

Medieval Tin-Glazed Painted Tiles in North-West Europe

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ALL OF THE KNOWN medieval tin-glazed tiles from NW. Europe beyond the Mediterranean littoral are discussed. They appear first c. 1290 in the Toulouse region and 14th-century examples are known from scattered sites in southern France, from the lower Loire valley and SE. Brittany, and from Flanders and Holland, with related material in Hamburg and East Anglia. The tiles are generally painted in green and brown and were locally produced. There is extensive documentation for the manufacture of such tiles for the Duke of Burgundy's château at Hesdin in French Flanders in the 1390s, and documentary evidence also records two Spanish tilers working for the Duke of Burgundy and the Duke of Berry at Dijon and Poitiers in the 1380s. Extant fragments from these sites and from Bourges and Mehun-sur-Yèvre include for the first time some with designs painted in blue. There is as yet no evidence for the continuing production of tin-glazed tiles in any of these areas during the 15th century or for locally-produced tin-glazed pottery before the late 15th or 16th century.

The decorated tile pavements laid throughout NW. Europe in the Middle Ages were almost invariably composed of lead-glazed tiles decorated in a variety of techniques, all of which seem to have been developed locally. Tin-glazed tiles, by contrast, are exceptionally rare, and the technique was derived from the regions bordering on the western Mediterranean. Within the context of the medieval tile industry they form a special category which deserve to be studied on their own. Not all of the tiles are recent finds: some of them were published decades ago, some have been known for over a century. In several cases the significance of the finds for the history of tin-glazed wares was realised at the time of their discovery, and yet, for whatever reason, the existence of medieval tin-glazed tiles in NW. Europe has consistently been overlooked in general studies on the subject.¹

The origins of French tin-glazed pottery and tiles have traditionally been traced back to the 16th century. The period of the French Renaissance saw the production of highly-accomplished tin-glazed painted wares, known in France as *faïence*, bearing polychrome decoration in an Italianate style and more or less closely connected with Italian tin-glazed wares, generally termed *maiolica*. The 'father of French *faïence*', Masseot Abaquesne of Rouen, is attested in the documents from 1526, and his known works include the three pavements of tin-glazed painted tiles

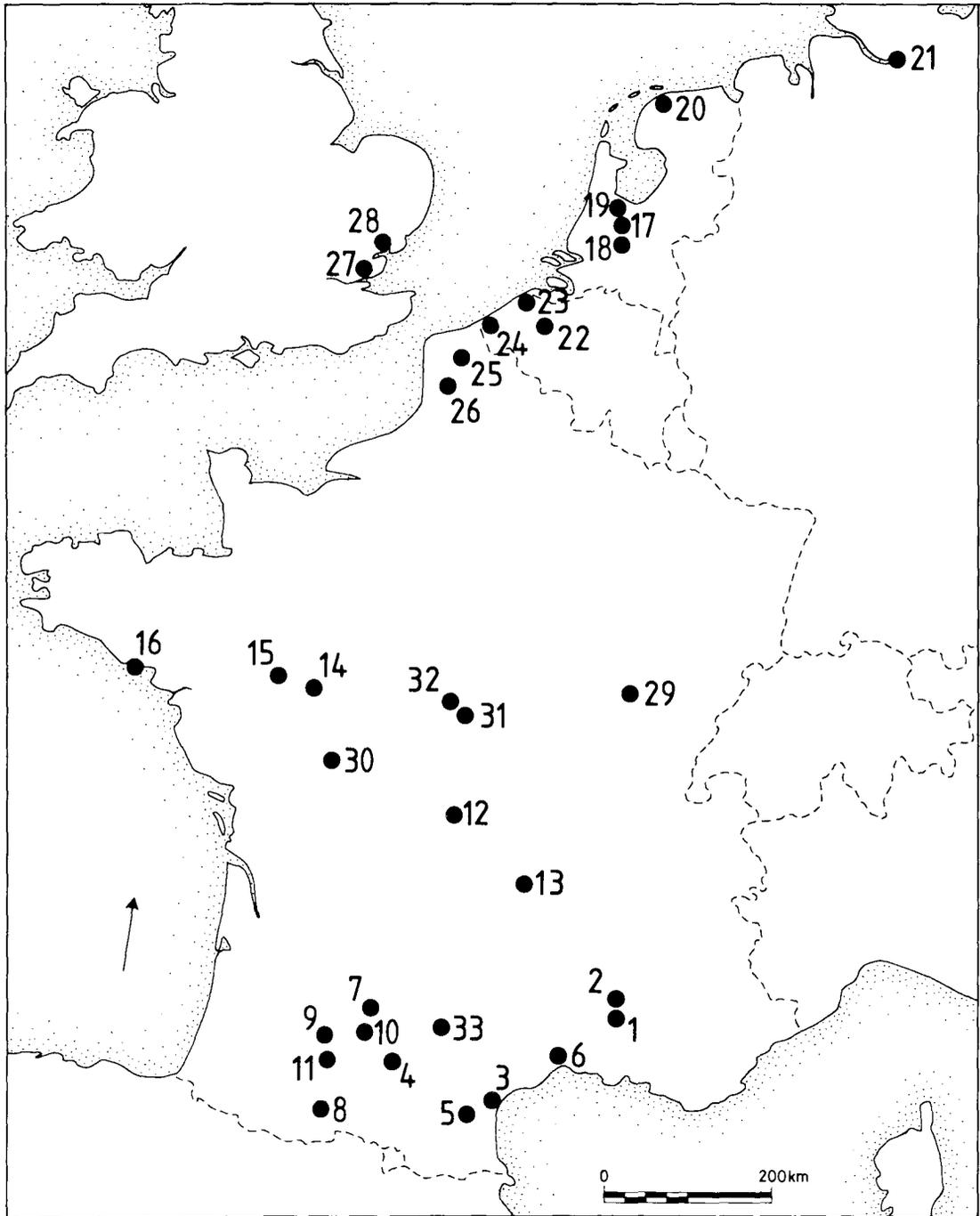


FIG. 1

Location of sites with tin-glazed tiles: 1. Avignon; 2. Châteauneuf-du-Pape; 3. Narbonne; 4. Toulouse; 5. Lagrasse; 6. Montpellier; 7. Moissac; 8. Escaledieu; 9. Flaran; 10. Belleperche; 11. Mazères; 12. Bonlieu; 13. Brioude; 14. Brain-sur-Allonnes; 15. Murs; 16. Suscinio; 17. Utrecht; 18. Heukelum; 19. Mariendaal; 20. Klaarkamp; 21. Hamburg; 22. Ghent; 23. Oostkamp; 24. Abbaye des Dunes; 25. Saint-Omer; 26. Hesdin; 27. Hadleigh; 28. Colchester; 29. Dijon; 30. Poitiers; 31. Bourges; 32. Mehun-sur-Yèvre; 33. Albi

made for the château of Ecoeu between 1542 and 1559 and the pavement of the château of La Bastie d'Urfé, dated 1557. Several other pavements have been attributed to him, as well as a number of pieces of pottery. A recent exhibition of *Faïences Françaises* held in the Grand Palais in Paris as part of the celebrations connected with the 'Année du Patrimoine' in France in 1980 began in traditional manner with Masscot Abaquesne and traced the subsequent development of French faïence over a period of two and a half centuries. There was no more than a passing allusion to the Middle Ages.²

Intensive research in recent years on the medieval ceramics of the Avignon area and neighbouring regions has revealed that tin-glazed painted wares of the highest quality were being produced from the end of the 13th century.³ Impressive quantities of luxury pottery and of painted tiles have been found decorated with designs in green and brown, and they adorned the dwellings and the tables of the richest spiritual and secular lords from the Pope downwards. During the period of the Avignon papacy the city was an international centre of great importance, with close commercial and artistic links with Italy and Spain, and the tin-glazed wares are broadly comparable to contemporary products in northern Italy and NE. Spain. Some of the finds, indeed, are imports from these areas, but most of the tin-glazed pottery and tiles were made in the Avignon region.

The local wares can be divided into two main series. The first, in a white, refractory, kaolinic clay, is associated with workshops in and around Saint-Quentin-la-Poterie, about 40 km WNW. of Avignon. Documentary sources record the purchase of large quantities of tiles from Saint-Quentin-la-Poterie by the papal court in Avignon in 1317-19 and again in 1336, and some of the tin-glazed tiles, both painted and monochrome, found at the Palais des Papes at Avignon are attributed to this source, as are the more numerous tiles from the papal château at Châteauneuf-du-Pape.⁴ In general, however, the pottery and tiles attributable to Saint-Quentin-la-Poterie are relatively few in number, and they may represent an early phase in the production of tin-glazed wares in this area. Much more common are the pottery and tiles in a buff or pinkish calcareous clay, which are thought to be slightly later in date and to have been made at an as yet unidentified centre in the lower Rhône valley near Avignon.⁵ Many of the tiles from the Palais des Papes belong to this series, as do a less well-known group from Narbonne (Pl. vii).⁶ The stylistic differences between these two series need not concern us here, but the style and the range of designs are quite different from those on the other tin-glazed tiles which form the subject of this paper. Furthermore, whereas the latter generally formed only a small element in pavements consisting largely of lead-glazed tiles, and were produced by tilers who seemingly had little connection with contemporary potters, the Avignon pavements consisted solely of monochrome or decorated tin-glazed tiles, and they were closely connected with the contemporary tin-glazed pottery, which was made in the same fabrics and with the same types of designs.

The quality and importance of the tin-glazed pottery and tiles produced in the Avignon region at this period have been a major discovery of recent years. However, this industry is essentially part of a much wider western Mediterranean phenomenon, and its origins and development cannot be studied apart from the parallel

industries in NE. Spain and northern Italy.⁷ There seems on present evidence to have been little influence on pottery production further north. Tin-glazed pottery is not thought to have been produced in NW. Europe until the end of the Middle Ages, and such few fragments of tin-glazed painted pottery as have been found in NW. Europe are generally considered to be imports from the Mediterranean.⁸

Against this background, the widespread occurrence of tin-glazed painted tiles from regions of France beyond the Mediterranean littoral and from further north comes as something of a surprise. With the notable exception of the innumerable late medieval plain tiles imported into England from the Low Countries, medieval tiles did not usually travel very far, and most tiles can be assumed to have been manufactured within about 80 km of the place where they were laid. The majority of these tin-glazed tiles can confidently be attributed to workshops known to have produced pavements of lead-glazed tiles, and in some cases there is documentary evidence to prove that they are local products. Some of them can be precisely dated by documentary references, and, even where these are lacking, a reasonably close date can often be assigned to them by association with the buildings which they adorned. Whereas pottery fragments are often difficult to date and to attribute to any specific source, most of these tiles have a firm geographical and chronological context, and they therefore provide particularly valuable evidence for the spread of the tin-glazed technique.

The tin-glazed tiles of the Avignon region are in fine, hard, white or pinkish-buff fabrics identical to those of the contemporary tin-glazed pottery of the same area. They are quite different from the fabrics of the ordinary bricks and roof-tiles in and around Avignon.⁹ By contrast, most of the examples to be discussed from other areas are in typical tile fabrics, that is, red-brown earthenwares of variable quality, but generally rather rougher than pottery fabrics. The composition of the fabric obviously varies from place to place, but it is normally the same as that of the lead-glazed tiles with which most of these tin-glazed tiles were laid. The technique of decoration, on the other hand, is essentially the same as that of the tin-glazed pottery. The surface is covered with an opaque white or cream-coloured tin glaze, or, more exactly, a tin-opacified lead glaze. The designs are normally painted in green (copper oxide) and brown, often with a violet tinge (manganese oxide), whence the terms 'green and brown' or *vert et manganèse* often applied to tin-glazed wares of this kind. The brown tends to be used in thin lines to outline the design or for hatching, whereas the green tends to be used as a wash to colour in the designs or the backgrounds. Pale yellow (?antimony) and blue (cobalt) are used only exceptionally. The range of colours is always limited and never approaches the richness of effect of the later polychrome wares associated with the Renaissance.

Scientific analysis on a few samples from the Low Countries has indicated the presence of tin in the glazes of some of the tiles. The Avignon tiles have been included in a much broader laboratory study of the ceramics of the region,¹⁰ but otherwise no systematic analysis of the glazes has yet been carried out. Consequently, no detailed account of the composition of the glazes or the precise techniques of manufacture can be attempted at the moment. It is not possible within a single article to give a full discussion of the pavements or assemblages with which the tin-glazed tiles are

associated: only such features will be considered here as are relevant to a proper understanding of the tin-glazed tiles themselves.

THE GARONNE VALLEY WORKSHOP

The earliest known tin-glazed painted tiles in France can be dated to the 1290s and can be identified as the products of a single itinerant workshop (Fig. 2). Six painted tiles have been found in the chapter house of the convent of the Jacobins (Dominicans) at Toulouse. Four of them are L-shaped tiles with equal arms intended for use on a step. The risers are decorated with a naturalistic ivy scroll pattern in brown and pale turquoise green (Pl. VIII, A). The top surfaces are almost completely worn away but probably bore the same design. A fifth tile painted in brown lines but without any green wash depicts a fine male head and was also originally the riser of a step-tile (Pl. VIII, B), while the sixth fragment, which bears a

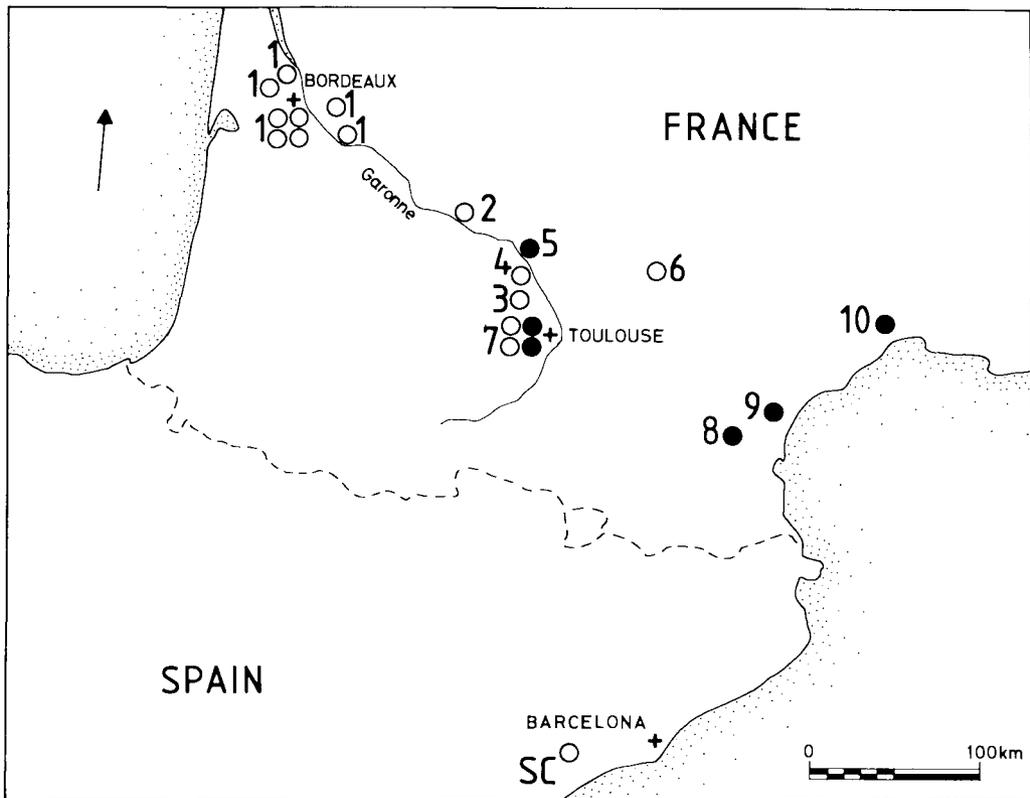


FIG. 2
 Garonne Valley workshop
 Sites without tin-glazed tiles: open circles
 Sites with tin-glazed tiles: filled circles
 1. Sites in and around Bordeaux; 2. Agen; 3. Grandselve; 4. Belleperche; 5. Moissac; 6. Albi; 7. Sites in Toulouse;
 8. Lagrassac; 9. Narbonne; 10. Montpellier; SC. Santa Crecus

human-headed grotesque monster, was probably an ordinary square tile.¹¹ A pavement found in the 19th century in the chapel of the provost's lodging at Toulouse cathedral seems also to have contained some painted tiles, notably some fleurs-de-lis and a nine-tile set of a labyrinth.¹²

A complete pavement survives in the chapel of the abbot's lodging at the abbey of Lagrasse. It contains a mere twelve painted tiles, and six of these are worn out. The remaining six bear lively representations of a hunter, a hound, a stag, two (?) goats fighting, a sagittarius, and a human-headed monster which is reminiscent in general terms of the monster at the Jacobins at Toulouse (Pl. VIII, c and d). As well as the standard green and brown, two of the tiles have parts of the design coloured in a pale yellow wash, the only occurrence of this colour among the tiles to be discussed.¹³ At nearby Narbonne there are the worn remains of a pavement in the chapelle de la Madeleine in the Archiepiscopal Palace. They include some painted tiles in a rather poor state of preservation. The designs include a cat, a bird, a (?) fish, and what appear to be some coats of arms. They seem rather cruder in execution than those at Lagrasse and Toulouse, but this may simply be a consequence of their worn condition.¹⁴

As well as the painted tiles, the pavements at Lagrasse and Narbonne contain numerous plain green tiles which appear to have been made with an opaque tin glaze. Similar tiles appear in some cupboards paved with tiles in the apsidal chapels of the church of the Jacobins at Toulouse, and they also seem to have been present in the destroyed pavement in the provost's lodging at Toulouse cathedral.¹⁵ The best-preserved examples, namely the Lagrasse floor and the Toulouse Jacobins cupboards, include standard lead-glazed black and yellow plain tiles as well as some medium green plain tiles. Tiles of this colour were normally produced by covering the surface of the tile with white slip and adding a transparent green lead glaze. Here, however, there is no slip, and the glaze is an opaque medium green colour with a turquoise tinge. It is quite unlike the glazes normally found on medieval tiles, and it appears to be a plain opaque tin glaze coloured green by the addition of copper oxide. There are parallels among the Avignon pavements, which, in addition to the patterned tiles, contained tin-glazed plain green and plain orange-brown tiles. There are also occasional pieces of pottery in the Avignon area which are covered with a comparable opaque plain green tin glaze.¹⁶

There are two other pavements made by the same workshop which, although not known to have included any painted tiles, appear to have contained some of these plain green tin-glazed tiles. Twelve small tiles are all that survive from a pavement in the Petit Saint-Jean, a house of the Knights Hospitallers in Montpellier; they include one green tile of this type.¹⁷ The floor of the abbot's chapel at Moissac was discovered largely intact in 1880, but has long since been destroyed.¹⁸ There is however a plan which shows that, as at Lagrasse, there were plain medium green or turquoise tiles as well as plain yellow and black ones. A single tile which survives built into the wall of the cloister at Moissac appears to have an opaque turquoise glaze comparable to those at Toulouse, Lagrasse and Narbonne.

The tiles at these sites were made within a period of about ten years. The Moissac floor can be dated *c.* 1290. The E. end of the church of the Jacobins at

Toulouse was dedicated in 1292 and the chapter house was constructed in the following decade. The ivy scroll on some of the step-tiles found in the chapter house is almost identical to a border pattern in the wall paintings in the chapelle de la Madeleine in the apse of the church of the Jacobins, paintings which date to about the time of the dedication. The chapel of Abbot Auger at Lagrasse bears the date 1296 and the pavement is certainly contemporary. The W. wall of the chapel was decorated with an extensive painting cycle of the same date, and it is conceivable that at both the Jacobins at Toulouse and at Lagrasse the tiles were actually painted by professional painters rather than by the tilers. The quality of the designs is not incompatible with such a hypothesis, and we shall see that there was a similar collaboration between painters and tilers on some of the later painted tiles.¹⁹ The chapelle de la Madeleine in the Archiepiscopal Palace at Narbonne is not precisely dated, but it does belong to the late 13th century. The date of the provost's lodging at Toulouse cathedral is unknown, while there is no external dating evidence for the Montpellier tiles.²⁰ There is however no doubt that all these pavements were made by a single workshop within the space of perhaps a decade at the end of the 13th century.

These are the earliest tin-glazed tiles in France, for none of the tiles from sites in and around Avignon can certainly be dated before *c.* 1300.²¹ However, the production of tin-glazed wares in the Avignon region probably began in the late 13th century, and a source in this area for the tin-glazed technique employed by the Garonne valley workshop cannot be ruled out on purely chronological grounds. On the other hand, the use of a pale yellow wash, as on the Lagrasse tiles, does not seem to be known in the lower Rhône valley, and the style of the tiles at Toulouse, Lagrasse and Narbonne is quite different from that of the Avignon wares. In fact, the Garonne valley workshop appears to have learnt the tin-glazed technique from quite another source.

The pavements at Moissac, Toulouse, Lagrasse, Narbonne and Montpellier are only a part of the surviving output of a single workshop which was active in the area probably for several decades.²² It appears first in the Bordeaux region probably *c.* 1260–70. After apparently working for some years near Bordeaux, the workshop became itinerant, and the evidence is such that its later products can be placed in chronological order, and the tilers can be traced moving slowly up the Garonne valley to Toulouse and then across to the Mediterranean coast. After Bordeaux, the known pavements are, in order, at Agen Cathedral, Grandselve Abbey, Belleperche Abbey, Moissac Abbey, Albi Cathedral, Toulouse (several sites including the Jacobins and the provost's lodging), Lagrasse, Narbonne and finally Montpellier (Fig. 2). Dating evidence from the series as a whole is good, and the tilers cannot have reached Toulouse before about 1290.

During the course of its travels this workshop assimilated two major stylistic and technical innovations. The pavements laid in and around Bordeaux and at all the sites as far as Belleperche are composed of long rectangular bands of good-quality inlaid tiles in a distinctive regional style. One technical peculiarity is that the tilers seem to have been unaware of the standard technique of scoring a tile before firing in order to enable it to be broken into smaller pieces after firing: all the

triangular tiles for the edges of the panels were fired as such. At Moissac the range of individual patterns is still the same, but suddenly the style and technique are completely different. From now on the floors are in a style closely dependent on later 13th-century Parisian pavements, characterized by square panels of rectilinear plain mosaic pieces, with two-colour tiles generally confined to the borders. The rectilinear mosaic pieces were derived from square tiles scored before firing, the very technique which had previously been unknown to this workshop. Furthermore, the two-colour tiles are now in the slip-decorated rather than the inlaid technique. In short, Moissac marks the introduction of new techniques and a new style derived from the Ile-de-France, and all the later pavements made by this workshop are of this kind.

The second major innovation is the appearance of the tin-glazed tiles. Moissac, Toulouse, Lagrasse, Narbonne and Montpellier are among the later sites in the series, and the tin-glazed technique does not appear at any of the earlier sites.²³ The technique was thus acquired during the lifetime of the workshop, but there is no possibility of its having been derived from Parisian sources along with the other innovations which appear first at Moissac: the tin-glazed technique was quite unknown in northern France at this date, and there are no medieval tin-glazed tiles at all in the Ile-de-France. The source of the technique was in fact neither the north of France, nor the lower Rhône valley, but northern Spain.

The reason that the products of the Garonne valley workshop can be placed in chronological order is that the tilers were continually making new wooden stamps to manufacture the two-colour tiles. As a result, in any one pavement in the series, some of the designs are usually the same as at the previous site, some are new and unique to that site, and others are new but will reappear at the next site. A simple seriation of the designs thus enables the order to be worked out, and this order produces a geographical and chronological progression which accords entirely with all the other available evidence. Grandselve, the third stop in the itinerary, was the greatest Cistercian abbey in the region, and it has produced some magnificent tile pavements. Grandselve had a daughter house at Santas Creus near Barcelona, itself one of the most important Cistercian abbeys in Spain.²⁴ Two-colour tiles, of the type so common in France and England, are unknown in Spain, except at Santas Creus. A few inlaid tiles have been found there, all of a single fleur-de-lis design. This design is identical to that on some of the tiles at Grandselve, and it is a pattern found nowhere else in the Garonne valley, neither at Agen, the site immediately before Grandselve, nor at Belleperche, the site immediately following. Grandselve is nearly 300 km from Santas Creus as the crow flies, with the whole range of the Pyrenees in between, and it is extremely improbable that tiles would have been transported from one to the other. In the unlikely event of this having happened, it would be hard to explain why all the tiles at Santas Creus are of a single design, when Grandselve has over two dozen different patterns. The most likely explanation is that one of the tilers was sent with the wooden stamp bearing the fleur-de-lis from Grandselve to Santas Creus in order to make tiles there. Santas Creus is situated in the region of NE. Spain where the production of tin-glazed painted pottery and tiles was well established in the later 13th century.²⁵ The fashion for inlaid tiles never seems to have caught on in

Spain, and after completing the commission the tiler would presumably have returned to the Garonne valley to rejoin his colleagues, who by then had probably moved on to Belleperche or Moissac. Can it thus be a coincidence that shortly afterwards the Garonne valley workshop began to make tin-glazed tiles? It is reasonable to suggest that the tiler who went to work at Santas Creus, probably in the mid 1280s, learnt the tin-glazed technique during his stay in Spain and introduced it to his colleagues in the Garonne valley on his return.

OTHER TIN-GLAZED TILES IN SOUTHERN FRANCE

The remaining tin-glazed tiles in southern France are much more widely scattered. They cannot be attributed to any single workshop and they cannot be closely dated, though they probably all belong to the early or mid 14th century. None of them have yet received a thorough study, but they are worth mentioning briefly as evidence for the fairly widespread distribution of tin-glazed tiles in the south of France (Fig. 1).

The most numerous survivors are those from the Cistercian abbey of Escaledieu, in the foothills of the Pyrenees. They include a variety of designs in a style which is less assured and less naturalistic than the products of the Garonne valley workshop, though they are competent products. The patterns include stylised foliate designs, various monstrous creatures, and one tile with a rather crude human figure with an inscription. A technical characteristic of the Escaledieu tiles is the existence of nail-holes in the centre of the four sides (Pl. IX, A and B).²⁶ Tin-glazed painted tiles are also known from the Cistercian abbey of Flaran, a daughter house of Escaledieu, but the resemblances are not such as to suggest that they are the products of the same workshop. Unlike those at Escaledieu, the designs on the Flaran tiles are all set within a green border running round the edge of the tile. The range of designs is also somewhat different, comprising fleurs-de-lis, circles, stars, rosettes, Maltese crosses and interlace motifs. There was also a twenty-five tile set with a heraldic double-headed eagle at the centre of three concentric bands of running scroll-work.²⁷ The tiles at Flaran and Escaledieu were in each case laid in the abbey church, and, in contrast to the products of the Garonne valley workshop, the pavements seem to have consisted entirely of tin-glazed tiles.

Stylistically, the Flaran tiles are not unlike some tin-glazed tiles from the nearby Cistercian abbey of Belleperche, a site which has already been mentioned in connection with the main Garonne valley workshop. The extensive areas of inlaid tile pavement found at Belleperche on various occasions can be assigned a place in the itinerary of the Garonne valley workshop between Grandselve and Moissac. Since it has been argued that the tin-glazed technique was introduced by a tiler sent from Grandselve to Santas Creus and that plain green tin-glazed tiles, if not patterned ones, appeared at Moissac, it is tempting to attribute the Belleperche tin-glazed tiles to the main Garonne valley workshop, at a date probably in the later 1280s. Some of the patterns of the Belleperche painted tiles (Pl. VIII, E), which include fleurs-de-lis, interlace motifs and Solomon's knot, are indeed comparable to some of the inlaid tiles at the same site. However, it seems more likely that they are

later products with designs partly inspired by the inlaid tiles. There are no plain green tin-glazed tiles from Belleperche, as there are at Moissac, Toulouse, Lagrasse, Narbonne and Montpellier, and the painted tiles are stylistically and technically rather different from those at these other sites. The patterns are rather crudely painted in thick dark bluish-green lines without brown outlines: they are quite unlike the finely-executed designs outlined in brown and painted a pale turquoise-green known at Toulouse and Lagrasse. The range of designs is also noticeably different, there being no human figures, animals or monsters, and they have a broad bluish-green border running round the edge of the tile, a feature which is reminiscent of the Flaran tiles but is unknown on the late 13th-century Garonne valley workshop tiles. The Belleperche painted tiles should therefore probably be attributed to a later and less skilled workshop, possibly the same as that which made the tiles at Flaran.²⁸

Still in the same region, two tiles from the archiepiscopal château of Mazères are part of a very unusual design. They are the sole survivors from a nine-tile set representing the wheel of fortune, a motif which is extremely rare on medieval tiles. The iconography of the wheel of fortune is more suited to a secular context than a religious one, and it is interesting that the only other example in France of a wheel of fortune on medieval tiles is from the late 14th-century château of Marguerite de Flandres, wife of Philippe le Hardi Duke of Burgundy, at Germolles in Burgundy.²⁹ The Mazères tiles are probably somewhat earlier in date: the château was constructed by the Archbishop of Auch after 1324, and the tiles perhaps date to the second quarter of the century.³⁰

The last two sites in this section are slightly further north. Some tiles, mostly now lost, are recorded from Bonlieu, another Cistercian house. They were apparently intended for the risers of a step, though they are of a slightly different form from those at the Jacobins at Toulouse. The designs included plant motifs, ornamental bands, human figures including a mounted knight fighting a monster, and coats of arms. The coats of arms were unfortunately not identified and thus provide no clue as to the date.³¹ A coat of arms, also as yet unidentified, figures on some nine-tile sets from the collegiate church of Saint-Julien at Brioude (Pl. IX, c). Unlike the others mentioned in this section, the Brioude tiles are not in a normal red-brown tile fabric, but in a hard buff fabric broadly comparable to that of the second Avignon series of pottery and tiles believed to have been manufactured in the lower Rhône valley. However, given the completely different style and the distance of Brioude from Avignon, it is improbable that the Brioude tiles were manufactured in the Avignon region.³² The painted tiles are the only tiles recorded from either Bonlieu or Brioude, and both churches are located in areas where medieval tiles of any kind are rare.

The predominance of Cistercian houses might be taken to indicate a preference for these tiles among the abbeys of that order, and the example of Grandselve and Santas Creus indicates the way in which connections within the Cistercian order could have had a direct influence on the type of tiles employed. However, by the end of the 13th century Cistercian tiles were to all intents and purposes indistinguishable from those at non-Cistercian sites, and it is more likely that the large proportion of tin-glazed tiles from Cistercian houses is no more than an accident of survival.

Cistercian houses tended to be constructed in remote locations and they have often suffered less over the years than abbeys built in more populous regions, with the result that medieval tiles often survive better at Cistercian abbeys than elsewhere.

If we are correct in dating these tiles to the early or mid 14th century, they are roughly contemporary with the main production of tin-glazed painted tiles in the Avignon region. Tin-glazed tiles seem to have been the only type available at Avignon: lead-glazed tiles of the kind so common further north are as yet unknown there. Lead-glazed tiles are hardly more numerous over much of southern France, with the major exception of the sites supplied by the Garonne valley workshop in the later 13th century. Subsequently, production of lead-glazed tiles in the south seems to have been at best sporadic, except along the Atlantic coast around Bordeaux and in the Saintonge. It is therefore less surprising that at Escaledieu and these other sites the 14th-century pavements were apparently composed solely of tin-glazed tiles: they were seemingly the only ones available. In fact, it is probably true to say that over most of this area tin-glazed tiles, though not very common, were nonetheless the norm, and that the predominantly lead-glazed tiles produced by the late 13th-century Garonne valley workshop were the exceptions. In northern France and the rest of NW. Europe the reverse is true.

Before leaving the south, we must notice the existence of a few painted lead-glazed tiles in the Saintonge. Saintonge pottery is well known, but there also appears to have been a significant production of lead-glazed two-colour tiles. They have been found in some numbers in the region, and among them are occasional painted tiles, apparently the products of the same workshops. The dating of these tiles is still rather uncertain, but they should probably be assigned to the very end of the 13th or the early 14th century, that is, to the very period when Saintonge polychrome pottery was being produced. The painted tiles were covered with a layer of white slip, onto which the designs were painted in green and brown. The surface was then covered with a transparent lead glaze before firing. Only about a dozen such tiles have so far been recorded, from six different sites: the Cistercian abbey of Notre-Dame-de-Ré on the Ile-de-Ré, the abbey of Fontdouce, the Cordeliers at La Rochelle, the château of Merpins (Pl. IX, D), the château of Vaucler, and at La Chapelle des Pots, where some at least of the tiles were probably made.³³ If the Saintonge polychrome wares can be seen as lead-glazed copies of the tin-glazed wares of the northern shores of the western Mediterranean, these painted tiles are similarly copies in a lead-glazed technique of the tin-glazed tiles.³⁴ The patterns of these Saintonge painted tiles comprise small fleurs-de-lis, cinquefoils within circles, a running scroll pattern and two fragments with human figures, one just a face, the other showing part of a mounted knight. The designs are not so much reminiscent of the tin-glazed tiles from the south of France as those from further north, to which we now must turn.

ANJOU AND BRITTANY

Tin-glazed tiles are among the products of two different recently-identified workshops active in the lower Loire valley and in SE. Brittany in the first half of the

14th century. The Loire valley group is known from the abbey church of Marmoutier, just outside Tours, where two pavements have been found *in situ*, and from loose tiles from the château of Montrichard, from the episcopal manor of Le Buron at Morannes, and from the château-fort of Brain-sur-Allonnes.³⁵ The Marmoutier pavements are associated with the new chevet, completed in the opening years of the 14th century, and the group as a whole can be dated *c.* 1300–20, but it is only at Brain-sur-Allonnes that any tin-glazed painted tiles have been found. They form only a minute proportion of the whole: there are about 14,000 plain tiles, 190 slip-decorated tiles, and about 40 fragments of painted tiles, which are uniformly badly made. The absence of the technique at the other sites may be just an accident of survival, but it is also possible, in view of the poor quality of the painted tiles at Brain-sur-Allonnes, either that the workshop had acquired a new technique when making the pavement there with which it had previously been unfamiliar, or, conversely, that it abandoned tin-glazed tiles after Brain-sur-Allonnes. Whatever the truth of the matter, although little worn, only a handful of the tin-glazed tiles from Brain-sur-Allonnes have designs which are even partly decipherable, principally a five-petalled rosette within a circle, a five-pointed star with a foliate spray in the centre, what appears to be a standing figure within a quatrefoil frame, and a four-tile set with an indecipherable figure (? a mounted knight) against a green ground within a circular frame, with brown cross-hatched triangles in the corners.³⁶ The first of these tiles is very similar to an unprovenanced but much better-preserved tile in Angers museum, which bears a white six-petalled rosette against a green ground set within a circle. Two other unprovenanced tiles of two different sizes in Angers museum bear a white fleur-de-lis against a green ground within a square white frame (Fig. 3). These three tiles, together with another tiny fragment, may well be the products of the same workshop. A fifth painted tile in Angers museum from Murs, just south of Angers, is larger and somewhat different. It bears an unidentified coat of arms.³⁷

The Breton workshop is known from two sites near Vannes, the episcopal manor of Conleau and the ducal château of Suscinio. Only a few slip-decorated and plain tiles survive from Conleau,³⁸ but a magnificent and nearly complete floor was found in 1975 on the site of a destroyed chapel at Suscinio. The tin-glazed painted tiles constituted only about 2% of the total, but they were laid in a prominent

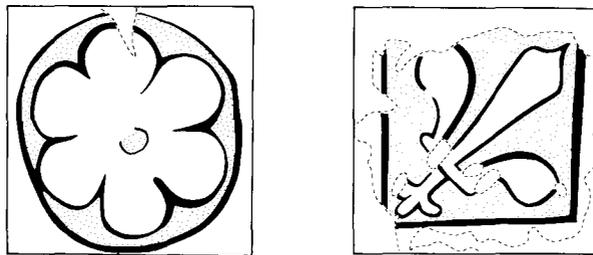


FIG. 3
Unprovenanced tiles painted in green (dotted areas) and brown (black) in Angers Museum, similar to those at Brain-sur-Allonnes; early 14th century. Scale 1:3

position in the floor of the choir and in the sanctuary in front of the altar; they were not used in the nave. Some of the tiles bear single-tile designs, such as human heads, small figures, geometric motifs or coats of arms, but the most striking examples are four-tile or even sixteen-tile sets, the latter occupying a whole square panel. Both smaller and larger sets usually contain human figures, animals or monsters set within a circular frame, with foliate motifs in the corners. Unlike the tiles at Brain-sur-Allonnes, these are technically accomplished and the designs are competently drawn. The Suscinio pavement dates probably to the second quarter of the 14th century.³⁹

Quite apart from the presence in both of tin-glazed tiles, there are several technical and stylistic features common to the Suscinio floor and the Loire valley group. In both cases the tiles were manufactured in an unusual, though not identical manner, and they are based on the same unit size of *c.* 92 mm, which is unusually small.⁴⁰ The general arrangement of the Suscinio pavement has close parallels in the Marmoutier floors, the style being quite different from the later 13th-century pavements of the same region. However, the actual patterns of the slip-decorated tiles are not the same in the two groups, and the Loire valley group appears to be slightly earlier. There is nonetheless a connection, and it is not impossible that the Breton group derives directly from the Loire valley group.

With the possible exception of the single tile from Murs, there is at present no evidence for the continuing production of tin-glazed tiles in this area into the later 14th century. The pavements at Brain-sur-Allonnes and Suscinio could date to within a decade or so, and the use of this technique may have been very limited both geographically and chronologically. The style of the Suscinio and Loire valley pavements derives ultimately, though perhaps not directly, from Parisian floors of the later 13th century. However, it has already been noted that there is no evidence for tin-glazed tiles in the Ile-de-France, and the technique is unlikely to have been introduced from that region. Stylistically the pavements are not unlike those at Moissac, Toulouse, Lagrasse and Narbonne, but this is to be explained by a common influence on both regions from the Parisian style, and there is no reason to suppose any direct connection.⁴¹ Coastal trade with the south-west might have been one means of transmission of the tin-glazed technique. The painted tiles at Brain-sur-Allonnes and in Angers museum (though less so those from Suscinio) are quite similar to the painted tiles in the Saintonge, but so few survive in either region that the significance of this is hard to determine. The Saintonge pavements as a whole are rather different. Furthermore, they are not properly dated, and they are not actually tin-glazed, but bear designs painted on a white slip and covered with a lead glaze. The closest parallels for the Breton and Loire valley tin-glazed tiles and for the pavements as a whole are actually to be found not further south, but in the Low Countries.

THE LOW COUNTRIES, GERMANY AND ENGLAND

Tin-glazed tiles are known principally from two areas in the Low Countries: the Utrecht region and Flanders. Three sites within Utrecht itself have produced

examples, in each case incorporated into the remains of an *in situ* pavement: the choir of Utrecht cathedral,⁴² the refectory of the abbey of St Paul,⁴³ and one of the canons' houses of the church of St John.⁴⁴ The layout of the three floors was similar, consisting of variations on the theme of square panels of rectilinear plain mosaic tiles, sometimes including some painted tiles, while ordinary slip-decorated tiles, if present at all, are usually confined to the borders between the panels. The connections between the three floors are so close that they can be attributed to a single workshop. The slip-decorated tiles with four small fleurs-de-lis which form the borders of the panels in the St John's church canon's house pavement reappear in the St Paul's abbey refectory floor, and the painted design of a lion rampant within a circle exists in almost identical form in the St John's church canon's house floor and in the cathedral pavement. The tiles from the cathedral and the St Paul's abbey refectory floor are in turn directly linked by the use in each of small squares painted with simple fleurs-de-lis and foliate crosses. The painted tiles are of various sizes, ranging from c. 60 mm square to c. 170 mm square, possibly even larger. The same range of sizes is to be found in each of the three floors, and they correspond to the basic sizes of the rectilinear plain mosaic tiles.⁴⁵ The patterns on the tin-glazed tiles are painted in green and brown, the brown being usually employed to outline the designs or figures which are left white, the green being used for the background. They include single-headed eagles within a circle, lions rampant within a circular or a square frame, heads of men and women of various sizes set within square frames, and simple sex-foils and geometric or foliate motifs. The St John's church canon's house floor also contained some rather worn larger scenes, again set within square frames; one consisted of a figure playing the violin, and another apparently depicted the outside of a building and (?) a tree.

The tin-glazed tiles formed an integral part of these pavements and they must have been manufactured in the region. A recent discovery suggests that they could even have been made on the very edge of the old town. Excavations in Kaatstraat, just outside the old city, have brought to light some fused wasters of roof tiles and floor tiles, together with some properly fired plain and patterned floor tiles. The slip-decorated tiles include the design of the four fleurs-de-lis, and there are also a few tin-glazed tiles. One is a six-petalled rosette almost identical to some of the tiles in the floor of the St John's church canon's house, while another depicts part of an architectural canopy, possibly from a tile-tomb (Pl. ix, E and F). These remains were found in waste pits, and there was no sign of a kiln. Tile waste was sometimes transported over considerable distances, but the Kaatstraat area is known to have been a centre of pottery production in the Middle Ages, and the floor tiles could well have been made nearby.⁴⁶

These Utrecht floors are closely related to some other tile pavements from sites in and around the city,⁴⁷ but tin-glazed tiles have so far been found only at two other sites. Two fragments of painted tiles were found in a border of oddments in a fine pavement in the church at Heukelum,⁴⁸ while some loose tiles have been found at the Cistercian nunnery of Mariendael (Pl. x, A).⁴⁹ They are as yet unpublished, but they include large square tiles with parts of human figures and architectural canopies which must come from tile-tombs and which thus suggest a link with the Kaatstraat

tiles. There is also one tile in the shape of two hands joined in prayer, with the hands painted onto the surface, which must have belonged to a much rarer type of tile-tomb where the figure, the canopy and the background were assembled from individually-shaped pieces. The Heukelum and Mariendael tiles can be attributed to the same workshop as the Utrecht pavements. The only other tin-glazed tile as yet recorded in Holland is from the Cistercian abbey of Klaarkamp in Frisia,⁵⁰ considerably further north, and there is some evidence that the Utrecht workshop was also active in that area.

A date of *c.* 1378 has become attached to the St John's church canon's house floor, and the Utrecht tin-glazed tiles have been dated to the later 14th century. The date of 1378, however, rests on no real evidence. The house where the floor was found was used as a canon's house until 1378, in which year it became the bishop's palace. The floor has been dated to *c.* 1378 solely on the unproven grounds that it is more likely to have been laid after the house became the bishop's palace. The cathedral floor has consequently been dated to a period of renewed building activity around 1400. However, the other pavements found in and around Utrecht, including that at Heukelum, although in no case precisely dated, are assigned on archaeological grounds to the first half of the 14th century rather than the second, more exactly to perhaps *c.* 1325, and the tin-glazed tiles should be placed in this period. The cathedral pavement can then probably be associated with the major rebuilding of the chevet in the Rayonnant style in the late 13th century, a campaign of work which came to an end *c.* 1320. The stylistic evidence provides additional support for the earlier dating. Two tiles from the cathedral and from the St Paul's abbey refectory floor are painted with the heads of women wearing a type of headdress which was in fashion in the first half of the 14th century. The overall layout of the Utrecht pavements, with their square panels of rectilinear plain mosaic tiles, is ultimately derived, once again, from the Parisian pavements of the later 13th century, a fact which also strongly suggests a date not later than the mid 14th century.⁵¹

The date suggested here for these Dutch tin-glazed tiles accords well with the date of *c.* 1320–30 which has been proposed for the monument of Pope Benedict V formerly in Hamburg cathedral. Benedict V died in exile in Hamburg in 965 or 966, but his body was taken back to Rome later in the century, so the monument was in fact a cenotaph. It belonged to the tradition of medieval tile-tombs, but was unique in being in the form of a low tomb-chest, rather than level with the ground as was usually the case (Pl. x, B).⁵² The Pope was represented on the top of the chest under an architectural canopy with an inscription round the edge, while the sides were also decorated with tiles. The monument was composed of tin-glazed tiles of a high quality, as is attested by the surviving fragments (Pl. x, C and D), and they are the only medieval tin-glazed tiles in Germany.⁵³ The general probability of some connection with the Dutch tin-glazed tiles is reinforced by the existence of fragments of tin-glazed tile-tombs in the Utrecht region, for no other examples of tile-tombs in this technique have been recorded. The tiles may indeed have been sent to Hamburg from Holland, rather than being made nearby, but, whatever the truth of the matter, the monument of Benedict V does provide supporting evidence for a date for the Dutch tin-glazed tiles in the earlier 14th century.

In Flanders tin-glazed tiles survive in greater numbers. A few examples are recorded from the abbey of St Bavon in Ghent,⁵⁴ and there is one tile decorated with a woman's head in a circular frame from the castle at Oostkamp, near Bruges,⁵⁵ but by far the largest number is from the Cistercian Abbaye des Dunes at Coxyde, on the Belgian coast. A nearly complete pavement was found there in the abbot's lodging in 1954. It was composed of square plain tiles and tin-glazed tiles, there being no two-colour tiles at all. Over three hundred painted tiles survived, though they were mostly in poor condition. They included a number of nine-tile sets depicting figures on a green ground within a quatrefoil frame. The best-preserved shows a single kneeling praying figure, while the others, possibly biblical scenes, include more than one figure. The remaining painted tiles all bear designs which are complete on one tile: apart from numerous heads of men and women, there are animals, monsters and eagles, all set within square frames.⁵⁶ Across the border in what is now French Flanders, tin-glazed tiles are known from the abbey of Saint-Bertin at Saint-Omer and from the château of Hesdin. From Saint-Bertin there are two four-tile sets with figures set within a circular frame, and a number of smaller tiles, mostly decorated with fleurs-de-lis or rosettes (Pl. x, F). They were incorporated into a pavement which included numerous slip-decorated tiles.⁵⁷ From Hesdin there is a fragment from a four-tile or nine-tile set depicting a hooded male head and part of a quatrefoil frame (Pl. x, E). A lost fragment of a large tile c. 190 mm square bore part of a black-letter inscription reading *deu* (? *deus* or *deum*) (Fig. 4).⁵⁸

The dating of these tiles presents a number of problems. The area of tiling found *in situ* at Saint-Bertin is closely related to a surviving highly-ornate pavement on the first floor treasury in the octagonal tower between the S. transept and the S. choir aisle of the former cathedral of Notre-Dame at Saint-Omer. This pavement, which does not contain any tin-glazed tiles, has generally been dated to the late 13th century,⁵⁹ though there is no certain evidence for such a date and it may well be rather later. The remains of the Saint-Bertin pavement were found roughly between the western piers of the crossing tower, at the E. end of the nave, but its exact relation to the building is not clear, and since the history of the church is complex, the pavement cannot be properly dated.⁶⁰

The position is little clearer at the Abbaye des Dunes. The abbot's lodging was apparently constructed by Abbot Jean d'Oostburg, 1280–99,⁶¹ and the tiles have usually been attributed to the end of the 13th century or the early 14th, a dating which has been supported by reference to the supposedly late 13th-century tiles at Saint-Omer. However, a 13th-century date is extremely unlikely for the tiles at either place, in view of what is known of the development of tin-glazed tiles in NW. Europe as a whole, and it is not even certain that the painted tiles at the Abbaye des Dunes are closely related to those from Saint-Bertin. It is true that the tiles found in the lavatorium at the Abbaye des Dunes can be attributed to the same workshop as the Saint-Bertin tiles and the floor of the treasury at Notre-Dame at Saint-Omer: the layout is similar and many of the slip-decorated designs are the same.⁶² The floor of the abbot's lodging, on the other hand, contains no two-colour tiles at all, and the arrangement of the pavement is quite different from those at Saint-Omer. The tiles are also of different sizes: at the Abbaye des Dunes the tin-glazed tiles and the plain

tiles with which they were laid are *c.* 105 mm square, while the Saint-Omer tiles at both Notre-Dame and Saint-Bertin are *c.* 120 mm square. Thus, while it is correct to associate the tiles from the lavatorium at the Abbaye des Dunes with the Saint-Omer pavements, the floor of the abbot's lodging should be treated separately — though this does not necessarily mean that it is very different in date.

A date in the first half of the 14th century seems likely for the floor of the abbot's lodging at the Abbaye des Dunes on the grounds of the style of the armour shown on some of the tin-glazed tiles, notably the presence on the shoulders of one of the knights of ailettes, which went out of fashion in the mid 14th century.⁶³ A similar date can be proposed for the Saint-Omer pavements on general stylistic grounds, and if these dates are correct, the painted tiles would be broadly contemporary with the tin-glazed tiles in the Utrecht region and at Hamburg. An early 14th-century date would also be possible for the Hesdin fragment depicting a hooded man from a four-tile or nine-tile set (Pl. x, E), but the same cannot be said for the fragment with the inscription (Fig. 4), since black-letter writing did not appear till the mid 14th century. There is in fact firm documentary evidence for a later 14th-century date for some tin-glazed tiles at Hesdin itself and at a site across the North Sea in Essex.

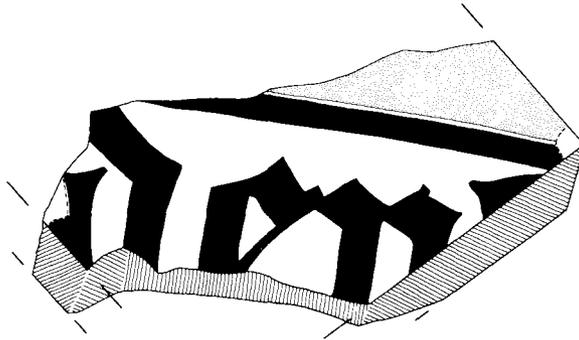


FIG. 4

Lost fragment of tile painted in dark green and black from Hesdin; ? made by Jehan le Voleur, 1390s. After a drawing in the Bibliothèque des Arts Décoratifs, Paris, Album 130.2, f.75. Scale 1:3

A few fragments of tin-glazed tiles have been excavated at Hadleigh Castle, notably parts of a four-tile set with figures in a quatrefoil frame (Fig. 5, 1–2),⁶⁴ while a single quarter-tile painted with a small brown fleur-de-lis survives from St John's Abbey, Colchester (Fig. 5, 3).⁶⁵ The Hadleigh tiles are part of a small group containing a few slip-decorated tiles and numerous plain tiles, the latter often scored for breaking into rectilinear mosaic tiles. The group was certainly not locally produced but imported, as must be the fleur-de-lis from Colchester. The painted tiles from both sites are comparable in general terms to the examples from Flanders which have just been discussed. More specifically, the slip-decorated tiles from Hadleigh Castle, while not identical to any designs on the Continent, are similar to some of the slip-decorated tiles from Saint-Bertin and at Notre-Dame at Saint-Omer. On the present evidence they cannot be attributed necessarily to the same workshop, but they do appear to belong to the same tradition and were probably

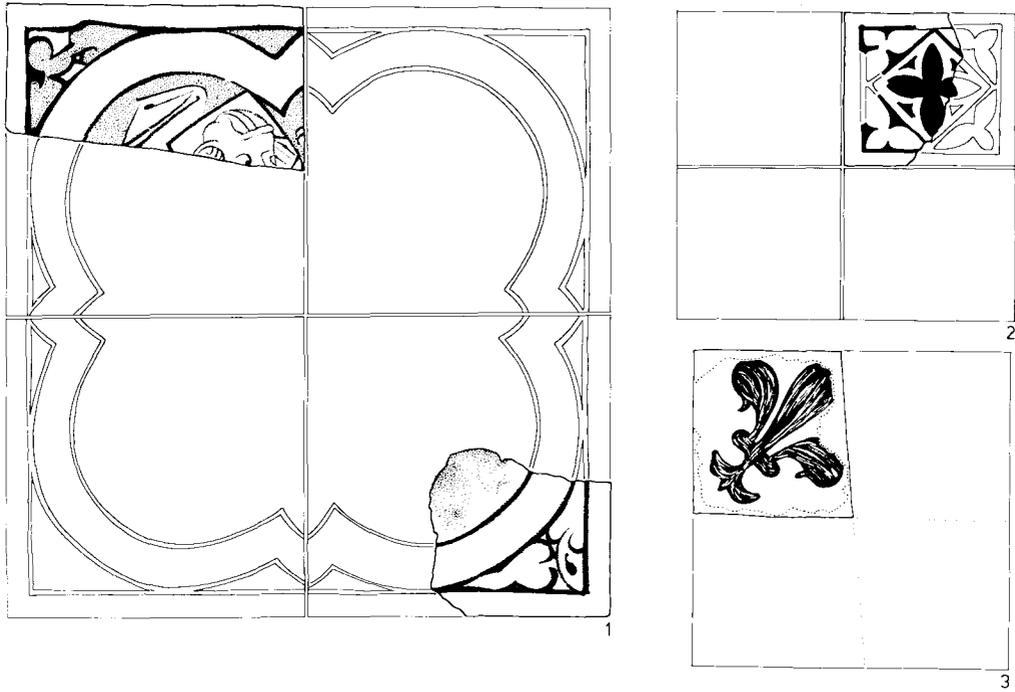


FIG. 5

1–2. Fragments of tiles painted in green and brown from Hadleigh Castle; c. 1365. After Keen, *op. cit.* in note 65.
 3. Quarter-tile painted in brown from St John's Abbey, Colchester; later 14th century. Scale 1:3

made in the same area. The Hadleigh tiles can be dated to the mid 1360s. Hadleigh Castle was under royal control from 1239 till 1378, but during most of that time little seems to have been done to it beyond routine maintenance. During the 1360s Edward III carried out substantial alterations both to strengthen the castle's defences and to enable it to serve as a royal residence. The work was largely completed by 1370. The documents record a purchase of 1500 Flemish tiles in 1364–66, and the price indicates that they were floor tiles. Although it is dangerous to link loose fragments to documentary references, these were the only type of floor tile found at Hadleigh, they are certainly Flemish and of about the right date, so there must be a strong presumption that they are the remains of the consignment purchased in 1364–66.⁶⁶ We can therefore be confident that tin-glazed tiles were in production in Flanders in the 1360s, though this does not of course rule out the possibility of an earlier date for some of the tin-glazed tiles in Flanders itself.

Remarkable evidence for the production of tin-glazed tiles for the château of Hesdin in the 1390s is preserved in some contemporary records. The texts were published by Houdoy in 1869 as proof of the manufacture of tin-glazed tiles in the 14th century.⁶⁷ Although fragments of painted tiles from Hesdin have now been known for over a century, the discussion as to whether the tiles referred to in a text of this date could really be tin-glazed tiles has continued to the present day.⁶⁸ Since this is no longer the point at issue, we can re-examine the texts dispassionately.

On 30th August 1391 Philippe le Hardi, Duke of Burgundy, issued letters patent in which he recorded that he had previously retained in his service Jehan du Moustier of Ypres and Jehan le Voleur, *ouvriers de quarreaux pains et jolis*, to make tiles for him, but that they had been unable to agree to work together; consequently, by other letters (which do not survive) the Duke had retained du Moustier in his service. But since he wished to have *beaucoup dudit ouvrage*, since Jehan le Voleur wished still to be employed and had on several occasions shown the Duke *des quarreaux qu'il a fais qui ont esté bien à notre plaisir*, and also because of the good relations which existed between Jehan le Voleur and the Duke, he had decided to retain Jehan le Voleur in his service for this purpose, and had agreed that he should deliver to Hesdin as many tiles as he could make in the following manner: *c'est assavoir que des dis quarreaux qui seront faits et ouvrés de la grandeur et pains dudit Voleur des peintures que nous les vaulions avoir; tant de ceulx qui seront pains à ymaiges et chiponnés, comme de ceulx qui serront pains à devises et de plaine couleur, par l'ordonnance de notre amé vallet de chambre et peintre Melchior Broerderlein*. The price was to be one gold franc for every four and a half feet. Furthermore, an advance of 50 francs was to be made to Jehan le Voleur, on due surety, to enable him to cover the necessary expenditure on *de vallés, de tieulaux, de four, feu, plong, terre, peintures, busche, charbon, et de toutes autres choses quelconque nécessaires pour la fachon des dits quarreaux*, the Duke himself having no obligation to provide the necessary materials for erecting the kiln or manufacturing the tiles. The tiles were to be delivered to the bailiff of Hesdin and to Melchior Broerderlam before the following Christmas.

A subsequent document records Jehan le Voleur, *peintre*, and Jacquemart Boistel, resident at Hesdin, giving surety of their possessions for the advance of 50 francs made to Jehan le Voleur for the purchase of materials necessary *à faire quariaux pains pour paver*. Later on we learn that Jehan le Voleur delivered 713½ feet of tiles on 17th February 1392, for which he was duly paid, and that in the same year one Simon le Thieullier paved a chamber at Hesdin under the supervision of Jehan le Voleur, *peintre, qui avait fait le dit pavement et qu'il le mist à point et aida à ordener et à drecher audit Simon*. Another consignment of 457 feet of *quarreaux pains et jolis* was delivered to Hesdin on 12th September 1393. In 1394 Jehan le Voleur, *ouvrier de quarreaux pains et jolis de Monseigneur*, was granted the sum of 50 francs in view of his good service and to help him *à supporter les grans frais et missions qu'il lui a convenu faire et soubstenir pour trouver et avoir les estoffes et matière, et aussi faire le four et les autres abillemens nécessaires pour les dis ouvrages*. From 1395 there are gaps in the records preserved at Lille, but in 1402 it is recorded that a suite of rooms in the Duke's residence at Arras was redecorated on the occasion of his son's marriage. Jehan le Voleur's name appears in connection with some painting carried out at the time, and one of the rooms was paved with *carreaux de peinture*. Although they are not further described, they were very likely tin-glazed painted tiles made by Jehan le Voleur.

Two further texts, unknown to Houdoy, are preserved in the archives at Dijon.⁶⁹ The first, dated 1401–2, resumes letters patent issued by Philippe le Hardi on 27th October 1400. A sum of 200 gold florins was granted to Jehan le Voleur, now called *varlet de chambre de Monseigneur et ouvrier de carreaux à paver*, for the services which he had rendered the Duke, of which a summary is then given: Jehan le Voleur had

first supplied tiles made at Ypres, or near Ypres, and he had then been sent to Hesdin by the Duke to make tiles there, *lesquelz carreaux il délivra à la mesure et longueur accoustumée audit Hesdin, qui estoit plus grand beaucoup que celluy dudit lieu d'Yspre*, the tiles being *mis et employés audit chastel de Hesdin* and duly paid for. This text provides new information about Jehan le Voleur's work before and during his employment at Hesdin, and it also suggests that he continued to manufacture the tiles after 1393. The second text, dated 1402, records a further grant of 40 écus, perhaps in recompense for the work Jehan le Voleur had done on the apartments at Arras in that year.

The Hesdin tiles are repeatedly referred to in these texts as 'painted tiles'. In most cases this phrase would be taken simply to mean 'decorated tiles',⁷⁰ but there can be no doubt that these ones really were painted. Jehan le Voleur is often described as *ouvrier de quarriaux pains et jolis*, or some such title, but he is also referred to as a painter, and it appears from his subsequent career that the latter was the more accurate description. In later texts he is mentioned several times in connection with painting commissions of various kinds — though there is never again any mention of tiles — and by 1405 he is described as *varlet de chambre et peintre de Monseigneur le Duc de Bourgogne*, titles which in the 1391 letters patent were held by Melchior Broerderlam and which were held by Van Eyck from 1424–25.⁷¹ If Jehan le Voleur could be considered on a level with two of the greatest Flemish painters of the period, he was clearly no mere tilemaker, and it would probably be more accurate to see him as an accomplished painter who took a particular interest in the manufacture of painted tiles. Jehan le Voleur died before 1421 and was succeeded by his son Colart le Voleur, who likewise worked for many years as a painter in the service of the Duke of Burgundy with responsibility, among other things, for maintaining the curious machines at Hesdin designed to carry out such practical jokes as pouring water on unsuspecting passers-by.⁷²

The texts of 1391–1402 make it clear that Jehan le Voleur was responsible for the production of the tiles, but it seems likely that his real involvement was principally as the designer and painter of the patterns: as the 1391 letters patent say, they were to be *pains dudit Voleur*. . . He may not have been so directly involved in the more ordinary processes of manufacture. Reading between the lines of the 1391 and 1400 letters patent, we may speculate that he had originally been in partnership at a tilery near Ypres with Jehan du Moustier of Ypres, le Voleur being essentially the painter and du Moustier the tilemaker. The original commission from Philippe le Hardi was presumably to have been carried out at the Ypres tilery, and some tiles apparently were sent to Hesdin from there, a distance of approximately 80 km, a not impossible distance for the transport of tiles particularly of a special kind. It was presumably also as a result of the inability of the two men to work together that Jehan le Voleur apparently established a whole new workshop at Hesdin, kiln and all, with money advanced by the Duke. Jacquemart Boistel, who stood surety with Jehan le Voleur for the advance of 50 francs, may perhaps have been a tilemaker employed by le Voleur at Hesdin, though he may simply have been a friend.

However this may be, Jehan le Voleur succeeded in producing a fair quantity of tiles within the space of two years and probably continued to make them for the rest

of the decade. They were seemingly of excellent quality. This is suggested by the extremely favourable reception given to Jehan le Voleur by the Duke throughout this period, and more particularly by the fact that he undertook to purchase as many tiles as were produced, which would surely not have been the case with tiles of average quality. The involvement of Melchior Broerderlam is also noteworthy. The leading Flemish painter of his day, he was in charge of the artistic work at Hesdin and was doubtless for this reason given oversight of the tile production, though this probably involved no more than approving the designs and checking the finished product. It is interesting that his most famous painting, which dates to this very time, shows evidence of an awareness of tile pavements. The panels of the altarpiece of the Chartreuse de Champmol at Dijon, painted in Flanders by Melchior Broerderlam and paid for by the Duke in 1394, include representations of two buildings both adorned with tile pavements.⁷³ Numerous medieval miniatures, and to a lesser extent monumental paintings, include representations of tiled floors, but they are almost all very stylised and cannot generally be identified as accurate representations of any known medieval pavements. Melchior Broerderlam's altarpiece is an exception. The pavements in the two buildings are composed entirely of plain tiles, which might not seem very distinctive, but the arrangement of the tiles in simple patterns is typical of 14th-century Dutch and Flemish tile pavements, many of which contained few if any patterned tiles. The swastika motif visible at the back of the building in the scene of the Annunciation is a characteristic design of tile pavements in the region⁷⁴ and shows that Melchior Broerderlam both observed and was concerned to copy actual pavements. In Burgundy, where the altarpiece was sent on its completion, 14th-century pavements were totally different in style.

According to the 1391 letters patent the tiles were to be painted with figures (*ymaiges*) and *chiponnés*, a word whose meaning is uncertain, but which may be connected with *chipoue*, grimace, thus (?)painted with grotesques;⁷⁵ others were to be painted with devices or inscriptions (*devises*), or plain. The fragment from Hesdin with the hooded head of a man (Pl. x, F) would fit this description, though stylistically it is comparable to the painted tiles from Saint-Bertin at Saint-Omer and at the Abbaye des Dunes, which probably date to the first half of the 14th century. Hesdin was already an important residence before its acquisition by the Dukes of Burgundy, and painted tiles could have been laid there earlier in the century. Even if this fragment does date to the time of Philippe le Hardi, it need not necessarily be one of Jehan le Voleur's tiles. An isolated text of 1381, which refers to a certain Pierre Cazien, priest at the court of Philippe le Hardi and *faiseur de peintures sur carreaux*,⁷⁶ suggests that painted tiles could have been laid at Hesdin before the 1390s. The fragment with the inscription (Fig. 4), however, could well be one of Jehan le Voleur's products. It is part of a much larger tile, and the 1391 text says the tiles are to be *ouvrés de la grandeur*, while the 1400 letters patent specifically state that the tiles made at Hesdin were larger than those made at Ypres. Furthermore, the black-letter inscription (?)deus or deum may well have belonged to a *devise*. No other painted tiles bearing an inscription have yet been found in Flanders, and although the name of God would not normally be spelt out on a floor, it would be appropriate to some sort of motto, such as 'time deum'.⁷⁷ We may therefore tentatively

attribute this fragment, which unfortunately is not known to survive, to Jehan le Voleur.

The Hesdin tiles and the *carreaux de peinture* laid at Arras in 1402 complete the evidence for the production of medieval tin-glazed tiles in the Low Countries.⁷⁸ It thus appears that their manufacture did not continue beyond the first years of the 15th century. In Flanders, where there seem to have been a number of different workshops, production certainly spanned the second half of the century and had probably begun before 1350. In Holland tin-glazed tiles at the moment are confined largely to the Utrecht region and perhaps to the products of a single workshop, though there seem to be connections with the tin-glazed tile monument of Benedict V in Hamburg. Further work on the tiles of the Low Countries and future discoveries should both increase the number of sites with tin-glazed tiles and provide better evidence for their date.⁷⁹ It is improbable, however, that any will be found much earlier than the second quarter of the 14th century, or about 1300 at the earliest, and it is worth at least raising the question of how and why the technique became known in this area at such an early date, only a few decades after the first appearance of tin-glazed tiles in the south of France.

It is perhaps tempting to posit some connection between the monument to Benedict V in Hamburg and the tin-glazed tiles of the Avignon region, in which case the technique could have been first used at Hamburg and then introduced into Holland. The papal court in exile in Avignon might have taken an interest in commemorating an earlier Pope who had himself died in exile as a result of a conflict with the temporal powers of his day. A specific patronage link of this kind could sometimes result in the introduction of new styles and techniques, as we have already seen with the case of Santas Creus,⁸⁰ but it is improbable that a tiler would have been sent right across Europe, a distance of over a thousand kilometres, just to make a single monument. The style of the Hamburg monument is in no way connected with that of the tin-glazed wares of the Avignon region, and, perhaps more significantly, there are no known examples of tile-tombs in any technique in the south of France. The tradition of making tile-tombs was essentially a northern one, which began in the first half of the 13th century in Normandy and reached its greatest flowering a century later in the same region.⁸¹ The tile-tombs of the Utrecht region and at Hamburg, although they are the only examples so far known in the tin-glazed technique, were probably derived from this tradition, and a direct link with Avignon is unlikely.

A glance at the map (Fig. 1) shows the markedly coastal bias in the distribution of tin-glazed tiles in northern Europe, and the technique may have been introduced through trading links around the Atlantic coast. In particular, there may have been connections with the lower Loire valley and Brittany. Several features of the tin-glazed tiles are common to both regions: four- or nine-tile sets bearing figured scenes within a circular frame; single tiles painted with the heads of men and women; and smaller pieces painted with simple fleurs-de-lis and rosettes. The tin-glazed tiles from Suscinio and Brain-sur-Allonnes find their closest parallels among the Flemish examples, but the overall layouts of the Loire valley and Breton floors are more reminiscent of the Utrecht group. The pavements in each case are in a style

ultimately based on that of 13th-century Parisian floors, characterised by square panels of rectilinear mosaic pieces, sometimes including painted tiles, separated by thin borders of two-colour tiles. Another feature common to both areas, but apparently absent from the Parisian prototypes, is the use of square plain tiles to form various designs such as the swastika motif mentioned above, or simple Greek crosses, or meander patterns. Pavements of this kind are unknown in the intermediate regions of Brittany, Normandy or Picardy, as also are tin-glazed tiles. Until more evidence becomes available on the origins of the industries in the two regions it is impossible to draw any firm conclusions, but it is tempting to speculate that there may have been links of some sort between the tilers in the lower Loire valley and SE. Brittany and the tilers in the Low Countries in the early years of the 14th century.

DIJON, BOURGES, MEHUN-SUR-YIEVRE AND POITIERS

If Hesdin was one of Philippe le Hardi's principal residences in Flanders, his Burgundian capital was at Dijon, and it was there that he founded the Chartreuse de Champmol, for which Melchior Broederlam painted the altarpiece which includes representations of contemporary Flemish pavements. The ducal oratory at the Chartreuse de Champmol was paved with tiles of three different kinds: slip-decorated tiles of two different sizes, and some large tin-glazed painted tiles *c.* 180 mm square. The tin-glazed tiles were laid in front of the altar, and they were painted in blue with the arms of Burgundy ancient — eight bars alternately blue and white — and the arms of Flanders — a lion rampant, in this case spread over two tiles (Pl. XI, A).⁸²

Philippe le Hardi's brother, Jean de France, Duke of Berry, the most famous patron of the arts of his time, had similar painted tiles made for his buildings. From his palace at Poitiers there are two fragments of a large circular tile, *c.* 210 mm in diameter, painted with his arms, *semé de fleurs-de-lys à la bordure engreslée de gueules*; the fleurs-de-lis are white on a blue ground, with the engrailed border white or violet-brown.⁸³ His arms reappear on tiles painted in the same colours from his palace at Bourges, though here the tiles are of a different shape: there probably were smaller circular tiles, though none survive, but the coat of arms was represented on square tiles with a segment of a circle cut out of each corner. A plain rectangular white tin-glazed tile with concave ends also survives from the same pavement at Bourges.⁸⁴ Similar fragments, again including blue tiles, have been found at the ducal château at Mehun-sur-Yèvre, to the west of Bourges.⁸⁵

The interest of these tiles is out of all proportion to their numbers. They are the first tin-glazed tiles with decoration in blue, and we are remarkably well informed about them through surviving documents. The slip-decorated tiles at the Chartreuse de Champmol were made in 1388–91 by one Perrin at a tilery belonging to the Duke of Burgundy at Montot, not far from Dijon. Perrin also supplied slip-decorated tiles from Montot to the château of Marguerite de Flandres, wife of Philippe le Hardi, at Germolles, and the wheel of fortune tiles mentioned earlier may have been made by him. Numerous slip-decorated tiles have been found at other ducal residences in Burgundy, such as the châteaux of Argilly (where there was also a tilery) and

Brazey-en-Plaine, though they cannot all be attributed to the Montot tiliary.⁸⁶ Tin-glazed tiles, on the other hand, have been found uniquely at the Chartreuse de Champmol. The Chartreuse accounts reveal that they were made by a Spaniard named Maître Jehan de Gironne, described as *ouvrier de tieuelles et de quarreaux de Monseigneur le Duc de Bourgogne*. He is mentioned between 1383 and 1388, and disappeared in 1389 *sans dire à Dieu*. He appears to have been in charge of the production of tiles, and was sent on several occasions to the Montot tiliary to make *pavements ouvrés appelés tables* and *carreaux de petits pavements*. The large tin-glazed tiles, however, seem to have been made actually in Dijon, where Jehan de Gironne set up a kiln at the hôtel of the Seigneur de Trouhans. He is recorded as having purchased there *couleurs pour peindre les quarreaux* and he also bought a *moutier de métal pour broier les couleurs des quarreaux*. The foundations of the Chartreuse de Champmol were laid in 1383 and the church was dedicated in 1388. Jehan de Gironne's stay at Dijon thus coincided with the building of the church, and the painted tiles, if not the slip-decorated tiles, had very probably been laid before the dedication.⁸⁷

The tiles made for the Duke of Berry's residences at Mehun-sur-Yèvre, Bourges and Poitiers are so similar that they can be attributed to a single workshop, and the man who directed that workshop is known to us from the documents which record expenditure on making the tiles at Poitiers. Like Jehan de Gironne at Dijon, he was a Spaniard, named Jehan de Valence (Valencia), nicknamed *le Sarrazin*, which suggests that he was of Moorish extraction. He arrived at Poitiers in November 1384 in the company of Guy de Dammartin, the architect in charge of the works. He had come from Bourges, so the tiles at Bourges and Mehun-sur-Yèvre seem likely to have been made before those at Poitiers. He set to work to manufacture *carreaux aux armes et devises de mon Seigneur*, a description perfectly applicable to the fragments found both at Bourges and at Poitiers. It is an indication of his special status that, instead of being paid for the finished products in the usual manner, like Jehan le Voleur at Hesdin, Jehan de Valence was paid a generous daily wage, and all the equipment and materials necessary for his work were paid for by the Duke. It is for this reason that the accounts exist at all. The workshop was set up in Poitiers itself at the hôtel de Vivonne, near Sainte-Croix, and a former street in that part of the town bearing the name Rue des Fours may have perpetuated its memory. The accounts for 1384–85 enable us to follow the work in remarkable detail.⁸⁸

The construction of the kilns or ovens occupied the months of November and December 1384. Sand, lime, clay and tiles of various sizes were bought for this purpose, as well as *de grans carreaux doubles nécessaires por fere la voulte d'un grant four*. This large kiln was presumably that in which the tiles were fired, and the fact that it had a *voulte* made of tiles suggests that, unlike the standard type of medieval tile kiln, this one had a permanent vaulted or domed roof. Tools and equipment were bought for the workshop and for making the tiles, including trestle-tables, a bucket and rope for drawing water, various implements for preparing the clay, including sieves and iron mallets for breaking up pebbles, wood for making moulds for the tiles, and knives for cutting them to shape. Clay was brought to the site by donkey. The designs were drawn out on a sheet of parchment purchased for the purpose, and materials were bought for the glaze and the colours: 50lb. of lead, 23lb. of tin, 3 pots of salt, 3lb. of

copper *pour fere le vert et or*, a dozen eggs from a poultry-woman to mix the colours, and some balances and saucers, presumably to weigh the ingredients. The account of 1385–86 likewise mentions in more summary form *plusieurs livres de plom, estain et sel . . . pour le fait de pointure des diz carreaux*, and it also records the purchase of a pound of *safré* (a compound of glass and cobalt for making the blue) *nécessaire pour poindre lesdiz quarreaux*. Charcoal was purchased to dry the tiles, presumably before the application of the glaze, while brushwood (*sarment*) was bought *pour chauffer les fours à fondre l'étain et le plom*. These were presumably smaller ovens where the tin and the lead were melted to make the oxides for the glaze. Fourteen pots were bought *pour fondre le blanc*, i.e. the opaque white glaze. Finally gorse (*genêt*) and brushwood were bought *pour chauffer et cuire les diz carreaux*, together with some tongs to take the tiles out of the kiln and some brooms to clean it. These items indicate that the first firing took place early in 1385. The accounts even record the purchase of candles for watching the work, presumably during the firing. As well as the materials, payments to the workforce are recorded: Jehan de Valence himself was paid 6s. 8d. a day. The actual painting of the tiles seems to have been done by one Master Richard the painter and his son Jehan, who were paid respectively 5s. 6d. and 2s. 6d. a day. Various labourers, earning 15d. a day, are also named. In 1385–86 the accounts include sums for the laying of the tiles, but they give much less detail about the running of the tiler. Production nonetheless clearly continued during the year, and Jehan de Valence is still mentioned in 1387.

It is curious that the most detailed surviving accounts to do with the production of medieval decorated tiles should not merely concern tin-glazed tiles, which are rare enough in themselves, but some of the mere handful of examples with designs in blue. It is remarkable also that some fragments of the very tiles mentioned in the accounts have survived, that similar fragments from two other sites can be attributed to the same workshop, and that the only other comparable blue-painted tiles, at Dijon, can likewise be shown by documentary evidence to have been made by a Spaniard working in the 1380s. Tin-glazed wares with designs painted in blue are characteristic of Spanish pottery and tile production of the 15th century, and it is clearly no coincidence that these tiles were made by Spaniards. There was probably no-one in France capable of making such tiles at that time. The Duke of Berry and the Duke of Burgundy are known to have been interested in each other's architectural and artistic works and to have employed some of the same artists, so it is not particularly surprising that both should have been employing Spanish tilemakers in the very same years to make very similar types of tiles. Migrations of this kind are not entirely unparalleled: in 1362 two Spanish tilers named Juan Albalat and Pascasio Martin were summoned from Manises to make tiles at Avignon,⁸⁹ but it is not known how the Duke of Berry and the Duke of Burgundy came to acquire the services of Jehan de Gironne and Jehan de Valence.⁹⁰ They were evidently willing to pay extra for an exceptional product, and it is noticeable that they made sure that the tiles were decorated with their own coats of arms.

Various claims have been made about the techniques of manufacture either implied by the texts or deducible from the extant fragments. The most interesting is that the Poitiers tiles had lustred surfaces, comparable to Spanish lustre wares.⁹¹

This is not discernible on the fragments, but lustre does not survive well in the ground. The claim has been made on the basis of the purchase of copper *pour fere le vert et or* and of large quantities of gorse, which is considered a particularly suitable fuel for the making of lustred surfaces. The use of copper for painting designs in green is of course well known, but lustrewares were also made with copper. On the face of it, the use of a metallic lustre on floor-tiles seems extremely unlikely, since it would very rapidly have been worn away, but the Duke of Berry might have been more interested in brilliant surface effects than in durability. It is to be hoped that proper scientific analysis will be carried out on the extant fragments, in conjunction with a more thorough re-examination of the accounts than has been possible here. For the moment it is only necessary to note two further points concerning the manufacture of these tiles, which set them apart from other medieval tiles. Tile kilns were normally set up in the countryside, or at least on the outskirts of towns, but at both Poitiers and Dijon the tiles were made and fired within the city. This is unparalleled, but it also raises the hope that eventually the precise site of the workshops could be discovered and excavated. Secondly, the fragments from Poitiers, Bourges and Dijon all have small marks on the surface which were left by the tripod supports (called *pernettes* in French) on which the tiles were placed face down during the firing. This is no mere conjecture, for the Bourges fragments, which are wasters, were found with various other pieces of waste including a number of *pernettes*, some with traces of blue on them from the glaze.⁹² *Pernettes* were commonly used for the production of post-medieval faïence, but there is no other evidence for their use with medieval tiles. These *pernettes* indicate that exceptional care was taken with the tiles during the firing, and the seeming use of a permanently-vaulted kiln, which presumably enabled a much closer control to be exercised over the firing conditions, points in the same direction.

This episode in the history of medieval tin-glazed tiles was of short duration. Jehan de Gironne disappeared from Dijon *sans dire à Dieu* and is not heard of again. Jehan de Valence apparently worked at Bourges and Mehun-sur-Yèvre as well as at Poitiers, but there is nothing to suggest that tiles of this type were made in France at a later date. No fragments of tin-glazed tiles of any kind are known from the buildings belonging to the two brothers of Jean de France and Philippe le Hardi, namely Louis of Anjou and Charles V, King of France.⁹³

THE FIFTEENTH CENTURY

The blue-painted tiles commissioned by the Duke of Berry and the Duke of Burgundy in the 1380s had no successors. In Berry decorated tiles of any date are fairly rare; in Burgundy there was a considerable output during the 15th century, but entirely of ordinary lead-glazed tiles.⁹⁴ In the Low Countries and particularly in Flanders the tradition of making tin-glazed tiles had much deeper and broader roots, but there are nonetheless no extant locally-produced tin-glazed tiles of the 15th century.⁹⁵ The only surviving examples are Spanish imports. Some fragments of blue-painted tiles at the Abbaye des Dunes are very similar to some from the convent of the Conception at Toledo.⁹⁶ Fragments of high-quality Spanish pottery are not uncommon in Britain and the Low Countries,⁹⁷ and more 15th-century Spanish tiles

may turn up in the future, but they can never have been imported in very large numbers. Some paintings by Van Eyck depict pavements of painted tiles, and again they are clearly Spanish imports rather than local products. The Ghent altarpiece of Hubert and Jan Van Eyck, dated from before 1426 to 1432, includes two panels of angel musicians standing on painted tiles, and others are visible in the Madonna of Jan Vos, painted by Jan Van Eyck and Petrus Christus in 1441–43. They suggest that the importation of Spanish tiles into the Netherlands had begun by about 1425.⁹⁸

A similar picture emerges even in the south of France. In the 15th century, with the return of the papal court to Rome, there was a significant decline in the production of luxury tin-glazed pottery and tiles in the Avignon region. The only important series of painted tiles from Avignon in this period, datable probably to the latter half of the 15th century, is a set of imported tiles decorated with designs in blue which are paralleled in both Spain and northern Italy, the latter being perhaps the more likely source.⁹⁹ The remains of a pavement of tin-glazed tiles with designs in blue and violet (Pl. xi, B), from the château of Combefa, near Albi, can be attributed to the episcopate of Louis I d'Amboise, 1474–1502, and are dated *c.* 1490. Stylistically they are closely connected to contemporary Spanish wares and they must have been made either in Spain or at Albi by tilers brought from Spain.¹⁰⁰

With the end of the 15th century we reach the period when the large-scale production of tin-glazed pottery and tiles began in various parts of France and the Low Countries, the main influence being now from Italy rather than from Spain. The establishment of these industries marks the beginning of the continuous production of tin-glazed wares in NW. Europe which has lasted until the present day, and it is not within the scope of this article to pursue these later developments.¹⁰¹ The question does however arise as to whether there was in fact any continuity in production between the 14th-century tin-glazed tiles and the late 15th- and early 16th-century wares. The fact that the beginnings of the later industries are attributed to craftsmen from the Mediterranean does seem to indicate that there was no surviving production of tin-glazed wares in the north, and this conclusion is reinforced by the complete lack of any extant 15th-century pieces which can be attributed to northern workshops. The only example known to me which was almost certainly a local product is said to have come from Autun in Burgundy.¹⁰² This remarkable piece is not a floor tile, but a plaque whose original purpose and position is unknown (Pl. xi, C). It depicts a Pietà with Philippe le Bon, Duke of Burgundy, his wife Isabelle of Portugal, and their son, Charles le Téméraire, presented by Saint Andrew and Saint Elizabeth of Hungary. It may be dated *c.* 1440–50. The finish is less than satisfactory, as the glaze has pitted in the firing over much of the surface, but the quality of the painting is outstanding for a ceramic piece. The range of colours is also remarkable for this date: apart from the white ground, the colours include dark brown for the outlines, a yellow-brown wash over most of the figures, a darker brownish-red for some of the background and some of the garments, a pale yellow in some of the coats of arms and the lower part of the Duchess's dress, and a medium blue in the coats of arms and the heraldic garments of the Duke and his son. Green is not used.

The plaque is closely related to a plaque in bronze given by Isabelle of Portugal to the Chartreuse at Basle to commemorate a foundation made there by her, and comparable plaques have been recorded elsewhere.¹⁰³ It matters little for our purpose what precisely was the function of this plaque: its main interest is as a piece of tin-glazed pottery datable to the mid 15th century and almost certainly made in the region. Apart from its obvious connections with the Burgundian court, it is extremely fragile and is unlikely to have travelled very far. On the other hand, the existence of this piece does not on its own invalidate the conclusion that there does not seem to have been any continuity in production between the tin-glazed wares of the 14th and later 15th centuries. The plaque is so exceptional in its conception, in its quality and in the range of colours used that it may well have been specially commissioned from a craftsman summoned to Burgundy by the Duke, rather like Jehan de Gironne and Jehan de Valence in the 1380s. It cannot by itself be taken to prove that tin-glazed wares were in regular production in Burgundy during the 15th century.

CONCLUDING REMARKS

We have traced the development and spread of tin-glazed tiles from their first appearance in the 1290s until the apparent ceasing of production at the start of the 15th century. Over most of southern France, with the exception of the Atlantic coastal areas, lead-glazed tiles were rare if not completely unknown. Apart from the products of the Garonne valley workshop, the pavements were generally composed solely of tin-glazed tiles, but they tend to be rather sporadic, and even in the Avignon region the total numbers of tin-glazed tiles fall far short of the contemporary lead-glazed tiles of the north of France. Outside the areas of Mediterranean influence tin-glazed tiles were confined to a few regions: the lower Loire valley and SE. Brittany, probably for only a short period in the early 14th century; Flanders and Holland (with which should be associated the monument to Benedict V in Hamburg cathedral and the two finds in Essex), where production seems to have continued for most of the 14th century, culminating in a decade of notable activity under the patronage of Philippe le Hardi; and at four of the principal residences of Philippe le Hardi and Jean de Berry at Dijon, Bourges, Mehun-sur-Yèvre and Poitiers during the 1380s. Future discoveries may add to this list, but there is probably little unpublished material awaiting identification. In Britain medieval tiles have been the object of detailed research for many years, but only the two sites in Essex have so far produced any tin-glazed tiles. In Denmark, where there are none, and in Germany thorough studies of all extant tiles are in progress.¹⁰⁴ In Belgium and Holland less systematic work has been undertaken, but we already know that tin-glazed tiles were manufactured there, and further discoveries are unlikely radically to alter the overall picture. In France the subject has been long neglected, but the research on which the present study has been based has covered almost all the surviving and recorded tiles. Within the limits of the available evidence, therefore, the present picture of the distribution of tin-glazed tiles in NW. Europe should be accurate. It is interesting to note which areas have not produced any examples.

Normandy, Picardy, the Ile-de-France and Champagne were all major centres of floor tile production, but they have not produced a single tin-glazed tile among them. In England likewise, where there were more tile pavements than in any other country with the possible exception of France, there is no evidence for any local production.

The distribution, in short, is rather uneven. In some cases we can trace how the technique came to be introduced, in others we are reduced to guesswork. The adoption of the tin-glazed technique by the Garonne valley workshop *c.* 1290 seems to have resulted almost accidentally from the visit of one of the tilers to Santas Creus. The manufacture of blue-painted tiles by Spanish tilers at Dijon, Bourges, Mehun-sur-Yèvre and Poitiers was the result of special commissions from two of the most influential patrons of the arts of their day, and it did not result in any subsequent tradition of tin-glazed tiles. By contrast, in the south of France generally and in the Avignon region in particular the production of floor tiles was only one aspect of a much larger tin-glazed ceramics industry, and the numbers of surviving tiles mirror in broad terms the rise of that industry in the early 14th century and its subsequent decline in the 15th. In the Low Countries as well tin-glazed tiles were being produced during most of the 14th century, but we do not know when, where or how the technique was first introduced, nor why it was seemingly abandoned at the start of the 15th century. The distinctly coastal distribution of the tin-glazed tiles outside the south of France, apart from the blue-painted tiles of the 1380s which are a special case, perhaps justifies us in looking for explanations in terms of general trade patterns and commercial connections rather than in terms of individual patrons. This is certainly the explanation for the tin-glazed tiles imported into England along with countless Flemish plain tiles and bricks. Even so, we cannot explain why the tin-glazed technique should have been adopted in the lower Loire valley and Brittany and in the Low Countries, but not, for example, in any of the intermediate coastal areas. If particular patrons were responsible, or equally if the ceasing of production in these regions was due simply to the death or disappearance of the tilers, the documents are lost and we shall never know. Yet the surprising thing is not that we cannot answer these questions in every case, but rather that in some cases the evidence is sufficiently good for us to be able to provide at least partial responses.

The most serious outstanding problem concerning the chronology and distribution of the tiles is the 15th century. Was there really a complete break between the late 14th-century tiles and the reappearance of locally-produced tin-glazed wares at the end of the 15th century and in the early 16th, or was there in fact a continuous tradition? Further discoveries should reveal whether the hiatus is real or apparent. But at this point a second question must be posed. Since the tin-glazed technique was quite widely used on medieval floor tiles, why was it apparently never used on pottery in NW. Europe until the late 15th century, particularly since the production of tin-glazed tiles was closely linked to that of pottery in the Mediterranean regions?¹⁰⁵ Assuming that it is not the case that we have overlooked evidence that has been there all the time had we ever thought to look for it, the total absence of locally-produced tin-glazed pottery does require an explanation. Some possible reasons do suggest themselves. Although tin-glazed tiles generally formed only a

small proportion of any pavement, it is nevertheless true that a fair number of them would have been required for even the smallest floors. The pavement of the abbot's lodgings at the Abbaye des Dunes contained some three hundred painted tiles, a small part of the whole, but nonetheless a fair load if they had to be transported over any distance. The cost of transporting three hundred tiles from the Mediterranean would have been appreciable. If the main centres of production of tin-glazed wares had been on the Atlantic coast rather than the Mediterranean, things might have been different, but as it was the import of tin-glazed tiles in sufficient quantities for even a few pavements was not really an economic proposition, as is clearly shown by the blue-painted tiles of the 1380s: it was the tilers who were imported, not the tiles. With the pottery the position is rather different. Tin-glazed pottery was a luxury item, even in the Mediterranean regions, and there would not have been many who could have afforded it. Even for those who could, a few plates, bowls, jars or whatever, or merely a single item for display, would have sufficed. The cost of transport of a few pieces of pottery would still have been high, but not impossibly high. In short, the market for tin-glazed pottery could probably be met by imported wares, but that for tiles could not.

A second, not unrelated, factor may have been quality. Many of the Mediterranean tin-glazed wares are of excellent quality, particularly some of the late medieval Spanish wares, and the pieces exported to the north would presumably have been among the best available. By contrast, many of the tin-glazed tiles in NW. Europe are only of average quality, and some, notably those at Brain-sur-Allonnes, are distinctly indifferent, not to say poor. It may be that the northern potters could not produce sufficiently good-quality wares to compete with the imports.

The same reason may partly account for the fact that the tin-glazed technique was not more widely adopted on tiles. Whereas most decorated lead-glazed tiles were mass-produced by mechanical means, generally through the use of a wooden stamp, every painted tile had to be decorated individually by hand. They were therefore more difficult and more expensive to manufacture. Consequently, they remained at the top end of the market and were usually, as we have seen, confined to the more important parts of the floor. They could never have competed with the mass-produced and often poor-quality lead-glazed products at the lower end of the market, and this is one reason why the tin-glazed tiles of southern France remained scarce luxury items, whereas the cheaper lead-glazed tiles in the north became by the end of the Middle Ages fairly commonplace. On the other hand, painted tiles had three main advantages over lead-glazed tiles. Firstly, they opened up a different range of colours, though the white, green and brown of the majority of these tiles were not greatly different from the yellow, green, dark green and dark brown available with lead glazes. It was only the rare blue-painted tiles which really offered something distinctively new, for the medieval tilers could not produce the far richer palette which made Renaissance tin-glazed pottery and tiles so appealing. Secondly, since each tile was painted individually, the tilers were freed from the restrictions imposed by the repetitive use of the same wooden stamps. Thirdly, and related to this, the technique made possible a finesse of design which was normally beyond the capabilities of the medieval tiler. Potentially at least, it raised the artistic level of the

tiles to that of painting. On the other hand, this presupposes the requisite painting skills, which not every tiler would have had, and this was certainly one reason why the technique was not more widely favoured.

The potentialities of tin-glazed tiles were not in fact properly exploited in the Middle Ages. There was really little point in making numerous more or less identical tiles painted with small rosettes and fleurs-de-lis, or even heraldic eagles and lions, when perfectly adequate versions of the same designs could be made much more cheaply with two-colour lead-glazed tiles. Even the single-tile designs depicting the heads of men and women, as at the Abbaye des Dunes, although they do exhibit a certain variety, are not that much more interesting than the two-colour heads in the nearby Saint-Omer pavements. The real advantage of tin-glazed tiles lay not in the production of small repetitive patterns, for which wooden stamps were ideal, but of large figured scenes. Any number of such scenes could be produced. Twenty different nine-tile scenes, for instance, are no more difficult to make with painted tiles than twenty copies of the same scene. By contrast a nine-tile figural scene on two-colour tiles would require nine wooden stamps, whether one copy were made or twenty, but twenty different scenes would necessitate 180 separate stamps! It is true that four-tile and nine-tile scenes are a distinctive feature of the medieval tin-glazed tiles, but the tilers did not exploit this advantage to the full. They did not, for instance, break out of the conventional idea of the four-tile or nine-tile set to make picture panels of perhaps one hundred or four hundred tiles. This would have been something distinctive with which lead-glazed tiles could not have competed, but as it was the tin-glazed tiles remained within the decorative conventions of the predominant lead-glazed pavements, and within those conventions they had little to offer. It was only the Renaissance tilers who, with the further advantage of a much wider range of colours, seized on the real possibilities of the tin-glazed technique to produce large-scale picture panels, such as those of Masseot Abaquesne at Ecoeu. This was one reason why the introduction into France of the new Renaissance tin-glazed tiles in the 16th century soon led to the collapse of the old-fashioned lead-glazed tile industry.

ADDENDUM

The discovery has just been announced of a pavement in the S. nave aisle of the Cistercian abbey church of Bonnefont (Haute-Garonne) (see G. Rivère, 'Abbaye de Bonnefont en Comminges', *Bulletin Monumental*, CXLII. 2 (1984), 187–89). The pavement survived over a length of about thirteen metres and contained, in addition to some seemingly late medieval tiles with small stamped relief motifs, a number of painted tiles. One bears a lion or leopard, but the majority of the patterns are geometric or otherwise non-figural. The two illustrated tiles are comparable in style to those from Escaledieu, which is about 30 miles distant, and the characteristic presence of nail-holes in the centre of the four sides strongly suggests that they were made by the same workshop as the Escaledieu tiles.

In Utrecht, the discovery has just been reported by Tarq Hoekstra of the first actual kiln site with evidence of the production of tin-glazed tiles. Two kilns dating to

the first half of the 14th century have been excavated, together with three fragments of contemporary pottery kilns. Among the wasters are some slip-decorated tiles and some fragments of tin-glazed painted tiles. For the Utrecht cathedral pavement, see also now T. J. Hoekstra, *Archeologische en Bouwhistorische Kroniek van de Gemeente Utrecht over 1983* (Utrecht, 1984), 105–08.

ACKNOWLEDGEMENTS

This article is an expanded version of a paper presented to the European Medieval Floor Tile Seminar at the British Museum in March 1983. It could not have been written without the assistance of the curators of the many museums and monuments who have allowed me to study the material in their care. I am particularly indebted to the following for information and help of various kinds: Patrick André, Jacques Boucard, John Cherry, Frédéric Clair, Paul Drury, Tarq Hoekstra, Mark Horton, Laurence Keen, Matthieu Pinette, M. and Mme Sangouard, and Tim Wilson.

NOTES

¹ A notable exception is A. Lane, *A Guide to the Collection of Tiles*, 2nd ed. (London, Victoria and Albert Museum, 1960), 47–48.

² See *Faïences Françaises* (Paris, Grand Palais, 1980), passim and 193–200 for Masseot Abaquesne; also A. Bréjon de Lavergnée, 'Masseot Abaquesne et les pavements du château d'Écouen', *Revue du Louvre et des Musées de France*, xxvii (1977), 307–15.

³ For what follows see notably G. Démians d'Archimbaud and M. Picon, 'Les céramiques médiévales en France méditerranéenne — recherches archéologiques et de laboratoire', 15–42 in *La Céramique Médiévale en Méditerranée Occidentale Xe–XVe Siècles (Valbonne 1978)* (Paris, 1980); and L. Vallauri, M. Vichy, R. Broecker and M.-C. Salvaire, 'Les productions de majoliques archaïques dans le Bas-Rhône et le Roussillon', *ibid.*, 413–27. The most remarkable single pottery find is that published by G. Démians d'Archimbaud, L. Vallauri, J. Thiriot and D. Foy, *Céramiques d'Avignon: Les Fouilles de l'Hôtel de Brion et leur Matériel* (Avignon, 1980) (= *Mémoires de l'Académie de Vaucluse*, 7th ser., 1, (1979–80)).

⁴ For the tiles, see also S. Gaignière and J. Granier, 'Les carrelages en terre cuite dans les constructions de Jean XXII, de Benoît XII et de Clément VI', *Guide Illustré d'Avignon* (April–May 1963); S. Gaignière, J. Granier and L. Voisin, 'Découverte d'un carrelage dans le studium de Benoît XII', *Guide Illustré d'Avignon* (April–May 1964); S. Gaignière, 'Le carrelage de la chambre du Pape', *Annuaire de la Société des Amis du Palais des Papes* (1973), 59–62; and S. Gaignière and J. Granier, 'Les carrelages du château de Jean XXII à Châteauneuf-du-Pape', *Mémoires de l'Académie de Vaucluse*, 6th ser. vii (1973–74), 29–62; also *Carrelages et Dallages* (Paris, Centre de Recherches sur les Monuments Historiques, n.d.), iii, 18–21; and E. C. Norton, 'Céramique', 415–21 in *Les Fastes du Gothique: Le Siècle de Charles V* (Paris, Grand Palais, 1981–82), nos. 358–59.

⁵ On the dating, see also below, note 21.

⁶ A sizeable collection of these tiles is preserved in the Musée de Narbonne. Some were found in excavations in 1950 in the courtyard of the old Archiepiscopal Palace, others come from chance finds made during roadworks. Some are illustrated in C. Crouzet, 'Les faïences Narbonnaises à décor brun et vert du XIVe siècle', 297–315 in *Narbonne, Archéologie et Histoire. Actes du XLVe Congrès de la Fédération Historique du Languedoc Méditerranéen et du Roussillon, Narbonne 1972*, II (Montpellier, 1973); and see also Vallauri, Vichy, Broecker and Salvaire, *op. cit.*, in note 3, passim.

⁷ The standard work on early Spanish tin-glazed wares is M. González-Martí, *Cerámica del Levante Español*, 3 vols (Barcelona, 1944–52); see also A. Battlori Munní and L. M. Llubia Munní, *Cerámica Catalana Decorada* (Barcelona, 1949); J. Ainaud de Lasarte, *Cerámica y Vidrio* (= *Ars Hispaniae X*) (Madrid, 1952); and M. A. Basch and L. M. Llubia Munní, *La Cerámica de Teruel* (Teruel, 1962). For a review of recent work on the origins of tin-glazed wares in Italy, see D. B. Whitehouse, 'The origins of Italian maiolica', *Archaeology*, xxxi.2 (March–April 1978), 42–49 and *id.*, 'Medieval pottery in Italy: the present state of research', in *La Céramique Médiévale . . .*, 65–82 in *op. cit.* in note 3.

⁸ See J. G. Hurst, 'Near eastern and mediterranean medieval pottery in north-west Europe', 195–204 in *Archaeologica Lundensia III Res Medievales* (Lund, 1968), and *id.*, 'The export of Spanish lustreware to north-west Europe', in *La Céramique Médiévale . . .*, *op. cit.* in note 3, 373.

⁹ This point is made by Vallauri, Vichy, Broecker and Salvaire, *op. cit.* in note 3, 427.

¹⁰ See F. W. Hudig, 'Maiolica olandese del Trecento', *Faenza*, xxi (1933), 131–41; and A.-M. Marien-Dugardin, 'Carreaux de pavement du moyen âge à décor "vert et manganèse" trouvés en Belgique', *Atti V Convegno Internazionale della Ceramica* (Albisola, 1972), 183–88. For the Avignon tiles, see references cited in notes 3 and 4.

¹¹ The tiles, preserved on site, were found in the infill of a grave in the chapter house and were presumably from the floor there. The four L-shaped tiles have equal arms *c.* 150 mm long, 135 mm wide and 25 mm thick. They have the numbers XXI, XXII, probably XXV and XXX painted in brown on the ends of the upper arm of the L, indicating that they formed part of one long step. The incomplete riser with a male head measures *c.* 137 × 133 × 26 mm. It has recently been covered with a transparent lead glaze, which gives it an unnaturally brownish appearance. The last, fragmentary tile measures *c.* 147 × 83 × 24 mm. Four of the five apsidal chapels in the church contain cupboards

paved with tiles, little worn and apparently in their original position. They consist of tiles *c.* 130 mm square, or quarter-tiles taken from quarries of the same size. The majority are ordinary lead-glazed black or yellow tiles, or small slip-decorated quatrefoils, but in the chapelle de la Vierge and the chapelle Saint-Dominique there are also plain turquoise-green tiles. Unlike the plain yellow tiles, they have no slip, and are apparently covered with a plain opaque tin glaze coloured green by the addition of copper oxide.

¹² A pavement was found in 1862 in a small chapel on the second floor of the provost's lodging during the destruction of the building. Nothing survives, but the plan was recorded by J. Esquié, 'Note sur des carrelages émaillés trouvés à Toulouse', *Mémoires de l'Académie des Sciences, Inscriptions et Belles-Lettres de Toulouse*, 7th ser., x (1878), 397-416. It shows a pavement very similar to that at Lagrasse (see below). As at Lagrasse, the intersections of the borders dividing the square panels were formed by patterned tiles, shown on Esquié's plan as dark fleurs-de-lis on a white ground. The square panels were filled with rectilinear mosaic pieces, as at Lagrasse, with the exception of one which was composed of nine large tiles *c.* 210 mm square on which was painted a circular labyrinth. This too is represented on the plan as dark on a white ground. Esquié states that these were inlaid tiles, like the others he discusses, but there are no other two-colour tiles among the products of this workshop which have a dark pattern on a light ground, and, if his plan is not simply in error in showing the designs thus, it seems more likely that they were in fact tin-glazed painted tiles, which do indeed have dark designs on a white ground. The large size of the labyrinth tiles points to the same conclusion. There is a tin-glazed painted tile depicting a fleur-de-lis in the Musée Paul Dupuy at Toulouse. It is unprovenanced, but could be from this floor. The museum also possesses another unprovenanced tin-glazed painted tile depicting two pairs of shears. The pavement of the provost's chapel is also shown by Esquié as having numerous plain green tiles, as well as black and yellow ones, and they were probably plain green tin-glazed tiles.

¹³ The chapel of Abbot Auger at Lagrasse retains its tile pavement complete though somewhat worn. The body of the chapel and part of the altar platform are tiled. The basic unit size is 125-130 mm square. The floor contains slip-decorated tiles, panels of rectilinear mosaic tiles, and ordinary plain tiles. These include standard black and yellow lead-glazed tiles, and turquoise-green apparently tin-glazed tiles, as at Toulouse (see above, notes 11 and 12). The glaze on the turquoise-green tiles is much more resistant to wear than the lead glaze on the others. The painted tiles are in the body of the chapel and are in the same pinkish-red fabric as the rest of the pavement. The pale yellow wash appears on the trees to either side of the hunter and on the hair, bow, bowstring and probably body of the sagittarius. The plan of the pavement published in *L'Art pour Tous*, XXI (1882), nos. 4575-76 shows additionally a tile painted with a crouching monkey between two trees holding a fruit to its mouth. If this is genuine, no trace of it now remains.

Two of the rectilinear mosaic panels in the body of the chapel include small pieces in a buff fabric. Most are worn out, but some retain a few traces of tin-glazed painted designs. They are quite different from the other painted tiles and must be from another source. They are in fact comparable to the painted tiles at Avignon and Narbonne. If they are original to the pavement rather than later insertions, they are the earliest precisely datable examples of such tiles (see below, note 21). For the pavement as a whole, see *Carrelages et Dallages*, op. cit. in note 4, III, 1-17; and E. C. Norton, 'Les carreaux de pavage du moyen âge en France', *Revue de l'Art*, 63 (forthcoming). For illustrations of the painted tiles, see also M. Durliat and D. Drocourt, 'L'abbaye de Lagrasse', *Congrès Archéologique* (1973), 104-22, figs. 14 and 15; M. Durliat, 'La chapelle de l'abbé Auger à Lagrasse', 127-35 in *Hommage à André Dupont — Études Médiévales Languedociennes* (1974), fig. 6, and *Revue de l'Art*, 63 (forthcoming).

¹⁴ Two panels of tiles are reset in the chapelle de la Madelaine in the Archbishopal Palace (now part of the museum). They consist of square panels of rectilinear mosaic comparable to the floor at Lagrasse and attributable to the same workshop. The tiles, in a pinkish-red fabric with a basic unit size of *c.* 120 mm square, are all very worn, and there are no certain traces of plain yellow or black lead-glazed tiles. The panels include a number of rather worn opaque turquoise tiles, comparable to those at Toulouse and Lagrasse, and some plain cream-coloured tiles. These are not the usual slip-covered lead-glazed yellow tiles, but are covered with an opaque cream tin glaze. There are also some worn tin-glazed painted tiles, representing a cat, a bird, a (?) fish, possibly a scroll-pattern comparable to the tiles at Toulouse Jacobins, three tiles with what appear to be coats of arms, and a quarter of a four-tile set bearing concentric quarter-circles alternately cream and green. The tiles are unpublished. *N.B.* These are quite different from the Avignon-style painted tiles found at Narbonne which have been mentioned above (see Pl. vii).

¹⁵ See above, notes 11-14.

¹⁶ For the tiles, see above, note 4. For the pottery, see Démiains d'Archimbaud, Vallauri, Thiriot and Foy, op. cit. in note 3, fig. 46; and Vallauri, Vichy, Broecker and Salvaire, op. cit. in note 3, fig. II, 14.

¹⁷ Unpublished quarter-tiles 61-67 mm square and 18-22 mm thick preserved in the Musée de la Société Archéologique, Montpellier. Four small slip-decorated quatrefoils and four small fleurs-de-lis enable them to be identified as products of the same workshop. The same museum also possesses an unprovenanced green and brown painted tile decorated with a rosette. It measures *c.* 113 × 113 × 18 mm and is in a different fabric.

¹⁸ The floor was published by J. Monméja, 'Mosaïques du moyen âge et carrelages émaillés de l'abbaye de Moissac', *Bulletin Archéologique* (1894), 189-206. The plan published by him as pl. XIII is not altogether accurate. The original plan which survives at the Musée de Moissac is published by Norton, op. cit. in note 13. There were also extensive pavements, of which only a few worn fragments remain, in the claustral galleries and buildings at Moissac.

¹⁹ See below, p. 152.

²⁰ For the date of the Jacobins at Toulouse, see M. Prin, 'L'église des Jacobins de Toulouse: les étapes de la construction', 185-208 and M.-H. Vicairé, 'Le financement des Jacobins de Toulouse: conditions spirituelles et sociales des constructions (1229-ca. 1340)', 209-53 in *Cahiers de Fanjeaux IX La Naissance et l'Essor du Gothique Méridionale au XIIIe Siècle* (Toulouse, 1979); for the chapelle de la Madelaine at Narbonne, see Y. Carbonell-Lamothe, 'Recherches sur la construction du Palais Neuf des archevêques de Narbonne', 217-35 in *Narbonne, Archéologie et Histoire* . . . , op. cit. in note 6. For the dates of the other sites, see references cited in notes 12, 13 and 18.

²¹ It is possible that some fragments of Avignon-type tiles set into the pavement at Lagrassac, dated c. 1296, are original, in which case they are the earliest dated examples of this type (see above, note 13).

²² The following section resumes the conclusions derived from a detailed study of all the tiles in the area, which I hope to publish fully in due course. Meanwhile, for some illustrations and the main references, see E. C. Norton, op. cit. in note 13; and id., 'The production and distribution of medieval floor tiles in France and England', in X. Barral i Altet (ed.), *Artistes, Artisans et Production Artistique au Moyen Âge* (forthcoming).

²³ There are no tin-glazed tiles at the Bordeaux sites, at Agen or at Grandselve. There are some painted tiles from Belleperche (though no tin-glazed plain green ones), but I attribute them to a later workshop (see below, p. 141). If they are in fact products of this workshop it does not affect my argument on the origins of the technique. At Albi cathedral and the other sites in Toulouse so few tiles survive that the absence of any tin-glazed tiles among them is probably a mere accident of survival.

²⁴ On the connection between Grandselve and Santas Creus, see E. C. Norton, 'Varietates pavimentorum: contribution à l'étude de l'art cistercien en France', *Cahiers Archéologiques*, xxxi (1983), 69–113, esp. 102–03.

²⁵ For early Spanish wares, see references cited in note 7.

²⁶ The abbey church was paved with the tiles, of which a few survive at Escaledieu. There are two tiles in the Victoria and Albert Museum, nos. c 962 and 963–1922 (Pl. ix, A; also in Lane, op. cit. in note 1, pl. 26, C–D), while an unprovenanced tile in the Musée d'Aquitaine at Bordeaux (Pl. ix, B) can also be attributed to Escaledieu. The tiles measure c. 120 × 120 × 30 mm and are painted in green and brown in the usual manner. They have never been fully published, but see the following: — Dinet, 'Brique peinte de l'Escaledieu', *Bulletin de la Société Ramond*, vi (1871), 100; C.-L. Frossard, 'Un carreau émaillé provenant de l'église du couvent de l'Escaledieu', *Bulletin de la Société des Antiquaires de France* (1889), 92–93; J. R. Marboutin, 'L'abbaye cistercienne de l'Escaledieu (Hautes Pyrénées)', *Bulletin Monumental*, xcii (1933), 59–78, esp. 69–71; M. Aubert, *L'Architecture Cistercienne en France*, 2nd ed. (Paris, 1947), I, 315; A. Berendsen, *Tiles, A General History* (London, 1967), 92; I.-D. Frossard, *Scala Dei — Escaledieu: Quelques Notes sur son Histoire, son Architecture, ses Légendes* (Escaledieu, 1967), 20–23.

²⁷ The apsidal chapels opening off the transepts of the abbey church were paved with tiles painted in green and brown. Some remain at Flaran, and five worn examples are in the Musée de la Société Archéologique at Bordeaux. They have not been illustrated, but are mentioned by P. Lauzun, *L'Abbaye de Flaran en Armagnac* (Auch, 1890), 13; Calcat, 'Carreaux émaillés recueillis dans la région', *Revue de Gascogne*, xxiii (1892), 488–91; A. Lavergne, 'Notice sur les carrelages vernissés du département du Gers', *Bulletin Archéologique* (1899), lxiv–lxv; id., 'Carrelages historiés du département du Gers', *Bulletin de la Société Archéologique du Gers*, ii (1901), 29–32; A. Bardié, 'Les carrelages vernissés des XIIe, XIIIe et XIVe siècles en Guienne', *Bulletin de la Société Archéologique de Bordeaux*, I (1933), 112–19.

²⁸ An extensive area of tile paving was uncovered in the nave of the church in the 19th century. It included a few tin-glazed painted tiles as well as numerous inlaid tiles. Portions of the floor are relaid in the Musée Ingres at Montauban. Some of the now unprovenanced tiles in the Musée d'Agén can be identified as those from Belleperche given to the museum in 1883. There are also unprovenanced tiles in the Musée d'Auch which can likewise be attributed to Belleperche. The collections in all three museums include some tin-glazed painted tiles. Further remains of paving have been found in this century. The painted tiles measure c. 115 × 115 × 30 mm thick. They have never been properly published, but see notably F. Pottier, 'Carrelage de l'église de Belleperche, XIIIe siècle', *Réunion des Sociétés des Beaux-Arts des Départements, à la Sorbonne*, v (1881), 225–29.

²⁹ For Germolles, see J. Desvignes, *Pavements de Germolles* (Musée Denon, Chalon-sur-Saône, 1973), nos. 35–36; and M. Pinette (ed.), *Les Carreaux de Pavage dans la Bourgogne Médiévale* (Musée Rolin, Autun, 1981), no. 201.

³⁰ Two unprovenanced tiles in the Musée d'Auch can be identified as the two tin-glazed tiles found in the château in the 19th century; see Calcat, op. cit. in note 27 and J. Monméja, 'La roue de fortune du château de Mazères — notes pour servir à l'histoire des carrelages émaillés', *Bulletin de la Société Archéologique du Gers*, v (1904), 61–83. On the date of the château, see J. Gardelles, *Les Châteaux du Moyen Âge dans la France du Sud-Ouest* (= Bibliothèque de la Société Française d'Archéologie 3) (Geneva, 1972), 174.

³¹ Some tin-glazed tiles were found in front of the altar during the clearing of the apse of the church in 1878. They were never properly published and have now been scattered among private collections or lost, apart from three preserved in the Musée de Gueret. They measured c. 195 × 150 × 34 mm, with a flange c. 30 mm wide and deep protruding from the top of the tile at the back; they were presumably intended for the risers of steps. See de Cessac, 'Carreaux provenant de l'abbaye de Bonlieu (Creuse)', *Bulletin de la Société des Antiquaires de France* (1880), 210–14; — Demartial, 'Deux carreaux... provenant de l'ancienne abbaye de Bonlieu (Creuse)', *Bulletin de la Société Archéologique et Historique du Limousin*, Ixii (1912), 525–26; A. Lacroq, 'L'abbaye de Bonlieu', *Mémoires de la Société des Sciences Naturelles et Archéologiques de la Creuse*, xxiii (1925–27), 327–32; H. Hugon ['Carreaux émaillés'], *Mémoires de la Société des Sciences Naturelles et Archéologiques de la Creuse*, xxv (1931–34), xiii–xiv; A. Delaborde, 'L'architecture cistercienne en Limousin', *Bulletin de la Société Scientifique, Historique et Archéologique de la Corrèze*, Lxvii (1945), 83–103, esp. 94.

³² Two different nine-tile sets in the Victoria and Albert Museum, no. 1551–1903 (illustrated by Lane, op. cit. in note 1, pl. 25, F), are shown on Pl. ix, c. A set of nine tiles in the British Museum, nos 1905. 11. 10. 1–9 combines elements from two separate sets identical to those in the Victoria and Albert Museum. A single unprovenanced tile in the Musée de Bretagne at Rennes is presumably from the same site: it is identical to the tiles in the centre of the four sides in the right-hand set on Pl. ix, c. Nothing is known of the circumstances of discovery of the tiles.

³³ See J. Boucard, *Carreaux de Pavage Médiévaux d'Aunis et Saintonge* (Mémoire de Maîtrise, Ecole Pratique des Hautes Études, Paris, 1977), 100–06; id., 'Les carreaux de pavage', in J. Chapelot (ed.), *Potiers de Saintonge — Huit Siècles d'Artisanat Rural* (Paris, Musée National des Arts et Traditions Populaires, 1975), 65–67; and J.-P. Gaillard, 'La forteresse médiévale de Merpins Vieux Bourg', *Revue Archéologique — Sites*, iii–iv (1979), 64–73.

³⁴ On Saintonge pottery in general, see G. C. Dunning, 'The trade in medieval pottery around the North Sea', 35–

58 in J. G. N. Renaud (ed.), *Rotterdam Papers: A Contribution to Medieval Archaeology* (Rotterdam, 1968), esp. 45–47. D. B. Whitehouse, 'Polychrome ware and Italy', *Medieval Ceramics*, II (1978), 51–52 and K. J. Barton, 'A further note on the origins of Saintonge polychrome jugs', *Medieval Ceramics*, IV (1980), 45–46 are agreed that Saintonge polychrome wares were not derived from Italian prototypes. Barton proposes a Spanish source, though influences from the Avignon area should perhaps also be considered now that the painted wares of that region are better known.

³⁵ Apart from Brain-sur-Allonnes (for which see below), these tiles are mostly unpublished. For a distant view of one of the Marmoutier pavements, see C. Lelong, 'Observations et hypothèses sur l'église abbatiale de Marmoutier', *Bulletin Monumental*, CXXXVIII (1980), 117–71, esp. 152. I am grateful to Monsieur Charles Lelong for showing me these pavements. A large number of tiles were found at Montrichard at the turn of the century (see L. Franchet, 'La céramique émaillée pendant le moyen-âge', *Association Française pour l'Avancement des Sciences, Compte-Rendu de la 37e Session, Clermont-Ferrand 1908* (Paris, 1909), 1423–30), but the only known survivors are a single unpublished tile at the Château de Blois, and another in the British Museum (E. S. Eames, *Catalogue of Medieval Lead-Glazed Earthenware Tiles in the Department of Medieval and Later Antiquities, British Museum* (London, 1980), no. 11,487; design 1790). Unpublished tiles from Le Buron in the Musée d'Angers, in the museum of the Centre de Recherches sur les Monuments Historiques, Paris, and at the site.

³⁶ The tiles were found in recent excavations at the medieval château-fort at Brain-sur-Allonnes. They were not *in situ*, but had probably decorated the first-floor apartments. The plain tiles are in two basic sizes, c. 184 mm square and c. 115–20 mm square, and they are c. 15–20 mm thick. The latter are generally complete and seem to have been laid as border tiles, the former rarely survive as such, having been normally subdivided into smaller squares or triangles. The most common size is the square of c. 92 mm, that is, a quarter of a square of c. 184 mm. The slip-decorated tiles are almost all c. 92 mm square, but with the difference that they were usually made and fired at that size, rather than being subdivided from tiles c. 184 mm square. The patterns are designed for squares of c. 92 mm. The painted tiles, however, are based on the same sizes as the plain tiles, that is, squares of c. 115–20 mm, or c. 92 mm squares which are derived from tiles c. 184 mm square. They are all made by the tin-glazed technique, painted in green and brown. The designs are very unclear and are decipherable on not more than ten tiles. The reason is not that they are very worn — the floors seem to have suffered very little wear — but that they were poorly made. The glaze has not properly fused and the designs have come out faint and smudged. Some may also have suffered in the fire which destroyed the château, though most of the tin-glazed tiles show no sign of fire damage. The five petalled-rossette and the five-pointed star are on c. 92 mm squares, the (?) standing figure within a quatrefoil frame is on a square of c. 115–20 mm, and the four-tile design of (?) a knight was fired as a single square of c. 184 mm. See E. C. Norton and F. Clair, 'Les carreaux de pavage du site médiéval de "La Cave Peinte" (XIVe), Brain-sur-Allonnes, Maine-et-Loire, *Revue Archéologique — Sites VIII–IX* (1980), 37–61.

³⁷ The two illustrated tiles are c. 97 mm square; the smaller fleur-de-lis is c. 68 mm square, while the fourth tile with an unidentifiable design is c. 47 mm square. The sizes correspond to those of the Brain-sur-Allonnes tiles. The Murs tile (no. AM 2906) is c. 118 mm square.

³⁸ Unpublished tiles in Vannes museum (see L. Marsille, *Catalogue du Musée Archéologique de la Société Polymathique de Vannes* (Vannes, 1921), 162, no. 2930).

³⁹ This remarkably fine pavement was found on the site of a former chapel just outside the château in 1975. It was composed of nearly 40,000 tiles, of which only about 2% were green and brown painted tiles. The floor has been lifted and is being conserved. The plain and slip-decorated tiles are mostly based on a square unit of c. 92 mm, though they were normally fired as rectangles c. 184 × 92 mm and c. 25 mm thick scored for breaking into two after firing. The plain tiles were sometimes fired as large squares of c. 184 mm, and there are a few squares of c. 118 mm. The plain tiles were often further subdivided into small rectilinear mosaic pieces. The painted tiles occur likewise as squares of c. 118 mm or c. 92 mm, but the majority of the latter size were fired not as rectangles but as large squares of c. 184 mm scored for breaking into four, though they were not always divided up after firing.

The floor of the nave contained large square panels made up of square or rectangular plain and slip-decorated tiles laid in the form of a rough Greek cross. In the choir and sanctuary the arrangement was more complex, consisting of square panels divided by borders of slip-decorated tiles. The panels were made up of rectilinear plain mosaic arrangements or of square painted tiles, or of a combination of the two. Within the panels the painted tiles were generally laid in four-tile or sixteen-tile groups of squares of c. 92 mm (sixteen tiles filling a whole panel) and the designs correspondingly cover four or sixteen tiles. They mostly represent human figures or animals, often in groups or in conflict, generally set within a circular frame. In the corners are foliate motifs of various kinds. There are also single-tile designs on squares of c. 92 mm and c. 118 mm, depicting small figures, simple geometric or foliate motifs, coats of arms, or a large male head. Published by P. André, 'Le pavement médiéval de Suscinio', *Archéologia*, 97 (August 1976), 42–49; see also *id.*, 'Un pavement inédit du XIIIe siècle au château de Suscinio (Morbihan)', *Arts de l'Ouest* (1980. 1–2), 19–32; C. Bassier, 'Le sauvetage des pavements historiés', *Monuments Historiques*, 109 (1980), 72–73; and *Revue de l'Art*, 63 (forthcoming).

⁴⁰ These technical features are more fully described in notes 36 and 39.

⁴¹ I have discussed these Parisian influences in E. C. Norton, 'A Study of 12th- and 13th-Century Decorated Tile Pavements in France and Related Material in England' (Univ. of Cambridge, Ph.D. Dissertation, 1983), 213–36; and in *Les Carreaux de Pavage du Moyen Age et de la Renaissance* (Paris, Musée Carnavalet, forthcoming).

⁴² A fragment of tile paving was found in the choir of the cathedral in 1924 and is preserved in the Centraal Museum, Utrecht. The floor consisted of square panels of rectilinear plain mosaic, together with a few small tin-glazed tiles. They are all single-tile designs, representing lions rampant within a circular or square frame, heads of men and women in square frames, and small foliate crosses. See E. M. Vis and C. de Geus, *Altholländische Fliesen*, 2 vols (Leipzig, 1926 and 1933), II, pl. 1; Hudig, *op. cit.* in note 10; E. J. Haslinghuis and C. J. A. C. Peeters, *De Dom van Utrecht* (s'Gravenhage, 1956), 416 and figs. 45–46; and Marien-Dugardin, *op. cit.* in note 10, fig. 8.

⁴³ The pavement of the refectory of St Paul's Abbey was lost when the building was altered in 1838, but a plan of it was published in 1879 and in 1902, and a few tiles were saved and are preserved in the Centraal Museum, Utrecht. The remains of part of the floor were rediscovered in 1955. The pavement consisted of three large panels of rectilinear mosaic tiles, the decorated tiles being confined to the central panel. Here the arrangement consisted of small square panels *c.* 170 mm across divided by borders of slip-decorated tiles *c.* 85 mm square bearing four small fleurs-de-lis. At the intersections of the borders were painted tiles *c.* 55–60 mm square set within four plain dark green triangles. These tiles bore small fleurs-de-lis or foliate crosses. The square panels were filled either with a single painted tile *c.* 170 mm square or by smaller painted tiles *c.* 120 mm square together with rectilinear plain mosaic pieces, or else simply by rectilinear plain mosaic arrangements. Only two of these larger tin-glazed tiles survive, a tile *c.* 170 mm square with a woman's head in a square frame, and a tile *c.* 120 mm square with a (?) griffin. The 1955 excavations also produced a loose tile *c.* 55 mm square painted with a six-petalled rosette, and a slip-decorated tile *c.* 110 mm square with a zig-zag motif. See *Mededeelingen van de Rijksadviseurs voor de Monumenten van Geschiedenis en Kunst* (1879), figs. I and II; S. Muller, *Oude Huizen te Utrecht* (s'Gravenhage, 1902), 37 and pl. XVI; and Hudig, *op. cit.* in note 10.

⁴⁴ A pavement was found on the site of the house of one of the canons of St John's Church in 1862. A plan was made, and parts of the floor are preserved in the Centraal Museum, Utrecht and in the Rijksmuseum, Amsterdam. Sections of three large panels were uncovered, the side panels being of simple rectilinear mosaic and of ordinary square tiles laid in a swastika pattern. In the centre the arrangement was much more elaborate, consisting of large panels *c.* 510 mm square divided by borders of slip-decorated tiles bearing four fleurs-de-lis. The panels were filled with plain square tiles arranged in various patterns, with simple rectilinear plain mosaic, or with tin-glazed tiles together with plain tiles of various shapes and sizes. There were three or four sizes of tin-glazed tiles: quarries *c.* 60 mm square decorated with simple six-petalled rosette motifs; tiles *c.* 85 mm square decorated with lions or double-headed eagles in a circle; tiles *c.* 120 mm square bearing foliate crosses in a square frame; and possibly tiles *c.* 240 mm square (though these may have been made up of four *c.* 120 mm squares) including a figure playing the violin and a building with (?) a tree. It may be noted that the sizes of the tiles are related: the 60 mm squares are the quarter of the *c.* 120 mm squares, and the 85 mm squares are the quarter of the *c.* 170 mm squares (a size found at the St Paul's Abbey refectory floor). Furthermore, the diagonal of a *c.* 120 mm square measures *c.* 170 mm, and the *c.* 240 mm tiles, if they existed, are both four times the *c.* 120 mm squares and the same as the diagonal of a *c.* 170 mm square. Such relationships are common in floors of this kind. See J. J. de Geer van Oudegein, *Het Oude Trecht, als de Oorsprong der Stad Utrecht* (Utrecht, 1875), 130–31 and pl. 3; Vis and Geus, *op. cit.* in note 42, II, pl. 1; Hudig, *op. cit.* in note 10; and Berendsen, *op. cit.* in note 26, 45 and 53.

⁴⁵ For fuller details, see notes 42–44.

⁴⁶ The tiles were found in recent excavations. The six-petalled rosette, measuring *c.* 60 × 60 × 20 mm, is the quarter of a tile *c.* 120 mm square; the architectural canopy fragment, measuring *c.* 85 × 85 × 20 mm, is the quarter of a tile *c.* 170 mm square. The size compares with those at the other sites in Utrecht. See T. J. Hoekstra, *Archeologische Kroniek van de Gemeente Utrecht over 1978–1979–1980* (Utrecht, 1981), 53–57.

⁴⁷ For other pavements of the same type in Utrecht itself, see T. G. van Dijk, 'Archeologisch onderzoek in de dekenkapel van de St. Pieterskerk te Utrecht', *Westerheem*, xviii.6 (December 1969), 289–97, where the pavement is associated with an altar erected shortly before 1325, and the floor in the crypt of St John's church published by Hoekstra, *op. cit.* in note 46, 51–53.

⁴⁸ See G. Berends and T. van Straalen, 'Een tegelvloer in Heukelum', *Nieuwsbulletin van de Koninklijke Nederlandse Oudheidkundige Bond*, lxiv (1965), 17–18. The tiles are preserved in the Rijksmuseum, Amsterdam. A date of perhaps *c.* 1325 seems likely (see P. J. Drury and E. C. Norton, *The Medieval Floor Tiles of East Anglia*, forthcoming).

⁴⁹ I am indebted to Mark Horton for information on these tiles, which are in the van Beuningen collection. Some two-colour tiles from Mariendaal, including many probably by the same workshop, were published by J. G. N. Renaud, 'Aardewerkvondsten van het Klooster Mariendaal', *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*, ix (1959), 199–224.

⁵⁰ In Dokkum museum. I am grateful to Drs H. M. van den Berg for bringing this tile to my attention.

⁵¹ For the dating of the pavements, see references cited in notes 42–49. For the costume evidence, see C. Enlart, *Manuel d'Archéologie Française*, III (Paris, 1916), 183 and n.1, who specifically compares the St Paul's abbey refectory tile to a manuscript of *c.* 1300 (cited by Hudig, *op. cit.* in note 10). On Parisian influences, see above, note 41. The discovery in 1955 at the St Paul's abbey refectory of a single two-colour tile with a simple zigzag motif (see note 43) perhaps supports the idea of Parisian links, since the motif is not particularly common, but does appear in the later 13th-century Parisian pavements.

⁵² The monument stood in front of the high altar of Hamburg cathedral until 1782. The cathedral was demolished in 1806. An engraving of the monument was published in 1661 by P. Lambecius, *Origines Hamburgenses*, II (Hamburg, 1661), pl. opp. p. 478, and this was closely copied in an engraving in N. Staphorst, *Hamburgische Kirchen-Geschichte*, I (Hamburg, 1723), tab. IX opp. p. 296. A separate illustration was published in 1685 by G. Henschenius and D. Papebrochius, *Prophylaeum ad Acta Sanctorum Maii* (Antwerp, 1685), 164 of the section entitled *Conatus Chronico-Historicus*. The two extant fragments, excavated in 1949 and now in the Museum für Hamburgische Geschichte, were published by R. Schindler, 'Zwei glasierte gotische bildkacheln aus den trümmern des ehemaligen Mariendomes in Hamburg', *Faenza*, xxxvii (1951), 39–42; see also Berendsen, *op. cit.* in note 26, 60–61 and Marien-Dugardin, *op. cit.* in note 10, fig. 10. The larger, incomplete fragment, apparently from one of the sides of the tomb-chest, measures *c.* 190 × 230 mm and depicts the head and body of a nimbed saint holding a book in his raised right hand. The figure is white with brown outlines and details and stands against a green ground. The other fragment, apparently from one of the ends, measures *c.* 140 × 120 mm and is decorated with a mounted knight holding a lance, with stylised trees, the background again being green. No fragments of the upper surface were found. Schindler cites an 1804 source as indicating that the figure of the Pope may have been in low relief, but the engravings strongly

suggest otherwise, and Henschenius and Papebrochius (whom Schindler does not cite) say that the whole monument was made with the same type of glazed tiles and that the figure of the Pope was white on a green ground. They also give the dimensions of the monument as 7½ feet long, slightly over 3 feet wide and a little over a foot high. There is some slight doubt as to whether the two extant fragments did in fact belong to this monument. The engravings all show a row of twelve apostles down one side of the tomb, each with an attribute and in a different posture. The extant fragment does not correspond to any of them, though the engravings may not be accurate. Similarly, the two ends were each adorned with three figures on horseback, but none of them corresponds exactly to the extant fragment. Furthermore, whereas the fragment with the saint is of about the right scale for a monument about a foot high (the apostles were shown about two-thirds length), the nearly complete fragment with the knight is only about half the requisite size. Neither fragment can have belonged to the other long side, which bore representations of the Annunciation, (?) Christ teaching or disputing, the Crucifixion, and Christ in Majesty with Evangelist symbols. It is therefore possible that the fragments did not in fact form part of the monument of Benedict V, but of another similar monument.

⁵³ See also below, note 96.

⁵⁴ A few tin-glazed tiles preserved in the abbey museum are mentioned by R. van Nerom, 'La technique des carreaux peints du carrelage de la prélatrice à l'abbaye des Dunes de Coxyde', *De Duinen*, II (1960), 30–35, n. 1; id., 'La disposition générale du carrelage de la prélatrice à l'abbaye des Dunes', *De Duinen*, V (1962), 36–48; and Marien-Dugardin, *op. cit.* in note 10.

⁵⁵ The tile measures c. 110 × 110 × 20 mm. Scientific analysis revealed the presence of small quantities of tin in the glaze; see Marien-Dugardin, *op. cit.* in note 10, fig. 7.

⁵⁶ The complete pavement measured approximately 8 m × 7 m. The painted tiles measure c. 105 × 105 × 20 mm. Some were not properly fired, with the result that the designs are not always clear even when the tiles are little worn. The designs are generally outlined in brown, with green being reserved for the backgrounds. Scientific analysis has revealed the presence of 10–15% tin in the glaze. The nine-tile sets are mostly very worn and difficult to interpret, though three have been very tentatively identified as the Judgement of Solomon, the Massacre of the Innocents and the Raising of Lazarus. See P. Schittekat, *Sous les Dunes de Coxyde* (1960), 98–104; van Nerom 1960, *op. cit.* in note 54; R. van Nerom, 'Notes sur deux pièces d'hommes d'armes, au carrelage de la prélatrice à l'abbaye des Dunes', *De Duinen*, IV (1961), 59–69; *Ons Heem*, xv.3/6 (1961), 201–05; van Nerom 1962, *op. cit.* in note 54; P. Schittekat, *Trésors sous le Sable* (Brussels, 1966), 53–63; and Marien-Dugardin, *op. cit.* in note 10.

⁵⁷ Numerous medieval tiles, including some tin-glazed ones, were found in excavations on the site of the church in the 1830s and 1840s, notably in 1843–44. Some are preserved in the Musée Sandelin at Saint-Omer, nos. 3158–62, and four small tin-glazed tiles or fragments, formerly in the Franks collection, are in the British Museum, nos. OA 4388–91. The excavations were described at some length, though not very clearly, by H. Delaplane, 'Saint-Bertin, ou compte-rendu des fouilles faites sur le sol de cette ancienne église abbatiale 1844', *Mémoires de la Société des Antiquaires de la Morinie*, VII (1844–46), 3–310, esp. 198 and 243; and by E. H. J. Wallet, *Description du Pavé de l'Ancienne Cathédrale de Saint-Omer* (Saint-Omer, 1847), 83–95. They illustrated many of the tiles. Most of the tin-glazed tiles were found *in situ* incorporated into an area of paving, which included two steps, running across the E. end of the nave, approximately between the two crossing piers. The layout of the floor consisted of square panels of sixteen patterned tiles (mostly of the two-colour variety, but including two four-tile sets of painted tiles) divided by dark green borders. The smaller painted tiles were laid at the intersections of the borders and on the steps. A few small painted fleurs-de-lis were also apparently found in the S. transept.

The painted tiles are c. 120 mm square, or quarter-tiles c. 80 mm square derived from squares of c. 160 mm, or smaller derivatives of these two sizes. They are c. 13–20 mm thick. The eight c. 120 mm squares formed two four-tile sets, published by Delaplane and Wallet as depicting a mounted knight and a strange bearded standing figure brandishing a sword, each set against a green ground within a circular frame. Both sets survive in the Musée Sandelin but have been so heavily repainted that the original designs cannot be made out. One of the fragments in the British Museum appears to have belonged to another four-tile set. The other painted tiles were all smaller pieces, mostly decorated with simple rosettes and fleurs-de-lis; two depicted small monsters, and two others coats of arms. The surviving examples in the Musée Sandelin have all been repainted, but three small fleurs-de-lis in the British Museum are in reasonable condition. See also R. Fonvieille, 'Une famille de céramistes au service des Ducs de Bourgogne', *Cahiers de la Céramique, du Verre et des Arts du Feu*, XXI (1961), 52–60, fig. 2.

⁵⁸ Some tin-glazed tiles were found on the site of the château in 1854. In 1872 they were in the possession of a certain M. Petit of Arras, but it is not known whether they survive. Two of the tiles were described by J. Houdoye, 'Les faïences de Philippe le Hardi (1391)', *Gazette des Beaux-Arts*, 2nd ser. V (1872), 93–96, and drawings of seven tiles, also dated 1872, are in the Bibliothèque des Arts Décoratifs, Paris, Album 130.2, f. 75. Two of these were in turn illustrated by V. Gay, *Glossaire Archéologique du Moyen Âge et de la Renaissance*, I (Paris, 1887), 284. The fragment with the letters deu was from a tile c. 190 mm square and 27 mm thick. A second fragment was described by Houdoye as part of a tile of the same dimensions decorated with drapery folds. The other tin-glazed tiles in the drawings are too small for identification. The only tin-glazed fragment known to survive, formerly in the collection of Camille Enlart and now in the Musée des Beaux-Arts et d'Archéologie, Boulogne, no. 10, 621 (see C. Enlart, *Manuel d'Archéologie Française I Architecture Religieuse*, II (Paris, 1920), 812; *Collection Camille Enlart* (Boulogne, Musée des Beaux-Arts et d'Archéologie, 1977), 42, no. 171; and Norton, *op. cit.* in note 4, no. 364) measures c. 110 × 95 × 20 mm and depicts a hooded male head. One of the 1872 drawings shows a small two-colour tile c. 60 mm square, another is of a plain black tile of about the same size. A two-colour tile c. 150 mm square found on the site more recently, dating to the late 14th or 15th century, is illustrated by Fonvieille, *op. cit.* in note 57.

⁵⁹ See Wallet, *op. cit.* in note 57, 79–83; L. Deschamps de Pas, 'Essai sur le pavage des églises', *Annales Archéologiques*, X (1850), 233–42 and 305–11, XI (1851), 16–23 and 65–71, and XII (1852), 137–52; J. Gailhabaud,

L'Architecture du Vème au XVIIème Siècle (Paris, 1858), 2 unnumbered pages and plates (excellent plan of the floor); E. Amé, *Les Carrelages Emailés du Moyen-Age et de la Renaissance* (Paris, 1859), pt. I, 142–44; and *L'Art pour Tous*, xvi (1877), 3547–52.

⁶⁰ The choir of the romanesque church was pulled down by Abbot Gilbert (1246–64) and the foundations for a new E. end were laid in 1255. However, the work was never completed, and a new church was started in or shortly before 1326. The choir was largely complete by about 1350, and was further altered and finished in the early 15th century. The transepts were begun before 1420, and the nave some time after 1425, not being completed until after 1473. The church was finally consecrated in 1520. On the dates, see P. Héliot, 'Églises et chapelles de l'abbaye de Saint-Bertin antérieures au XIIIe siècle', *Bulletin Archéologique* (1936–37), 601–30, esp. 612–13; and id., *Les Églises du Moyen Age dans le Pas-de-Calais*, II (Arras, 1953), 421–22. Wallet, op.cit. in note 57, 90, n. 2 records that the Saint-Bertin pavement had been preserved by a thick wall which had been built on top of it, a wall which he says was erected to separate the finished part of the building from the work still in progress in the nave. If this is right, the tiles can be dated to not later than c. 1425, but they can hardly be that late anyway.

⁶¹ See van Nerom 1962, op. cit. in note 54, 48, n. 18.

⁶² See C. van Nerom, 'A propos du pavement trouvé en 1971 au lavatorium de l'abbaye des Dunes', *De Duinen*, xiii–xiv (1983–84), 69–86.

⁶³ See van Nerom 1961, op. cit. in note 56. C. Blair, *European Armour circa 1066 to circa 1700* (London, 1958), 45–46 dates the wearing of ailettes to the period c. 1275–1350.

⁶⁴ Tiles c. 125 × 125 × 12–22 mm, in a sandy red-brown fabric, excavated in 1971–72; see L. Keen, 'Floor tiles', in P. L. Drewett, 'Excavations at Hadleigh Castle, Essex 1971–1972', *J. Brit. Archaeol. Assoc.*, 3rd ser., xxxviii (1975), 131–33 and 154, and Drury and Norton, op. cit. in note 48.

⁶⁵ The tile, in Colchester Museum, no. 1627/8, is a quarter-tile derived from a quarry c. 125 mm square and 13–14 mm thick; see Drury and Norton, op. cit. in note 48.

⁶⁶ The account was published by J. A. Sparvel-Bayly, 'Records relating to Hadleigh Castle', *Trans. Essex Archaeol. Soc.*, n.s. 1 (1878), 86–108, esp. 102. The dating is discussed more fully in Drury and Norton, op. cit. in note 48.

⁶⁷ J. Houdoy, *Histoire de la Céramique Lilloise* (Paris, 1869), 1–19. The texts were subsequently printed by C. C. A. Dehaisnes, *Documents et Extraits Divers concernant l'Histoire de l'Art dans la Flandre, l'Artois et le Hainaut avant le XVe Siècle*, II (Lille, 1886), 644, 683, 700, 721, 769, 782 and 794, and by Gay, op. cit. in note 58, I, 284. The original documents were again consulted by Fonvieille, op. cit. in note 57, who gives different spellings. I cite the texts as published by Houdoy.

⁶⁸ Fragments from Hesdin were described by Houdoy only three years after he published the texts (Houdoy (*sic*), op. cit. in note 58). For the long debate, see Fonvieille, op. cit. in note 57, and most recently *Faïences Françaises*, op. cit. in note 2, 12.

⁶⁹ Published by G. Lebreton, 'Les carrelages à vernis plombifère et à émail stannifère', *Congrès Archéologique* (1881), 491–96.

⁷⁰ The words *tegulae pictae*, *pictum pavimentum*, etc. in documentary references normally mean no more than 'decorated tiles' in a very general sense (see Eames, op. cit. in note 35, I, 73).

⁷¹ Houdoy, op. cit. in note 67, 14.

⁷² See Fonvieille, op. cit. in note 57, though it is clear from the documents he cites that the family profession was not primarily the manufacture of ceramics, but painting.

⁷³ Illustrated in for instance E. Panofsky, *Early Netherlandish Painting*, 2 vols (Cambridge, Mass., 1953), pls. 50 and 51.

⁷⁴ For instance in the pavement of the St John's church canon's house at Utrecht (see above, note 44), or, closer at hand, in a pavement at Louvain published by J. de Brouwer, 'Carrelage ancien conservé au Musée Archéologique de l'Université de Louvain', *Bulletin des Métiers d'Art*, v (1905–06), 283–87 and wrongly dated to the 12th century by J. Helbig, 'Ancienne céramique de carrelage et de revêtement en Belgique', *Revue Belge d'Archéologie et d'Histoire de l'Art*, xxii (1953), 219–40.

⁷⁵ See Fonvieille, op. cit. in note 57, 54 and n. 3. He transcribes the word as *chipoues*. Houdoy, op. cit. in note 67, 12, n. 3 suggests the meaning interlace based on a different derivation.

⁷⁶ This text is also published by Lebreton, op. cit. in note 69.

⁷⁷ There were similar devices and mottoes on the contemporary tin-glazed tiles at Poitiers (see below), and they are quite common on Burgundian tiles of the 15th century and later (see e.g. Pinette, op. cit. in note 29, nos. 1, 5, 6, 12, 33, 89, 90, 236 and 272), though they are not represented as yet among the late 14th-century tiles in Burgundy connected with the court of Philippe le Hardi.

⁷⁸ Houdoy, op. cit. in note 58, 95 (repeated by Gay, op. cit. in note 58, 284) cites the following reference of 1427 from the accounts of the collegiate church of Saint-Amé at Douai as evidence of the continued production of tin-glazed tiles: *A Jehan le Courtillieur, potier et faiseur de quariaux demeurant à Espinoy, pour six cens de quariaux gaunes et noirs, et armoies les alcuns des armes de Saint-Morand, de France et d'Artois paincturés, pour paver le cuer de la dite église par marchiet fait à lui au pris de XXVII francs (XXVIII s pour franc)*. However, the fact that they are described as yellow and black tiles suggests that they were ordinary lead-glazed tiles, and that the word *painturés* simply means 'decorated' (see above, note 70).

⁷⁹ Tin-glazed tiles are reported from excavations in progress at the abbey of Andres (Pas-de-Calais) (ex. inf. M. Didier Deroeux).

⁸⁰ See above, p. 140.

⁸¹ See E. C. Norton, 'The thirteenth-century tile-tombs of the abbots of Jumièges', *J. Brit. Archaeol. Assoc.*, cxxxvii (1984), forthcoming, esp. n. 7 for references to the 14th-century examples.

⁸² In 1792, shortly before the destruction of the building, the tile pavement of the lower chapel of the ducal oratory in the Chartreuse de Champmol was seen by Louis-Bénigne Baudot. Among others, he recorded that *près du maître-autel plusieurs carreaux forment les armes de Bourgogne antique, et d'autres les mêmes armes accolées au lion . . .* These are the very

designs on the painted tiles found in excavations in 1951–52 on the site of the oratory and preserved in the Musée des Beaux-Arts, Dijon. The tin-glazed tiles were c. 180 mm square and c. 30 mm thick, in a red-brown fabric similar to that of the two-colour tiles. The designs are painted in blue or greenish-blue on a cream or white ground, the colours varying somewhat according to the firing. The fragments have some large spots on the surface which were presumably caused by their being fired upside-down on tripod supports (*pernettes*). See P. Quarré, 'Les carreaux de pavement de l'oratoire ducal à la Chartreuse de Champmol', *Mémoires de la Commission des Antiquités du Département de la Côte d'Or*, xxiii (1947–53), 234–40; *La Chartreuse de Champmol — Foyer d'Art au Temps des Ducs Valois* (Dijon, Musée des Beaux-Arts, 1960), 43, nos. 54–55; Pinette, op. cit. in note 29, 35, nos. 25–26; and E. C. Norton, 'Les carreaux de pavement de la Bourgogne médiévale', *Archéologia*, 165 (April 1982), 34–45.

⁸³ The fragments, in a pink fabric, were found in rubble thrown out from the Tour Maubergeon in the Palace in 1902; they are preserved in the Musée de la Société des Antiquaires de l'Ouest, nos. 3841–42. See L. Dupré, 'Les carreaux émaillés du Palais de Justice de Poitiers au XIVe siècle', *Bulletins de la Société des Antiquaires de l'Ouest*, 2nd ser. ix (1901–3), 459–69; L. Magne, *Le Palais de Justice de Poitiers* (Paris, 1904), 42–93 passim and 159–65; id., 'Sur les carreaux à émail stannifère du Palais de Jean de Berry', *Bulletins de la Société des Antiquaires de l'Ouest*, 2nd ser., x (1904–06), 116–24; M. L. Solon, 'The lusted tile pavement of the Palais de Justice of Poitiers', *Burlington Magazine*, xii (1907–08), 83–86; P. Gauchery, 'Renseignements complémentaires sur la vie et les travaux de Jean de France, Duc de Berry, d'après des documents nouveaux', *Mémoires de la Société des Antiquaires du Centre*, xl (1921), 195–211, esp. 202–04; G. Fombeure and M. Dehlinger, 'Les incunables de la faïence française à Poitiers et à Bourges', *Mémoires de la Société des Antiquaires de l'Ouest*, 3rd ser., xvi (1940), 267–305.

⁸⁴ In 1935 some fragments of tin-glazed tiles were found beneath the floor of the great *salle de réunion* in the Ducal Palace. They are preserved in the Musées de la Ville de Bourges (Inv. D 2248). The tiles are not worn and have no mortar on them: they are wasters, and were found with a number of tripod supports for use during the firing (*pernettes*), some of which bore traces of blue glaze on them from the tiles. The tiles are all in a fine pale pink fabric and are very thin, 11–18 mm. The principal fragments are a rectangle c. 80 × 60 mm, with concave ends, covered with a plain white tin glaze, and two decorated fragments from tiles probably c. 140 mm square but with segments of a circle cut out at the corners. They bear white or brownish fleurs-de-lis (originally four to a tile) on a medium blue ground, with an engrailed border along the edge of the tile in white or violet-brown: they are fragments of the arms of the Duke of Berry. On the basis of these fragments an arrangement has been reconstructed consisting of a square decorated tile with four white rectangles along its sides, with large circular tiles c. 130 mm in diameter (of which no fragments were found) filling the junctions of the rectangles and the cut-out corners of the squares. A few other tiny fragments of blue and white tiles are also preserved. See R. Gauchery, 'Les carrelages émaillés du Duc de Berry au Palais de Bourges', *Mémoires de la Société des Antiquaires du Centre*, xlvii (1934–35), 29–36; Fombeure and Dehlinger, op. cit. in note 83; and Norton, op. cit. in note 4, no. 362.

⁸⁵ A few fragments of tin-glazed tiles are recorded as having been found many years ago, one being a turquoise-blue piece, but they have never been published (see P. Gauchery, op. cit. in note 83, esp. 202–04, and R. Gauchery, op. cit. in note 84). Other fragments are said to have been found in recent excavations.

⁸⁶ See Quarré, op. cit. in note 82. For Germolles, see Desvignes, op. cit. in note 29, and for the other sites, Pinette, op. cit. in note 29, passim.

⁸⁷ For the documentary evidence, see Quarré, op. cit., in note 82, and C. Monget, *La Chartreuse de Dijon*, 3 vols. (Montreuil-sur-Mer, 1898–1905), I, 31, 50, 60, 83–84, 110, and 245.

⁸⁸ These accounts were first summarised by A. de Champeaux and P. Gauchery, *Les Travaux d'Art exécutés pour Jean de France, Duc de Berry* (Paris, 1894), 13–14 and 114. They were published fairly fully by Magne 1904, op. cit. in note 83, 42–93 passim and 159–65 (partly reprinted as Magne 1904–06, op. cit. in note 83). The following paragraphs are based on his account. See also the other references cited in note 83.

⁸⁹ Cited by A. and J. Sangouard, 'Le carrelage du XVe siècle de la chapelle du château de Combeffa en Albigeois — sa place parmi les pavements de faïence des XVe et XVIe siècles en France', 306–29 in *Gaillac et Pays Tarnais. Actes du XXXIe Congrès de la Fédération des Sociétés Académiques et Savantes Languedoc-Pyrénées-Gascogne, Gaillac 1976* (Albi, 1977), esp. 319.

⁹⁰ J. Chompret, 'Les faïences françaises primitives', *Cahiers de la Céramique et des Arts du Feu*, I (1955–56), 18–23 and Sangouard and Sangouard op. cit. in note 89, 318 state that Jehan de Valence was sent (in 1387, which cannot be correct) by King John of Aragon, uncle of the Duke of Berry's wife, but I have found no evidence for this.

⁹¹ This is claimed by Magne 1904, op. cit. in note 83. It is repeated by Solon, op. cit. in note 83, but challenged by Fombeure and Dehlinger, op. cit. in note 83, who give a completely different account of how the tiles were made.

⁹² See Gauchery, op. cit. in note 84, esp. 31.

⁹³ Some tiles from Louis of Anjou's château at Saumur have sometimes been mentioned in connection with these tiles (e.g. by Quarré, op. cit. in note 82, 239, n. 6). In design and general conception they are not unlike the Poitiers and Bourges tiles, but they are inlaid tiles, though of an unusual type (see L. Magne, *Décor de la Terre* (Paris, 1913), 144–48 and *Carrelages et Dallages*, op. cit. in note 4, I, 9–15). The tiles laid in Charles V's château de Beauté near Paris c. 1375 are poor-quality slip-decorated tiles (see Norton, op. cit., in note 4, no. 361 and Norton forthcoming, op. cit. in note 41).

⁹⁴ See e.g. Pinette, op. cit. in note 29, passim.

⁹⁵ For a doubtful documentary reference, see above, note 78.

⁹⁶ Schittekat 1966, op. cit. in note 56, 54; compare Gonzalez-Marti, op. cit. in note 7, II, 205. There are also 15th-century Spanish-type tin-glazed tiles at the abbey of Steingaden in Bavaria (ex. inf. Dr Eleonore Landgraf).

⁹⁷ See J. G. Hurst, 'Spanish pottery imported into medieval Britain', *Medieval Archaeol.*, xxi (1977), 68–105. Unless there is evidence to the contrary, any tin-glazed pottery mentioned in inventories of the period (e.g. an inventory of the château of Hesdin in 1452 cited by Houdoye, op. cit. in note 58, 94) can be assumed to be imported.

⁹⁸ See the illustrations in Panofsky, *op. cit.* in note 73, pls. 128 and 150 and Gonzalez-Marti, *op. cit.* in note 7, III, 588–91. Some caution is however necessary, for Jan van Eyck travelled in Spain and Portugal in the late 1420s (Panofsky, *op. cit.* in note 73, I, 179), and it is possible that the tiles represented in his paintings are based on some he had seen there rather than on imports into the Netherlands. The representations of pavements in 15th-century Flemish paintings deserve further study (see M. Michel, 'Inventaire des dessins de pavements représentés dans la peinture flamande au XVe siècle', *Revue des Archéologues et Historiens d'Art de Louvain*, xiii (1980), 177–79, who, however, fails to draw any parallels with the surviving pavements).

⁹⁹ See Démians d'Archimbaud, Vallauri, Thiriot and Foy, *op. cit.* in note 3, 34–35.

¹⁰⁰ See Sangouard and Sangouard, *op. cit.* in note 89.

¹⁰¹ Potters from Faenza started production of tin-glazed pottery at Antwerp in the last quarter of the 15th century (see J. G. Hurst, 'South Netherlands maiolica', 362–64 in G. Beresford, 'The Old Manor, Askett', *Records Buckinghamshire*, xviii.5 (1970)). For a review of the French evidence, see Sangouard and Sangouard, *op. cit.* in note 89, 319–25, and for Masscot Abaquesne see the references cited in note 2.

¹⁰² The plaque, in the Musée d'Art Sacré le Hieron at Paray-le-Monial, measures 395 × 260 × 10 mm and is extremely fragile. It has rounded edges and has no signs of wear on the surface. See Pinette, *op. cit.* in note 29, no. 154 and Norton, *op. cit.*, in note 82, esp. 38.

¹⁰³ See Abbé Brune ['Plaque de laiton, appartenant au Musée de Bâle'], *Bulletin Archéologique* (1906), ciii–civ; and *La Chartreuse de Champmol*, *op. cit.* in note 82, no. 60.

¹⁰⁴ In Denmark by Birgit als Hansen and in Germany by Dr Eleonore Landgraf.

¹⁰⁵ It is true that further north pottery and tile production tended to be quite distinct, but this is hardly a sufficient explanation for the absence of any locally-produced tin-glazed pottery.