>Ovis / Capra</i> )	129	16.0	268	6.7		
Pig ( <i>Sus domesticus</i> )	31	3.9	395	9.9	3	13.0
Cat ( <i>Felis catus</i> )	1	0	2	0	1	4.3
Dog ( <i>Canis familiaris</i> )	1	0	1	0	1	4.3
Dog/Fox ( <i>Canis familiaris / Vulpes vulpes</i> )	1	0	6	0.2	1	4.3
Mole ( <i>Talpa europaea</i> )	2	0	0	0	2	8.7
Rabbit ( <i>Oryctolagus cuniculus</i> )	3	0	4	0.1	1	4.3
<i>Bird</i>						
Chicken ( <i>Gallus gallus dom.</i> )	8	1.0	13	0.3	2	8.7
cf. chicken	4	0.5	1	0	-	-
Goose/Greylag goose ( <i>Anser anser</i> (dom.))	1	0	6	0.2	1	4.3
cf. Starling ( <i>Sturnus vulgaris</i> )	1	0	0		1	4.3
<i>Fish</i>						
Bass ( <i>Dicentrarchus labrax</i> )	3	0	1	0	1	4.3
Flat fish ( <i>Pleuronectidae</i> )	2	0	0	0	1	4.3
Herring ( <i>Clupea harengus</i> )	1	0	0	0	1	4.3
<i>Classes</i>						
Large mammal	57	7.1	194	4.9	-	-
Medium mammal	493	61.3	174	4.4	-	-
Small mammal	1	0	1	0	-	-
Bird	6	0.7	2	0	-	-
Total	804	97.7	3,996	99.9	23	99.4

more than two years. The pig bone assemblage contained at least one sow and one boar, their sex being estimated using the canines of the maxillae and mandibles. Pigs would have been kept as 'waste-to-meat-converters'. The horse bones probably all derive from adult animals. The radius used for a height at the withers estimation, calculated at 1.25 m, belonged to quite a small animal comparable to the ones from Pepper Hill Lane (1.15 m and 1.37 m; Charles 2001). It is known from the literature that there were donkeys, mules, and hinnies in medieval England (Armitage and Chapman 1979) but although it is difficult to distinguish their disarticulated remains, none of the teeth was indicative of donkey or of a crossbreed (Davis 1976; Armitage and Chapman 1979; Baxter 1998).

Chickens and possibly geese were kept as poultry. The absence of a spur on a tarsometatarsus of chicken indicates a female bird. The presence of a flatfish head bone indicates that at least some fish reached the site whole and thus possibly fresh. As the site is c. 10 km from the Kent coast, fresh marine fish is certainly a possibility. The remains of herring and flatfish were found at Pepper Hill Lane (Ingrem 2001). Other wild species were probably not important in the diet, and it is likely that the remains of rabbit and mole were intrusive as these are burrowing animals, although the earliest rabbit remains found in Britain date to the 11th/12th century. A few cats and probably dogs were also kept.

In addition to the important role of animal husbandry, the layout of the landscape, with its pattern of dispersed farms and settlements was also influenced by the process of woodland clearance, undertaken in part for the expansion of arable land. The southern and larger part of the Milton estate lay in the Forest of Blean, which had originally extended from the Hoo peninsula to Canterbury. The trees of the forest extended from the downs to the south side of Watling Street and lapped beyond it to the north side in some places. This woodland was in the process of being cleared for cultivation throughout the late Saxon and early medieval periods (Everitt 1986, 313), with belts of residual woodland surviving for instance along parish boundaries. The wood charcoal from the site indicates the collection of locally available tree and shrub types for domestic fuel, and provides details of the tree types growing locally in the late 12th–early 13th century. The occurrence of calcareous soils is indicated by the dominance of beech and currant, and there are indications that the latter, along with walnut, were cultivated locally. The highly restricted charcoal assemblage from fire-pit 854, which consisted almost solely of hazel (*Corylus avellana*), indicates this had been specifically selected for fuel use, possibly from a managed (eg, coppiced) source.

In the Milton estate, woodland clearance involved the enclosing by ditches of a series of large lobe-shaped assarts extending south from Watling Street, which, after clearance, were ploughed and sowed with oats and rye, and often left to lie fallow for a number of years (Everitt 1986, 319; Muir 2000, 22, 24, 181). Although there was common pasture on the downs and marshes, in the absence of nucleated settlements, common open fields with ridge-and-furrow cultivation were largely absent from Kent (Darby and Campbell, 1962, 529; Everitt 1986, 12, 39–42, 70–1, 314, 335; Hallam 1988, 621; Muir 2000, 208). The charred cereal remains recovered from the site indicate the cultivation mainly of hulled barley and free-threshing wheat. Oats and small numbers of rye grains were also present, possibly reflecting the continuing process of woodland clearance, although it is possible that the oats were not cultivated but were in effect a weed. It is suggested that barley and rye are lower status cereals than free-threshing wheat (*cf.* Greig 1988), although often bread could be baked from a mixture of the two. Moreover, barley is likely to have been the main ingredient used in the production of ale. Given the absence of cereal chaff in the charred remains, it must be assumed that the crops had been threshed and winnowed prior to arriving on the site, while the presence of small-sized weed seeds mainly from the sample from the fire-pit (854) suggests that, although the grain may also have been coarse sieved, fine-sieving had either not been conducted or was relatively incomplete (*cf.* Hillman 1981).

Leguminous crops were also cultivated, mainly pea (*Pisum sativum*) and broad bean (*Vicia faba*), and a possible seed of lentil (*Lens culinaris*) was recovered from the bakery (context 981) although it was too poorly preserved for secure identification. At least one seed of flax (*Linum usitatissimum*) was also recovered. Wild food remains recovered include occasional fragments of hazelnut shell, elder (*Sambucus nigra*) and a single stone of sloe (*Prunus spinosa*).

With the exception of the fire-pit, there were relatively few weed seeds, these include redshank (*Persicaria* sp.), vetch/wild pea (*Vicia/Lathyrus* sp.), and brome grass (*Bromus* sp.). The fire-pit, in contrast, contained a wide range of weed seeds, the majority of which are common arable weeds. Apart from the many (possibly wild) oat grains, the seeds were dominated by stinking chamomile (*Anthemis cotula*), a particularly noxious weed of clay soil that was recovered from no other samples on the site. Other weeds included fat-hen (*Chenopodium album*), hedge-parsley (*Torilis* sp.), scentless mayweed (*Tripleurospermum inodorum*), and either rye grass and/or darnel (*Lolium* sp.). While the mixture of barley and free-threshing wheat from this

feature could represent a crop grown as a maslin, the presence of seeds of species associated with lighter, sandier soils; eg, sheep's sorrel (*Rumex acetosella*) and corn camomile (*Chrysanthemum segetum*), suggests a mixture of crops from different fields.

Lands at Fulston (*Fugeleston* – meaning Fugul's farmstead) are first mentioned in 1197, and the fact that it became a manor of itself suggests that it was cleared of woodland by an individual and his household, rather than by a community acting together (Glover 1976, 77; Everitt 1986, 41, 314). From its beginning as a manor, the lord's demesne lands (or home farm) probably consisted of one large field, taking advantage of the fertility of the soil to grow crops for sale rather than consumption. In the 12th century, demesne lands were often leased out by their lords, but in the late 12th and 13th century there was a movement towards their direct management in order to grow agricultural produce for a cash market (Williamson 2004, 46).

Bread was a staple food for the medieval populace, its importance indicated by the imposition in 1202, by King John, of laws regulating its price and limiting the amount of profit a baker could earn. These laws were followed in 1266, during the reign of Henry III, by the enactment of the Assize of Bread, further regulating the weight, contents and quality of loaves. Such regulations, however, would have had greater force in towns and cities than in rural settings such as this, where all stages in the production of bread, from the cultivation of the cereals, through the milling of the grain, to the baking of the loaves, may have been under some degree of manorial control (Coulton 1989, 55).

In medieval households, baking was closely associated with brewing, both tasks often being undertaken by women, and with both bread and ale being produced on a daily basis. Like bread, ale, in its way, was also a staple in the medieval diet (except perhaps for those on its lowest rungs of society), providing a safe alternative to water for drinking, and it too was subject to regulation in the form of the Assize of Ale, in places from at least the 12th century but nationally from the 13th century (Bennett 1996, 99).

The location of the oven and possible brewing hearth within a purpose-built bakery/brewery, itself sited within a substantial enclosure (with evidence of milling in the immediate vicinity) clearly places these features within the context of a significant settlement, probably the manor. It is possible that the lord's tenants were both obliged, and even charged *banalities* (fees), to grind their grain in the manorial mill and bake their loaves in the manorial oven. However, while the production of bread on this site, and possibly the brewing of ale, may reflect the

asymmetric relationship of the rural serfs to their feudal lord, the centralisation of these processes also had an economic logic, since the construction and operation of such a bakery/brewery represented a significant investment which only made economic sense if bread and ale were produced in quantity (possibly even for the wider market).

The bakery building was demolished in the early 13th century, and while some continuity of occupation into the 14th century is indicated by the continued alignment of the later features on the site, the earlier enclosure boundaries being possibly still recognised, the nature of that occupation appears to have changed substantially. Although the large ramped hollow (450) and the possible flint wall footing indicate the presence of structures on the site, the low levels of finds, particularly pottery, points to activity that was less closely associated with the domestic sphere than possibly to agricultural concerns. These structures, however may still have been associated with a nearby manor house. The site may be broadly comparable, therefore, to an early 13th–mid-14th century farmstead at Earlswood, Surrey, which appears to have consisted of a domestic timber-framed longhouse dwelling and agricultural buildings grouped around a yard, probably as a stock farm (Ellaby 1984, 195–9).

The site appears to have been finally abandoned by the middle of the 14th century, an event probably influenced by the deterioration of the climate and the weakening of the economy in the early 14th century, which led to the desertion of many settlements (Muir 2000, 22). Following a series of bad harvests, there was a widespread famine in 1315–17, accompanied by an epidemic in 1316 resulting in great mortality, as well as by outbreaks of animal disease which remained prevalent until 1322. While there is evidence of an agricultural recovery in south-eastern England by the mid-1320s (Campbell 2000, 87), due in part to new crop rotations and manuring and marling regimes, this was set back by great droughts in the summers of 1325 and 1326, widespread flooding from the sea and renewed outbreaks of animal disease (Kershaw 1973, 15), a pattern which repeated into the 1340s. This culminated with the Black Death in 1348–9 and the series of agricultural and health crises which followed it, resulting in an estimated 40% fall in the English population between 1300 and 1375 (Campbell 2000, 402).

The medieval abandonment of the site may also have been related to changes in the ownership of the manor following the death, near the beginning of the 14th century, of John de Fogheleston, who was probably the last of his line. While part of the manor was retained by his widow, Margaret, as her dower land, the rest, in the absence of any heirs, was

escheated to Marguerite of France, the widow of Edward I. Some time before her death in 1318 Marguerite granted the land, together with the reversion of the dower lands, for the duration of her life, to Gassotus de la Ruelle, a grant subsequently confirmed by Edward II's queen, Isabelle of France, and in 1331 by Edward III. This change of ownership is likely to have been the context in which the first manorial site was abandoned, although the estate is not actually called a manor in these grants.

In the late 15th and early 16th century Fulston Manor appears to have been held by the Gerard family, many of whom were buried in the chancel of the parish church which belonged to Fulston. They probably lived in the late medieval manor house built to the south-west of the site, the ruins of which, after its demolition in the late 18th century, were built

upon by a "neat farm-house" – the present Fulston Manor Farm (Hasted 1797–1801, vi 159). Although there is significant documentary evidence as to the changing ownership of Fulston Manor in the post-medieval and modern periods, the absence of any dating evidence during the excavation for the possible building, as represented by the flint wall and rectangular spread, means that the nature, history and context of this late structure remains elusive.

### **Archive**

The full documentary, finds and environmental report are retained in the archive, which is currently held at the offices of Wessex Archaeology under the project codes 57960 and 57961.





# 4. A Late Bronze Age, Anglo-Saxon, and Medieval Settlement Site at Manston Road, Ramsgate

*by Andrew Hutcheson and Phil Andrews*

## **Project Background**

In 1994, Tesco Stores Limited applied for planning permission to redevelop a site south of Manston Road, Ramsgate (centred on NGR TR 36175 65500), as a retail store with associated car parking (Fig. 4.1). The archaeological potential of this site was subsequently outlined in a desk-based assessment (Trust for Thanet Archaeology: Perkins 1994). This indicated that the site lay within an area of high archaeological potential, most clearly demonstrated by excavations carried out nearby between Ozengell Grange and Lord of the Manor roundabout which revealed a group of small Late Neolithic–Early Bronze Age henge monuments and ploughed-off round barrows overlain by 230 graves comprising part of an Anglo-Saxon cemetery (Perkins and Macpherson-Grant 1980; Youngs and Clark 1981; 1982); additionally, a number of excavated and unexcavated sites in the vicinity are recorded in the archives of the Trust for Thanet Archaeology (Perkins 1994). In particular, the desk-based assessment drew attention to the presence within the proposed development area of an extensive cropmark on the eastern half of the site recorded during an aerial photographic survey conducted by Cambridge University. This cropmark consisted of the outline of a multi-roomed building with a triple ditched enclosure surrounding it, and was thought at the time to represent either a Roman villa or a medieval manor house.

Kent County Council's Heritage Conservation Group (KCC HCG), acting as archaeological advisors to Thanet District Council, requested that an archaeological field evaluation be undertaken prior to determination of a planning application (No. OL/TH/94/0514). This evaluation, carried out by Wessex Archaeology in May 1995, was designed to investigate, in particular, the cropmark on the east side of the site. Fourteen trenches were initially opened (Tr 1–14 on Fig. 4.1), with additional work (including Tr 15–18) subsequently undertaken at the request of the County Archaeologist. The evaluation showed that the cropmark was of medieval rather than Romano-British date, and also revealed the presence of a shallow Late Bronze Age ditch (in Tr 17) and an Anglo-Saxon sunken-featured building (SFB) (in Tr 11), both in the western half of the site (Wessex Archaeology 1995).

Based on the results from the evaluation, excavation was undertaken on part of the western half of the site in the area on which the retail store and associated service yard were to be built. The remainder of the site, designated for car parking and 'soft landscaping', was to be the subject of an archaeological watching brief. This programme was later modified (in October 1996), and the proposed area of 'soft landscaping' (in the northern corner of the site) included within the area of controlled excavation (a total area of c. 1 ha; Fig. 4.1). Wessex Archaeology undertook excavation in 1996, followed by a watching brief in 1997 during the digging of drain trenches on the eastern side of the site (Fig. 4.1), which provided additional information on some of the medieval features.

## **Archaeological Background**

There are a number of archaeological sites within a 0.5 km radius of the proposed development area listed in the Kent and Trust for Thanet Archaeology Sites and Monuments Records. Some of these have been partially investigated by excavation, while others are known solely from cropmarks. (Fuller descriptions can be found in Perkins 1994). In summary, they comprise the following: Late Neolithic–Early Bronze Age henges and barrows (between Lord of the Manor roundabout and Ozengell Grange); an Early Neolithic burial, Iron Age pits, and a Romano-British farmstead (at Nethercourt); scattered Romano-British finds (at Staner Hill); at least one Anglo-Saxon cemetery (between Lord of the Manor roundabout and Ozengell Grange) within which c. 300–400 graves have been recorded, some containing rich assemblages of grave goods; a medieval grange and earlier remains (at Ozengell Grange); and several undated enclosures, field systems, ring-ditches, and possible graves known only from cropmarks (at Nethercourt).

On the 1:1250 OS map covering the proposed development area, the area to the east in the angle between Manston Road and the railway is marked with 'Upper Court (site of)'. This name is derived from a statement by Charles Cotton (1895, 168) that the site of a manor house which bore that name could be seen as a parchmark in dry weather on the left hand side of Manston Road, just beyond the railway

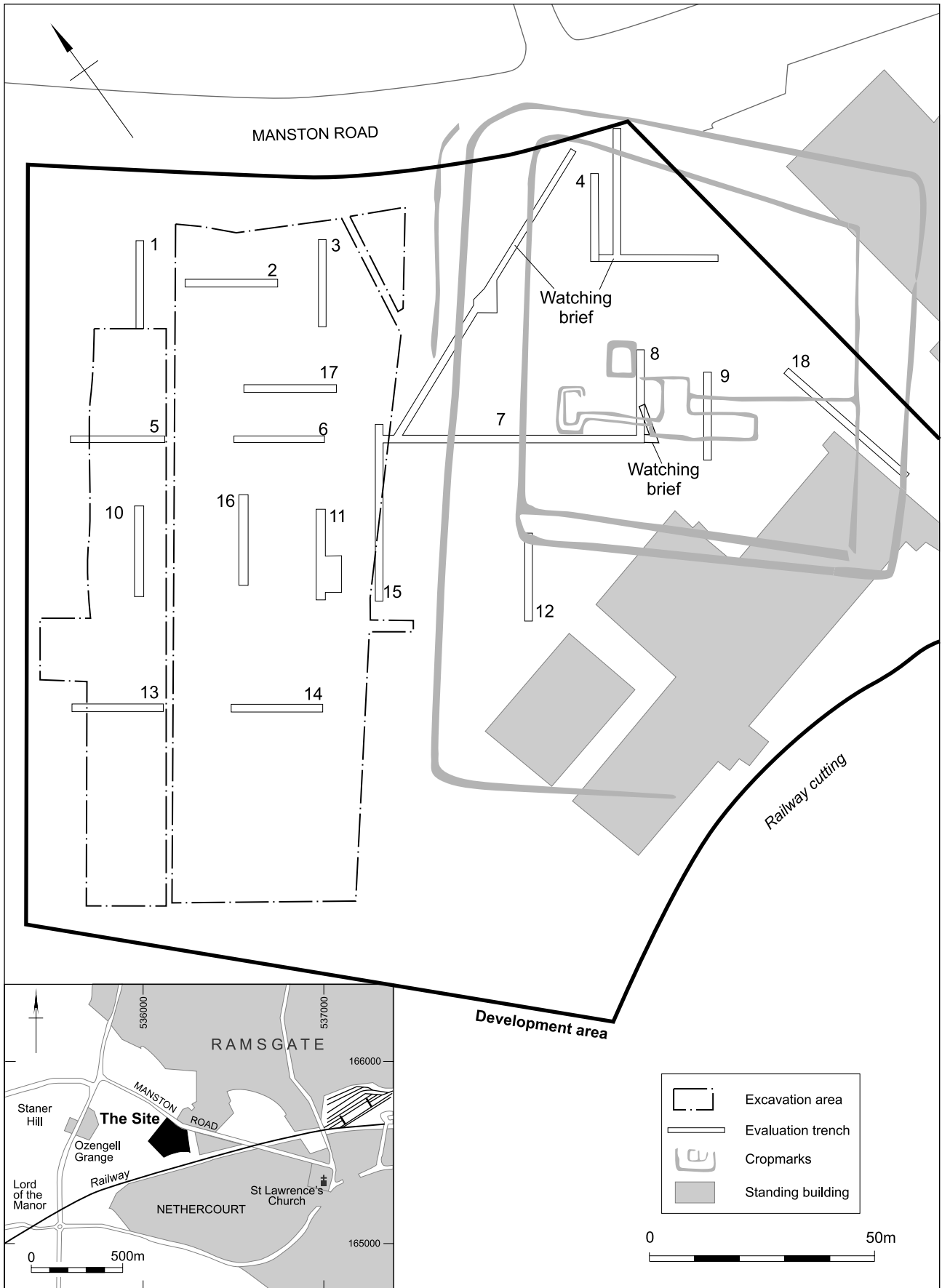


Figure 4.1 Manston Road, Ramsgate: Site location plan



Plate 4.1 Manston Road, Ramsgate: General view of excavation looking south

level crossing, although the house itself had been demolished before the reign of Queen Anne. Fragments of upstanding wall footings close to this point were noted by Perkins in the mid-1950s. A low-level oblique aerial photograph taken in the mid-1960s by Cambridge University showed what was very probably the parchmark noted by Cotton. This appeared as a rectilinear ditched enclosure (Kent SMR No. TR 36 NE 27) with the remains of a multi-roomed building within it (Kent SMR No. TR 36 NE 123). When the cropmark was plotted onto a modern map (Perkins 1994), it was found to lie across the eastern half of the development area, partly within the area of the proposed car park. The position of the cropmark shown in Figure 4.1 is c. 10 m to the north-west of that plotted by Perkins (1994, fig. 3); this 'adjustment' has been undertaken in order to provide a best-fit with the excavated evidence.

Subsequent to the excavations reported here, several other archaeological investigations have been undertaken in the vicinity, the results of which are relevant to that described and discussed below. In particular, work at Chalk Hill less than 1 km to the south has revealed a Neolithic causewayed enclosure and Late Bronze Age–Late Iron Age features (Dyson *et al.* 2000), whilst a more recent excavation immediately to the west of the site recorded ditches, metallised surfaces, and a few pits associated with field systems, enclosures, and trackways of Middle–Late Bronze Age and Early/Middle Iron Age date (Boast *et al.* 2006). A little further away at Cliffs End, almost 2 km to the south-west, excavations in 2004–5 revealed a variety of features including ditches, enclosures, and a large pit containing articulated burials of Late Bronze Age date, an Anglo-Saxon cemetery, assigned

to the 6th–7th centuries, and around 70 pits of probable Middle Saxon date with large quantities of oyster shell but few other finds (Leivers *et al.* in prep.).

## Geology and Topography

The drift geology consists of younger (Weichselian) Head Brickearth over cryoturbated Upper Chalk. The Brickearths are mainly fluviually reworked loessic deposits. The truncation of the Brickearth surface strongly suggests erosion due to meltwater outwash, indicated by thin bands and more dispersed rolled flint gravels (*cf.* Kerney 1965; Weir *et al.* 1971. Both describe the nearby Pegwell Bay Brickearth formation). The thickness of the Brickearth deposits varies over the area from non-existent in the eastern half of the site to slightly greater than 1.0 m in the northern corner.

The development site, which covers c. 2.4 ha in total, lay towards the south-east edge of the Isle of Thanet, overlooking the infilled Wantsum Channel (Pl. 4.1), on land which rises gently from 42.68 m OD in the north-east up to 44.50 m OD in the south-west, with the highest point at 45.35 m. Staner Hill, approximately 500 m to the north-west of the site, is the highest point on the island, rising to c. 55 m OD. The area as a whole appears to lie in a very slight depression which constitutes the head of a dry valley that runs north-west to south-east across the west side of Ramsgate to exit into the sea at a break in the cliffs to the west of Ramsgate Harbour.

The site remained as open fields up to the 1970s, when it was developed as a car storage pound. Some

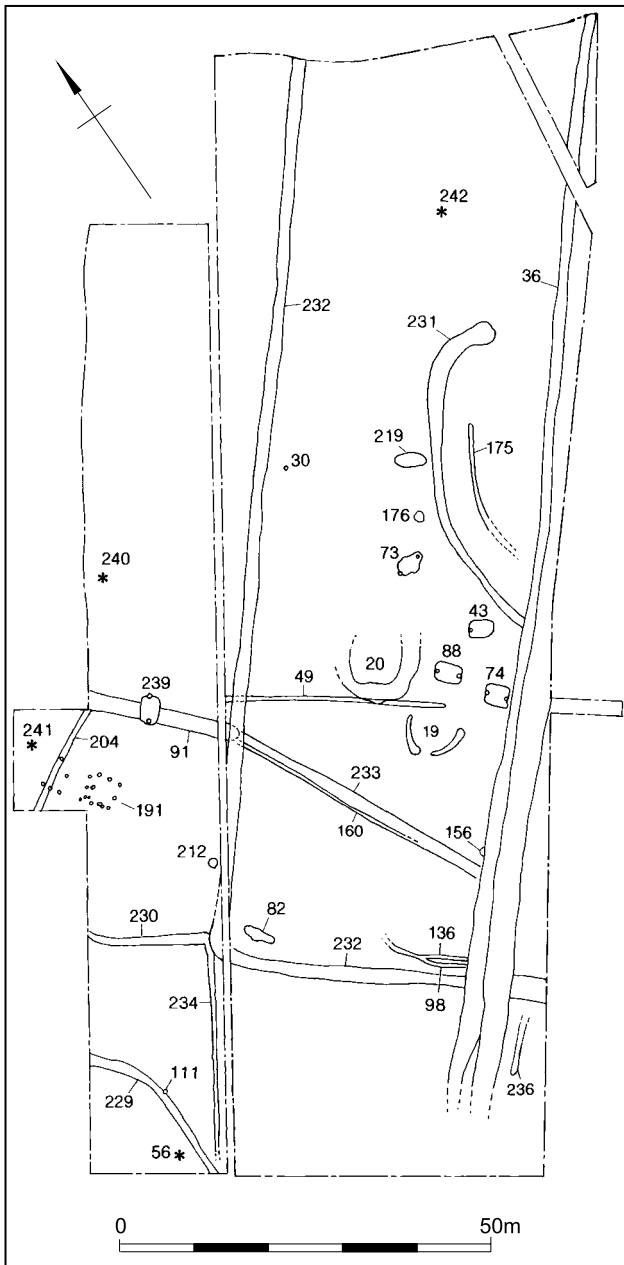


Figure 4.2 Plan of all excavated features

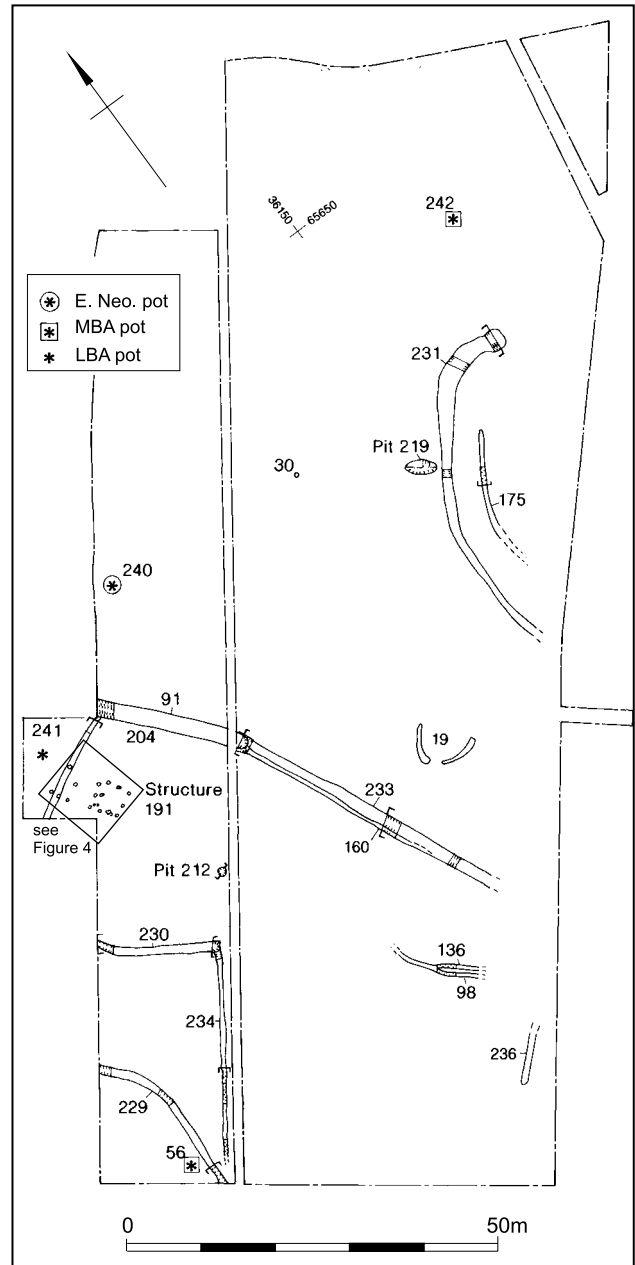


Figure 4.3 Plan of Late Bronze Age and other prehistoric features

areas towards the south end were covered by concrete or tarmac but most of the area was converted to hard-standing; this involved mixing the topsoil with cement powder and leaving it to harden to a 'crust'. It is likely that this conversion of the area to car park also involved some levelling of the ground surface causing the truncation of archaeological features. In the late 1970s a factory unit was constructed in the south-eastern corner, and this remained abandoned but extant when the fieldwork was carried out.

Archaeologically, the fact that the site was used as a car park from the 1970s until recently may be significant. Much of the surrounding area is in

agricultural use and, since the early 1970s, has been subject to deep ploughing which is likely to have greatly reduced the archaeological potential of any underlying remains. The site may, therefore, have survived as something of an island of relatively well-preserved archaeological remains.

### Methods

The 1995 evaluation comprised the excavation, by machine, of eighteen 2 m wide trenches of various lengths totalling c. 400 m (c. 2% of the development

area). The trenches on the east side of the site were positioned to intersect features plotted from the aerial photograph, whereas those on the west side were arranged within the footprint of the proposed retail store (Fig. 4.1). Although features in the eastern half of the site, cutting cryoturbated chalk and sand, were clearly visible, at least two ditches (subsequently identified during the excavation) cutting Brickearth in the western half were not recognised.

The excavation in 1996 initially involved the stripping of a rectangular area measuring c. 100 x 60 m. This was subsequently extended to the north-east, up to the edge of development area (including the zone proposed for 'soft landscaping'), and a small extension stripped on the south-west side to expose the complete plan of a Bronze Age rectangular structure. The final excavated area measured c. 165 x 65 m (c. 1.07 ha). The depth of overburden increased from c. 0.30 m in the south-western part of the site, where considerable truncation of deposits was apparent (possibly 0.50 m or more; see Pl. 4.2), up to a maximum of c. 0.75 m along the north-east side of the site. Some difficulty was experienced during the early stages of machining in identifying the surface of *in situ* Brickearth which, over part of the site, formed a thin and often discontinuous spread, the nature of which had not been recognised during the evaluation.

Sufficient of each feature was excavated to record its form and date, and to facilitate interpretation. This normally meant a minimum of 50% of non-linear features (ie, pits and post-holes) and 10% of linear features (ditches and gullies). The Bronze Age pottery vessels, the Late Bronze Age rectangular structure, and the Anglo-Saxon SFB were 100% excavated. Bulk samples, comprising up to 20 litres of deposit, were taken from a range of sealed and dated features. All excavated features are shown on Figure 4.2.

### Early Neolithic

A small, shallow cut, 240 (Fig. 4.3), close to the north-western edge of the site, contained the truncated remains of a lugged, carinated bowl of Early Neolithic type (see Fig. 4.17, 1–2); rim sherds from possibly a second vessel were also present (see Fig. 4.17, 3). The cut, virtually indistinguishable from the surrounding Brickearth, had evidently been dug specifically to take at least one vessel.

No other Neolithic features or finds were certainly identified, but it is tentatively suggested that the remains of a possible segmented ring-ditch, 19 (Fig. 4.3), may have been of Neolithic or Bronze Age date. This feature comprised two curvilinear, U-shaped gullies, each c. 6.0 m long and separated by a gap of about 1.50 m. No clear evidence for a third gully was identified to the north-east which would have



Plate 4.2 Truncated Middle Bronze Age vessel 56, facing north

completed a circular arrangement c. 7.0 m in diameter. The excavated lengths were up to 0.30 m wide, 0.20 m deep and were filled with redeposited brickearth with occasional charcoal flecking and small flints; no finds were recovered. These features were very indistinct and difficult to excavate, and considerable doubt remains as to their interpretation; it is possible that they were natural features.

A few sherds of grog-tempered pottery could be of Late Neolithic or Early Bronze Age date, but all were residual in later contexts, as was a single sherd of either Beaker or Collared Urn.

### Middle Bronze Age

Two small, shallow pits, 56 and 242 (Fig. 4.3), 0.70 m in diameter and less than 0.10 m deep, have been ascribed to this period. Pit 56 lay towards the south-west corner of the site, and pit 242, a poorly-defined feature, some 130 m to the north-east. Each contained the truncated remains of a vessel assigned to the Deverel-Rimbury tradition of the Middle Bronze Age. Both vessels had been placed upright, and only the bases survived (Pl. 4.2). No finds or human bone was found in association with these vessels which might have suggested that they represented burials.

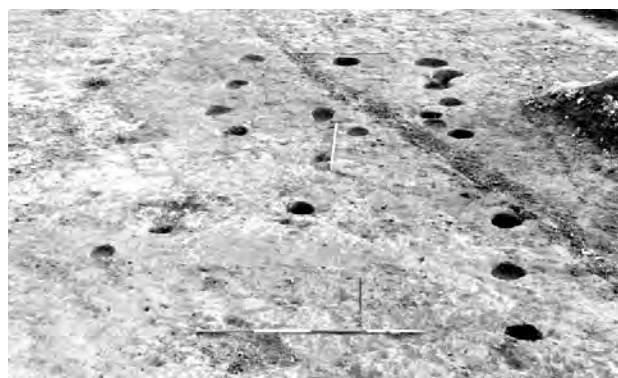


Plate 4.3 Late Bronze Age structure 191

## Late Bronze Age

The Late Bronze Age features comprised a rectangular post-built structure, several ditches and gullies likely to have been enclosures or field boundaries of more than one phase, and a small number of pits (Fig. 4.3). All of these have been assigned to the 11th–8th century BC on the basis of the ceramic evidence.

### Structure 191

This was rectangular in plan and lay on the western edge of the excavation (Figs 4.3–4; Pl. 4.3). It measured c. 10.0 x 3.50 m, was aligned north-west to south-east, and comprised 22 circular or sub-circular post-holes possibly representing two phases of construction. It is clear that the post-holes had been truncated to some degree, but their different depths may, to some extent, have reflected the varying thickness of the brickearth through which they were cut.

The group of post-holes at the south-east end formed a closely-spaced, sub-rectangular arrangement measuring c. 4.0 x 3.50 m, with the corners marked by post-holes 116, 120, 170, and 185. Post-holes 116 and 120 (0.75 m and 0.60 m in diameter respectively) were larger in plan than 170 and 185 (0.50 m in diameter), but shallower (0.15 m compared to 0.35 m), with all but one (124) of the remainder being similarly shallow and having flat or slightly rounded bottoms. All of the post-holes were spaced at intervals of between 1.0 m and 1.50 m (centre-to-centre), with 132 and 128/179/186 possibly representing one pair, and 181/183 and 122/124/126 another, along the north-east and south-west sides respectively, in addition to the corner pairs of 116 and 120, and 170 and 185. No relationship could be established between post-holes 128/179/186, but 181 cut 183, and 124 was cut by both 122 and 126. Post-hole 158, cut by 130, lay centrally placed towards the north-west end of this part of the structure.

The group of six post-holes at the north-west end was separated by a gap of approximately 3.0 m from those at the south-east end. These were smaller, only 0.35–0.40 m in diameter, but similarly spaced to those at the south-east end. Post-holes 190, 198, and 206 lay 1.50 m apart and continued the same alignment as 120, 122, 124, etc, to the south-east, with 190 and 198 being substantially deeper (0.30 m) than 206 (0.12 m). No post-holes were found to correspond with the line of 116, 132, 170, and 181/183 to the south-east, but 194 lay approximately 1.0 m to the south-west and 208 a similar distance to the north-east of the projected line.

The fills of the post-holes comprised uniform, reddish-brown sandy silts with occasional small flints and rare charcoal flecks; no post-ghosts or post-impressions were apparent. A total of 65 sherds of pottery were recovered, 60 of Late Bronze Age date and five of possible Early Bronze Age date.

### Ditches and Gullies

Several ditches and gullies were investigated which represented parts of several enclosures and/or boundaries of more than one phase (Figs 4.3, 4.5). However, few stratigraphic relationships could be determined. Ditch 91 and Structure 191 both cut gully 204, and ditch 233 represented a recut of ditch 160.

Shallow gully 204 was aligned north-east to south-west and extended to the south of ditch 91, but not to the north of it, suggesting that the two features were originally contemporaneous and part of the same system. Gully 204 was at least 15 m long, extending to the south-west beyond the limit of excavation, up to 0.65 m wide, 0.10 m deep, and produced two sherds of pottery.

Ditch 91 was the most substantial of those present. It ran north-west to south-east over a distance of at least 20 m, was up to 3.0 m wide, 1.0 m deep and had a V-shaped profile; a 'shelf' along part of the south-east side (see Fig. 4.5) may provide evidence for a recut or an earlier, shallow phase (*cf.* gully 204), but no differentiation in the fill of dark yellowish-brown silt was apparent. Ditch 91 extended to the north-west beyond the limit of excavation, but ended in a rounded terminal to the south-east at its junction with ditches 160/233. A total of 78 sherds of pottery was recovered from the excavated sections.

Two phases were represented by ditch 160 and a recut, 233, which continued to the south-west of ditch 91, but on an alignment slightly skewed to the south. Unfortunately, the relationship between ditch 91 and ditches 160/233 had been destroyed by a medieval ditch, but it is suggested that they were broadly contemporaneous and formed part of the same enclosure or field system. Ditch 160 and ditch 233, which cut the north-west edge of 160 along the entire 35 m length exposed, were relatively shallow, with a maximum depth of 0.35 m, and were together 1.40 m wide. They both had open U-shaped profiles, with little differentiation apparent in their fills which produced a total of 58 sherds of pottery. Ditch 160/233 may have returned to the south-west as gully 236 (undated), but it is thought more likely that the latter may have been a return of gully(s) 98/136 (see below).

The eastern corner of a possible square or rectangular enclosure, represented by ditch 230 and

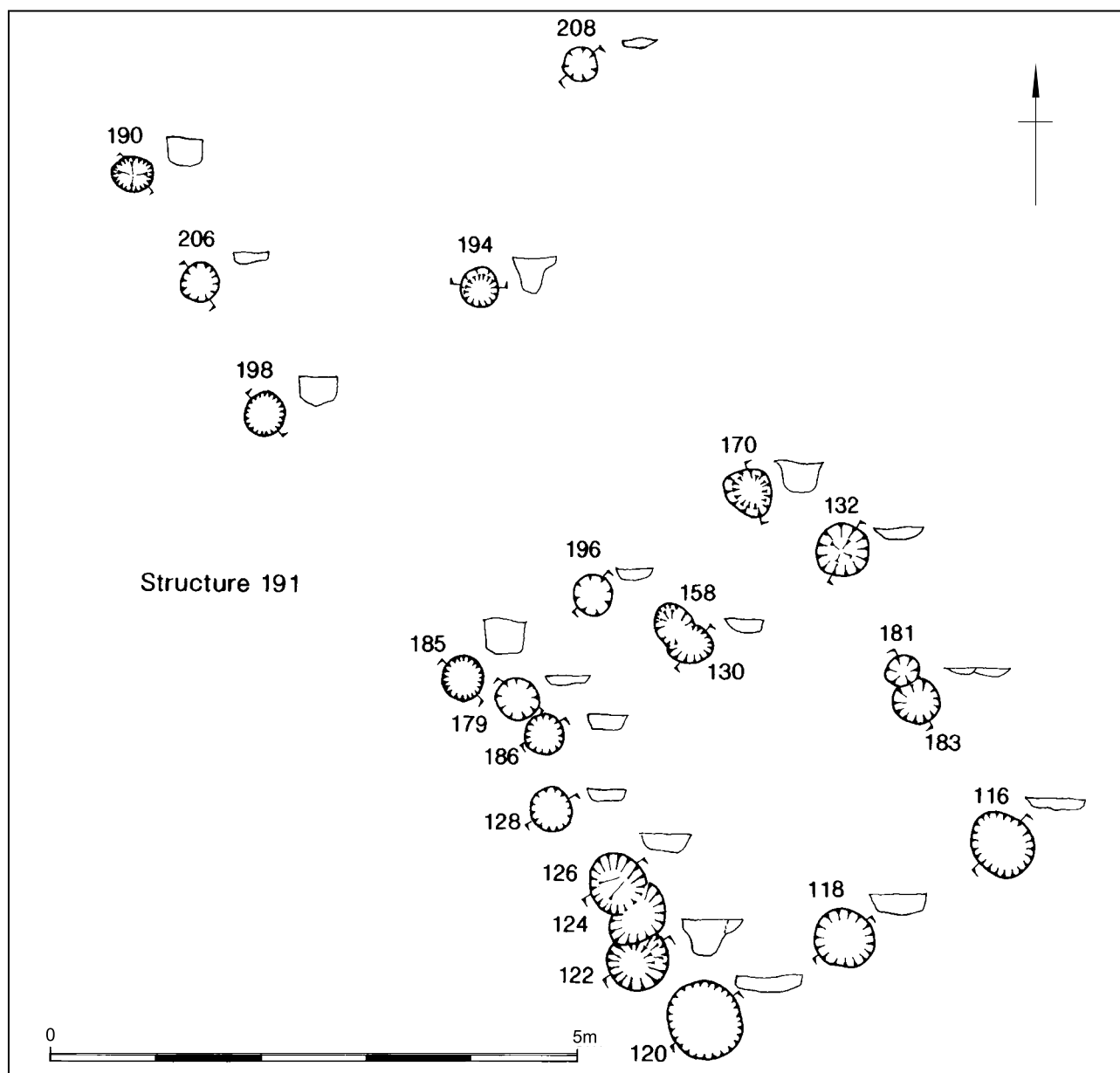


Figure 4.4 Plan and sections of Late Bronze Age structure 191

ditch/gully 234, was exposed in the south-west corner of the site. Ditch 230 was at least 17 m long, up to 1.50 m wide and 0.50 m deep. This returned at 90° to the south-west as ditch/gully 234 which was truncated to the south-west, but was at least 30 m long, 0.75 m wide and 0.25 m deep. Ditch 230 varied from U- to V-shaped in profile, whereas 234 was U-shaped in all the sections investigated. Ditch 230 produced 184 sherds of pottery, more than any of the other Late Bronze Age ditches, but ditch 234, in contrast, produced none.

Also in the south-west corner of the site was curvilinear ditch 229, though no relationship could be established between this and ditch/gully 234 which had been truncated in the area where the two features would have intersected. Ditch 229 had a regular,

U-shaped profile, was approximately 1.0 m wide and between 0.40 m and 0.50 m deep, and produced a single sherd of pottery. It may have bounded an enclosure which lay mainly outside the limit of excavation to the south-west.

Towards the south-east corner of the site were two shallow gullies, 98 and 136, aligned north-west to south-east, which merged and probably formed part of the same recut feature. A 5.0 m length survived, cut away by a post-medieval trackway to the south-east and fading out to the north-west. The gullies were up to 0.35 m wide and 0.10 m deep, produced four sherds of pottery, and perhaps returned to the south-west as undated gully 236 which was of similar profile and also filled with a mid-brown silty loam.

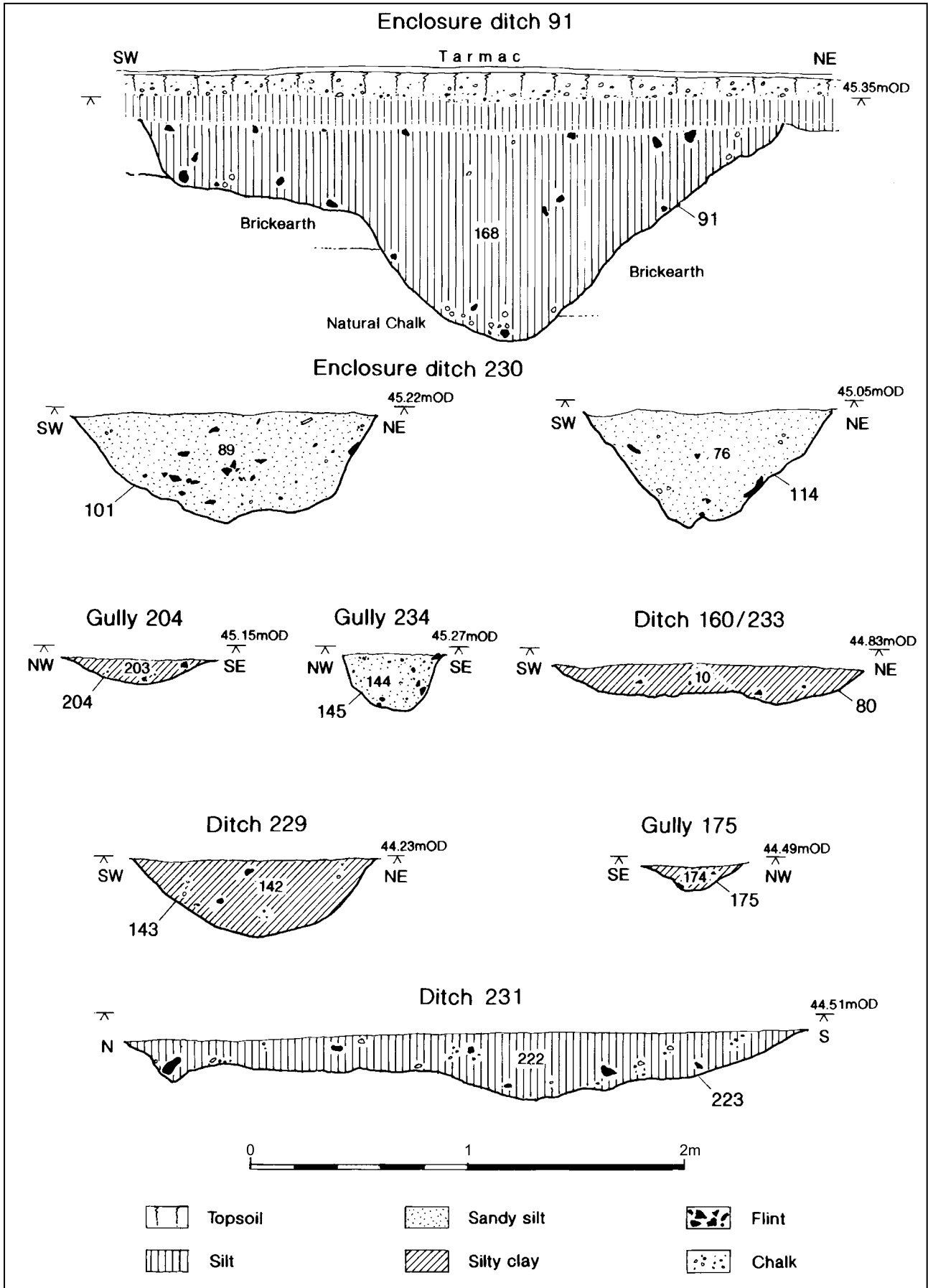


Figure 4.5 Sections of Late Bronze Age ditches



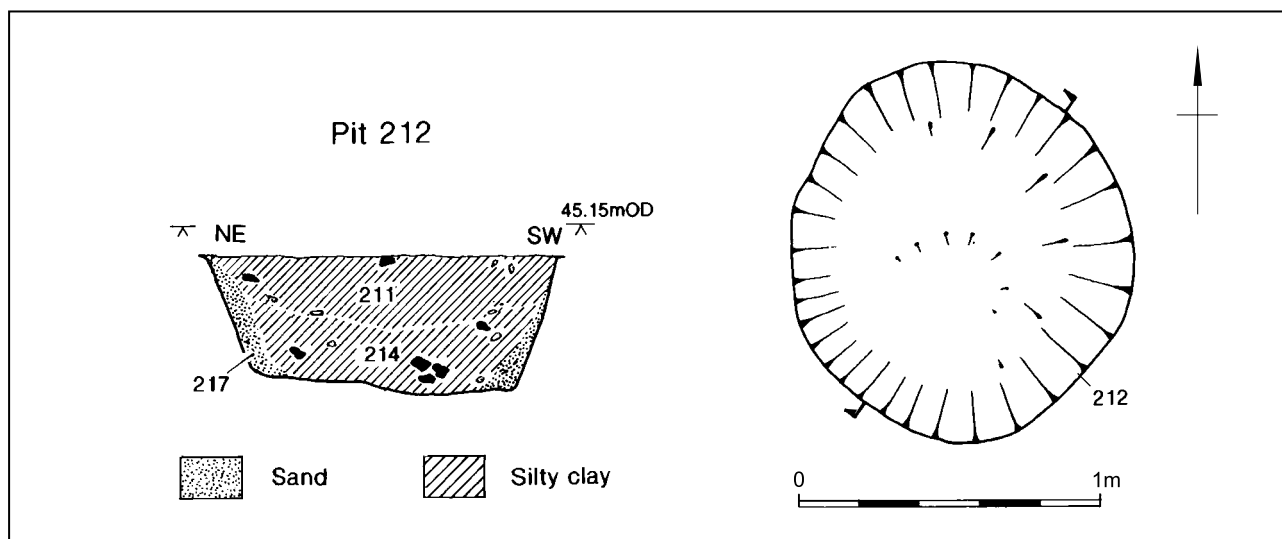


Figure 4.6 Plan and section of Late Bronze Age pit 212

Two parallel, curvilinear ditches, 175 and 231, lay to the north-east of the other Late Bronze Age ditches, and may have defined an enclosure lying mainly outside the limit of excavation to the east. Curvilinear ditch 231 was at least 40 m long with a maximum width of 3.0 m and up to 0.30 m deep. It had a wide, flat-bottomed profile and is likely to have been truncated. A probable terminus was identified at the east end but its extent to the south was unclear. The finds comprised three sherds of Late Bronze Age pottery, and 19 sherds from a Middle Bronze Age vessel recovered from one location on the bottom of the ditch during the evaluation, perhaps representing a disturbed Middle Bronze Age pottery deposit similar to those found in cuts 56 and 242 (see above). Curvilinear ditch 175 lay 5.0 m to the east and ran parallel to ditch 231, but only a 12 m length of this feature survived, with a maximum width of 0.50 m and a depth of 0.13 m. Although ditch 175 produced no finds, its relationship to ditch 231 suggests that it too was Late Bronze Age.

### Other Features

Pit 212 lay approximately 20 m to the south-east of Structure 191. It was circular in plan, 1.20 m in diameter, and 0.45 m deep with steep sides and a flat base (Fig. 4.6). There were three fills of slightly differing reddish-brown soils which contained a total of 67 sherds of Late Bronze Age pottery and two residual Early Bronze Age sherds

Pit 219 lay immediately to the east of curvilinear ditch 231. It comprised an irregular cut 5.0 m long, 1.90 m wide, and 0.43 m deep, filled with an undifferentiated greyish-brown silty clay. It produced nine sherds of pottery and the fragmented jaw of a horse.

Shallow cut 241, which lay less than 5.0 m to the north-west of Structure 191, contained 14 sherds of pottery, possibly from a single vessel. The feature had been truncated and it was not possible to establish whether the vessel had been complete when placed in the cut.

Post-hole 30 was an apparently isolated feature which lay 20 m to the west of curvilinear ditch 231. It was oval in plan, measuring 0.70 m by 0.40 m and 0.20 m deep, and filled with redeposited brickearth containing two small sherds of pottery.

### Anglo-Saxon

Five sunken-featured buildings (SFBs), a shallow pit, a gully and the remains of a possible ring-ditch lay across the central part of the site (Fig. 4.7). The finds, particularly those from the SFBs, suggest occupation dating to the later 6th–7th centuries.

### Sunken-featured Buildings

Three of the SFBs, 43, 74, and 88, lay in a group close to the eastern edge of the excavated area and were aligned approximately north-west to south-east. A fourth, 73, lay c. 20 m north of this group and was aligned east-west, and the fifth, 239, lay 45 m to the north-west and was aligned north-east to south-west.

Distances given between post-holes are centre-to-centre, and depths are measured from the surrounding ground surface. The finds from the SFBs are discussed in a separate section following the description of the buildings.

SFB 43 (Fig. 4.8), partly investigated during the evaluation, was sub-rectangular in plan, 3.40 m long, 2.20 m wide and a maximum of 0.32 m deep. A

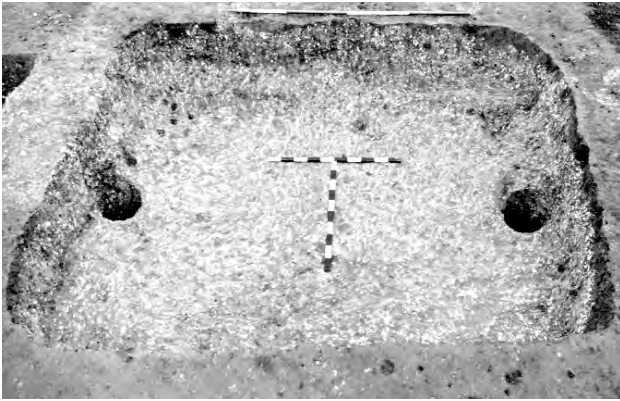


Plate 4.4 SFB 74, facing south-west

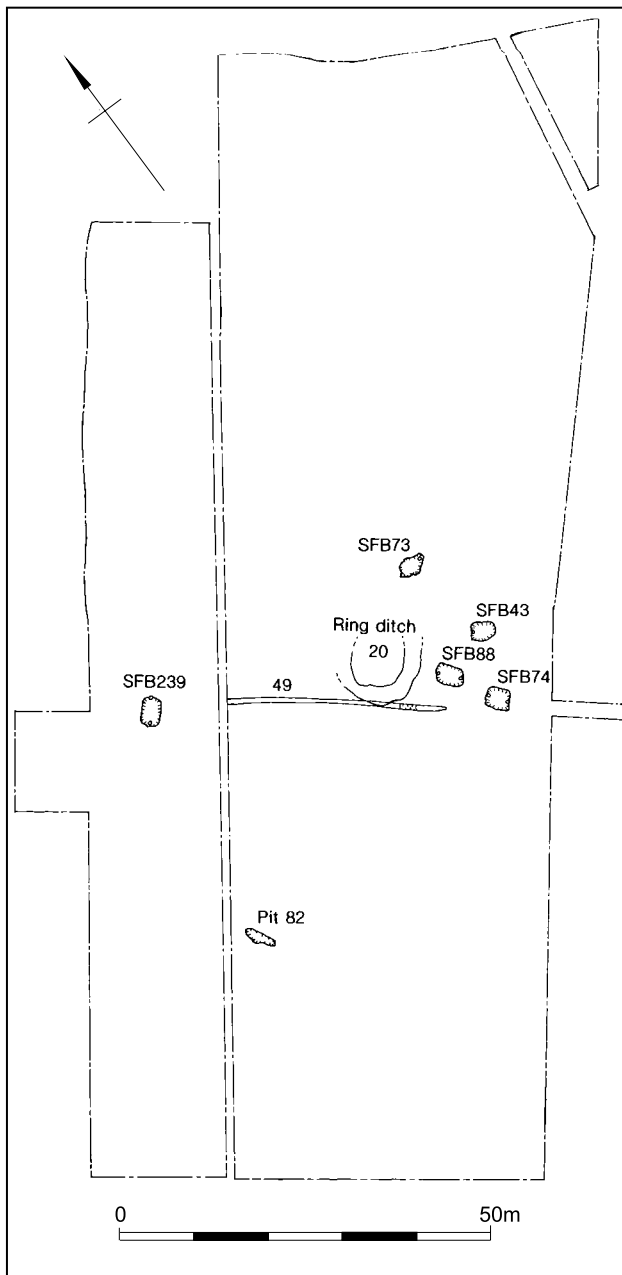


Figure 4.7 Plan of Saxon features

single, shallow post-hole survived, centrally placed at the north-west end, on the edge of the pit. This post-hole was only 0.15 m deep, and the only example where any of the principal post-holes was shallower than the pit. Two possible stake-holes were noted in the base of the pit. Both the post-hole and the pit were filled with an undifferentiated pale brown silt.

SFB 73 (Fig. 4.8) was approximately sub-rectangular in plan, 3.70 m long, 2.20 m wide and 0.40 m deep, and was the most irregular in plan of the five SFBs excavated. This irregularity may, to some extent, reflect the fact that it had been dug almost entirely into brickearth whereas the others were dug largely through chalk. There were two post-holes, 69 and 72, 3.60 m apart, centrally-placed at either end on the edge of the pit, both c. 0.30 m in diameter and 0.50 m deep. A third post-hole, 71, of similar size, lay 0.40 m to the west of post-hole 72 and probably represented an addition to or a replacement of the latter. A smaller, sub-square post-hole, 70, lay 0.60 m to the south-east of post-hole 69, and may have been related to some internal arrangement rather than a roof support. The fill of the pit and post-holes was an homogeneous brown clayey silt.

SFB 74 (Fig. 4.8; Pl. 4.4) was one of the two largest SFBs and was markedly sub-rectangular in plan, measuring 3.40 m long by 2.90 m wide and 0.60 m deep. The sides of the pit were vertical, and the bottom flat except for a slight 'step' along the south-west side. There were two substantial post-holes, 66 and 67, 2.90 m apart and centrally-placed at each end. Both post-holes were circular, c. 0.40 m in diameter and 1.15 m deep, and had chalk post-packing (layers 64 and 65 respectively) surrounding post-ghosts indicating posts 0.20–0.25 m in diameter. The fill of the pit and the post-ghosts was an undifferentiated mid-brown silty clay loam.

SFB 88 (Fig. 4.9; Pl. 4.5), less than 5.0 m to the south-east of SFB 74 was also substantial, and was the most complex in terms of its morphology and fills. The pit was sub-rectangular in plan, 3.70 m long by 2.60 m wide, and 0.60 m deep. Two post-holes, 86 and 87, were centrally-placed 3.30 m apart at either end, with 86 inclined slightly inwards. Both post-holes contained flint post-packing and post-ghosts indicating posts approximately 0.15 m in diameter. Internal features comprised two shallow post-impressions in the south-east and south-west corners, the largest 0.40 m in diameter, shallow 'steps' along the north-east and south-west sides, and a shallow slot and possibly associated small post-hole along the south-west side. SFB 88, unlike the other SFBs, contained a relatively complex sequence of fills, but these can be separated into three or four principal components. The bottom fill, 79, was a light to mid-yellowish-brown sandy loam up to 0.30 m thick which produced a relatively large assemblage of finds (see

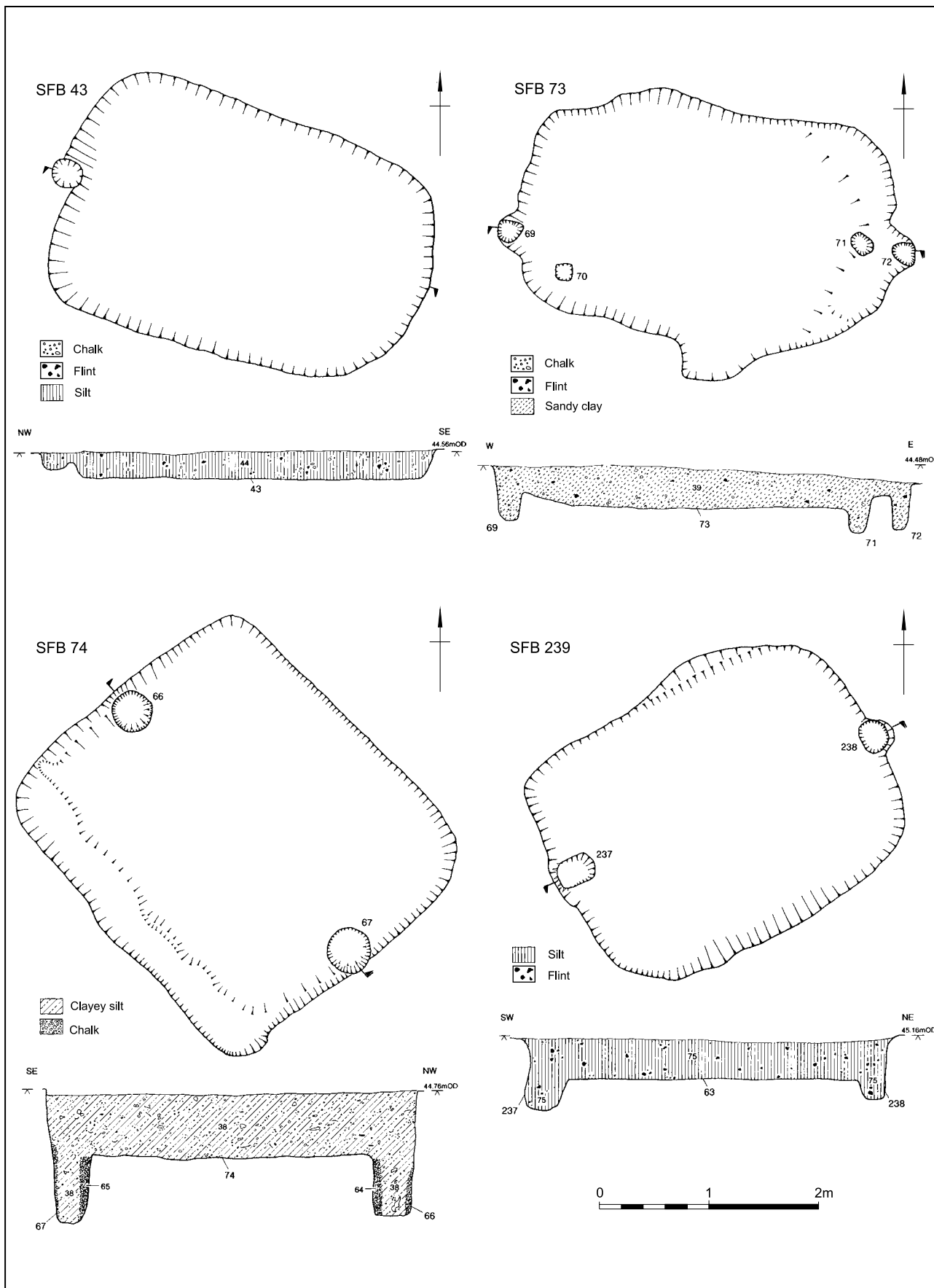


Figure 4.8 Plans and section of SFBs



Plate 4.5 SFB 88, facing south-west

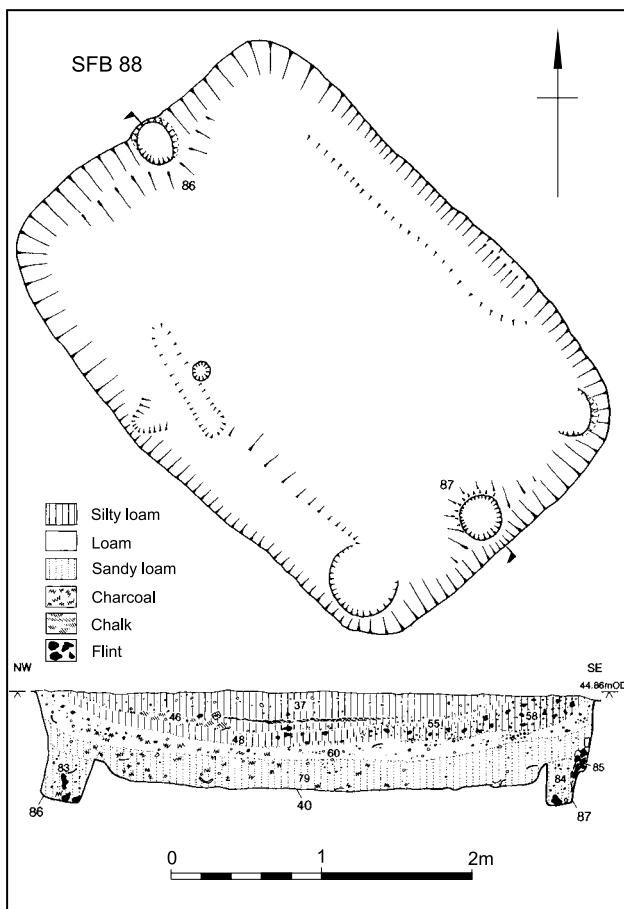


Figure 4.9 Plan and section of SFB 88

below) including a near-complete horse skull lying on the bottom of the pit. Above this was layer 60, a mid-dark orange-brown loam which contained frequent flecks and small fragments of chalk. The upper fill was up to 0.40 m thick and comprised layers of dark brown, dark yellowish-brown or dark greyish-brown silty loams (layers 37, 48, 55, and 58) separated by a layer of burnt daub (46) c. 0.10 m thick. Of these, the uppermost, layer 37, produced a further relatively large assemblage of finds (see below).

SFB 239 (Fig. 4.8) was sub-rectangular in plan, 3.10 m long, 2.40 m wide and 0.35 m deep. Two post-holes, 237 and 238, were centrally-located, 3.0 m apart, at either end, with post-hole 237 being sub-rectangular and slightly deeper at 0.60 m. The pit and post-holes were filled with a single homogeneous fill of reddish-brown silt.

**The finds from the sunken-featured buildings**

The finds assemblages from individual SFBs almost certainly reflect their use as convenient receptacles for the disposal of domestic rubbish after they had been abandoned; in none of them was there any evidence that the finds represented *in situ* floor assemblages (Table 4.1).

SFB 88 was the most prolific in terms of all finds – small finds, pottery, and animal bone. This is not simply a reflection of its large size as SFB 74, which was also substantial, contained fewer small finds than any of the other SFBs. Rather, it is likely to at least partly reflect the more complex stratigraphy identified in SFB 88, absent in the other SFBs. This appears to have included a greater volume of material which was disposed of in the pit from elsewhere and less material derived from weathering and erosion of the pit sides. Of the 28 itemised small finds from SFB 88, 11 (all but two of copper alloy or iron) came from the upper fill (layer 37), and nine (including all but one of the bone objects and four of the five knives from this SFB) from the bottom fill (layer 79).

SFB 88 contained more copper alloy and iron objects than any of the other SFBs, whereas SFBs 73

**Table 4.1 Catalogue of small finds from SFBs**

Object	SFB 43	SFB 73	SFB 74	SFB 88	SFB 239
Copper alloy	Raised perforated disc, sheet frag.	-	-	Tweezers, pin, scoop, sheet frags	Tweezers, strip frag.
Iron	-	T-clamp, binding strip, nail, unid. frags	-	4 x knife, 2 x chain link, strip with ?tang, staple 4 x ?heckle teeth, ?modelling tool, strip, key/latchlifter, unid. frags	Nail, unid. frags
Glass	Vessel glass, 3 x monochrome bead, 3 x polychrome bead, amber bead	Vessel glass, 3 x polychrome bead	-	Monochrome bead	3 x Vessel glass, 3 x monochrome bead, polychrome bead
Worked bone	Pin	2 x Comb frags, 2 x needle, pin frag.	Comb, pin frag.	3 x Comb & frags, 2 x pin	Pin beater
Fired clay	Spindle-whorl	-	Spindle-whorl	-	-
Stone	-	Quern frag.	-	Quern frag.	-
Slag	-	400 g	49 g	204 g	-

and 74 contained no copper alloy objects and SFBs 43 and 74 no iron objects. On the other hand, SFB 88 contained only a single glass bead, and SFB 74, the other substantial SFB, no glass at all; the majority of the vessel glass and beads came from SFBs 43 and 239. Worked bone and antler occurred in all of the SFBs, but ceramic objects (both spindle-whorls) were restricted to SFBs 43 and 74, and stone (quern fragments) to SFBs 73 and 88; most ironworking slag came from SFB 73, with none from SFBs 43 and 239. Loomweights were conspicuous by their absence from all SFBs.

Joining sherds of pottery amongst both finewares and coarsewares were found in SFBs 74 and 88, and joining sherds of a glass vessel in SFBs 73 and 239.

*Other Features*

Gully 49 (see Fig. 4.7) was traced for c. 50 m between SFBs 74 and 239, but the relationship between this and possible ring-ditch 20 which it intersected could not be ascertained. Gully 49 had a maximum width of 0.55 m, an average depth of 0.15 m, and produced a single sherd of pottery.

Pit 82 (Fig. 4.7) was an irregularly-shaped shallow hollow, 4.10 m long, 1.65 m wide and 0.20 m deep which lay approximately 50 m to the west of the main concentration of SFBs. There was some hint in its plan that it comprised three separate cuts, but there was no indication of this in the fill which was a homogeneous light greyish brown slightly clayey silt containing a single sherd of pottery.

Feature 20 (Fig. 4.10), interpreted as a possible ring-ditch, lay immediately west of the main group of SFBs, in an uncertain relationship to these and gully 49 to the south-west. The north-east part of ring-ditch 20 was removed during machining, and the north-west part cut by a modern service trench, but the remainder showed it to have been approximately 10 m in diameter. It was cut into brickearth, and did not penetrate the underlying cryoturbated chalk, making it difficult to discern, and it was only defined with reasonable clarity following careful cleaning and a subsequent period of weathering. Ring-ditch 20 was somewhat irregular in plan, with a maximum width of 2.30 m and a depth of 0.35 m. It had a wide, shallow, flat-bottomed profile, and two fills were discerned in

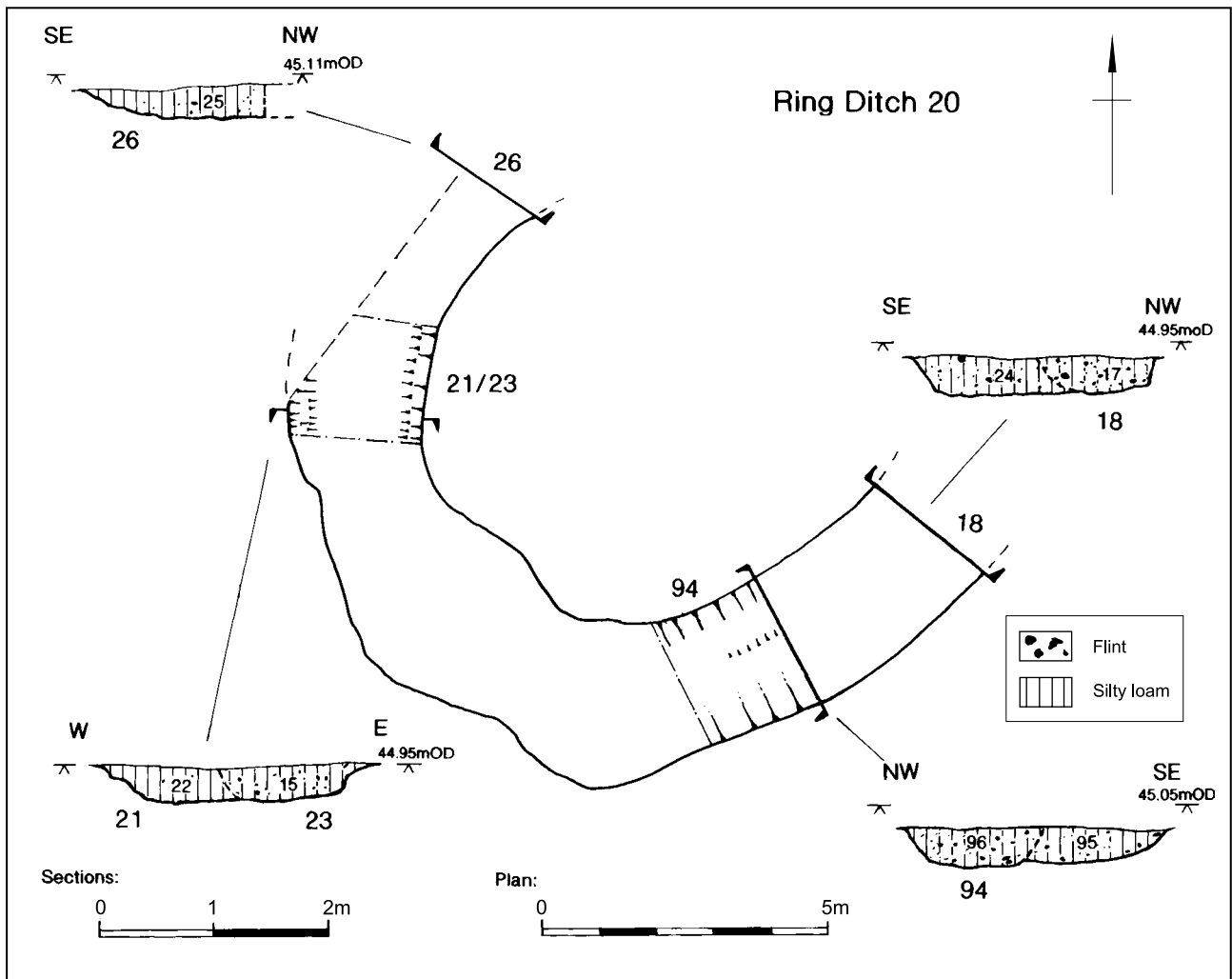


Figure 4.10 Plan and sections of ring-ditch 20

section, possibly representing a recut approximately 1.0 m wide rather than separate phases of infilling. The fills were both silty loams, with the outer being yellowish-brown and the inner pale brown. No pottery was recovered, but a few fragments of animal bone were present, and an iron knife which has been dated to the late 7th century was recovered from the west side. Despite careful cleaning of the area enclosed by the ring-ditch, no internal features were identified.

## Medieval

Several ditches, possibly forming a series of concentric, square enclosures, surrounded the fragmentary remains of a structure in the eastern half of the site (Figs 4.11–14). Most of these features were exposed and investigated during the evaluation, but the excavation and watching brief provided the opportunity to record and excavate additional parts of this system. The layout of ditches revealed by this work can, to some extent, be matched with the cropmarks plotted from the aerial photograph (Fig. 4.11), but there are several inconsistencies which probably result from areas where features are unclear on the photograph due to the oblique angle of the shot and the height of the cereal crop. The inset on Figure 4.11 shows the postulated layout of the ditches based on the evaluation, excavation and watching brief work, and may be compared with the cropmark plot. The small quantity of finds recovered suggests that the structural remains and ditches date to the later medieval period, probably the 14th–15th centuries, and that the ditches had been infilled by the end of the 15th century.

Slight traces of a building were exposed in evaluation trenches (Tr) 7–9, which closely match features on the cropmark plot. These traces were represented by a fragment of chalk and flint rubble wall footing, 521 (Fig. 4.12) in Tr 8, with vestigial traces of two further possible footings, 328 and 332, less than 10 m to the south-west, and a shallow foundation trench, 523 (Fig. 4.12), in Tr 9. Feature 523 produced a large sherd of 14th–15th century pottery. Wall 521 appeared to have been set just inside the northern edge of a large, shallow cut or terrace at the junction of Tr 7 and Tr 8. This upper part of this cut contained much roof tile, probably derived from demolition of the building. No floor surfaces were found in the evaluation, and any which may have survived the demolition phase were probably removed during the levelling of this area of the site in the 1970s, prior to the establishment of a car pound (see above).

A relatively deep, flat-bottomed feature, probably a ditch, 525 (Fig. 4.12), was found towards the north-

eastern end of Tr 9. This had steeply sloping or near-vertical sides, and was c. 2.0 m wide and 1.20 m deep. It was filled with a single deposit of dark greyish-brown silty clay loam which produced several fragments of roof tile and three small sherds of probable Anglo-Saxon grass-tempered pottery. On balance, it is considered most likely that ditch 525 was a medieval feature, possibly a drain, and that the pottery was residual. On the cropmark plot this ditch extended south-east from the building and appeared to form part of the ditched complex, but some uncertainty in this was demonstrated by the fact that the ditch was not uncovered in Tr 18, despite the fact that the cropmark plot shows this feature crossing the line of this trench.

Feature 515 (Fig. 4.12) towards the north-western end of Tr 7 may have been the southern terminal to a ditch, but does not appear on the cropmark plot and it is perhaps more likely to have been a pit. It was 2.25 m wide, 0.60 m deep, and filled with yellowish-brown silty loam. This feature produced a comparatively large assemblage of pottery (12 sherds of probable late 14th–early 15th century date), animal bone, and many roof tile fragments.

The structural remains found in Tr 7–9 were surrounded by a series of possibly five, concentric, square enclosures defined by ditches of various sizes. These ranged from less than 0.30 m up to 1.50 m in depth, and ‘enclosed’ an area at least 150 m square. The ditches are described below, from the innermost to the outermost, based on the postulated layout shown in Figure 4.11.

Ditches 511 and 513 (Fig. 4.12) were revealed towards the west end of Tr 7, running parallel to each other and 2.0 m apart. They varied in width from 0.90 m to 1.30 m, were up to 0.28 m deep, and the only finds were a small quantity of roof tile from ditch 511. These two shallow ditches can probably be equated with unexcavated linear features 599 and 597 respectively to the south-east of the building (in Tr 18), but none of them could be traced on the aerial photograph, presumably owing to their shallow depths.

It is suggested that ditches 303 and 307 to the north-east, ditches 301 and 509 to the north-west, and ditch 533 to the south-west of the building remains may all have been part of the same, substantial feature, although they differed in size and profile. They are all recorded on the aerial photograph plot. The only datable finds from any of these ditches were two sherds of probable 14th–15th century pottery from ditch 509 which was not fully excavated, but was 3.0 m wide, had steeply sloping sides and was at least 0.80 m deep. Ditch 533 (Fig. 4.12) was the largest of those excavated with a width of just over 3.0 m, a depth of approximately 1.50 m (augered) and steeply sloping sides. The main fill, 578, was a

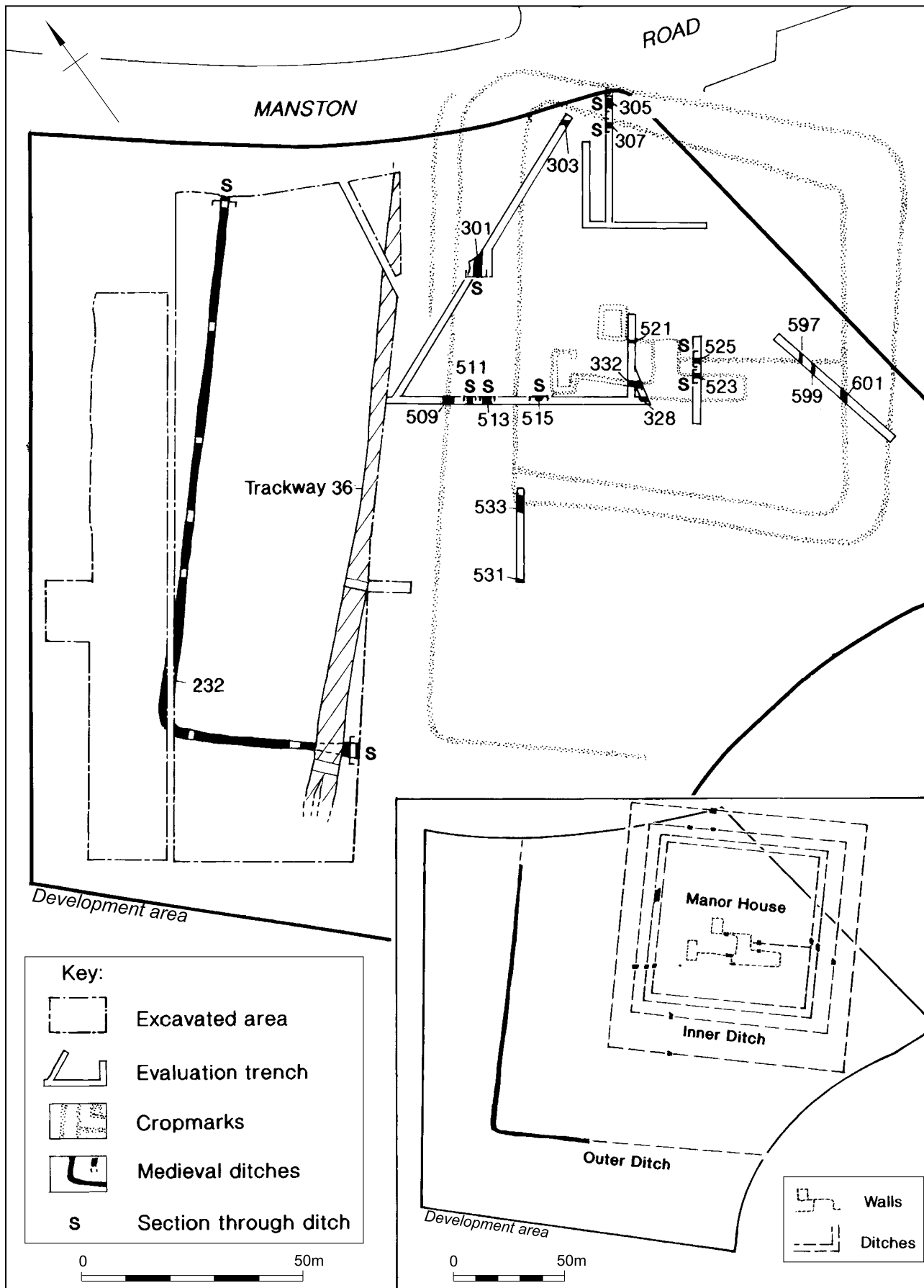


Figure 4.11 Plan and interpretative plan of medieval and post-medieval features

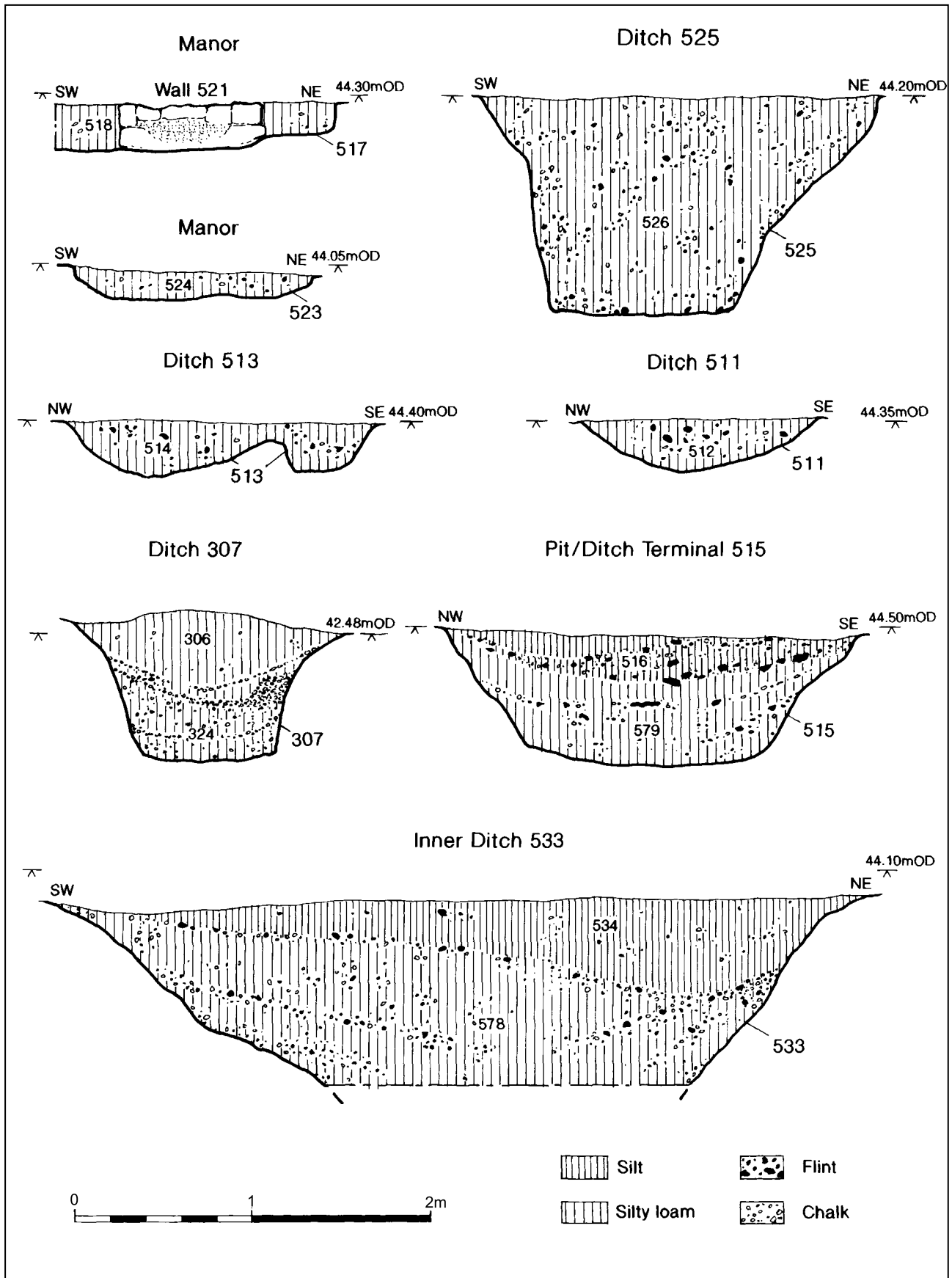


Figure 4.12 Sections of medieval features



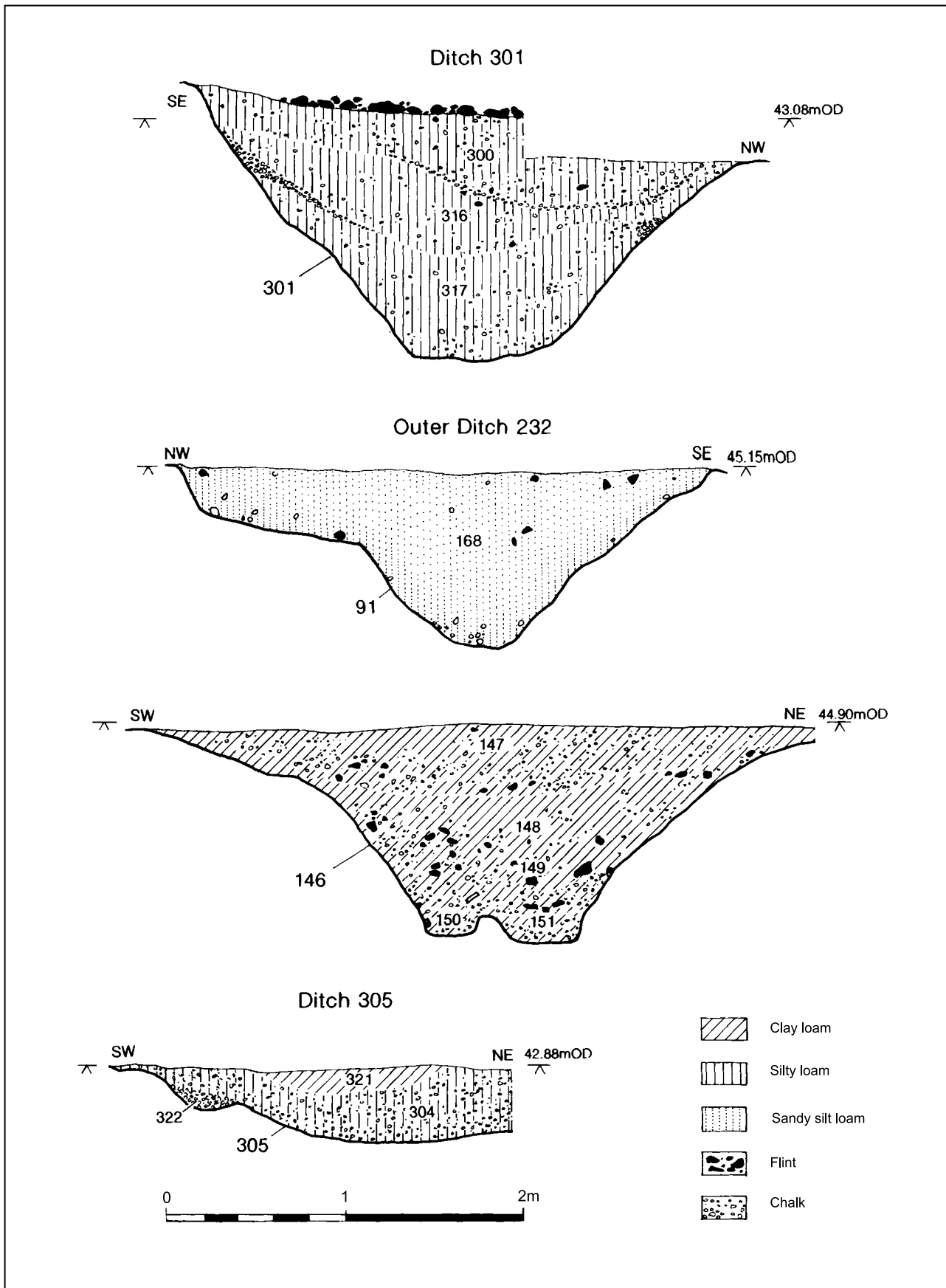


Figure 4.13 Sections of medieval features

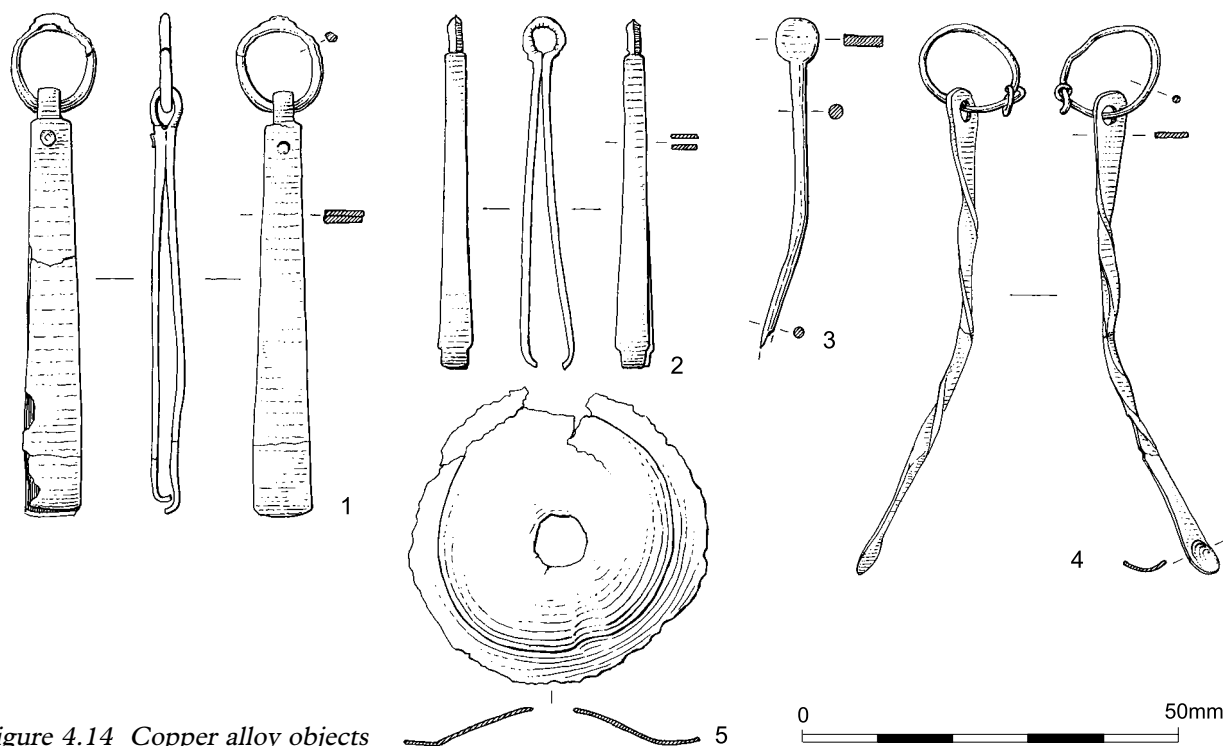


Figure 4.14 Copper alloy objects

homogeneous mid-brown sandy loam containing some chalk and flint and a few very small fragments of roof-tile. Ditch 301 (Figs 4.11, 4.13) was slightly smaller than ditch 533, but appeared to have a similar profile, a similar fill but with at least two tip lines clearly discernible, and produced no finds. A layer of flint cobbles was exposed in the top of this ditch during the watching brief, but could not be further investigated. Ditch 307 (Fig. 4.12), also assigned to this group, was smaller, only 1.50 m wide and 0.80 m deep, and was U-shaped with a flat bottom. Neither of the two fills of dark yellowish-brown to brown silty loams produced any finds, but the lower fill, 324, was characterised by a series of chalk tip lines.

Incomplete sections of ditches 305 and 531 were revealed, to the north-east and south-west respectively of the building remains. Ditch 305 (Fig. 4.13), exposed on the edge of the site, and ditch 531 at the south end of Tr 12, appeared to be comparatively wide (>2.0 m) features, but shallow (<0.50 m), with open U-shaped profiles. No trace of this postulated circuit was found on the north-west side, but it may have been truncated in the area investigated, a possibility suggested by the 'fading-out' in this area of a cropmark which perhaps represented part of this circuit (see Fig. 4.11).

The line of what was probably the outermost ditch, 232, was clearly revealed in the excavation but, although substantial, it did not appear on the aerial photograph (probably because this area was covered by a different crop to the remainder of the site). Ditch 232 cut two Late Bronze Age ditches and an Anglo-Saxon gully, and was cut by post-medieval trackway 36. A total length of 170 m was exposed, turning

through 90° to form the western corner to the enclosure. Eight sections, each 2.0 m long, were excavated, and these revealed the ditch to be 3.0–3.60 m wide, and 1.0–1.20 m deep with a V-shaped profile (Figs 4.11, 4.13). There was evidence for a recut, most clearly demonstrated along the south-west side, where one section revealed two cuts with parallel 'cleaning-out slots' along the bottom of both (Fig. 4.13, ditch section 146). The fills of the ditch along the north-west side were generally quite homogeneous, ranging from sandy silt loam to clay loam, but more variation and some tip lines represented by concentrations of flint and chalk were apparent in the fills along the south-west side. No pottery was found in any of the excavated sections, though a small quantity of roof-tile and a horseshoe were recovered.

## Post-medieval

A large linear feature, 36, interpreted as a trackway, was traced over a distance of 150 m running north-east to south-west along the east side of the excavated area (Fig. 4.11); its absence in the south-east corner can be attributed to truncation in this area. No indication of its existence was apparent on the aerial photograph. Trackway 36 was on the same alignment as the ditches surrounding the medieval building remains, which lay approximately 50 m to the east, but it cut across the top of infilled ditch 232 which was the most westerly of this group of features and one of the most substantial. Trackway 36 was, in total, 5.0–6.0 m wide, up to 0.50 m deep, with two phases

apparent (see Fig. 4.2); these probably represented one period of continuous use but with a slight shift to the east. Heavy use of this trackway is suggested by it having developed into a hollow way with near-vertical sides and a flat but rutted base with some patches of flint cobbling surviving. It was filled with a greyish brown silty clay loam containing variable but often large quantities of flint gravel and chalk inclusions, capped by a compact spread of gravel. Few finds were recovered from the excavated sections but these included fragments of ceramic roof tile, one complete and one fragment of horseshoe, several iron nails, and four sherds of Late Bronze Age pottery.

## Undated

Pit 111 (see Fig. 4.2) was sub-circular, 0.70 m in diameter, 0.43 m deep and bowl-shaped. It lay on the edge of Late Bronze Age ditch 229 and probably cut it, but this could not be established with certainty. It was filled with a mid-brown silty clay with occasional flints and chalk. Pit 156 (see Fig. 4.2) was probably originally sub-circular, though truncated by trackway 36. It measured 2.30 x 1.20 m, was 0.45 m deep, and filled with a brown silty clay loam. It is probable that this feature was a tree-hole. Pit 176 (see Fig. 4.2) was circular, shallow, with concave sides and a flat base. It measured 1.25 m in diameter, 0.15 m deep, and was filled with a light to mid-red-brown loam containing some animal bone, oyster and limpet shell.

## Finds

### *Metalwork*

by Emma Firth

Forty-five metal objects were recovered from the evaluation and excavation, 11 of copper alloy and 34 of iron. All objects were recorded by object number, context, and object type, and all have been X-radiographed. Certain objects were selected for conservation on the basis of their context and intrinsic interest. The majority of objects were recovered from Anglo-Saxon SFBs (see Table 4.1), with only a small number from medieval and post-medieval features, and none from Late Bronze Age contexts. Full details of all the metalwork, including objects not illustrated here, are included in the archive.

### **Copper alloy objects**

The eleven copper alloy objects, all from Anglo-Saxon SFBs, comprise two pairs of tweezers, one scoop, one pin, one raised perforated disc, and six unidentified fragments (Fig. 4.14).

### *Toilet instruments*

The two pairs of tweezers (ON 3041, 3502, Fig. 4.14, 1–2), from SFBs 239 and 73 respectively, are undecorated and are compared with examples from Anglo-Saxon contexts at West Stow, Suffolk (West 1985, fig. 97, 1, fig. 231, 20). One pair of tweezers has a ring attached (Fig. 4.14, 1) indicating that they probably formed part of a toilet set. Tweezers have been found in both male and female graves at the Buckland cemetery, Dover (Evison 1987), as well as in SFBs at Mucking, Essex (Hamerow 1993, fig. 106: GH43, 1, fig. 133: GH83, 1).

The scoop (ON 3304, Fig. 14, 4), from SFB 88 (context 37), is comparable with an example from West Stow (West 1985, fig. 229, 25), which was recovered from a 7th century context. These scoops are usually described as earscoops and the suspension loop and attached ring suggests that it was attached to either a chain or other toilet items (eg tweezers). Scoops were found at the waist of both male and female burials at Buckland (Evison 1987, 118).

### *Personal ornament*

A disc or 'cheese-headed' pin (ON 3022, Fig. 4.14, 3) came from the same context as the scoop. It is comparable with examples dated to the second half of the 7th century at Buckland (Evison 1987, 84, text fig. 27, 140), and with an example from a 7th century context at West Stow (West 1985, fig. 246, 4). Traces of mineralised vegetation were noted in the corrosion during conservation, though no further analysis of this has been carried out. The use of pins such as these is uncertain; they may have been used as hair pins or to fasten garments.

### *Fitting*

The function of this object (ON 3010, Fig. 4.14, 5), a raised, perforated disc 39 mm in diameter with a flattened edge, is unknown, though the central perforation suggests it may have been a decorative fitting attached to a wood or leather object. It was found in SFB 43 (context 28)

### *Unidentified fragments*

Six small, flat fragments (not illus.) came from SFB 88 (four frags), SFB 43 (one frag.) and SFB 239 (one frag.). There are no diagnostic features present on any of them, and they may be fragments of larger objects or, and probably less likely, off-cuts from the manufacture of other objects.

### **Iron objects**

The thirty-four iron objects have been grouped, as far as possible, according to function. All the illustrated objects are from Anglo-Saxon features and all but two are from SFBs.

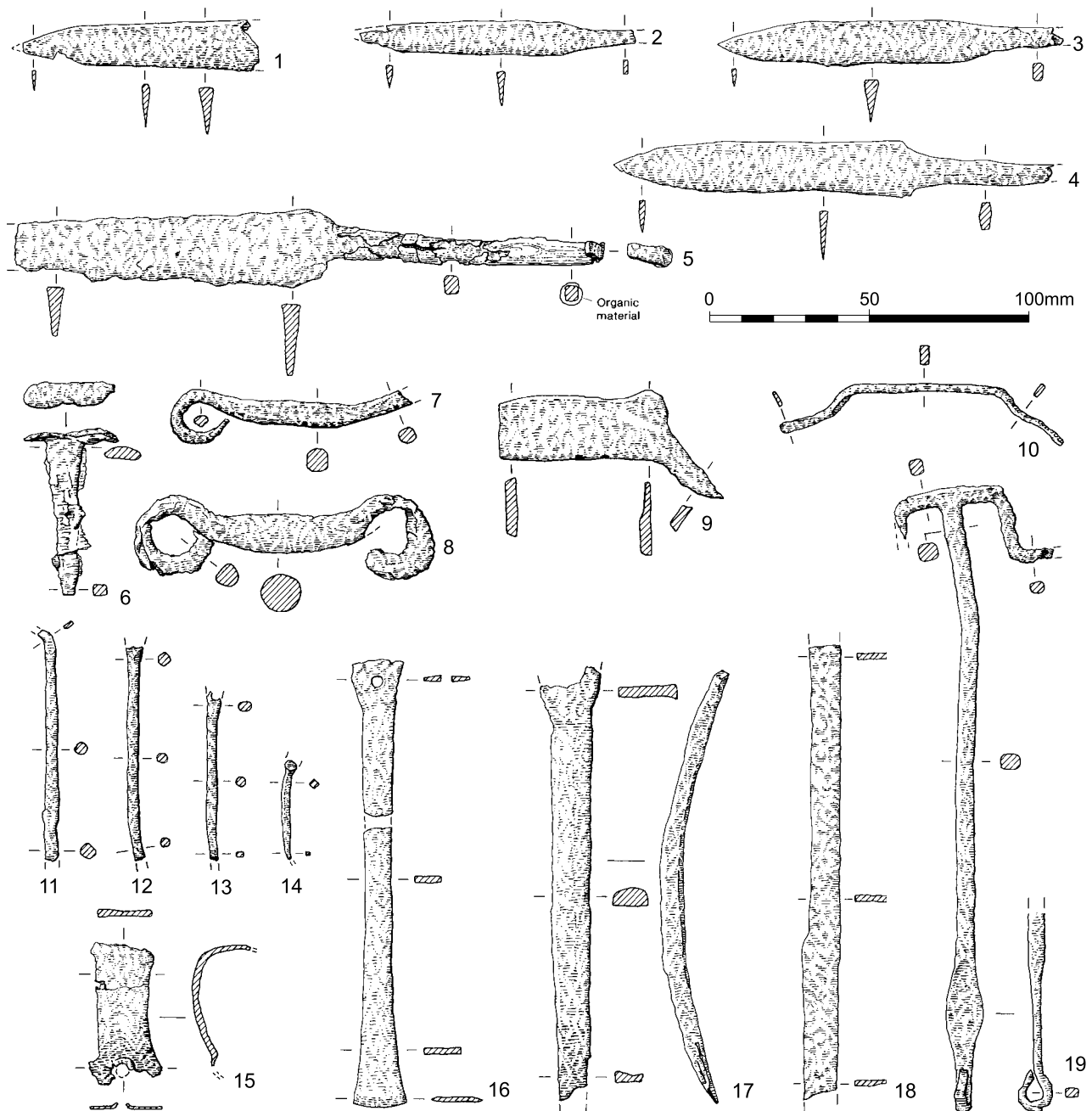


Figure 4.15 Iron objects

#### Knives

Five knives were recovered (Fig. 4.15, 1–5), all but one from SFB 88. They have been categorised according to Evison's knife types from the Anglo-Saxon cemetery at Buckland (Evison 1987, text fig 22, 113). Four are Type 1, with a curved back and curved blade (Fig. 4.15, 1–4). Type 1 knives occur in all phases at Buckland (later 5th–mid-8th centuries), and are the most numerous type at that site. The remaining knife (Fig. 4.15, 5), from ring-ditch 20, may be of Type 4, but with an extra long tang (V. Evison pers. comm.); Type 4 knives have been dated c. 675–700 at Buckland.

All the knives are incomplete; there were no organic traces of grips on any of the tangs apart from ON 3001, the Type 4 example.

#### Tools

A possible tool (Fig. 4.15, 16) comprises a strip with flattened and flaring ends, one of which is perforated, possibly for suspension. It is similar to Roman objects identified as modelling tools (Manning 1985, pl. 13, C12), and may have had a similar function.

Four iron spikes were recovered (Fig. 4.15, 11–14). All are incomplete, circular or square in section with a slight swelling towards one end and some have a slightly curving profile. They are comparable to similar spikes from West Stow (West 1985, fig. 242, 17–34), and one from Market Lavington, Wiltshire (Montague 2006, fig. 47, 3). They may be heckle teeth from woolcombs.

### *Building ironwork and fittings*

A rectangular building staple (Fig. 4.15, 10) used for joining two timbers together is comparable with an example from West Stow (West 1985, fig. 242, 7). A possible T-clamp (Fig. 4.15, 6) was also recovered and is similar to a Romano-British example (Manning 1985, pl. 62, C12). A curved strip (Fig. 4.15, 15), broken at both ends but retaining part of a perforation may be part of a binding strip or strap fragment. A T-shaped key or latchlifter (Fig. 4.15, 19), is comparable with smaller keys from Mucking (Hamerow 1993, fig. 151.4). Similar objects, described as girdle hangers, were found in the Anglo-Saxon cemetery at Sarre, Kent (Perkins 1991b, 157, fig. 5, 1) and also at West Stow (West 1985, fig. 240, 1–2). Eleven nails (not illustrated) were recovered, two from Anglo-Saxon SFBs, seven from medieval or post-medieval features, and two undated. Of those from Anglo-Saxon contexts, one does not have any diagnostic features and the other is comparable with a slightly larger example from West Stow (*ibid.*, fig. 242, 12).

### *Household ironwork*

Two chain links with looped, hanging eyes at either end were recovered from SFB 88. The smaller example (Fig. 4.15, 7) is rectangular in section and has one eye missing; the larger example (Fig. 4.15, 8) is round in section and is complete. A possible bucket handle (Fig. 4.15, 17) made from a curved strip was recovered from ring-ditch 20. This object is incomplete but has an eye at one end, of which less than half survives. The curvature and narrowness of the handle suggest it may be from a small bucket or tub. It is comparable with objects from West Stow (West 1985, fig. 241, 6–7).

### *Horse furniture*

Two complete horseshoes (not illustrated) were recovered, from medieval enclosure ditch 232 and post-medieval trackway 36 respectively. Both have six square or rectangular holes, one has calkins on both heels and both have nails *in situ*. A further possible fragment came from trackway 36.

### *Unidentified objects*

Two unidentified objects were also found. One (Fig. 4.15, 9) is an incomplete, flat-sectioned strip with a possible tang at approximately 45° at one end. The other (Fig. 4.15, 18) object is a flat, rectangular-sectioned strip which is broken at both ends; this might be a fragment of iron strip or bar intended for the manufacture of other objects. The remaining objects (not illustrated) are small, flat fragments or strips with no diagnostic features and all were recovered from SFBs 73, 88, and 239.

### **Illustrated iron** (Fig. 4.15)

1. Knife; part of blade and tang missing, back and cutting edge curving to meet tip, Evison Type 1. ON 3038, Context 79, SFB 88.
2. Knife; tang and tip of blade broken, back and cutting edge curving to meet tip, Evison Type 1. ON 3047, context 79, SFB 88.
3. Knife; tang broken, back and cutting edge curving to meet tip, Evison Type 1. ON 3031, context 55, SFB 88.
4. Knife; back and tip curving to meet tip, Evison Type 1. ON 3047, context 79, SFB 88.
5. Knife; tip missing, straight back and cutting edge taper towards tip, traces of organic material on tang, Evison Type 4. ON 3001, context 17, ring-ditch 20.
6. T-clamp (2 frags). ON. 3024, context 39, SFB 73.
7. Chain link; square section, hanging loop at one end, other end missing. ON 3016, context 44, SFB 88.
8. Chain link; round section, hanging eyes at both ends. ON 3012, context 37, SFB 88.
9. Object; flat rectangular strip with ?tang at c. 45°, rectangular section. ON 3025, context 79, SFB 88.
10. Rectangular staple; rectangular section. ON 3025, context 48, SFB 88.
- 11–14. Spikes; ?heckle teeth, round section. ON 3018–11, context 37, SFB 88.
15. ?Binding strip/strip frag.; broken at both ends, part of perforation survives at one end. ON 3036, context 38, SFB 73.
16. ?Modelling tool; (2 frags), both ends flattened and flaring, one end perforated, rectangular section. ON 3015, context 37, SFB 88.
17. ?Bucket handle; incomplete, curved strip, rectangular section, remains of pierced eye at one end. ON 3003, context 25, Ring-ditch 20.
18. Narrow, flat strip; rectangular section, ends missing. ON 3017, context 44, SFB 88.
19. T-shaped key/latchlifter; square section stem, flattening out slightly to form small handle, end rolled over to form small loop. ON 3021, context 46, SFB 88.

### **Metalworking debris**

*by Phil Andrews*

A total of 653 g of iron working slag was recovered, all from Anglo-Saxon SFBs. Most (400 g) came from SFB 73, with lesser amounts from SFBs 74 (49 g) and 88 (204 g). This small assemblage contains no diagnostic pieces, but all of it is likely to derive from iron smithing, perhaps from a single operation. A fragment of iron strip or bar, possibly intended for smithing, was also recovered from SFB 88 (see Fig. 4.15, 18).

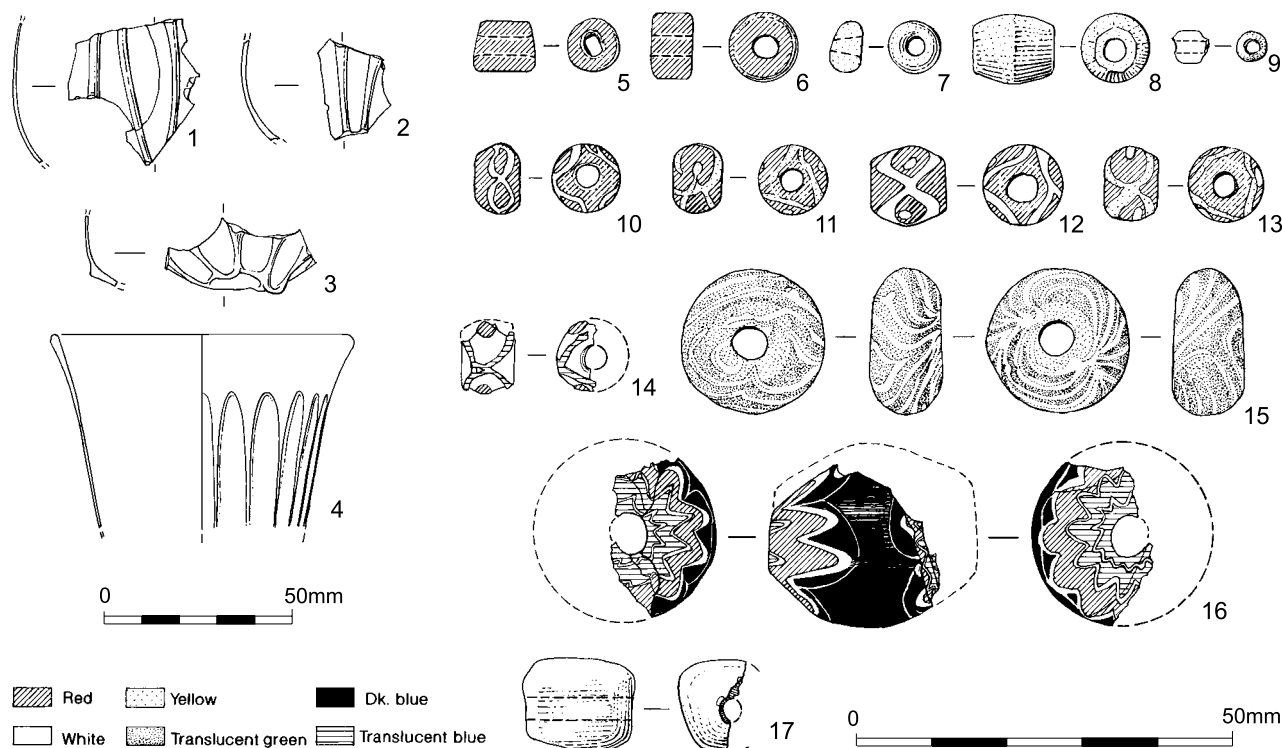


Figure 4.16 Vessel glass and beads

### Worked Flint by Phil Harding

A total of 345 pieces of worked flint was recovered from various features, consisting of 318 unretouched flakes, one burnt flake, 13 cores, eight pieces of core trimming debris, and five retouched tools. All lithic artefacts are made from flint obtained from local sources. Out of the 141 pieces retaining cortex, 115 (81.6%) were Bullhead flint, 25 (17.7%) flint from derived sources, and one (0.2%) gravel. Cores and core trimming debris indicate that the bullhead flint was obtained mainly in the form of small rounded nodules from surface or near surface exposures. Most of the assemblage is unpatinated or only lightly patinated with a transparent waxy film. Most artefacts exhibit little or no edge damage. No spatial patterning is apparent in the distribution of raw material across the site.

Technologically, the majority of the artefacts conform to the general characteristics of Bronze Age industries from southern England. Cores include prepared and unprepared single and joint platform types worked with both hard and soft hammers. Flake shapes are variable and include narrow flake-blades with thin platforms, and squat, thick flakes with thick platforms and hinge terminations. The pieces of core trimming debris are undiagnostic of any temporal period.

Retouched forms comprise five scrapers. All are flakes exhibiting marginal retouch along their distal ends. While strictly not datable, similar types are known from Bronze Age contexts elsewhere and

suggest a likely Bronze Age date for the pieces compatible with that indicated on technological grounds by the unretouched flakes and cores.

### Glass and Amber by J. Fry

Fifteen fragments of vessel glass, 15 glass beads, and one amber bead were recovered, with all but one bead coming from Anglo-Saxon SFBs.

#### Vessel glass

Four of the vessel fragments, two conjoining, probably derive from a single vessel. Three came from SFB 239 (Fig. 4.16, 1 and 3), and the fourth from SFB 73 (Fig. 4.16, 2). These four fragments are in a thin, translucent, pale green glass with trailed, vertically looped decoration and a low iridescence. While the overall form of the vessel is uncertain, the curvature of these fragments suggest that they belong to either the lower part of a cone beaker or a squat jar. Cone beakers have been dated to the 5th–early 6th century (Kempston-type cone beakers are found mainly in south-east England, with a concentration in Kent from sites such as Faversham, Buckland (Dover), Ozengell, Westbere, Howletts, Lyminge, and Wye Down, probably indicating a production centre in the region), and squat jars (possibly manufactured in Kent) to the late 6th–7th century (Harden 1971, 89–91, fig. 5). Given the likely late 6th–7th century date for the settlement at Manston Road, Ramsgate, it is perhaps more likely that these fragments belong

to a squat jar, though the possibility that they represent an earlier heirloom cannot be ruled out. Indeed, the Manston Road vessel is comparable to a cone beaker from Wye Down (in Ashford Museum) and one from Faversham (in the Ashmolean Museum). These have slightly bulging walls and narrow bases, rather than the straight flaring walls and wide bases of the earlier cone beakers (W. Stephens, pers. comm.).

The remaining eleven fragments come from a single vessel, possibly a ribbed palm cup, and all were recovered from SFB 43. The vessel is of a flared, slightly convex-sided form with an everted, slightly thickened rim and very faint (?mould blown) vertical ribbing, in a thin, translucent, bright blue glass with a high iridescence (Fig. 4.16, 4). This type of vessel has been dated to the 6th century (Harden 1971, figs 5 and 7, 90), and may be of Kentish or Frankish origin. Similar examples come from King's Field, Faversham and Kingston Down (both in Liverpool Museum). However, the bright blue colour of the Manston Road example is unusual, and the only parallel for colour – the Sittingbourne bowl – is different in that the glass is clear rather than bubbly, with a good gloss (W. Stephens, pers. comm.).

### Glass beads

Fifteen glass beads were recovered (7 monochrome, 8 polychrome). One bead was unstratified and the remainder derived from Anglo-Saxon SFBs.

Of the seven monochrome beads three are matt opaque red, three matt opaque yellow, and one translucent pale green with an inner metallic skin. The three red beads all came from SFB 43; two are cylindrical (Fig. 4.16, 5–6) and the third fragmentary. The three yellow beads all derive from SFB 239; two are annular (Fig. 4.16, 7) and one biconical (Fig. 4.16, 8). The seventh bead, from SFB 43, is small and drawn, with an inner metallic skin, possibly gold (Fig. 4.16, 9). The ends show clear signs of having been broken from a segmented drawn cylinder. Such beads are a long-lived type; they are known in Roman Britain from the 2nd century and continued in use to at least the early 6th century. The monochrome beads are not as closely datable as the polychrome but comparisons with the Buckland, Dover cemetery suggest that the red and yellow examples are likely to be of later 6th or 7th century date, while the gilt bead could be earlier, perhaps late 5th or early 6th century (Evison 1987).

Seven of the eight polychrome beads fall into three groups, on the basis of decorative motifs:

1. Interlacing marvered trails: one annular example, in opaque red with white trails (Fig. 4.16, 10).
2. Interlacing marvered trails and dots: five examples, four opaque red with yellow or white

decoration (Fig. 4.16, 11–13), and the fifth of uncertain body colour (very decayed) with blue trails and red dots (Fig. 4.16, 14). Four are barrel-shaped and the fifth biconical.

3. Marvered combed trails: one large annular example, translucent pale green with opaque white decoration (Fig. 4.16, 15).

All three groups find parallels within the Buckland, Dover assemblage (Evison 1987), where they are compared with the chronological framework from Schretzheim, Germany. Beads with crossing trails, or crossing trails and dots, have a span of 590–630 at Schretzheim, and a broader period of deposition of 575–675 at Buckland. The closest parallel at Buckland for the bead with combed trails (*ibid.*, type D12) occurs in a phase 1 grave (475–525), although the type does have a broader lifespan; at Portway, Hampshire, for example, beads with more regularly combed trails are dated to the second half of the 6th or 7th century (Cook and Dacre 1985, fig. 59).

The eighth bead is more unusual. This consists of a short section through a *millefiori* cane, comprising coatings of translucent blue, opaque red and opaque blue, divided by thin coatings of opaque white glass (Fig. 4.16, 16). The cane section has been tapered at each end in broad facets to reveal the successive coatings. The technique of manufacturing *millefiori* glass, that is, glass in which slices of such multi-coloured canes are embedded, was reintroduced by the glassmakers of Venice in the late 15th century, using an ancient Roman technique, and in the 16th century became a virtual Venetian monopoly. As well as vessels, the Venetians used the *millefiori* canes for the manufacture of beads. The example from Ramsgate was found unstratified, but appears on this dating evidence to derive from the medieval activity on the site.

### Amber bead

A single amber bead was found in SFB 43. This is of irregular cylindrical shape, roughly half surviving (Fig. 4.16, 17).

### Pottery

by Lorraine Mephram

The stratified pottery assemblage from all stages of work on the site comprises 1352 sherds (11,059 g), ranging in date from Early Neolithic to medieval. The small quantity of unstratified material recovered is not included here. Fabric totals are given in Table 4.2 and the fabrics are described in Appendix 4.1. The pottery is discussed by chronological period.

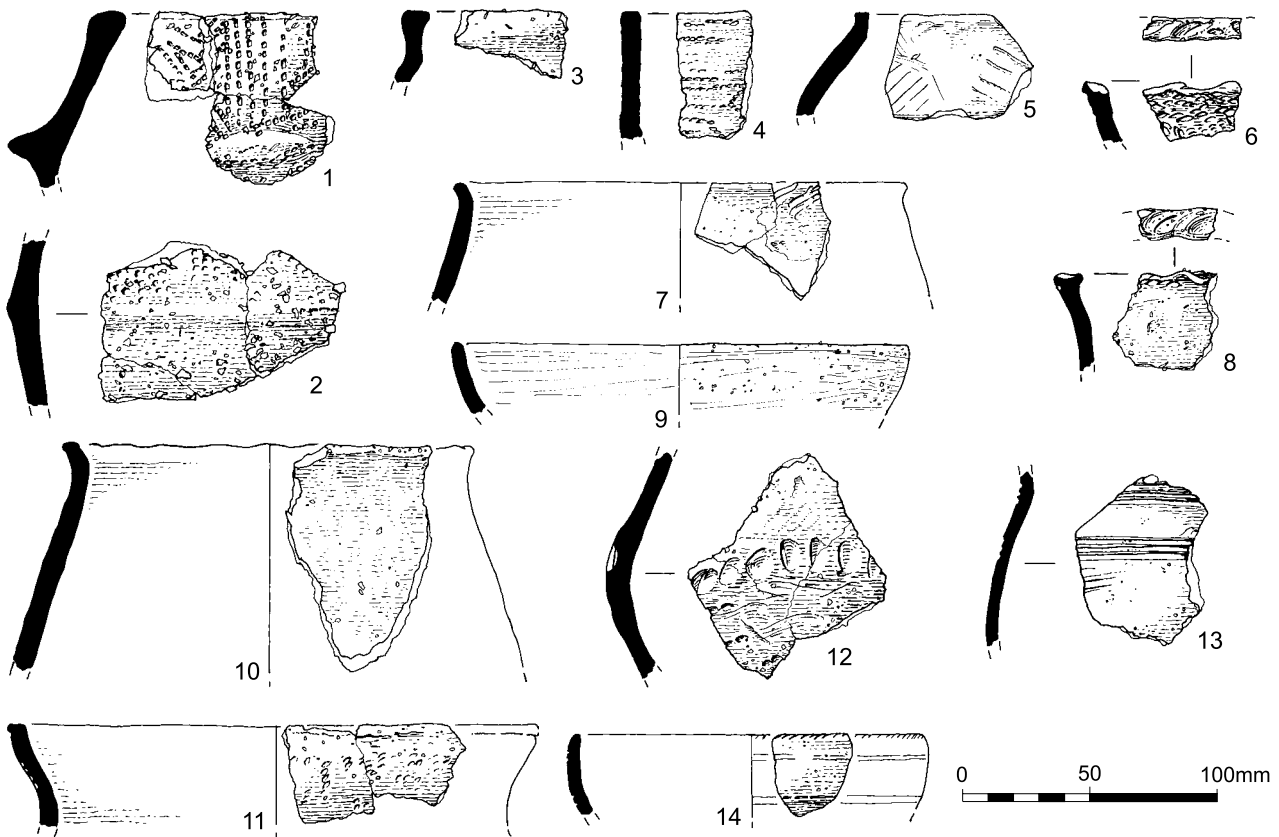


Figure 4.17 Prehistoric pottery

### Early Neolithic

The earliest material consists of 152 sherds from a single context, all in a coarse, flint-tempered fabric (FL7). These sherds appear to comprise a large part of a single vessel. The sherds are very abraded but sufficient diagnostic sherds survive to enable identification as a lugged, carinated bowl of Early Neolithic type, with an internally expanded rim (Fig. 4.17, 1–2). The lug is unperforated. Traces of shallow tooled (‘fluted’) decoration, mainly vertical but also diagonal, survive above the carination; the evidence for its continuation below the carination is ambiguous. One rim sherd, also internally expanded but of a slightly different form, appears to derive from a second vessel (Fig. 4.17, 3). Both vessels would fall within the composite class of dependent restricted vessels as defined by Cleal (1992), and belong to the Windmill Hill ceramic style.

Early Neolithic vessels are not common in Kent, although it should be noted that finds are more common in the eastern part of the county, where a number of vessels have been found around Deal, Ramsgate, and Folkestone. The concentration here is in part a reflection of active collecting in this area, but is also likely to be related to areas of fertile loam subsoil (Dunning 1966).

This vessel, or vessels, came from deposit 240. Although no cut was discernible on excavation, the number of sherds and their close grouping would

suggest that this represents a single deposit within a small, cut feature and, moreover, that if not precisely *in situ*, no significant post-depositional movement has taken place.

### Early Bronze Age pottery

A small number of sherds in grog-tempered fabrics have been tentatively identified as Early Bronze Age in two grog-tempered fabrics (GR1–2). Only one diagnostic sherd was observed, a body sherd with abraded decoration, probably square-toothed comb impressions. Fabric and decoration here suggest an identification as either Beaker or Collared Urn and other grog-tempered sherds could, on the basis of fabric similarity, also be of similar Early Bronze Age date, although the possibility that some may be Late Neolithic cannot be entirely ruled out.

All the grog-tempered sherds occurred as redeposited material in later contexts, the decorated sherd in Anglo-Saxon hollow 82, and other grog-tempered sherds in post-holes in Late Bronze Age structure 191, Late Bronze Age pit 212, SFB 43 and medieval ditches 509 and 232.

### Middle–Late Bronze Age pottery

A total of 584 sherds was identified as Middle–Late Bronze Age, mainly on the basis of fabric type, since diagnostic sherds are scarce. The overwhelming majority of the Middle–Late Bronze Age assemblage



comprises sherds in flint-tempered fabrics (FL1–6), with only a very small proportion in limestone-tempered (LI1) or finer sandy fabrics (QU1–2). The term ‘flint-tempered’ is used advisedly here; in all cases flint inclusions are sufficiently frequent to indicate deliberate addition rather than natural occurrence. In general, the condition of the sherds is abraded and fragmentary (mean sherd weight 6.7 g).

Firing in all cases is irregular, with most sherds exhibiting patchy oxidisation of surfaces. The bulk of fabrics FL3 and FL5 comprises two vessels. In each case only the base survives but the thickness of the vessel walls, coupled with the coarseness of these two fabrics, suggests that these vessels could be assigned to the Deverel-Rimbury ceramic tradition of the Middle Bronze Age. In addition, body sherds in fabric FL5 were recovered during the evaluation from curvilinear ditch 231 and could comprise a third vessel of similar date.

Other fabric types are more characteristic of the post-Deverel-Rimbury ceramic assemblages of the Late Bronze Age. They may be broadly subdivided into ‘coarsewares’ (fabrics FL1, FL4, FL6, LI1, QU2) and ‘finewares’ (fabrics FL2, QU1), although the distinction is not always easy to sustain, since the flint-tempered and limestone-tempered ‘coarsewares’ sometimes appear to have had a surface slip or slurry applied to the exterior, which would have resulted in a relatively smooth, fine surface finish. This surface treatment only survives on a few sherds, but its friability and lamination suggest that it may originally have been more common within the assemblage.

Diagnostic sherds are scarce, but include a small number of rim sherds and a very few decorated body sherds. On the basis of these sherds, five vessel types have been defined, although no complete profiles can be reconstructed. The correlation of vessel forms to fabrics is given in Table 4.3.

- Type 1 Jar of unknown profile with flared neck and flattened rim, the rim sometimes finger-impressed (Fig. 4.17, 6, 8, 11)
- Type 2 Jar, slack-shouldered, with short everted rim (Fig. 4.17, 7, 10)
- Type 3 Jar or bowl, carinated, with short upright or everted rim (Fig. 4.17, 5)
- Type 4 Bowl with upright rim, possibly carinated (Fig. 4.17, 4)
- Type 5 Bowl with convex sides and slightly inturned, rounded rim (Fig. 4.17, 9)

One group of finger-impressed sherds come from the shoulder of a medium to large jar, possibly of type 1 (Fig. 4.17, 12). Apart from this vessel, decoration is restricted to finger impressions on the rims of three type 1 jars, and horizontal scoring on one body sherd in fabric F6 (Fig. 4.17, 13). The scarcity of

**Table 4.2 Pottery: Fabric totals by period**

Fabric	No. sherds	Weight (g)	% of period	% of total
<i>Early Neolithic</i>				
FL7	152	680		6.1
<i>Early Bronze Age</i>				
GR1	6	24	53.3	
GR2	5	21	46.7	
Sub-total	11	45		0.4
<i>Middle/Late Bronze Age</i>				
FL1	347	1683	43.2	
FL2	37	68	1.7	
FL3	9	235	6.0	
FL4	53	622	16.0	
FL5	47	620	15.9	
FL6	77	570	14.6	
LI1	2	51	1.3	
QU1	10	36	0.9	
QU2	2	14	0.4	
Sub-total	584	3899		35.3
<i>Romano-British</i>				
Samian	5	21	20.0	
Greywares	2	5	4.8	
Grog-tempered	14	79	75.2	
Sub-total	21	105		1.0
<i>Saxon</i>				
<i>Imports</i>				
Q402	7	29	0.5	
Q403	2	11	0.2	
Q404	1	18	0.3	
Q405	30	695	11.7	
Q406	42	849	14.2	
Q407	12	49	0.8	
<i>Coarsewares</i>				
Q401	84	790	13.2	
V400	64	1064	17.8	
V401	318	2421	40.6	
V402	5	39	0.7	
Sub-total	565	5965		53.9
<i>Medieval</i>				
Sandy	18	358	98.1	
Shelly	1	7	1.9	
Sub-total	19	365		3.3
Total	1352	11059		

**Table 4.3 Pottery: Prehistoric vessel forms by fabric**

	FL1	FL4	FL6	Total
Rim, form unspecified	1	-	1	2
Type 1: Jar with flared rim	3	-	2	5
Type 2: Slack-shouldered jar	1	1	-	2
Type 3: Carinated jar/bowl	1	-	-	1
Type 4: ?Carinated bowl	1	-	-	1
Type 5: Convex-sided bowl	1	-	-	1
Total	8	1	3	12

decoration, combined with the range of fabrics and vessel forms observed would place this small Late Bronze Age assemblage within the plainware tradition of the post-Deverel-Rimbury ceramic style, with a potential date range between the 11th and 8th centuries BC (Barrett 1980).

#### *Distribution*

Table 4.4 gives the breakdown of prehistoric pottery by feature. Two of the possible Middle Bronze Age vessels were found in features comprising shallow and

Table 4.4 Pottery: Prehistoric pottery by context (no. sherds/wt (g))

	E. NEO FL7	?EBA GR	?MBA FL3/FL5	FL	LBA	QU	Total
Pot 240	152/680	-	-	-	-	-	152/680
Post-hole 30	-	-	-	2/5	-	-	2/5
Pot 56	-	-	28/520	-	-	-	28/520
Ditch 91	-	-	-	78/411	-	-	78/411
Gully 136	-	-	-	2/3	-	2/1	4/4
Bdg 191	-	5/20	-	53/297	-	7/42	65/359
Gully 204	-	-	-	2/4	-	-	2/4
Pit 212	-	2/8	-	67/444	-	-	69/452
Pit 219	-	-	-	9/60	-	-	9/60
Ditch 229	-	-	-	1/14	-	-	1/14
Ditch 230	-	-	-	184/1221	-	-	184/1221
Ditch 231	-	-	19/100	3/24	-	-	22/124
Ditch 233	-	-	-	55/171	-	3/6	58/177
Pot 241	-	-	-	14/26	-	-	14/26
Pot 242	-	-	9/235	-	-	-	9/235
Total	152/680	7/28	56/855	470/2680	-	12/49	697/4292

barely distinguishable cuts, one (deposit 56) near to the south-west edge of the site, and one in an isolated position near the northern boundary (deposit 242). The position of both, apparently deliberately placed upright in small cuts, is suggestive of use as funerary vessels, although both were very heavily truncated, and no associated human bone was recovered from either.

Sherds which may comprise a third Middle Bronze Age vessel came from curvilinear ditch 231, where they may represent redeposited sherds in a Late Bronze Age feature. Alternatively, these sherds might be *in situ*, while the three Late Bronze Age sherds from this feature could be intrusive.

Late Bronze Age pottery was recovered from a number of features across the site, mainly ditches and gullies, as well as the post-holes of a rectangular structure. Pottery was concentrated in the post-holes of structure 191, in nearby pit 212, and in possible enclosure ditches 91 and 230. Sherds of a single vessel in fabric FL1 (deposit 213) were recovered from an indistinguishable cut just to the north-west of structure 191. It may be noted that ditches 91 and 230 contained an identical range of flint-tempered fabrics, and these two ditches contained nearly all the sherds of the fine flint-tempered fabric FL2. The fine sandy fabrics QU1 and QU2 are restricted to gully 233, gully 136 and structure 191.

#### Late Iron Age–Romano-British pottery

A decorated rim sherd from a bowl of possible Late Iron Age or early Romano-British date, in a sandy, grog-tempered fabric, was recovered from the top of Late Bronze Age pit 212 (Fig. 4.17, 14). Other Romano-British material is represented by a very small number of sherds, comprising samian, coarse greywares, and grog-tempered wares (see Table 4.2). Fabric types are not described in detail here. No diagnostic sherds are present, although the samian

suggests a date range in the early Romano-British period (1st–2nd centuries). All Romano-British sherds occurred as residual material in later contexts.

#### Anglo-Saxon pottery

The Anglo-Saxon assemblage includes a group of coarsewares, which are assumed to be of local manufacture, but the most significant part of this assemblage is a small group of wheelthrown, imported wares. The latter group will be considered first here.

#### Imported Wares

Six fabric types have been defined, four unoxidised (QU402–4, QU407) and two oxidised (QU405–6), of which one is significantly pale-firing. They range in coarseness from fine with few visible inclusions to moderately coarse with visible quartz grains. Fabric totals are given in Table 4.2. Diagnostic sherds, which occurred only in fabrics QU405 and QU406, indicate a restricted range of two main vessel forms:

- Type 1 Jug or pitcher with strap handle (Fig. 4.18, 4–6).
- Type 2 Rounded jar with pronounced neck and everted rim (Fig. 4.18, 1–3).

The apparent absence of narrow-necked bottle forms may be noted (although see the base in fabric QU407, described below). The jugs/pitchers are decorated on the upper part of the body with roller-stamped decoration, carried out before the application of the handle (see Fig. 4.18, 5). The form of the spout(s) is uncertain, whether pulled/pinched or applied tubular, although one neck sherd (Fig. 4.18, 6) would seem to fit better with the base of a tubular form.

The definition of the rounded jars follows the recommended nomenclature (MPRG 1998), and includes those vessel forms previously defined by Evison as globular bowls and shouldered jars (1979,

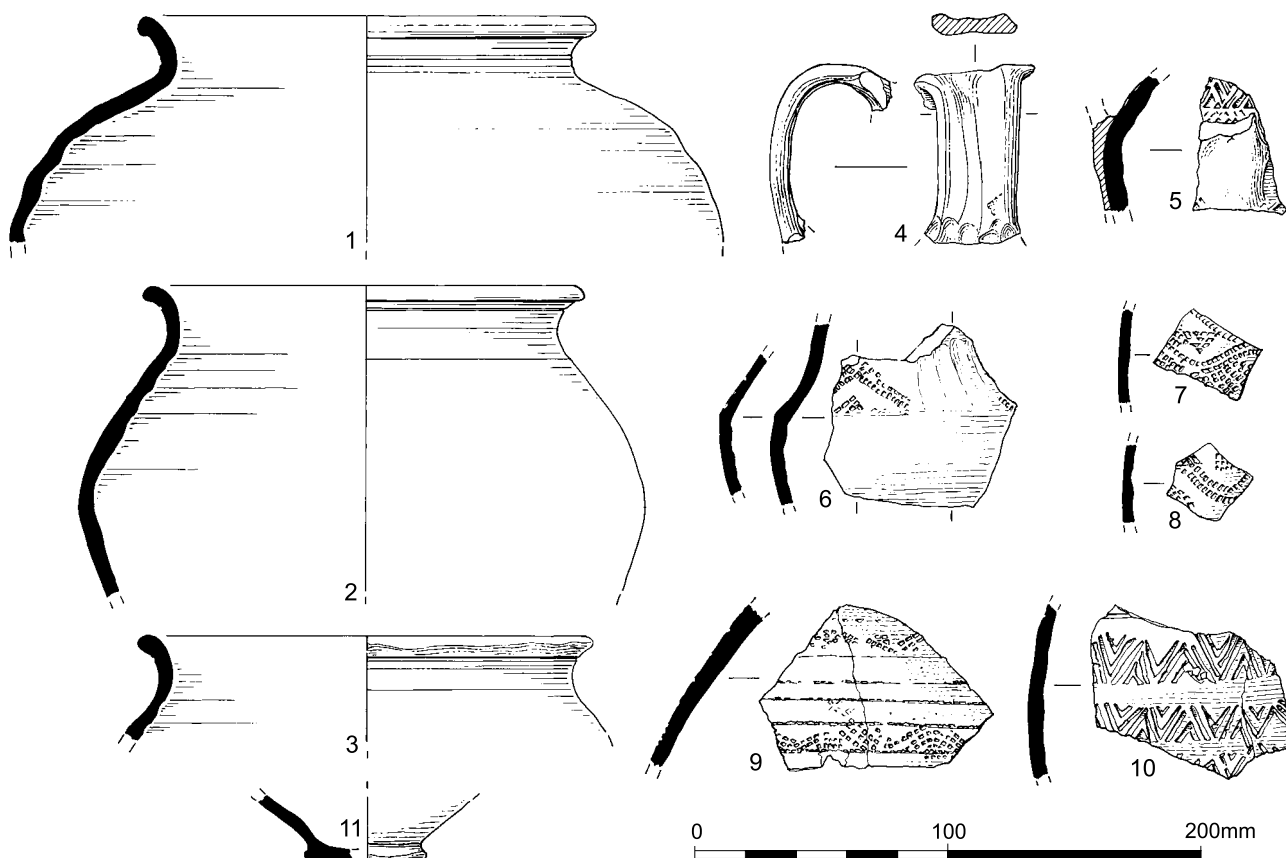


Figure 4.18 Saxon pottery: imported wares

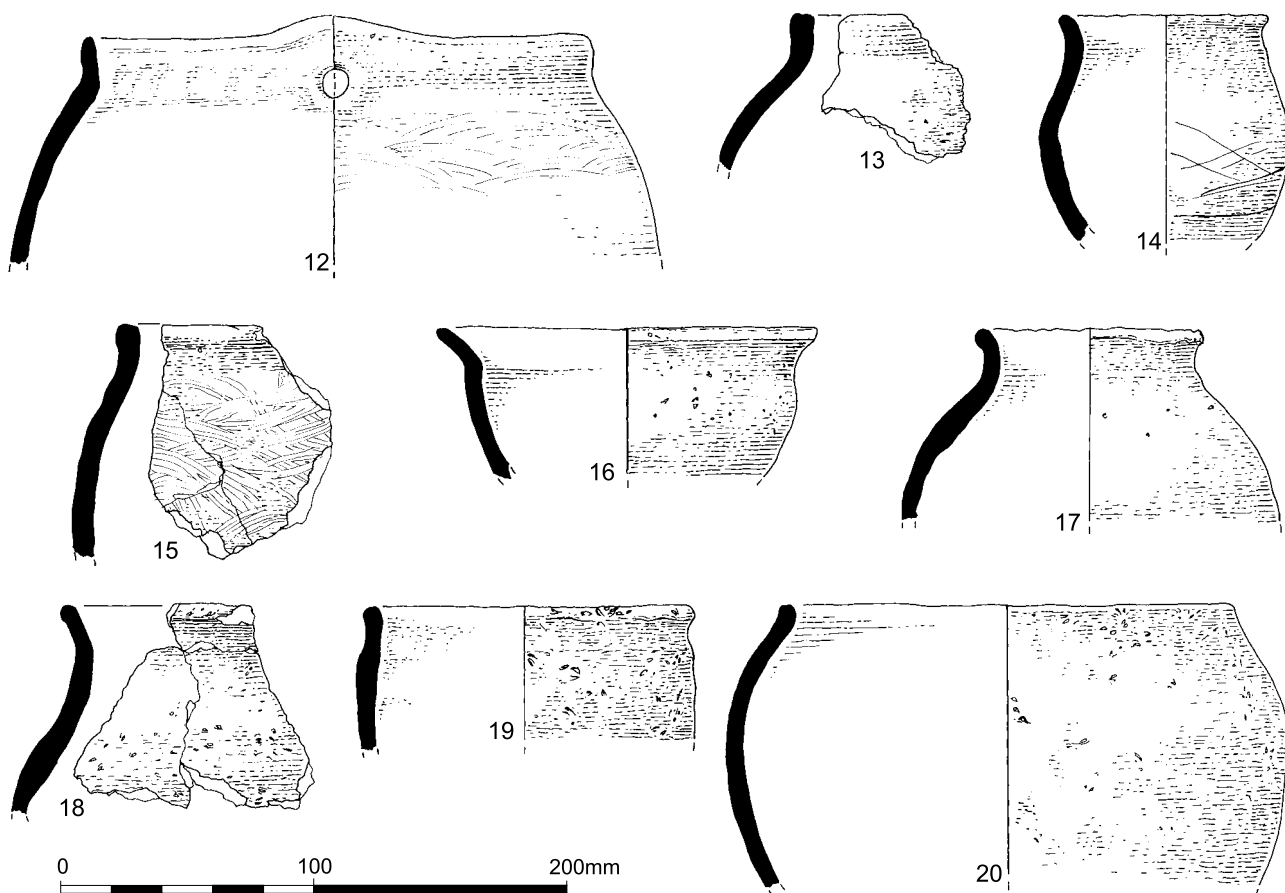


Figure 4.19 Saxon pottery: local coarsewares

**Table 4.5 Pottery: Saxon vessel forms by fabric (coarsewares)**

	VE400	VE401	VE402	QU404	Total
Rim, vessel form unknown	3	6	2	3	14
Type 3: Lugged jar/bowl	1	2	-	-	3
Type 4: Rounded jar, upright rim	-	2	-	2	4
Type 5: Rounded jar/bowl, everted rim	1	2	-	1	4
Type 6: Shouldered bowl, upright rim	-	2	-	-	2
Type 7: Convex bowl, inturned rim	-	1	-	-	1
Type 8: Rounded bowl, everted rim	-	1	-	-	1
Total	5	16	2	6	29

figs 17, 18). Some at least of these vessels appear to be plain, although a number of roller-stamped body sherds are present, which although unattributable to vessel form, could derive from either jars or jugs/pitchers. Roller-stamped designs are either wavy, with interspersed single motifs (Fig. 4.18, 6–9), or horizontal rows of chevrons (Fig. 4.18, 5, 10). On the basis of rim and handle sherds alone, a minimum number of seven vessels may be calculated, five jars and two jugs/pitchers.

Fabrics QU402–4 and QU407 occur either as single sherds, or as small groups of sherds within single features, and each is likely to represent a single vessel. There are no rims or decorated sherds amongst these fabrics; a single base in fabric Q407 (Fig. 4.18, 11) is more likely to derive from a jug or bottle rather than a jar, but otherwise vessel forms may not be distinguished.

#### *Local coarsewares*

The remainder of the Anglo-Saxon assemblage comprises coarsewares, which may be subdivided into predominantly organic-tempered fabrics (VE400–402) and sandy wares (QU401). Four fabrics have been defined. Fabric totals are given in Table 4.2.

These coarsewares constitute the characteristic sandy/organic-tempered component of an Early–Middle Saxon assemblage. Despite the presence of known imported wares on the site, there is nothing to suggest that these coarsewares are anything other than of local manufacture, possibly on or near the site itself. They occur in a range of unstandardised utilitarian vessel forms, of which five main types have been defined on the basis of rim sherds:

**Table 4.6 Pottery: Saxon pottery by context (no. sherds/wt (g))**

	Imports	Coarsewares		Total
		VE	QU	
SFB 43	1/2	36/235	1/6	38/243
SFB 73	1/1	14/100	-	15/101
SFB 74	11/144	107/638	23/243	141/1025
SFB 88	77/1472	196/2347	54/515	327/4334
SFB 239	2/21	15/64	6/60	23/145
Gully 49	-	-	1/3	1/3
Pit 82	-	3/20	-	3/20
Total	92/640	371/3404	85/827	548/4871

- Type 3 Convex jar with short upright rim; two opposed, perforated lugs pulled up from the rim (Fig. 4.19, 12).
- Type 4 Rounded or convex jar with short upright or everted rim (Fig. 4.19, 13, 17, 18).
- Type 5 Convex jar or bowl with slightly constricted neck and short upright rim (Fig. 4.19, 14, 15).
- Type 6 Straight-sided bowl with slight shoulder and short upright rim (Fig. 4.19, 19).
- Type 7 Convex bowl with slight shoulder and short upright rim (Fig. 4.19, 20).
- Type 8 Convex bowl with everted rim (Fig. 4.19, 16).

The correlation of vessel forms to fabrics is given in Table 4.5. No complete profiles were reconstructable. The absence of sharply biconical or carinated forms may be noted, and this lack may be fairly confidently regarded as real, since carinated vessels are recognisable from even very small body sherds. No decorated sherds are present. Surface treatment, in the form of burnishing, was observed, predominantly on the finer fabric VE401; there are no signs of any other surface treatments such as combing, rustication or ‘coarse-slipping’.

#### *Distribution*

The Anglo-Saxon pottery was found concentrated in the five SFBs, although the quantities in each building varied quite widely (see Table 4.6). SFB 88 produced the greatest quantity, while SFB 73 produced only 15 sherds. The outlying SFB 239 also produced a relatively small quantity of pottery, including the only occurrence of fabric VE402. All of the SFBs produced at least one sherd of imported pottery, although only SFBs 74 and 88 produced any quantity. Joining sherds between these two structures were observed, in both coarsewares (Fig. 4.19, 17) and imported wares (Fig. 4.19, 2).

Other Anglo-Saxon pottery came in minimal quantities from gully 49 and pit 82.

#### *Discussion*

There is no doubt that the interest in this small assemblage lies in the group of wheelthrown Frankish vessels which were found concentrated in the SFBs. Frankish pottery is not, of course, an uncommon find

in Kent but has so far been almost entirely restricted to cemetery sites (Evison 1979), largely due to the lack of excavations on settlement sites. The settlement at Mucking, Essex has sherds from 15 Frankish vessels, which was then considered to be the largest number of vessels from a settlement site; the associated cemetery produced only one Frankish vessel. While the Mucking assemblage is significant, it was recognised that further excavations on settlement sites in this area, particularly those associated with, or close to cemeteries, would inevitably yield more evidence for the use of Frankish pottery in domestic contexts (Hamerow 1993, 22). The evidence from this site tends to confirm that view.

A minimum number of seven vessels has been calculated from the Ramsgate site on the basis of rim sherds and representation of fabrics, and it is instructive to compare this group of vessels with those from Mucking, and also with those from cemetery sites in Kent. The Mucking settlement assemblage included three probable bottles, one spouted pitcher, one jug and three biconical bowls; the other seven vessels were unidentifiable. Bottles are in the minority, although not completely absent as they appear to be at Ramsgate. Both sites may be contrasted with the overall picture from the cemetery assemblages in Kent, which are dominated by bottles (just over half of the vessels listed by Evison: 1979), with jugs, pitchers, and shouldered jars very much in the minority. Evison noted that the bottles found in graves are often noticeably worn, with abraded surfaces and often with rims or handles missing – some had even been reused after breakage – and argued that while they may have been imported originally as wine containers, they must have had some subsequent value to influence their curation and final use as funerary vessels, a use which they apparently did not have on the Continent. The recovery of such vessels from a settlement site might not, therefore, be expected. The jugs/pitchers and jars from Ramsgate show no signs of excessive wear and appear to represent nothing more than a strictly utilitarian domestic assemblage, albeit of strikingly better quality than the locally made wares.

The generally accepted date range for the Frankish imported wares is mid-6th–7th century, and the absence of biconical forms amongst the Ramsgate assemblage could perhaps indicate a date range no earlier than the 7th century for this small group. Any chronological sequence within the various structures of the Ramsgate settlement is impossible to discern. Certainly the joining sherds and similarity of assemblages between SFBs 74 and 88 would indicate the contemporaneity of these two structures, but quantities from other structures are too small to draw conclusions.

### Medieval pottery

A small quantity of medieval pottery was recovered, all but one sherd from ditches excavated during the evaluation phase. Most sherds are in moderately fine oxidised sandy fabrics, with just one sherd in a coarse shelly fabric (see Table 4.2); fabrics are not described in detail here.

Most of the medieval pottery came from a single feature, pit or ditch terminal 515, and this small group includes the rim of a partially glazed jug with narrow rod handle, the rod handle from a second jug, one glazed body sherd with combed decoration and a second with white-slipped decoration, both also likely to derive from jugs. No other diagnostic forms were noted from other contexts. The single sherd in the shelly fabric, from foundation/robber trench 520, is an abraded rim sherd, probably from a jar. The potential date range for the medieval pottery is 14th–15th century.

### List of illustrated sherds (Figs 4.17–19)

#### *Early Neolithic*

1. Carinated bowl with lug; faint traces of impressed decoration; fabric FL7. Pottery Record No. (PRN) 267–9, ON 3027, context 54, cut 240.
2. Carinated bowl, probably same vessel as No. 1; faint traces of impressed decoration above and below carination; fabric FL7. PRN 267–9, ON 3027, context 54, cut 240.
3. Rim sherd, fabric FL7. PRN 267–9, ON 3027, context 54, cut 240.

#### *Late Bronze Age*

4. Upright rim sherd (type 4), fabric FL1. PRN 227, context 159, structure 191.
5. Rim sherd, jar (type 3), fabric FL1. PRN 200, context 119, structure 191.
6. Rim sherd, jar (type 1), fabric FL6. PRN 192, context 100, ditch 230.
7. Joining rim sherds, jar (type 2), surface slip or slurry flaking off, fabric FL1. PRN 176, context 89, ditch 230.
8. Finger impressed rim sherd, jar (type 1), fabric FL1. PRN 172, context 89, ditch 230.
9. Rim sherd, rounded bowl (type 5), fabric FL1. PRN 262, context 213, cut 241.
10. Rim sherd, jar (type 2), fabric FL4. PRN 243, ON 3061, context 168, ditch 91.
11. Rim sherds, jar (type 1) fabric FL6. PRN 175, context 89, ditch 230.
12. Finger-impressed shoulder; fabric FL1. PRN 173, context 89, ditch 230.
13. Decorated body sherd, horizontal incised lines, fabric FL1. PRN 242, context 168, ditch 91.

#### *Late Iron Age/Romano-British*

14. Decorated rim sherd, bowl, fabric G2. PRN 260, context 211, pit 212.

*Anglo-Saxon*

1. Jar rim, fabric QU405. PRNs 44/89, contexts 37/48, SFB 88.
2. Jar rim, fabric QU406. PRNs 48/70, contexts 37/38, SFBs 88/74.
3. Jar rim, fabric QU406. PRN 69, context 38, SFB 74.
4. Pitcher strap handle, fabric QU406. PRN 154, context 79, SFB 88.
5. Decorated body sherd, roller-stamped, handle stump, fabric QU405. PRN 112, context 60, SFB 88.
6. Decorated body sherd, roller-stamped, ?pitcher, fabric QU405. PRN 120, context 60, SFB 88.
7. Decorated body sherd, roller-stamped, fabric QU405. PRN 66, context 38, SFB 74.
8. Decorated body sherd, fabric QU406. PRN 50, context 37, SFB 88.
9. Decorated body sherds, roller-stamped, fabric QU406. PRN 43, context 37, SFB 88.
10. Decorated body sherds, roller-stamped, fabric QU405. PRNs 94/116, contexts 58/60, SFB 88.
11. Base sherd, fabric QU407. PRN 113, context 60, SFB 88.
12. Rim sherds, bowl or jar with opposed perforated upright lugs drawn up from rim (type 3), fabric VE400. PRN 49, context 37, SFB 88.
13. Rim sherd (type 4), fabric VE401. PRN 111, context 60, SFB 88.
14. Rim sherds (type 5), fabric QU401. PRNs 45/46, context 37, SFB 88.
15. Rim sherds (type 5), fabric VE400. PRNs 64/65, context 38, SFB 74.
16. Rim sherd, bowl (type 8), fabric VE401. PRN 24, context 37, SFB 88.
17. Rim sherds (type 4), fabric QU401. PRNs 72/119, contexts 38/60, SFBs 74/88.
18. Rim sherds (type 4), fabric VE401. PRNs 114/115, context 60, SFB 88.
19. Rim sherd (type 6), fabric VE401. PRN 96, context 58, SFB 88.
20. Rim sherds (type 7), fabric VE401. PRNs 117/118, context 60, SFB 88.

*Ceramic Building Material*

by Lorraine Mephram

The ceramic building material comprises largely fragments of roof tiles, with a few pieces of brick, all from medieval or later features. With the exception of six fragments from ditch 525, the majority of the ceramic building material came from the fills of 'terrace 517' (associated with the medieval building remains) and ditches 519, 511, and particularly 515. All tiles appear to be handmade in a very similar fabric. Association with pottery of medieval date (probably 14th–15th century) in ditches 519 and 511 suggests a similar date range.

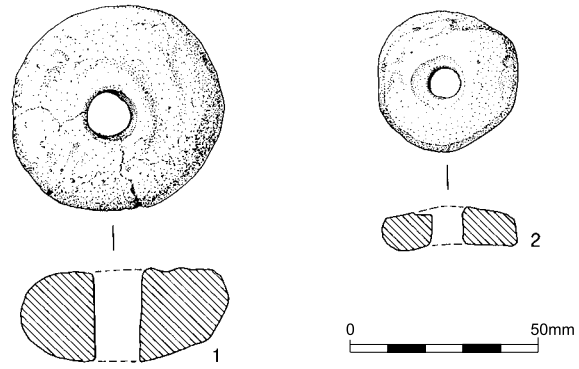


Figure 4.20 Fired clay objects

*Fired Clay*

by J. Fry

A total of 442 fragments of fired clay and two ceramic objects was recovered. Most of the fired clay comprises small undiagnostic fragments in a fine, friable, oxidised sandy fabric with occasional flint inclusions. This includes 73 undiagnostic fragments from Late Bronze Age contexts, dispersed in small quantities within discrete features across the site. Most of the material (83% of the total) came from Anglo-Saxon features, with approximately 75% of the total from SFB 88, some of which had surviving surfaces and/or wattle impressions, suggesting that the fragments derived from a wattle and daub structure. Small quantities of generally undiagnostic fragments were recovered from SFBs 63, 73, and 74.

The two ceramic objects recovered are both spindle whorls. One, from SFB 74, is annular (ON 3026, Fig. 4.20, 1), and has been purpose-made in a sandy, organic-tempered fabric. The other, from SFB 43, is made from a sherd of Romano-British oxidised coarseware (ON 3000, Fig. 4.20, 2). While this object could be of Romano-British date, its provenance suggests that it is more likely to be Anglo-Saxon. The re-use of pottery and other Romano-British artefacts in the Saxon period is not uncommon.

*Stone*

by J. Fry

Eighteen pieces of stone were recovered, including two quern fragments (not illustrated). The first, from SFB 88, represents c. 30% of a quern with a diameter of 220 mm and a thickness of 60 mm. This is part of the lower stone of a rotary quern, with part of the spindle-hole present, in a red sandstone local to the north-east Kent coast. The second, from SFB 73, represents c. 20% of a quern of unknown diameter and a thickness of 55 mm. This is part of the upper stone of a rotary quern, with part of a handle-hole

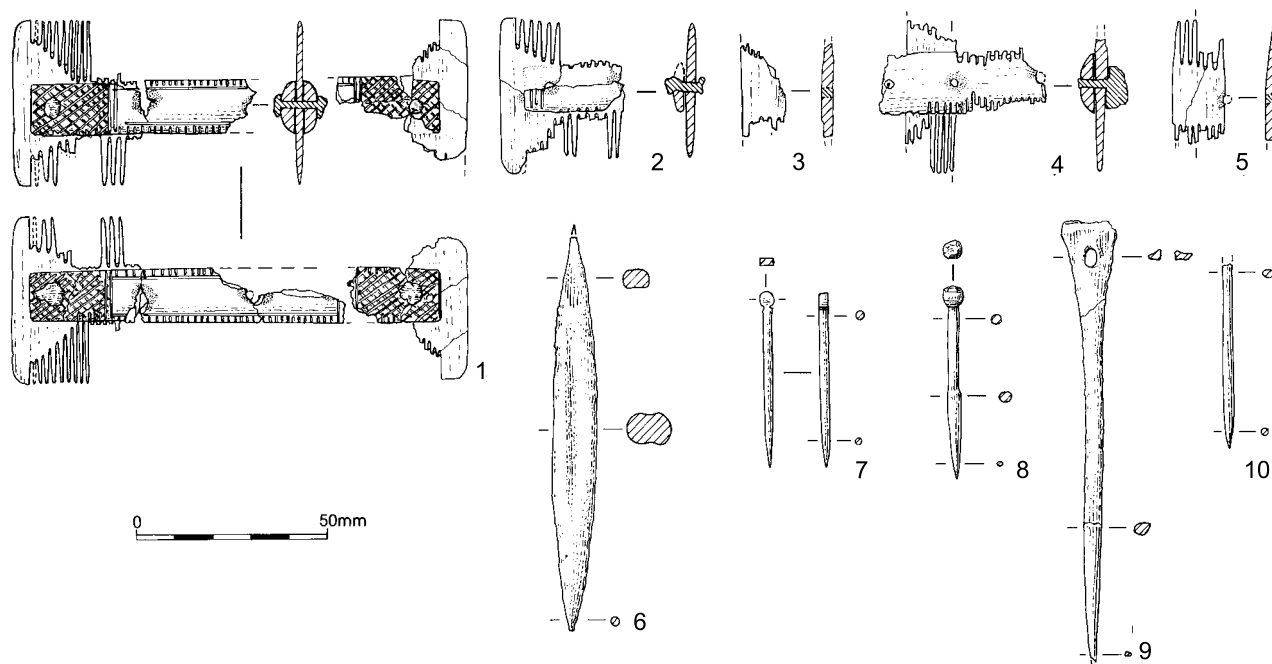


Figure 4.21 Worked bone and antler objects

present, in a green sandstone local to the south-east Kent coast.

One sandstone slab, probably part of a floor tile, was found in medieval ditch 515, associated with relatively large quantities of ceramic building material. The other fifteen pieces are all undiagnostic fragments of red sandstone, ranging from 10 mm to 40 mm in thickness. These were recovered from a range of features, including Late Bronze Age ditch 162, Anglo-Saxon SFB 88, and medieval ditch 232. They are of uncertain origin, though the fragments from ditch 232 could be from floor tiles.

### Worked Bone and Antler

by J. Fry, with species identifications by Sheila Hamilton-Dyer

A minimum of 11 worked bone, antler, and ivory objects was recovered, all from Anglo-Saxon SFBs.

#### Combs

Fragments of at least four combs were identified. All are double-sided composite combs with plano-convex antler side plates fastened with iron rivets to elongated, symmetrical, plain-ended bone billets. The most complete example came from SFB 88. This has side plates decorated with a dense lattice design at each end, and short incised 'nicks' (created by cutting the teeth) on the upper and lower edges, bounded by horizontal lines extending between the zones of lattice design (ON 3048, Fig. 4.21, 1). A second, more fragmentary comb from the same structure has side plates with similar short, vertical 'nicks' along the

edges and longer vertical lines across the ends (ON 3056, Fig. 4.21, 2). Two further fragments, one from the tooth plate (ON 3500, Fig. 4.21, 3) and one from the side plate, may belong to the same comb. Two groups of fragments from SFB 73 may derive from a single comb (ON 3033, 3035, Fig. 4.21, 4-5); the largest fragment comes from near the end of the comb, with a side plate with nicked edges. The very fragmentary remains of another comb with similar treatment came from SFB 74.

At West Stow, Suffolk, a large group of double-sided combs was used to create a typology based on decorative motifs and shape of end tooth plates (West 1985, 127-8); the Manston Road combs, where identifiable, fall within type 1B, examples of which occur at West Stow in early 6th and 7th century contexts. The dense lattice design is, however, characteristic of 7th and early 8th century combs, and does not occur before then (I. Riddler, pers. comm.). On this basis a date in the second half of the 7th century is indicated for the Manston Road combs.

#### Weaving implement

One object from SFB 239 is identified as a pin beater or thread picker, with double ended points, made from a cattle or horse metapodial, for use in weaving to beat the weft into place (ON 3059, Fig. 4.21, 6). Such objects are frequently highly polished through wear, but this example is too degraded for such surface finish to survive.

#### Pins and needles

Two complete pins, two complete needles and two shaft fragments were recovered.

One of the pins, from SFB 43, has a small, flat disc-shaped head (ON 3009, Fig. 4.21, 7) and is of a type dated to the 7th century at, for example, West Stow (West 1985, fig. 246, 3, 62). The other pin, from SFB 88, possibly made from ivory, has a spherical head and a hipped shaft (ON 3040, Fig. 4.21, 8). Spherical-headed pins are not chronologically distinctive, appearing from the Romano-British to the medieval period; examples with short, hipped shafts, however, are characteristic of the second half of the 7th century (Evison 1987, 83).

The needle with a pierced triangular head, made from a pig fibula (ON 3028/3513; Fig. 4.21, 9), from SFB 73, is more crudely manufactured than the pins. A second example (not illustrated), from the same context, is not perforated; such objects may have been used as weaving tools rather than, for example, needles or dress items. The two remaining objects comprise plain shaft fragments, one probably from a pin (ON 3053, SFB 88, Fig. 4.21, 10).

## Environmental Evidence

### *Animal Bone*

by Sheila Hamilton-Dyer

Animal bone recovered from both the evaluation and the excavation is reported on here. Analysis concentrated on material from Late Bronze Age features and, especially, the Anglo-Saxon SFBs. Later and undated material was fully recorded for the archive and is briefly discussed. The initial preservation conditions appear to have been good with indications that several bones had been preserved in an 'ivoried' condition. Subsequently, the bones have been considerably damaged, probably a result of bioerosion by fungi, bacteria, and invertebrates. Many have meandering areas of erosion (Hackett tunnels; Davis 1997) and are fragile and chalky in appearance.

### **The assemblage**

Bone condition is generally not good, but sufficient to identify a third of the 1629 bones to species. The high level of fragmentation gives an artificially high quantity of unidentified material; 20% of the bone comprises indeterminate fragments less than 50 mm in size, most of which are likely to have been broken from other bones.

As expected, the bones of domestic ungulates predominate. Other taxa are infrequent, but include red deer, cat, rabbit, several small mammals, fowl, goose, other birds, and fish (Table 4.7). From the Anglo-Saxon features, which produced the bulk of the material, sheep/goat bones are the most frequent taxa,

with cattle second, and pig and horse in third and fourth position respectively. The smaller Late Bronze Age group is mainly of cattle. Medieval groups are varied and have a higher amount of bird than the Anglo-Saxon assemblage. All of the fish remains are from Anglo-Saxon features and all, except one, are from the sieved samples. The sieved samples also include small mammal bones, of mole, field vole, and woodmouse. These are not discussed further, save to say that some may be intrusive and all are common in rural habitats such as rough pasture.

Butchery marks are very rare, owing to the damaged bone surfaces. Those that can be observed include chopping at the base of horn cores, split metapodia, halved pigs' heads, and knife and chop marks on ribs and vertebrae.

### **Bronze Age**

The 65 bones are mainly of cattle and cattle-sized fragments (Table 4.7). Other bones include three of horse, one each of sheep and pig, and several of small mammals including field vole. The much fragmented horse jaw from pit 219 is of a young animal of about three years old. All of the material is fragmentary and of poor quality; any butchery marks have been obliterated.

### **Anglo-Saxon**

The Anglo-Saxon features produced the largest assemblage, comprising 1415 bones, of which over half are from one sunken-featured building (SFB 88). Although bone was recorded separately for all contexts much of the discussion below treats the material as a single group.

The majority of the 454 bones identified to species are of sheep, cattle and pig. Just over 40% of the total bone fragments were not identified to species but are probably mostly sheep and cattle. Minor species present are horse, red deer, cat, small mammals, fowl, goose, small birds, and at least three species of fish (Tables 4.7–8). The distribution of the minor species is sporadic and the presence or absence in a particular context is unlikely to be significant. The relative proportions of the domestic ungulates differs very little between features; overall, sheep/goat form 52.3% of the identified bones, cattle 30.4%, pig 13.4%, and horse just 3.9%.

The anatomical distribution is summarised in archive. There are slight differences between the species in the relative proportions of the main limb bones and teeth. The slight under-representation of sheep/goat teeth may be due to the successful reconstruction of several jaws; any further degradation and these would have been recorded as loose teeth. The lack of cattle forelimb may be because of difficulties of identification; many small fragments of limb shaft could not be assigned to





species or anatomy with certainty. There is also a lack of pig foreleg which cannot be easily explained; the samples are small and this may be enough to bias the results. Overall, head, teeth, and foot bones are well-represented, and perhaps again this owes more to survival and identifiability than any other reasons.

Amongst the sheep/goat bones just two were identified as goat; a horn core and a metacarpus. These are from different layers of SFB 88 and are not from the same animal. The metacarpus has an unfused distal epiphysis, equivalent to an age of two years at most. The horn core is of a substantial animal and had been chopped. Amongst the sheep remains is the large horn core of a ram, also chopped off.

Only the ovicaprid mandibles gave a large enough sample for a useful assessment of ageing. There were 20, including 13 mandibles which were certainly from sheep, and none which were certainly from goat (Payne 1985). These were grouped in the same manner as Maltby (1982). There is a notably high number from stages 3 and 4 implying a cull age of one to two years, no lambs and few old sheep. This would be the prime age for meat production and is similar to early Anglo-Saxon West Stow, Suffolk (Crabtree 1989), where over half were estimated to be of this age. However, it is quite different to the situation at middle Saxon *Hamwic*, Southampton (Bourdillon and Coy 1980), where a much higher percentage of old animals was observed (over 35% had the third molar in wear; Maltby stage 5 or more), and also at Anglian York (O'Connor 1991), implying an emphasis on wool production. The preservation at the present site is not good and mandibles of young animals may not have survived, but this cannot account for those of the older animals, of which only two were found.

Ageing information for cattle is restricted to a few jaw fragments, some with unerupted molars, and both fused and unfused bones. As expected, pig remains are mostly of young animals.

Like butchery marks, metrical data are rare; only 19 bones (mostly sheep/goat) were measured. With such a limited sample it is not possible to analyse the data in detail, but all the measurements fall within the ranges reported for sites of the period (eg, Melbourne Street, Southampton. Bourdillon and Coy 1980; statistical appendix).

Of the minor species, horse accounts for 13 bones, often recovered in a fragmentary state. The remains from SFB 88 include the skull of an old male (parts from contexts 60 and 79 fit together), the rear of which had been gnawed.

Red deer remains are present in both of the largest groups (from SFBs 74 and 88). Three of these are pieces of antler tine, but give no indication whether collected or culled. The other, however, is a tooth and therefore was from a dead animal.

There is a single fragment of cat femur, and several of the bird bones have small gnaw marks consistent with cat. Larger gnawing gives indirect evidence of dog, although no dog bones were found. The cat fragment, some small mammal bones and several other small fragments are charred. This burning was observed on some bones from all of the Anglo-Saxon features. Most of the fragments are very small, but they also include parts of a cattle jaw, maxilla, calcaneus, and rib, a sheep axis, and a pig frontal.

The 12 bones of fowl all come from SFBs 74 and 88, and include a pair of cockerel tarsometatarsi with unusual cut marks. One has the tip of the spur core cut off and another cut near the shaft; the other has repeated cut marks along the spur core. If the intention was to replace the spur with metal for cock fighting, it would be expected that the spur core would be removed near to the shaft in the manner used in the 18th century (West 1982). The bones show some age-related thickening and extension, and perhaps the spur sheathes had grown particularly long and were removed for decorative or some other purpose, although one would expect cut marks around the core or the core completely chopped off. The greatest length of these bones is 82.7 mm and 81.5 mm respectively, a good size for the period but not unusual (Bourdillon and Coy 1980, statistical appendix). In short, there is no clear explanation and these bones remain a curiosity.

Other bird bones are few; there are five bones of goose, probably tamed or domestic greylag, and two sparrow-sized passerine bones, all from SFB 88. The unidentified fragments are likely to be of fowl.

The 41 fish remains are, as expected, mainly from sieved material, and mostly comprise fin rays and other undiagnostic fragments. At least three species could be identified in the remaining 17 elements. The denticles and teeth of rays were identified from SFB 88, and at least one of the teeth is of a male thornback. Herring was found in both SFBs 74 and 88, and there is also a flatfish otolith.

### Medieval

The 136 bones are, with a single exception, from ditches, probably associated with Upper Court manor house (Table 4.7). The preservation of the bone from feature 515, probably a pit, is considerably better than from elsewhere on the site. The improved condition of the bone enabled the observation of carnivore gnawing, probably mostly of dog with some comparable with cat. Bones of cat were also found. Remains of rabbit and rat were found in ditches 232 and 515, and are indicative of a post-Conquest date. Many bird bones are present, mainly fowl, some of large size yet still immature. Other birds include goose, pigeon, rook, jackdaw,

and sparrowhawk. There are several chopped pigs heads, one of a male with a very substantial upper canine. A complete sheep metacarpus from ditch context 534 gives an estimated withers height of 0.586 m (based on factors recommended by von den Driesch and Boessneck (1974)), and this is typical of the small animals reported for southern England in this period.

### Discussion

The Late Bronze Age material is a very small group, mostly of cattle. The medieval material is quite different from either of the other two period groups, with cattle very low and more pig and fowl. There are also species not present in the earlier assemblages, namely rat, rabbit, jackdaw, and rook.

In the Anglo-Saxon assemblage sheep fragments dominate the fragments numerically, with cattle second, and pig in third place. Fowl and horse comprise minor, but significant percentages. Other species are rare and there is little reliance on wild resources. This narrow resource base is similar to the findings at major urban settlements such as Southampton and York. Unlike these settlements, however, there is a greater reliance on sheep rather than cattle; of the cattle/sheep/pig total, sheep form 54.4%, while cattle are at 31.6% and pig 13.9%. At the rural middle Saxon site at Shavards Farm, Hampshire (Hamilton-Dyer and Bourdillon n.d.), the proportion of sheep is higher than at Southampton nearby, but is otherwise similar. This is in contrast with the middle Saxon smelting site at Ramsbury, Wiltshire (Coy 1980), which had a comparatively high proportion of pig and considerably more wild animal remains, particularly red deer. The large early Anglo-Saxon assemblage from West Stow, Suffolk (Crabtree 1989), also has a high proportion of sheep.

Much of Thanet is on chalk and thus better suited to sheep production than cattle, which may explain the high level of sheep, although the damper pasture and marshland of the Wantsum Channel lay only a short distance to the south. Romney Marsh on the south coast of Kent is famous for its breed of sheep, but these are large and polled, unlike the present sample. Despite the numerical dominance of sheep bones, the meat of sheep would have been less important than that of cattle because of the difference in size of the animals. The sheep age profile is like that at West Stow, Suffolk, with emphasis on meat production, rather than the pattern at Southampton and elsewhere of mainly old animals which indicates that they were raised for wool. Although the small sample size and condition of the bone limited metrical analysis, comparison with data from other sites shows the material to be very similar.

The fish are all marine and probably from a local inshore fishery. Eel, so common in other assemblages,

is not present. The lack of few rivers and streams on Thanet is likely to be the principal reason for this absence; it cannot be due to poor preservation as the similarly sized and fragile bones of herring are present.

Much of the Anglo-Saxon assemblage is consistent with post-occupation dumping rather than *in situ* debris accumulating on a living floor; several of the horse and cattle bones are (or were) largely complete, rather than small pieces of plate waste. Head and foot bones in particular would normally be regarded as waste and discarded away from the habitation.

Animal bone assemblages are comparatively rare from rural Anglo-Saxon sites. There are no others from Thanet and comparatively few from Kent. This is, therefore, an important collection despite its relatively small size, giving useful information on the animal economy of the site, and more generally on animal husbandry in north-east Kent during this period.

### Charred Plant Remains

by Pat Hinton

A series of 18 samples which had already been processed and assessed was selected for analysis from a total of 41 bulk samples. Apart from the cereals, nomenclature follows Stace (1997). All taxa are represented by seeds (which term includes nutlets, caryopses, etc.) unless otherwise stated.

Preservation of most of the charred seeds from all samples is poor; many are damaged and others are represented by little more than fragments. Some have not been identified. All samples also contained a small amount of very small charred particles, probably cereal in origin. Recent contaminants in the form of seeds, roots, snails or fungal sclerotia occurred in all samples.

### Bronze Age

The one Middle Bronze Age sample, from soil associated with pottery deposit 56, included slight evidence of *Triticum dicoccum* (emmer), other grains identifiable only as wheat, and a small amount of probable cereal fragments (Table 4.9). The two weed seeds are only partially preserved; the possible knotgrass (*cf. Polygonum aviculare*) was indicated solely by size and by a suggestion of triangular formation at one end, and the vetch or vetchling (*Vicia/Lathyrus* sp.) is represented by less than one half of a cotyledon, which if whole would measure c. 2 mm diameter. This probably represents one of the tares (*V. hirsuta* or *tetrasperma*).

The Late Bronze Age samples also contained wheat, probably mostly emmer, and fragments of glumes, but only glume bases are counted and listed.

Table 4.9 Charred plant remains from Bronze Age contexts

	Feature	MBA		LBA		Structure 191	
		Vessel 56	Ditch 91	Pit 212		post-holes	
Context	Sample	2008	2025	2041	2043	189	187
Sample vol. (litres)		10	20	20	8	10	10
<i>Cereals</i>		<i>Common name</i>					
<i>Triticum dicoccum</i> L. sl (grains)	emmer wheat	1	(1)	2(1)	(2)	-	-
<i>T. dicoccum</i> L. sl (glume bases)		2	(6)	8	-	(2)	6
<i>T. dicoccum/spelta</i> (glume bases)	emmer or spelt wheat	-	15	1	8	-	-
<i>Triticum</i> sp. (grains)	wheat	2	3	2	1	-	-
<i>Hordeum vulgare</i> L. sl (grains)	hulled barley	-	1	2(2)	1	-	1
<i>H. vulgare</i> (rachis internodes)		-	1	-	1	-	-
<i>Avena</i> sp.L. (grains)	oats	-	-	-	-	1	-
<i>Avena</i> sp.L. (awn frags)		-	1	-	-	1	-
Cerealia indet. (grains & frags)		>0.5 ml	<0.5 ml	c. 1 ml	<0.5 ml	<0.5 ml	c.1 ml
<i>Species</i>							
<i>Stellaria media/neglecta</i>	common/greater chickweed	-	1	-	-	-	-
cf. <i>Polygonum aviculare</i> agg.	knotgrass	1	-	-	-	-	-
<i>Fallopia convolvulus</i> L. Å.Löve	black bindweed	-	-	1	-	1	-
<i>Rumex</i> sp.	dock	-	(1)	2	-	-	-
<i>Vicia/Lathyrus</i> sp. (frags)	vetch/vetchling	1	1	2	-	-	-
<i>Galium aparine</i> L.	cleavers	-	1	-	-	-	-
<i>Bromus hordaceus/secalinus</i>	soft-/rye-brome	-	2	1	-	-	-
Unident seeds		-	-	1	-	-	-

( ) – identification uncertain

These are mostly incomplete, but their presumed size, venation, and keel angles suggest that most are of emmer wheat. Some slightly larger and more rounded bases might possibly be spelt (*Triticum spelta*).

*Hordeum vulgare* (hulled barley) occurs in four of the five Late Bronze Age samples, with tiny fragments of rachis internodes in two of these. In no case is it possible to determine whether these represent 6- or 2-row barley.

Wild plant seeds are slightly better represented in two of the Late Bronze Age samples and all may be arable weeds. The fragments of vetch/vetchling suggest that a whole seed would measure c. 3–3.5 mm diameter, and they therefore differ from the earlier fragment from a Middle Bronze Age context. Remains from two of the post-holes in Structure 191 are very sparse, but in the evidence of wheat, barley, and *Avena* sp. (oats), they reflect the contents of the other samples. However the evidence for oats is very slight, and it is probable that these are wild oats and represent weeds rather than cultivated species.

### Anglo-Saxon

Wheat is present in all Anglo-Saxon samples as a few almost intact grains, but more frequently as fragments (Table 4.10). The better-preserved grains are all identifiable as free-threshing wheats, mostly a short, plump form, but a few are relatively longer. There is one rachis fragment which suggests a hexaploid bread wheat (cf. *Triticum aestivum* group) and one other which is too incomplete to identify closely. That glume wheats were present, however, is shown by a few glume bases, again damaged and incomplete, which are likely to be of spelt (*T. spelta*). This was the

characteristic wheat of the later prehistoric and Romano-British periods and it occasionally persists into later deposits. However, in this case they may represent relict fragments from the earlier, Late Bronze Age occupation.

Hulled barley is present in all but one context. Again, preservation is rarely good, but there are examples in three of the samples of grains with the twisted form which denotes the lateral grains of six-row barley. *Secale cereale* (rye) occurs in two, possibly three, of the features in fewer numbers than the wheat and barley, but sufficient to indicate a significant presence. Oats were more rarely found and there is none of the chaff which might determine whether they were wild or cultivated species.

*Pisum sativum* (peas) occur in only two, or probably three, contexts, but it is possible that a few of the legume fragments listed with the wild plants (as *Vicia/Lathyrus* spp.) may be pea. This small presence may accurately reflect their importance at this site, but pulses, possibly because their processing requirements differ from cereals, may be under-represented.

An attempt was made to separate the wild plants in Table 4.10 into their likely habitats, but there is rarely a clear-cut distinction between arable weeds and plants more likely to occur in grassland, and particularly so when some identifications are uncertain. However, it is probably safe to say that most of the wild seeds, including some of the grasses, are from weeds of cultivated fields and became burned with other waste. In most cases the seeds indicate no more than typical conditions of tilled fields, but *Anthemis cotula* (stinking mayweed) is

Table 4.10 Charred plant remains from Saxon contexts

Common name	SFB 43		SFB 73		SFB 74		SFB 74		SFB 88		SFB 239		Pit 82	
	Feature Context	Sample vol. (litres)	2003	2007	2005	2002	2004	2006	2010	2012	2010	2013	2018	2022
<i>Cereals</i>														
<i>Triticum dicoccum/spelt</i> (glume bases)	-	-	-	-	-	1	-	-	-	-	(1)	1(1)	-	1
<i>Triticum</i> sp. (grains)	8(3)	1	3	26(3)	16(2)	24	5(2)	-	-	-	11	-	-	5(2)
<i>Triticum</i> sp. (rachis frags)	-	-	-	1	-	-	(1)	-	-	-	-	-	-	-
<i>Triticum</i> sp. (grains)	-	-	-	21	24	6	3	6(4)	1	-	3	-	-	-
<i>Triticum</i> sp. / <i>Secale cereale</i> L.	6	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Secale cereale</i> L. (grains)	17(4)	-	(1)	-	8(3)	3(4)	1	2	(2)	-	-	-	-	-
<i>Secale cereale</i> L. (rachis frags)	-	-	-	-	-	1	-	1	-	-	-	-	-	-
<i>Hordeum vulgare</i> L. (grains)	10(2)	-	4	11(3)	23(6)	8(3)	4	6(3)	10(2)	1	5(1)	-	-	-
<i>Hordeum vulgare</i> L. (rachis frags)	-	-	1	1	10(2)	2	1	-	-	-	-	-	-	-
<i>Avena</i> sp. (grains)	(1)	-	1	(1)	10(2)	-	-	-	-	-	2	-	-	-
<i>Hordeum vulgare</i> L. (awn frags)	-	-	-	1	-	-	1	-	-	-	-	-	-	-
Cerealia indet. (grains & frags)	1.5 ml	<0.5ml	1 ml	1 ml	2.5 ml	1 ml	<0.5 ml	1 ml	0.5 ml	<0.5 ml	<0.5 ml	<0.5 ml	<0.5 ml	<0.5 ml
<i>Pisum sativum</i> L.	1(1)	-	-	-	1(1)	-	-	-	(2)	-	-	-	-	-
<i>Species</i>														
<i>Chenopodium</i> sp.	-	-	-	-	2	1	-	-	-	-	-	1	-	(1)
<i>Atriplex prostrata/patula</i>	-	-	-	-	1	-	-	-	-	-	2	-	-	-
<i>Stellaria media/neglecta</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Caryophyllaceae indet.	-	-	-	-	-	1	-	-	-	-	-	-	-	1
<i>Fallopia convolvulus</i> L. Á.Löve	-	-	-	-	2	1	-	-	-	-	2	-	-	-
<i>Rumex</i> sp.	-	-	-	-	-	-	1	-	-	-	1	-	-	-
<i>Brassica</i> sp.	1	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Vicia tetrasperma</i> L. Schreber	1	1	-	1	6	2	-	-	-	-	-	-	-	-
<i>V. hirsuta/tetrasperma</i>	-	-	-	1	12	1	1	3	4	-	-	-	-	-
<i>Vicia</i> cf. <i>sativa</i>	1	-	-	1	3	2	-	3(2)	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> sp.	-	-	1	-	c. 20	>2	-	4	1	1	-	-	-	-
<i>Medicago lupulina</i> L.	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Trifolium</i> sp.	-	-	-	(1)	-	1	(1)	1	1	-	-	-	-	-
<i>Euphorbia pepplus</i> L.	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Euphrasia/Odontites</i>	1	-	-	-	2	1	1	-	-	-	-	-	-	-
<i>Plantago lanceolata</i> L.	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Veronica hederifolia</i> L.	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Galium aparine</i> L.	-	1	-	1	(1)	2	-	-	-	1	1	-	-	-
<i>Anthemis cotula</i> L.	1	-	-	1	4	-	4	3	1	-	3	1	-	-
<i>Tripleurospermum inodorum</i> L. Schulz Bip	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Festuca/Lolium</i>	1	-	-	-	-	3	-	-	-	-	1	-	-	-
<i>Cynosurus cristatus</i> L.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Poa annua</i> L.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Bromus hordeaceus/secalinus</i>	1	1	1	1	3	4	7(1)	5(1)	4	9(1)	-	-	-	-
Poaceae indet.	2	-	-	3	3	3	3	2	4	2	4	2	-	-
<i>Corylus avellana</i> L. (shell frags)	-	-	-	-	2	1	3	1	4	4	1	4	2	-
<i>Schoenoplectus tabernaemontani</i> (C. Gmelin) Palla	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Umid. seeds	-	1	2	-	1	2	-	-	-	-	-	2	-	-

characteristic of heavier clay soils. Others, eg, *Cynosurus cristatus* (crested dog's tail) are perhaps more typical of grassland. *Schoenoplectus tabernaemontani* (grey club-rush), represented by only one seed, is a plant of shallow ponds and ditches and frequently occurs in marshy places by the sea. The few fragments *Corylus avellana* (hazel) nut shell suggest woodland or scrub nearby.

### Medieval

A sample from ditch 525 was processed as part of the evaluation assessment. Although this produced very little flot, some cereal grain which appeared to be mainly wheat and charred weed seeds were present. No chaff was recorded.

### Discussion

In all of the samples examined, the plant remains suggest discarded rubbish, the grains, chaff, and weed seeds probably having their origin in crop processing refuse. Fragments of hazel nutshell may represent discarded food remnants or accidental introductions with the wood for other purposes. Rushes may well have been utilised as floor or roof covering material. In the case of the Anglo-Saxon SFBs, the charred material may perhaps have come from domestic hearths, but from the Bronze Age contexts, it is probably redeposited rubbish or part of the general background of charred organic material.

However, the range of cultivated and wild plants does indicate the crops utilised and also provides some evidence of surrounding conditions. There appears to be a major difference in the agricultural regimes of the two periods. Emmer wheat and hulled barley appear as the only cereals in the Bronze Age, whereas in the Anglo-Saxon period the glume wheats were replaced by free-threshing wheats. Rye and peas also appear for the first time in the Anglo-Saxon period, and there is some evidence at this later date for the cultivation of heavier clay soils, and for the exploitation of wetter, marshy areas for other purposes.

## Charcoal

by Rowena Gale

Bulk samples from Middle Bronze Age, Late Bronze Age, and Anglo-Saxon features included charcoal. Charcoal was sparse and poorly preserved in the prehistoric features, and was only slightly more abundant in the Saxon features. Samples selected for identification included material from Middle Bronze Age pottery deposit 56; from Late Bronze Age pit 212; three samples from Anglo-Saxon SFBs 74 and 88, and material from pit 82. Evidence was sought of the contemporary environments and woodland economy, particularly of the exploitation of nearby marine and riverine resources.

The results are summarised in Table 4.11. The anatomical structure of the charcoal was consistent with the taxa (or groups of taxa) given below. The anatomical similarity of some species and/ or genera makes it difficult to distinguish between them with any certainty, eg members of the Pomoideae. Classification is according to *Flora Europaea* (Tutin *et al.* 1964–80).

### Broadleaf species:

Aceraceae. *Acer campestre* L., field maple

Cornaceae. *Cornus sanguinea* L., dogwood

Corylaceae. *Corylus avellana* L., hazel

Fagaceae. *Quercus* sp., oak

Rosaceae. Subfamilies:

Pomoideae, which includes *Crataegus* sp., hawthorn; *Malus* sp., apple; *Pyrus* sp., pear; *Sorbus* spp., rowan, service tree, and whitebeam.

These taxa are anatomically similar; one or more taxa may be represented in the charcoal.

Prunoideae. *Prunus spinosa* L., blackthorn.

### Middle Bronze Age

Charcoal fragments from soil associated with pottery deposit 56 were very small and poorly preserved, and included oak (*Quercus*), hawthorn type (Pomoideae),

Table 4.11 Charcoal (no. frags)

Feature	Context	Sample	<i>Acer</i>	<i>Cornus</i>	<i>Corylus</i>	Pomoideae	<i>Prunus</i>	<i>Quercus</i>
<i>Middle Bronze Age</i>								
Vessel 56	57	2008	-	-	-	1	?1	1
<i>Late Bronze Age</i>								
Pit 212	211	2041	-	-	-	-	2	3sh
<i>Saxon</i>								
SFB 74	38	2005					1	3
SFB 88	60	2012	-	-	7	-	3	6sh
SFB 88	79	2013	2	1	6	-	3	14rs
Pit 82	81	2022	2	-	1	-	11	4

r – narrow roundwood (<20 mm)

s – sapwood

h – heartwood

and probably *Prunus*. The latter was partially vitrified and structurally distorted, probably from exposure to excessive heat.

### Late Bronze Age

Charcoal from the upper fill of pit 212 was sparse and comprised small fragments of oak sapwood and blackthorn (*P. spinosa*).

### Anglo-Saxon

Two samples of charcoal from SFB 88 were examined. That from context 60 included oak sapwood and heartwood, blackthorn, and hazel (*Corylus*). In addition to the above, maple (*Acer*) and dogwood (*Cornus*) were present in context 79. Charcoal from SFB 74 was very friable and distorted, and mainly consisted of thin flakes with insufficient diagnostic information available for identification. However, the sample included oak and blackthorn. Charcoal was recovered from the fill of pit 82 in relatively abundant quantities and included maple, hazel, blackthorn, and oak.

### Discussion

Charcoal from the of the Middle and Late Bronze Age contexts was sparse, but more or less similar taxa (oak, *Prunus* and hawthorn type) were identified from both. The origin of the material is unclear, but the former may have been associated with a burial deposit, although there was no evidence of cremated bone, and the latter may have derived from domestic occupation.

The charcoal from Anglo-Saxon contexts included a wider range of taxa (maple, dogwood, hazel, blackthorn, and oak) than the prehistoric samples. The origin of the material is again uncertain, although it may have derived from domestic hearths or the remains of burnt structural components.

The taxa identified from the Anglo-Saxon structures are largely comparable to those from sunken-featured buildings at Prospect Park, Harmondsworth (Gale 1999), although at Prospect Park there was slight evidence to suggest that birch (*Betula*) and willow/poplar (*Salix/Populus*), neither of which occurred in the charcoal from Manston Road, may have had artefactual associations. Charcoal was also examined from an SFB at Hurst Park, East Molesey (Gale 1996, 99), but there the sample was extremely sparse and poorly preserved; oak, birch, and possibly heather (Ericaceae) or member of the Rosaceae were identified. Although these two London sites are geographically distant from the coastal site at Ramsgate, it should be noted that most of the taxa identified tolerate a fairly wide range of soils and would probably have been common in these areas. The similarity is likely to reflect environmental factors as much as those of cultural preferences.

### Environmental evidence and use of woodland resources

A comprehensive interpretation of prehistoric woodlands based on the few pieces of charcoal identified here would, almost certainly, produce a very inaccurate picture of the landscape. However, it is useful to record the presence of oak and possibly scrubby members of the Rosaceae, such as blackthorn and hawthorn.

The wider range of taxa indicated in the Anglo-Saxon period suggests that the surrounding area supported stands of oak, maple, and possibly hazel. Oak and hazel tolerate fairly damp clay soils and, by implication, the oak in particular, may have grown in lower lying areas such as those adjacent to the Wantsum Channel, and probably extended up the flanks of the valley onto drier soil. Firewood and timber would most likely have been collected from a source close to the site. There was no evidence of the use of wetland species such as willow (*Salix*) or alder (*Alnus*) which may have grown in damper soils in the vicinity of the Wantsum Channel, but this may reflect either their less efficient potential as firewood or their use for other purposes. Similarly, there was no evidence of the use of marine species.

Taxa characteristic of marginal woodland or more open areas included dogwood, blackthorn and hazel. Charred hazel nutshells from Anglo-Saxon contexts suggest that hazel occupied open/well lit areas that allowed fruiting to occur. These taxa tolerate well-drained or relatively dry soils, characteristic of clay horizons overlying chalk, and probably grew on the higher ground near the site.

### Conclusion

Charcoal from prehistoric contexts indicated the likely presence of oak woodlands in the Bronze Age but this could not be substantiated from the small amount of charcoal available for study. The wider range of taxa identified from Anglo-Saxon features suggested the presence of deciduous oak woodland and areas of more open scrub and marginal woodland. There was no evidence from the charcoal examined to suggest the exploitation of wetland or marine species. The environmental requirements of the taxa identified suggested that they could have grown relatively close to the site.

### Marine Shell

by Sarah F. Wyles

Marine shell from both the evaluation and excavation was collected by hand and some sieving through a 5.6 mm mesh. The assemblage comprises 507 shells, representing a minimum number of 347 individuals, of nine species (Table 4.12). The oyster shells were

Table 4.12 Marine molluscs

Species (mni)	LBA	Saxon					Med	Total	
		SFB 43	SFB 73	SFB 74	SFB 88	SFB 239			Pit 82
Oyster <i>Ostrea edulis</i>	4	22	35	7	50	9	1	2	130
Mussel <i>Mytilus edulis</i>	2	4	1	9	71	-	7	-	94
Limpet <i>Patella cf. vulgata</i>	1	2	18	5	61	1	1	5	94
Common Periwinkle <i>Littorina littorea</i>	-	5	11	-	4	-	-	-	20
Rough Periwinkle <i>Littorina saxatilis</i>	-	2	-	-	1	-	-	-	3
Flat Periwinkle <i>Littorina littoralis</i>	-	1	-	-	1	-	-	-	2
Common Whelk <i>Buccinum undatum</i>	-	-	-	-	1	-	-	1	2
Common Cockle <i>Cerastoderma edule</i>	-	-	-	-	1	-	-	-	1
Top Shell <i>Gibbula</i> spp.	-	-	-	-	1	-	-	-	1
Total	7	29	65	21	191	10	9	8	347

rapidly scanned for infestation data by context, but the assemblage is too small for any detailed analysis to be statistically viable.

Although marine shells were recovered from both Bronze Age and medieval deposits, the majority (96%) were from Anglo-Saxon features, with 55% of the material coming from SFB 88. The predominant species recovered is oyster (*Ostrea edulis*), which forms 37% of the total assemblage. The other significant species are mussels (*Mytilus edulis*) and limpets (*Patella cf. vulgata*), which each represented 27%.

#### Anglo-Saxon

No significant differences in the numbers and distribution of left versus right oyster valves were observed, so no specific areas of preparation or consumption can be discerned, although 35% of the valves had notches or cuts from opening on them. The shells were generally in good condition with only a small proportion of each shell showing traces of infestation. The main infestor appeared to be the polychaete worm *Polydora ciliata* and there were indications of infestation to a lesser extent by *P. hoplura*, sea mat *Polyzoa*, and sting wrinkle *Ocenebra erinacea*. The *Polydoras* have a wide distribution around the coast, as does *Polyzoa*, while the sting wrinkle is found on the south coast.

There were a range of shell sizes, which may be a result of no selection procedure. Traces of chalk deposits and chambering were noticed on some of the shells and some had other oysters attached and were irregular in shape. The unselective method of retrieval of the oysters, the misshapen nature of some shells, and the clumping of others, possibly as a result of lack of room for growth, all indicate that the oysters may have come from a natural or unmanaged bed.

Mussels and limpets generally occur in similar habitats to oysters. Both have a wide distribution being common on rocky shores, with mussels favouring the middle shore. The less commonly occurring species comprising common, flat, and rough periwinkles and the top shell are found on the middle

shore, while the common whelk and cockle prefer the lower shore.

Shellfish, as represented by the retrieved marine shell, does not appear to have formed a significant part of the Anglo-Saxon diet. It is probable that the oyster shell was hand collected from the beach, rather than fished from laid beds, together with the limpets and mussels. The few other marine shells (8% of the assemblage) are likely to have been retrieved accidentally as part of this scavenging process.

#### *The Non-marine Mollusc Assemblages: Evidence for Exploitation of the Landscape by Michael J. Allen*

No samples were taken specifically for snails, but following the recording of estuarine species (*Hydrobia* spp.) in the assessment of the flots of both Bronze Age and Anglo-Saxon bulk samples from totally terrestrial locations, and the presence of low numbers of terrestrial shells, the extraction of the residues and analysis was undertaken of a limited number of samples. The specific aim was to examine the assemblages to determine the diversity and location of possible local environments (terrestrial, estuarine, riverine, floodplain, etc) that were exploited. For instance, in the dry downland hinterland of Dorchester, Dorset, the occurrence of fresh- and brackish-water snails in a terrestrial environment has indicated the use and exploitation of local riverine resources, possibly for manuring, in the prehistoric period (Allen 1997, 279–83). Elsewhere, such as at Bawksbury, Hampshire, the occurrence of floodplain and riverine species in pits on the hilltop suggest the use of reeds for bedding or for lining Iron Age pits (Allen 1995).

This programme of analysis was, however, instigated relatively late in the post-excavation programme. Samples had not been taken, nor specifically processed, for snails because of the poor preservation of shells on the brickearth derived soils. The assemblages were recovered from the flots



(0.5 mm) and residues (1 mm) of large bulk soil samples processed by standard flotation methods for charred plant remains and charcoal. These samples were up to 20 times larger than standard 1 kg snail samples, and the most detrimental aspect was that although the flot was retained on a 0.5 mm mesh (as with standard snail processes; Evans 1972), the residues were only retained on a 1 mm mesh. This has resulted in the loss of shell fragments of 1–0.5 mm. However, it was considered that this would not be greatly detrimental to the level of analysis required by the nature of the questions addressed. Furthermore, numbers of shells were low in relation to the quantity of soil processed (Table 4.13) and loss is considered minimal. Some samples contained a number of obviously modern specimens retaining their periostricum and appearing ‘glassy’; these are recorded in parentheses in Table 4.13, and are excluded from overall totals. Numbers of the burrowing, thus palaeo-ecologically insignificant,

species *Cecilioides acicula*, are high to exceptionally high and confirms the likelihood of some modern introduction of other modern specimens.

### Middle Bronze Age

A single sample from Middle Bronze Age pottery deposit 56 produced only two terrestrial species, *Vallonia excentrica* and *Helicella itala*. Both, however, are xerophiles; typical of very open conditions and both are rarely found in any significant numbers in woodland and very shady habitats. From this we may tentatively infer that the local woodland cover had been removed prior to the Middle Bronze Age, and that local deforestation was probably achieved during the Neolithic period. More significant, however, is the presence of two specimens of the obligatory saltwater marsh and estuarine species *Hydrobia ulvae*. These specimens must have been introduced to the site, probably accidentally in association with materials collected from either the littoral or from the saltmarsh

Table 4.13 Non-marine molluscs

Phase Feature	MBA		LBA			Saxon		
	pot 56	ditch 91	ditch 230	2006	SFB 88	2013	pit 82	
Sample	2008	2025	2046	2044	2006	2010	2013	2022
Context	57	92	168	76	48	61	79	81
litres	10	20	20	20	10	10	10	10
<i>Terrestrial</i>								
<i>Pomatias elegans</i> (Müller)	-	-	-	-	1	-	-	-
<i>Carychium tridentatum</i> (Risso)	-	8[1]	1	-	-	-	1	[2]
<i>Cochlicopa lubrica</i> (Müller)	-	2	-	-	-	-	-	-
<i>Cochlicopa</i> spp.	-	1	-	-	-	-	-	-
<i>Vertigo pygmaea</i> (Draparnaud)	-	3	-	-	4[8]	3[10]	[4]	1
<i>Truncatellina cylindrica</i> (Férussac)	-	-	-	-	-	1	-	-
<i>Pupilla muscorum</i> (Linnaeus)	-	4	-	1	14[1]	8[2]	4[1]	-
<i>Vallonia costata</i> (Müller)	-	13[1]	-	-	3[1]	-	-	-
<i>Vallonia pulchella</i> (Müller)	-	-	-	-	-	-	-	[2]
<i>Vallonia excentrica</i> Sterki	2	20[1]	-	-	38[17]	19[13]	5[12]	-
<i>Vallonia</i> spp.	-	-	-	-	-	-	-	[1]
<i>Punctum pygmaeum</i> (Draparnaud)	-	[2]	-	-	-	-	-	-
<i>Vitrea pellucida</i> (Müller)	-	-	-	-	-	1	-	-
<i>Vitrea contracta</i> (Westerlund)	-	2[4]	-	-	-	[1]	-	[3]
<i>Aegopinella nitidula</i> (Draparnaud)	-	5[2]	[1]	-	-	-	[1]	1
<i>Oxychilus cellarius</i> (Müller)	-	1[1]	-	-	-	[1]	-	-
Limacidae ( <i>Limax maximus</i> )	-	-	-	-	5	4	1	-
<i>Cecilioides acicula</i> (Müller)	259	294	136	278	2267	2448	1282	483
<i>Clausilia bidentata</i> (Ström)	-	-	-	-	-	-	1	+
<i>Candidula intersecta</i> (Poiret)	-	-	-	1	-	-	-	-
<i>Candidula gigaxii</i> (L. Pfeiffer)	-	-	-	-	-	[1]	[4]	-
<i>Helicella itala</i> (Linnaeus)	2	1[1]	-	-	2	-	-	1
<i>Trichia hispida</i> (Linnaeus)	+	3[3]	[1]	-	6	3	2[1]	1[1]
<i>Helicigona lapicida</i> (Linnaeus)	-	+	-	-	-	-	-	-
<i>Cepaea</i> spp.	-	2	-	-	1	-	-	+
<i>Helix aspersa</i> (Müller)	-	+	-	-	+	+	+	-
Terrestrial taxa	1	12	1	2	9	7	6	4
Terrestrial total	4	65	1	2	74	39	14	4
<i>Fresh-Brackish water</i>								
<i>Potamopygus jenkinsi</i> (Smith)	-	-	-	-	-	-	1	-
<i>Hydrobia ulvae</i> (Pennant)	2	-	-	-	3	1	3	1
<i>Hydrobia ventrosa</i> (Montagu)	-	-	-	-	-	-	1	-
Fresh-Brackish water taxa	1	-	-	-	1	1	3	1
Fresh-Brackish water total	2	-	-	-	3	1	5	1
<i>Marine</i>								
<i>Littorina</i> spp.	-	-	-	-	1	1	-	-

estuarine edges of the Wantsum Channel. This could include fishing and food collection as seen in the presence of both fish (although no evidence was recovered from this phase) and shellfish, or other marine resources such as mud for flooring or walling, or reeds for roofing or lining.

### Late Bronze Age

Bulk samples from two ditches (91 and 230) were examined. Enclosure ditch 230 was almost devoid of shells, whereas 91, the most substantial ditch on the site of this phase, produced 65 shells of 12 taxa from 20 litres of soil. The assemblage is dominated by *Vallonia costata* and *V. excentrica* which comprise over 50%. Most of the assemblage can, therefore, be classed as open country species (Evans 1972, 194–6), and the majority of those shade-loving species present are commonly found in longer, damp grass (eg. *Carychium tridentatum* and *Vitrea contracta*). From this rather limited assemblage, the presence of open conditions with more shady environments can be suggested, possibly reflecting some vegetation regeneration within the ditch itself. Caution needs to be expressed with any interpretation here as the assemblage is both small, and 16 obviously modern, intrusive shells were recorded (Table 4.13). This component includes only one new species (*Punctum pygmaeum*), but slightly higher overall proportions of the shade-loving elements. However, no fresh- or brackish-water species were recovered, contrasting with their presence in samples from Middle Bronze Age and Anglo-Saxon features.

### Anglo-Saxon

Four samples from Anglo-Saxon features were examined, three from SFB 88 and one from shallow pit 82. Only four weathered shells were recovered from pit 82, and the presence of nine modern shells obviously representing a different fauna makes any palaeo-environmental interpretation impossible. Samples from SFB 88 produced larger assemblages (maximum 74 shells from 10 litres), but all contained exceptionally high numbers of the burrowing species *Ceciliooides acicula* and modern 'glassy' specimens. Nevertheless, the assemblages, not surprisingly, largely comprised open country species. More significant was the presence of fresh- and brackish-water specimens that are worthy of discussion in this context. All Anglo-Saxon samples, including pit 82, contained species of *Hydrobia* spp.; species which are found in profusion in salt marshes, estuarine muds, and brackish lagoons, but also occur in ditches. *H. ventrosa*, of which one specimen has been identified, occasionally frequents fresh-water pools near to saline sources (Macan and Worthington 1974, 141). This may be significant in view of the presence of a single specimen of *Potamopyrus jenkinsi* which, although

morphologically similar to *Hydrobia* spp. (Macan 1977, fig. 5), has been confirmed by comparison with specimens from two reference collections. It is significant that, ecologically, *P. jenkinsi* is common in running waters of all types, especially brackish water, from which until 1893 it had only been recorded. This tends to indicate the exploitation of a brackish riverine or estuarine margin rather than a littoral one. Littoral estuarine areas were also exploited as two juvenile winkles (*Littorina* sp.) were recovered in these samples, but the exploitation of saltmarshes and estuarine areas seems more probable for the incorporation of *Hydrobia* and *P. jenkinsi*.

### Discussion

Exploitation of estuarine saltmarshes, for whatever purpose, must have included the retrieval of materials to which these fresh- and brackish-water species adhered. Furthermore, as 40% of the Anglo-Saxon samples from SFB 88 were recorded as containing these species from only rapid scanning, it indicates their general preponderance. This is confirmed by the fact that they were not restricted to a single Anglo-Saxon context, feature, or even feature type.

On balance, it seems most likely that both the littoral and the estuarine salt marshes were exploited, and we may postulate the use of resources, most probably including shellfish and/or reeds, along the coast and within the Wantsum Channel. There is evidence of the exploitation of oysters which could be found in these locations, but confirmatory evidence was not recovered from the charred assemblages. A lack of evidence from the charred plant remains of, for example, reeds, may be a result of the lack of processing required of this vegetation which may result in accidental charring.

### Discussion

by Phil Andrews, Andrew Hutcheson,  
and Michael J. Allen

Several phases of occupation were represented on the site, with the principal remains dating to the Late Bronze Age (11th–8th centuries BC), the Anglo-Saxon (later 6th–7th centuries AD) and the medieval periods (14th–15th centuries) respectively. Slight evidence for activity in the Early Neolithic, Middle Bronze Age, and post-medieval periods was also found, but this was of a more ephemeral nature and less easily interpreted.

### Early Neolithic–Middle Bronze Age

The function of shallow cut 240, an apparently isolated feature which contained a truncated Early

Neolithic pot and sherds from a possible second vessel, is unclear; the pot had been placed upright in the pit, presumably complete, but no other Neolithic finds came from this or any other feature on the site. The dating and interpretation of possible segmented ditch 19 remain far from certain, thus precluding further discussion of this feature for which a natural origin cannot be ruled out.

More substantial evidence for Early Neolithic activity has been recorded to the south of the site at two locations. One or possibly two crouched burials lying in a large pit, apparently reused for storage, were found during construction work on the Nethercourt Estate in 1949 (Dunning 1966, 1). Although only limited investigation was possible, the discovery suggests that settlement lay nearby. More recently, a study of aerial photographs has revealed a possible Neolithic causewayed enclosure at Chalk Hill less than 1 km away (Dyer 1997), the existence of which was subsequently confirmed during excavations along the route of the Ramsgate harbour approach road (Canterbury Archaeological Trust 1997; Dyson *et al.* 2000).

A few sherds of possible Early Bronze Age pottery were identified from the site, including one sherd from a Beaker or Collared Urn, but all were residual in later contexts. In addition to this, several flint tools and a small assemblage of other struck flint assigned a Late Neolithic/Early Bronze Age date were recovered from the more recent excavation immediately to the west of the site, all of these also being residual finds (Boast *et al.* 2006).

Two isolated features, 56 and 242, containing truncated Middle Bronze Age vessels (with possibly a third represented by the sherds from Late Bronze Age ditch 231) are, like the Early Neolithic pottery deposit, difficult to interpret. Although both may have been funerary vessels no human bone was recovered from either; the absence of human bone has been noted from similar examples of isolated Middle Bronze Age vessels excavated elsewhere at, for example, Hurst Park, Surrey (Andrews 1996a, 101). However, recent excavation of a 0.25 ha area immediately west of the site has recorded a sequence of Middle Bronze Age ditches representing part of a rectilinear field system which was succeeded by a trackway and at least one possible temporary stock enclosure (Boast *et al.* 2006). Most of the ditches ran approximately north-north-east to south-south-west, with only two extending to the west and none to the east, and together these attest to significant Middle Bronze Age activity in the vicinity. Perkins (1992, 310) has noted that Middle Bronze Age hoards and finds, as well as evidence for settlement, is generally confined to Thanet's north and east coasts, whereas Late Bronze Age material is more commonly found along the south coast.

## *Late Bronze Age*

Late Bronze Age settlement is clearly attested at Manston Road and provides an important addition to the sites of this period recorded in Thanet. However, the exact extent and nature of this settlement remain unclear. The surviving evidence suggests that the limit to the north-east may have been established, but features clearly extended beyond the limit of excavation to the south-west and subsequent excavations in the field to the west have confirmed this (see below).

The probability that the majority of the ditches and gullies represent enclosures or field boundaries, of more than one phase, has been suggested above. Two possible enclosures were defined by curvilinear ditches 229 and 231 respectively, and what were perhaps two further enclosures on differing alignments to each other were defined by rectilinear arrangements comprising ditches 91, 160/223, 204, and possibly 236, and ditches 230 and 234 respectively. All but the possible enclosure defined by ditch 231 extended to the south-west of the site, and continuations of ditches 91 and possibly 230 may have been identified on recent excavations to the west where the western, rounded corner of an (undated) enclosure was recorded, along with a single Late Bronze Age pit (Boast *et al.* 2006). Only ditches 91 and 160/233 showed any evidence of ditch maintenance, in the form of recutting, and it would appear that none of the ditches would have provided substantial barriers. A defensive function is therefore considered improbable, and a large enclosed settlement of the type possibly identified at Monkton Court Farm (Perkins 1992) does not appear to have existed at Manston Road. Drainage is an equally unlikely function for the ditches, and it seems most likely that they marked minor enclosure or field boundaries, perhaps with associated fences or hedges, within an open settlement.

Rectangular structure 191, perhaps a long-house, lay approximately 10 m to the south-west of ditch 91 and on broadly the same alignment. However, the north-west end of the structure clearly post-dated ditch/gully 204, and structure 191 may, therefore, have lain within an enclosure, but was not perhaps contemporary with the earliest phase of this enclosure. Two distinct elements to structure 191 have been identified, at the north-west and south-east ends respectively, represented by different patterns of post-holes, but it is considered likely that both elements represent part of a single structure which overall measured 10 m by 3.5 m; perhaps the greater density of post-holes, some intercutting, at the south-east end represents a rebuilding of that part of the structure. Unfortunately, no post-ghosts or post-impressions were apparent which might aid in any

structural reconstruction, although paired post-holes were apparent along either side and the central post-holes suggest that the building had a ridged roof. The gap of c. 3 m between the north and south elements of the structure possibly indicates the position of an entrance, perhaps opposed entrances, which may have marked a functional division between the two ends of the building, with people living at one end and animals being kept at the other. No associated hearths or floor levels survived, but the concentration of pottery in post-holes belonging to this structure, in pit 212, and in ditches 91 and 230 which all lay nearby suggest that it may have served, in part at least, a domestic function.

Rectangular structures have been identified on several Late Bronze Age sites in Britain (eg, Barrett and Bradley 1980b; Pryor *et al.* 1986; Brown 1988; Harrison 1991; Evans and Knight 1996), and the Manston Road example may now be added to this group. It is somewhat shorter and narrower than the sub-rectangular, regularly laid-out example at Barleycroft Farm, Cambridgeshire, which measured 16.5 x 5.5 m (Evans and Knight 1996, 2), but broader than the rather more irregular example from Loft's Farm, Essex, which measured 15.5 x 2.0 m (Brown 1988, 260). It is perhaps most similar to that at Winnall Allotments, near Winchester, Hampshire, which measured 11.5 x 3.6 m (Harrison 1991, 5–6). No floors or hearths survived in any of these examples and the location of doorways could not be determined with certainty. Like the Ramsgate example, their function remains unclear and various uses including houses/barns and meeting halls has been suggested, though not all need have served the same function(s). The presence of rectangular structures is a feature of Bronze Age sites in the Low Countries (Louwe Kooijmans 1993, 87–8, fig. 6.10a–c), and attention has been drawn to connections between areas on either side of the North Sea at this time (Champion 1980).

No other structural remains were identified except for a single, isolated post-hole, but it is possible that other structures including round-houses, four-post, and two-post structures may have lain outside the excavated area, or been destroyed in parts of the site that had been heavily truncated. Such structures have been found on other sites with rectangular structures (eg, Barleycroft Farm, (Evans and Knight 1996); Winnall Allotments (Harrison 1991); Lofts Farm (Brown 1988)), often in association with enclosures or boundary ditches, but it has not always been possible to demonstrate their contemporaneity on these sites.

Little more can be said about the layout of the Late Bronze Age settlement, although some information can be gleaned on the nature of the economy. There were no finds other than pottery,

though some of the worked flint may be of Bronze Age date. The animal bone assemblage is very small, comprising predominantly cattle, but this indicates a pastoral element to the economy, and the settlement was in a good location to exploit not only the grass of the dry chalkland, but also the wetter meadows fringing the Wantsum Channel to the south which would have provided valuable summer grazing land. Sheep may also have been important, but there was very little evidence for this, perhaps because the bone may not have survived as well as the cattle bone. The few plant remains indicated that emmer, spelt and hulled barley were grown, although no waste from the earliest stages of crop cleaning was present, and the dry chalk and loessic soils of the surrounding area would have provided good conditions for growing cereals and other crops. Thus, it would be reasonable to assume that a mixed farming economy may have existed, supplemented occasionally by shellfish from the coast.

The Late Bronze Age site at Manston Road is one of a number which have recently come to light in east Kent, based on evidence from a small number of excavations and evaluations, and the occurrence of hoards and single finds of metalwork. The principal concentrations are around the coast of Thanet and along the Thames Estuary; indeed, both the north and south sides of the estuary appear to have been fringed by Late Bronze Age settlements. In Thanet, the most extensive site yet discovered is at Monkton Court Farm where evaluation has defined an area of settlement, possibly enclosed, covering c. 3.25 ha. A variety of features were recorded including several hut floors, pits and post-holes, and the site also produced three Late Bronze Age hoards of metalwork (Perkins 1994). Other Late Bronze Age sites have been identified at Minnis Bay, Birchington (Worsfold 1943), St Mildred's Bay, Westgate (Perkins 1988), on the Ebbsfleet peninsula (Hills 1895; Perkins 1992; Hearne *et al.* 1995, 335; and see Chapter 2), and Chalk Hill, Ramsgate where an enclosure, trackway, and elements of a rectilinear field system of Late Bronze Age–Early Iron date were recorded (Dyson *et al.* 2000). At Cliffs End, almost 2 km to the south-west of the site, excavations in 2004–5 revealed a variety of Late Bronze Age features including ditches, enclosures, and, of particular interest, a large pit containing 14 articulated burials as well as a substantial quantity of disarticulated human bone (Wessex Archaeology 2005b; Leivers *et al.* in prep.).

The Manston Road site might best be interpreted as an open, domestic settlement, probably based on a mixed farming economy, which developed during a period of agricultural intensification, and it serves to strengthen an emphasis on the growing importance of the Wantsum Channel during the Late Bronze Age (Perkins 1994, 311). The site may have been linked to

wider exchange networks, including cross-channel links between the Thames Estuary and what is now north-east France/Belgium via the Wantsum Channel, highlighted by the distribution of Late Bronze Age hoards which include continental metalwork (Perkins 1994, 293–6, fig. 24), and it perhaps served a specialised agricultural function within this network.

It is noted here that no Iron Age features or finds were identified, though recent excavations immediately to the west did record a metalled trackway running approximately north–north–east to south–south–west which has been assigned an Early–Middle Iron Age date (Boast *et al.* 2006).

### *Anglo-Saxon*

The discovery of Anglo-Saxon settlement remains of late 6th–7th century date at Manston Road is of exceptional local and regional importance for it represents one of very few excavated settlement sites in the county (see Hawkes 1982) and only the second to be found in Thanet, an area particularly well-known for its rich cemeteries of this period. The famous Ozengell/Lord of the Manor cemetery (not yet fully published, but see Hawkes 1969), for example, lies less than 500 m to the south–west of the site at Manston Road.

Five SFBs were found, and it seems probable that these represent only part of a settlement which perhaps extended further to the west and possibly also the east of the excavated area (several sherds of Anglo-Saxon pottery came from medieval ditch 525 on the east side of the site). However, no Saxon features or finds were recorded in the recent excavation of a 0.25 ha area immediately to the west of the site (Boast *et al.* 2006). The limits to the north and south may have been established, although this cannot be stated with certainty as the settlement may have been dispersed so that there were large gaps between the buildings. No associated post-built halls were identified, and it is possible that none were present, at least in the excavated area; it is unlikely that post-holes in the central part of the site would have been completely truncated given the survival of Late Bronze Age post-built structure 191, though the greater degree of truncation which has occurred in the south–west half of the site may have removed any trace of such structures in this area. On the available evidence it might be suggested that the settlement comprised entirely SFBs, or at least more SFBs than post-built halls. This may be compared with the recently excavated site at Whitfield, to the north of Dover, where four SFBs and two halls of probable late 6th–7th century date were found, also representing part of a more extensive settlement (Parfitt 1996). The occurrence of post-built halls has recently been

discussed (Andrews 1996b, 109–10) where it is suggested that their presence or absence is not necessarily a result of a single factor such as chronology, geography or status, but more probably a combination of several factors which also included the availability of resources and the necessity for such structures which may have provided meeting places as well as living space. This is to some extent supported by the evidence from Manston Road and Whitfield which are sites of similar date, but where there are differences in geography and perhaps status. However, if anything the settlement at Manston Road, with a possibly higher status suggested by the greater number and range of finds, might be expected to have had halls, whereas Whitfield might not. Whatever the explanation, it seems clear that at least some of the SFBs at both sites were used for domestic occupation with others serving ancillary roles such as for storage or as ‘workshops’.

The SFBs at Manston Road were probably all of the two-post type. However, for reasons which are unclear SFB 43 had only one surviving post-hole which, unusually, was shallower than the pit; SFB 73 had a second, probable replacement post-hole at one end; and SFB 88 may have had additional posts, indicated by post-impressions in two of the corners. No floor surfaces, hearths or *in situ* floor deposits were identified within the SFBs and this might support the contention that they had raised, planked floors, as has been argued for some of the West Stow examples (West 1985, 116–21). Further support for this postulated arrangement might come from the substantial depths of SFBs 74 and 88, both c. 0.60 m deep and likely to have been originally deeper allowing for some truncation; in neither example was there a step(s) down onto the floor of the pit or any other surviving evidence of access. The sides of the pits, particularly in SFBs 74 and 88, were well-preserved suggesting that they may have had plank or wattle linings.

None of the SFBs intercut, though some were quite closely spaced (particularly SFBs 43, 74, and 88) suggesting, perhaps, that not all stood at one time. The finds do not enable any sequence to be determined with certainty, but joining sherds of pottery occurred in SFBs 74 and 88, and joining sherds of glass in SFBs 73 and 239. The suggested date for the worked bone from SFB 88 indicates that this structure was probably abandoned in the second half of the 7th century. The fact that SFB 74, although substantial, contained few finds, may indicate that this was the final building to be abandoned as more debris might be expected to have been disposed of in it if there was continuing occupation in the immediate vicinity. On the available evidence, it might be concluded that the site was occupied for less than 100 years, between the late 6th and the late 7th century,

perhaps by only one or two generations, thus representing an essentially single-phase settlement.

The finds from the SFBs have been discussed above, and the fact emphasised that they relate not to the period of use of individual buildings, but to their subsequent disuse. They represent a comparatively rich assemblage both in terms of the quantity and the quality of the material recovered, and the Frankish pottery and the vessel glass is particularly noteworthy. Furthermore, the other finds comprising metalwork, glass and amber beads, coarse pottery, and worked bone and antler contrasts with the paucity of material from the recently excavated settlement at Whitfield, near Dover, where the four SFBs produced no imported pottery, approximately 80 sherds of coarsewares, two glass beads, and two iron objects (Parfitt 1996). In broad terms, the nature of the finds assemblage from Manston Road, apart from the imported pottery and vessel glass, is very similar to the larger assemblage from West Stow, Suffolk (West 1985).

Little can be deduced about the function of pit 82, perhaps a complex of smaller pits, which lay some distance from the nearest SFB. It had certainly been truncated and contained few finds, and whether it was dug for any purpose other than domestic rubbish disposal is unclear. Groups of pits, also of uncertain function and containing few finds have been found at West Stow (West 1985, 55–7), and Thetford, Norfolk (Andrews 1995, 21–2).

The presence of a single, shallow gully, 92, may be significant in chronological terms. At West Stow the development of an irregular system of boundary ditches has been assigned to the latest phase of settlement, in the 7th century (West 1985, 151), and there is some support for ditches having been a 'late' development from probable 6th–7th century sites at Thetford (Andrews 1995, 24) and Hurst Park, Surrey (Andrews 1996a, 104).

The assignation of ring-ditch 20 to the Anglo-Saxon period is equivocal, and the function of this feature remains uncertain. The close juxtaposition between it and several SFBs might suggest that they were related, but if the ring-ditch were a later feature then this arrangement is entirely coincidental. No pottery was recovered from the ditch and the only finds were two iron objects: a knife probably dating to the later 7th century, and part of a possible bucket handle. These may have been residual finds, although the size of the objects and the relative completeness of the knife might suggest not.

If ring-ditch 20 was a Saxon feature, then it may have represented a barrow. However, no burial was found and, unless any burial was contained entirely within the central mound, it is unlikely to have been destroyed as it is considered that this part of the site has been subject to relatively little truncation. The lack of

truncation also means that the ring-ditch would never have been much deeper and would always have had a broad, shallow profile. This profile, with possible evidence for a recut, is not similar to excavated examples of Anglo-Saxon ring-ditches which are narrower and deeper with a U- or V-shaped profile (eg Garner 1994, 83, fig. 4). Finally, the fact that the ring-ditch was apparently isolated, with no other ring-ditches or burials in the immediate vicinity, would also suggest that it was not a funerary feature and, although Anglo-Saxon settlement and burial sites sometimes occur near to each other, none has been found in such close proximity as the SFBs and ring-ditch here. In conclusion, an Anglo-Saxon date for this feature, whatever its function, is still considered most likely, although the possibility that it was a later, medieval feature is considered further below.

The finds and environmental analyses enable some general characterisation of the nature of the local economy and environment to be made. A small quantity of ironworking slag probably derived from smithing was recovered, and textile production is indicated by two spindle-whorls, a pin-beater, and two needles/weaving tools which provide evidence for both spinning and weaving. Other materials present include copper alloy, glass, pottery and worked bone and antler, but no evidence was found of them having been worked on site. The imported Frankish pottery and fragments of vessel glass, some also of possible Frankish origin, attest to cross-channel links at this time, and supplements the meagre evidence from other settlement sites such as Mucking, Essex (Hammerow 1993, 22), as well as cemetery sites in Kent (Evison 1979).

The Anglo-Saxon economy was a predominantly agricultural one, based on mixed farming which included the herding of sheep, whose wool was used in spinning and weaving, and cattle. The presence of a small quantity of red deer bones suggests the possibility of some hunting and, therefore, the presence of woods in the vicinity, while fowl, goose, and cats are more likely to represent domestic animals kept largely within the settlement. Cereals (free-threshing wheat, hulled barley, rye, and oats) were cultivated together with peas, and although most of these crops are likely to have been grown on the drier chalk and loessic soils of the higher ground, some (particularly the peas) may have been grown on the heavier clay soils on the margins of the Wantsum Channel. These heavier clay soils may, as in earlier times, have also provided wetter meadows for the grazing of cattle, particularly during the drier summer months. The food provided by this mixed farming economy was supplemented by small quantities of shellfish (oyster, mussel, limpet, and winkle) and fish.

The evidence of the agricultural economy indicates the exploitation of several different

landscape zones, all of which lay within 5 km of the site:

*Dryland soils:* These would have provided land for the cultivation of cereals and herding of sheep and cattle, as well as the prime location of settlement and associated home-base activities. Presumably, some woodland also existed on these soils from which firewood and timber for construction and woodworking was obtained.

*Lowland soils:* Wetter, lowland clay soils may have been used for the cultivation of some cereals, but peas are better suited to these soils. Although there is no definite evidence, cattle may have been pastured in wetter meadows.

*Estuarine environments:* Exploitation of brackish estuarine environments is indicated by the accidental incorporation of both snails and the grey club-rush seed in some deposits, but we cannot be sure of precisely what resource was utilised. These estuarine areas were a likely source of reeds for thatch and flooring, and the softer estuarine muds may have been used for building (as a component of daub) or even manuring, though the latter is unlikely in the chalklands covered by spreads of brickearth.

*Littoral zone:* The use of the littoral for the collection of shellfish, particularly oysters, to supplement the diet is evident.

*Marine environment:* A few bones of sea fish were recovered indicating some fishing activity. The presence of imported Frankish pottery also provides evidence for maritime trade, with the Wantsum Channel, as in earlier periods, probably acting as an important link between the English Channel and the Thames Estuary.

In summary, the ecotonal location of the site enabled exploitation of the dry soils of the higher ground for cultivation and grazing; the wetter lowland pasture for summer grazing and possibly some cultivation; the estuarine fringe of the Wantsum Channel for reeds and/or mud; the littoral for shellfish; and the sea for fish.

The availability (and proven use) of all of these resources in the Anglo-Saxon period may, in large part, have been the reason for the choice of settlement location on the south side of the Isle of Thanet overlooking the entrance to the Wantsum Channel, a waterway which is likely to have been an important route for cross-channel and coastal trade. The currently known distribution of cemeteries, including the major examples at Ozengell/Lord of the Manor and Sarre (but not that at St Peter's, Broadstairs), and smaller examples at Monkton, Mount Pleasant, Nethercourt, and Station Approach, Ramsgate, would add some support to the suggestion of Anglo-Saxon

settlement and burial having been concentrated along the southern side of the island. At present, the only known settlement site in Thanet, other than that at Manston Road, also lies on the south side of the island, at Sarre, where a single SFB was found (during the laying of a waterpipe) less than 200 m to the west of the major Anglo-Saxon cemetery (Perkins 1991b, 144; see also Chapter 2).

It seems improbable that the settlement at Manston Road and the cemetery at Ozengell/Lord of the Manor were not related given their proximity and broadly contemporary date, though some late 5th–early 6th century graves have been identified (Youngs and Clark 1981; 1992), but further discussion of this must await full publication of the cemetery. (It should be noted that the 'Anglo-Saxon Burial Ground' indicated on Ordnance Survey maps as lying immediately to the south of the site at Manston Road, within the railway cutting, may be an incorrect placement; it probably though not certainly refers to the Ozengell/Lord of the Manor cemetery discovered some 500 m to the south-west during railway construction in 1846 (Roach-Smith 1854; see also Hawkes 1969)). At Cliffs End, 2 km to the south-west, excavations in 2004–5 recorded a further Anglo-Saxon cemetery, assigned to the 6th–7th centuries, and thus also broadly contemporary with the settlement at Manston Road (Wessex Archaeology 2005b). In addition, the site at Cliffs End revealed c. 70 pits of probable Middle Saxon date containing large quantities of oyster and other marine shells but few other finds, and thus possibly contemporary with the cemetery there, but no sunken-featured buildings or post-built structures were identified that would provide clear evidence for occupation.

The Manston Road site is likely to have been only one of several settlements associated with these cemeteries, and it must only be a matter of time before more sites are found in this area. Unfortunately, Anglo-Saxon settlement sites have often been chance discoveries (like the example here), and their presence has rarely been indicated by systematic fieldwalking, metal-detecting, aerial photographs, or evaluation trenching. Experience has shown that their discovery is usually on excavations where large areas are stripped, and it is only these sites that sufficient of the the settlements will be revealed to enable details of their layout and nature to be ascertained.

### *Medieval and Post-medieval*

There is no evidence for activity on the site following the end of Anglo-Saxon occupation, probably in the 7th century, and the 14th century. However, St Laurence's Church to the east (see Fig. 4.1) is

Norman and tradition assigns its foundation to the year 1062 (Cotton 1895, 253–66), and Hasted (1800, 381) notes that by the reign of Edward I (1272–1307) the manors of Upper Court and Nethercourt were both held by Robert de St Laurence. Cotton (1895, 167) also records that in early times the site of Upper Court was called the Manor of St Laurence. Subsequently the manor passed through various families until sold to Edward Brooke in the early 18th century. Ordnance Survey maps mark ‘Upper Court (site of)’ apparently incorrectly, some 200 m to the east of the remains at Manston Road, probably basing this location on Cotton (1895, 168) who states that ‘The Manor House in the field on the left hand side of the present Manston Road, just beyond the level crossing over the railway, and in very dry weather the site of the house may be traced upon the parched ground, although the house was demolished before the reign of Queen Anne’.

The cropmark which was subject to limited investigation, mostly during the evaluation and watching brief, has now, as a result of this work, been almost certainly identified as the site of the medieval manor of Upper Court, with the earliest archaeological evidence indicating a 14th century date for this. However, only a relatively small area was examined and very little dating evidence recovered, and so it is possible that any earlier features were not encountered. Alternatively, the remains may represent the development of a new site for the manor which was moved there from elsewhere in the 14th century. Certainly, the layout of the house and surrounding features might suggest that they were established on a new site rather than modifying an existing one. The paucity of medieval (and post-medieval) finds noted above might be explained either by disposal areas not having been encountered, deposits having been truncated, or by rubbish having been disposed of away from the site.

The apparently regular, multi-ditched layout of the site is unusual for this period (spanning probably the 14th to at least the 15th century), though some uncertainty surrounds its interpretation. Limited investigation of the structural remains, presumably the manor house, at the centre of the complex showed that the stone walls had been heavily robbed and subsequently truncated, and no associated floors or surfaces were identified. A building measuring approximately 25 m long with a possible wing to the north-east is indicated by the cropmark, with other remains extending to the north-east; overall these structural remains covered an area of 45 x 20 m. The building(s) lay at the centre of a series of perhaps five concentric square or rectangular enclosures which may have been added later, perhaps in a single phase of development, and covered an area approximately 150 x 150 m (see Fig. 4.15). The postulated layout

shown in Figure 4.15 is based on combining the air photographic and excavation evidence, and although probably broadly correct may be inaccurate in some details. The main areas of uncertainty are whether the outer ditch extended around the north-east side (partly beneath Manston Road) and the south-east side (partly in the area removed by the railway cutting).

The number and different sizes of the ditches forming the enclosures make it clear that the site was not what is conventionally termed a ‘moated site’; none of the ditches was substantial enough to be described as a moat and none would have held water in this relatively high (and dry) location. Two of the larger ditches may have acted as boundaries, one (232) surrounding the entire complex, and the other (301/303/307/509/533/601) of varying size and profile defining an internal boundary. Other ditches (305/531 and 525) may also have served as internal boundaries whilst the three shallowest examples may have been horticultural features, possibly dug for hedges. Only the outer ditch (232) showed evidence of having been maintained and this had clearly been recut or cleaned out on more than one occasion. It is considered that the most likely interpretation for this arrangement of features is that they formed a ditched garden or orchard surrounding the manor house, a rarely recognised type of site. However, it was common to build large ditched enclosures around medieval and later manorial-type gardens (Bond and Iles 1991, 37; Currie 1990; Landsberg 1994, 16–17), many of which comprised extensive orchards, and an example has recently been identified at St Cross, near Winchester, Hampshire. There, research has revealed what appears to have been a ditched garden or orchard combined as a rabbit warren, with a possible small building platform at one end, possibly the site of a garden house recorded in accounts of c. 1380–1410 (C. Currie, pers. comm.). At Manston Road it is possible that ring-ditch 20, which has been assigned to the Anglo-Saxon period, may have been a later, medieval feature, perhaps associated with a small earthwork or structure which lay within the ditched garden/orchard; conceivably this may have been a rabbit warren.

The limited assemblage of medieval animal bone did contain rabbit, but the principal species present were sheep, fowl and other bird, and pig, the latter including several chopped heads.

The small amount of pottery recovered suggests that some or all of the enclosure ditches had been infilled by the end of the 15th century. A small quantity of pottery identified as Roman was recovered from a ditch investigated in the late 1970s and thought to be the south-west corner of the outer enclosure ditch (Perkins 1994, 6, fig. 3); this was taken to indicate a probable Romano-British date for



the site, but the 1995–6 investigations suggest that either the pottery was residual or that the ditch was an unrelated Romano-British feature. (No Romano-British features and very little pottery were recovered from the recent excavations, although Romano-British remains are recorded nearby at Nethercourt and at Staner Hill – see Fig. 4.1).

Cotton (1895, 168) records that the manor house had been demolished by the reign of Queen Anne (1702–1714), also quoting Lewis (1736, 187) who writes that ‘... part of the ruins belonging to it [Upper Court] but a few years since, when they were carried away and applied to a barn wall nearby’ (perhaps at Ozengell Grange – see Fig. 4.1). Furthermore, Hasted (1830, 383) notes that at the time of its sale to Edward Brooke in the early 18th century the manor house had already been pulled down though part of the ruins of the chapel still remained.

Post-medieval sunken-trackway 36 which crossed the site appears not to have respected the medieval enclosure ditches, though the remains of the manor house may still have been upstanding. The trackway cannot be closely dated, but it may represent a track depicted on a map of 1769 (Andrews *et al.*) running between Newington and Lord of the Manor (see Fig. 4.1), crossing the track between St Laurence and Manston in approximately this location.

## Appendix 4.1. Pottery Fabrics

### Early Neolithic

FL7 Soft, moderately fine, slightly micaceous clay matrix; moderate, poorly sorted, angular flint <5 mm; v. rare, rounded quartz <0.1 mm; rare iron oxides. Thin surface slip or slurry, applied to smooth surfaces and disguise inclusions, survives on some sherds, but mostly laminated off. Firing unoxidised, patchy oxidisation of surfaces.

### Early Bronze Age

GR1 Soft, moderately fine clay matrix, slightly soapy; moderate, fairly well sorted, sub-rounded grog <2 mm; rare sub-rounded quartz <1 mm; rare iron oxides.

GR2 Soft, moderately coarse clay matrix; sparse, fairly well sorted, sub-angular grog <2 mm; rare sub-angular flint <1 mm; rare rounded quartz <0.1 mm.

### Middle–Late Bronze Age

#### *Flint-tempered fabrics*

FL1 Soft, moderately coarse, clay matrix; sparse–moderate, fairly well sorted, sub-angular flint <3 mm; rare sub-rounded quartz <1 mm; sparse iron oxides and mica.

FL2 Soft, moderately coarse clay matrix; moderate, well sorted, sub-angular flint <2 mm; rare sub-rounded quartz <0.1 mm; rare iron oxides and mica.

FL3 Soft, coarse clay matrix; common, well sorted, angular flint <3 mm; rare iron oxides.

FL4 Soft, moderately coarse clay matrix; moderate, fairly poorly sorted, angular flint <4 mm; sparse iron oxides <2 mm; v. rare mica.

FL5 Soft, coarse clay matrix, extremely friable; common, poorly sorted, angular flint <4 mm; rare sub-rounded quartz <1 mm.

FL6 Soft, moderately fine clay matrix; sparse, poorly sorted, angular flint <4 mm; rare sub-rounded quartz <1 mm; rare iron oxides.

#### *Limestone-tempered fabric*

LI1 Soft, moderately coarse clay matrix; sparse–moderate, fairly well sorted subangular limestone frags <2 mm; rare sub-rounded quartz <0.125 mm.

#### *Sandy fabrics*

QU1 Soft, fine clay matrix; rare, well sorted, rounded quartz <0.1 mm; rare iron oxides.

QU2 Soft, moderately coarse clay matrix; sparse, poorly sorted, sub-rounded quartz <0.5 mm; sparse organic material <2 mm; rare iron oxides.

### Saxon

QU402 Soft, moderately coarse clay matrix; common, well sorted, sub-rounded quartz <0.2 mm; rare iron oxides. Wheelthrown; oxidised throughout.

QU403 Soft, moderately fine clay matrix; moderate, well sorted, rounded quartz <0.1 mm; moderate iron oxides. Wheelthrown; unoxidised with oxidised margins.

QU404 Hard, fine clay matrix, smooth; v. rare rounded quartz <0.5 mm; sparse iron oxides. Wheelthrown; oxidised buff/very pale grey.

QU405 Hard, moderately fine clay matrix; sparse, fairly well sorted, sub-rounded quartz <0.1 mm; sparse iron oxides. Wheelthrown; unoxidised throughout.

QU406 Hard, moderately coarse clay matrix; common, well sorted, sub-rounded quartz <0.5 mm; rare iron oxides and mica. Wheelthrown; unoxidised, sometimes, oxidised margins or core.

QU407 Hard, fine clay matrix, slightly soapy; few visible inclusions; rare rounded clay pellets <0.1 mm; rare iron oxides and mica. Wheelthrown; oxidised throughout.

QU401 Soft, coarse clay matrix; moderate, well sorted, sub-rounded quartz <0.5 mm; moderate, well sorted, linear voids <5 mm representing burnt-out organic temper; sparse rounded limestone <0.1 mm. Handmade.

- VE400 Soft, moderately coarse clay matrix; moderate, fairly well sorted, linear voids representing burnt-out organic temper <5 mm; sparse, fairly well sorted, rounded quartz <0.5 mm; v. rare limestone <1 mm. Handmade; generally unoxidised.
- VE401 Soft, moderately fine clay matrix; common, fairly well sorted, linear voids <5 mm, representing burnt-out organic temper; rare sub-rounded quartz <0.2 mm; some examples have rare limestone <0.1 mm; rare mica. Handmade; generally unoxidised.
- VE402 Soft, coarse clay matrix; moderate, poorly sorted linear voids <5 mm, representing burnt-out organic temper; sparse, poorly sorted, sub angular– sub rounded, patinated flint <1 mm; rare–sparse sub-rounded quartz <1 mm; rare–sparse iron oxides. Handmade; generally unoxidised.

## 5. A Kentish Type of Medieval Sunken-Featured Bakery/Kitchen

by Jörn Schuster and Chris J. Stevens

In 1997, a sub-rectangular sunken-featured building was excavated near Kent International Business Park (KIBP) Manston on the Isle of Thanet (Boast 1998) (Fig 5.1). This building was located in the south-eastern corner of a medieval enclosure which also included a structure with masonry footings, possibly a small manor house (Perkins *et al.* 1998, 235). The sunken-featured building had an entrance ramp on its north-western side, flanked by two post-holes placed on either side of the ramp near the edge. The pit was cut into the natural chalk and up to 0.70 m deep. In the south-east corner, there was a subcircular hearth or oven measuring c. 1.50 m in diameter. Its base was constructed of a layer of red-brown clay laid on a bed of tabular flint nodules on top of the natural chalk rock which had been scraped flat (Fig. 5.2). Compared to the base of the rest of the pit, the area of the hearth formed a raised platform. The northern side of the hearth/oven was formed by a narrow raised strip of rammed chalk. Beyond this, to the north was an oblong cut whose northern side consists of a wall of compacted chalk similar to that which separates it from the hearth/oven to its south. From the pottery recovered from the various layers of the feature's construction and decay, it appears to have a time span ranging from the late 12th to the late 13th/early 14th century. Apart from an ashy layer, none of the excavated deposits suggested an obvious function for the installation, such as pottery or metalworking waste (Boast 1998).

### Comparable Structures

At the time of discovery no comparisons were known for a hearth or oven of similar construction from a domestic context in a sunken-featured building but the situation has changed profoundly in recent years. Closely comparable buildings have been excavated at Star Lane, Manston, on the Isle of Thanet (this volume Fig. 2.30), Fulston Manor near Sittingbourne (this volume Figs 3.3–5) and in Area B1 of the West Malling and Leybourne Bypass excavations (this volume Fig. 1.8). Other examples (Fig. 5.1) have been forthcoming from Ickham (Linklater and Sparey-Green 2003, 23), Chilham (T. Allen, pers. comm.), at least 15 near Monkton on the Isle of Thanet (J. Rady, pers. comm.), and two or more along the route of the A2 near Gravesend are to date the most westerly (T. Allen, pers. comm.).

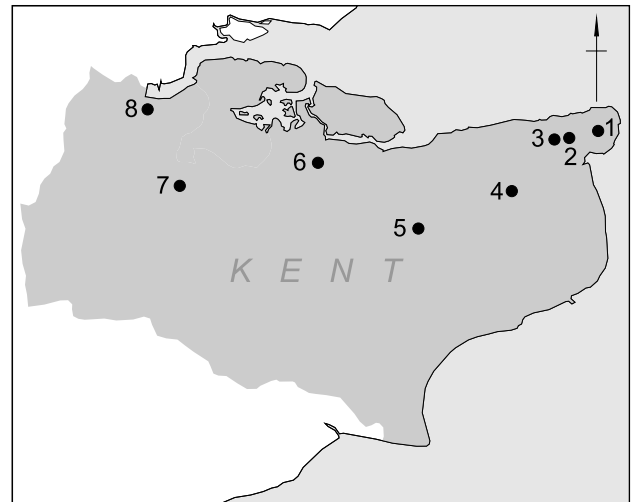


Figure 5.1 Distribution map of sunken-featured buildings with domed ovens and oven/hearths in Kent: 1 Star Lane, Manston (this volume); 2 KIBP Manston, Acol, Isle of Thanet (Boast 1998); 3 Monkton (J. Rady pers. comm., see also <http://www.canterburytrust.co.uk/thanearth.html>, accessed 23 December 2008); 4 Ickham Court Farm, Ickham (Linklater and Sparey-Green 2003); 5 Chilham (T. Allen, KAP, pers. comm.); 6 Fulston Manor, Sittingbourne (this volume); 7 Leybourne (this volume); 8 Gravesend (T. Allen, OA, pers. comm.; see also [http://www.thehumanjourney.co.uk/pdf\\_store/a2/Med\\_settlement.pdf](http://www.thehumanjourney.co.uk/pdf_store/a2/Med_settlement.pdf), accessed 23 December 2008).

The new discoveries, which range in date between the 11th and 14th centuries, have led to a better understanding of the various features discovered in the KIBP Manston sunken-featured building. Thus the large circular structures with their flint cobble base, covered by layers of smooth clay, appear to be domed ovens (eg, this volume Pls 1.2; 2.20). The post-holes observed to one side of the KIBP Manston oven are most likely the traces of two large stones which supported the sides of the stoke-hole. At Star Lane, where the oven walls survived to a height of 0.26 m, these stones were found *in situ* (this volume, Fig. 2.30 and Pls 2.20–2). At Ickham, the fired base of the dome had preserved the impressions of 59 stake-holes which initially supported the structure (Fig. 5.2; Linklater and Sparey-Green 2003, 24). While in some buildings the installations next to the domed ovens are likely to be simple floor-level hearths



the oven bars (Moffett 1994, 61). Alternatively, grain may be thrown into the oven to test the oven temperature – when hot it will burst open. However, grains could also be rolled, cracked, and crushed, and it may be that their presence signifies nothing more than general kitchen waste. It is less likely that the ovens were used for grain-drying as this requires a different kind of oven which permits warm air to circulate (see eg, Beresford 1977, 241–2; 245, fig. 25) rather than heat to radiate from the floor and the oven walls.

The remains found in the sunken-featured buildings clearly indicate that they served some or various purposes in the production of food, among them probably the baking of bread, but other uses like cooking or even brewing would also be possible. It is probably justified to speak of them as bakeries and/or kitchens cum brewhouses.

### **Only for the Rich? Or Off-the-Shelf for Every Farm?**

The buildings at KIBP Manston, Fulston Manor, and Ickham were located in enclosures including possible or definite manor houses, and the latter close to the village church. This proximity supports the possibility of seigniorial ownership of the facilities. The existence

of separate bake- or brewhouses is implied by a number of implements listed in the *Gerefa* (List B), an 11th century guideline to the reeve on the efficient running of the lord's farm (Gardiner 2006, 264–5, table 1). The various implements mentioned in List B appear to be grouped according to where they would be found in the farm. Those grouped at the end of the list (fire-guard, meal-hopper, curfew, oven-rake, and mash-shovel) seem to belong in the bake- or brewhouse.

On the other hand, the large number of buildings now revealed near Monkton could mean that such bakeries/kitchens were far more common and perhaps not exclusive to manorial or ecclesiastical farms. Like at Star Lane (this volume, Fig. 2.29), the sunken-featured buildings near Monkton were often placed in the corners of rectangular enclosures along tracks.

As bakeries and/or kitchens, the sunken-featured buildings presented here will have provided essential facilities required by every farmstead. So far, the buildings appear to be distributed in a broad band across northern Kent, north of and including the northern slopes of the North Chalk Downs and a focus on the Isle of Thanet (Fig. 5.1). Considering the distribution of this type of building it appears justified to speak of a Kentish type of bakery/kitchen building.



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This volume presents the results of archaeological investigations undertaken at four sites in Kent. The two 'linear' schemes: the West Malling and Leybourne Bypass and Weatherlees-Margate-Broadstairs Wastewater Pipeline, provided transects across the landscape revealing settlement and cemetery evidence of Neolithic, Bronze Age, Iron Age, Romano-British and Anglo-Saxon date. Two Bronze Age metalwork hoards were also recovered and a variety of World War II features.

Medieval settlement remains included sunken-featured buildings at West Malling, Fulston Manor, and Star Lane, Manston, that appear to belong to a type of building specific to Kent that had combined uses as bakeries, brewhouses, and/or kitchens. A short study of these, their distribution, form and possible functions, is included.

In addition to evidence for Bronze Age occupation, Manston Road, Ramsgate produced Anglo-Saxon settlement evidence with six sunken-featured buildings and a sizeable assemblage of domestic items.



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