

The Excavation of an 11th-century Viking Hall and 14th-century Rooms at Waltham Abbey, Essex, 1969–71

By P. J. HUGGINS

EXCAVATIONS N. of Waltham Abbey church between 1969 and 1971 revealed a range of 14th-century rooms of the Augustinian abbey butting up against the W. side of the 12th-century claustral buildings. Pre-conquest remains discovered are interpreted here as a rectangular late-Viking turf-walled hall of aisled construction, possibly associated with Tovi, one of Cnut's ministers. Earlier pits, gullies and a linear ditch are probably 9th-century.

Among the finds were: a sequence of pottery, including imported wares, of the 9th to the 17th century; gilded silver and bronze objects of dress; objects of bone; and medieval floor tiles. There is a documentary survey, and specialist descriptions of jettons and of a pre-conquest alphabet inscribed on lead.

INTRODUCTION (FIG. 29)

The town of Waltham, with the church of the secular college established by Harold and the later abbey of Augustinian canons, lies on a gravel terrace to the E. of the marshy R. Lea (or Lee) in the parish of Waltham Holy Cross, fourteen miles due N. of Greenwich, London. Rescue excavations by Waltham Abbey Historical Society, following a planning application for building, took place at TL 381007, N. of the church, between 1969 and 1971. The work began at the E. end of the vicarage garden and in grassland today called Abbey Close. A subsidiary excavation took place in the cloister walk. Building has not, in fact, taken place.

DOCUMENTARY EVIDENCE

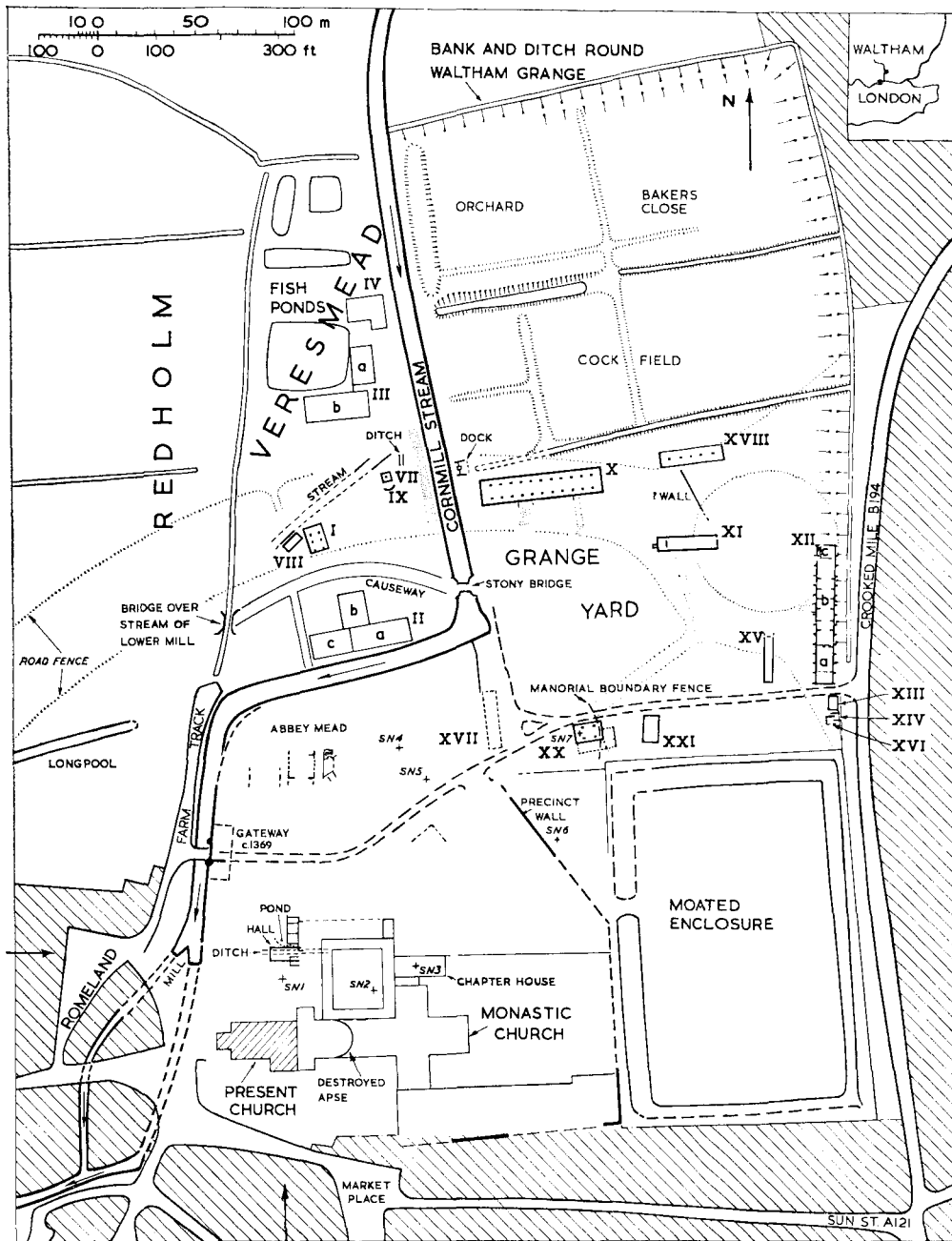
By K. N. BASCOMBE

According to the anonymous late 12th-century author of the tract *De Inventione Sancte Crucis*¹ Waltham was founded in the reign of Cnut (d. 1035) by Tovi le Prude, described² as first in all England after the king, his *stallere*, and standard-bearer (*vexillifer*). Tovi is stated to have begun to build, in "a wooded place now called Waltham", a poor cottage ("*pauperis tugurii*");³ and the writer

¹ Printed by Stubbs (1861). For a paraphrase see Dean (1975). A full translation by F. S. Baker and K. N. Bascombe is being edited for publication by Dr P. Hodges of Lewes. For works cited in abbreviated form see p. 131 f.

² Stubbs (1861), 6.

³ *Ibid.*, 9. A figure of speech intended to exemplify Tovi's humility, but which hardly accords with his station.



adds that the vill of Waltham was first founded at this time, by persons who had been cured through the agency of the Holy Cross (apparently a stone crucifix) on its journey from Montacute (Somerset) where it was found. There had been previously nothing in the place but Tovi's hunting lodge ("vile domicilium ad succurrendum cum causa venandi accederet illuc heros ille"). Tovi is stated furthermore to have owned estates locally at Enfield, Edmonton, Cheshunt and Mimms while, further afield, Reading is particularly mentioned. He gave Waltham itself, Kelvedon, Loughton and Alverton in Essex, Hitchin in Hertfordshire, and Lambeth to the service of the Cross.

Domesday Book shows Tovi's grandson, Esegar (Ansgar), who succeeded to the office of *stallere*, as owning land in eight counties. The statements of the *De Inventione* relating to Tovi himself therefore may well be accurate, although no *stallere* named Tovi appears in any surviving contemporary document. The office, which receives its first mention⁴ in English sources c. 1032, is discussed by Larson,⁵ who considers that it is Norse in name and origin, and that it came into England with the Danes. The office was clearly an important one, and Osgod Clapa, another *stallere*, is reported as "standing next to the king". Unfortunately there is little evidence available as to the functions of the *stallere* in 11th-century England. However, in Norway at this period he seems to have served as the king's spokesman, as an intermediary between the king and his henchmen, and as a war-leader, while in 13th-century Norway he provided horses or other means of transport for the king's journeys. Waltham was used by many of the later kings of England for stabling and provisioning their horses. By Edward the Confessor's reign several *stalleres* held office at one time; three, for example, witnessed⁶ a charter of 1060-6.

Tovi's wife, whom the *De Inventione* names as Glitha, daughter of Osegod Scalp, is said⁷ to have made gifts to the Holy Cross at Waltham. According to Florence of Worcester⁸ the wedding of Tovi, a powerful Dane, to Glitha, daughter of Osgod Clapa, took place at Lambeth in 1042, being marked by the fatal collapse of King Harthacnut while drinking. However, the donations of Glitha appear in the *De Inventione* account after the installation of the Cross at Waltham and the gifts of Tovi, without mention of any interval of time. At the time of his marriage to Glitha Tovi is said to have been an old man, and his son Athelstan cannot have been by her, if, as the author of the *De Inventione* claims,⁹ Esegar, who was *stallere*⁶ by 1052, was in turn Athelstan's son.

A difficulty in tracing Tovi's early career arises as three persons called Tovi (Tofi, Tofig)¹⁰ appear on documents of the period. A Tofi Pruda was a witness¹¹

⁴ Robertson (1939), 418.

⁵ Larson (1970), 146-52.

⁶ Kemble (1846), no. 822. One of these was Esegar, who is said to have been Tovi's grandson.

⁷ Stubbs (1861), 12.

⁸ Forester (1854), 144.

⁹ Stubbs (1861), 13.

¹⁰ e.g. three (one called *minister*) witness an Abingdon charter of 1033: Kemble (1846), no. 751; two (each *minister*) an Oxford and Abingdon charter of 1032: *ibid.*, no. 746; and two (*hwita* and *reada*, each *minister*) a Dorset charter of 1024: *ibid.*, no. 741.

¹¹ *Ibid.*, no. 749.

to a charter of Cnut, relating to land in Patrington (N. Humberside) in 1033, his signature being preceded by that of Osgod Clapa; he attended¹² a shiremoot in Herefordshire, on behalf of Cnut; and he was executor¹³ of the will of Ælfric Modercope (lands in Ely and in Norfolk) in 1042-3. Osgod Clapa and Tofi were successive witnesses to a charter¹⁴ of Cnut to Christ Church, Canterbury: Robertson, however, considers this document of 1032 is unlikely to be genuine in its present form. The signature of Osgod *minister* follows that of one of the two Tofigs *minister* in the Oxford and Abingdon charter¹⁰ of 1032, and that of the Tofig *minister* in the Abingdon charter of 1033.

It appears, therefore, that Tovi le Prude flourished at least from 1033 (or probably 1032) to 1042 or 1043, probably in some association with Osgod Clapa throughout. Robertson considers¹⁵ that the Tofi *minister* who signed charters from 1018 onwards was mostly the same man. The suggestion¹⁶ that the Osgod *minister* who signed from 1026 to 1046 was throughout identical with Osgod Clapa (who was outlawed in the latter year) appears more certain, since no charter is signed by more than one person of this name.

The gift by Tovi le Prude of Waltham and other lands to the Holy Cross (which is apparently his only documented connexion with Essex) is said¹⁷ to have been made orally, and is not attested by any surviving charter.¹⁸ Tovi's son Athelstan is said to have forfeited Waltham, among other lands, to the crown after his father's death. The *De Inventione* writer attributes this to Athelstan's degenerate character; an alternative explanation, given by Freeman,¹⁹ is that the cause was opposition to King Edward's accession to the throne — that is, the same reason as assumed for the exile of Osgod Clapa. Loughton, Alverton, Hitchen and Lambeth were among the estates granted to the college founded²⁰ by Harold, earl of Wessex (later king of England) at Waltham *c.* 1060 by its foundation charter,²¹ which, although now considered²² textually spurious, is probably largely genuine in content.

Harold's college of secular canons was dissolved²³ in 1177 on the initiative of King Henry II in favour of an Augustinian priory, which became an abbey in 1184.

The domestic records of the house have almost wholly disappeared and, because of this, of its exemption²⁴ from diocesan visitation, and of the lack of any useful local chronicle, references to its life and to the conventual buildings are few and scattered. In the Pipe Rolls between 1177 and 1184 are recorded grants

¹² Robertson (1939), 150-3; Kemble (1846), no. 755.

¹³ Whitelock (1930), 75; Kemble (1846), no. 970.

¹⁴ Robertson (1939), 168-71, 417-19; Kemble (1846), no. 1327.

¹⁵ Robertson (1939), 400.

¹⁶ *Ibid.*, 418.

¹⁷ Stubbs (1861), 11.

¹⁸ See, however, K. Bascombe in Huggins (1972), 32.

¹⁹ Freeman (1868), 43.

²⁰ *V.C.H. Essex*, II, 166.

²¹ Stubbs (1861), 46-9; Kemble (1846), no. 813.

²² Hart (1971), 31.

²³ *V.C.H. Essex*, II, 167.

²⁴ *Ibid.*, 168.

from the Exchequer of money and building materials for the new foundation. Many of these grants were directed towards the building of the church; but there is a reference in 1177-8 to 26s. 8d. for the removal²⁵ of barns (*"horreis"*) for the enlargement of the court (*"curiam"*) of the canons; and another in 1179-80 to £20 given²⁶ for the purchase of ground (*"ad emendam terram"*) for the same purpose.

In 1220-2 a water conduit was constructed from Wormley (Herts.) to the abbey. The description²⁷ of its route indicates a close topographical relationship between the entrance to the cellar, the old *lavatorium* (washing place), the kitchen, and the quadrangle. Subsequently the artificer, Master Lawrence of Stratford, completed his tracery and scaffolding for installing the basin in the quadrangle (*"perfectit formas suas et scantillonas ad stagnum fundendum in quadrangulo"*). In 1214 King John had given²⁸ to the canons of Waltham a tin basin (*"stagneum lavatorium"*) from his great hall at Westminster. This is in agreement with the presence at Waltham at this period of a normal monastic layout: the cellar along the western side of the cloisters; the kitchen probably somewhere outside their NW. corner; and the lavatory at or near the same angle of the cloister walk. Mention²⁹ in 1286 of an encounter having taken place "in the abbey between the cellar and the kitchen" is not in disagreement with this. The same document mentions the "abbot's upper chamber" and "the lower hall called the abbot's chamber".

There is a reference³⁰ to the bakery and other buildings near the cloister *temp.* Abbot Reginald de Maideneth (1274-89). The next abbot, Robert de Elenton, is said³¹ to have discharged the onerous debts of the house, but the abbey was again in debt³¹ by 1324, while there is further evidence³² of financial difficulties in 1336, 1338, 1342 and 1344. A contributory cause of these difficulties may have been the burden imposed by royal visits which, judging from the calendars of Close and Patent Rolls, were especially numerous between 1331 and 1344. The abbey was always responsible for entertaining the king and his court; in the present context a visit by Edward I in February, 1299, a few months before his second marriage to Margaret of France (10 September 1299), may be of special significance. In 1393 a grant³³ providing that no lord or other great person other than the king or queen should be lodged in the abbey reflected, no doubt, its financial position at that time.

By 1464 the cellarer had acquired his own chamber.³⁴

At the dissolution of the abbey in March, 1540, an inventory³⁵ was made of its contents, evidently for valuation purposes, since only rooms with saleable contents

²⁵ *Pipe Roll Soc.*, xxvii (1906), 37.

²⁶ *Ibid.*, xxix (1908), 34.

²⁷ BL, Harl. MS. 391, ff. 4-5.

²⁸ Colvin (1963), 549.

²⁹ Fowler (1915), 248.

³⁰ BL, Harl. MS. 3776, f. 38.

³¹ *Cal. Close* (1323-27), 319.

³² *Cal. Close* (1333-37), 575; (1337-39), 607; (1341-43), 471; (1343-46), 474.

³³ *V.C.H. Essex*, II, 169.

³⁴ Waller (1889-1900), 79.

³⁵ Public Record Office (P.R.O.), E117/11/24.

are mentioned (with, in some cases, a note of the person for whom the contents were reserved). The rooms include: (i) *the grete hall*, (ii) *the abbotts utter parlour*, (iii) *the stone parlour*, (iv) *thinner parlour*, (v) *the grete somer chambour*, (vi) *the abbotts chambour*, (vii) *the abbotts inner chambour*, (viii) *the wardrobe*, (ix) *the kings chambour*, (x) *the abbotts chapell*, (xi) *the grete chambour called the wintour chambour*, (xii) *the next chambour*, (xiii) *the quenes chambour*, (xiv) *the master of the childernes chambour*, (xv) *Pratts chambour*, (xvi) *the bakers chambour*, (xvii) *the buttrye*, (xviii) *the kechyn*, (xix) *the scullery*; then follow various outbuildings.³⁶ The contents of rooms v, vi, vii and viii, with part of those of xvii, xviii and xix, were reserved for the abbot; those of ix, x, xi, xii, xiii and xiv were reserved for "Mr Deny". The presence of the king's and queen's chambers in the inventory reflects the royal interest in Waltham as a staging-place on progresses, which continued after the dissolution; visits are recorded³⁷ in May, 1541, and February, 1542. In January, 1542, Anthony Denny was made³⁸ keeper of the abbey site and of the king's mansion house at Waltham; he had already, in 1541, taken a lease³⁹ of the "grange called Waltham Grange" and of the demesne lands of the monastery.

In June, 1542, work was begun on the enclosure⁴⁰ of a park to adjoin the king's mansion house; this park lay NE.⁴¹ of the grange. The park was apparently complete by February, 1543; in July, 1543, construction⁴² of the king's new lodge, adjacent to the park gate, was started, continuing until that Christmas. Much material was brought from the churchyard, presumably from demolition of some of the abbey buildings. There is a reference⁴³ in June, 1544, to payment for stripping of lead from the abbey buildings. In 1552 a large part of the church collapsed,⁴⁴ while the demolition of a further (unspecified) abbey wall is recorded⁴⁵ in 1562. In 1547 Sir Anthony Denny was granted⁴⁶ by Edward VI both the park and the site of the abbey; the formal terms of the grant do not make it clear what buildings remained standing in the latter; no 'mansion house' or 'capital messuage' appears, though "empty ground" is mentioned. A map⁴⁷ of c. 1600 shows no evidence of standing buildings in the area of the excavation.

The living of Waltham Abbey church was endowed⁴⁸ with £100 per annum and a house, probably the present vicarage, by the will of the earl of Norwich, grandson of Anthony Denny, in 1637. The house was already the curate's residence, so the garden may well have been enclosed before this date.

³⁶ K. Bascombe in Huggins (1972), 32-3.

³⁷ *Letters and Papers Hen. VIII*, xvi, 395; xvii, 57.

³⁸ P.R.O. E315/235 f. 91.

³⁹ Northamptonshire Record Office (N.R.O.), W(C) 163; see also K. Bascombe in Huggins (1972),

33-5.

⁴⁰ P.R.O. E101/545/29, 1-57.

⁴¹ Huggins (1972), fig. 1.

⁴² P.R.O. E101/545/29, 64-82.

⁴³ Colvin (1975), 37.

⁴⁴ Strype (1822), 30.

⁴⁵ Fuller (1840), 276.

⁴⁶ N.R.O., W(C), 165.

⁴⁷ Hatfield House, maps and charts II, f. 23, part reproduced as Huggins (1972), pl. ia.

⁴⁸ *V.C.H. Essex*, v, 170.

THE EXCAVATIONS (FIG. 30)

The excavations were carried out in three periods of two weeks each, in August 1969, July 1970 and July 1971, with additional work at weekends in the autumn of 1969.

Long, exploratory trenches were set N. and S. across the site for a distance of 47 m. (155 ft.) in 1969. Machine stripping was not possible, so further trenches were set out to establish the plan of the medieval remains discovered. After the first season it was postulated that some features might represent a large pre-conquest building. The two succeeding seasons were devoted to the investigation of this building which is now interpreted as a late Viking hall.

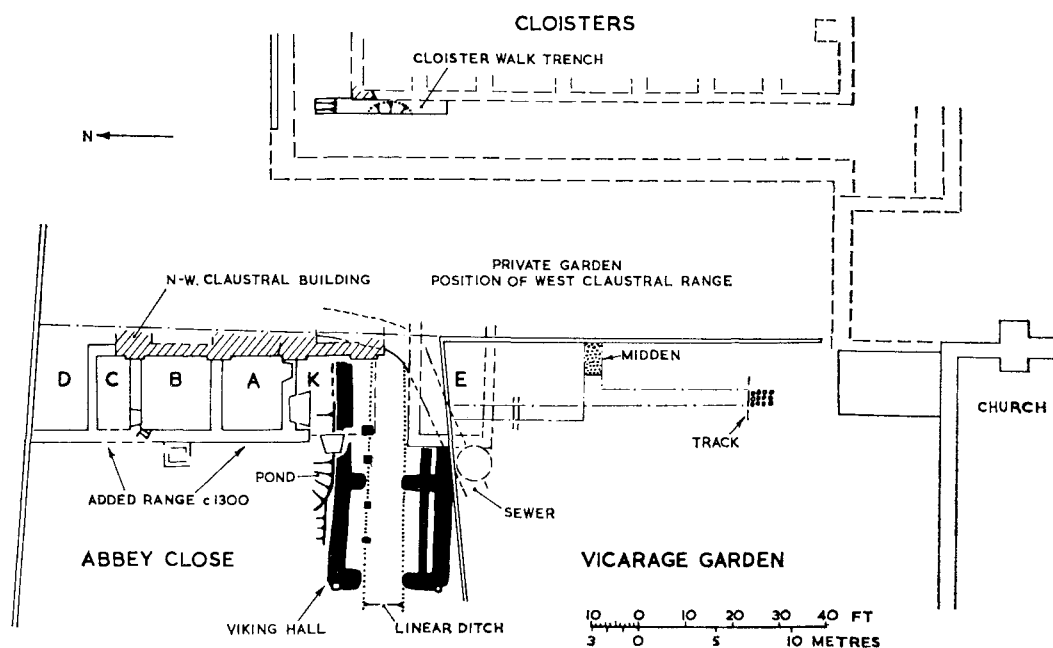


FIG. 30

WALTHAM ABBEY, ESSEX

General plan of excavated features in Abbey Close, vicarage garden and cloister walk, 1969-71

THE EXCAVATED FEATURES

The excavated features have all been given a number, under which each feature is described and the significant finds listed. The numbers have been grouped as follows:

- | | |
|----------|--|
| F1-40 | Features in the vicarage garden (1969) |
| F41-175 | Features in Abbey Close (1969) |
| F200-240 | Medieval and later features in Abbey Close over the Viking hall (1970-1) |
| F250-272 | Features in the cloister walk (1971) |
| F300-354 | Viking hall and other pre-conquest features (1970-1). |

Below is set out a descriptive list of the pre-conquest features in Abbey Close. For economy of space, the medieval and later features are omitted here. In the list "bone: 6/2" means that a bone object is described as no. 2 in Appendix 6; the numbers for iron, lead and glass refer to details omitted from this report. For the pottery code see Appendix 1.

- F300 Silt, grey or black layers, 25 to 40 cm. thick, of ditch running along length of Viking hall. *Pottery*: 1A, 1B, 2AC, 3D1, 4D2, 1G (FIG. 36, nos. 20, 21); *iron*: 3/1; *loom weight*: 6/4; *spindle whorl*: 6/9.
- F301 Ditch fill, deposited over F300 during building of hall. *Pottery*: 7A, 8B, 10C, 7AC, 9D1, 12D2, 5 Badorf, 4 Ipswich (FIG. 36, nos. 22-32); *bone*: 6/2.
- F304 Chalky gravel spreading down into ditch over F300 from foundation deposit F308 of interior dividing wall.
- F305 Silt-filled gully leading into ditch F300 from N. *Pottery*: 4AC, 4D2; *iron*: 3/7.
- F306 Silt-filled gully, opposite F305, leading into ditch F300 from S. *Pottery*: 4A, 1B, 2 derived Roman (FIG. 36, nos. 1, 2); *iron*: 3/2.
- F307 Dark loam filling trenches cut into natural clay, taken to represent turf walls of Viking hall. Considerable amount of Roman building debris, particularly dense by pond. *Pottery*: 14A, 5B, 16C, 19AC, 2AC + 'grog', 38D2, 12D1, 10 Badorf, 2 Ipswich, 1 J1 (FIG. 36, nos. 8-18); *alphabet*: Appendix 12; *silver gilt*: 2/1; *bronze*: 2/3; *iron*: 3/3; *glass*: 5/1; *loom weight*: 6/5, 6; *lava*: 6/10.
- F308 Chalky gravel under F307 as foundation deposit to walls of Viking hall, contained some Roman debris. *Pottery*: 1AC, 1D1 (FIG. 36, no. 33); *loom weight*: 6/7.
- F309 Viking hall wall deposits above F307, orange sandy clay rather than dark loam. *Pottery*: 2AC, 3C, 2D1, 6D2, 3G, 1 Badorf, 2 Ipswich (FIG. 36, nos. 34-6).
- F310 Deposits of loam and clay, only seen in places, spreading over and by side of walls of Viking hall; may result from destruction of walls. *Pottery*: 4AC, 5D2, 10G (FIG. 36, no. 37).
- F311 Loam, seen in isolated places, mainly outside hall, representing old ground surface, up to 20 cm. thick. *Pottery*: 4A, 1B, 1C, 1D1, 3D2 (FIG. 36, no. 3).
- F312 Trench for N. wall of hall, seen for 13.7 m., up to 38 cm. deep into natural and 0.9 m. wide; filled with F307 and F308.
- F313 Trench for S. wall of hall, seen intermittently; fill as F312.
- F314 Trench for W. end wall of hall, extending from N. and S. to lip of underlying ditch, up to 1.2 m. wide; fill F307 with very little F308 at one side as if filling void between turves and trench side.
- F315 Three flat-bottomed holes, loam fill, largest 15 × 20 cm., presumably for doorway posts for entrance to hall from W.
- F316 Flat-bottomed posthole at SW. corner of hall, 55 × 60 cm., 40 cm. deep into natural, clay-loam fill.
- F317 Flat-bottomed posthole at NW. corner of hall, 40 × 45 cm., 38 cm. into natural, clay-loam fill.
- F318 Trenches into natural for interior dividing walls of hall, probably narrower than side wall trenches, same fill as F312.
- F320 Gully on N. side of hall feeding into pond. Relationship suggests hall, pond and gully co-existed. Probably designed as eaves-drip gully for hall. Filled with clay F228.
- F320A Possibly gully like F320 on S. side of hall, disturbed fill.
- F321 Pit, loam fill, 50 cm. deep from top of natural. *Pottery*: 1D2, 1 Ipswich(?).
- F322 Pit, loam fill, 30 cm. into natural. *Pottery*: 1C.
- F323 Pit, loam fill, 15 cm. deep. *Bone comb*: 6/1.
- F324 Pit, loam fill, 30 cm. deep.
- F325 Depression, loam fill, 25 cm. deep, stony patch at top. *Pottery*: 2AC, 2C, 1D2 (FIG. 36, nos. 4, 5).
- F326 Pit, loam fill, 30 cm. deep. *Pottery*: 1A, 1AC.
- F327 Shallow depression, dirty clay fill with charcoal, cuts into natural and ditch fill. Building period, before F347 laid. *Pottery*: 3AC, 1C, 1D2 (FIG. 36, no. 7).
- F328 Pit, loam fill with stones and burnt patches, 18 cm. deep, cuts into natural and ditch fill. Possible brazier position.
- F329 Pit, loam fill, 16 cm. deep. *Pottery*: 2AC, 1C.

- F330 Pit, loam fill, 12 cm. deep into natural. *Pottery*: 1AC.
 F331 Pit, loam fill, 45 cm. deep. *Pottery*: 1A.
 F332 Partially seen loam-filled pit or posthole. *Pottery*: 1A.
 F334 Partially seen loam-filled pit, extent uncertain.
 F335 Pit, loam fill, extent uncertain, later than gully F306. *Pottery*: 1C; *lava*: 6/11.
 F336 Pit, loam fill with stones and burnt patches, earlier than F335, later than F306. *Pottery*: 3A (FIG. 36, no. 6); *glass*: 5/3; *lava*: 6/12.
 F338 Clay laid down as floor to hall, includes minor patches of loam and charcoal, material therein can represent building and use of hall. *Pottery*: 18A, 10B, 6C, 15AC, 22D1, 9D2, 10G, 4 Ipswich, 1 Andenne, 1 buff, 1 J1 (orange glaze), derived Roman (FIG. 37, nos. 1-16); *bronze*: 2/2, 14; *iron*: 3/4-6; *lead*: 4/1; *glass*: 5/2.
 F340 Red burnt clay area of F338, a well-used fire area, no delineating curb. *Pottery*: 1D1.
 F341 Ditch silt seen in cloister walk trench, like F300 but open later. *Pottery*: 1A, 3D2, 2G, 1 Stamford ware (FIG. 36, nos. 39-41).
 F342 Area of loam and charcoal seen inside doorway of hall, on floor F338 somewhat disturbed. *Pottery*: 2A, 2AC, 3D1, 1 J, 1 fine redware J1.
 F343-6 Four clay, sand or gravelly clay foundations for N. side aisle posts, up to 70 cm. deep, sherd in F344. *Pottery*: 1 large Ipswich-type.
 F347 Linear foundation of chalky gravel, orange gravel with large stones under. Postulated to have served as aisle post and bench foundation.
 F348 Orange gravel foundation, linear feature with possible use as F347, both foundations had little Roman debris typical of hall period features.
 F349 Pit or trench, clay and loam fill with Reigate stone debris at bottom. After F331 and 332, before F347. *Pottery*: 1D2.
 F351 Pit, gravelly loam + stones. Possibly dug as soakaway at entrance to hall at late stage in its use. *Pottery*: 1D2, 1G, 1 Ipswich; *bone*: 6/3.
 F353 Posthole in foundation F344. Possibly represents replacement aisle post.
 F354 Disturbance of clay, loam, charcoal and red burnt clay outside hall to W., before soakaway F351 dug.

FEATURES PRIOR TO THE VIKING HALL

THE LINEAR DITCH (FIGS. 31, 32; PL. X, B)

The linear ditch, over which the Viking hall was built, was some 1.2 m. (4 ft.) deep and 2.5 m. (8 ft.) wide, some patches of associated old ground surface (F311) remaining (section RST, FIG. 32). The ditch was attested for a distance of 13 m. (42 ft.) under the hall, and an end in the cloister walk suggests it stretched a further 18 m. E. Two opposed gullies (F305, F306) fed into the ditch (FIG. 31). This shows the ditch was draining the land on each side and was therefore a stormwater ditch rather than a boundary ditch; no associated bank was detected.

Silt (F300), to varying depths, was seen in most places where the ditch was sectioned (FIG. 32); in one position it appeared to have been cleaned out prior to filling. The basal feature of the walls of the Viking hall was a chalky gravel (F308), and in one position (section KL, FIG. 32) this gravel had slipped down the side of the ditch and mixed with the silt. This suggests that the ditch was being filled when the Viking hall was being built, probably with material dug out of the wall trenches. The two gullies were filled with a hard dark silt as if they had gone out of use naturally; they both included small groups of sherds which could all be middle Saxon material of the 9th century or earlier. The silt in the ditch contained sherds of 9th to 11th-century date; this silt also contained a spindle whorl (Appendix 6/8) and a loom weight (Appendix 6/4).

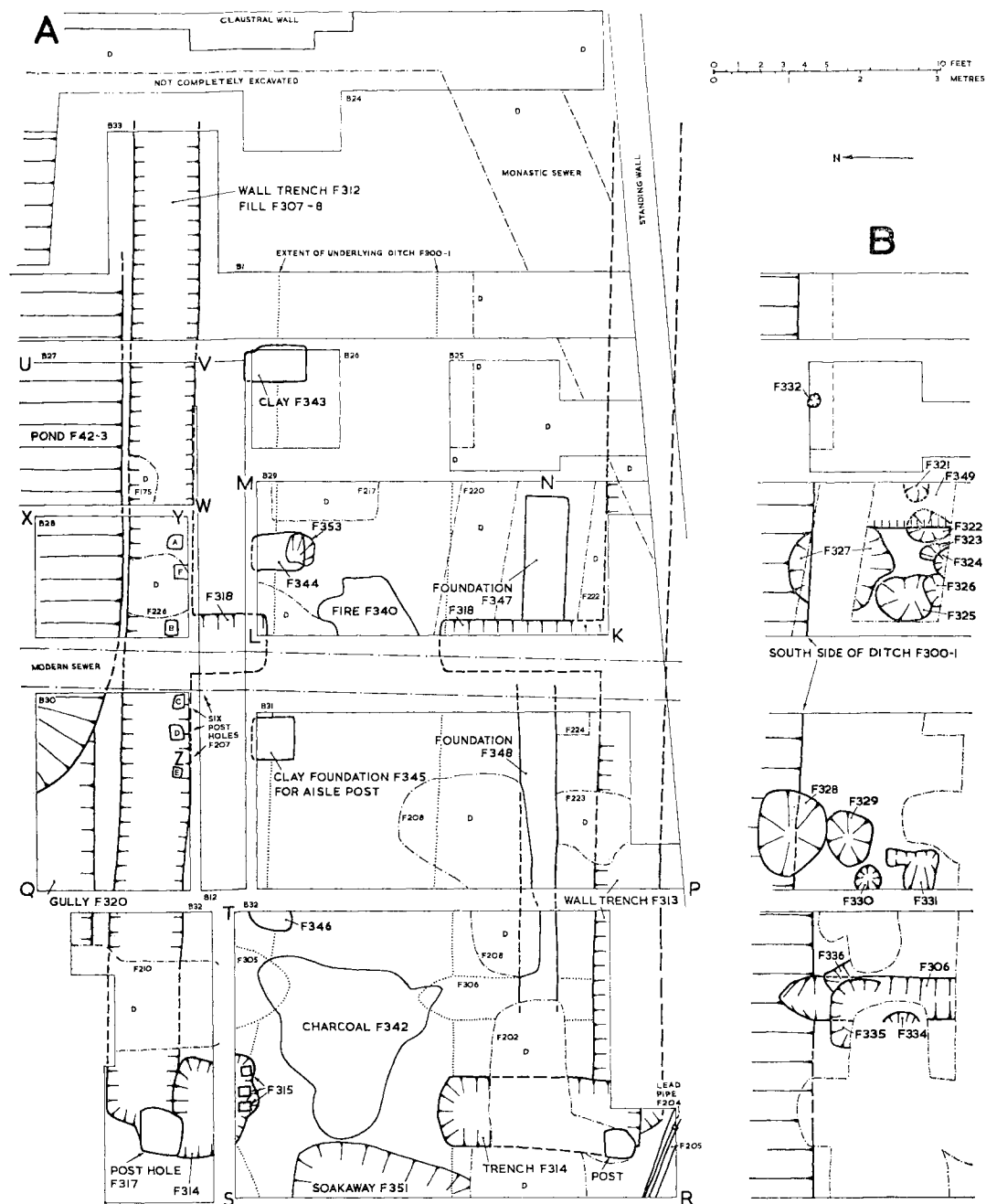


FIG. 31

WALTHAM ABBEY, VIKING HALL

A. Plan of hall, later disturbance marked D; B. Plan of features on S. side of ditch underlying hall

THE SHALLOW PITS (FIG. 31, B)

A series of shallow intersecting pits was detected close to the S. side of the linear ditch (plan, FIG. 31, B). Two of these (F327, F328) partially overlay the ditch and are taken to be features of the Viking hall building and occupation periods respectively. All the other pits detected in the natural clay were loam-filled, with odd patches of stones and charcoal. Although there were very few sherds in these pits they are clearly pre-hall as they are located, in the main, below hall period features (FIG. 31A and B can be compared).

A bone comb (Appendix 6/1) was found in pit F323 with bird, fish and probably sheep bones; the excavator believed that the comb, which was upright in the hole, had been dropped or pushed into the pit, possibly from a higher level during occupation of the hall. It should be stated that while the comb was certainly worn out when lost, this pit is partially under the postulated bench on the foundation F347. Other finds in these pits include part of a loom weight in F334 and fragments of lava in F335 and F336.

See also pit F9, p. 97.

THE VIKING HALL (FIGS. 31, 32)

Shallow foundation trenches, interpreted as a hall, about 7.5 m. (25 ft.) wide externally and over 15 m. (50 ft.) long, with an internal division and a doorway at the W. end, were constructed over the linear ditch. The fill of the ditch was realized by the builders to be unstable so that neither the end nor the dividing walls extended over it. At the W. gable end there were massive corner postholes and, at the entrance, a group of three postholes for one side of a doorway. Along the N. side of the hall were four clay foundations for aisle posts. Along the S. side were two separate linear foundations, presumably for timber sill beams. These beams could have supported the aisle posts along the S. side as well as benches along the wall. Some of these features can be paralleled throughout areas of Viking settlement but, considered together, are out of place in areas of purely Saxon influence.

The hall is shown in plan in FIG. 31; the walls are represented by the foundation trenches cut into the natural clay. Parts of the hall had been disturbed by medieval and later activity; these parts are enclosed by chain dot lines and are marked D.

THE WALLS (PL. X, A)

The above-ground form of the walls is not certain. Elsewhere Viking hall walls are of stone and turf, the latter often being used even in stone areas because of its draught proofing qualities. Local stone is not readily to hand at Waltham, but a limited amount of Roman debris seems to have been available.

The lowest deposit in the side wall foundation trenches (F312, F313) was 5 to 25 cm. of fine gravel (F308). Above this was 10 to 25 cm. of dark loam (F307) with pottery and other small objects in some quantity; this loam could have

resulted from the dumping of loose occupation soil on top of the gravel as additional drainage material, or from the laying of cut turves, the pottery being brought in with either earth or turves. When the dating of the hall comes to be considered it must be remembered that these objects in the wall loam may represent pre-hall phases of occupation. Where the hall bordered the pond a considerable amount of Roman debris was used to stabilize or improve drainage of this loam (best seen in section UVW, FIG. 32).

Above the loam, at about floor level, was a third characteristic layer (F309) of orange sandy clay, 7 to 14 cm. thick. This was seen in enough positions to be considered general to the side and interior walls. Above this clay layer there were, in places, deposits of loam and clay (F310) which are remains of the wall proper or derive from the levelling of these remains. The latest pottery in F310 suggests the hall may not have been demolished until the 12th century. Level F310 had been cut by pit F226 containing a 12th-century rim.

The side wall trenches were about 0.9 m. (3 ft.) wide. The end wall trench was about 1.2 m. (4 ft.) wide where seen in its best preserved part. In the end wall only the loam (F307) and a small pocket of gravel (F308) was seen (section ST, FIG. 32); this pocket could have resulted from the filling of a gap at the side of turves already laid in the trench.

Drainage was obviously a problem at Waltham. The basal foundation gravel attests this, possibly assisted by the loam above. The succeeding clay layer might be looked upon as a damp proof course below the level of the floor of the hall. It is difficult to conceive that the above-ground walls were made of anything but turves. It is possible that the loam and clay (F310) may represent the remains of walls made of unbaked loam or clay 'bricks', but such bricks seem not to belong to the contemporary building repertory and unless comparative evidence is found elsewhere this type of wall is ruled out. The walls, of course, are not load bearing.

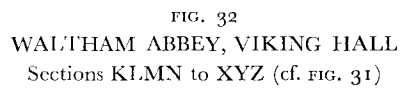
THE ENTRANCE

The only entrance seen was at the W. end, the end walls being built to the lips of the filled-in ditch. On the S. side the wall trench (F314) was somewhat mutilated, but on the N. side it was clearly defined with a row of three holes (F315) for square timber doorway posts. Another post or two may have existed to cross the whole width of the wall, and others are assumed to have existed on the S. side. An imposing doorway is postulated, some 2.7 m. (9 ft.) wide, with squared timber posts and, necessarily, lintels through the thickness of the wall.

A feature at the entrance was a loosely-filled pit (F351) (plan, FIG. 31; section RS, FIG. 32) and this is interpreted as a soakaway to keep the entrance drained. Two sherds of 12th or early 13th-century date are a further indication that the hall may have stood until the 12th century at least.

THE GABLE-END POSTHOLES

The holes (F317, F318) for vertical posts are the only original structural postholes seen, except for the three door posts (F315) above. The smaller one,



although mutilated by later features, was recognized first as a probable posthole before it was realized this was the end of the hall; it would have accommodated a post some 40 cm. (1 ft. 4 in.) square. The interpretation was confirmed by the larger flat-bottomed, square-sided, hole at the NW. corner of the hall which would have taken a vertical post about 50 cm. (1 ft. 8 in.) square; the hole was filled with dirty clay showing that the post had been extracted, pointing to a definite demolition rather than decay. These corner posts with the wooden doorway between, and the 1.2 m. (4 ft.) thick walls, would have given the gable end an imposing appearance.

THE AISLE-POST AND BENCH FOUNDATIONS

A row of four stony-clay foundations (F343-6) were set parallel to the N. wall at intervals of about 2.5 m. (7 ft. 6 in.). They are positioned along the N. lip of the linear ditch; one, shown in section LM (FIG. 32; PL. IX, B), is 70 cm. (2 ft. 7 in.) deep and is dug into the natural clay. These features are interpreted as foundations for a row of aisle posts. Perhaps each post sat on a stone or other base, but no such evidence remained. The N. aisle, so formed, would have been about 1 m. wide. A posthole (F353) was later cut into the side of foundation F344; it may represent the position of a repair post by the side of the original free-standing post.

Two foundation trenches lay parallel to the S. wall. These are taken to have supported timber sill beams which could have served the double purpose of carrying the S. aisle posts and benches, just over 1 m. wide, along the S. wall. In the western room, foundation F348 (just seen in section PQ, FIG. 32) would, in all likelihood, have stretched the whole length of the wall and so have supported posts opposite foundations F345 and F346. The postulated bench, some 5.5 m. (18 ft.) long could have provided sleeping accommodation for three people in comfort. The shorter foundation F347, in the room to the E., was nearly 2 m. (6 ft.) long, and would have supported one post, opposite foundation F344, as well as providing sleeping accommodation for a single person or couple. This shorter foundation strangely cut into the dividing wall (F318) (section KL, FIG. 32), but it is taken to be an original feature because no foundation comparable to F344 on the N. side lay under it. Farther E., on the S. side, similar foundations are likely to have been completely destroyed by later activities. On the N. side one other post foundation should remain in the unexcavated area.

THE FLOOR AND FIRE AREA

To establish a floor level necessitated the filling of the linear ditch. In places it was possible to separate the upper ditch fill (F301) from the clay (F338) which formed the floor level. The floor level was not everywhere determinate but it is best seen in section KLM, where the top of the foundation (F344) for the N. aisle post is level with the burnt clay, representing the fire area (F340), which is the upper part of F338. The fire area is not called a hearth as it was not delineated in any way. It was positioned in the passage between the two rooms, presumably

so as to heat and light them both. It may, of course, not be original to the hall. As the floor deposits were excavated, numerous patches of charcoal and odd patches of burnt clay were detected. This implies a certain amount of repair of the floor surface and may indicate the use of movable charcoal braziers. The largest patch of charcoal (F342) was just inside the entrance.

Some sixty-seven sherds were found in the ditch fill (F301), with fragments of lava, loom weights, and a bone point, as well as food bones and Roman rubbish. The pottery was similar to that in the wall loam (F307), and several sherds from these features were found to fit. Over 100 sherds were found in the clay floor (F338) including a few 11th or 12th-century sherds, one being from a glazed pitcher — further evidence that the hall survived this long. A few pieces of bronze and iron as well as individual pieces of glass, lava and loom weight were found in the clay floor with 2.5 kg. of food debris (see Appendix 10), but in general the surface must have been kept clean.

THE POND AND THE EAVES-DRIP GULLY

The pond was sited close to the N. wall of the Viking hall. It is difficult to conceive the co-existence of the linear ditch and the pond, only about 2 m. (7 ft.) apart. On the other hand, it seems unlikely that a stately hall would be built in such a position, over a ditch, unless the area available was already restricted by the existence of the pond. However this may be, the hall and pond co-existed, and the gully F320 presumably acted to collect the eaves-drip water where it did not fall straight into the pond.

The gully (F320) on the N. side was filled by the early 13th-century deposit F228 (section PQ, FIG. 32), which was one of the first levels over the destroyed wall of the hall; it also dipped down into the pond. This suggests that the pond and the gully were filled after the hall was demolished. A feature in the vicarage garden (F320A) may represent a gully on the S. side (FIG. 34).

THE POSTHOLES ALONG THE N. WALL

The row of six postholes F207 A to F is discussed here because, from its position, it might be seen as a feature of the walls such as to support internal panelling. Five of these holes were seen where they cut the sandy clay wall deposit (F309). However, one, lettered F, existed completely within the pit F226 (section YZ, FIG. 32), which was itself a post-hall feature. The postholes were not seen in the higher deposits F227 or F228 and are unlikely to have been visible in F310. Thus these posts are taken to be of the period between the destruction of the hall and the final filling of the pond. One of the posts, lettered B, lay behind the dividing wall (F318) and so cannot be interpreted as a panelling support member: in fact, they are all rather far in from the edge of the wall to serve such a purpose; an air gap between the wall and any such panelling would be expected.

If the post F was not a member of the group, then the rest could be seen as wall stabilizing posts. If such an interpretation occurs elsewhere in the future it should be considered here also. Similar postholes were not seen elsewhere in this

excavation, but the position of this group coincides with good remains of the clay (F309) in which they were clearly visible; there were other areas of F309 in which such holes did not occur. They are also in a position bordering the pond where a fence might be expected if there was a delay between the demolition of the hall and the final filling of the pond.

THE PRE-HALL OCCUPATION: DISCUSSION

The majority of the pre-conquest finds were from pre-hall features. They occurred mainly in the ditch fill (F301) and in the wall loam (F307). If, as is thought, the wall loam derives from turves, then the finds therein could have been lost or discarded either days or very many years before the turves were cut; likewise the fill of the ditch could contain material of quite a wide date range.

It has been postulated elsewhere,⁴⁹ on place-name evidence, that Waltham was occupied by Saxons in the settlement phase *c.* A.D. 500–550, and probably became a royal estate at that time. No other documentary evidence exists before Tovi's settlement in Cnut's reign. Excavation, however, has shown that the ditch, open when the hall was being built, the shallow pits on the S. side and, possibly, the pond are features of a pre-hall period. A wide date range for the pottery in these features is now suggested, covering the middle and late Saxon periods; the only evidence for an earlier occupation is the grass-tempering technique and two sherds of 'rusticated' handmade sandy ware, both of which can be paralleled at Mucking (Essex) in the early Saxon period.

Grass-tempered ware has been found in pits under the monastic forge (building XX in the grange) and in the market place area, but none has been found in fairly widespread excavation elsewhere in the town. The early settlement may therefore be limited to a small area within the later monastic precinct perhaps extending to the market place.

The lava and the relief-band amphorae sherds in the ditch fill and wall loam attest trading contacts with the Rhineland; the Ipswich-type ware also must have been brought from the E. coast, while grass-tempering is a technique apparently introduced to this country from the Anglo-Saxon homeland.

Linear stormwater ditches are common at Anglo-Saxon settlements such as Thetford⁵⁰ and North Elmham (both in Norfolk);⁵¹ the discovery of one at Waltham confirms the existence of a noteworthy estate or settlement in the pre-hall period. The filling of the ditch and the building of the hall denote a major change in use of the area, such as might be consistent with the advent of Tovi the Dane.

THE VIKING HALL: DISCUSSION

The Anglo-Saxon tradition of building with timber wall posts, in separate postholes or in post trenches, is well known;⁵² some of the wider examples are of

⁴⁹ R. M. Huggins, *Medieval Archaeol.*, xix (1975), 198–201.

⁵⁰ Davison (1967), fig. 40.

⁵¹ Wade-Martins (1970), fig. 4.

⁵² P. V. Addyman in Clemoes (1972), 273–307, illustrates many examples.

aisled construction.⁵³ The relatively narrow Waltham building with free-standing aisle posts, but without timber wall posts, does not fit into this tradition. Buildings comparable to the Waltham example, with thick walls of stone and earth, stone and turf, or turf alone,⁵⁴ are known around the Viking world from Scandinavia to the northern settlements. Except in the narrowest of cases these rectangular buildings possess two rows of aisle posts.

This latter type of building is well known from the migration period settlement at Vallhagar,⁵⁵ Sweden. The Norse farm at Jarlshof has been published⁵⁶ in detail; seven phases of development span the period from the 9th to the 13th century. The single-room building was capable of development to meet varying needs and circumstances.⁵⁷ It is suggested here that the Waltham building is of this general type with developments not yet found elsewhere: these being the sill beams to support aisle posts on the S. side as well as benches, and the use of gable-end posts to stabilize the corners of relatively narrow turf walls.⁵⁸

THE MAIN STRUCTURE

It has been assumed that the four aisle posts, free-standing on their foundations on the N. side, were mirrored by four similar posts on sill beams on the S. side. It is also assumed that the side walls above ground were the same thickness as the foundation trenches cut into the natural clay. Then the aisle width from the wall to the centre line of the aisle posts must have been about 1 m. (3 ft. 3 in.) and the central or nave width about 3.8 m. (12 ft. 6 in.), giving a total internal width of 5.8 m. (19 ft.). The actual aisle width is less by half the aisle-post size, so is about 0.9 m. (3 ft.) and thus appears very small.⁵⁹

If it is assumed that single rafters stretched from the apex of the roof to the outer edge of the walls, then the aisle posts are positioned precisely in the centre of the span of the rafters; in which case, theoretically, the walls need have taken no roof load. However, if the eaves-drip gully is correctly interpreted, the roof must have overlapped the walls by say 0.45 m. (1 ft. 6 in.). This lengthening of the lower end of the rafters would have had the desirable effect of applying a small part of the roof load to the walls, thus lessening the likelihood of the roof lifting in a high wind. Presumably a timber wall plate rested on top of the turf wall, and a small load from the rafters would generally have assisted the stability of the rafter and wall-plate junction. In fact a slightly higher wall load than necessary

⁵³ Such as building G at Thetford, *Medieval Archaeol.*, xi (1967), fig. 43; and East Halls I and II at Cheddar, *Medieval Archaeol.*, vi-vii (1962-3), fig. 25.

⁵⁴ Eleven migration period buildings excavated at Lista, W. Norway, showed that turf played a more important role in the walls than at Vallhagar: O. Klindt-Jensen in Stenberger (1955), II, 986. Isolated farms in Norway have walls of earth and rubble of average thickness 0.9 m.; this is the same thickness as at Waltham: Hagen (1967).

⁵⁵ Stenberger (1955), I-II. Building 7 from Vallhagar is illustrated in *Medieval Archaeol.*, I (1957), fig. 17.

⁵⁶ Hamilton (1956).

⁵⁷ Some at Vallhagar were divided for domestic and animal occupation. In Iceland, extensions and added rooms, rather than separate outbuildings, are a response to the climate. In Greenland, in the middle ages, the type had developed into the 'corridor' or 'passage' house.

⁵⁸ Stability of corners was obviously a problem, often solved by rounding, presumably so that the end of the building could be hipped. Two postholes at one end of Building I at Homa, Gotland, may have contained gable-end wall posts: Stenberger (1955), II, 905.

⁵⁹ Less than 1.2-2.0 m. as at Vallhagar: Stenberger (1955). However it is shown below to be a competent design.

may have been induced, by suitable adjustment of relative dimensions of wall height and aisle-post length, so as to produce a desirable compressive force between the rafters at the apex of the roof. Such a horizontal compressive force at the top of the rafters would have needed to be balanced by a tensile force, probably in a tie beam connecting the top of adjacent pairs of aisle posts. Aisle posts are likely to have been connected by plates or by purlins, upon which the rafters would have rested. Such a basic structure would have taken the self weight of the roof and snow loads but would not adequately have resisted wind forces; these would have needed to be resisted by some sort of bracing. In particular the free-standing aisle posts would have needed triangulating with other members, so a brace to the tie beam is likely and a horizontal member from the outer wall plate to the aisle posts is possible. Longitudinal bracing also may have been provided.⁶⁰

THE DOOR AND ROOF

The walls of the Vallhagar buildings are reckoned to be at least 1.5 m. (5 ft.) high. At Dune Dalken, Gotland,⁶¹ the charred remains of three pine planks held by two horizontal battens showed that the door there was 1.8 m. (6 ft.) high; the doorway was 2 m. (6 ft. 6 in.) wide. An even wider doorway of 3.3 m. (11 ft.) is reported from Homa, Gotland.⁶² The Waltham doorway, which may be up to 2.7 m. (9 ft.) wide, therefore, appears not to be excessive; the width was influenced by the unstable fill in the ditch below. It has been suggested that door frames may considerably reduce the width of the actual door, but no evidence remained in this respect.

The corner posts at the gable end are presumed to have stabilized the corners of the turf-walled building; they are likely to have been jointed with the side-wall plates and were probably tied right across the building so as to form the top of the doorway. The turf walls at the W. end, being thicker than the side walls, may have continued to the apex of the building. Such a wall would need to be protected by an overhanging roof.

Evidence of the form of roof covering sometimes remains in archaeological contexts after a fire. The charred door at Dune Dalken was presumed to have been saved by the collapse of a turf roof over it. Turf roofs were certainly commonly used on Viking houses. In the case of the very wide turf-walled buildings, such as 'Thjodhild's church', Brattahlid, Greenland, it is suggested in a reconstruction⁶³ that the whole of the building except perhaps the door end was effectively enveloped in windproof turf. At Ginderup, Jutland,⁶⁴ one of the iron age houses left evidence of rafters, 4 and 8 cm. thick, which had been covered by straw and two layers of turf. Remains of a fallen roof in a medieval survival at Grof, Iceland,⁶⁵

⁶⁰ For discussion of structural possibilities of the house type see I. Anderson and R. Lundström in Stenberger (1955), II, 1008-1047.

⁶¹ A. Björnstad in Stenberger (1955), II, 911-14.

⁶² *Ibid.*, 905.

⁶³ Jones (1973), fig. 43.

⁶⁴ Wilson (1970), 34.

⁶⁵ Eldjárn (1965), 18.

show turves and flat stones used in alternate 'courses'. Klindt-Jensen records⁶⁶ a roof of heather or turf, probably in two layers, resting on wattles or on twig or straw matting laid on the rafters, and, secondly, suggests turves were laid on birchbark. At Kvívík, Faroe Is.,⁶⁷ a Norse hall was roofed with straw, birch bark and turf and it was probably held in place by long cords twined from juniper branches. It has been suggested⁶⁸ that clay-plastering, bearing impressions of branches, may come from a roof in Norway.

No evidence of the form of the roof covering at Waltham remained in the excavated building. The eaves-drip gully, with postulated overhanging roof at the sides, suggests the roof functioned by letting the rain drip off, so it may have been thatched; the under side of the roof could have been plastered. The thin layer of orange clay (F228) over much of the floor could have derived from such plastering of the under side of the roof. A turf roof is possible but would be less able to deal with winter rain than with snow, and would be more effective in the northern Viking world than at Waltham.

CONCLUSION

There is considerable evidence around the northern Viking world, from the 9th century into later medieval times, for the basic long, rectangular, turf or turf-and-stone walled building of aisled construction. There is also evidence of change to meet varying needs and circumstances. In the Viking homelands there are pre-Viking examples of such buildings, although in the Viking era itself wattle-and-daub or stone walls seem more common. In mainland England this type of building has not been reported previously. However, it is here suggested that the Waltham building is a hall of this general 'colonial' type with, as yet, unparalleled features: the massive corner posts, and the sill beams to support the S. aisle posts.

The likelihood of a Viking attribution is increased by the knowledge that Tovi the Dane held estates at Waltham under Cnut, and that he built there a hunting lodge and, later, a church. The hunting lodge would have been used by Tovi only intermittently since he had other estates, and commitments at court. The excavated hall at Waltham may, perhaps, be identified with this lodge.⁶⁹ An imposing timber and turf gable end may have been particularly suited to displaying the trophies of the chase.⁷⁰

A palisade fence (FIG. 29)⁷¹ found below the monastic forge (Building XX in the grange) and attributed to the Saxo-Norman period is associated with pottery similar to that from the floor of the hall. It seems probable, therefore, that this was an eastern boundary of the estate in which the hall stood.

⁶⁶ On Jutlandic sites, in Stenberger (1955), II, 987.

⁶⁷ Dahl (1970), 69.

⁶⁸ O. Klindt-Jensen in Stenberger (1955), II, 984.

⁶⁹ Earlier notes on the building in *Medieval Archaeol.*, xv (1971), 125, and xvi (1972), 153, are largely to be disregarded.

⁷⁰ In the poem *Beowulf* the hand and arm of the monster Grendel were displayed beneath the gables of the hall Heorot; the translation is discussed by R. Cramp, 'Beowulf and archaeology', *Medieval Archaeol.*, I (1957), 76.

⁷¹ Huggins (1973), fig. 4.

LATER MEDIEVAL BUILDINGS IN ABBEY CLOSE AND THE VICARAGE GARDEN

The main medieval discoveries were a range of rooms (A–D), the walls of which were built up to the buttresses of a building at the NW. corner of the claustral ranges with an added kitchen (K), and a room (E) which presumably butted against the W. claustral range (FIGS. 30, 33, 34). Most of the excavated buildings were positioned over the filled-in pond, the southern side of which was found to extend into the cloister walk. The pond, which had been about 1.8 m. deep, was filled with up to 45 cm. of silt (F42); the edge had been stabilized with stony clay (F41), and it had finally been filled with clay (F43). In places the fill could be separated into F43L, which was black stained, and F43U, which was clean. The foundations for the later buildings were taken down to the gravel bottom of the pond.

THE NORTH-WEST CLAUSTRAL BUILDING (FIG. 33)

Only the western side of this building was seen since it was on the edge of the area investigated. Some Reigate stone ashlar of wall F100 remained. Four shallow buttresses divided the wall into three unequal bays, presumably because of the nature of the internal arrangements. The mortared stone foundations (F138) to the wall were carried down to the bottom of the pond.

A major feature of the building is tentatively interpreted as a garderobe pit (F109) (section CD, FIG. 33). A main sewer (F21), of well-coursed mortared stone, connected with this pit and was later extended as a brick construction (F142) right through the garderobe. Ten Reigate stone ashlar courses of the garderobe remained, to a depth of 1.9 m.

The central bay incorporated a doorway (F104), of which a S. jamb stone with iron hinge remained. The doorway may have been 2.9 m. wide originally but a later fireplace (F105), for Room A, confused the evidence. The construction of the fireplace probably coincided with a narrowing down of this doorway.

Dating. Basing his view on architectural considerations S. E. Rigold considers the cloisters were built by the 1180s. A lead bulla of Pope Alexander III, 1159–81 (Appendix 9/22 and PL. XI, B), was found in the gravel backing (F134) and actually lay on the surface of the foundation (F138) (section CD, FIG. 33); if this was lost or, possibly, deposited during the pope's reign, it supports an early date for the claustral building.

Outside the area of the building, the pond may not have been completely filled until the first half of the 13th century. The water conduit was laid in 1222 and the dedication was finally held in 1242, by which time perhaps work on the major buildings had been finished.

There is no reason to suppose this part of the claustral buildings survived the dissolution by more than a few years. However, material in F162 over the wall (F100) indicates stone was being robbed c. 1640–80. Fill (F140) over and beside the brick sewer through the garderobe pit attests mid 17th-century activity, possibly the construction or repair of this length of sewer.

THE ADDED RANGE OF ROOMS A TO D (FIGS. 30, 33)

The range of rooms built against the claustral building continues N. and E. around the earlier wall. The walls are of mortared flint and stone on gravel foundations dug to the bottom of the pond, except for the narrow wall between C and D which was of mortared chalk on a gravel foundation. Room A incorporated an external doorway (F69) and retained the narrowed internal doorway (F104) into the claustral building. A fireplace (F105) served this room. Room B was not apparently connected to Room A but was originally accessible from the lobby C through a door (F73). A flight of brick steps (F72) was cut through the W. wall of Room B to give access to the partly cobbled exterior, perhaps at the same time as the doorway (F73) was blocked. Lobby C may have been a stair well to the upper floor; no other way out was detected. The blocked doorway was eventually made into a hearth for lobby C, perhaps even after the destruction of all the other remains. Area D is of unknown extent.

Mortar levels F68, F83 and F91 in A, B and C respectively (FIG. 33) suggest that the floors therein were tiled; there were some tile impressions visible in the mortar and fragments were found. A group of eleven tiles was found *in situ* in doorway F69 under later blocking (Appendix 7 and PL. x, c). The floor levels were at slightly different heights in the three rooms. Fragments of plaster showed the inside walls were plastered and painted in imitation masonry courses (Appendix 8).

A square garderobe tower (F128) was built against the W. wall of Room B. It was constructed of mortared stone, sunk not quite to the bottom of the pond; it was of soakaway type, not connected to the sewers. It butted against the Room B wall and was possibly a later addition. A step (F129) on the inside of wall F126 was probably to provide access to the latrine, which presumably also served the upper floor.

A construction feature common to all the outside walls was a substantial deposit of backing clay (F132) (section EF, FIG. 33).

Dating. In rooms A to C no weathered surface remained under the floors, but in area D a layer (F110) in trench B22 contained some 110 sherds (FIG. 38, nos. 1-14), including many fragments so tiny as to suggest they had been walked upon. The sherds spanned most of the 13th century up to about 1300, and are taken to cover the period after the filling of the pond and before the rooms were built. A deposit of stony clay (F143) over the wall-backing clay (F132) in the small trench B7 contained forty-six sherds, dating into the 14th century. This stony clay may have been a levelling deposit of the construction period.

Although the evidence is not conclusive, an early 14th-century date is suggested for the range of rooms A to D. The practice of 'masoning' or imitating masonry on plaster was used as early as 1255 at Guildford.⁷² The glazed floor tiles (F139) of the 'Westminster tiler' type are considered consistent with an early 14th-century date (Appendix 7). Pottery in the destruction debris (F157, F156,

⁷² Salzman (1967), 158.

F155 and F154 respectively) in rooms A to D is mainly mid 16th-century, and suggests that destruction was not long delayed after the dissolution. A few features (FIG. 33) suggest a post-dissolution use of the remaining walls of Room C, perhaps during the Denny period.

THE KITCHEN K (FIGS. 30, 33)

The kitchen (not the main monastery kitchen, which has yet to be located) was an addition not clearly delineated by substantial walls; however, its size can be gauged from the extent of the clay floor (F58) (dotted on plan, FIG. 33). This floor covered an earlier wall (F50) of uncertain purpose, and a drain (F48) which collected water from a sump (F114) in a presumed external position; an adjacent foundation (F217) is not understood.

The kitchen had three hearths. Two of these, F52 (which cut into the original exterior side of wall F44) and F62 (of Great bricks (Appendix 8) in the centre of the room), are considered original and contemporary with the floor. The S. and W. walls of the kitchen were presumably timber-framed with sill beams, and it was against these that the clay floor was laid. When the third hearth (F174) was added the W. side was effectively extended, but evidence for the associated walls was vague. The kitchen was pre-dated by fire-reddened clay (F57), which probably represents an activity soon after the pond was filled. An upper clay flooring (F60) overlay part of the original floor (F58), and was laid before the brick surround (F55) to hearth F52 was added.

The original doorway of Room A was blocked so that the point of access into the kitchen is uncertain. The length between the claustral wall buttresses was filled, perhaps as support for a working bench. A destruction deposit (F61) of clay and loam may have derived from wattle-and-daub filling of the postulated timber-framed S. and W. walls of the kitchen, the filling having been knocked inwards before the tile roofing fell (Appendix 8).

Dating. Two jettons (Appendix 9/2, 3) were found under the original hearth (F52) in deposit F53; these are ascribed to the 1360s. Four jettons (Appendix 9/4-7) were found on the clay floor (F58) and are recorded with the layer (F60) above it; these cover a minimum date range of 1370 to 1420, so they either represent a mixed group lost together on an otherwise clean floor, or an accumulation over a period — which seems less likely in the circumstances. However, they show that the floor lasted at least until the early 15th century before being partially covered by the second clay layer (F60). A mortar rubble deposit (F136), probably from filling F137, between the buttresses of the NW. claustral building contained a few sherds possibly extending to about 1350. A construction date *c.* 1370 is suggested here.

Six additional jettons were found in the destruction debris (F158) (Appendix 9/12-17): two worn ones are late 15th-century; the others belong to the last years before the dissolution. There is no reason to suppose the building survived long after the dissolution.

THE ROOM E WITH LATRINE TOWER (FIGS. 33, 34)

Room E lay partly in Abbey Close and partly in the vicarage garden; it is presumed that it butted against the wall of the W. claustral range. It was represented by mortared flint and stone walls and by a robber trench. The room was built over a sewer (F21), into which the postulated latrine tower (F14) could have discharged. A drain, incorporating Great bricks (Appendix 8), passed along the outside of the S. wall and likewise could have discharged into the sewer. The floor level within this room was not established and minor features within the room are not understood.

Dating. There was a lot of internal disturbance and a jetton (Appendix 9/8) in F22 could have been introduced during internal works; it is dated second quarter of the 14th century. A pit (F15) is taken to be the construction pit for the latrine tower; one sherd therein (FIG. 38, no. 18) is dated *c.* 1300 and thirteen pieces of a jug are consistent with such a date. An early 14th-century date for construction, as also for rooms A to D, is thus suggested. Sherds in the construction trench (F19) for the drain to the S. suggest a 15th-century date.

There is no reason to suppose the building survived the dissolution destruction noted elsewhere. Sherds in the wall robber trench (F51) showed that robbing was taking place after 1640, probably when the vicarage garden wall was built. Sherds in F32 can be separated into dissolution destruction and later robbing periods.

OTHER VICARAGE GARDEN FEATURES

The area to the S. of Room E is characterized by a considerable accumulation of loam (F20, F25), the latter containing roof tiles. The pottery found, dating from *c.* 1300 until 1540, together with food debris (Appendix 10), suggests a continual deposition of kitchen waste in this region; a use which coincides with the building of the 14th-century rooms A–E. The size and unworn condition of most of the sherds suggest the area was not cultivated.

An oyster midden (F31) may have piled up against the wall of the claustral range (FIG. 34 and Appendix 10), and is further evidence of rubbish disposal here. A lead-alloy *méreau* (Appendix 9/21) is of special interest. Pottery in F31, and in the loam accumulation, consists mainly of jugs, probably used for bringing wine to table. A pit (F12) contained some of the earliest pottery in the group and may just pre-date the building of Room E.

Parallel and close to the church are track deposits (F8), with associated basal features (F2, F7), and a possible flanking ditch (F1). These may represent a route into the outer parlour of the W. claustral range. Dating is vague; two sherds in F8 are *c.* 1250–1350.

Pottery in the destruction layer (F33) suggests the W. claustral range was demolished soon after the dissolution of 1540; subsequent loam accumulation occurred from the 17th to the 19th century. A square pit (F9) is the only clearly pre-monastic feature in this area; it contained a pot (FIG. 36, no. 19), which can be ascribed to the Viking hall period or possibly even earlier.

No buildings were found in the excavated area between the turf-walled hall and the present church except Room E built in the 14th century. In particular, there was no evidence of secular college claustral buildings or of residences for the secular canons. Houses for the latter are thought to have been situated to the W. of the church in the road now called High Bridge Street.

MISCELLANEOUS FEATURES OVER THE VIKING HALL

Here are described features, other than Room E and the sewer (F21), in the area of the Viking hall. Many of these features destroyed, or partially destroyed, the remains of the hall; these areas are marked D on FIG. 31, A. Some of the features are included on FIG. 33. A foundation with features F219-21 abuts Room E, and a nearby foundation (F217-18) is free-standing; a few medieval sherds were associated. A pit (F222) and a disturbance (F239) are other minor features. A more significant pit (F226) with a 12th-century rim sherd had been dug into a levelled wall deposit (F310) (section XYZ, FIG. 32); it was covered with upper pond-fill deposits, F228 and F227, both with sherds of the early 13th century.

Features not indicated on FIG. 33 but the positions of which are shown, without detail, on FIG. 31, A, include a rubbish pit (F208) and a trench (F210) each with *c.* 1540 material. A pit (F202) with less rubbish contains late 17th-century material.

A medieval feature shown in the SW. corner of FIG. 31, A, is a lead pipe (F204) (Appendix 4) set in clay (F205), with a construction trench (F203) (section, FIG. 32) containing sherds dated early 13th century. This may be part of the abbey's water conduit system, but it cannot be associated with any known buildings, nor was it seen in the vicarage garden trench. A simple lead furnace (F216), being a hole in the ground in which lead was melted with charcoal, was found close by; its position just under the topsoil was at the NW. corner of trench B31. Its date is unknown; it may have been connected with leadworking for windows or the water conduit.

Some of these features are significant, since they cut into, or cover Viking-hall features, and show that the hall did not survive the 12th century — being almost certainly levelled off before the building of the cloisters. It is conceivable that by 1177 the hall had become one of the barns then removed.

Pottery in F228 and F229 suggests that the section of the pond lying well to the W. of the claustral buildings was not finally filled until the early 13th century.

THE CLOISTER WALK EXCAVATION (FIG. 35)

The narrow trench in the cloister walk was excavated to see if the linear ditch, the Viking hall or the pond extended so far E. The S. bank of the pond was found to continue: the ditch was found to end in the excavated area, or perhaps it was interrupted. No trace of the hall was found and it is taken to have ended in the unexcavated area (FIG. 30).

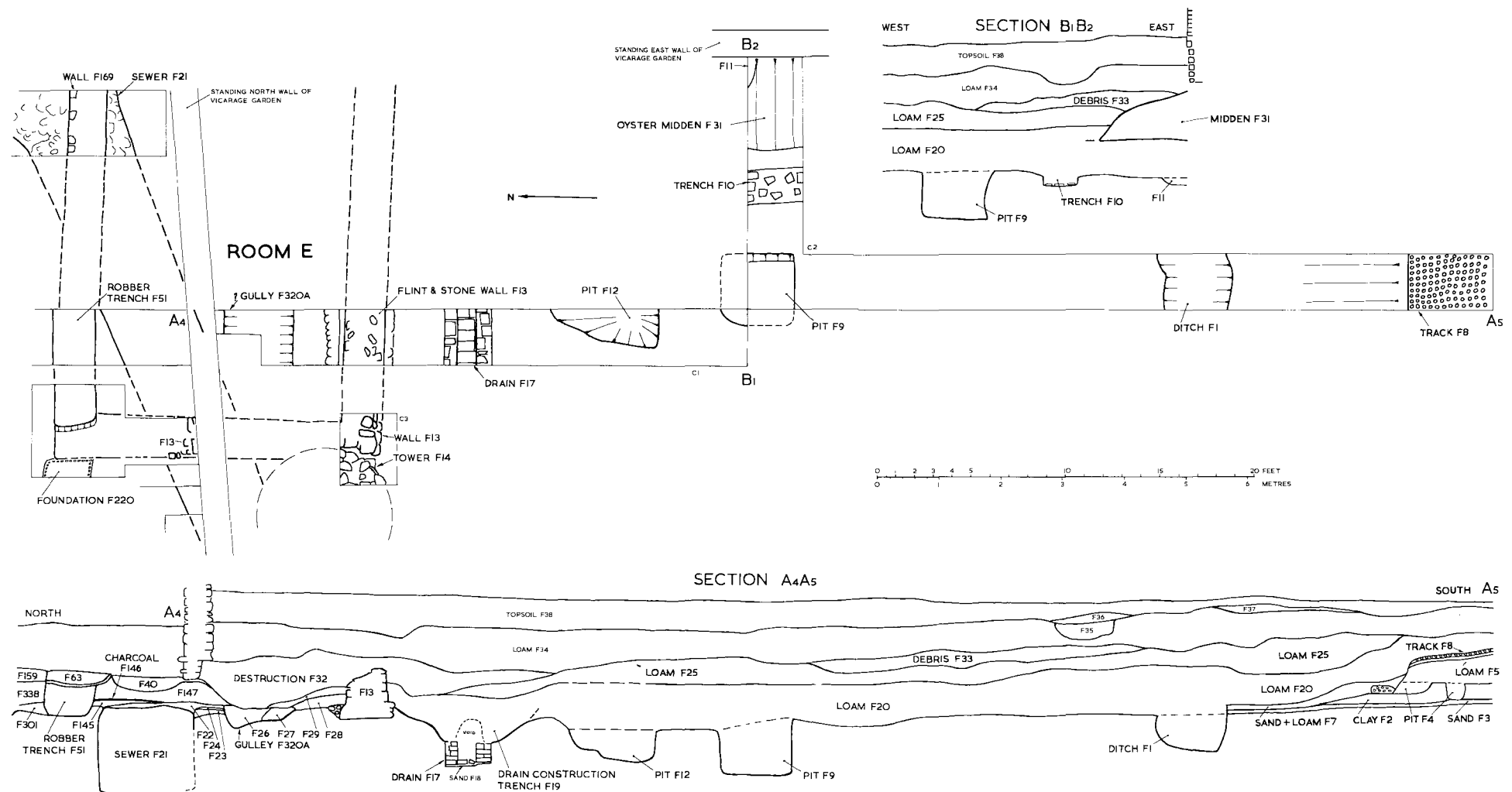


FIG. 34
WALTHAM ABBEY, FEATURES IN VICARAGE GARDEN
Plan and sections A4 A5 and B1 B2

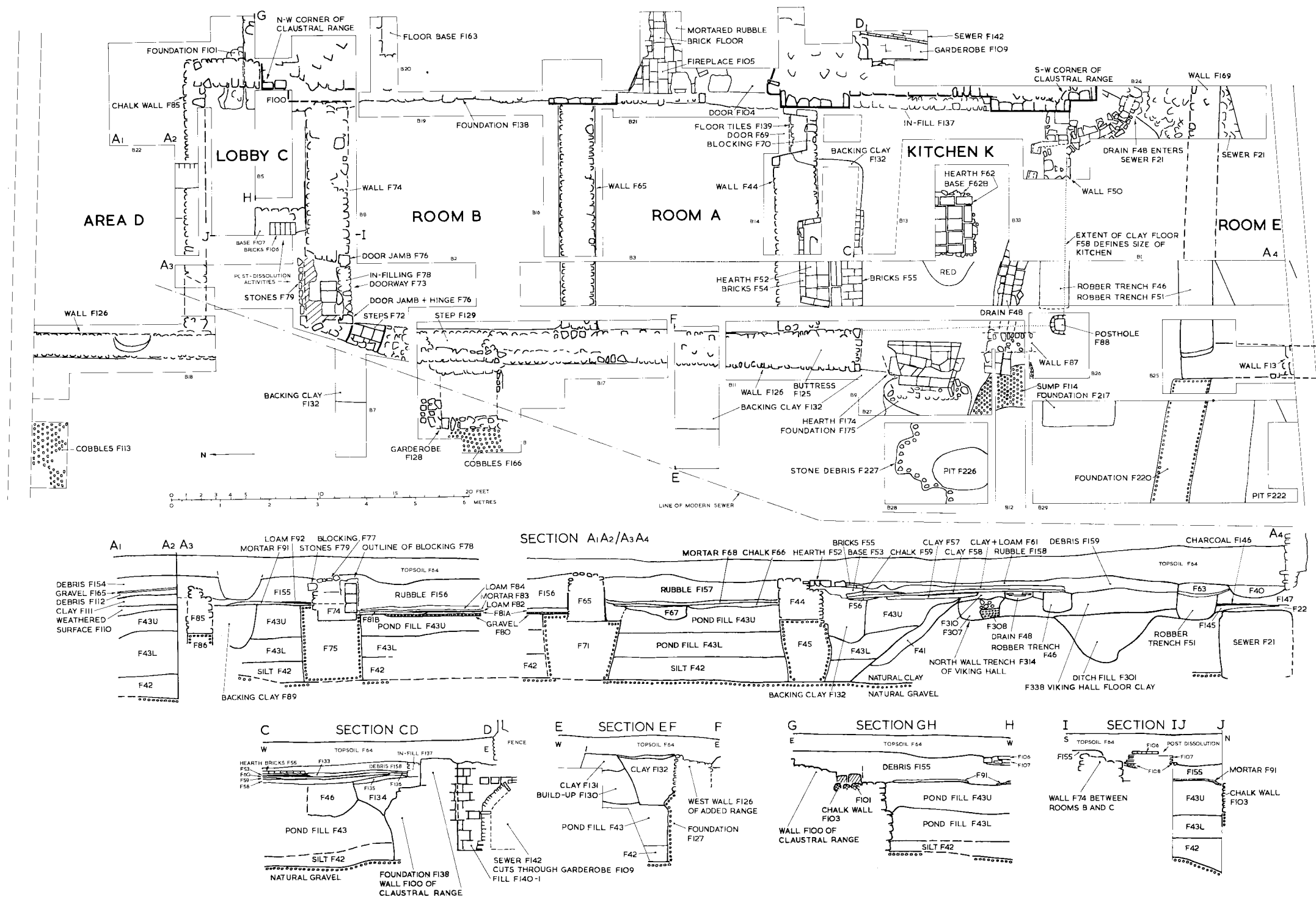


FIG. 33
WALTHAM ABBEY, MONASTIC BUILDINGS IN ABBEY CLOSE
Plan and sections A1 A2 A3 A4, CD, EF, GH and IJ

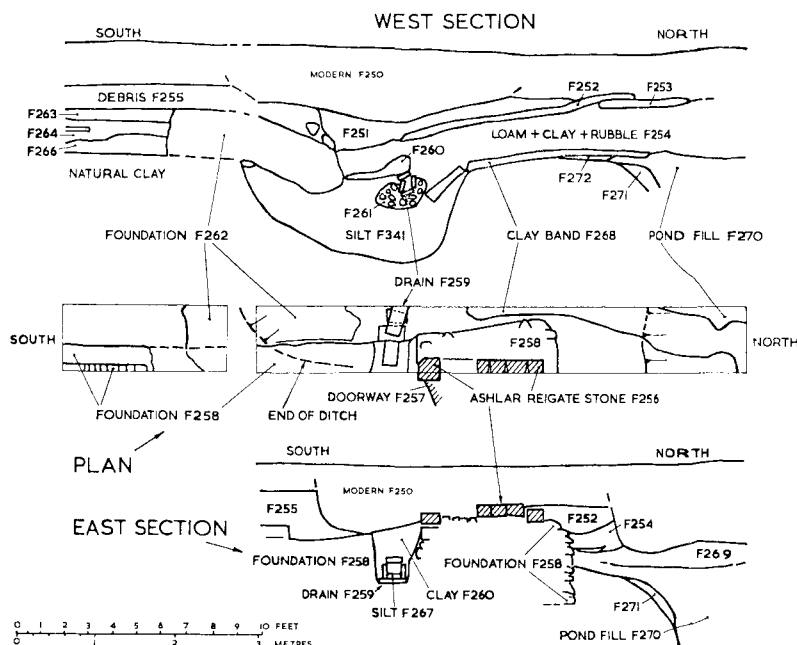


FIG. 35

WALTHAM ABBEY, CLOISTER WALK

Plan and sections of excavations

Excavations had previously taken place in the cloisters and their extent determined. In the present work the NW. corner of the wall between the walk and the garth was seen. The wall, like the NW. claustral building, had Reigate stone ashlar. One jamb stone of a, probably small, door (F257) from the walk to the garth was found; this area of the cloisters is a likely position for the monastic wash place or *lavatorium*. The wall foundations here were carried down only 0.5 m. into the natural clay and had a total depth of 1.1 m.

A brick drain (F259) had been inserted through the doorway and had collapsed into the silt of the underlying ditch. The drain was constructed of Great bricks (Appendix 8), and the few sherds in the surrounding material (F261) (W. section, FIG. 35) suggest a date of 1300–50. The base of a urinal (Appendix 5) was found in the silt (F267) of the drain. A band of distinctively fine clay (F268) (plan and sections, FIG. 35) is comparable with that seen surrounding the lead pipe (F204) in Abbey Close.

THE MONASTIC REMAINS: DISCUSSION

By K. N. BASCOMBE

The first period of excavated monastic remains is represented by a shallow westward projection from the main claustral buildings. The presence of the garderobe pit (which can be paralleled in a similar position⁷³ at the Augustinian priory of Holy Trinity, Aldgate, London) suggests a domestic use for the building or some part of it. The shallow pilaster buttresses of this wall agree with a date soon after the refoundation of 1177. The doorway in the middle bay would give access to the ground floor of the western range, probably used as cellarage and perhaps also as accommodation for guests' servants. The 1286 documentary reference makes the placing of the canons' kitchen in this area less probable. The gravel track further S. presumably led to the outer parlour.

The rooms added in the early 14th century are clearly residential in character. Room E, with its latrine tower, may have supported a great chamber, such as was commonly built⁷⁴ for an abbot in the 13th century, adjacent to the former guest-hall (on the upper floor of the western range), which now typically became reserved for the principal guests — other travellers being relegated to a separate guest-house. A comparable, if somewhat larger example, of 14th-century date, may be seen at the Cluniac priory of Castle Acre (Norfolk). For the addition of rooms to the western side of the claustral buildings there is again a parallel at Holy Trinity, Aldgate, where the original western range was evidently extended (possibly in more than one phase), along the whole of its length, by an extra range of rooms added to its western side. The financial difficulties experienced by Waltham Abbey after 1320 may have been caused in part by the expense of building works. The kitchen, K, whose erection *c.* 1370 would have marked another step in the conversion of the abbot's residence into a self-contained house, is of much poorer workmanship. About 1376 Abbot Litlington, of the much richer, Benedictine, abbey of Westminster, built himself a whole new residence on a grand scale.⁷⁴

The discovery of a drain from the cloister walk into the garth, together with possible evidence for the laying of a lead pipe, near the NW. angle of the cloister, raises the question of the siting of the *lavatorium*. The tin basin referred to³⁰ in 1214 was presumably destined for the *lavatorium*, and in 1222 it, apparently, is mentioned⁷⁵ as lying within the 'quadrangle', that is, the cloister. A post-reformation ornamental pond straddling the site of the N. cloister walk has been reported elsewhere,⁷⁶ and a section of lead pipe was found in connexion with this feature. It is now suggested⁷⁷ that Waltham possessed a *lavatorium* projecting into the cloister garth from the centre of its N. side; as the ornamental pond was not dismantled, final determination of this point must await future excavation. Most of

⁷³ Dickenson (1968), pl. xiii; the original is a fine late 16th-century plan (BL, Maps 186 h. 1 (10)).

⁷⁴ Brakspear (1933), 139-42.

⁷⁵ BL, Harl. MS. 391, f. 5.

⁷⁶ Huggins (1970), 232-3.

⁷⁷ This was first put forward by J. T. A. Burton some years ago but not published.

the existing examples in Britain of this type of feature are of the late 12th or early 13th century.

THE MONASTIC ROOMS AND THE 1540 INVENTORY

Of the rooms listed in the inventory taken at the dissolution (see Documentary Evidence) the fittings and contents fall into three groups. The first includes the contents of rooms (i) to (iv) (the only rooms with wainscoting) that are unreserved. The second includes items reserved for the abbot; presumably the rooms in which these stood had formed part of the abbot's lodgings, and the items had been his personal belongings. The third group includes those contents reserved for Mr Denny; some of these were in the royal chambers, and may have been for the personal use of the king — for whom Denny, soon to become keeper of the site, could have been acting as agent. The house which Anthony Denny's grandson occupied c. 1600 lay to the E. of the cloisters, and possibly had some connexion with the earlier royal lodgings. If so, and the abbot's lodgings formed part of the same group as the royal lodgings, the excavated structures cannot be identified with either. If, however, the rooms mentioned in the inventory did not form a single group, then the excavated rooms may indeed be some of those referred to in 1540.

CONCLUDING REMARKS

A great area of the abbey site remains unbuilt upon, but only for the chapter house, where excavation⁷⁸ took place in 1972, is there any immediate prospect of further investigation. There may be more evidence of the Viking hall to the E., but the actual end may have been destroyed by the foundation or (?) undercroft of the W. claustral range; this point cannot be investigated at present. In recent years emphasis has turned to town development; five excavations⁷⁹ have taken place therein and a sixth is planned for 1976.

The finds and the excavation records are in the collections of Waltham Abbey Historical Society; anyone who can contribute to their description or identification is welcome to contact the society.

APPENDIX I

POTTERY (FIGS. 36-40)

By R. M. HUGGINS

Several groups of pottery from the excavation are of particular interest. Middle and late Saxon pottery, associated with the construction of the Viking hall and from underlying features, is the first large group of pottery of this period to be found at Waltham. It provides a range of rim forms for grass-tempered pottery and includes Badorf relief-band amphorae sherds and Ipswich-type pottery. Also found were St Neots ware and

⁷⁸ By A. B. Havercroft for Department of Environment in 1972.

⁷⁹ In Greenyard, Romeland, Market Place and Sun Street, all in advance of development. The planned excavation is in Church Street. Notes in *Medieval Archaeol.*, xviii (1974), 199; *Post-Medieval Archaeol.*, vii (1973), 104; viii (1974), 122.

local coarse-shell-tempered ware, which were both found in quantity in the Saxo-Norman enclosure group under the monastic forge.⁸⁰ In the present excavation grass-tempered and sandy handmade ware occurred frequently. The technique of tempering handmade pots with fragments of grass or chaff can be paralleled at the early Saxon site of Mucking (Essex)⁸¹ and recently at a local site at Nazeingbury;⁸² at neither of these sites was shell-tempered pottery found. A long period of use for this ware, perhaps throughout the Saxon period, seems likely.

The filling of the pond included an early 13th-century group with some jugs and a curfew.⁸³ This pottery is surprisingly late⁸⁴ if the claustral buildings were erected at the end of the 12th century, and it can only be assumed that this part of the pond stood open for some reason after the rest had been filled in. Alternatively the pottery is earlier than has been thought up to now.

A small group (FIG. 38, nos. 1-15) from the open area (F110) to the W. of the claustral building, established after the filling of the pond, continues the sequence, with red sandy ware becoming predominant. When the 14th-century rooms were added to the claustral buildings, domestic rubbish began to be deposited to the S. of them outside the wall of the western claustral building. This rubbish contained a high proportion of jugs, probably for serving wine, very few cooking pots, and little imported ware until the late 15th-century stoneware became available. A comparison of jug rims with cooking pot rims shows a marked resemblance, and a development of these jugs is suggested.⁸⁵ References to local potters begin in the early 14th century, and it seems very likely that many of these jugs were made at Waltham.⁸⁶

The group from the destruction layers and pit F208 can be closely dated *c.* 1540 when the abbey was dissolved. The maiolica dish with *IHS* monogram would not have been made after 1540.⁸⁷ The 17th-century group was associated with stone robbing and sewer works; it also contained clay pipes, dated *c.* 1640-80, and square and round glass bottles of mid 17th-century type.⁸⁸ Buff ware from Surrey and Hampshire is more common in this period.⁸⁹

A list of types of ware is given below; these are the same types already established from previous excavations⁹⁰ at Waltham; the present excavation has provided some fresh evidence but has not altered the sequence.

- A. Grass-tempered, handmade, black pots. No bases were found; some fabric is thick with reddish surface. There is considerable variation in temper, hardness and thickness. Where sand temper can be seen to have been included this is designated AC; the distinction between A and C is difficult to make when the grass or chaff temper is only visible in section, surfaces being smooth and sometimes burnished. Small pots are often blackened inside and may have been lamps (71 sherds of A; 65 sherds of AC).
- B. Gritty, handmade ware, black or brown fabric, grits standing out to make rough surface. Rim FIG. 36, no. 1, is only one found; it has slight thumbing,

⁸⁰ Huggins (1973), 155-67.

⁸¹ Jones (1969), 145-56.

⁸² At present being excavated by the authors for Waltham Abbey Historical Society.

⁸³ Discussed by Hurst (1961), 265-7. See also Hurst in Cunliffe (1964), 126 and fig. 45; and C. and J. Orton and P. Evans in Sheldon (1974), 72-3.

⁸⁴ The curfew or firecover (FIG. 37, no. 32) is identified as 'Northolt k ware', dated 1225-1325 by Hurst (1961), 267; FIG. 37, no. 33, is in the same ware. FIG. 37, no. 34, and the 'fish-scale' green-glazed jug sherds are unlikely to be earlier than 1225.

⁸⁵ A similar resemblance was noted in the well group in Huggins (1973), 167.

⁸⁶ R. M. Huggins in Huggins (1969), 69.

⁸⁷ J. G. Hurst in Beresford (1971), 362-4.

⁸⁸ Hume (1974), 60-76.

⁸⁹ Holling (1971), 57-88.

⁹⁰ Huggins (1969), (1970), (1972), (1973).

- reminiscent of prehistoric pottery, but type has occurred elsewhere with Saxon pottery (27 sherds).
- C. Fine-sand-tempered, handmade pots, grey or black. Shapes are similar to type A (45 sherds).
- D1. 850–1200. Pots and inturned bowls of St Neots type, tempered with finely broken shell, wheelmade (59 sherds).
- D2. 850–1300. Pots tempered with coarse-shell fragments, not wheelmade until after conquest, sometimes only rim wheelmade. Red, grey or black fabric. Early pots are soft and friable, later sand was added to make fabric harder. FIG. 37, no. 25, shows change to red sandy ware almost complete, with only trace of shell temper in 13th-century pot (169 sherds).
- E. 11th and 12th-century sandy fabric not found in this excavation.⁹¹
- G. Coarse-sand-tempered, grey ware, with some brown surfaces. Wheelmade, large diameter pots. This ware is thought to originate in Hertfordshire or Middlesex⁹² and competes with local shelly ware (D2) in 12th and 13th centuries (179 sherds).
- H. 1200–1500. Red sandy ware, unglazed, cooking pots (132 sherds).
- J1. Imported jugs and pitchers, including Badorf relief-band amphorae⁹³ and Ipswich-type pots or pitchers. Ipswich ware is thought to end in 850⁹⁴ but Waltham fabric has been shown not to originate at Ipswich (see Petrological Note); therefore may be later. Amphorae have unrouletted bands which may be late; they have been found elsewhere in 9th to 10th-century contexts. Sherds of Stamford ware with yellow glaze should be post-conquest. Fine white ware with apple-green glaze (FIG. 38, nos. 11, 18) is probably French, late 13th or early 14th-century.⁹⁵ Sherds of polychrome jugs (FIG. 38, no. 17; FIG. 39, no. 26) were found and one (FIG. 38, no. 32) is possibly a Rouen fragment.⁹⁶ Sherds of Siegburg and Raeren stoneware (one of the latter green-glazed) were found in 15th and 16th-century levels. Rim of 15th-century fine white ware cup with green glaze⁹⁷ (FIG. 39, no. 38) may be from Surrey or France. Buff ware is only found in any quantity in 17th century (FIG. 40, nos. 26–9).
- J2. 1250–1500. Red, sandy ware jugs of Essex type. Some early attempts at glazing can be found on 12th to early 13th-century fabrics. Change to well-fired red ware seems to have occurred at Waltham 1250–1300 (see pots in F110) (FIG. 38). Rim forms in pit-group F10/12 (FIG. 38, nos. 20–2, 24–6) seem to develop from F110 pots; they closely resemble each other and are probably local. Cooking pot rims give date *c.* 1300 for group. Jug rim from lowest level of F20 (FIG. 39, no. 1), with long straight neck and five painted bands, may be earlier. Jugs from F20 show reduction of neck bands and shorter moulded neck; strap handles⁹⁸ become common replacing early fashion for rod handles. Oyster midden (F31) shows 15th-century jugs with changed rim form (FIG. 39, nos. 35, 36); jugs in F25 (FIG. 39, nos. 30–3) are probably late 15th or 16th-century, with very little glaze and white slip carelessly applied. Throughout period these jugs may be decorated by white slip painting or coated with white slip covered by green glaze which has often disappeared. FIG. 38, nos. 25, 26, demonstrate different decorative techniques on almost identical jugs.

⁹¹ Discussed in Huggins (1973).

⁹² Notably at Northolt (Hurst (1961), 261–2), and at S. Mimms excavated by J. P. C. Kent.

⁹³ J. G. Hurst in Dunning (1959), 54–5; and Lung (1955), 56–66.

⁹⁴ J. G. Hurst in Dunning (1959), 14–19.

⁹⁵ Rackham (1972), figs. 74, 75, have decoration in similar technique.

⁹⁶ Barton (1966), 73–85.

⁹⁷ Matthews and Green (1969), fig. 3 and p. 10.

⁹⁸ At Writtle (Essex) double thumbled handles with piercing appear before 1306; strap handles become more common after this date. Rahtz (1969), figs. 53, 54.

- K. Pink ware with mottled green glaze. Quite common elsewhere at Waltham⁹⁹ in 15th and 16th centuries but here represented by only 10 sherds.
- L. Hard, grey ware, sometimes decorated with white bands; 15th-century, but again represented here by only 6 sherds.
- M. Fine red ware, 16th-century, decorated with brown glaze. Pit group F208 contained several forms made in this ware, including pipkins, chafing dishes and shallow bowls.
- N. 17th-century development of group M, certainly made locally; kilns are known at Harlow,¹⁰⁰ Loughton¹⁰¹ and at Waltham.¹⁰² Trailed slip decoration (FIG. 40, no 20) is distinctive feature.

PETROLOGICAL NOTE ON AN IPSWICH-TYPE SHERD

A petrological examination of a grey, Ipswich-type sherd from F307, the foundation loam of the Viking hall walls, was made by Dr D. F. Williams as part of a general investigation being carried out into the characteristics of Ipswich ware.

Williams distinguishes three groups in his preliminary work, using twelve sherds from different sites in Ipswich, Rickingham, Blythburgh and Tattingstone (all in Suffolk), the Treasury (Whitehall, London) and Waltham. He places the Waltham sherd in Group 3 with the Blythburgh and Tattingstone specimens. His analysis and discussion of the sherds in this group follow:

Like the other two groups, quartz, with some quartzite, is the predominant temper, in an optically anisotropic clay matrix. However, the average grain size, about 0.1 mm., tends to be larger than in Group 2 — excluding the large coarse additions — but smaller and more angular than in Group 1, indicating a much finer-grained mix. Also present is a plentiful amount of muscovite, and small amounts of plagioclase and flint.

Although Group 3 does not include any vessel from Ipswich, given the rather ubiquitous nature of the inclusions in thin section, it is not possible at this stage to rule out entirely an origin in or around Ipswich for this group. All that can be said safely is that, on present evidence, the temper employed in these three vessels is not similar to known Ipswich ware vessels from Ipswich.

CATALOGUE

POTTERY FROM PRE-HALL FEATURES (FIG. 36)

F306 gully

1. Rim of vessel, sand temper, thick black core, red surfaces, worn (C).
2. Rim of small vessel, grass temper, black inside, brown outside surfaces (A).

F311 old ground surface

3. Rim of small pot, handmade, sand temper, brownish black outside, blackened inside (C).

F325 shallow pit

4. Rim of small pot, black fabric, sand and grass temper (AC).
5. Rim of pot, black fabric, sand temper (C).

F336 pit

6. Rim of pot with worn outer surface, smooth black inner surface, red core, grass temper (A).

F327 shallow pit

7. Rim of small pot, black fabric, grass and sand temper (AC).

F307 wall-foundation loam of hall

8. Rim of pot, handmade, black inside, brown outside, grass with some sand temper (AC).
9. Rim of pot, dark grey fabric, sand and some grass temper (AC).
10. Rim of pot, handmade, black fabric, some grass and fine-sand temper (AC).

⁹⁹ Huggins (1969), fig. 25.

¹⁰⁰ Cooper (1968), 22-30.

¹⁰¹ *Post-Medieval Archaeol.*, IV (1970), 182.

¹⁰² As well as the 19th-century pottery kilns which existed in Wood Green Road and which probably had 17th-century predecessors, a post-medieval kiln was seen briefly at Jacks Hatch, on the Waltham boundary, during building work.

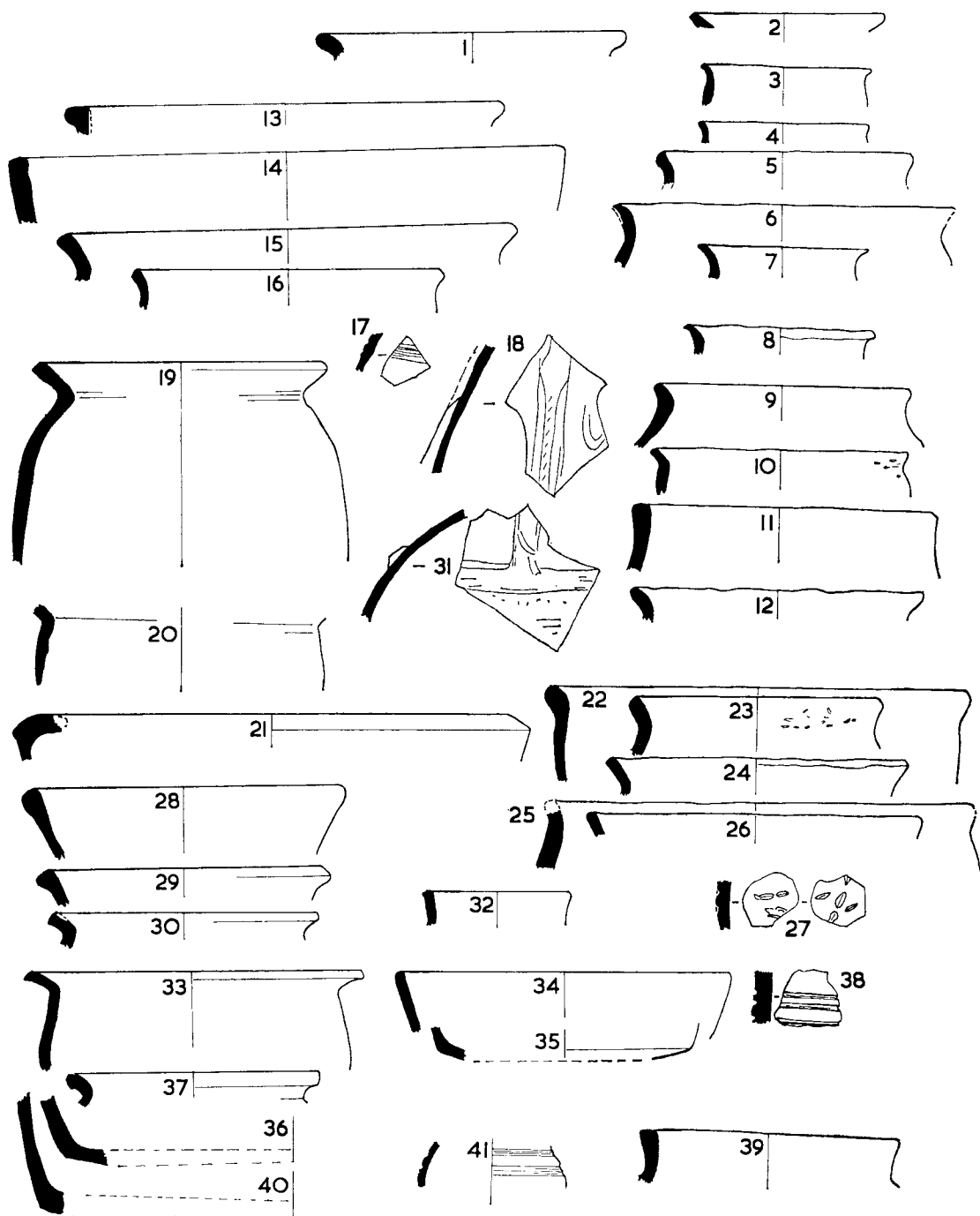


FIG. 36
 POTTERY FROM WALTHAM ABBEY
 Finds from pre-hall features. Sc. 1:4

11. Rim of thick pot, handmade, black fabric, grass temper (A).
12. Rim of pot, fine sand with some grass temper, black inside, outside surface red like no. 1 (AC).
13. Worn fragment of rim, red outer surface, grey core, coarse-shell temper (D₂).
14. Rim of upright form, handmade, red surfaces with grey core, sand and coarse-shell temper (D₂).
15. Rim of pot, wheelmarks, coarse-shell temper, blackened under rim (D₂).
16. Rim of small pot, black fabric, shell(?) temper (D?).
17. Sherd of pink fine ware, wheelmade with incised lines on outside. Badorf ware.
18. Large sherd of amphora, pink fabric like 17, with applied strip decoration partly pulled away, core lighter pink. Badorf ware.

F9 pit S. of hall, in vicarage garden

19. Large sherd of pot, coarse-shell temper, reddish brown surfaces blackened with burnt encrustation inside and over rim, handmade (D₂).

F300 ditch silt

20. Neck sherd of pot, coarse-shell temper, reddish brown surfaces, grey core (D₂).
21. Rim of bowl with inturned rim, fine-shell temper, grey core, brown surfaces, blackened on top of rim. St Neots ware (D₁).

F301 ditch fill

22. Rim of heavy pot, black burnished outer surface, traces of red inside, worn surfaces, grass temper (A).
23. Rim of pot, black ware, grass and some sand temper (AC).
24. Rim of small pot, black ware, grass temper (A).
25. Sherd of black ware, much grass temper (A).
26. Worn rim of small pot, black ware, grass and sand temper (AC).
27. Two sherds of coarse black ware, grass and sand temper, roughly decorated with rusticated (probably finger-nail) impressions (AC).
28. Rim of pot with all surfaces worn, coarse-shell and sand temper, red fabric (D₂).
29. Rim of pot, black ware with fine-shell temper (D₁).
30. Rim of pot, black surfaces, grey core, fine-shell temper. St Neots ware (D₁).
31. Large sherd of relief-band amphora, buff surface on pink body, relief bands applied to body pulled away at top of sherd, wheelmade. Sherd fits one in F307. Badorf ware.
32. Rim sherd of fine grey ware, wheelmade. Ipswich-type ware.

F308 gravel foundation under F307

33. Large rim sherd of pot, fine-shell temper, brown surface outside, inside surface leached and worn (D₁). Found with large sherd of coarse black pot with sand and some grass temper. Sherd from F305 fits this larger piece.

F309 wall deposit above F307

34. Rim of straight-sided bowl, hard, dark grey smooth surface, fine-sand temper, wheelmade. Roman?
35. Base of pot, red sandy ware (H).
36. Base of pot, coarse shelly ware (D₂).

F310 destruction of wall

37. Rim of pot, fine-shell temper, pink surfaces, grey core, wheelmade. St Neots ware (D₁).

F228 clay deposit over walls of hall

38. Sherd with deep grooving on outside, coarse black ware, some grass temper. Similar fabric to 27 above (A). (Derived with five 13th-century jug sherds.)

F341 ditch silt in cloister

39. Rim of pot, black fabric, sand and some grass temper (AC).
40. Sagging base of large pot, coarse-shell temper (D₂).
41. Sherd of small jug, grooving on shoulder, fine white ware, pale yellow glaze outside, wheelmade. Stamford ware.

POTTERY FROM VIKING HALL PERIOD AND POND (FIG. 37)

F338 clay floor of hall

1. Rim fragment of pot, worn brown fabric, rough surface with white flint temper, thumbled edge of rim (B).

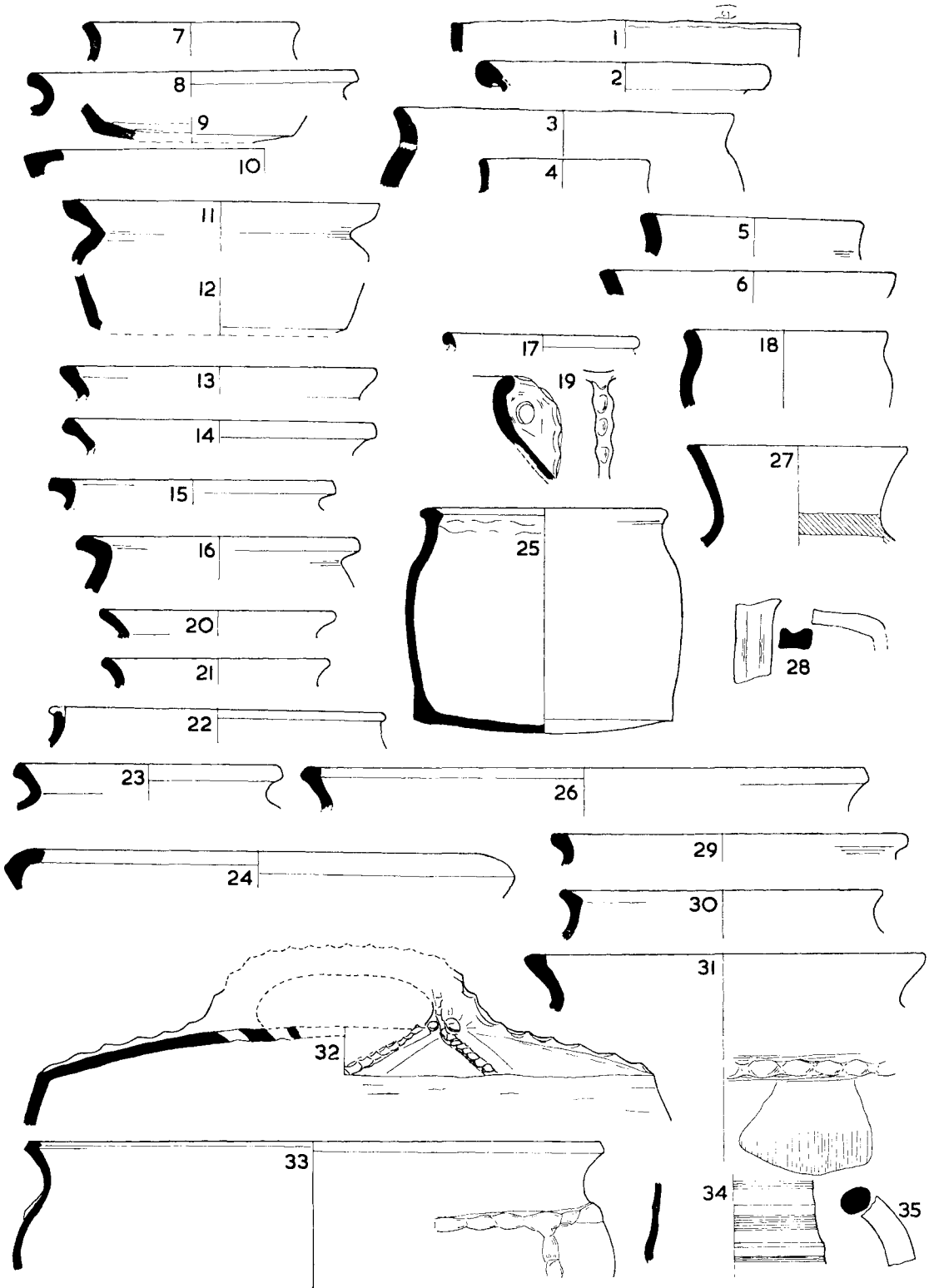


FIG. 37
 POTTERY FROM WALTHAM ABBEY
 Finds from Viking hall period and from pond. Sc. 1:4

2. Rim, brown fabric, sand temper giving rough surface (C?).
3. Rim and sherd of heavy pot, much grass temper, black with red outside surface (A).
4. Rim of small pot, black fabric with sand and some grass temper (AC).
5. Rim of pot, fine grey ware, some burnishing outside neck. Ipswich-type ware.
6. Rim of similar fabric to 5, reddish margins.
7. Rim of small pot, black inside surface and core, brownish outside, fine-shell temper. St Neots ware (D1).
8. Rim of pot, pinkish surface surfaces blackened on top of rim, fine-shell temper. St Neots ware (D1).
9. Base of pot, slightly sagging, pink surface outside, grey inside, fine-shell temper. St Neots ware (D1).
10. Rim of bowl, pink surfaces, grey core, fine-shell temper. St Neots ware (D1).
11. Rim of pot, grey core, red surfaces, coarse shelly ware, wheelmade (D2).
12. Base, of similar ware to 11 (D2).
13. Rim of pot, fine shelly ware, black inside, brownish outside (D1).
14. Rim of pot, black ware, coarse-shell temper (D2).
15. Rim of pot, fine-shell temper, blackened outside and below rim, wheelmade (D1).
16. Rim of pot, coarse-shell temper, blackened inside and on top of rim and outside, wheelmade (D2).

F42 and 43, pond silt and fill

17. Rim fragment of red, fine, burnished ware. Samian type.
18. Rim of small pot, fine-sand temper, black ware with brown surfaces (C).
19. Pierced vertical lug handle of large vessel with evidence of rim shape, thumb on back, soft coarse shelly fabric, red surfaces. Presumably one of several handles placed round rim. (D2).
20. Rim of pot, leached shell, blackish brown surfaces, grey core, probably wheelmade (D2).
21. Rim of pot, black shelly ware (D).
22. Rim of pot, red surfaces, coarse-shell temper, wheelmade, grooved on top of rim with signs of extra clay being added to form rim (shown white in section) (D2).
23. Rim of pot, fine-shell temper, blackened on outside and at top inside, otherwise red inside. St Neots ware (D1).
24. Rim of inturned bowl, fine-shell temper. St Neots ware (D1).
25. Almost complete pot, coarse-sand temper with traces of shell, grey core, black below rim, reddish brown outside with grey patch where pot fired close to another. Rim only wheelthrown with clay overlapping below (G). Found with 32.
26. Rim of large pot, grey sandy ware with some traces of shell, orange to buff surfaces, wheelmade (G).
27. Rim of jug, buff sandy ware, pale orange surfaces, patchy yellow glaze on outside over painted brown linear pattern (J1).
28. Strap handle of jug, buff ware, yellow glaze overall. Stamford ware?
29. Rim of pot, grey ware, coarse-sand temper (G).
30. Rim of pot, coarse-sand temper, trace of shell, reddish surfaces, grey core (G).
31. Rim and body sherd of large pot, grey ware, coarse-sand temper, applied thumb band on shoulder and incised vertical lines below (G).
32. Curfew, light grey ware, coarse-sand and grit temper, blackened underneath, three applied thumb bands radiating from trace of handle which has pierced holes at base. Northolt k type.
33. Rim of large pot with applied thumb band on shoulder, coarse gritty temper. Northolt k type.
34. Body sherd of jug, fine red ware, outside rilled with green mottled glaze overall (J1).
35. Rod handle of jug, grey ware with red surfaces, green glaze splashes.
Also found were sherds of similar ware with applied 'fish-scale' ornament covered by green glaze (J1).

POTTERY FROM 13TH AND EARLY 14TH-CENTURY FEATURES (FIG. 38)

F110 above pond, area D

1. Rim of cooking pot, shelly ware with red surfaces, grey core, worn (D2).
2. Rim of cooking pot, grey sandy ware (G).
3. Rim of red sandy ware, possibly jug (H or J2).

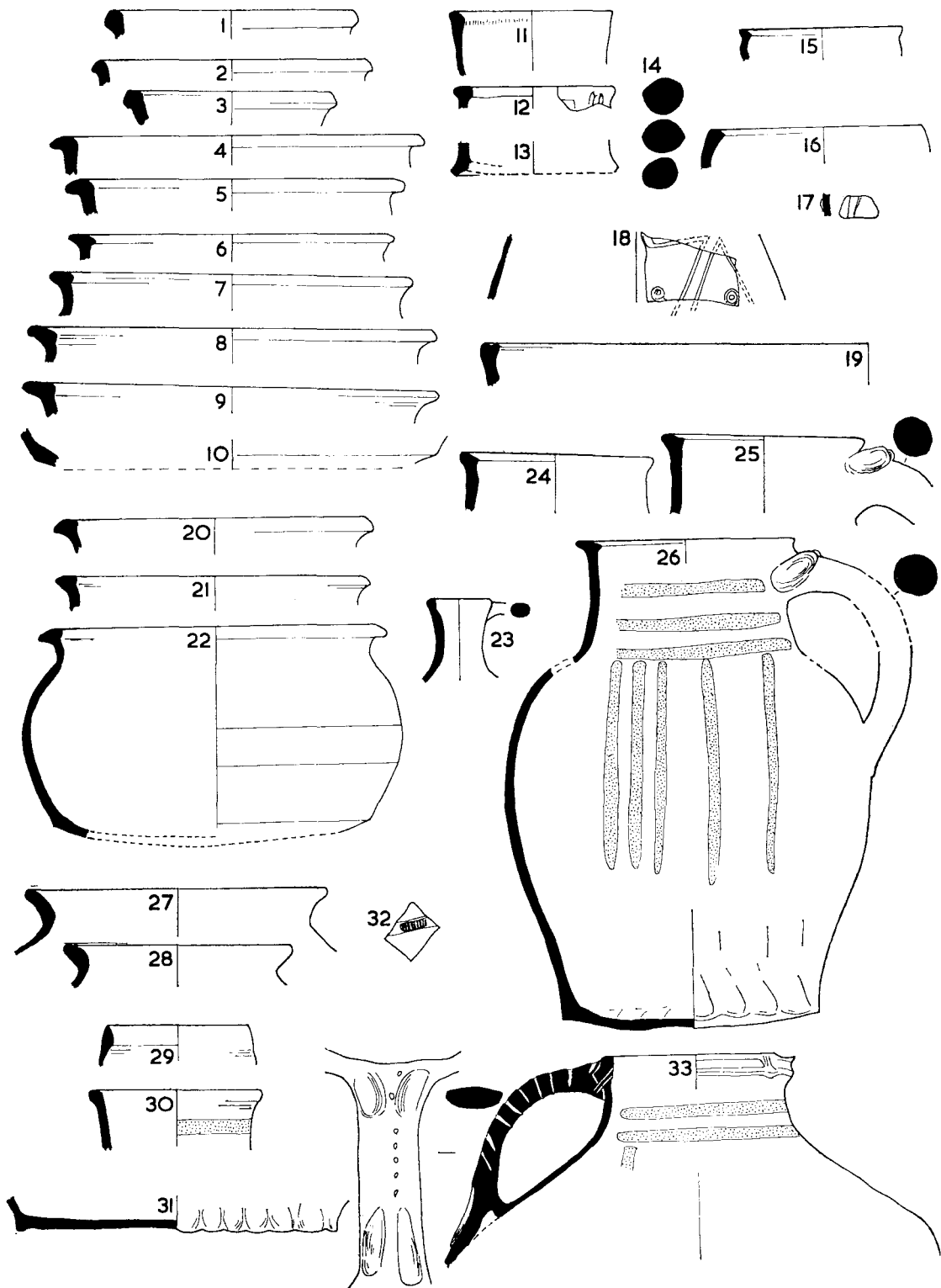


FIG. 38

POTTERY FROM WALTHAM ABBEY

Finds from 13th and early 14th-century features. Sc. 1:4

- 4-6. Rims of cooking pots, red sandy ware with grey core, worn (H).
7. Rim of cooking pot, red sandy ware with grey core, less worn than 1-6 (H).
8. Rim of cooking pot, brighter red than 3-7, sandy, grey core in thick part of rim only, trace of glaze (H).
9. Rim of cooking pot, red surfaces, grey core, sandy, greenish brown patch of glaze on rim (H).
10. Base of cooking pot, red sandy ware (H).
11. Rim of jug, whitish fine wheelmade fabric, green-glazed outside. Probably French import (J1).
12. Rim of jug, red ware, fine-sand temper, dark green glaze over white slip outside and over rim to inside, moulded decoration partly pulled away to show white slip under (J1).
13. Base of jug, red sandy ware, grey core, light orange surfaces, trace of glaze outside (J2).
14. Sections of pieces of three different rod handles of jugs, traces of green glaze on two, one with white slip under glaze, all red ware (J2).

F136 infilling between buttresses in kitchen K

15. Rim of jug, red ware with grey core, red margins, white slip on both surfaces covered by green glaze outside (J2).

F143 make-up W. of steps F72 (see also 33 below)

16. Rim of jug, coarse sandy ware, brown surfaces (J).
17. Sherd of decorated jug, red sandy fabric with dark brown glaze, yellow barbotine vertical band (J1).

F15 construction trench for Room E latrine tower

18. Sherd of jug, whitish fabric like 11 above, green glaze over outside covering applied decoration (J1).

F28 clay piled against wall F13 of Room E

19. Rim of bowl, fine-sand temper, blackened on top and inside. (?).

F10 with F12, pit

20. Rim of cooking pot, red sandy ware, grey core, blackened outside and grey inside (H).
21. Rim of cooking pot, red sandy ware, blackened on outside, grey core (H).
22. Rim and base of cooking pot giving complete profile, red sandy ware, unglazed except for some splashes inside (H).
23. Complete rim and neck of small vessel with rod handle, shelly ware with reddish surfaces, grey core, olive green glaze outside and just inside rim (D2).
24. Rim of jug, grey core, red surfaces (J2).
25. Rim and rod handle of jug, red ware, white slip outside, glaze missing (J2).
26. Large part of jug with white painted decoration, rod handle deeply thumbbed at junction as on 25, red ware, brown glaze on upper decorated part showing yellow over slip, base thumbbed in slanting unusual style (J2).

F19 loam fill of construction trench for drain F17

27. Rim of cooking pot, red sandy ware, thick grey core, unglazed (H).
28. Rim of cooking pot, red sandy ware, unglazed (H).
29. Rim of jug, red sandy ware, unglazed (J2).
30. Rim of jug, red sandy ware, grey core, white band painted on neck, greenish glaze on lower part outside (J2).
31. Thumbbed base of jug, red sandy ware, unglazed (J2).
32. Sherd of jug, buff outer surface with darker peeling slip, possible glaze, rouletted applied band, reddish brown micaceous inside surface. Possibly French (J1).

F143 deposit W. of steps F72 (see also 16 and 17 above)

33. Complete neck and handle of jug, red ware, two white bands painted on neck and traces of vertical bands below, strap handle with double thumbing at both junctions and deep holes probably made by nail down back with two holes pierced from inside neck, traces of brown glaze outside (J2).

14TH TO 16TH CENTURY POTTERY FROM F20, F25 AND F31 IN VICARAGE GARDEN (FIG. 39)

F20 loam

1. Rim of jug with trace of handle, five horizontal white painted bands on neck and trace of vertical stripes on body, red sandy ware with grey core, partial speckly green glaze below rim outside (J2).

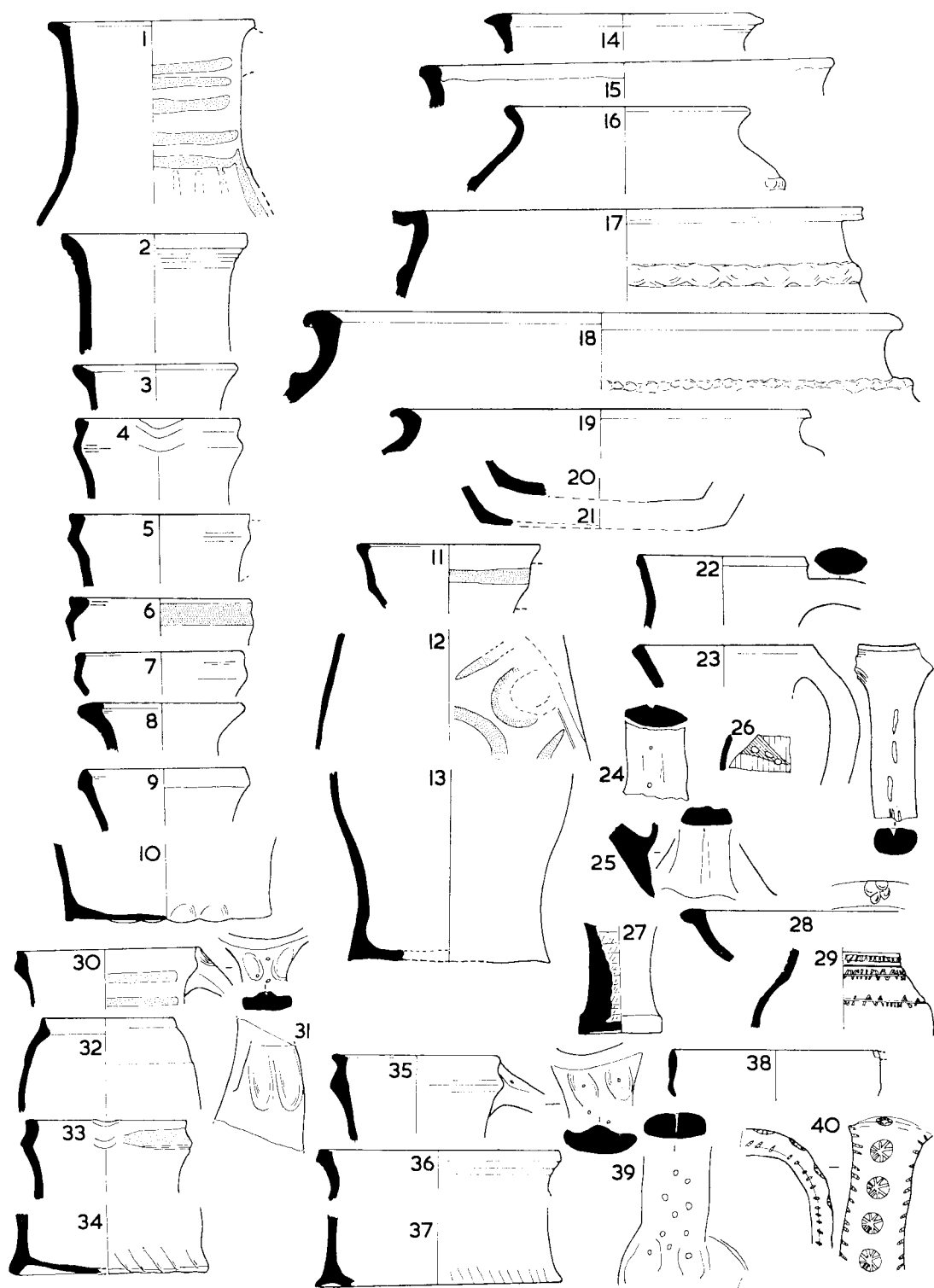


FIG. 39

POTTERY FROM WALTHAM ABBEY

Finds from F20, F25 and F31 in vicarage garden, 14th to 16th-century. Sc. 1:4

2. Rim of jug, red sandy ware, slight grey core, white slip outside and inside neck, glaze missing (J2).
3. Rim of jug, red sandy ware, trace of brown glaze on dark surfaces (J2).
4. Rim of jug with pulled lip, red ware with grey core, white slip covering both surfaces with remains of green glaze on outside (J2).
5. Rim of jug with trace of strap handle with double thumbing, red sandy ware, white slip covering both sides, trace of green glaze outside (J2).
6. Rim of jug, red sandy ware, white painted stripe round neck, glaze missing (J2).
7. Rim of jug, sandy buff ware with greyish core, pale orange surface inside, buff outside with patches of smooth green glaze (J1).
8. Rim of jug, red ware, white slip both sides, trace of glaze outside (J2).
9. Rim of jug, red sandy ware, orange inside surface, greenish glaze outside (J2).
10. Base of jug, red ware with two thumb marks outside which are probably repeated but not continuous (J2).
11. Rim of jug, red ware with white stripe on neck, trace of handle (J2).
12. Body sherds of jug, red sandy ware with white painted pattern outside, peeling off in places, thin greenish brown glaze pitted and patchy outside (J2).
13. Base of jug, red sandy ware with thick grey core, outside slip coated with patchy greenish brown glaze (J2).
14. Rim of pot, red sandy ware, grey core (H).
15. Rim of pot, red shelly ware, rim thickened with extra clay, wheelmade (H).
16. Rim of cooking pot, orange surfaces, grey core, small portion of thin thumbled band on shoulder (H).
17. Rim of storage jar, orange surfaces, grey core, applied thumbled strip decoration, unglazed (H).
18. Rim of storage jar, red ware, unglazed, narrow thumbled band on shoulder (H).
19. Rim of cooking pot, red sandy ware with grey core, dark surfaces, unglazed (H).
20. Sagging base of small pot, light orange inside surface, unglazed (H).
21. Sagging base of larger pot, similar fabric to 20, under side slightly burnt (H).
22. Rim of jug with strap handle, red sandy ware with traces of brown glaze (J2).
23. Rim and handle of jug, red sandy ware with grey core, traces of white slip outside, handle with deep slashes made with knife point or similar tool (J2).
24. Segment of strap handle, red ware with grey core, slip coated, shallow piercing on back, glaze missing (J2).
25. Base of similar handle with white slip and patchy green glaze (J2).
26. Sherd of polychrome jug, fine red ware, white slip coating outside, brown triangular pattern with white dots, green speckled glaze over surrounding area (J1).
27. Pedestal base of buff sandy ware, traces of pale yellow glaze inside (J1).
28. Rim of bowl, buff ware, moulded pattern applied on rim, green glaze overall (J1).
29. Body sherd of mug, with incised tooled pattern cut by horizontal incised grooves, grey fabric, brown salt glaze outside, grey inside. Raeren stoneware.

F25 loam above F20

30. Rim of jug, reddish brown surfaces, sand temper, double thumbled strap handle with shallow piercing, double white slip painted bands on neck (J2).
31. Handle base, similar fabric to 30 (J2).
32. Rim of jug with slip coating outside and inside rim only, red surface, grey core in parts, glaze missing (J2).
33. Rim of jug with pulled lip and painted slip band under rim, grey fabric with dark brown surfaces, no glaze visible (J2).
34. Base of jug, red sandy ware, dark inside surface, outside rough black glaze with white patches, rough diagonal marking (J2).

F31 oyster midden

35. Rim and strap handle of jug, double thumbled and pierced, orange red surfaces, sandy, grey core (J2).
36. Rim and moulded neck of jug, red ware with white slip on both sides (J2).
37. Base of jug, red sandy ware, grey core, base tooled down, no glaze visible (J2).
38. Rim of cup, white fabric, dark green glaze inside, patchy outside glaze, traces of small handle pulled away from rim (J1).

39. Base of strap handle, orange surfaces, grey core, sandy, slightly thumbbed at base, deeply pierced (J2).
40. Handle of jug, red surfaces, grey core, sandy, wheel design stamped on back, maggot stamp on sides, traces of yellowish glaze. A similar handle with identical stamp pattern but with brownish green glaze well preserved overall was recently found near the market place at Waltham with other 15th-century pottery (J1).

16TH AND 17TH-CENTURY POTTERY (FIG. 40)

F32 and F33, dissolution rubble S. of Room E

1. Sherd and strap handle of jug, light red ware, unglazed (J2).
2. Sherd and strap handle of jug, red ware with brownish glaze outside, moulded band at neck junction (J2).
3. Rim of bowl, unglazed red ware (M).
4. Rim of chafing dish with one of three 'horns', red ware, brown glazed inside and over rim (M).
5. Rim of vessel with broad white painted band, red ware, no glaze visible (J2).
6. Body sherd of mug, pale grey glaze. Raeren stoneware.
7. Filled base, brown glaze outside. Raeren stoneware.

F208 pit W. of kitchen

8. Rim of jug, unglazed red ware, roughly made (J2).
9. Rim and pedestal base of chafing dish or 'salt', red ware, some brown glaze inside bowl only, knife cut base (M).
10. Rim and base of tyg, purplish fabric with very dark brown glaze inside and out except under base, sharply rilled (M).
11. Base with bung-hole of cistern, red ware, dark surfaces, unglazed, knife trimmed (M).
12. Shallow bowl, diameter uncertain possibly oval, pulled lip, fine ware with glaze inside, fabric and glaze reduced to greyish colour by heat, knife cut (M).
13. Rim and base of pipkin with pulled lip, no handle found, red ware, brown glaze both sides (M).
14. Large part of shallow bowl, red ware with some grey core in thickness of wall, clear brown glaze inside base (M).
15. Small dish, buff ware, green speckled glaze inside, outside roughly finished with splashes of glaze only. Surrey ware.
16. Base of maiolica bowl, with part of *IHS* monogram painted in blue with yellow circle round it, soft buff fabric with bluish tin glaze both sides, wire marks under base.
17. Base and shoulder with moulded band of mug. Raeren stoneware.

F162 robbing of walls F74 and F100; and F140 over brick sewer F142

18. Large part of chafing dish with three 'horns' and pulled lug. F162. (M).
19. Sherd of stoneware, brown glaze, stamped with arms of Amsterdam, initials *SR* on either side of shield. F162.
20. Rim of dish, trailed white slip decoration on red ware with brown glaze showing yellow over slip. F140. Metropolitan ware (N).
21. Neck of bottle with handle and mask, stoneware. F140.
22. Neck of bottle with handle and mask, stoneware, pale brown to grey mottled glaze outside. F140.
23. Neck of flask, red hard earthenware almost stoneware, unglazed, dark surface. F162. Hurst type III. (For complete vessel see Mynard (1969), fig. 11, no. 13.)
24. Base of small jar, plain white glaze both sides. F140. Delftware.
25. Rim of pot, blue spots and lines on creamy base, lowest line yellow. F162. Delftware.
26. Bowl of chafing dish, one of three knobbed 'horns', holes pierced in side and trace of handle (one of two), buff ware, apple green glaze both sides. F140. Surrey ware.
27. Rim of large bowl, double thumbing outside rim, buff ware, honey-coloured glaze with brown specks inside and over rim. F162. Surrey ware.
28. Rim of bowl or chafing dish, buff ware, yellow glaze inside. F162. Surrey ware.
29. Cup, buff ware, yellow glaze inside, sharp ridging outside. F162. Surrey ware.
30. Small cup, black-glazed overall on red ware. F162. (N).

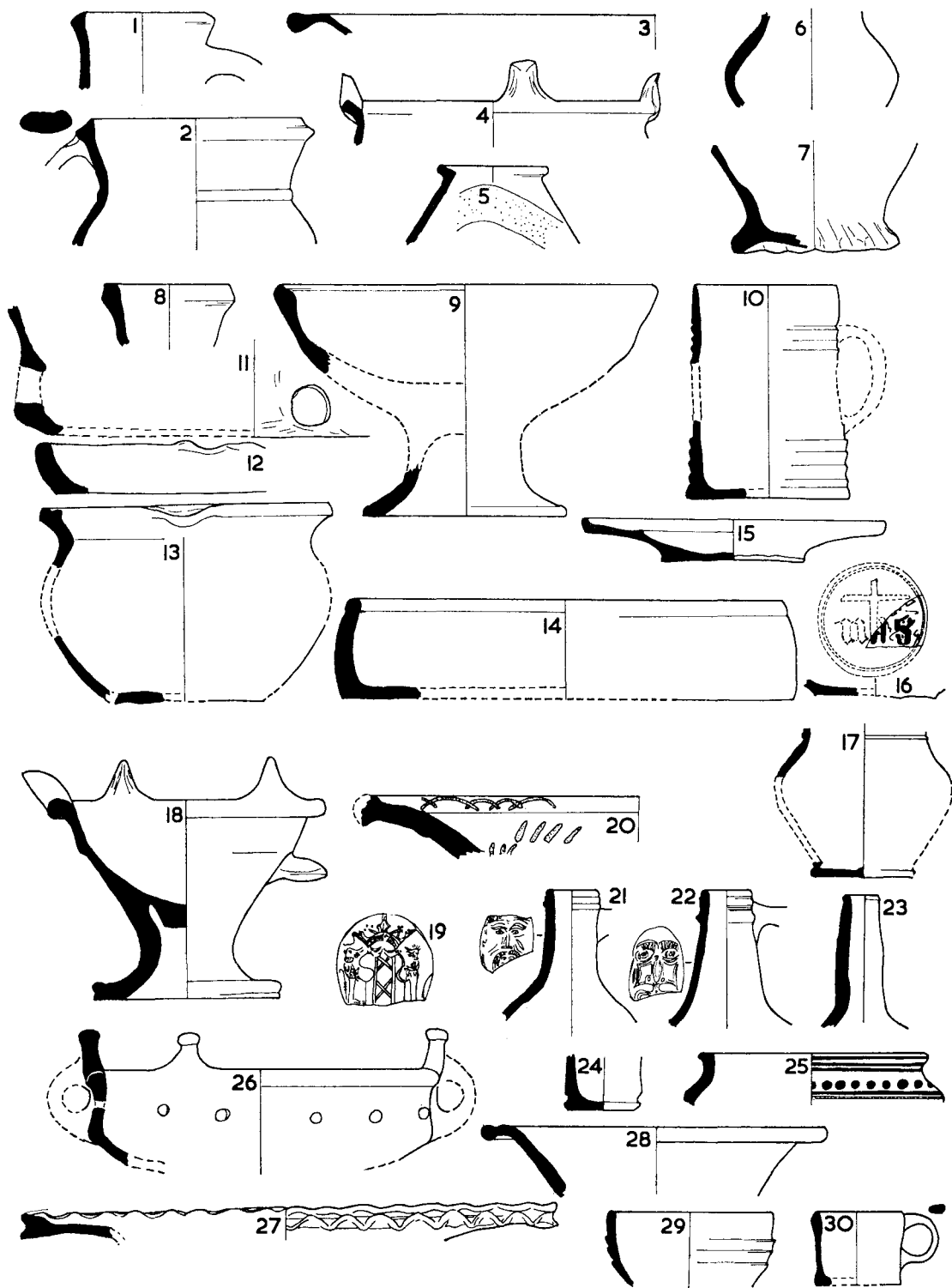


FIG. 40

POTTERY FROM WALTHAM ABBEY

Finds of 16th and 17th-century date. Sc. 1:4

APPENDIX 2

CATALOGUE OF SILVER AND BRONZE OBJECTS (FIG. 41)

Pre-conquest

1. Pin with grotesque pig-like head, large gaping mouth, tiny snout, large pointed ears, eyes represented by tiny inlaid black stones. Pronounced thickening of stem. Head 7 mm. long, overall length 51 mm. Silver, probably gilded overall but little remained on stem. F307, loam of walls of Viking hall. (Animal-headed pins are a predominantly Viking type; this pin could have been lost during the building of the hall or earlier. In Scandinavian mythology the boar is associated¹⁰³ with the deities of fertility Freyr and Freyja, but it also had cult associations in the Celtic and Anglo-Saxon worlds. No close parallel can be suggested.) See no. 2.
2. Pin with spiral groove decoration on spherical head and peripheral groove. Some thickening of stem as no. 1. Head 5 mm. diameter, overall length 51 mm. Bronze, slight evidence of gilding remains. F338, clay floor of Viking hall. (A larger example from North Elmham¹⁰⁴ with decoration over the whole head and with apparent thickening of the stem is dated late 9th or 10th century. The stem thickening is not usually evident from published drawings of pins, although casual finds from York¹⁰⁵ show this thickening, and it occurs in one illustrated by Laing.)¹⁰⁶
3. Brooch pin. 31 mm. long. Bronze, some gilding remaining particularly in chevron incisions. F307, as no. 1.
- 4 (not illustrated). Two fragments of thin bronze plate. F338, as no. 2.

Post-conquest

5. Unidentified object with opposed beasts muzzle to muzzle, raised from lightly punched background, spherical terminals, flat back; possibly part of an ornamental buckle holding the bar by spring action but would not have been very serviceable. Outline shape of Viking boat is considered coincidental. Original width 25 mm. Bronze, gilded. F208, *c.* 1540 pit cut through floor F338 of Viking hall and possibly derived therefrom.
6. Lombardic-D-shaped flat strap-end buckle, pin missing. Bronze, slight evidence of gilding. F51, 16th or 17th-century robber trench with derived 13th-century pottery. (Compare with *L.M.M.C.*, pl. 76, no. 6.)
7. Buckle, pin missing, thin plate bent over to accommodate pin for a hinge. Bronze. F158, *c.* 1540 debris in kitchen K.
8. Strap-end buckle, iron staining possibly remains of pin. Bronze. F31, oyster midden with 15th-century material.
9. Brooch or pin. 45 mm. long. Bronze. F31, as last.
10. Simple brooch, bent up from wire, end of simple wire pin broken. 25 mm. diam. Bronze. F159, debris with 16th and 17th-century material.
11. Ring, oval section, probably made by folding over thin sheet to meet at outer periphery. 29 mm. diam. Bronze. F161, destruction debris, *c.* 1540.
12. Strap-end hinge, two rivets. Bronze, with fragments identified as leather. F158, as no. 7.
13. Small plate, three holes countersunk from flat side but curved side with rouletting in grooves meant to be seen. Two small holes likely to be for riveting to flat surface, central hole possibly for fastener. 17 × 7 mm. Bronze. F58, late 14th or early 15th-century clay floor to kitchen K.
14. Body of Jew's harp, staining possibly indicating iron 'stang'. 51 mm. long. Bronze. F64, lower topsoil find but probably of late medieval type. (Examples from the Home Counties are illustrated by Elliston-Erwood.)¹⁰⁷
15. Object of 1 mm. diam. wire, possibly two links of chain with loop to support pendant, or hinged fastener or clasp. Bronze. F154, debris in Room D, a *c.* 1540 deposit.
- 16 (not illustrated). Ten tag ends found in seven features of 14th-century and later dates. Several had small holes for rivet to secure lace. Material from contents, by comparison

¹⁰³ Davidson (1964), 98.¹⁰⁴ Wade-Martins (1970), fig. 19, b.¹⁰⁵ Waterman (1959), fig. 11, nos. 5, 9.¹⁰⁶ Laing (1975), fig. 124, no. 17.¹⁰⁷ Elliston-Erwood (1943), fig. 1.

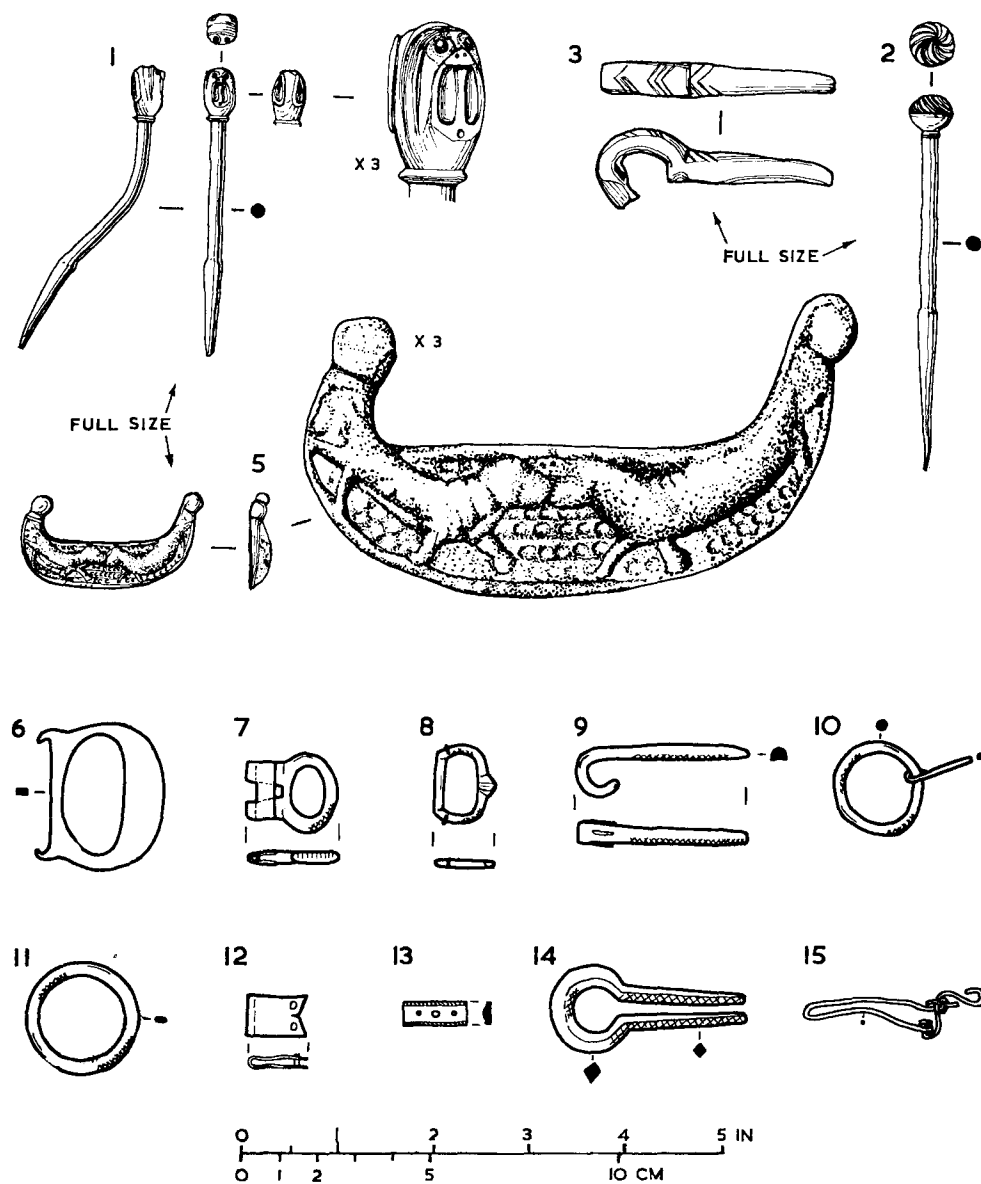


FIG. 41

FINDS FROM WALTHAM ABBEY

Silver and bronze objects (Appendix 2). 1-3. Pre-conquest. Sc. 1:1 and 3:1;
5-15. Post-conquest. Sc. 1:1, 3:1 and 1:2

with modern material, is probably silk. Several measured 19, 25 and 31 mm. in length, suggesting they were made in $\frac{3}{4}$, 1 and $1\frac{1}{4}$ in. sizes. Bronze. F32, F53, F60, F140, F154, F158 and F210.

- 17 (not illustrated). Ten dress pins found in nine features of late medieval and subsequent date. Heads all spirally wound, best with head subsequently hammered, presumably between two closed dies, into spherical shapes; a few left, without this treatment, with flattish head. Specimens measured 39, 45 and 58 mm., suggesting they were made in $1\frac{1}{2}$, $1\frac{3}{4}$ (probably 2), and $2\frac{1}{4}$ in. sizes; also one probably $1\frac{1}{4}$ in. long. Bronze. F34, F53, F158, F173, F200, F202, F210, F250 and F251.

APPENDIX 3

IRON OBJECTS

Illustrations and the full report on the iron are omitted here for economy. The finds and excavation records are deposited in the collections of Waltham Abbey Historical Society, where they may be consulted. A few pieces of iron, including two studs in the clay floor (F338), were found in the pre-conquest levels. The most interesting later iron object was part of the link of the mouthpiece of a snaffle bit (*L.M.M.C.*, type 4, fig. 19b), in pit F208 with *c.* 1540 material.

APPENDIX 4

LEAD

The illustrations and the full lead report are omitted here. The finds and excavation records are deposited in the collections of Waltham Abbey Historical Society, where they may be consulted. One lump was found in the clay floor (F338) of the Viking hall. The lead pipe (F204) SW. of the Viking hall had associated 13th-century sherds in its construction trench. It was of 148 mm. (nearly 6 in.) circumference externally and about 4 mm. thick. It was made from lengths of sheet bent up, and the longitudinal seam was sealed with molten lead; ends were butted and surrounded by a 4 cm. wide band; sealing of the joints was by tooling-on molten lead.

APPENDIX 5

GLASS

The illustrations and part of the description of the glass are omitted here. The finds and excavation records are deposited in the collections of Waltham Abbey Historical Society, where they may be consulted.

Vessels

Three fragments of fine quality, one with trailed yellow bands, were found in the pre-conquest levels.

The base of a urinal was found in silt (F267) in the drain (F259) in the cloister walk. A rim fragment of a wine glass of pale green, heavily weathered glass and a rim fragment of a straight-sided dish of pale green glass, came from pit F208 with pottery of *c.* 1540. A bottle or flask neck was found in F33, also *c.* 1540.

A quantity of post-medieval glass came from the 17th-century features F140 and F162.

Window glass

Medieval and post-medieval window glass was found in the following features, some of which are well dated (TABLE 1). It was possible to separate this glass into five types:

- A. Completely de-vitrified, 1.8–5.0 mm. thick.
- B. Pale green glass with flaking weathered surfaces, 2.1–3.2 mm. thick.
- C. Colourless glass with intact brown stained surface deterioration, 2.1–2.5 mm. thick.
- D. Sea green glass with very little surface deterioration, 1.6–2.5 mm. thick.
- E. Clear colourless glass with surface iridescence, 1.2–1.8 mm. thick.

TABLE I
OCCURRENCE OF WINDOW GLASS

Feature and date	Type A	Type B	Type C	Type D	Type E
F43U <i>c.</i> 1250 or later			1		
F20 mixed 1250–1540	7 + 1 painted	2 + 3 painted	1		
F53 <i>c.</i> 1400	1 painted				
F251 15th-cent.	1 + 1 painted	2			
F208 <i>c.</i> 1540	1				
F33 after 1540	1				
F252 1540 or later	15 + 2 painted		1		
F162 late 16th or 17th-cent.	2	5 + 1 painted	2	1	
F222 early 17th-cent.				1	4
F159 17th-cent.	3				
F140 1640–70	4	2		3	1
F144 1640–80		1 crown			9
F34 17th to 19th-cent.		1			3
F35 18th-cent.					5

Purple painted fragments of type B are tentatively described as 'foliage pattern'. Those in F20 may indicate the type of window in the western claustral range or in Room E. The style is quite different from the 'petal and leaf design with criss-cross background' found previously¹⁰⁸ within the monastic precinct.

Little can be said about the date of types A or B, the latter found in a 15th-century deposit. Availability of the other types can be said to be: type C by the 16th century; type D by the late 16th or early 17th century; type E by the early 17th century.

As to the method of manufacture, a crown bullion of type B may have come from a medieval window although the date of deposit F162 is 1640–80. All the medieval pieces were weathered indicating that it was a potash glass. Some pieces of type A were undulating when seen in section, perhaps indicating that it was cylinder blown glass.

Lead came fragments of two types were found: A, of 'dumb-bell' form in F34 and F144 in a derived context, dated elsewhere¹⁰⁹ first half of 13th century; B, of slender 1-section, in F208 and F210, both *c.* 1540 pits.

APPENDIX 6

CATALOGUE OF MISCELLANEOUS FINDS (FIG. 42)

Pre-conquest

1. Remains of single-sided bone comb, estimated length 20 cm. (8 in.). Iron rivets hold central tooth plates between side pieces; 12 tooth plates remain, each 12 to 17 mm. long and possibly of deer antler (shown by chain-dot lines). Teeth, 4.7 per cm., mostly broken.

¹⁰⁸ Huggins (1970), fig. 18.

¹⁰⁹ Huggins (1972), fig. 30, no. 6; shown there in a deformed state. See Drury (1974) for illustration of both types.

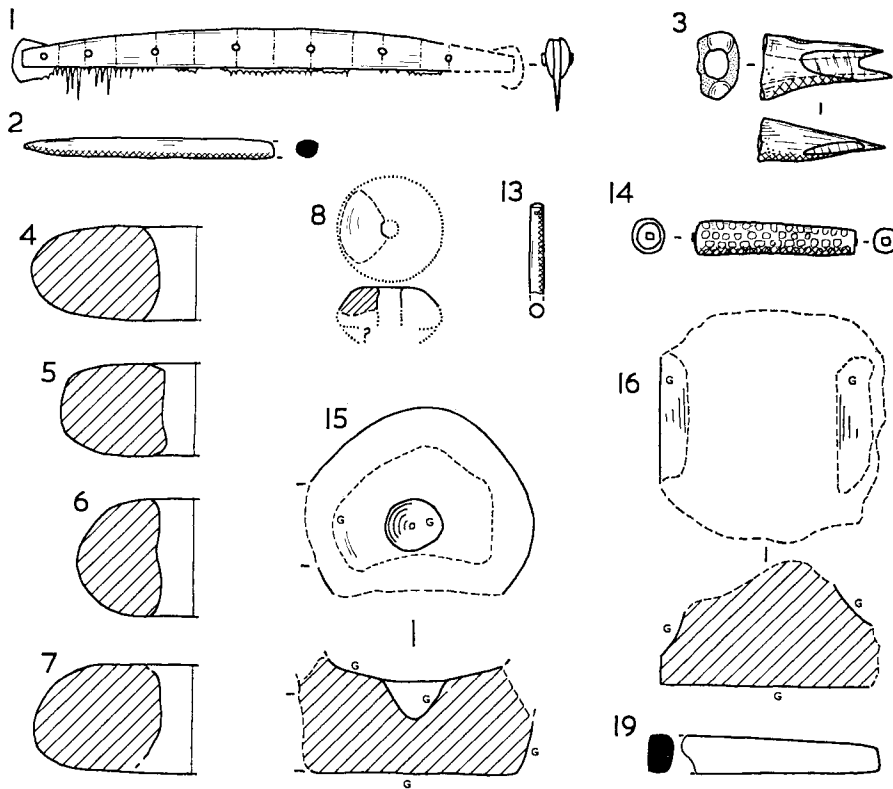


FIG. 42

FINDS FROM WALTHAM ABBEY

Miscellaneous objects (Appendix 6) of bone (1-3, 13, 14), clay (4-8, 15, 16) and stone (19).

1-8. Pre-conquest; 13-19. Post-conquest. Sc. 1:3

Found in pre-hall pit F323. (Single-sided combs are common in Saxon-period contexts and were characteristic of the Viking age. A comb of similar shape, but decorated, from York¹¹⁰ is dated late 10th or 11th century.)

2. Bone point, slightly oval 7.5 × 8.5 mm., remaining length 98 mm. Remains of groove suggests made from metapodial. F301, fill of ditch with pottery of 9th to early 11th century.
3. Specialized double-pointed bone implement, hole bored down centre (see chain-dot line). Made from proximal end of metapodial. Surfaces knife cut, prongs carefully pointed. F351, soakaway at entrance to Viking hall, probably 12th-century feature.
- 4-7. Pieces of baked clay loom weights, soft-fired orange sandy fabric, 9 to 13 cm. diam., hole not always central. Nos. 4, 5, 7, probably to be called Intermediate;¹¹¹ no. 4 in F300, nos. 5 and 6 in F307, no. 7 in F308, probably all from pre-hall occupation. (A bun-shaped weight like no. 6 has previously been found¹¹² in a loam with 11th and 12th-century pottery.)
8. Fragment of baked clay spindle whorl, c. 42 mm. diam., shape uncertain. F300, ditch silt under Viking hall.

¹¹⁰ Waterman (1959), fig. 16, no. 3, etc.

¹¹¹ Dunning (1959), 24.

¹¹² Huggins (1973), fig. 15, no. 4.

- 9 (not illustrated). Eight fragments of loom weight. Bun-shaped fragments occurred in F300 and F301 and other small pieces in F300, F301(2), F334, F338 and in a later medieval context.
- 10 (not illustrated). Fragment of Niedermendig lava grinding stone, *c.* 3 cm. thick, 60 to 80 cm. diam. F307, loam of wall of Viking hall.
- 11 (not illustrated). Piece of conical(?) lava quernstone with semi-angle of *c.* 83°. Central hole *c.* 25 mm. diam., max. remaining thickness *c.* 55 mm. F335, pre-hall pit.
- 12 (not illustrated). Six other fragments of lava. One piece in F336 *c.* 4 cm. thick with remains of a part-drilled hole. Others, F301 (3), F307 (2). All lava found probably represents pre-hall occupation.

Post-conquest

13. End of bone implement, 5 mm. diam., with small hole drilled near end. F81B, *c.* 1300 deposit.
14. Bone handle, iron tang along length, bronze end plate. Handle decorated with knife cuts leaving 'wire-netting' type raised surface. Dress pins found inside probably to tighten tang. F251, disturbance in cloister walk with 15th-century pottery.
15. Base of open cresset lamp (compare with examples in *L.M.M.C.*). Incompletely oxidized red sandy ware with reddish brown glaze overall. Scar on side suggests round handle; flat base for it to stand on shelf or table. Found in F10, associated with pit F12 with pottery 1250-1350.
16. Square base, fabric and overall glaze like no. 15. Could be base of candlestick but no parallels can be suggested. F210, trench with pottery *c.* 1540.
- 17 (not illustrated). Piece of roof tile with long edge rounded as if used as abrasive tool. F127, *c.* 1300 deposit.
- 18 (not illustrated). Fine sandstone sharpening block. F42, pond silt.
19. Mica schist hone and fragment of another. F130, with pottery *c.* 1250.
- 20 (not illustrated). Piece of coarse sandstone, grooved to suggest use as shaping rather than sharpening stone. F32, with 16th and 17th-century material.

APPENDIX 7

FLOOR TILES (FIG. 43; PL. X, C)

Decorated tiles

The floor tiles from Waltham have been classified previously¹¹³ into groups based on dimensions. Decorated tiles of Group 2 (*c.* 114 mm. square and 25-30 mm. thick) and Group 3 (122-130 mm. square and 25-30 mm. thick) were found in the present excavations; some are illustrated in FIG. 43 using original (nos. 1-14) and additional numbering (nos. 14 ff.). All the tiles have a colourless glaze over the face, except no. 17, yielding a yellow design against a yellowish red background; where the face is not completely oxidized the background is grey. Fractured surfaces show that the clay was not well levigated; such surfaces were often irregularly faceted. Sand tempering with some 'grog' was added to a very slightly micaceous clay in varying degree. It is not possible to distinguish between the types on macroscopic examination of the fabric.

- Group 2, no. 7: Fleur-de-lys.¹¹⁴ Eight were found *in situ* in F139. In each, a break occurs in right-hand stamen showing that same defective, probably worn, stamp was used. Repetition of other detail also noticed. Fragment from debris (F157) in Room A, and another from early excavations in cloisters, possessed same characteristics. Edges bevelled 4° to 8°.
- no. 9: Foliage pattern.¹¹⁵ Two complete tiles and two fragments *in situ* in flooring (F139) in doorway (F69) of Room A. Asymmetry in

¹¹³ Huggins (1970), 43-6, fig. 16, nos. 1-14.

¹¹⁴ Like *L.M.M.C.*, no. 70. Also Bengoe (Herts.), no. 7; Keen (1973), fig. 1; detailed examination of the tiles shows the same broken stamen and asymmetry as at Waltham.

¹¹⁵ Like *L.M.M.C.*, no. 37. No. 19, Whitcomb (1965). Bengoe, no. 4, Keen (1973), fig. 1; detailed examination of the tiles reveals the same asymmetry in the design as at Waltham.

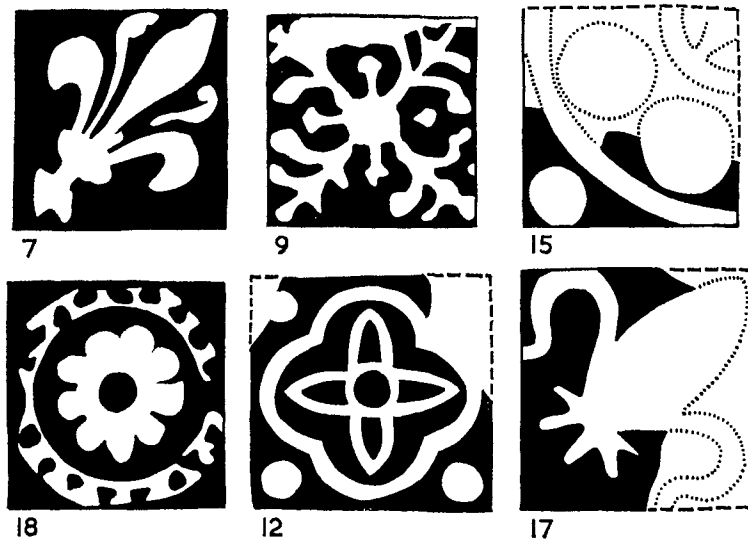


FIG. 43
MEDIEVAL FLOOR TILES FROM WALTHAM ABBEY
(Appendix 7). Sc. 1:4

- design indicates that single fragments found in F32, F157 and F210 were from same stamp. Edges bevelled 6° to 10° . Tiles found in other excavations showed same asymmetry. Another small piece in F208.
- no. 15: Roundels A,¹¹⁶ a four-tile design. Edges bevelled $c. 8^{\circ}$. Two fragments only found, one each in F162 and F250. Reconstruction from example found in chapter house.
- no. 18: Nine-petal rosette.¹¹⁷ Two tiles were *in situ* in flooring F139. Encircling band has reserved spots, probably intended to be triangular not round. Slip badly applied.
- Group 3, no. 10: (not illustrated.) Sixteen-square chequer pattern. Edges bevelled $c. 8^{\circ}$. One piece each found in F154, debris in area D, and in F254, debris in cloister walk. Former extremely crude and unused fragment with slip proud rather than filling the impressions. Two tiles from earlier cloister excavations help to suggest that they were used in claustral buildings.
- no. 12: Quatrefoil. One almost complete tile found in F34 and fragment in F32. These deposits both in vicarage garden and may derive from western claustral range or from Room E. There was an example from earlier cloister excavations. Edges bevelled $c. 5^{\circ}$.
- Group 3A, no. 17: (crude copies.) Edges bevelled $c. 16^{\circ}$. One specimen, unglazed, found in F210, a $c. 1540$ trench. This example showed that cream-

¹¹⁶ Like no. 1, Kings Langley (Herts.); L. Keen in Neal (1973), fig. 19. No. 16 is given to a Roundel B type, with half rings and discs, found in Waltham chapter house excavation by A. B. Havercroft in 1972, unpublished.

¹¹⁷ Near nos. 20 and 21, Whitcomb (1965). Bengoe, no. 4: Keen (1973), fig. 1; the Bengoe specimens are not in very good condition but examination suggests they, too, may have been made from the same stamps as used for the Waltham tiles.

coloured slip, after having been applied to impression, had been brushed around to fill limits of pattern and had, in places, spread on to face of tile; brush used appeared to be about 1 cm. wide. Evidence of brushing cannot be detected on any of the glazed tiles.

Plain tiles

TABLE II
OCCURRENCE OF PLAIN GLAZED FLOOR TILES

B = black, BR = brown, G = greenish brown, Y = yellow.

Fragments for which the type could not be determined have not been included in the table.

	Triangular		Square			Diamond
	Group 2	Group 3	Group 2	Group 3	Group 4	Group 2
F42, pond silt	B					
F61, debris	B					
F139, flooring			6B			
F157, debris	B		2B			
F161, debris		2Y			19BR	B
F162, debris					G	B
F208, c. 1540 pit						
F210, c. 1540 trench		B		B		
F250, topsoil					BR	
F32, debris					G	

TABLE II shows that Group 2 black tiles were present by the early 13th century when the pond was finally filled. Group 3 tiles, both black and yellow, were present by the 16th century, as were the brown and greenish brown Group 4 square tiles. The fragmentary Group 4 tiles in F161 were in debris outside Room C near the blocked doorway, and suggest a floor of these tiles nearby (the Group 4 size range is c. 190 mm. square and 25–33 mm. thick).

DISCUSSION

The floor tiles with inlaid decoration fall within, and extend, the series already found¹¹⁸ at Waltham in the claustral area. The Group 2 tiles are of the 'Westminster tiler' type and the tiles of this group found *in situ* provide new evidence for dating. Eight fleur-de-lys (no. 7) tiles were found interspersed with plain black tiles and with two rosette tiles (no. 18) and two foliage tiles (no. 9). They were found as F139 under the blocking of the doorway (F69) in Room A, and, in spite of being covered with mortar, the glaze was in good condition on all the tiles (PL. x, c). Impressions in the mortar surface (F68) within Room A suggested that the floor had been tiled overall, and fragments of fleur-de-lys and black tiles in debris F157 seem to show that this floor was originally laid of these two types. The group F139 was not carefully positioned and may even represent a repair, such as might be expected in a doorway; the fleur-de-lys point in several directions, and the rosettes and foliage seem out of place. The blocking of the doorway is taken to be when the kitchen K was added c. 1370, so that a date for the group must be earlier than this. The building of Room A is dated on pottery evidence early 14th century. The presence of the black tile stratified beneath the room in F42 suggests that these at least were contemporary with the building period, and possibly the fleur-de-lys can be equally early.

¹¹⁸ Huggins (1970), 43–6.

APPENDIX 8

BUILDING MATERIALS

STONE

Illustrations and description of the excavated medieval stone are omitted here. The finds and excavation records are deposited in the collections of Waltham Abbey Historical Society, where they may be consulted. There were some twenty-six pieces with evidence of moulding or chamfering.

BRICKS

Bricks from Waltham were classified Great (G) and Flemish-size (f) as a result of finds within the monastic grange.¹¹⁹ Two of the present groups were listed there for completeness, i.e. G163 and G178. Type G260 here is a size previously called SB10. Type G194 is an old code; the size range has been increased slightly to accommodate the present group.

TABLE III
OCCURRENCE OF GREAT BRICKS

Code	Volume range (cu. in.)	Size range (in.)			No. of bricks	If reused	Provenance
		Length	Width	Thickness			
G147	—	12	6	2	1	?	Drain F259
G154	152-157	$14\frac{3}{8}-14\frac{1}{2}$	$5\frac{7}{8}-6$	$1\frac{7}{8}-1\frac{3}{4}$	3	?	Drain F259
G163	154-179	$12\frac{1}{2}-13\frac{1}{4}$	$6\frac{3}{8}-7$	$1\frac{3}{4}-2$	4	?	Hearth F62
G178	171-190	$12\frac{7}{8}-13\frac{1}{4}$	$6\frac{1}{2}-6\frac{3}{4}$	$2-2\frac{1}{8}$	7	No	Drain F17
G194	182-209	$12\frac{3}{4}-13\frac{1}{4}$	$6\frac{1}{4}-6\frac{3}{4}$	$2\frac{1}{4}-2\frac{1}{2}$	5	?	Drain F259
G260	251-272	12-13	$10\frac{1}{4}-11$	$2-2\frac{3}{8}$	1	?	Hearth F62

Previously listed examples of the Great bricks are not helpful in establishing the date by which they were first available. However on the evidence of building construction here, it is likely that types G163, G178 and G260 were available by the 14th century. A few sherds in F261 around drain F259 suggest that types G147, G154 and G194 were in use by the 14th century also. All the above mentioned bricks were of coarse, sandy fabric fired to shades of red or purple; those in the drain F17 showed spots of colourless glaze.

A group of smaller yellow fabric bricks was found in F25, loam with roof tile debris; the date range of this deposit is between 1250 and 1540 but the position of the bricks suggests they were late in this wide range. Eight bricks were measured and are coded f108; they measure $9\frac{3}{4}-10\frac{1}{2}$ in. \times $4\frac{3}{8}-5$ in. \times $2\frac{1}{8}-2\frac{3}{8}$ in.

Orange red Flemish-size bricks were found as follows:

f68 ($8\frac{1}{2}$ in. \times 4 in. \times 2 in.), five bricks in F106, a post-medieval floor;

f81 ($8\frac{5}{8}-8\frac{3}{4}$ in. \times $3\frac{7}{8}-4$ in. \times $2\frac{3}{8}$ in.), a post-medieval brick wall across the cloisters;

f96 ($9-9\frac{1}{2}$ in. \times $4\frac{1}{2}$ in. \times $2-2\frac{1}{2}$ in.), laid as F55, a surround to hearth F52, in the kitchen K, and as F54 at the back of the hearth; these are likely to be additions and alterations to the hearth, itself dated c. 1370.

WALL PLASTER

About eighty pieces of wall plaster were recovered, mostly from destruction levels in Rooms A and B. Although covered with up to three coats of whitewash, the plaster was originally decorated with red lines 3-6 mm. wide imitating masonry laid in an

¹¹⁹ Huggins (1972), 111-14.

irregular manner. Two pieces from Room A were curved suggesting that this room had rounded corners with the bands carrying around the corners. The plaster consisted of a coarse sandy base with a 1–2 mm. thick fine finish. Only one specimen with a red band was found in the added kitchen K among other small plain pieces, and it is unlikely that this room was similarly decorated.

Of special interest were five small pieces of plaster with an all-over red wash¹²⁰ found in F162, the debris over the wall of the NW. claustral building, showing perhaps how this building was decorated.

ROOFING MATERIALS

Pieces of slate were found in twenty-three of the medieval and later features. Of the 140 pieces, about 100 came from the vicarage garden. The largest group was in F20, the loam build-up with pottery in the range 1250–1540; this group included three pieces which were clearly roofing slates and some sixty other pieces.

Some of the slate was in deposits dated between 1250 and 1350 by pottery, so that nearby buildings are likely to have been so roofed by this date. By the time of the dissolution the debris (F25) above F20 shows that the claustral range was roofed with flat ceramic tiles. Specimens of roofing slate were of material judged by F. G. Dimes to be Devonian in age and to come from SW. England.

The roofing debris in the destruction levels of rooms A to E and K was exclusively of flat ceramic tiles, of an orange colour ranging to purple and red, either with a projecting lug or with two round peg holes.

Room E is likely to have been ridged E. and W. and the added kitchen was probably a lean-to with roof sloping S. Much tile debris in F159 between these rooms is consistent with this arrangement. The W. claustral range, against which Room E apparently butted, is likely to have been ridged N. and S.; much tile debris in F20A and forming up against the midden (F31) confirms this.

There was no accumulation of tiles to suggest how the range of rooms A to D was roofed. Rooms A to C would be expected to have a roof ridged N. and S. and the absence of tiles to the W. may suggest there was a surrounding parapet which prevented tile fall in this direction. The S. end of a shallow-ridged N. and S. roof over rooms A to C could have been hipped. Single pieces of ridge tile and hip tile over the W. wall of A and B in F161 could have come from such a configuration.

Two fragments of decorated ridge tile were found. The first, from the oyster midden (F31) with 15th-century pottery, is a fragment with greenish brown glaze, made of orange to purple sandy clay, similar to a complete tile from the present Lady chapel roof;¹²¹ this chapel is early 14th-century in date. The second fragment is of a knife-cut cockscomb ridge tile with patchy brown glaze found in F159, the c. 1540 destruction debris between rooms K and E. This is the first such tile recognized at Waltham. Jope suggests¹²² that in the Oxford region the change from hand moulding to knife cutting occurs at the end of the 13th century, and that the latter type continues into the 15th century. By comparison, the Waltham serrations are shallow, and although they may therefore be early in this date range, they are not likely to be original to the claustral buildings but may have been used over rooms A to D or E.

ROMAN DEBRIS

Fragments of building stone, brick and tile were found in sixteen of the pre-conquest features. Over 260 pieces have the hard fired appearance associated with Roman brick and tile, including eighteen pieces of tegula and two pieces of flue tile. Nearly 200 pieces

¹²⁰ Salzman (1967), 158, records 14th and 15th-century instances of reddening walls with red ochre.

¹²¹ Huggins (1972), fig. 26, no. 2.

¹²² Jope (1951), 86–8.

of building stone: Reigate stone, Kentish ragstone, Bath or Barnack limestone, chalk and a few pieces of Caen stone may similarly be of Roman origin. In particular a piece of Bath stone column, 25 cm. (10 in.) diam., was found in the hall wall loam (F307).

The largest group of the above material was placed, not very carefully, in the loam (F307) of the Viking hall walls; over 100 pieces of brick or tile and over fifty pieces of stone were so used; the concentration was particularly dense (section UVW, FIG. 32) in the wall adjacent to the pond and clearly demonstrated that it was used to stabilize the bottom of the turf wall in this critical position. About a third of the amount of Roman debris in F307 was recovered from the underlying gravel foundation (F308). Some forty pieces of brick or tile and sixty of stone were found randomly throughout the ditch silt (F300) and fill (F301). The only other sizeable group of this debris, fifty pieces of brick or tile and forty pieces of building stone, was found randomly throughout the clay floor (F338).

Very little of this debris was found in the pre-hall pits suggesting perhaps that it had been brought in specially for use during the building of the walls of the Viking hall. The source of the debris is not certain, but a Roman site under the present market place some 150 m. (400 ft.) S. of the hall now seems likely.¹²³

APPENDIX 9

JETTONS AND A BULLA (PL. XI, B)

By S. E. RIGOLD

With a note on

A COIN

By J. P. C. KENT

1. Very worn antoninianus of Victorinus, A.D. 269-70. Ditch fill (F301) under Viking hall, with other derived Roman material.
2. French Official; diam. 20 mm. Obv: 'Moor's head'; AVE MARIA:GRACIA, double crosslet stops/ rev: 'quadrilateral cross flory' (composed of 4 arcs), lys in centre, cinqfoils in quarters, +A/VE/M/RI; execution above average. (This, by far the commonest of the smaller French jettons, appears to displace the ultimate 'Sterlings', and to be generally a little earlier than the larger French kind (as nos. 5, 6, and 19) commonly imported into England. Probably 1360s, but the type persists a little later.) F53, under hearth (F52) in kitchen K.
3. French Official; diam. 25 mm. but die slightly larger. Obv: shield of 'France ancient' in sixfoil; +GETES (B)IEN—COMPTE(?); stops unclear/ rev: 'quadrilateral cross flory', O stamped over one fleur, uncertain what is in centre, +PAI—NOI.COMPTES, pellet stop; thin fabric. (Larger French jettons with reverse border and legend are generally earlier than the common larger type (no. 5, etc.) and quite rare in England. Probably 1360s.) F53, as last.
4. English, Sterling series, late; diam. 21 mm. Obv: triangle containing I between pellets over IIII, cross between pellets below I between pellets on other sides/ rev: long cross potency, lys in quarters, no border. Pierced from obv.; thin fabric. (This has been classed by Berry (1974), pl. vi, no. 4, with Edward II, but it is probably a good generation later and, as he says, certainly a rare type. The alternative rev. that he cites is not quite that of certain jettons of the 1320s and the fabric is quite different. The piercing persists on all English jettons and is sometimes added to French 'Moor's heads', etc. Perhaps about the 1360s and a cheap alternative to the fine 'standing king', etc. Chipped but not worn.) F60, on clay floor (F58) in kitchen K.

¹²³ As a result of service trench observations and limited excavations in the grounds of the Pentecostal Chapel at the N. end of Sewardstone Street, and to the S. of nos. 1-3 Sun Street in 1975.

5. French Official; diam. 23 mm. Obv: standing king under canopy, as Barnard (1916), pl. v, no. 21; .AVEM./ARIA./ rev: elaborate cross flory in quadrilobe, neat foliate cusps, A/V/E/M between stops in spandrels. Stops unclear but probably crosslets throughout; corroded. (One of the smallest [and earliest?] of the common large French jettons. Probably 1370s.) F60, as last.
6. French Official; diam. 26 mm. Obv: crown, 3 rosettes with large piercings (or rough annulets?) on band, pellet in annulet l. and r.; +AVEMARIA.GRACIA.PLE (ligated), annulet and pellet-in-annulets stops/ rev: as previous, A/V/E/A(?) between annulets in spandrels. Fairly thick fabric, execution and lettering progressively coarser than the two previous. (Serial devolution would point to about the 1390s.) F60, as last.
7. French Official; diam. 25 mm. Obv: crown, unclear whether anything on band; AVE-MARIA:GRASIA:PLENA, colon stops/ rev: 'quadrilateral cross flory', Vs over rosettes(?) in quarters. Much more weakly engraved than any of the foregoing; lettering more advanced with Lombardic N and long serif to L. The alternative rev., proper to the smaller jettons, seems to occur sporadically on the larger throughout the series. (Serial devolution would suggest first or, possibly, 2nd quarter of 15th century.) F60, as last.
8. French Official, late but not quite in the 'Derivative' (i.e. really slovenly) grouping; diam. 28 mm. Obv: shield of 'France modern', crown between pellets above, M between lys and pellet at each side; +IOIE.DESIR.ALAMOVREVS, crosslet stops/ rev: plain cross flory of three strands, unbarred As on cusps and, between crosslets, on spandrels. Thick fabric; obv. neat, rev. less so. (15th century, second quarter or middle. Not worn but resistant.) F22, in Room E over sewer F21.
9. Nuremberg; this, like all the following Nuremberg pieces except nos. 11 and 20, is of the 'normal' type (*Reichsapfel* in trilobe/ 3 crowns and 3 lys). The points noted are: diameter; size of orb; initial-mark; ornaments in spandrels; terminals of crown — in this case: 22 mm.; largish orb; nil; nil; fleurs. (Probably c. 1520.) F210, a rubbish trench with pottery dated c. 1540.
10. Nuremberg; diam. 23 mm.; medium orb; nil; annulets; annulets. (1530s.) F136 in kitchen K, open to dissolution.
11. Nuremberg; diam. 27 mm. *Reichsapfel* in trilobe/ lion of St Mark; garbled mixed legends and crown i.m. both sides. Fairly thick. (c. 1540.) Pit (F208), pottery c. 1540.
12. 'Unplaced Central Group' (Franco-German border); diam. 20 mm. Unclear quartered shield in trilobe/ short cross flory, stars in quarters, border of Ss (?). Thin. (15th century, last quarter; even more worn than no. 17.) F158, destruction debris in kitchen K.
13. Nuremberg; 23 mm.; medium orb; nil; annulets; annulets. (1530s.) F158, as last.
14. Nuremberg; 23 mm.; medium orb; nil; pellets; annulets. (1530s.) F158, as last.
15. Nuremberg; 23 mm.; medium orb; nil; nil(?); annulets. (1530s.) F158, as last.
16. Nuremberg; 23 mm.; largish orb; nil; nil; annulets. (Perhaps 1520s.) F158, as last.
17. 'Unplaced Central Group'; diam. 20 mm. Crowned Lombardic M (Maria? Maximilian?), border of Ss and stars/ eagle wing crest(?) and 3 stars, border of Ss. Thin fabric; much worn. (c. 1490s, though the group goes back to mid 15th century.) F158, as last.
18. Nuremberg; 23 mm.; medium orb; crown; pellets; annulets. (1530s.) F157, dissolution debris.
19. French Official; diam. 25 mm. Obv: crown, 3 pierced sixfoils on band; +AVEMARIA:GRACIA:PL, double crosslet stops/ rev: as no. 5, foliations on cusps heavier, A/V/E/G between crosslet stops in spandrels. Thicker fabric than no. 5. (About 1380s.) Topsoil F64 in Abbey Close.
20. Nuremberg; diam. 24 mm. Lozenge of 4 lys, pellets at sides/ ship; neat but garbled Lombardic legends. The smallest size of the popular ship-type, of which the earliest have intelligible legends. Pierced, bent and fire-damaged, giving it a rather silvery tone. (c. 1520s.) Topsoil F38 in vicarage garden.
21. Lead-alloy *méreau* for religious use (FIG. 44); diam. 13 mm.; neat fabric. Shield bearing a chevron between three estoiles or mullets/ outlined cross, i.e. the 'True Cross', with oblique label on upper arm and simplified instruments of the Passion — spear l., crown of thorns r. Papworth lists: sable a chevron between 3 estoiles (cinquefoils) argent for Waltham. This is not the blazon generally used by the abbots of Waltham (Argent, a cross engrailed sable, 5 crosses crosslet or), but with the cross and the instruments of the Passion the connexion with the abbey is probable but as yet unelucidated. The simple heater-shaped shield suggests that it dates from some time before the dissolution. F31, oyster midden in vicarage garden with 15th-century pottery.



FIG. 44

LEAD *MÉREAU* FROM WALTHAM ABBEY

(Appendix 9/ 21). Sc. 4:3

22. Lead papal bull (pendant seal; the term transferred by popular synecdoche to the document to which it was appended) of Pope Alexander III, 1159–81 (PL. XI, B). Diam. 35 mm.; thickness, 5 mm.; mass, 50.3 gm.; density 10.6 gm./cc., compared with pure lead at 11.4 gm./cc., the difference due either to alloy or to the attachment-cords. F134, on surface of foundation (F138) of claustral wall (F100). Obv: ALEX/ANDER/PP.III., in good, evenly spaced Roman letter, the only 'Lombardic' element being the somewhat wedge-shaped horizontal strokes, but the large loops of P and R make it to that degree less classical than, say, a comparable bull of Alexander VI (Borgia). Rev: SPASPE over conventional heads of St Paul and St Peter in pear-shaped aureoles, as modified from naturalistic busts late in the reign of Paschal II (1099–1118) and persistent ever since; Latin cross between. The lettering, less 'Lombardic' than that on bulls of Alexander's rival, Paschal III (1164–8) and conspicuously so than that on 13th-century bulls, may indicate a high point of the 12th-century 'Renaissance', late in Alexander's reign, which would accord with the regular refoundation of Waltham Minster in 1177. At this period cartularies suggest that such bulls were issued sparingly (in the 13th century, they, and discoveries of detached seals are much more numerous) and this one might come from the general confirmation of the refoundation.

COMMENTARY ON JETTONS

The association of nos. 2 and 3 is significant and confirms a general hypothesis, viz. that the small French jettons take over English needs when the supply of ultimate 'Sterlings' and other small late English pieces ceases, soon after the treaty of Brétigny, and that the larger French pieces with border-legends on both sides are then about to give way to the type (as nos. 5, 6 and 19) which is much commoner in England. Both could well have been buried in operations of about 1370.

Those associated with the kitchen floor (nos. 4–7) are not so uniform: they seem to cover about fifty years from the date of nos. 2 and 3. That no. 4 may be as late as this seems quite acceptable, but the closely associated no. 7 seems unlikely to be before about 1415, and the others are spread over the interval.

No. 8 is not early: it could have been around in the later 15th century. The occurrence of worn and battered 'unplaced' jettons in a dissolution context (nos. 12 and 17) is interesting. This particular kind is sometimes difficult to distinguish from the earliest Nurembergers, found in contexts of the 1490s, but the source is probably different and there is no documentary evidence of a Nuremberg industry before that date. Here we do not have, as we do occasionally elsewhere, 'French derivatives' in similar condition in a similar context.

The early or 'early-mid' Nurembergers are consistent enough and look a shade earlier, on average, than the Coventry assemblage¹²⁴ of the following decade or so. One jetton is little proof, but could the context of no. 9 be a decade or two pre-dissolution? There is no sign of the late 15th-century activity found on some monastic sites, nor of the activity between 1280 and 1340 that produces 'Sterlings' from so many sites.

¹²⁴ From Whitefriars, *Medieval Archaeol.*, XI (1967), 278.

APPENDIX 10

FOOD DEBRIS

Pre-conquest

In the Viking hall, excavation produced 14 kg. (30 lb.) of animal bones representing ox, pig and sheep, together with 55 oysters, 2 whelks, 25 fragments of fish skeleton including a pike mandible, 28 chicken bones and one bone each of pigeon and mallard. The mammal bones occurred in twenty of the excavated features, the molluscs in twelve, the bird bones in eight and the fish in three. The largest groups were as follows:

- F300, ditch silt: 1.8 kg. representing (minimum) 1 ox, 2 pig, 1 sheep; 11 oysters.
 F301, ditch fill: 4 kg. representing 3 ox, 2 pig, 1 sheep; 15 oysters; 1 chicken; 5 fish bones.
 F338, clay floor of hall: 2.5 kg. representing 1 ox, 1 pig, 2 sheep, 1 horse tooth; 12 oysters, 1 whelk; 3 chicken, 1 bone each of pigeon and mallard; 10 fish bones.

Only the last group represents the period of use of the hall, although how much was trodden in and how much brought in during construction is indeterminable. Only one of the pre-hall pits (F323) contained recognizable food debris, in the form of 10 fish fragments and a few unidentifiable fragments of bird and small mammal. In the pre-conquest rubbish pit (F9) in the vicarage garden there were a few fragments of ox bone and 3 chicken bones.

Post-conquest

Bones of ox, pig and sheep or goat were the commonest animal remains. Also represented were hare, rabbit, chicken, goose, a wader, and single finds of grouse, buzzard, mute swan, pheasant and red deer (a tibia). There were a few bones of cat, dog and horse. Mollusca were represented by abundant oysters, whelks, cockles and mussels and a few common snails. Some fish bones were found. The main groups were as follows:

- | | |
|---------------------------------------|--|
| F20, loam 1250-1540: | 26 kg. representing (minimum) 7 ox, 5 pig, 14 sheep; 89 oyster shells; 4 chicken, 4 goose, 1 mallard, 1 pigeon, 1 buzzard, 1 mute swan; 1 dog, 1 hare. |
| F33, debris c. 1540: | 5.9 kg. representing 1 ox, 1 pig, 4 sheep; 59 oyster shells; 1 chicken, 2 goose, 1 medium size wader; 2 fish bones. |
| F154, debris 1540-1640: | 5 kg. representing 2 ox, 1 pig, 3 sheep; 71 oyster shells. |
| F12, pit 1250-1350: | 3.8 kg. representing 3 ox, 3 pig, 2 sheep; 16 oysters; 2 goose. |
| F19, drain construction, dug into F20 | 3.4 kg. representing 2 ox, 2 pig, 3 sheep; 76 oyster shells. |
| F158/9, debris 1540-17th cent.: | 3.2 kg. representing 2 ox, 1 pig, 2 sheep; 31 oysters. |
| F162, debris late 16th-17th cent.: | 3.2 kg. representing 1 ox, 4 sheep; 11 oysters; 1 chicken. |
| F210, trench c. 1540: | 3.2 kg. representing 1 ox, 3 sheep; 37 oysters; 1 chicken. |
| F208, pit c. 1540: | 2.7 kg. representing 1 ox, 1 pig, 1 sheep; 103 oyster shells, 4 whelks; 1 chicken, 1 goose; 1 fish bone. |
| F34, loam 17th-19th cent.: | 2.3 kg. representing 2 ox, 2 sheep; 4 oyster shells. |
| F31, midden 15th cent.: | 1.4 kg. representing 1 ox, 1 pig, 1 sheep; (many thousands oysters unweighed), 25 whelk, 9 cockle, 18 mussel; 1 chicken. |
| F43, pond fill 13th cent.: | 1.4 kg. representing 2 ox, 1 pig, 1 sheep; 30 oyster shells; 1 chicken, 1 goose, 1 mallard; 1 fish bone. |
| F222, pit early 17th cent.: | 1.1 kg. representing 1 ox, 1 pig, 1 sheep; 38 oyster shells; 1 chicken. |
| F228, clay 13th cent.: | 1.1 kg. representing 1 ox, 1 pig, 2 sheep; 9 oysters; 4 chicken, 1 grouse. |
| F225, pit late 12th cent.: | 0.9 kg. representing 1 ox, 2 sheep; 19 oysters; 2 chicken, 1 pigeon, 1 pheasant; 1 cat. |

The amount of food debris in the loam (F20), in the disturbance (F19) and in the dissolution debris (F33) seems to represent kitchen refuse thrown there after the building of the additional rooms A to E, pottery of the period before 1250 being almost entirely absent in this area. It continued to be deposited until *c.* 1540. The midden (F31) contained thousands of oysters as well as hundreds of whelks, cockles and mussels so that, in the 15th century, this mollusca debris was being piled up amidst the other rubbish either very close to the western wall of the claustral range or possibly against the wall. The western side of the abbey is traditionally that used for visitors' accommodation and the refuse may be from the results of hospitality rather than the everyday fare of the canons.

The Domesday and dissolution inventory records¹²⁵ of animals show that sheep was numerically the most common animal at Waltham and sheep bones were the most numerous in the excavated material.

The present excavations suggest that goose was not domesticated at Waltham until the late 12th or 13th century, whereas chicken were kept in the pre-conquest period. As a dove-cote is known¹²⁶ in the abbey grounds from the 12th century, it is surprising that so little remains of pigeon (3 bones) were found. Two goose radii and one ulna had cut marks at the distal end, possibly suggesting that the metacarpus was cut off, with the best wing feathers, perhaps to be sent to the quill maker.

APPENDIX 11

POLLEN ANALYSIS

One slide was made from a sample of ditch silt (F300) under the Viking hall. K. Barker of Southampton University inspected the slide and considered that the grains showed signs of corrosion, and the pollen spectrum was completely skewed by differential resistance to this corrosion. This was characterized by the amount of pine, *Pinus*, and fern present, these being two of the 'last to disappear' grains. Grass, sedge and birch grains also showed signs of corrosion. There was no oak present and this is one of the most susceptible grains to corrosion. Likewise elm, ash, hazel, alder and willow were not present. Barker considered that no conclusions on the environment should be drawn from this sample.

APPENDIX 12

THE WALTHAM ALPHABET: AN ANGLO-SAXON INSCRIPTION (PL. XI, A)

By ELISABETH OKASHA

A piece of inscribed lead (PL. XI, A) was discovered in the loam (F307) of the walls of the Viking hall. Associated finds included a gilt boar's head pin and a quantity of pottery, some imported, datable between the 9th and early 11th century. The piece of lead is irregular in shape, contains no trace of decoration, and is most likely to be spillage. It is about 5 cm. long, 4.5 cm. wide and 2 mm. thick. The text is incised in two lines on the smoother face. I am uncertain whether this face was specially prepared for it, or whether it was found to be conveniently smooth. The majority of the letters are carefully executed, despite their diminutive size: they range from about 5 mm. to 2 mm. in height. Most of the letters are clearly legible. The script is insular, with capital or majuscule S, probably capital A and possibly capital E and F. There is some seriffing but this is not consistent.

¹²⁵ Listed in Huggins (1970), 51.

¹²⁶ Building IX, later VII, in Veresmead (Fig. 29); see Huggins (1972), 49-51, for excavation report.

The text reads as follows:¹²⁷

(A) B C D E F G/H I (K) L (M) | N O P Q R S (T V X.) |

The A appears to be a capital, but it is rather damaged and the exact shape of the letter is not now clear. The apparent ligature G/H is probably unintentional, caused by a slip of the tool. Other slips are also visible, for example at the top of F and P. As is usual at this date, 'i' and 'j' are represented by one letter. The form of K is unusual resembling a capital F; I do not know of any parallel in Anglo-Saxon inscriptions.

The last four letters present several difficulties, concerning both the reading of the letters and their identification. What follows is an attempted interpretation. Bearing in mind the usual Anglo-Saxon alphabetical sequence,¹²⁸ the letter following S is likely to be T, although of an odd and unparalleled sort. The next letter is probably V, although X and Y are also possible readings; a parallel form for V occurs on Falstone.¹²⁹ The following letter could have been either a form of Y (cf. Y on the Sutton brooch)¹³⁰ or a form of X. I cannot find an exact parallel to such an X, although a form on the Canterbury pocket sun-dial bears some resemblance.¹³¹ If this letter is X, the last letter could then be Y, which is a perfectly possible reading of the remaining traces. It is just possible that there is a further letter totally lost from the end of the text. This could then have been Z, or Z may have been omitted, as it is from the alphabet in BL, MS. Titus D xviii.¹³²

There are few parallels to the text. No other epigraphical alphabets survive from Anglo-Saxon England, nor are there any epigraphical runic alphabets from this country. There are, however, a few alphabets in manuscripts, for example Titus D xviii, as mentioned above, and the one on f. 87^v of BL Harley 208, which Ker dates as "s. X/XI (?)".¹³³ In various places in the margins of Anglo-Saxon manuscripts there occur pen trials, for example *abc* in the lower margin of the 11th-century Corpus Christi Old English Bede.¹³⁴ There are also alphabets used as quire signatures, for example Bodl. Hatton 113,¹³⁵ and letters of the alphabet used as syntactical glosses.¹³⁶

In much the same way that an alphabet, or part of it, was written in the margin of a manuscript, it seems likely that the alphabet under consideration was incised on the piece of lead without previous intention. It could perhaps have been cut as a teaching aid, although the small size of the letters argues against this. Or it could have been incised for practice, possibly by a craftsman working in precious metals. It could have been merely the idle product of an empty hour; or it could have been scratched as a demonstration of literacy.¹³⁷

The object is difficult to date satisfactorily. The archaeological evidence perhaps favours a date before *c.* 1030, on the assumption that the remains are of the hall of the Dane Tovi, while the associated finds date from the 9th to the early 11th century. The script of the lead piece certainly suggests that the text is pre-conquest, but does not provide sufficient evidence to date it more exactly. Neither a linguistic nor a formulaic

¹²⁷ The following system of transliteration is used: A indicates a clearly legible letter; *A* a letter damaged but legible; (*A*) a damaged letter where the reading is fairly certain; (A) a legible and undamaged letter of unusual form, probably A; A/B ligatured letters; (.) one letter lost. The text was examined using a binocular stereo-microscope under low power; expressions such as 'legible', etc., used throughout, therefore, mean 'legible under the microscope', etc.

¹²⁸ See Robinson (1973), 443-75.

¹²⁹ Okasha (1971), no. 39 and fig.

¹³⁰ Ibid., no. 114 and fig.

¹³¹ Ibid., no. 20 and fig.

¹³² BL, MS. Titus D, xviii, f. 8^v; printed in Wanley (1705), 247. Following Z are: 7 Ð þ ð ð.

¹³³ Ker (1957), 304.

¹³⁴ C.C.C.C., MS. 41, p. 436; Page (1973), 212.

¹³⁵ Bodl., MS. Hatton 113; Ker (1957), 398.

¹³⁶ See Robinson (1973), 443-75.

¹³⁷ I am indebted to Dr R. I. Page for this last suggestion.

dating is possible, nor is there any decorative work to help towards an artistic dating. In these circumstances we can best see it as fitting readily into the 9th to early 11th century period suggested by the associated finds.

Note. I should like to express my sincere thanks to Dr R. I. Page, Corpus Christi College, Cambridge, and to Mr T. A. M. Bishop, St John's College, Cambridge, for their help over various points in my interpretation of the text.

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