# EXCAVATIONS IN THE SUB-VAULT OF THE MISERICORDE OF WESTMINSTER ABBEY

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# by

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# Summary

The earliest finds from the site were a few abraded fragments of Roman pot, tile and glass, not associated with any feature. Some evidence was revealed of Saxon activity on the site prior to the construction of the Confessor's Abbey in the eleventh century. The sub-vault itself was found to have been inserted between the south wall of the frater, or refectory, and the north wall of the monastic kitchen in the first half of the thirteenth century, replacing an open court, and to have been demolished in the second half of the sixteenth century. Throughout its existence the sub-vault served as an extension of the kitchen, and formed a connection between the kitchen and the frater.

# Introduction

Documentary research in the early part of this century established the area immediately behind 20 Dean's Yard, Westminster Abbey, as the site of the misericorde, or flesh-frater of the monastery (see below for a discussion of the role of the misericorde). Proposals for the construction of a new building in this area involved the removal of deposits down to the original floor level of the sub-vault. With the kind co-operation of Mr. Peter Foster, Surveyor of the Fabric at Westminster Abbey, the Inner London Archaeological Unit excavated an area within the east side of the sub-vault from February-May 1975, prior to its redevelopment (figs. 2-3).

# The identification of the sub-vault

The use of the misericorde, or *domus misericordiae*, reflected a gradual liberalization of attitudes in the monastic world on the question of abstinence from eating flesh meat. In the rule of St. Benedict, meat was strictly prohibited except to the very ill,<sup>1</sup> and the prohibition was maintained in Britain in the Regularis Concordia (drawn up at some date between 963 and 975),<sup>2</sup> and Lanfranc's Statutes (late eleventh century).<sup>3</sup> However, by degrees, this ruling was liberalized and the eating of meat was permitted to an increasing number of monks. Eventually this meant the provision of meat to all the monks during certain fixed periods of 'recreation' in the course of the year. At Westminster Abbey meat was served on 146 days in 1396–7, and on 170 days in the following year.<sup>4</sup> The meat was, however, provided in a separate room, thus keeping to the letter of the Rule in that no meat was consumed in the refectory proper. This separate room was known as the misericorde, and was first mentioned at Westminster Abbey in the Customary of Abbot Ware of 1266.<sup>5</sup> However, the shortage of documentation prior to this date means that it cannot be stated for certain that a misericorde chamber had not existed previously.

The position of a subsidiary structure such as the misericorde was not strictly laid down either by rule or custom, but was dictated by the site at disposal. It was, however, generally situated near the frater or infirmary. At Canterbury<sup>6</sup> and Barking,<sup>7</sup> for example, it was attached to the infirmary, while at Durham<sup>8</sup> it was situated in a loft at the west end of the frater.

The site of the misericorde at Westminster Abbey was correctly identified by Dr.



Fig. 1. Westminster Abbey location plan.

Armitage Robinson, then Dean of the Abbey, in 1911. It had been previously associated with a long range of buildings running parallel with the frater, and separated from it by about 15 metres of open ground.<sup>9</sup> Practically the whole of this range is now included in the southern portion of Ashburnham House.

Dr. Armitage Robinson gave detailed reasons for differing from previous writers on the monastic buildings at Westminster.<sup>10</sup> These may be summarized as follows:



Fig. 2. Westminster Abbey ground plan. (After R.C.H.M. (Westminster Abbey).)

- (a) The Customary of Abbot Ware, 1266, made it incumbent on the cellarer to maintain the roof, tables and windows of the refectory, and likewise those of the adjoining chamber called the misericorde.
- (b) Another phrase speaks of the misericorde as juxta refectorium.
- (c) Descriptions in grants and leases of a later date join together the great kitchen, the

# LOCATION OF EXCAVATION



Fig. 3. Westminster Abbey sub-vault of the misericorde. Location of excavation.

misericorde, and the refectory in a manner which strongly suggests that they were adjacent. The most important of these is a document of 1571. Lady Anne Parry was leased the misericorde in 1562, but in 1571 she was released from all obligations to repair it. The document shows that the misericorde was not on the ground floor, but had beneath it certain premises belonging to the kitchen.

# Excavations in the Sub-Vault of the Misericorde of Westminster Abbey

Armitage Robinson concluded that the misericorde was adjoining and immediately south of the refectory, and was on the first floor. He also noted a description by a former Surveyor of the Abbey, Mr. Micklethwaite, of 'a Norman wall running from the south side of the frater at right angles to it and a little east of the existing serving hatch, in which wall are two round-headed windows, high up, which shews it to have been the east side of a building'.<sup>11</sup> This was, in fact, the east wall of the misericorde.

Robinson's work was followed up by the Rev. H. F. Westlake, who in 1921 carried out excavations<sup>12</sup> to test Robinson's conclusion that 'if there was a vaulted chamber under the Misericorde which formed part of a passage to the kitchen, all the facts fit well together'.<sup>13</sup> This proved to be the case. The eastern wall and the two vaulting shafts on either side of the hatch communicating with the frater were already known. Westlake found another shaft to the west of these and, 'further to the west again the splayed stones of what seemed to be a doorway were found, thus fixing the line of the western wall, a portion of which was soon discovered. . .'.<sup>14</sup> He also discovered the two most easterly vaulting arches in the south wall, and noted above these 'two corbels, unsymmetrically placed as regards the arches beneath, which evidently supported a hearthstone above. Such a hearthstone in the misericorde finds mention in the almoner's roll for the year 1361–2'.<sup>15</sup> Westlake was thus able to prove the existence of the sub-vault. He could not investigate the central line of shafts which were believed to exist because of the presence of a large drain. He had, however, established the size and approximate height of the sub-vault.

Prior to the 1975 excavations, it was believed that the sub-vault was two bays wide. This premise was based on comments made in the late nineteenth century by its original discoverer, Thomas Wright Senior, then Surveyor of the Fabric, who believed it to be the monastic kitchen, and stated that '... although so little is left of the kitchen, there is enough to show that ... it was a vaulted room of four bays in length, by two bays in width, and therefore had three pillars down its centre, the bases of which have been removed to make room for a common drain. ...<sup>16</sup>

In 1884 Thomas Wright Senior discovered the remains of two ovens 'side by side with parts of the firestone soles, and side walls, as well as the tile-built roofs' in the southern side of the south wall.<sup>17</sup>

An archway with hatches can still be seen in the south wall of the present Abbey Song School. This is the remains of the serving hatch between the kitchen and frater (see Description of the Masonry, p. 153). A passage in the Customary of Abbot Ware states that 'up to the time of Prior Philip (1253–8) there was a hollow and a mural arch with a vault skilfully contrived between the refectory and the convent kitchen',<sup>18</sup> and this may refer to an early version of the serving hatch separating the two. For food to be passed from the kitchen to the frater through this hatchway, there must also have been direct access between the kitchen and the sub-vault.

Two other points must be noted. The first is that nothing was known of how the misericorde or its sub-vault fared in the great fire of 1298 at the monastery, although a document referred to damage to both the kitchen and the frater (see discussion of phase 4, p. 150). Secondly, although the document of 1571 referred to above released the lessee from any obligation to repair the misericorde, there is no actual order known for its demolition. The frater was pulled down in accordance with an order of the Dean and Chapter dated November 5th, 1544.<sup>19</sup>

# WESTMINSTER ABBEY MISERICORDE 1975 PHASE1





# Part I. Description of the Excavations

Investigations were confined to the eastern portion of the sub-vault, but extended to the centre of the hatchway known to exist between the sub-vault and the frater, and still to be seen in the Abbey Song School. The excavated area thus covered one and a half bays of the sub-vault. The remainder of the sub-vault was observed during redevelopment. The site was heavily disturbed by post-medieval pitting.

#### **PHASE 1. (Fig. 4)**

This phase consists of all the pre-Norman levels on the site, five sub-phases were discernible: (a) A layer of chocolate brown river silt 0.40m thick (F91), O.D. 2.54m, overlay fine natural sand, O.D. 2.14m. Because of the depth involved, it was not possible to excavate this silt.

(b) The earliest finds from the site were nine sherds of Roman pot, two fragments of Roman tile, and one fragment of glass, all trampled into the top of the silt in the S. W. corner of the site. No associated feature was located.

(c) In the N.E. quarter of the site was a shallow trench filled with pinkish mortar (F 108), orientated S.E.-N.W. cut on both sides, on the west by a seventeenth century pit (F 18), and on the east by a slot (F 89), but surviving to a length of 1.20m. It was 0.55m wide and 0.05m deep, with vertical sides and a flat bottom. It contained a few small fragments of bone, but no pottery.

Two post-holes (F 83, F 84) may have been associated with this trench. Both were cut by a pit (F 18), and one (F 83) was cut through the centre of the trench (F 108) to a depth of 0.72m. The other (F 84) was about 0.70m to the south and at right angles to the line of the trench and the post-hole (F 83). The fill of the two post-holes consisted of a loose mid-grey sandy soil with light grey mortar flecks. One (F 83) contained a single sherd of coarse dark grey shell-gritted fabric, a few fragments of tile, and some small fragments of bone and oyster shell. There were no finds from the other.

The trench (F 108) is interpreted as a footing for a timber sill beam, which, in association with the two post-holes, may have been the corner of a building.

(d) An irregular slot (F 89) with an associated post-hole (F 89(a)) cut the earlier trench (F 108) on its eastern side. This slot ran approximately north-south, and was cut at its northern end by the south wall of the frater, and at its southern end by a shallow scoop (F 85). Its eastern side was removed by the foundation trench of the east wall of the misericorde. The associated post-hole (F 89(a)) was on the western side of the slot and was partially sealed by the fill of the slot.

The surviving length of the slot was 1.70m, and its width 0.30m. Its base was highly irregular, but it was never deeper than 0.15m. It became shallower towards its south end, and was only 0.05m deep where cut by the scoop (F 85). The associated post-hole (F 89(a)) was approximately circular with a diameter of 0.25m. Its depth below the bottom of the slot was 0.07m. The fill of both was a light greyish-brown clay, with some light grey mortar flecks. There was, however, rather more mortar in the post-hole, and a few small fragments of Reigate stone and charcoal.

Sealing all these features was a very thin deposit (c. 0.01m) of trampled silt (F 91(a)).

(e) Cutting through this trample was a shallow ditch (F 100), which ran approximately S.E.-N.W. across part of the site. It was cut in the S.E. by two sewer trenches (F 27, F 28), and in the N.W. by first the sleeper wall (F 101, phase 2), and then by modern pits, which removed all trace of the ditch west of the sleeper wall. Only a length of 3.80m of the ditch survived. It was 0.85m deep, and of uncertain width (see Section 3). It had partly silted up and had then been deliberately backfilled, largely with quantities of oyster and whelk shells, and bone. A thin gravel spread was laid over its surface. This backfilling occurred in the second half of the eleventh century, and contained a coin, probably of Heinrich III, Holy Roman Emperor 1039-56. The gravel spread was sealed by the make-up for the earliest floor in the excavated area (F 90, see phase 2).

The ditch (F 100) cut through two other features (F 111, F 114), both small scoops. The first (F 111) was approximately circular with a diameter of 0.45m and a depth of 0.30m. It was filled with

loose mid-brown sandy soil, and produced no finds. The second (F 114) was cut by the two sewer trenches (F 27, F 28), and only a small portion c. 0.30m deep survived under the ditch. It was backfilled with redeposited sand, and produced one pot body-sherd of brownish-grey coarse shell-gritted fabric.

# Discussion of phase 1

The presence of river silt directly on top of natural sand in the sub-vault excavations indicates that, at one stage, a large part of Thorney Island was under water.

The very small quantity of Roman material recovered during the excavation is relevant to the widely held view that there was a major Roman structure in the vicinity of Westminster Abbey.<sup>20</sup> However, the limited extent of the excavation in the sub-vault makes it impossible to come to any conclusions on this issue.



Fig. 5. Westminster Abbey sub-vault of the misericorde. Section 3 (facing south) ( $\frac{1}{10}$ ).

The existence of at least three phases of pre-Norman activity represents the earliest archaeological evidence of inhabitation on Thorney Island. It is likely that this activity was associated with the earlier monastery.<sup>21</sup> The most interesting feature was the corner of a possible timber building represented by a beam trench (F 108) and two post-holes (F 83, F 84). However only the ditch (F 100) was datable (to the second half of the eleventh century—see finds report). Its orientation suggests a construction date prior to the siting of the Norman frater and kitchen. Its backfilling consisted almost entirely of kitchen refuse (see Section 3, Fig. 5), which may have been derived from a monastic kitchen, either from a temporary wooden structure in use while the Abbey Church was being built, or from the kitchen of the earlier monastery.

# PHASE 2. (Fig. 6)

This phase was contemporary with the construction of the Norman monastery in the late eleventh century, when the excavated area was bounded on the north by the monastic frater, and on the south by the kitchen. Four sub-phases were discerned:

(a) The earliest floor on the site (F 90) sealed the ditch (F 100) and the trampled river silt (F 91 (a)). Except where removed by later features, this floor covered the whole excavated area and, during redevelopment, was traced extending over the entire sub-vault and beyond its western wall.

To construct this floor, the site was first levelled by depositing a layer of fine light grey silty soil which contained a few small stones. The floor surface of crushed clunch and lime mortar was then laid on top of this.

The relationship of this floor to the monastic frater and kitchen cannot be precisely established, although it probably antedates them. The walls of both buildings were built tightly against their foundation trenches, making it impossible to establish if the floor ran up to the walls or was cut by the foundations. However, the floor abutted the foundations rather than the base of the walls, thereby making the latter more likely. If this was the case, the floor can be dated earlier than 1100, the usually accepted date for the completion of the frater.

(b) The second sub-phase saw the construction of the frater and kitchen in the late eleventh century.<sup>22</sup> (See discussion of the masonry, p. 153.)

(c) Shortly after this, and probably within the same period of construction, a sleeper wall was built running north-south between the south wall of the frater and the north wall of the kitchen, and abutting them. It cut through the original surface of the floor (F 90). The sleeper wall was one metre wide and 0.65m deep, and was constructed on a bed of lime mortar 1.30m wide and 0.20m deep. It was built mostly of clunch with some flint, tile, and re-used Reigate stone blocks.

On top of the sleeper wall was one course of a clunch-faced wall (F 92 (e)), which may be interpreted as the remains of a partition wall. It ran from the north wall of the kitchen for a distance of just over 2m before it was cut by the base of pier 8 of the later sub-vault. On top of this, abutting the kitchen wall, was the foundation base of what may have been either a buttress or the support for an earlier pier (pier 7 of the sub-vault was later inserted on top of it).

Above the centre of the sleeper wall, between piers 8 and 9 of the later sub-vault, was an irregular patch of rubble walling  $0.95m \log_2$  and  $0.15m \log_2$ . Its function is unknown, but, as with the base on top of the partition wall (F 92 (e)), it may have been part of an earlier vault. It seems more likely, however, to be the last remains of a partition wall on top of the sleeper wall. All deposits above it had been removed by a modern pit (F 4).

(d) The floor (F 90) continued in use during the building operations, and was in fact repaired on a number of occasions after the insertion of the sleeper wall. This was particularly the case to the west of the sleeper wall where at least four separate major repairs were made. This was the area of the pathway between the opposed entrances of the frater and kitchen, and it therefore seems likely that this pathway was in use from the time of the original construction of these two buildings.

At least two post-holes (F 87 and F 105) and a shallow scoop (F 85) were cut through the floor. (There is also a possibility that two other post-holes [F 97, F 98] were cut through the floor at this time. Their relationship to the floor had, however, been destroyed by a later feature.) It was not possible to assign these post-holes to sub-phases.

The post-hole (F 87) was approximately circular, with a diameter of 0.35m and a depth of 0.55m. It was backfilled mainly with redeposited chocolate brown silt, but also contained some small flecks of Reigate stone, clunch, and mortar, a large quantity of small bones and bone fragments, and a few fragments of oyster shell. The fill of the second post-hole (F 105) which had been cut by a later feature (F 33), consisted of a loose dark brown sandy soil with flecks of mortar and clunch. The other two post-holes (F 97, F 98) had similar mid-grey silty fills containing some oyster shell and fragments of stone.

Immediately east of the first post-hole (F 87) was a small shallow depression (F 85). It had been backfilled with a sandy black soil which contained a large quantity of charcoal, oyster shell, bone, and pottery, and some small fragments of clunch and Reigate stone.



# WESTMINSTER ABBEY MISERICORDE 1975 PHASE 2



# Discussion of phase 2

Four major problems arise from phase 2:

(a) The first concerns the role of the floor (F 90). Its original extent is unknown, but must have been large, and was possibly linked to the Great Court of the monastery (now Dean's Yard). The lack of evidence for a building with which to associate it, points to it having initially been an open court.

(b) The second problem concerns the reason why the monastic planners left a gap between the frater and kitchen. The most likely explanation is that it acted as a 'lightwell', allowing windows to be inserted in the facing walls of the two buildings. There was no evidence for any roof over the pathway between them.

(c) The initial purpose of the sleeper wall (F 101) is not known. The technique of laying a sleeper wall as the foundation of a vault was relatively common in large masonry structures built on sand, thereby considerably reducing the possibility of subsidence. The same technique was used along the line of the nave arcade in the abbey church at Westminster. Within the 1975 excavated area, the sleeper wall was later used as a foundation for the sub-vault. Its original purpose is unknown, but must be associated with the possible partition wall (F 92 (e)) and the other masonry remains noted above. The issue is further confused by the fact that, during the redevelopment scheme, it was discovered that there were no more sleeper walls under the other lines of columns of the sub-vault. (This does not rule out their presence elsewhere—where the redevelopment scheme did not remove deposits to the requisite depth.)

(d) Finally, it has not been possible to closely date the end of phase 2, and the initial construction of the pit (F 78) which begins phase 3. It is difficult to date any of the pottery in phase 2 closer than likely to be eleventh and twelfth century, but taken in conjunction with the finds from phase 3 (a), a date within the second half of the twelfth century seems most likely (see pot report p. 159).

# PHASE 3. (Fig. 7)

During the later twelfth and early thirteenth centuries, much of the excavated area was occupied by a large lined pit (F 78) and an associated gravel surface. Unfortunately the pit was cut by a modern drain (F 27). There were four sub-phases:

(a) The pit was cut through the floor (F 90) east of the sleeper wall (F 101), probably in the second half of the twelfth century. Its maximum surviving extent was 2.10m east-west and 2.06m north-south. The base of the pit survived under a concrete support for the modern drain (F 27), but could not be excavated below a depth of 1.75m. In its earliest phase the pit did not appear to be lined.

(b) The pit was then partially backfilled with Reigate stone, clunch, a large amount of flint rubble, and some greyish-green clayey soil (F 78 (m)).

Above this rubble fill, the sides of the feature, but not the bottom, were lined with a deposit of mid-grey clay (F 78 (k)) varying in thickness from 0.05m to 0.10m. This clay deposit was spread out over the surface east of the sleeper wall. The relationship of this deposit to those west of the sleeper wall is uncertain due to the disturbance caused by later features, however, both it and the next phase of the pit were associated with a series of thin gravel and mortar surfaces (F 76, F 82, F 95, F 99). Each of these surfaces had a thin deposit of black trampled soil on top of it.

A rubble and mortar platform (F 92), 0.30m high, was constructed on top of the partition wall (F 92 (e)) and extending west of it over the final repairing of the earliest floor (F 90). This platform was sealed by the latest gravel surface (F 76), but the previous surfaces had built up beside it, gradually reducing its height, and all of them must be considered to post-date it.

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# WESTMINSTER ABBEY MISERICORDE 1975 PHASES 3 and 4a

Fig. 7. Westminster Abbey sub-vault of the misericorde. Plan of Phase 3 and 4A.

(c) The pit was then again partially backfilled, with thin layers of crushed Reigate stone (F 78 (j)) and mid-brown sandy silt (F 78 (i)). It was then re-lined with loose mortar and gravel (F 78 (h)). This lining only survived on the north side and on the bottom of the feature.

(d) The pit was finally back-filled and the site levelled, in the first half of the thirteenth century, to permit the construction of the sub-vault. The backfill (F 78 (a-g), F 73, F 88) consisted of separate deposits of mid-brown sandy soil with Reigate stone and clunch rubble, light grey mortar dust containing a large quantity of building rubble, and redeposited sand.

# Discussion of phase 3

Section 1 is misleading in regard to the pit, in that it only shows associated deposits which were used to level the site for floor surfaces. It was not possible to draw a section of the pit because little except its edges survived the insertion of the modern drain (F 27).

The mortar platform (F 92) was probably associated with the doorway into the monastic kitchen, and the pathway to the frater.

The use of the lined pit and its associated gravel surfaces is uncertain. However, the material used for its backfilling contained the best group of finds from the site, and the *terminus post quem* of c. 1245 for the insertion of the sub-vault provides a very useful date for the study of the pottery.

# PHASE 4. (Figs. 7, 8 and 9)

The insertion of the sub-vault followed immediately upon the final backfilling of the lined pit (F 78) and the levelling of the site between c. 1220-1245. This date is based on the type of pier-base used (see p. 154). The sub-vault was probably used as an extension of the kitchen from the time of its construction, but from the lack of ovens or hearths throughout most of its existence, and from the evidence for partitioning, it seems to have had a purely storage function until the late fifteenth century. Three sub-phases were discerned:

(a) Following immediately upon the backfilling of the lined pit (F 78) and the levelling up of the area, an eastern wall three bays wide was constructed, containing a window in its central arch; this window supplied light to the eastern side of the sub-vault and was later replaced by another larger one in the same position. A small, shallow scoop (F 86) filled with loose light grey mortar dust, was cut into the top of the foundations of the east wall, and within its backfill was the base of a vessel, other fragments of which were found in the final backfilling of the lined pit (F 78). Vaulting shafts were inserted into the south wall of the frater and the north wall of the kitchen. Two construction trenches (F77, F 79) were cut to allow the insertion of piers on top of the sleeper wall (F 101). The completed sub-vault consisted of four triple bays, with simple quadrapartite vaulting, 14m long by 8.20m wide, and 2.90m high. A hatch connected it with the frater, and there were doorways between it and the kitchen, and in the northern corner of its western wall (see p. 153).

A floor of mortar rubble (F 70 (b)) surfaced with Reigate stone chippings (F 70 (a)) was constructed in association with the newly inserted vault. Slots for a timber partition were cut into piers 2, 8, and 9 (see p. 155), indicating that the area east of the pathway between the kitchen and frater was partitioned off, possibly for storage purposes.

Separating this floor from the top of the mortar platform (F 92) was a very shallow slot-like feature (F 72). Its full length is unknown, because it was cut by modern features at both ends. A length of 1.90m survived. It was 0.25m wide and 0.05m deep, and was filled with green sand containing much crushed egg-shell and some complete oyster shells.

Cut through the floor (F 70) was a large post-hole (F 68, see Section 1, Fig. 11), with an associated short trench. The post-hole was 0.60m in diameter and 0.85m deep. The trench sloped up gradually from the edge of the post-hole, and was cut by a modern feature at its western edge. The trench was probably cut to ease the insertion of the post. The function of the post is less certain, but its large size and its position nearly in the centre of one bay may indicate that it was used to prop up part of a collapsed vault. The post was removed and the hole backfilled with clunch, flint and mortar rubble, to allow the construction of a new floor.

(b) This new floor (F 57/64/67) replaced the earlier one (F 70), probably in the fourteenth century (see pot report p. 166. It is impossible to narrow down the dating range of the finds). The site was first levelled with a deposit of mid-chocolate brown sandy silt (F 59), and then the new floor was laid. The floor surface survived only patchily, and the material used varied between crushed mortar, crushed clunch, and Reigate stone chippings. These variations were probably due to floor repairs. This was again most evident west of the sleeper wall in the area of the pathway between the kitchen and frater.

(c) The floor (F 57/64/67) was replaced in the fifteenth century by another (F 56), which survived as patches of orange clay and mortar, resting on a bedding of clean sand (F 56 (a)), and black sandy soil (F 56 (b)). With the black soil was a length of lead pipe (F 53), 1.82m long, which ran in a S.E.-N.W. direction, but was cut by modern features (F 4, F 38) at both ends.



WESTMINSTER ABBEY MISERICORDE - PIER ELEVATIONS

Fig. 8. Westminster Abbey sub-vault of the misericorde. Pier elevations and sketch plan of pier positions.

# Discussion of phase 4

The construction of the misericorde and its sub-vault was thus confirmed as being prior to the Customary of Abbot Ware of 1266,<sup>23</sup> which provides the earliest documentary evidence for a misericorde at the monastery. The most important finding was that the sub-vault was three bays wide rather than two (see Introduction p. 139). Westlake's 'splayed stones of what seemed to be a doorway'<sup>24</sup> at the northern end of the western wall were discovered during the redevelopment (see p.154).

# WESTMINSTER ABBEY MISERICORDE 1975 PHASE 4





There was no evidence in the sub-vault of the great fire in the monastery in 1298. There was no burnt layer of that date, and no sign of burning on the masonry. 'An M.S. Chronicle of St. Mary of Southwark, in the British Museum<sup>25</sup> states that on the 29th March 1298 was burnt the little hall of the king at Westminster, also the monks' dormitory, refectory, infirmary, cellars, and the abbot's hall.' The refectory had its upper stage rebuilt and a new timber roof.<sup>26</sup> It is feasible that the hall of the misericorde was burnt, but the fire did not affect the sub-vault.

# PHASE 5 (Fig. 10)

In the mid-late fifteenth century the function of the sub-vault was changed by the insertion of a circular two-bay baker's oven through the kitchen wall. Two sub-phases were evident:

(a) The oven (F 42) was inserted through the wall separating the sub-vault from the kitchen, immediately east of pier 7. The wall and dome were constructed with a facing of roof tiles over an inner layer of rubble and mortar. The two bays were of Reigate stone blocks. There was no evidence of a stoke-hole, a chimney, or an outlet; these must have been in the kitchen.

A new floor (F 52) was laid, associated with the oven. The make-up for it was of mid-grey sandy silt, with clean sand on top. Only very slight traces of a thin mortar surface survived.

The north-east corner of the sub-vault was divided off by a brick partition (F 51) and given a plain glazed tile floor. Only one course of bricks survived, laid end-to-end between piers 4 and 9. The partition also ran between piers 9 and 2, heavily disturbed by later features. A large block of Reigate stone was included in the partition immediately north of pier 9. Within the brick surround was a band approximately 0.10m wide filled with loose mortar and sand. Inside this was a thin vertical strip of yellow mortar 0.01m wide, suggesting a timber partition. Within that were the remnants of a plain glazed tile surface. This feature was inserted into the earlier deposits, and the original tile surface (F 51 (d)), was 0.15m below the surrounding floor (F 52). Under the tile surface was a layer of clean sand (F 51 (e)), apparently make-up for the tile floor, and below that a deposit of purple ash and black soil (F 51 (f)), varying in thickness to a maximum of 0.10m.

The tiles were of Netherlands type with a red fabric, and had a yellow, green, or brown glaze. The yellow glaze was over a white slip. Only a few broken fragments from around the edges of the feature survived. The rest must have been removed prior to the further deposit of clean sand (F 51 (b)), on top of which a new glazed tile surface was laid. As with the lower floor (F 51 (d)), the tiles were set into a thin layer of yellowish mortar. The tiles of this later floor were very badly laid, being set at different angles.

(b) In the late fifteenth or early sixteenth century a layer of black soil (F 47), varying in thickness up to 0.20m, was deposited on top of the floor (F 52), as build-up for a new floor. This deposit was probably kitchen refuse, as it contained a large quantity of animal bone. It did not extend over the partition (F 51), but covered the rest of the excavated area, and ran up to the side of the oven.

Cut through this layer immediately to the west of pier 9 was a post-hole (F 54) and a small length of a slot-like feature (F 55), running in a S.E.-N.W. direction, but surviving to a length of only 0.90m, being cut at both ends by later features. The fill of both was a similar mid-brown sandy soil with much oyster shell and some fragments of Reigate stone, clunch, and mortar. There were also traces of burnt wood in the post-hole.

A brick and stone wall (F 46) was constructed around the oven, and just cut into the top of the black layer (F 47). Only the bottom course survived with one side running north-south between piers 7 and 8, and the other running west-east from pier 8, before being cut through and removed by a modern feature. The wall was the width of two bricks.

A new floor was laid running up to and sealing the partitioned-off area (F 51) (see Section 1, Fig. 11). On top of the black layer (F 47) was deposited a layer of orange mortar rubble (F 49 (b)), containing some fragments of roof-tile and clunch, and a little Reigate stone. The floor was then surfaced with crushed clunch (F 49 (a)), surviving in parts only as a fine grey powdered mortar (F 49 (c)).

# Excavations in the Sub-Vault of the Misericorde of Westminster Abbey WESTMINSTER ABBEY MISERICORDE 1975 PHASE 5b





A short stretch of walling (F 29) was constructed running north from pier 9, and cut short of pier 2 by a later feature. There was also a short fragment of a return wall running west from pier 9 before it in turn was cut. The wall consisted largely of Reigate stone blocks with some clunch, and survived to a height of three courses. It was cut into the top of the black deposit (F 47), and was faced on its inner, but not on its outer surface. Its purpose is unclear.

During the redevelopment scheme, a partitioned-off area, surfaced with reused thirteenth and fourteenth century tiles, and bounded by a single course of bricks laid end to end, was located extending north from the south wall of the misericorde in the second bay from the west (see p. 156). No pottery was found associated with this partition, but the dating of the bricks, and the fact that it was directly sealed by material from the demolition of the sub-vault, places the partition within this phase.

# Discussion of phase 5

The insertion of the oven into the sub-vault in the mid-late fifteenth century reflects the close association of the sub-vault and the monastic kitchen. However, there was no evidence found of the two other ovens mentioned above (see p. 139), either during the excavation or during the redevelopment of the site. These ovens were probably totally contained within the kitchen.

The major issue raised by phase 5, however, was the absence of the pathway between the kitchen and frater. In previous phases this pathway was subject to much heavier wear than occurred in the rest of the excavated area, yet in this period there is no evidence for its existence, and only very scant evidence for the area west of piers 7, 8, 9, and 2 having been floored. It is unfortunate that the east-west return of the partition wall (F29) was cut at a point which makes it impossible to say whether or not it would have blocked off the pathway. Due to the presence of a seventeenth century pit, it was also impossible to date the blocking of the doorway between the kitchen and the sub-vault, or even to discover whether it occurred before or after the demolition of the sub-vault.

# PHASE 6

Two sub-phases were discerned:

(a) The demolition of the sub-vault (see Sections 1 and 2, Fig. 11) occurred in the late sixteenth century. The demolition level (F 10) was just over 1.00m in depth, and consisted of two main deposits of rubble (F 10 (c), F 10 (e)), separated by a layer of dark greyish-brown sandy soil (F 10 (d)) (see Section 2). There were very few worked stones, and most of the rubble was in fact fragments of mortar and small pieces of Reigate stone, clunch, and roof tile. A large dump of clunch blocks (F 45), probably the remains of a collapsed vault, lay around the oven (F 42), which had also been demolished. It seems highly likely that all the worked stone, including the shafts of piers 3, 8, and 9 was taken away to be re-used elsewhere. Pits (F 10 (f), F 43) were cut through the rubble to remove the shafts of piers 9 and 3.

(b) The area then remained open until the early eighteenth century, when it was built upon once more. During its period as an open space no surface was laid, and the area was heavily pitted. Of these pits, one (F 18) seems to have contained a barrel, though only stains of the wood remained. The function of the pits is uncertain, their fill consisting mostly of redeposited building material.

#### Discussion of phase 6

The date of the pottery found in the rubble of the demolished sub-vault (late sixteenth century) agrees remarkably well with the documentary evidence for the building's continuance in use until the 1570's (see p. 170).

It is also noteworthy that the deposits reflected two periods of demolition although there was no discernible difference in date between them.

# WESTMINSTER ABBEY MISERICORDE 1975 SECTIONS 1 and 2



Fig. 11. Westminster Abbey sub-vault of the misericorde. Sections 1 (facing east) and 2 (facing south).

Line of North wall

#### Excavations in the Sub-Vault of the Misericorde of Westminster Abbey

Little has been said of the mainly seventeenth century pits dug after the demolition of the sub-vault. Only very poor groups of finds were recovered from them, and the pits themselves were largely isolated from one another. The material is available for examination at the Inner London Archaeological Unit.

# THE MASONRY

#### (i) The North Wall

This was originally the outer face of the south wall of the frater (constructed by 1100). Part of the original facing of Caen stone blocks survived between piers 2 and 3. The blocks were well laid with only very narrow gaps between each one. The facing was cut through for the insertion of piers 2 and 3. The patching of these cuts consisted of re-used Caen stone blocks, along with Reigate stone and clunch rubble, and some roof tiles. All the piers around the walls have surrounds of dressed Reigate stone blocks. There was an approximately square socket, with sides of c. 0.10m, cut into a Reigate block on the east side of pier 2. It was not possible to ascertain whether this socket was cut at the time of the insertion of the vault, or at a later date. (There were other sockets beside piers 4 and 5 in the east wall—see below.)

Between piers 1 and 2 is the hatchway connecting the sub-vault and frater. Within the sub-vault this is now concealed behind a brick wall. However, the remains of the frater are now occupied by the Abbey Song School, and here the hatchway is visible from its north side as 'a fourteenth century archway with a moulded semi-circular arch and responds with clustered shafts having moulded capitals and bases'.<sup>27</sup> Within this archway is a square-headed window, probably of sixteenth century date. Similar hatches connecting the frater with the kitchen can be seen in the frater wall at, for example, Carlisle,<sup>28</sup> Tintern,<sup>29</sup> and Beaulieu.<sup>30</sup>

The mortar of the original facing of the frater wall was a very light grey colour, whereas that within the cuts for the piers was orange. The foundations were of clunch and limestone rubble, and just under 1.00m deep. They were not stepped and were built tightly against the side of the foundation trench. Their shallowness and lack of stepping is unusual in view of the looseness of the natural sand. They contained much reused building material, including a volute which may either be an unfinished Norman work, or from the earlier Saxon monastery. If the latter, it suggests that demolition of earlier stone buildings, though not necessarily of the earlier church, had begun.

More of the north wall was exposed during the redevelopment scheme, down to the level of the base of the piers. Most of its facing had been removed at an earlier unknown date, leaving only the rubble core. Part of the facing, which was largely of limestone rubble, only survived where protected by the demolition levels.

The splayed stones of the western doorway of the sub-vault were also exposed at this time. The doorway was of Reigate stone, and had been inserted into the north wall. The base of what had been a moulded semi-circular arch over the doorway was revealed immediately east of the jamb (see under west wall p. 154).

#### (ii) The East Wall

A large part of the wall face between piers 3 and 4 was destroyed by the insertion of a fireplace and chimney into the wall in the eighteenth century. The facing survived, however, beneath the associated hearth. It consisted of Reigate stone, clunch, and flint building rubble, including some re-used facing stones. A few pieces of tufa were present in the shadow arches of the bays. The surface of the wall was plastered over, and may have been painted.<sup>31</sup>

The wall was best preserved between piers 4 and 5. Here two phases of a window were visible within the archway. The earlier window survived only at the bottom corner of its south side, as two joined and chamfered blocks of Reigate stone. The replacement window had two vertical chamfered jambs of Reigate stone blocks, beginning at the top of the arch, and a base of clunch rubble. The window must have been the principal light source for the sub-vault. There was brick and roof tile present in the final blocking of the window.

There were squarish sockets at the same level immediately south of the shafts of both piers 4 and

5. The level was lower however than that of the socket beside pier 2.

The facing of the wall between piers 5 and 6 was almost totally destroyed by, in particular, the insertion of a cast iron sewer pipe. Only scanty remains of a shadow arch survived. There were also the remains of stepped foundations of flint although the levels are so disturbed that it is possible that they may have been inserted to strengthen the wall at the time of the insertion of the sewer pipe.

The rubble core of the east wall was visible in places, and consisted mainly of clunch rubble and orange mortar. Rubble and orange mortar were also used to backfill the foundation trench (F 86 (b)).

#### (iii) The South Wall

Pier 6 itself was totally destroyed, as was most of the original wall face between piers 6 and 7. This was caused by a combination of the cast iron sewer pipe and the insertion of the two-bay baker's oven (F 42). Most of the archway extending east from pier 7 survived.

The wall between pier 7 and the western edge of the excavated area was well preserved. Most of the archway extending west from the pier seems to have survived, although covered in modern plaster and cement. The wall below the archway contained a number of phases, the earliest of which was a flagstone surface. The surface was level with the top of the one surviving course of the partition wall (F 92 (e)) which was built on top of the sleeper wall (F 101) (see Phase 2). It was not located elsewhere in the excavated area, and was cut against the wall face by a seventeenth century pit. Resting on the flagstone surface were two very badly laid courses of Reigate stone blocks, and above that the main part of the wall itself was a doorway which was on the same level as the first floor surface of the sub-vault (F 70). Most of the doorway lay outside the area of excavation, and was only exposed during the redevelopment of the site.

The wall between pier 7 and the door jamb consisted, on its lower part, of faced Reigate stone blocks. Above that, and possibly representing a cut for the insertion of pier 7, later than the doorway, was a wall of badly-laid rubble.

The flagstone surface probably represents the position of the original doorway to the path between the kitchen and frater. The construction of a new door slightly further west may have been necessary to allow the insertion of pier 7 in its correct place in the vault. The date of the blocking of the doorway is unknown.

Above the arches between piers 6, 7 and 8 were the two corbels mentioned in the Introduction (p. 139) as evidently supporting a hearthstone in the misericorde itself.

#### (iv) The West Wall

The remains of the west wall were only revealed during the redevelopment scheme. The doorway in the north-west corner of the sub-vault was 2.14m wide. The door jambs were splayed, and the base survived of a moulded arch which went around the interior of the door. The wall was rubble-faced, and 1.15m thick. It survived to a height of four courses.

The doorway was partially blocked, probably in the late fifteenth century, and a flight of three stairs constructed leading out of the sub-vault to a newly constructed surface of granite sets. It was not possible to say whether this was a general surface or only a pathway from the door.

#### (v) The Pier Bases

The pier bases were of a simple neo-Attic type, with water-holders, common in Britain from the late twelfth century until c. 1260.<sup>32</sup> From c. 1240, however, an intermediate roll began to be inserted to replace the water-holder, making a triple roll. This triple roll type was the favourite base in use at Westminster Abbey during its rebuilding under Henry III,<sup>33</sup> and can be seen, for example, in the crypt and vestibule of the Chapter House, and in the Chapel of St. Faith, at Westminster. Work on these was probably started concurrently with work at the Abbey Church in 1246.<sup>34</sup> It is probable, therefore, that the sub-vault of the misericorde was constructed before this date.

In the sub-vault, pier 7 had one element less than the others, but was otherwise of the same type. The missing element was probably due to the height of the already existing base (see Phase 2). All

the bases have rather large lower rolls which may indicate an earlier date in the lifespan of the type.<sup>35</sup>

The base of pier 2 had a slot facing south; pier 9 had two slots, one facing the slot in pier 2, and the other facing a similar slot in the north side of pier 8 (p. 155).

An inscribed arrow extending up the centre of the face of pier 4 was probably used by masons for 'lining up' the rest of the vault. It was the only mason's mark visible on the masonry.

Traces of cream paint were found on the shafts of piers 4 and 5, and it is likely that all the piers, and possibly even the walls, were painted at one stage.

Piers 3 and 6 were missing, as were some others outside the excavated area. Pier 3 was removed during the demolition of the sub-vault, as were the shafts of piers 8 and 9. The tool marks from the removal of the shaft of pier 3 were still visible. Pier 6 was probably removed during the insertion of the cast iron sewer (F 28).

# COMMENTS ON THE STRATIGRAPHY EXPOSED DURING REDEVELOPMENT

The scheme removed deposits down to the level of the base of the piers. As in the excavated area, these deposits were very severely disturbed by post-medieval pitting. Over much of the area, however, the sixteenth century demolition rested directly on top of a floor surface which was level with the bottom of the pier bases, i.e. at the original surface level of the sub-vault. It is probable that deposits were removed down to this level at a sixteenth century date, prior to the demolition, and a new surface constructed.

A much fuller account of the evidence revealed during the redevelopment scheme, both within the sub-vault, and in the area between the sub-vault and the cellarer's range, will appear in the next volume of the Transactions.

# Discussion

The fine natural sand on the site was overlain by a layer of chocolate brown river silt. A few fragments of Roman pottery and tile were trampled into the surface of this silt, but no associated features were located.

There were three phases of pre-Norman activity on the site. The first consisted of the mortar footing for a timber sill beam with two post-holes which were possibly associated with it. The second was an irregular slot with an associated post-hole. The third was a shallow ditch, dug in the mid-eleventh century before the layout of the Norman monastery had been decided.

The ditch was backfilled, and sealed by the make-up for the surface of an open court, which may have been connected directly with the great court of the monastery (now Dean's Yard). This surface was cut before 1100 by the south wall of the frater and the north wall of the kitchen, and later by a sleeper wall running north-south between them, and abutting them. The floor continued in use after this, and was repaired on a number of occasions west of the sleeper wall, where a pathway crossed from the kitchen to the frater.

A large pit was dug east of the sleeper wall in the second half of the twelfth century. It had at least three phases of use, in the last two of which it was lined, and had associated gravel and mortar floors.

The pit was finally backfilled pre c. 1240, and the insertion of the misericorde and its sub-vault followed immediately. The completed sub-vault consisted of four triple bays, with simple quadrapartite vaulting, 14m long by 8.20m wide, and 2.90m high. A hatch connected it with the frater, and there were doorways between it and the kitchen, and in the northern corner of its western wall. It is probable that part of the original vault collapsed and had to be repaired. A new floor was laid in the sub-vault. The sub-vault

was used as storage space for the kitchen until the mid-late fifteenth century. Various sections were partitioned off, and the floor surface was replaced twice.

In the mid-late fifteenth century, a two-bay baker's oven was inserted through the kitchen wall into the sub-vault, and a new floor laid. In the late fifteenth or early sixteenth century, a layer of black soil was deposited on top of this floor, the area around the oven was partitioned off, and a new floor constructed. It was within this phase that the pathway between the kitchen and frater went out of use. A part of the sub-vault was partitioned off and surfaced with reused decorated medieval tiles.

In the late sixteenth century, the misericorde and its sub-vault were demolished, and the site levelled. It remained an open space until the early eighteenth century, when it was built upon once more.

# **Conclusions**

It must be emphasised that the area excavated was very limited, which must qualify the value of the conclusions. It was, however, the first formal excavation to be carried out at Westminster Abbey, and is therefore of special importance.

The lack of features of Roman date was disappointing, and the existence of a major Roman structure on Thorney Island remains uncertain.

The presence of at least three phases of pre-Norman activity on the site represents the first archaeological evidence of the religious community at Westminster prior to the time of Edward the Confessor. The remains of the timber building in particular prove the site to have been occupied.

The presence of the ditch is intriguing in that, although it can probably be dated to the mid-eleventh century, it was dug before a decision had been taken on the layout of the Norman monastery, because it ran under the walls of the refectory and kitchen.

The position of the monastic kitchen has been firmly established as being south of the sub-vault. Its north wall was used as the south wall of the sub-vault, and a small section of its west wall was revealed during the redevelopment scheme.

From the late eleventh century to the thirteenth century the open court between the frater and kitchen would have acted as a light well. It was common monastic practice for food to be served through a hatch between the kitchen and frater. The problem at Westminster, however, is the reason for an 8m pathway between the two, which was open to the elements, there being no evidence of any roofing over the pathway.

The difficulty of inserting additional buildings into claustral ranges, where space was at a premium, is reflected by the insertion of the sub-vault and misericorde between the kitchen and the frater. This was a problem faced by all monastic planners, particularly with religious houses situated in, or very close to, major centres of settlement. The misericorde was especially problematical because it had to be situated close to either the infirmary or the frater. Westminster was fortunate in having a space available between the kitchen and frater. In some monasteries, such as Kirkstall and Jervaulx, the solution was to turn the frater into a two-storeyed building, the upper part becoming the frater, and the lower the misericorde.<sup>36</sup> At Furness, a new frater was built with two floors, the lower housing the misericorde.<sup>37</sup> Much research is still necessary on the siting of lesser buildings within monastic precincts.

Little is known of how the misericorde was used. Initially monks certainly ate in the misericorde on the days that meat was served. At Peterborough the rule was 'that all

singular brethren and monks of the monastery take the refection altogether in a place called the miseracorde, soch dayes as they eate fleshe, and all other dayes in the refectory'.<sup>38</sup> However, by the end of the fourteenth century, meat was being eaten in the frater in most Benedictine houses.<sup>39</sup> At Westminster, in later days at least, the 'grammar children' used it as their hall, and, on certain occasions, also the servants of the monastery. It was there that the prior gave breakfasts to the singing-men, and to newly professed novices.<sup>40</sup>

There is also very little information on the origins of the construction of a separate building for the consumption of meat, although the practice of eating meat on certain days of 'recreation' can be traced back earlier than 1216 at Abingdon, Bury, Durham, Peterborough, and St. Albans.<sup>41</sup>

At Westminster, a secondary effect of the construction of the misericorde and its subvault was to provide additional storage space for the kitchen, and a roof over the pathway to the frater. How the two buildings coped with the reduction in light caused by the insertion of the new hall is unknown.

The evidence for monastic diet recovered from the excavations is of major importance, although any conclusions must be limited by the fact that the deposits on the site were from the construction of floor levels, and not from the dumping of waste. The sparsity of animal bone recovered was probably due to the fact that any large bones would have been removed before the floors were laid. However, more than twenty varieties of fish, and numerous bird remains, were recorded (reports, p. 170) as well as large quantities of crushed egg-shell.

#### NOTES

- <sup>1</sup> Dom Cuthbert Butler *Benedictine Monachism* (1924) reference note p. 44, p. 307.
- <sup>2</sup> Regularis Concordia—rules set out by a Council under Dunstan which took place at some date between 963-975. See the edition by Dom Thomas Symons, in Nelson's Medieval Classics (1953).
- <sup>3</sup> Lanfranc's Consuetudines—he composed them in the late eleventh century for the monks of Christ Church, Canterbury. Ref. Wilkins 'Concilia' (i) 328-61.
- <sup>4</sup> Rev. H. F. Westlake Westminster Abbey 2 (1923) 393.
- <sup>5</sup> Ed. Sir Edward Maunde Thompson Customary of St. Augustine's Canterbury and St. Peter's Westminster 2 (1904).
- <sup>6</sup> G. H. Cook English Monasteries in the Middle Ages 73.
- <sup>7</sup> R. C. H. M. Essex, Central and South West (1921) 8.
- <sup>8</sup> R. L. Palmer English Monasteries in the Middle Ages (1930) 29.
- <sup>9</sup> Ed. M. E. C. Walcott, Westminster Abbey Suppression Inventories.
- <sup>10</sup> Dr. Armitage Robinson The Abbot's House at Westminster (1911) 54-58.
- <sup>11</sup> Rev. H. F. Westlake Westminster Abbey 2 (1923) 391.
- <sup>12</sup> Rev. H. F. Westlake 'Notes on some recent excavations at Westminster Abbey' Antig. J. 50 (1921) 232-3.
- 13 Ibid.
- 14 Ibid.
- 15 Ibid.

- <sup>16</sup> Thomas Wright Senior, Private notes, 55, neg. no. WAM 65047.
- 17 Ibid.
- <sup>18</sup> Rev. H. F. Westlake Westminster Abbey 1 (1923) 30.
- 19 Rev. H. F. Westlake Westminster Abbey 2 (1923) 390.
- <sup>20</sup> For example see C. A. Ralegh Radford 'Westminster Abbey Before King Edward the Confessor' Westminster Abbey Occasional Paper No. 15 (Summer 1965).
- <sup>21</sup> *Ibid.* There was a monastery on the site from at least the tenth century, and probably a minster church before that date.
- <sup>22</sup> R.C.H.M. London (Westminster Abbey) (1924) 84.
- <sup>23</sup> Thompson op. cit. in note 5.
- <sup>24</sup> Westlake op. cit. in note 12.
- <sup>25</sup> Faust A.8. See W. R. Lethaby Westminster Abbey and the King's Craftsmen (1906) 199.
- <sup>26</sup> Ibid.
- <sup>27</sup> R.C.H.M. London (Westminster Abbey) (1924) 84.
- 28 Francis Bond Westminster Abbey (1909) 300.
- <sup>29</sup> Ibid.
- <sup>30</sup> Ibid.
- <sup>31</sup> Some fragments of painted plaster were recovered from the demolition level close to the east wall.
- <sup>32</sup> With thanks to Mr. S. E. Rigold.
- <sup>33</sup> Francis Bond English Church Architecture Vol. 2, 551.
- 34 H. M.Colvin History of the King's Works Vol. 1, 141.
- <sup>35</sup> With thanks to Mr. S. E. Rigold.

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<sup>36</sup> R. L. Palmer English Monasteries in the Middle Ages (1930) 157.

<sup>38</sup> Francis Bond Westminster Abbey (1909) 300.

# Part II. The Finds

# THE POTTERY

<sup>39</sup> Palmer op. cit. in note 36.

940-1216.

40 Rev. H. F. Westlake Westminster Abbey 2 (1923) 386.

<sup>41</sup> Dom David Knowles The Monastic Order in England

# by

# Elizabeth Platts

#### Introduction

The site yielded approximately 1,500 sherds of pottery dating from the Roman period to the nineteenth century. A high proportion of the sherds—more than 75%—were small (an average area of 60 sq. mm) and featureless. No complete vessels were found during the excavation, though demolition workers found four sixteenth and early seventeenth century pots during redevelopment work after the excavation. There were few assemblages and only one vessel (a large decorated jug from the pit F78, Fig. 13, No. 31) was present to any large extent.

The range of vessels represented is small, though it must be said that the nature of the sherds made definite attribution difficult. In Phases 1 and 2 cooking pots predominate and only one sherd might be considered to have come from a spouted pitcher. Phase 3 reflects the introduction of jugs, and would also appear to show a greater variety of use of cooking pot-type vessels: the proportion of these showing evidence of burning decreases in this and the next phase. However, it must be pointed out that the disparity in size of sample makes this observation likely to be misleading. Phases 4 and 5 show the greater variety of vessels produced in the later medieval period.

There are few examples of fine 'table' wares other than the decorated jugs, from Phase 3 D. Very few sherds of imported pottery were found, and no moulded sherds from such vessels as anthropomorphic jugs, so that there is little independent dating evidence—the majority of sherds coming from cooking pot-type fabrics having a long period of use without change. The importance of the group from the pit F78 lies in the date of c. pre-1240 taken from the masonry used for the insertion of the sub-vault, that date providing a fixed point for the dating of the pottery.

The small size of the sherds, the lack of complete vessels represented, and the bias towards those wares associated with kitchen use all point to the conclusion that the bulk of the pottery sherds was brought from the kitchen waste dumps rather than that the area was being used directly for rubbish pitting.

The featureless nature of the majority of the sherds makes them unillustratable. Only some rims, bases, and sherds of especial interest have been described and drawn here. (The bulk of the material is deposited at Imex House, 42 Theobalds Road, London WC1, and may be consulted there.)

The wares are described in the following order:

Red wares: i glazed and/or slipped ii plain Grey (reduced) wares Buff wares 'Shell' tempered wares 'Surrey' white wares Imports

<sup>&</sup>lt;sup>37</sup> Ibid.

The sherds are described in the following order:

Colour of fabric Hardness and tempering Surface colouring Slipping and glazing Applied decoration

# PHASE 1

Sub-phase A There were no finds from this level.

- B Apparently redeposited, the nine small sherds of Roman pot, two fragments of Roman tile and one fragment of glass were the earliest finds from the site. The small amount of the sherds makes close dating difficult.
- C A single Saxon sherd from F83.
- D Nine sherds, all from cooking pot-type wares, some showing evidence of burning, probably tenth and eleventh century in date.
- E These sherds are associated stratigraphically with a coin, probably of Heinrich III, Holy Roman Emperor 1039-56.

Phase 1 (Fig. 12)

Sub-phase A No finds.

#### Sub-phase B Roman

Koman

1 (F91 C and D) Bead rim. Samian. Not illustrated: eight small sherds Roman pottery.

Sub-phase C

Saxon

Not illustrated: (F83) Body sherd. Dark grey coarse shell-tempered fabric.

Sub-phase D

Grey wares

- 2 (F89) Jar or cooking pot rim. Brown-grey very sandy fabric.
- 3 (F91 A) Jar or cooking pot rim. Grey-brown fairly fine fabric with red surfaces.

Sub-phase E

Grev wares

- 4 (F100 F) Cooking pot rim. Grey very sandy fabric, blackened exterior.
- 5 (F100 F) Cooking pot rim. Pink-grey very sandy fabric, blackened exterior.

# PHASE 2

The very small amount of sherds, and their nature—from cooking pots—makes it difficult to date any of the pottery in Phase 2 closer than likely to be eleventh and twelfth century.

It is interesting to note the absence, both in this Phase and in Phase 1, of various Midlands wares, for example Thetford and Stamford. However, the small size of the sample does not make the absence relevant.

Phase 2 (Fig. 12)

Sub-phase B

- 'Shell' tempered ware
- 6 (F115) Cooking pot base (sagging). Dark brown coarse fabric.

Sub-phase D

Grey wares

- 7 (F94 C) Cooking pot rim. Light orange-buff, very sandy fabric.
- 8 (F94 D) Cooking pot rim. Light grey very sandy fabric, blackened exterior and interior surfaces.



Fig. 12. Westminster Abbey sub-vault of the misericorde. Roman, Saxon and medieval pottery: Phase 1, Nos. 1 ( $\frac{1}{2}$ ), 2 to 5 ( $\frac{1}{4}$ ); Phase 2, Nos. 6 to 8 ( $\frac{1}{4}$ ); Phase 3, Nos. 9 to 21 ( $\frac{1}{4}$ ).

#### PHASE 3

This Phase provides the most significant information of the site for the study of medieval pottery. The group of pottery from the pit (F78) must pre-date c. 1220-1240 when the pit was finally backfilled for the insertion of the sub-vault (see discussion of the masonry, p. 153). It shows, therefore, that at this period quite a wide range of wares were in use: the reduced gritty wares of the Hertfordshire types, shell-tempered wares, oxydised wares possibly from West Kent kilns, and, most notably, the red sandy wares used for the decorated jugs, believed to have been produced near London. The best example (Fig. 13, No. 31) from the pit (F78) is a large jug—almost complete—approximately 400mm high, decorated with stripes of painted red slip and applied cream slip, partially glazed outside with a thin yellow glaze. The fabric is reduced in parts and the glaze reads green over those areas. This jug is similar to those found during the Guildhall extension excavation, Marsden (1968, 13 and Pl. 3, Fig. 8). Another interesting jug in the pit (F78) group (Fig. 14, No. 42) in a similar fabric is covered in a cream slip and decorated with applied rouletted stripes, glazed with a mottled yellow/green glaze. It would appear to be an English-made copy of a Paris or Rouen original, cf. Platt and Coleman-Smith (1975, No.991), but this would make the introduction of the original jugs earlier than is thought at the moment.

There is a higher proportion of cooking pots and storage vessels sherds in Sub-phase B than in Sub-phase D, but there is no discernible difference in date between these two.

Phase 3 (Fig. 12, Nos. 9-21, Fig. 13, Nos. 22-37, Fig. 14, Nos. 38-62. Fig. 15, Nos. 63-88. Fig. 16, Nos. 89-97)

#### Sub-phase B

Red wares

- 9 (F78 M) Jug base. Red fine sandy fabric with a reduced core, spots of yellow glaze on the interior and the base.
- 10 (F78 M) Cooking pot rim. Red sandy fabric with a reduced core.
- 11 (F78 Q) Cooking pot rim. Red sandy fabric with a reduced core.
- Grey wares
- 12 (F78 K) Body sherd. Reduced sandy fabric, light grey interior surface, red-brown exterior surface with incised wavy lines. Similar to a jug found at the Bank of England, now in the Museum of London (Acc. No. 5738).
- 13 (F92 F) Cooking pot rim. Reduced sandy fabric, red surface on rim, blackened partially on exterior and interior surfaces.
- 14 (F92 B) Cooking pot rim. Reduced very sandy fabric, blackened partially on exterior and interior surfaces.
- 15 (F78 L) Cooking pot base. Buff-grey very sandy fabric, dark grey surface on interior surface and base.
- 'Shell' tempered
- 16 (F78 M) Cooking pot rim. Reduced coarse fabric, blackened exterior and interior surfaces.
- 17 (F78 M) Cooking pot rim. Reduced coarse fabric, red exterior and interior surfaces, blackened exterior.
- 18 (F78 K) Cooking pot rim. Red coarse fabric with a reduced core.
- 19 (F78 Q) Cooking pot rim. Brown-grey coarse fabric, blackened exterior surface.
- 20 (F78 M) Cooking pot base. Red/grey coarse fabric, red surfaces, blackened exterior.
- 21 (F78 M) Three sherds (fitting). Red coarse fabric, partially blackened exterior, with an applied thumbed band.

# Sub-phase C

Red wares

- 22 (F78 J) Jug rim. Red fabric with a reduced core, darker red interior surface, yellow-green glaze on the exterior surface.
- 23 (F104) Cooking pot base. Red fine sandy fabric with a reduced core, spots of yellow glaze on the exterior surface.
- 24 (F78 H) Cooking pot rim. Red coarse very sandy fabric with a reduced core.
- Grey wares
- 25 (F78 H) Cooking pot rim. Reduced coarse sandy fabric.
- 26 (F78 J) Cooking pot base. Dark grey/light grey/buff very sandy fabric, blackened exterior surface.
- 'Shell' tempered wares
  - 27 (F104) Cooking pot rim. Red fabric with a reduced core.
  - 28 (F78 I) Cooking pot rim. Red fabric with a reduced core.
  - 29 (F78 I) Cooking pot rim. Red fabric with a reduced core.
  - 30 (F78 J) Cooking pot base. Reduced coarse fabric, red interior surface, blackened exterior surface.
- Sub-phase D
  - Red wares
  - 31 (F78) Jug. Red fine sandy fabric with a reduced core, cream slip round neck and descending in stripes, dark red slip between every fourth cream stripe, thin yellow glaze over decorated area, green glaze over four areas.
  - 32 (F88 E) Jug handle. Red/grey fine sandy fabric, applied cream slip stripe, yellow glaze.
  - 33 (F78) Jug rim. Ribbed red fine sandy fabric with a reduced core, brown/green glaze exterior.
  - 34 (F78) Jug rim. Red fine sandy fabric, partial dark green/brown glaze.



Fig. 13. Westminster Abbey sub-vault of the misericorde. Medieval pottery: Phase 3, Nos. 22 to 37  $(\frac{1}{4})$ .

- 35 (F78) Jug handle. Grey/red fine sandy fabric, partial green glaze exterior.
- 36 (F78) Jug handle. Red/grey fine sandy fabric, partial yellow glaze.
- 37 (F78) Jug rim and handle. Reduced fine sandy fabric, cream slipped with spots and streaks of green and yellow glaze. The handle with red surfaces applied after the slip.
- 38 (F78) Rim. Reduced fine sandy fabric, red interior surfaces, green glaze on exterior surfaces.
- 39 (F78 E) Handle base. Reduced fine sandy fabric, red interior surface, green glaze on exterior surface. Same vessel as 38?
- 40 (F78) Body sherd. Reduced fine sandy fabric, red interior surface, applied cream slip pellets, yellow glaze exterior. Rouen Copy. (Similar to Tatton-Brown [1975, Nos. 214, 215] and examples in Rackham [1973].)
- 41 (F78) Body sherd. Red fine sandy fabric with a reduced core, mottled yellow and dark green glaze exterior, fingertip impressions.
- 42 (F88 A) Body sherd. Red fine sandy fabric with a reduced core, dark cream slip exterior, applied red clay rouletted strips over, mottled yellow/green glaze.
- 43 (F78) Handle (Jug). Red fine sandy fabric with a reduced core, partially yellow glazed.
- 44 (F78) Handle. Red fine sandy fabric with a reduced core, yellow and green glazed.
- 45 (F78) Jug base. Red fine sandy fabric with a reduced core, darker red exterior surface, spots yellow glaze exterior and on base. Slight pedestal.
- 46 (F78 F) Jug base. Red fine sandy fabric, with a reduced core, spots of green glaze.
- Not illustrated:

(F78 B) Body sherd. Red/brown fine sandy fabric, cream slip, applied red strips, mottled dark green glaze.

(F78 C) Rouen copy sherd.

#### Grey wares

- 47 (F78) Jug rim with spout. Reduced very coarse fabric, dark grey exterior and interior surfaces.
- 48 (F78) Cooking pot rim. Reduced coarse fabric. Burnt.
- 49 (F78) Cooking pot rim. Brown coarse fabric. Dark grey exterior and interior surfaces.
- 50 (F78) Cooking pot rim. Reduced coarse fabric, blackened exterior.
- 51 (F78) Cooking pot rim. Reduced coarse fabric.
- 52 (F78) Cooking pot rim. Reduced coarse fabric.
- 53 (F78) Cooking pot rim. Reduced fairly fine fabric.
- 54 (F78) Cooking pot rim. Reduced coarse fabric, blackened exterior and interior.
- 55 (F88) Cooking pot rim. Reduced coarse fabric, dark grey exterior and interior surfaces.
- 56 (F88 A) Cooking pot rim. Reduced coarse fabric.
- 57 (F73) Cooking pot rim. Reduced coarse fabric, dark grey exterior and interior surfaces.
- 58 (F78 D) Cooking pot rim. Reduced very coarse fabric, blackened exterior surface.
- 59 (F78 E) Cooking pot rim. Reduced coarse fabric, blackened exterior surface.
- 60 (F78 E) Cooking pot rim. Reduced coarse fabric, blackened exterior surface.

- 61 (F78 D) Cooking pot rim. Reduced coarse fabric, blackened exterior surface.
- 62 (F78 D) Cooking pot rim. Reduced very coarse fabric, blackened exterior and interior surfaces.
- 63 (F78 E) Cooking pot rim. Reduced coarse fabric, blackened exterior surface.
- 64 (F78) Cooking pot base. Reduced very coarse fabric, blackened exterior surface.
- 65 (F78) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 66 (F78) Cooking pot base. Reduced very coarse fabric, blackened exterior surface.
- 67 (F78) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 68 (F78) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 69 (F78) Cooking pot base. Reduced coarse fabric, dark grey interior surface, blackened exterior surface.
- 70 (F78) Cooking pot base. Reduced coarse fabric, blackened exterior surface, partially blackened interior surface.
- 71 (F78 A) Cooking pot base. Reduced coarse fabric, blackened on base.
- 72 (F78 A) Cooking pot base. Reduced (light grey) coarse fabric, blackened exterior surface.
- 73 (F78 A) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 74 (F78 C) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 75 (F78 C) Cooking pot base. Reduced coarse fabric, dark grey exterior and interior surfaces, exterior blackened.
- 76 (F78 F) Cooking pot base. Reduced very coarse fabric, partial red and blackened exterior surface.
- 77 (F78 A) Cooking pot base. Brown-grey coarse fabric, dark grey exterior and interior surfaces.

'Shell' tempered wares

- 78 (F78) Cooking pot rim. Red coarse fabric with a reduced core.
- 79 (F78 G) Cooking pot rim. Reduced coarse fabric, heavily blackened on exterior and interior surfaces.
- 80 (F78) Cooking pot base. Reduced coarse fabric, red interior surface, blackened exterior surface.
- 81 (F78) Cooking pot base. Reduced coarse fabric, red interior surface, blackened exterior surface.
- 82 (F78) Cooking pot base. Reduced coarse fabric, red interior surface.
- 83 (F78) Cooking pot base. Reduced coarse fabric, blackened exterior surface.
- 84 (F78 E) Cooking pot base. Reduced coarse fabric, red interior surface, partially blackened exterior surface.
- 85 (F88 C) Cooking pot base. Reduced coarse fabric.

Buff sandy ware

- 86 (F78) Cooking pot rim. Buff/grey very sandy fabric, brown exterior surface.
- 87 (F78) Cooking pot rim. Buff very sandy fabric.
- 88 (F78 D) Cooking pot rim. Buff/grey very sandy fabric.
- 89 (F78 P) Cooking pot rim. Grey-buff very sandy fabric.



Fig. 14. Westminster Abbey sub-vault of the misericorde. Medieval pottery: Phase 3, Nos. 38 to 62  $(\frac{1}{4})$ .



Fig. 15. Westminster Abbey sub-vault of the misericorde. Medieval pottery: Phase 3, Nos. 63 to 88 (1/4).

Graham Black

- 90 (F78) Cooking pot base. Buff very sandy fabric, blackened exterior surface. Same vessel as 87?
- 91 (F78 A) Cooking pot base. Pink/grey very sandy fabric, blackened exterior surface.
- 92 (F78) Cooking pot base. Buff very sandy fabric, blackened exterior surface.
- 93 (F78 E) Cooking pot base. Buff very sandy fabric, blackened exterior surface.
- 94 (F88 A) Cooking pot base. Grey/buff very sandy fabric, blackened exterior surface.
- 95 (F88 A) Cooking pot base. Buff very sandy fabric, blackened exterior surface.

96 (F78 N) Cooking pot base. Dark buff very sandy fabric, blackened exterior surface.

#### Imports

97 (F78 A) Jug base. Off white fine fabric, mottled green glaze on exterior and interior surfaces.

Not illustrated:

(F78) Body sherd (thin). Off white fine fabric, green glaze on exterior surface, mottled on interior surface.

(F78) Body sherd with incised line. Off white fine fabric, yellow glaze on exterior surface.

# PHASE 4

- Sub-phase A Material found in features within this Sub-phase is identical with that found in Phase 3 and indeed sherds from the same vessel are present.
- Sub-phase B The very small number of sherds in this Sub-phase and in Sub-phase C, and the absence of any sherds from the highly decorated and anthropomorphic jugs and other vessels usually reckoned to flourish during this period (the thirteenth and fourteenth centuries) do not help to narrow down the dating range. However, it would appear that Sub-phase B should be placed in the fourteenth century: the presence of an early Surrey ware sherd indicates a date after 1275.
- Sub-phase C The pottery from this Sub-phase includes several sherds apparently residual from the thirteenth century, sherds which cannot be ascribed to within a century or so (thirteenth and fourteenth centuries), and a single sherd and a fragment of imported tile which have been dated as late fifteenth century. The suggested date, therefore, for this Sub-phase would appear to be shortly before the insertion of the baker's oven.

Phase 4 (Fig. 16, Nos. 98-113. Fig. 17, Nos. 114-122)

#### Sub-phase A

Red wares

- 98 (F70 B) Two body sherds. Fine sandy reduced fabric, thick cream slip exterior and interior, applied cream slip stripes, alternately straight and scaled, yellow and green glazed.
- 99 (F70 B) Body sherd. Fine sandy red fabric with a reduced core, cream slip stripes and pellets on a dark red slip stripe, partly yellow glazed. Rouen copy.
- 100 (F60) Body sherd. Reduced fine sandy fabric, cream slip on exterior surface, applied strips over and mottled green and yellow glaze.
- 101 (F77) Handle. Red sandy fabric with a reduced core, impressed decoration and a yellow glaze over the top surface.
- 102 (F77) Handle. Reduced sandy fabric, traces of yellow glaze.
- 103 (F79) Base sherd. Red sandy fabric with a reduced core, thumbed, spots of yellow glaze on the exterior surface.
- 104 (F77) Jug base sherd. Red fine sandy fabric with a reduced core, spots and streaks of yellow glaze on the exterior surface.

Grey wares

- 105 (F68 A) Cooking pot rim. Reduced (light grey) fairly fine fabric, dark grey exterior and interior surfaces, blackened exterior.
- 106 (F68 A) Cooking pot rim. Reduced coarse fabric,

dark grey exterior and interior surfaces, partially blackened exterior surface.

- 107 (F71) Cooking pot rim. Grey-brown coarse fabric.
- 108 (F77) Cooking pot rim. Grey-yellow coarse fabric.
- 109 (F77) Cooking pot rim. Reduced coarse fabric, very dark grey exterior and interior surfaces.
- 110 (F77) Cooking pot rim. Reduced coarse fabric, brown interior surface, blackened exterior surface.
- 111 (F77) Cooking pot rim. Reduced coarse fabric.
- 112 (F77) Cooking pot rim. Reduced coarse fabric.
- 113 (F68 A) Handle (of pipkin?). Reduced coarse fabric, dark grey exterior and interior surfaces.
- 114 (F77) Cooking pot base. Reduced coarse fabric, dark grey exterior and interior surfaces.
- 115 (F79) Cooking pot base. Reduced coarse fabric, blackened on base.

'Shell' tempered wares

116 (F80) Cooking pot rim. Reduced coarse fabric, red interior surface, blackened exterior surface. Imports

Not illustrated:

(F68 B) Body sherd. Off white fabric, yellow glaze on exterior surface. French, possibly Normandy. (F68 A) One rim, three body sherds (very small). Off-white fabric, mottled green glaze on exterior and interior surfaces. The rim is plain and featureless.



Fig. 16. Westminster Abbey sub-vault of the misericorde. Medieval pottery: Phase 3, Nos. 89 to 97 (1/4), Phase 4, Nos. 98 to 113 (1/4).



Fig. 17. Westminster Abbey sub-vault of the misericorde. Medieval pottery: Phase 4, Nos. 114 to 122 (1/4), Phase 5, Nos. 123 to 133 (1/4).



Plate 1. Westminster Abbey sub-vault of the misericorde. A reused Saxon or early Norman volute in the foundations of the frater. Note the shallowness of the foundations, and the sleeper wall butting against them on the left-hand side. (Scale 1m.)



Plate 2. Westminster Abbey sub-vault of the misericorde. The sleeper wall cutting across the line of the ditch. (Scale 1m.)



Plate 3. Westminster Abbey sub-vault of the misericorde. The base of pier 2. Note the slot for the insertion of a timber partition. (Scale in divisions of 100mm.)



Plate 4. Westminster Abbey sub-vault of the misericorde. The window in the central bay of the eastern wall. The bottom of the earlier window survived as two worked stones under the chalk base of its replacement. (Scale in divisions of 100mm.)



Plate 5. Westminster Abbey sub-vault of the misericorde. The northern jamb of the western doorway. Note the base of a moulded column on the inside of the door. (Scale in divisions of 0.5m and 100mm.)



Plate 6. Westminster Abbey sub-vault of the misericorde. The southern wall of the sub-vault west of pier 7. Note the eastern jamb of the thirteenth century doorway, and the flagstone sill of the original eleventh century door (the course below the stones on which the end of the scale is resting). (Scale 1m.)



Plate 7. The two-bay baker's oven inserted into the sub-vault in the late fifteenth or early sixteenth century. (Scale 1m.)



Plate 8. Westminster Abbey sub-vault of the misericorde. Pre c. 1240 jug, (No. 31, p. 161). (Scale 300mm.)

Excavations in the Sub-Vault of the Misericorde of Westminster Abbey

Sub-phase B

Not illustrated:

(F57/64/67-F59) Six body sherds only:

Red ware

One slipped and glazed sherd.

Grey ware

Four reduced coarse fabric sherds.

'Surrey' ware

One sherd.

Sub-phase C

Red wares

117 (F56) Bowl rim. Red fairly coarse fabric.

## PHASE 5

- Grey wares
- 118 (F66) Cooking pot rim. Reduced sandy fabric, blackened exterior surface.
- 119 (F56 B) Cooking pot rim. Reduced fairly coarse fabric.
- 120 (F66) Cooking pot base. Reduced fairly fine fabric, blackened exterior surface.

'Cistercian' type

121 (F53) Rim and handle base (of posset cup?). Red fine hard fabric, brown glaze on exterior and interior surfaces.

Imports

- Sub-phase A This Sub-phase contains a small sherd of imported tin-glaze pottery. It is unfortunately too small and not sufficiently decorated to be attributed with conviction, but it is suggested that it is of Spanish origin and sixteenth century in date.
- Sub-phase B Both this and the previous Sub-phase show the change towards more specialised kitchen equipment, and the influence of the Aardenburg and Low Countries potters, if not actually represented by imported pottery, becomes more pronounced.

Phase 5 (Fig. 17, Nos. 123-133. Fig. 18, Nos. 134-145)

Sub-phase A

Red wares

- 123 (F51 B) Dripping pan rim and handle. Red sandy fabric with some reduction, green and yellow glaze on interior surface, blackened exterior surface.
- 124 (F61) Jug rim and handle base. Red sandy fabric with a reduced core, cream slip and spot of yellow glaze on exterior surface.
- 125 (F52 A) Pipkin base and foot. Red sandy fabric with partial reduction, green-brown glaze on interior surface, spots on exterior surface.
- 126 (F52 A) Base. Red sandy fabric with a reduced core, spots of yellow glaze on base.
- 127 (F61) Jar rim. Grey-brown sandy fabric, dark grey exterior and interior surfaces, a spot of yellow glaze on the rim.
- 128 (F52 A) Jar rim. Red sandy fabric with a reduced core, dark grey exterior and interior surfaces.
- 129 (F52 A) Base. Red sandy fabric with a reduced core.
- 'Surrey' ware
- 130 (F51 F) Jug rim. Cream sandy fabric, partial mottled green glaze on exterior surface.

Imports

Not illustrated:

(F52) Body sherd (small). Cream fabric, white tinglaze on exterior and interior surfaces, blue decoration. From Spain?

Sub-phase B

#### Red wares

131 (F49 B) Pipkin rim and handle. Red sandy fabric,

spots and streaks of green-brown glaze on exterior and interior surfaces.

- 132 (F48) Flanged rim. Red sandy fabric with a reduced core, partial cream slip on interior surface, yellow glaze over interior surface.
- 133 (F47 C) Jug base. Red sandy fabric, partial yellow and green glaze on exterior surfaces, some blackening on base.
- 134 (F47) Jug base. Red sandy fabric with a reduced core, cream slip on exterior surfaces, spots of yellow glaze on exterior surface.
- 135 (F47) Jar rim. Red sandy fabric with partial reduction.
- 136 (F47) Jar rim. Red sandy fabric with partial reduction.
- 137 (F47) Jar rim. Red sandy fabric with partial reduction.
- 138 (F47 C) Jug rim. Red sandy fabric with partial reduction, streaky cream slip on exterior and interior surfaces.
- Grey wares
- 139 (F47) Cooking pot rim. Grey-brown fabric, dark grey exterior and interior surfaces.
- 140 (F47 A) Cooking pot rim. Reduced coarse fabric, blackened on exterior surface.
- 141 (F47 D) Cooking pot rim. Grey-yellow coarse fabric, dark grey exterior and interior surfaces.
- 142 (F47 D) Base. Reduced fairly coarse fabric, orange exterior surface and yellow-light brown on interior surface.

'Surrey' wares

143 (F47) Jug rim. Off white sandy fabric, green glaze on exterior and interior surfaces.

<sup>122 (</sup>F56 B) Base? Grey-yellow fine fabric. French?

144 (F47 C) Base. Cream sandy fabric, spots of mottled green glaze on exterior surfaces.

145 (F49 B) Base. Cream/light grey sandy fabric, spots of mottled green glaze on exterior and interior surfaces.

## PHASE 6 (not illustrated)

The finds from Phase 6 reflect the demolition of the misericorde in the late sixteenth century, with finds and pottery dating from that period and into the seventeenth century. There are no finds which can be dated definitely to the middle of the eighteenth century, but there are some nineteenth century clay pipes and a metal plaque. The only complete vessels came from this Phase, found during the redevelopment of the site after the excavation—a miniature albarello, a 'Surrey' ware chamber pot and a tripod pipkin—all date from the first half of the seventeenth century.





# THE FISH BONES

#### by A. G. Jones

# Introduction

This report is concerned with fish remains retrieved from the Westminster Abbey site excavated in 1975. Twenty one species have been identified from a total of 396 identified bones. Fish biology is discussed in the context of the information it can provide about fishing methods and places. In addition the opportunity is taken to consider some of the theoretical problems related to interpreting the results of this type of investigation.

# Methods and Materials

Two methods were employed in the retrieval of fish remains from archaeological deposits. During the course of excavation fish bones were picked out of the soil by hand, along with mammal bone, pottery etc. In addition nine 1 kg. soil samples were wet sieved using 300 micron mesh. The bones and other occupation evidence were removed from the soil residues using forceps, under a lens. The fish bones were identified at the British Museum (Natural History) using comparative skeletal material.

Measurements of certain vertebrae were taken using conventional sliding calipers. Details of these measurements are given in the full version of the results.

(A complete list of results and details of measurements is available upon request from the offices of the Inner London Archaeological Unit.)

PHASE		I		II		III	] ]	IV	· ·	/a	Vb	VI
Other Flatfish		1	(1)	1	(60)	6	(3)	2	(2)	2		
Sole					(11)	2						
Plaice						8						
Flounder						4						
Turbot		1				3						
Gurnard						2						
Mackerel					(1)							
Bass					(3)	2						
John Dory					(1)							
Ling											(1)	
Haddock					(4)	11		2		1		
Cod	(2)		(1)	4	(10)	1	(3)	2	(1)	1	(1)	1
Whiting					(59)	9		1				
Conger Eel					(4)	6	(1)	3		1		
Common Eel	(1)				(25)	3					1	
Cyprinids					(11)	1						
Pike					(4)							
Smelt		1			(2)	1						
Herring	(2)				(67)	24						
Shad	1					1				·		
Sturgeon				1		2						
Other Elasmobranchs	*				(1)							
Thornback Ray						2						

Table 1. A condensed version of the results. Bracketed numbers represent the quantities of vertebral centra, unbracketed numbers represent other identified bones.

#### Discussion

It is important to emphasise that the fish remains identified from a site represent a small proportion of the fishes actually consumed. Their survival depends not only upon soil conditions, but varies with different skeletal materials. Cartilage, which forms the entire skeleton of sharks and rays, decomposes very quickly, whereas the bones of large bony fish are much more durable. This differential survival may mean that all easily visible traces of certain fish can disappear from the soil or that other fish can be disproportionately represented in the bone samples. Secondly, because many fishes have very small bones, hand picking of excavated soil does not yield a representative sample. Without the use of sieving only 11 fish species (instead of 21) would have been recovered from this site. These excavations demonstrate how a limited amount of sieving can add significantly to the results. Finally within any group of fish bones a number are unidentifiable because they posses insufficient characteristic features. This is particularly true of ribs, fin rays and branchiostegals.

Alongside these factors it is important to consider the archaeological context of the remains. The site, lying between the kitchens and the frater, is unlikely to have been used as a prime rubbish disposal area because of the unsavoury consequences of such action. Pit 78 is a feature of unknown purpose but probably was used as a rubbish pit when the area was levelled. Evidence from the fish bones suggests that some kitchen refuse was scattered on the site during periods of building activity. The majority of the deposits are not primarily rubbish dumps but were laid down in order to provide a level surface for floors.

The present day distribution and habits of the identified fish throw light on the interpretation of results. Some biological notes are given here, based largely on Wheeler (1969).

## Thornback Ray Raja clavata

This is the only cartilaginous fish to be specifically identified. It is probably the most abundant ray in British waters and occurs at depths between 2–60 metres. It is usually captured in trawls or on hooks and lines. It can grow to 850mm length by 610mm breadth and weigh 17 kg.

#### **Other Elasmobranch Remains**

As the skeleton of sharks and rays is composed of cartilage little evidence survives in archaeological deposits. Teeth and dermal denticles persist but are usually undiagnostic to species as well as being extremely small (often under 2mm). The Thornback Ray possesses distinctive dermal denticles or bucklers by which it was identified. It is possible that a large variety of small sharks and rays were caught in medieval times but leave no trace for the archaeologist.

Apart from Thornback Ray bucklers the only elasmobranch remain found was one mineralised core of a vertebral centrum. It was not further identified.

#### Sturgeon Acipenser sturio

This is one of the most interesting fish in this assemblage. Today it is very rare in British waters although it is thought to have occurred more commonly prior to the building of weirs for navigation and the pollution of rivers. It spends most of its life in the sea returning to rivers to spawn. Sturgeon can grow to five or six metres length and be over 100 years old. It is most often caught between depths of 20-50 metres.

The female sturgeon is famed as the source of caviar, but both sexes are prized for their flesh. It is usually caught in trawls but nets and occasionally hooks are also effective.

The remains consisted of two bony scales and two skull fragments. All were composed of a characteristic flakey mineral material and were deeply sculptured. Being large they were found by hand picking, the lack of evidence from sieved samples suggests it was not regularly eaten.

# Shad Alosa sp.

The one dentary retrieved could be derived from one of two species A. alosa or A. fallax. Both species have similar habits and are separated on small morphological criteria.

Shads are large members of the herring family attaining 500–600mm length. They are pelagic plankton feeders migrating into rivers to spawn. Like sturgeon they have been adversely affected

by pollution. They are usually caught in seine or drift nets but will take a baited hook. The paucity of shad remains suggests they were not commonly eaten.

#### Herring Clupea harengus

This pelagic fish formerly occurred in immense shoals in the southern North Sea. It exhibits seasonal migrations and attains 400mm length. Prior to the introduction of mid-water trawl it was usually caught in drift or seine nets. Herring remains were recovered from all sieved soil samples but because of their small size were not found by traditional techniques. In view of the number recovered it is reasonable to suggest that herring was one of the more important food fish on the site.

#### Smelt Osmerus eperlanus

This small fish rarely grows longer than 200mm. It is a pelagic shoaling migratory fish rarely occurring far from the shore.

It is caught most frequently in British waters in the southern North Sea, entering the lower reaches of east coast rivers to spawn. It is usually caught with drift nets or herring trawls. Its flesh has a good flavour but small quantities found in Westminster Abbey indicate it was not regularly eaten.

#### Pike Esox lucius

Pike is a carnivorous freshwater fish which lies in wait for its prey under the cover of aquatic plants. It frequently grows to 1,000mm and 14 kg., being caught for sport with hooks and commercially in nets or traps. Although the flesh is palatable the small quantities of remains recovered suggest it cannot be considered an important food fish. It does demonstrate that the monks of the Abbey were obtaining fish from a wide variety of sources.

#### **Cyprinid Remains**

Most of the common larger freshwater fishes in Britain (e.g. roach, dace, chub etc.) belong to the family Cyprinidae. Their bones are not especially distinctive and with a few exceptions are difficult to identify as to species. A small number of vertibrae and a single tooth from a pharyngeal bone were recovered, their size suggesting that they derived from small fish. The small amount of remains suggests that these fish were not often used for food.

#### Common Eel Anguilla anguilla

Eels were represented in almost all sieved samples by quantities of vertibrae and seem to have played an important role in the diet of the monks.

Depending on the season eels can be caught in salt, brackish or fresh waters. They can grow to over a metre in length but the size of the vertebrae suggest those in the sample did not exceed 500mm. Many methods are used to catch them including hook and line, nets, traps and eel spears.

#### Conger Eel Conger conger

This fish is usually found amongst rocks or on rough ground. It occurs in most British waters but is more often taken in the English Channel and western waters than in the North Sea. Usually it is captured on hooks at depths of 20-60 metres. It often grows to 1,200-1,500mm.

Comparatively large quantities of Conger eel remains were recovered by both sieving and hand picking. It is likely that as a result of having large hard bones they survive in the samples in disproportionately high numbers. However, the occurrence of Conger bones in three phases suggests it was a fairly important food fish.

#### Whiting Merlangius merlangus

This is a very common fish in the North Sea inhabiting depths of 30-100 metres. It is not a large fish, rarely exceeding 400mm length. It is one of the most important fish to be caught by small boat fisheries. Today it is most often taken in trawls, but drift nets, seine nets and hooks are also used. Whiting remains were found in sieved samples in such numbers that it may be suggested that they formed an important constituent of the monks' diet.

#### Cod Gadus morhua

The Cod is abundant in the North Sea occurring in both inshore and offshore waters. Today it is mainly taken in trawls but can be caught on baited hooks and in other nets. It is a large fish growing to 1,500mm and 40 kg. Cod remains were found in all phases which indicates that it was the most frequently eaten species.

#### Haddock Melanogrammus aeglefinus

This is a bottom living fish rarely caught at less than 60 metres depth. It is captured in trawls but will take a baited hook. Its distribution at present is mainly in the northern North Sea although there is evidence to suggest that it was more abundant further south. It commonly grows to 800mm and 3 kg. Haddock was represented mainly by clavicles which were all distended by hyperosteosis.

Although its remains are not as common as those of cod, it played a significant part in the diet of the monks.

#### Ling Molva molva

This fish is an active mid-water predator found in depths of 100-400 metres, occasionally large specimens come close inshore. Ling grow to 2,000mm and weigh 25 kg., it is one of the largest of British bony fish. It is caught on hooks and lines or in trawls, usually in the northern North Sea, or to the south of Ireland.

The small amount of material indicates that it was not often eaten, and because prime fishing locations are so far from London it is possible that it was brought onto the site salted or dried.

#### John Dory Zeus faber

John Dory is a solitary and fairly rare fish found close inshore to depths of 200 metres. It is usually taken in trawls over sandy ground and is most common in the warmer waters off southern England and Europe. It does occasionally occur in the North Sea and is taken by hooks.

It is very significant that John Dory occurs in the sample not only because it is rather rare in British waters but because it is probably the most highly prized of any sea fish. Thus this fish, represented by one vertebral centrum, illustrates the economic status of the monks.

#### **Bass** Dicentrarchus labrax

Bass exhibit seasonal migrations coming inshore into bays and the lower reaches of rivers in the summer and migrating into deeper water in the winter. It can grow to 1,000mm and 9 kg. and is caught in trawls, nets and on hook and line usually off southern England. As it is a common inshore fish that readily takes a baited hook, it is popular with anglers.

The bones retrieved from the site come from at least two fish: one very large and one of average size. Bass flesh is good to eat but probably was not a regular part of the occupants' diet.

#### Mackerel Scomber scombrus

Mackerel is a pelagic active migratory fish which lies in large shoals close to the surface. It can grow to 500mm and 2 kg. and is caught most frequently in nets or on hooks. It occurs in the summer and autumn off all British coasts except the southern North Sea where it is sporadic.

#### Gurnard Trigla sp.

Gurnards are common gregarious fish which form loose shoals on the bottom. They are caught on hook and line and in trawls. The bones in the sample are two cranial bones possessing characteristic 'gurnard type' sculpturing. It is impossible to assign them to any one species. Gurnards are bony but good to eat and can grow to 600mm and 2.25 kg.

#### **Turbot** Scophthalmus maximus

A large flatfish growing to 25 kg. It lives on the bottom from the seashore to 80 metres and is usually taken on hook and line or in seine nets. It is the most sought after species of flatfish having an excellent flavour. It is most common in the shallow waters of southern Britain.

Although large vertebrae probably belonging to turbot were found, dentaries allowed positive identification.

#### Excavations in the Sub-Vault of the Misericorde of Westminster Abbey

#### Flounder Platichthys flesus

This is a common flatfish able to live in inshore, estuarine and freshwater situations. It lives on sandy or muddy ground in all British coastal waters. Many methods are employed in its capture, seine nets, set nets, hook and line and spearing. Like other flatfish (excluding sole) jaw bones were diagnostic, all vertebrae are grouped together under 'Other flatfish'. It will grow to 2.5 kg. and is eaten, although its flavour is not as palatable as plaice.

#### Plaice Pleuronectes platessa

This is a common flatfish living on sandy or muddy ground usually to 70 metres. It grows to 3.5 kg. and is caught in trawls, seine nets, set nets and occasionally by hook and line around the British coast. Plaice are well known for their eating qualities but an estimate of their importance in diet is impossible due to the sparsity of positively determined bones.

# Sole Solea solea

The Sole is common in both inshore and offshore waters to depths of 40 metres. It will live in estuarine as well as marine conditions on sandy ground. It is most often caught by trawls but can be taken with seine nets and even with hooks. It is highly prized for its flesh and grows to 500mm. Sole remains were recognised by premaxillae and vertebrae and seem to be a moderately important constituent of the diet.

#### **Other Flatfish**

This group is composed of all flatfish bones that are impossible to assign to any one species. It includes vertebrae and anal pterigophores (a strong curved bone delimiting the posterior wall of the body cavity). Some species of flatfish might be represented in this group that have not been specifically mentioned due to the absence of identifiable material.

It is clear from the number of remains that flatfish played an important role in feeding the monks of Westminster Abbey.

#### **Fishing Locations**

In view of the perishable nature of the fresh fish and before quick transportation was available most fish had to be captured locally or preserved (smoked or salted). In the case of Westminster Abbey two main sources were open to fishermen, the Thames and its estuary, and the southern North Sea. With the exception of Ling all fish in this assemblage could be caught in one of these two locations. Work on medieval fish bones from East Anglia has suggested that Ling was imported to south-east England in a preserved state.

#### **Fishing Techniques**

In order to catch such a diverse group of fish several different techniques must have been employed. The pelagic fish, Herring, Bass, Mackerel, Shad and Smelt are most likely to have been caught in surface nets although Mackerel, Bass and Shad will take hooks.

Hooks and line would take all other marine species. It is likely that long lines with many hooks would be set in order to catch both middle-water and benthic fish.

Shore seine nets probably were used in conjunction with the aforementioned methods for catching Whiting, small Cod, Plaice, Sole and Smelt.

The freshwater fish Pike and Cyprinids were probably also taken by some kind of net set in the river.

Eels are traditionally captured using an iron spear (leister) or in wicker traps as they migrate to the sea.

#### **Diet and Economy**

St. Benedict forbade monks of his order to eat meat of four legged animals. Evidence from mammal remains suggests this directive was not carried out with complete diligence. It was not until the Papal Bull Benedictina (1366) that concessions were granted to meat eaters. Thus the demand for fish and fowl from Westminster Abbey and other religious houses was great.

The Benedictine order was extremely rich being often under royal patronage. It is therefore not surprising to find amongst this assemblage some rare and highly valued food fish.

Sturgeon, John Dory, Bass, Turbot and Sole are regarded as delicacies because of their flavour, flesh qualities and rarity. Benedictine monks seem to have shared these opinions. These less common fish are represented by small numbers of remains. Herring, Eels, Whiting, Cod, Haddock and Plaice/Flounder remains are more common, implying that they played a major role in diet.

#### Summary

Twenty one species of fish were identified. They represent fish from freshwater, estuarine and marine conditions. In order to catch this variety surface nets, hooks and lines and seine nets are likely to have been used. The fish were probably caught in the River Thames and its estuary, and the southern North Sea.

Several species are rare and highly valued food fish; they provide dietary evidence of the wealth of the monks.

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## THE ANIMAL AND BIRD BONES

#### by

#### Alison Locker

The animal bone from this site was initially identified feature by feature, but for the purposes of publication this has been reduced to a chart showing the total number of fragments of each species in each phase. Since the quantity of animal bone from the site was small special mention has only been made of features containing relatively large amounts of bone. However, a more detailed account is available on request.

Measurements were taken whenever possible, they are those used by R. T. Jones of The Ancient Monuments Laboratory and are also available.

The frequency chart does not include rib fragments as these may have been broken many times and therefore would distort the figures. As the chart indicates the number of fragments is insufficient to be statistically viable, and so no relative percentages of species were assessed.

The paucity of material is due to the fact that most of the bones are from floor levels, which, as one would expect, appear to have been kept clean. This is emphasised by a comparison with the two features that produced the most animal bone, i.e., the pit (F78) from Phase 3, and the ditch (F100) from Phase 1. These two phases contain more animal bone than any other.

The ditch may not contain the monks' kitchen refuse, but may be an infill of debris by workmen. Bos, Ovis and Sus were identified from the ditch, with no apparent selection except that no skull fragments were identified. This might indicate that the carcasses were being partially prepared elsewhere.

A variety of birds was also noted; *Gallus sp.* (Domestic fowl), *Anas sp.* (Duck), *Corvus monedula* (Jackdaw), *Columba sp.* (Pigeon), *Lagopus lagopus* (Red Grouse), *Anser sp.* (Goose). All these were probably a source of food except Jackdaw.

A fragment of human skull was found in F100 B.

Phase 2 contained a small amount of bone, mostly Bos and Ovis.

Phase 3 however, produced far more bone, mainly from the pit (F78) which contained the following; Bos sp. (Cow), Ovis sp. (Sheep), Sus sp. (Pig), Cervus elaphus (Red Deer), Gallus sp. (Domestic fowl), Anas sp. (Duck), Anser sp. (Goose), Ostrea edulis (Oyster), and Buccinum undatum (Whelk).

PHASE	Ι	II	III	IV	Va	Vb	VI
Species							
Bos sp.	50	13	24	16	9	11	9
Ovis sp.	60	12	47	19	16	9	29
Sus sp.	32	1	45	5	1		1
Cervus elaphus			2				
Phocaena sp.			1				
Canis sp.				1			
Oryctolagus cuniculus			1	1		1	4
Gallus sp.	15	3	36	1	1	1	9
Anas sp.	11		2				
Corvus monedula	1		1				3
Columba sp.	2	1	2				
Lagopus lagopus	1						
Anser sp.	2		10			4	1
Ostrea edulis	*		38	12		7	2
Mytilis edulis						1	1
Cardium edule						5	
Buccinum undatum	*		7	5			1

(\* = sample taken)Table of total number of fragments per species in each phase. An unusual find was a Porpoise tooth (*Phocaena sp.*) from F88. Porpoises were an unusual, but not a rare occurrence in the Thames.

Phases 4, 5a, 5b and 6 contained little bone.

#### Conclusion

There is therefore no evidence from the animal bone from this site that with the insertion of the sub-vault in Phase 4, there was a relaxation of monastic rule. If this had occurred one might expect to see an increase in the quantity and variety of animal bone after Phase 4, indicating a more varied diet.

However, the possibility that this did occur cannot be dismissed since, as was previously mentioned, few features where one would expect domestic debris to accumulate were found.

In general terms Bos and Ovis are the most predominant species with Bos being most important in terms of meat weight. The common domestic birds also appeared regularly in the diet.

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