

III.

A THIRTEENTH-CENTURY TILE KILN AT NORTH BERWICK, EAST
LOTHIAN, AND SCOTTISH MEDIÆVAL ORNAMENTED FLOOR
TILES. BY JAMES S. RICHARDSON, F.S.A. SCOT., CURATOR OF THE
MUSEUM.

The discovery at North Berwick of the remains of a thirteenth-century kiln for making floor tiles is of exceptional importance and interest. It is the first of its kind of mediæval date to be recorded in Scotland, and it establishes the certainty of the local manufacture of the floor tiles recovered from the ruins of the Cistercian convent at North Berwick¹ during the first half of the last century. These are now in the collections of the National Museum of Antiquities, the Royal Scottish Museum, and the British Museum.

In 1908 workmen happened to come across the remains of the kiln, which they unfortunately partly destroyed. Further damage was prevented by the owner,² and what remained of the kiln was left undisturbed until last October when I obtained permission to make an examination. The safeguarding of small trees and shrubs growing on the site prevented the entire removal of the debris from the remains of the kiln chamber, this also prevented the examination of the outer face of the structure and of the ground outside the kiln where it is possible that further evidence of the tilery lies buried.

The kiln is situated 30 yards to the north of the line of the ruined north wall of the convent and on slightly lower ground. The chamber (fig. 1) is 10 feet wide, and when complete it may have been square on plan. The remains consist of a south or end wall, 6 feet of the east wall, and 3 feet of the west wall. The floor is 3 feet 6 inches below the present ground level, and the walls stand to a uniform height of 18 inches. These are about 2 feet thick and are constructed of rubble packing, bound with lime mortar, and faced on the inner side with tile-bricks.

The arched fire-openings are in the side walls. Two arches and the remains of another are in the east wall, and there is one in what remains of the west wall. These openings are constructed of brick and are now incomplete. Over the arches whinstone spalls and roofing-tiles were built in horizontal beds. On the south wall there is a roughly built scarcement composed of limestone rock, and above it, 6 inches

¹ *Inventory of Ancient Monuments (Scotland): County of East Lothian*, No. 104.

² Colonel Speir assisted me to dig within the kiln, and he has kindly presented the National Museum of Antiquities with a fragment of an arch of the kiln and specimens of "wasters."

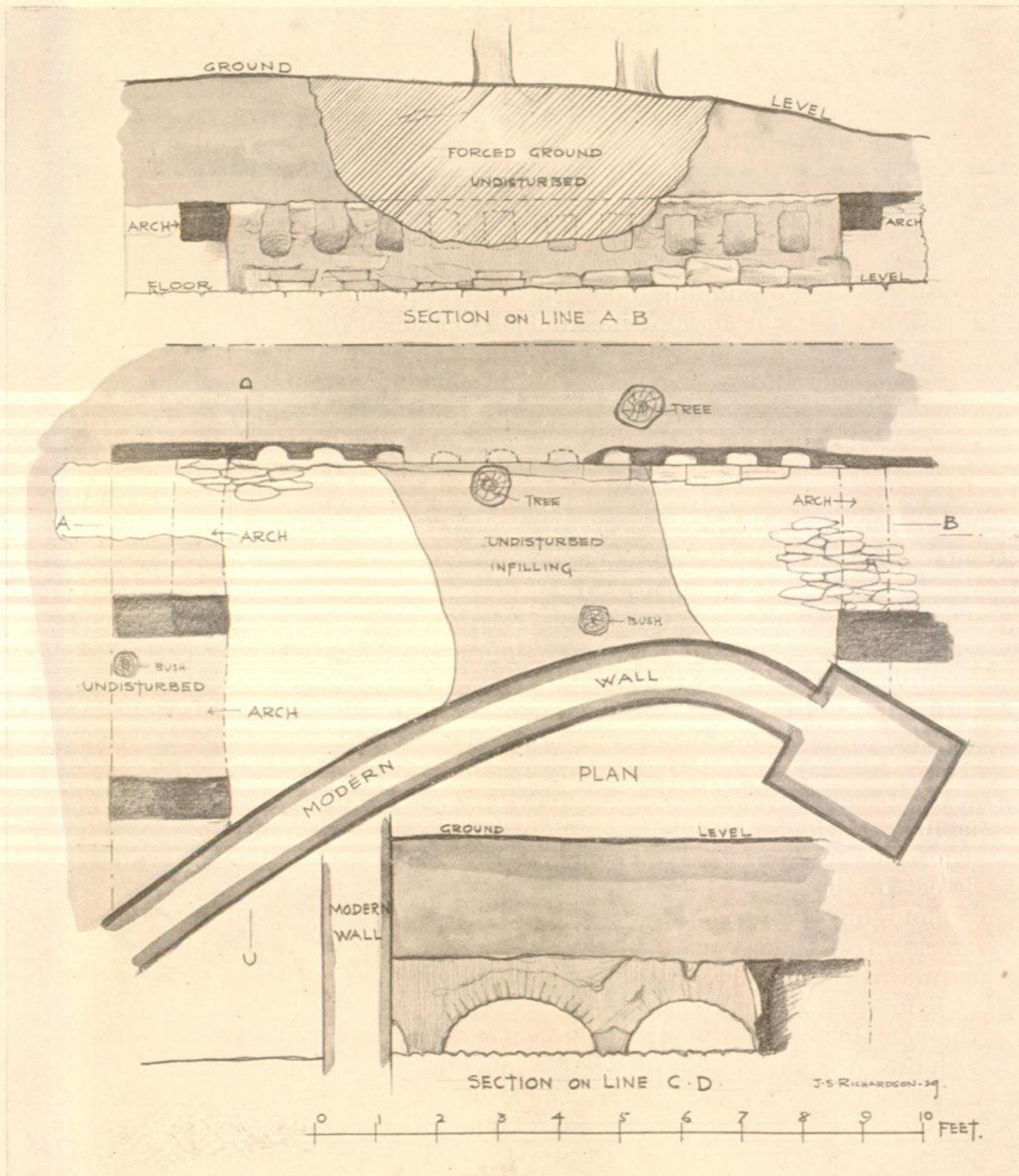


Fig. 1. Plan and Sections of the remains of a Tile Kiln on the site of the Cistercian Abbey at North Berwick, East Lothian.

from the floor, appears a line of crude beam holes arranged at 17-inch centres. The top of this wall overhangs slightly, indicating that it carried a brick vault. The holes may have been used during the construction of the covering vault of the kiln. This seems a more probable explanation than associating the use with a platform floor. A brownish streaked, vitreous deposit having a slightly corrugated and glazed surface covers, to within 6 inches of the floor, the internal face of the kiln.



Fig. 2. Unglazed Waster of a Tile from the North Berwick Kiln.

Both the floor of the chamber and the hearths of the fire-openings are at the one level; they are *hornised* with whinstone spalls set on edge, and were covered with a 1-inch layer of charred deposit containing some pieces of coal.¹ Above this level the remains of the chamber was packed with debris consisting of limestone and whinstone rubble, broken ornamented floor tiles and spoilt specimens (*wasters*) (fig. 2), a few unglazed floor tiles of large size and a freestone wrought with a string course and annulet of the First Pointed style. There were also clay, and soil intermingled with some small shards of pottery, and a few animal and fish bones, oyster and whelk shells. From all indications it is

¹ The coal probably came from Newbottle.

obvious that at an early period the upper part of the kiln had been intentionally taken down to the ground level by the tilers on completing their work at the convent, and the rubbish was deposited in what was left of the chamber at that time.

Judging from the range of tiles found, it is evident that the output was a comparatively large one, but this tiliary does not appear to have supplied any other building, as no tiles similar to those at North Berwick have been found.

SCOTTISH MEDIAEVAL ORNAMENTED FLOOR TILES.

In Scotland the only known remains of tiled pavements still *in situ* are at Melrose Abbey. These precious fragmentary settings are to be seen within the ruin of the thirteenth-century Chapter House and in the Outer Cloister Court. They were brought to light as recently as 1921 through the operations carried out by the Ancient Monuments Department of H.M. Office of Works.

The tiles from ecclesiastical buildings nearly all belong to the thirteenth century, and have been found at the Cistercian monasteries of Melrose, Newbottle, North Berwick, and Glenluce. There is a single inlaid tile said to have been found at Dornoch Cathedral. From secular buildings very few tiles have been recovered. These are of sixteenth-century date, and most of them come from Dirleton, Tantallon and Crichton Castles, and Linlithgow Palace.

Scottish tiles are few in number, none the less they add an important note to the history of European ceramics. Amongst them is included a collection of remarkable tiles with raised patterns, manufactured at the North Berwick Cistercian Tillery.

The earliest Scottish tile pavements of the mediæval period followed the Roman tradition, being built on the mosaic principle (fig. 3). They presented a series of geometrical patterns formed by the assemblage of tiles of different shapes, each tile glazed with a single colour—either yellow, brownish green, or dark brown. The light tones were obtained by adding a skin of white or light-coloured clay to the tile and applying the glaze over this. A few mosaic tiles are ornamented with inlaid patterns and others are fitted with a small inserted tile. The Cistercians were renowned tile-makers and specialised in the mosaic style of pavement. By the end of the twelfth century they discovered the particular method of inlaying a pattern on a tile with a different coloured clay of an equal shrinkage. In England, France, and Flanders the manufacture of this inlaid type of tile developed and continued after the thirteenth until the sixteenth century: during this later

period no inlaid tiles were produced in Scotland, and this was no doubt due to the difficulty in obtaining the white slip clay required for these tiles. Impressed and moulded methods of decoration were discarded as unsuitable and plain tile floors, which never were especially numerous, were superseded by stone pavement.

Of the process followed in the making of an inlaid tile, it is only necessary to remark that the tile was stamped with a die bearing a design in relief, and that the hollows thus produced were filled with white clay. To produce the same design in converse, the surface of the tile was thinly coated with white clay, the stamp was then applied

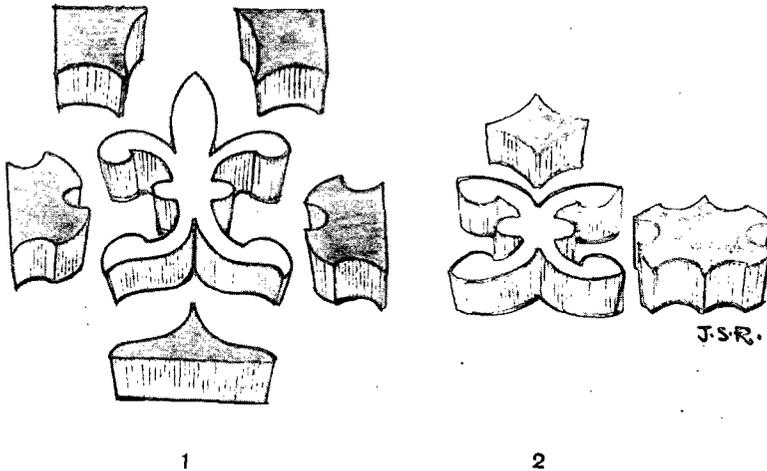


Fig. 3. Diagram of Mosaic Tiles forming the Newbottle Fleur-de-lys and X Patterns.

and the imprint filled with the clay that composed the body of the tile. That this was the method employed can be seen by examining broken examples found at Newbottle and Melrose Abbeys. Other methods of ornamenting tiles were by impressed patterns or by raised patterns. The mosaic or shaped tile was cut to a template and the sides finished by tooling. Stamps of wood or lead affixed to wood were used to produce inlaid and impressed tiles; for those with raised or embossed patterns, moulds were required. To make one of the Newbottle inlaid tiles, a mosaic fleur-de-lys shaped tile was used to indent the pattern. In each case the tile was finished by dusting a film of powdered lead over the top surface and firing it in a kiln. The glaze so produced was transparent; it was yellow over white clay

and reddish brown over red: greenish browns and dark browns in the glaze were obtained by the introduction of metallic oxides—copper produced green and manganese brown. The sides of the tiles are not vertical but slope slightly inwards from the top surface, and the Newbottle square tiles have also a small conic hollow on the underside. These features were devised to provide a strong contact with the bed of mortar on which the tiles were laid, and the sloped side also allowed close surface jointing. A few of the smaller square tiles exhibit on their surface incised diagonal lines, and some diamond-shaped tiles show a medial line. These cuts have been applied before glazing; they may have been made to represent false joints, or to enable the man who laid the floor to cut the tile if necessary to a prescribed shape.

A plain tile mosaic was frequently used for covering large floor spaces, composed of square tiles coloured yellow, green, or brown, arranged in simple geometrical patterns and set in compartments as in "Byland 11 and 12" (fig. 4). In setting out a floor of ornamented square tiles the introduction of plain tiles, either in transverse lines or laid alternately with the ornamented ones, gave a much more pleasing floor than if the whole surface had been covered with ornament. At Newbottle some blue marble blocks, similar in size to the large square tile, appear to have been introduced into the floor settings. In some instances border tiles with geometrical or foliated designs have been used. The upright part of stone steps, or risers as they are called, were frequently faced with bands of mosaic tiles.

The tiles of late date from the East Lothian castles and Morham in the same county must have come from a common tilery. They are similar in size, and are all of a light-coloured, hard-baked clay resembling Flemish brick, and coated with a green-tinted lead glaze. Unfortunately these interesting examples are now only represented by broken pieces. One of the tiles belonging to this group has borne a ship, and two different fragments of this pattern have been found, one at Tantallon and the other at Dirleton Castle: for the purpose of illustration these have been shown in relation to each other (fig. 24, Nos. 4 and 3). Some of the tiles shown complete in the illustrations have been reconstructed in the drawing from fragmentary specimens.



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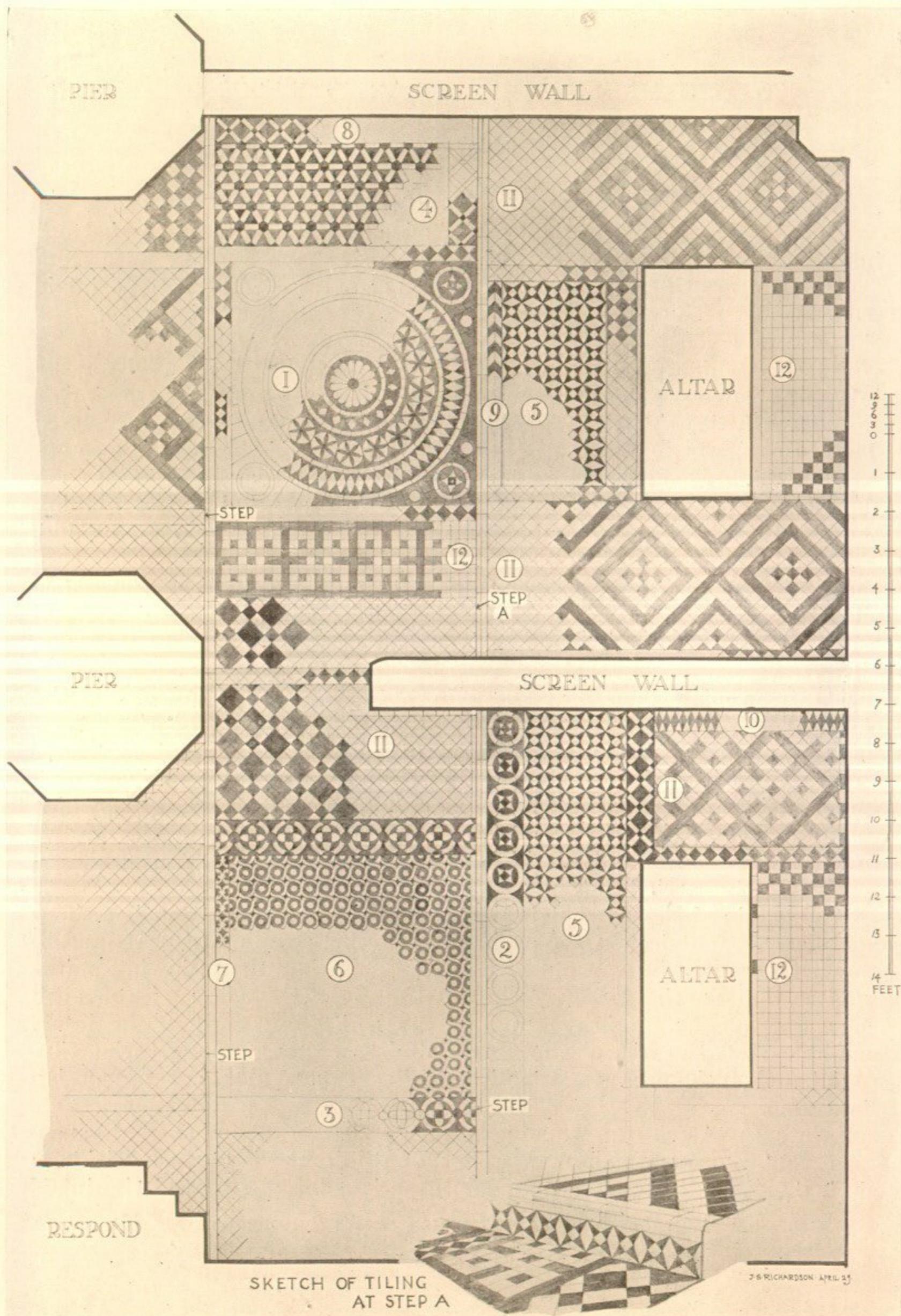


Fig. 4. Plan of Tiled Pavements in the South Transept Chapels of Byland Abbey, Yorkshire.

TILES FROM ECCLESIASTICAL BUILDINGS.

NEWBOTTLE ABBEY, MIDLOTHIAN.¹—MOSAIC AND INLAID FLOOR TILES.

The mosaic tiles found detached during the excavations carried out in 1878 and 1895 comprise over sixty different shapes.² They date from the early years of the thirteenth century: a few of these have inlaid patterns and some of the larger ones have a small tile inserted. The tiles are of a hard quality and for the most part have a blue core. A white clay which is not procurable in Scotland has been used for the inlay and surface skin, and the body clay is of a sandy nature similar to the North Berwick tiles. The glaze is either yellow, green-brown, or dark brown, but very few of the tiles retain it as it has been worn off. At least, eighteen different geometrical tile settings can be deduced from the tiles now stored in boxes, and these are illustrated. Since making the drawings, I have examined at the Cistercian Abbey of Byland, Yorkshire, the mosaic tiled pavements and the detached tiles discovered there within recent years. The similarity of these and the Newbottle tiles is so marked in the manner of their settings, shapes, glaze, and key-hollows, that the probability is that they were made by the same tilers.

The Newbottle floor patterns were probably similar to those in the South Transept Chapels at Byland Abbey (fig. 4) shown on the accompanying plan. With the exception of "Byland 6," all the patterns have their counterparts in the Newbottle settings. There are various small imperfections in the setting out of some of the Byland patterns, which make it evident that the men who laid these floors were not the makers of the tiles, as more care would have been taken to see that the design was correctly carried out.

The origin of the Newbottle tiles cannot be established, but if a tilery at Byland is found, then the probability of tilers coming from Byland to Newbottle cannot be overlooked. In the meantime the following points tend to indicate the foreign origin of the tiles: (1) Their typical French character; (2) the foreign nature of the white clay used in the inlaid examples; (3) the absence of any definite wasters amongst the tiles found, and (4) the presence of polished 4-inch square blocks of Tournesian limestone.

(Plate I.) As shown, wheel-pattern No. 1 is an assemblage of seventeen yellow or greenish-brown tiles of different shapes set within a circle 6 feet in diameter. Amongst these is a lozenge-shaped tile inlaid

¹ *Inventory of Ancient Monuments (Scotland): Counties of Midlothian and Westlothian*, No. 182.

² I thank the Lothian Trustees for allowing me to examine the tiles.

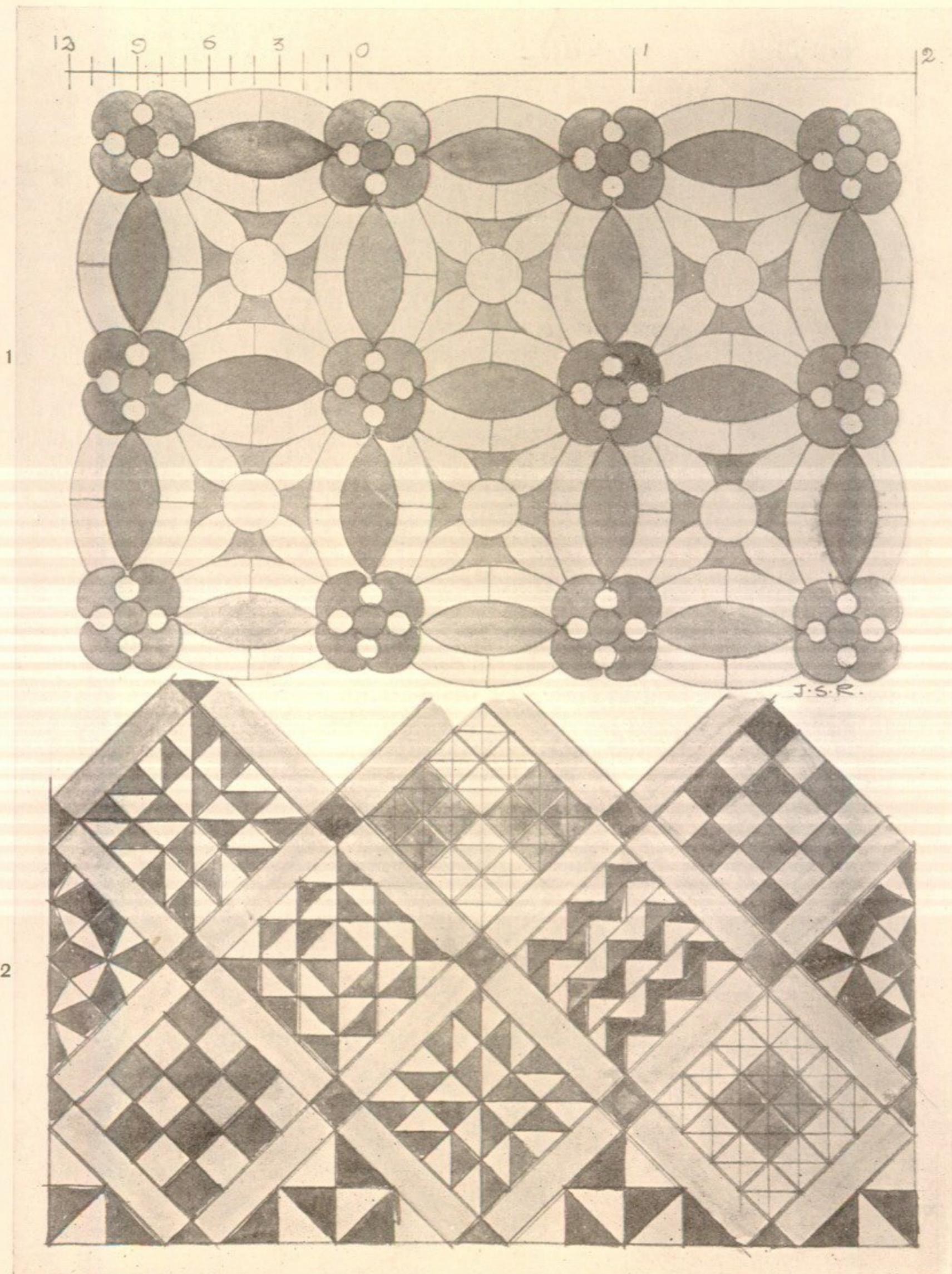


Fig. 5. Floor Patterns reconstructed from Tiles found at Newbottle Abbey.
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with a small rosette (fig. 8, No. 2). By substituting the spandrils from wheel-pattern No. 2 for the "cog-edged" margin, composed of a rhombus-shaped tile with an inserted round tile, a facsimile to "Byland 1" (fig. 4) is obtained. Thirty-three different shaped tiles are required for this composition. This pattern, with a slight difference in the setting of the small roundel, occurs in a South Transept Chapel at Rievaulx. Tiles from an outer ring of a wheel-pattern have been found at Jervaulx Abbey, Yorkshire, and are now in the British Museum.

(Plate II.) Wheel-pattern No. 2 is composed of twenty yellow or greenish-brown tiles of different shapes. Fourteen additional shapes are required to compose the spandrils.

(Fig. 5, No. 1.) An eight-tile continuous pattern.

(Fig. 5, No. 2.) Small square and small triangular tiles set within squares compose this mosaic. Some of the small square tiles have diagonal cuts. A floor composed in this manner is to be seen in the Chapelle de la Sainte Vierge, Église de Saint Denis (Seine).¹ The probability, however, is that at Newbottle the small tiles were used as in "Byland 8" (fig. 4). A pattern similar to the latter also occurs in the crypt of Saint-Germain D'Auxerre.

(Fig. 6, No. 1.) A three-tile continuous pattern corresponding to "Byland 4." This setting occurs also at Rievaulx in one of the chapels (nave, south aisle), and at Melrose in the Chapter House.

(Fig. 6, No. 2.) A two- or three-tile continuous pattern similar to one in the Église de Saint Denis (Seine), and like one in the Melrose Chapter House.

(Fig. 6, No. 3.) A three-tile continuous pattern similar to "Byland 5."

(Fig. 6, No. 4; fig. 3, No. 2.) A three-tile continuous \times pattern—used in a single band as a border and as a riser setting at "Byland 7."

(Fig. 6, No. 5.) A five-tile continuous pattern. The rounds with square centres are at Reims Cathedral. As an independent setting it appears as a round in the spandrils of "Byland 1" and the Newbottle wheel-patterns; it also appears as a border pattern at "Byland 2."

(Fig. 6, No. 6.) A six-tile continuous pattern. A round of this pattern can appear as fig. 6, No. 9, or as a border—"Byland 3." The Byland setting in the South Transept Chapel floor does not contain the small shield-shaped tile; this tile has nevertheless been found on the site.

(Fig. 6, No. 7.) A three-tile continuous pattern. This can also be set as a round (fig. 6, No. 10) or as a border.

(Fig. 6, No. 8.) A continuous pattern composed of an octagon tile, such as is seen at the Église St Denis in the Chapelle St Cucuphas.

¹ I have to thank Le Bureau des Monuments Historiques for permission to make rubbings of this floor. The tiles are reproductions of the originals.



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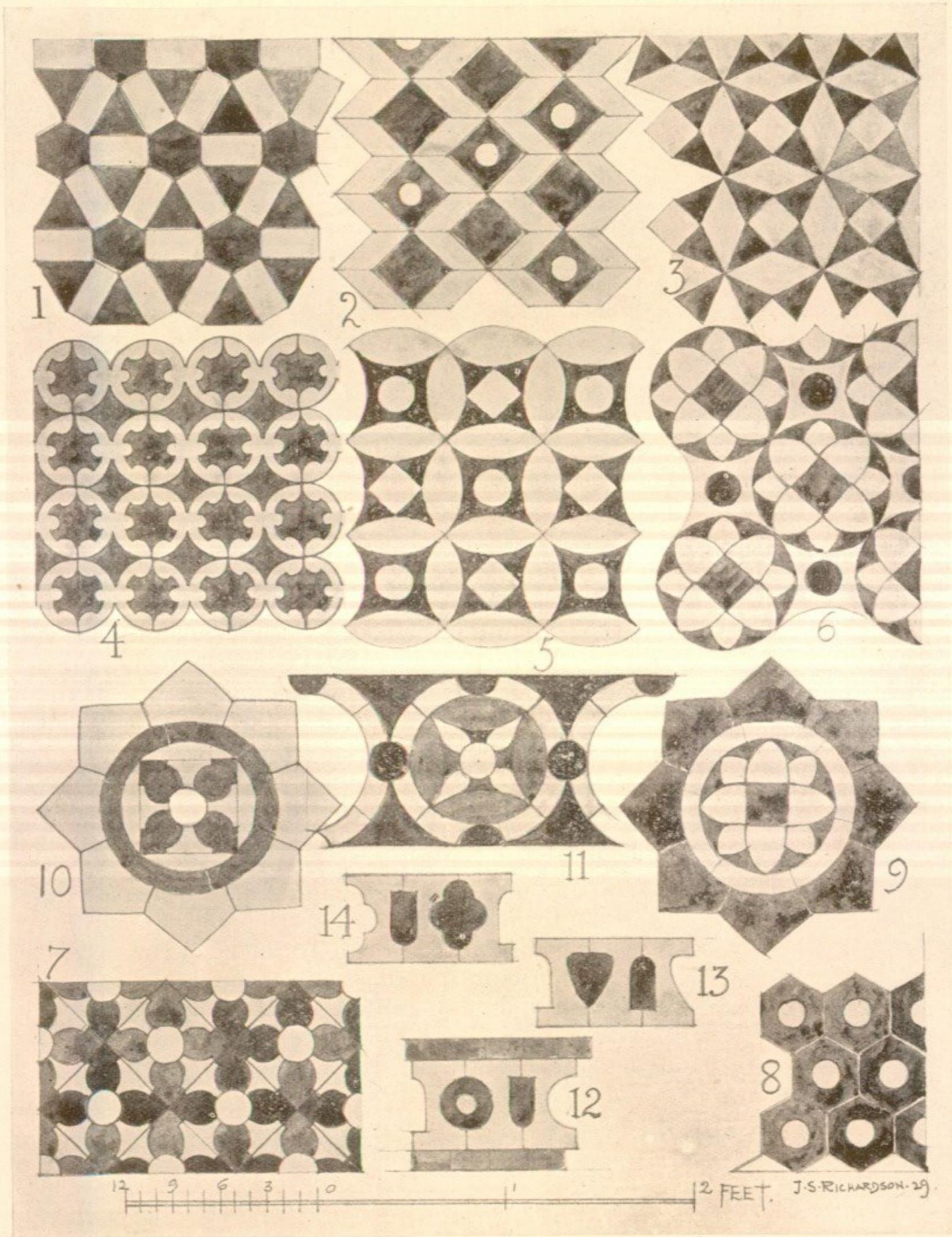


Fig. 6. Tile Settings reconstructed from Tiles found at Newbottle Abbey.

(Fig. 6, No. 11.) A border setting with ring and frame as "Byland 2."

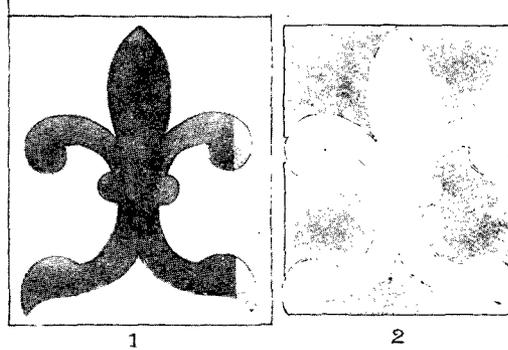


Fig. 7. Inlaid and Mosaic Tiles of Fleur-de-lys Pattern from Newbottle Abbey.

(Fig. 6, Nos. 12, 13, and 14.) Three-tile patterns for border or riser settings.

(Fig. 7, No. 1.) An inlaid tile with a fleur-de-lys pattern. The mosaic fleur-de-lys of the above setting has been used to imprint the design. The tile has a white clay surface, the imprint being filled with red clay. Only fragments of this tile have been found. Size $5\frac{1}{2}$ inches by $6\frac{1}{2}$ inches by $1\frac{1}{2}$ inch.



(Fig. 7, No. 2; fig. 3, No. 1.) Six-tile fleur-de-lys pattern. This design has probably been used for a border or riser setting.

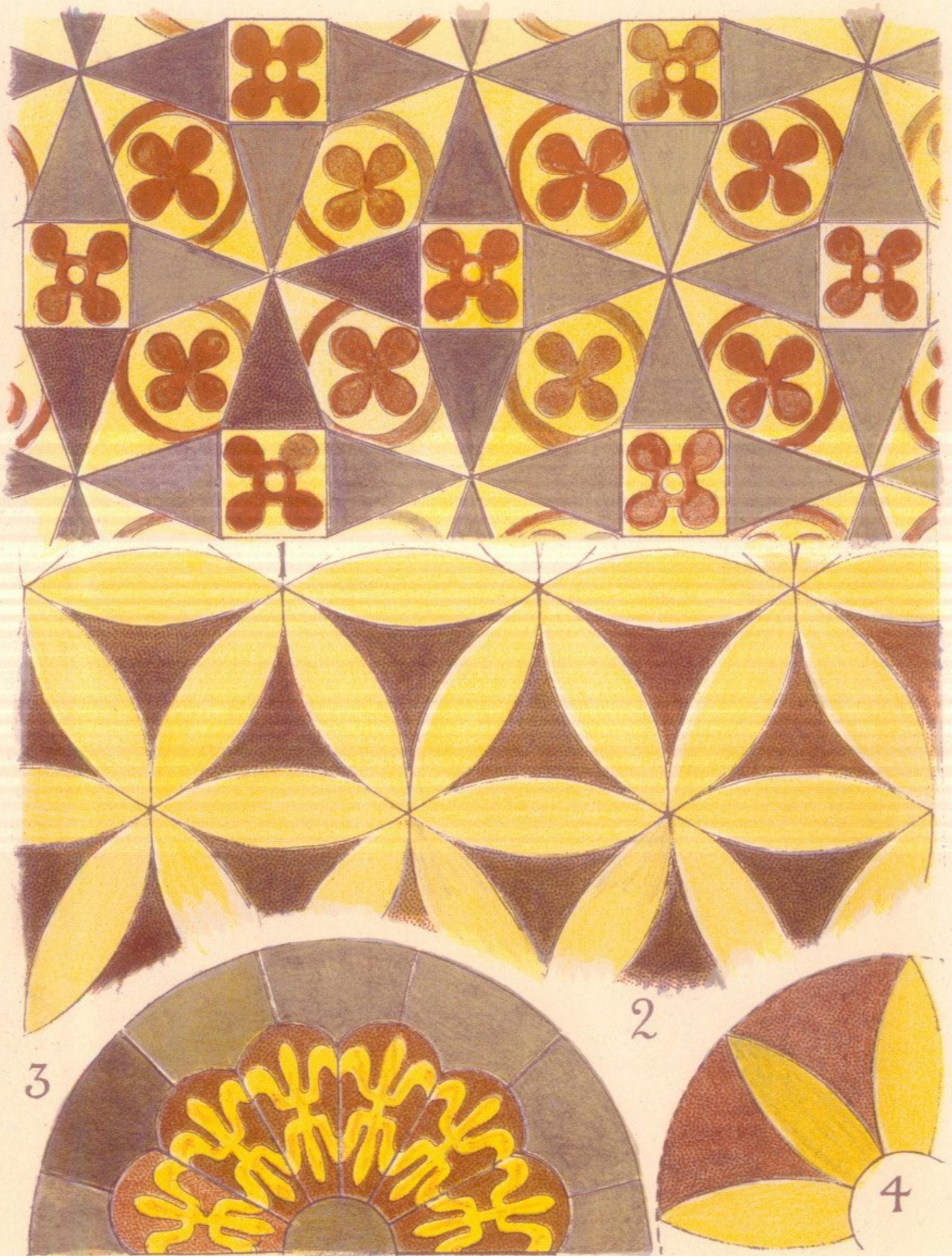
(Fig. 8, No. 1.) Inlaid tile.

A continuous ring and fleur-de-lys pattern composed of a tile with quadrants containing fleur-de-lys at each corner and an eight-petaled rosette having a quatrefoil in the centre. The tile is $3\frac{3}{4}$ inches square by $1\frac{1}{2}$ inch deep and has a conical depression on the underside. The clay of which the tile is composed is baked blue-grey throughout and the inlay is in white. There are converse coloured examples of this tile.



Fig. 8. Newbottle Abbey: Inlaid Tiles.

(Fig. 8, No. 2.) A small lozenge-shaped tile with rosette ornament: this tile is in wheel-pattern, "Newbottle" and "Byland."



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MELROSE ABBEY: Mosaic Floor Tiles, some with Inlaid Patterns.

MELROSE ABBEY.—MOSAIC, INLAID, AND STAMPED TILES.

In addition to the fragmentary tile settings a number of detached tiles were found. These are of a light red colour, free from sand but not so well baked as the Newbottle and North Berwick examples. The clay used for the applied surface and for infilling is not white but of a lighter tone than the clay used in making the tile. The inlay is very shallow, causing the pattern to be sometimes distorted or blurred. In general appearance the tiles resemble early examples in the collection of the Lapidary Museum at St Bavon's Abbey, Ghent. Some of the mosaic tiles have an inlaid pattern and are $2\frac{1}{2}$ inches thick. It is of interest to note that none of the tiles at the parent house of Rievaulx, Yorkshire, exactly resemble those at Melrose. It is only in the arrangement of one pattern (fig. 12) that there is any similarity in the pavements of these two abbeys. This particular pattern also occurs at the grand-daughter house of Newbottle. No *wasters* of the early tiles have been found at Melrose, but a "throw out" of a plain tile, $1\frac{1}{2}$ inch thick, and having a broken side overlaid with glaze may point to the existence of a tile kiln attached to the monastery. In this connection the Rev. Adam Mylne, who lived at Melrose during the first half of the eighteenth century, has recorded that "a little to the south of Darnick is a place called the Tilehouse where they made their tile for the service of the monastery, and a great deal of it is sometimes found there finely glazed."

(Plate III. No. 1.) Is the centre of a wheel-pattern. The petal-shaped tile is inlaid with a double fleur-de-lys. The stamp has been the same as that used in the rectangular tile (fig. 9, No. 4). The existing example of the outer tile is bedded out of place in the Outer Cloister Court setting (fig. 13).

(Plate III. No. 2.) Shows the petal-shaped tile from the centre of a wheel-pattern. Two such tiles are bedded out of their place in a small setting on the south side of the Chapter House. A tile of this shape from Thornton Abbey, Lincolnshire, is in the British Museum; others occur at Newbottle (fig. 5, No. 1), at Rievaulx, and also at the Chapelle St Michel, Collège de St Quentin (Aisne).

(Fig. 9, No. 1.) A small leaf-shaped tile, thick and brown glazed, from a wheel-pattern.

(Fig. 9, No. 2.) Part of a brown glazed tile from a spandril of a wheel-pattern.

(Plate III. No. 3.) A two-tile continuous pattern.

(Plate III. No. 4.) A three-tile continuous pattern. The small square tile is inlaid with a quatrefoil design and the lozenge-shaped tile has

the same motif within a circle. Both of these tiles are to be found in converse colours. The stamp used on the lozenge-shaped tile has not been made for those of this shape. The setting corresponds to "Byland 5" and to that at Newbottle (fig. 6, No. 3). The lozenge-shaped tile might also have been used in the outer ring of a wheel-pattern as in "Byland 1." Along with a "double dove-tail" shaped tile it forms pattern shown in fig. 9, No. 3.

(Plate IV. No. 1.) A four-tile pattern, each tile ornamented with a fleur-de-lys set diagonally within the quadrant of a ring with trefoil

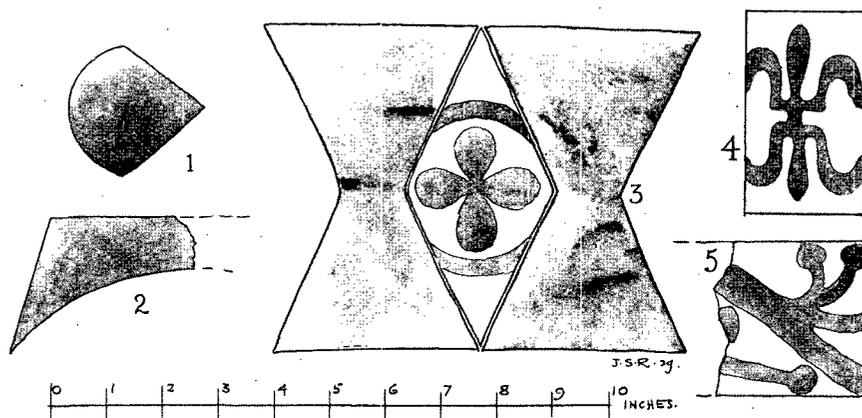


Fig. 9. Melrose Abbey, Mosaic and Inlaid Tiles.

projecting into the spandril. This design appears in converse colour and two of these tiles appear set as single tiles in the small settings of tiles in the Chapter House. Size of tile, $4\frac{7}{8}$ inches square by 2 inches.

(Plate IV. No. 2.) A four-tile pattern, smaller but similar to the last. Size of tile, $3\frac{1}{2}$ inches square by 2 inches.

(Plate IV. No. 3.) A continuous-tile pattern composed of independent broken rings with diagonals which slightly project, the centres of the rings being at the corners of the tiles; these tiles are also in converse colour. Size $4\frac{7}{8}$ inches square by 2 inches.

(Plate IV. No. 4.) A continuous-tile pattern composed of independent rings, the centre of each ring being in the middle of the side of the tile, colours also in converse. Size $4\frac{7}{8}$ inches square by 2 inches.

(Plate IV. No. 5.) A floor pattern smaller in scale but similar to the last. Size $3\frac{1}{2}$ inches square by 2 inches.

(Plate IV. No. 6.) An ∞ single-tile pattern. This tile appears in the

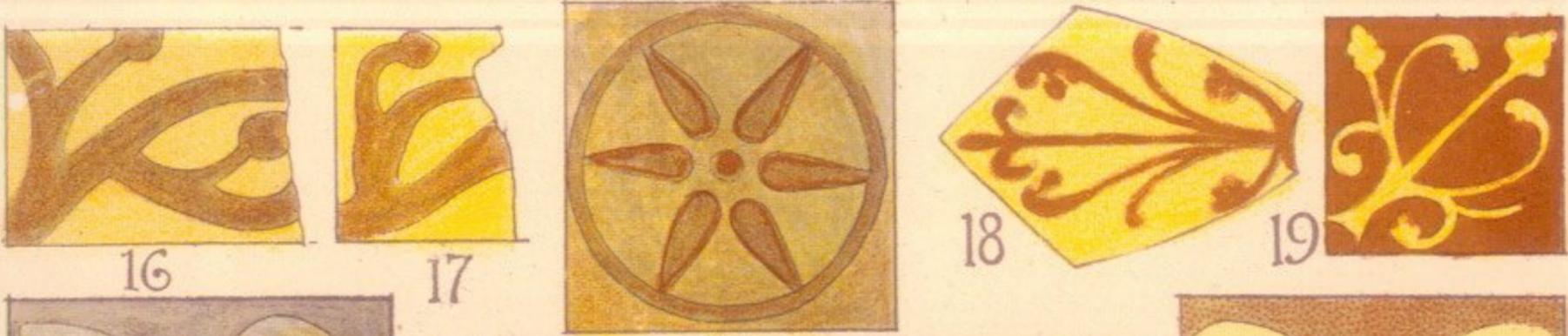
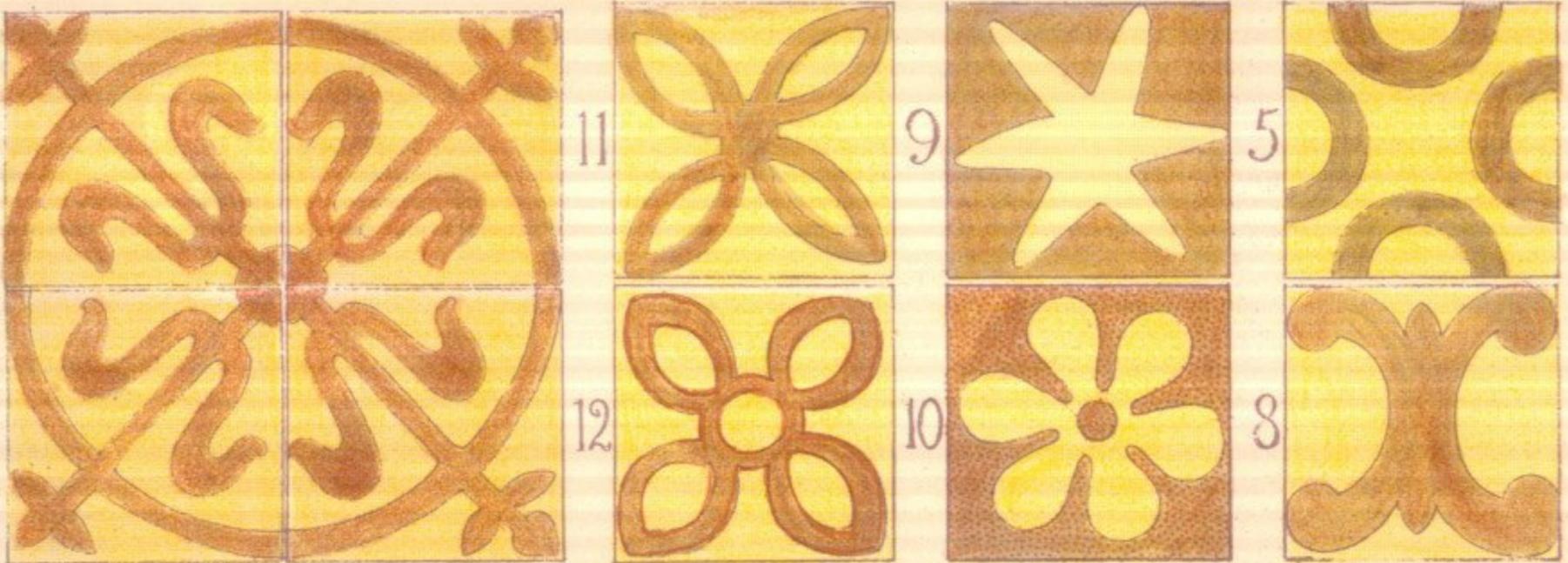
1

3

4



2



6

7



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MELROSE ABBEY: Floor Tiles, with Inlaid Patterns.

border of floor setting (fig. 10) in the Chapter House. Size $4\frac{7}{8}$ inches square by 2 inches.

(Plate IV. No. 7.) A fleur-de-lys set diagonally. This tile was found in the garden of Priorwood House and is now in the National Museum of Antiquities. Size $4\frac{7}{8}$ inches square by 2 inches.

(Plate IV. No. 8.) Single-tile pattern with α design. This tile appears in a setting in the Chapter House (fig. 11). Size $3\frac{1}{2}$ inches square by 2 inches.

(Plate IV. No. 9.) Single-tile pattern with six-pointed star in two sizes, $3\frac{1}{2}$ inches square and $3\frac{1}{4}$ inches square by 2 inches. The smaller tile appears in the Chapter House setting (fig. 10).

(Plate IV. No. 10.) Single-tile design with six-petalled rosette in two sizes, $3\frac{1}{2}$ inches square and $3\frac{1}{4}$ inches square by 2 inches deep.

(Plate IV. No. 11.) Single tile with a design composed of four intersecting semicircles. Size $3\frac{1}{2}$ inches square by 2 inches. This appears along with Plate IV. No. 8, in the Chapter House setting (fig. 11).

(Plate IV. No. 12.) A single-tile design, a quatrefoil with a ring centre. Size $3\frac{1}{2}$ inches square by 2 inches.

(Plate IV. No. 13.) A single-tile pattern, a six-petalled flower within a circular ring. Size $4\frac{1}{8}$ inches square by 2 inches.

(Plate IV. Nos. 14 and 15.) Border tiles ornamented with a foliaceous scroll set between a simple border. Width $4\frac{1}{8}$ inches.

(Plate IV. Nos. 16 and 17, and fig. 9, No. 5.) Border tiles ornamented with a foliaceous scroll. Size $5\frac{1}{2}$ inches by $2\frac{3}{4}$ inches by 2 inches.

(Plate IV. No. 18.) Petal-shaped mosaic tile ornamented with an "iron hinge" pattern. This tile is especially interesting, and may be compared with that seen in Plate IV. No. 19, from the Château de Gisors (Seine), now in the Musée Céramique de Sèvres, which is obviously similar.

(Fig. 9, No. 4.) A single-tile pattern ornamented with a double fleur-de-lys pattern in brown on a yellow ground. Size $2\frac{3}{16}$ inches by $3\frac{7}{8}$ inches by 2 inches.

Fragments of Tile Settings in the Chapter House.

(Fig. 10.) Is at the east end of the Chapter House. It is a two-tile setting with a plain border and contains four tiles with fleur-de-lys

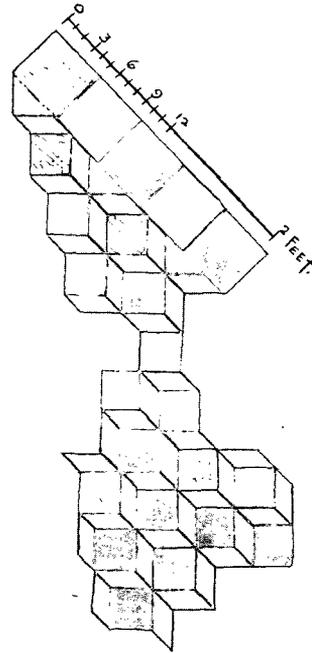


Fig. 10. Tile Setting at east end of Chapter House, Melrose Abbey.

and one (Plate IV. No. 9) with a star inlay. These are $4\frac{1}{4}$ inches square.

(Fig. 11.) In the centre of the Chapter House, square tiles set diagonally—this fragment contains four tiles with the intersecting semicircle

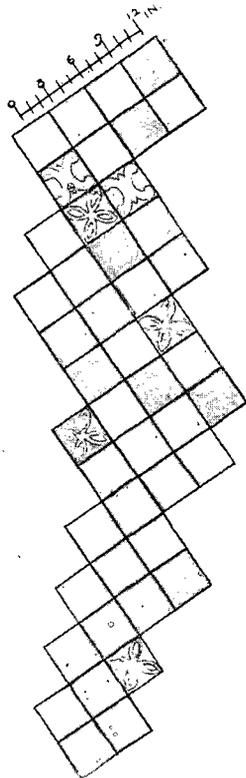


Fig. 11. Tile Setting in Chapter House, Melrose Abbey.

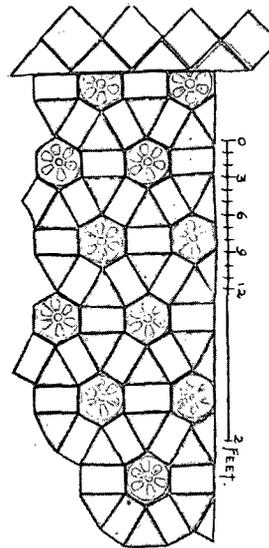


Fig. 12. Tile Setting in Chapter House, Melrose Abbey.

pattern and two with the α pattern (Plate IV. Nos. 11 and 18). Owing to wear, it is impossible to say how the tiles were grouped by colour.

(Fig. 12.) A three-tile setting bedded alongside the last. The octagonal tile is inlaid with a six-petalled flower within a circle. The rectangular tiles have been yellow and the triangular ones dark green. These tiles are now very much worn. Tile (fig. 9, No. 4) may have been used in this setting.

Besides these settings there are two small fragments of the Chapter House floor situated to the north and south of the last two groups. These

each contain a single tile with a fleur-de-lys pattern (Plate IV. No. 1) and the petal-shaped tile from Plate III. No. 2.

Fragments of Floor in the Outer Cloister Court.

(Fig. 13.) Two fragments of a floor remain; for the most part these are composed of $6\frac{1}{4}$ inches square tiles by $1\frac{1}{2}$ inch, and some of these tiles

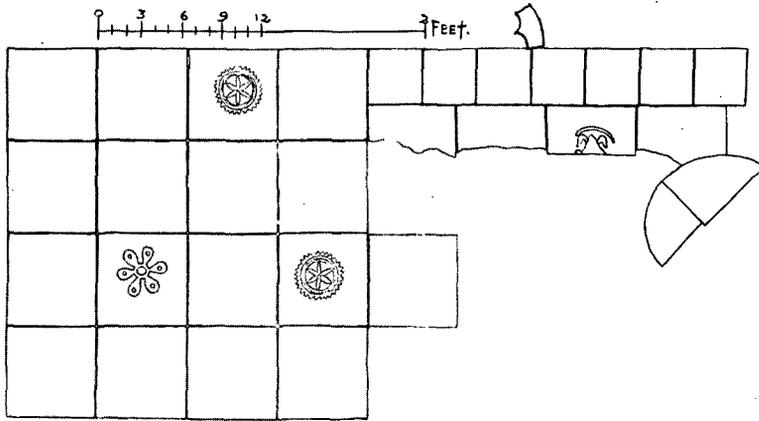


Fig. 13. Tile Setting in Outer Cloister Court, Melrose Abbey.

are ornamented with a stamped pattern and may be of fourteenth-century date. The designs used are illustrated to a larger scale in fig. 14.

NORTH BERWICK CONVENT.—TILES WITH RAISED PATTERNS.

The tiles made at the North Berwick tiliary in the thirteenth century are unlike those found in England¹ or France, but bear a resemblance to the embossed tiles produced in Switzerland—notably the St Urban tiles from Zofingen,² now in the Schweizerisches Landes Museum at Zürich. The North Berwick examples are unusually large for their period, the square tiles measuring $6\frac{7}{8}$ inches by 2 inches and the border tiles $10\frac{1}{2}$ inches by $3\frac{3}{8}$ inches by 2 inches. The patterns stand out $\frac{1}{4}$ inch. Such high relief suggests that the moulds were designed for mural decoration rather than for floor tiles, as such raised patterns are ill suited for pavements. The worn state of the tiles, however, clearly indicates the purpose to which they were put. Some of the examples, notably the

¹ Thirteenth-century tiles with raised patterns are exceedingly rare in Britain: two have been found at Repton in Derbyshire and a part of one at Whitland Abbey, Carmarthenshire.

² Forrer, *Fliesen-keramik*, pl. xiv, figs. 10, 11, 12.

"Lion," the "Panther," the "Dragon," and the "Griffin" tiles are of good design, indicating that the craftsman who carved the moulds was an artist of considerable ability. Whether these moulds were made at

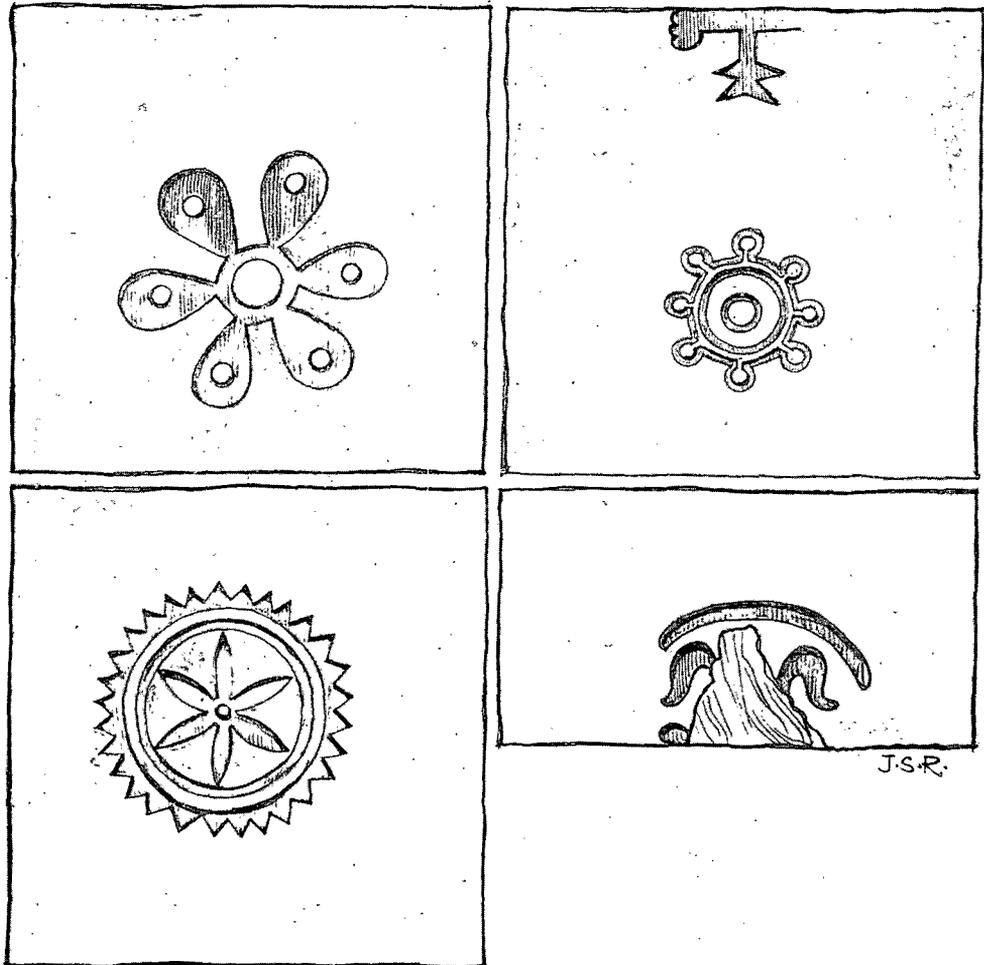


Fig. 14. Tiles with Impressed Patterns, Melrose Abbey.

North Berwick by the men who carved the stone capitals of the First Pointed style recovered from the site, or whether they were imported from the continent, cannot be determined.

The tiles have a blue core and are well baked. This clay resembles the

Newbottle clay and contains sand grit. Most of the tiles are covered with a brownish-green glaze, but some are yellowish in tone, and others are brown. Many fragments of distorted tiles, *wasters*, were found in the kiln; some of these had swollen and burst through over-firing.

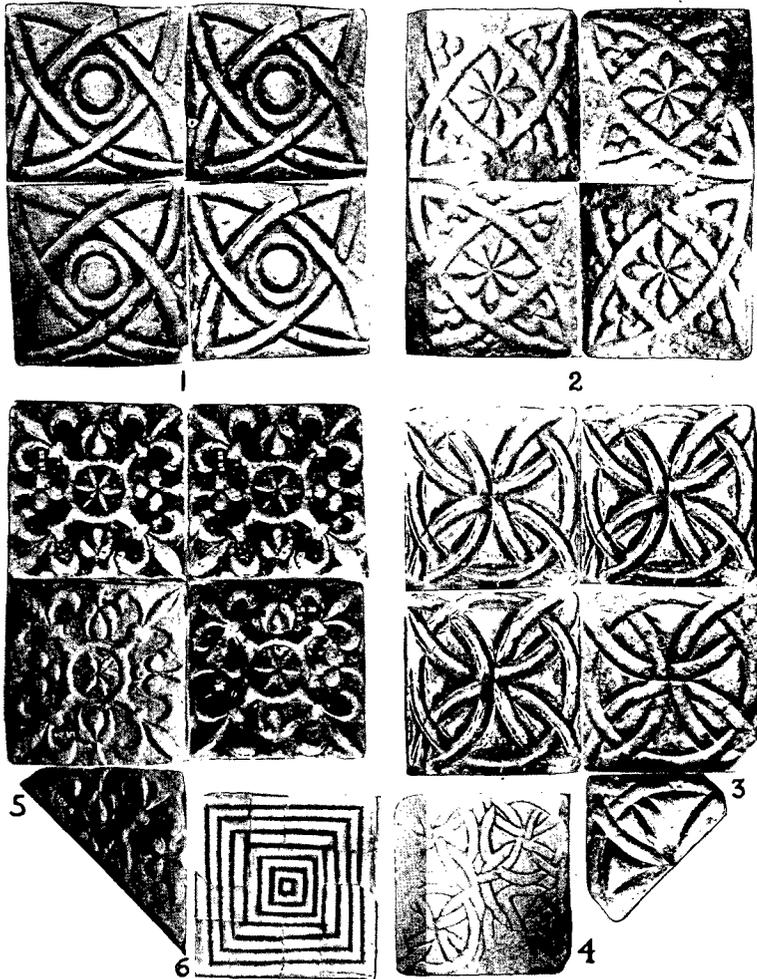


Fig. 15. North Berwick Convent: Tiles with raised Geometrical Patterns.

Geometrical Designs.

(Fig. 15, No. 1.) Tiles giving a continuous floor decoration of intersecting rings. The design on each tile consists of the interlaced segments

of four rings of a radius equal to a side of the tile; in the centre is a small circular ring.

(Fig. 15, No. 2.) A tile bearing a design similar to the last, but having an eight-petalled flower in the centre, fleur-de-lys and three-bud patterns alternately arranged in the angle compartments, and a leaf in the outer compartments.

(Fig. 15, No. 3.) Tiles giving a continuous floor decoration of intersecting smaller rings. The design on a tile consists of a ring interlaced with four segments of rings of a similar size, the radius of each being equal in size to half the side of the tile.

(Fig. 15, No. 4.) Tiles giving a continuous floor pattern of yet smaller intersecting rings: each tile contains a design similar to that composed by assembling four tiles of the last. The diameter of each ring is equal to a quarter of the size of the side of the tile.

(Fig. 15, No. 5.) Tiles giving a continuous floor pattern, each tile ornamented with four fleur-de-lys set diagonally and springing from a ring containing a six-petalled flower: alternately arranged between the fleur-de-lys are three-bud and trefoil patterns.

(Fig. 15, No. 6.) Tile having a design composed of eight concentric squares.

The tiles have been set diagonally in the pavements.

Zoomorphic Designs.

Fig. 16 shows a continuous pattern composed of "Lion" and "Panther" tiles. One tile has a Lion passant guardant to sinister, set within a circular foliaceous spray, and the other a Panther passant to dexter, set within a spray similar in character to the above.

The Lion, according to the Bestiary, is the king of beasts, and an analogy is made out between the outward appearance of the lion and Christ, his strength in front being typical of the Godhead of our Lord and his weakness behind typical of our Lord's manhood; his tail over his back signifies justice which is placed over us, and his claws mean vengeance upon Jews. In *Livre des Créatures*, a metrical translation from the Latin of Philippe de Thaun (MS. Cotton, Nero, A.V.) which formerly belonged to the Cistercian Abbey of Hulm Cultram in Cumberland, the luxuriant tail assigned to the lion in mediæval art is thus explained. "The lion has this nature, when we hunt him, with his tail he erases his track in the ground that we may not know how to seek him—remember this is a great signification. The track of the lion means incarnation, which God would take on earth to gain our souls. And this truly He did covertly. He placed Himself in degrees, of which last order was of prophets and apostles, and till He came to ours, until He

was carnal man, and was mortal for us, and by order acceptable, and thus He vanquished the devil."

The Panther is described in the Bestiary as "an animal of very precious being." Philippe de Thaun tells us, "This little animal eats divers meals,



Fig. 16. North Berwick Convent: "Lion" and "Panther" Tiles.

it is mild and of a good disposition, it is loved by all animals except the dragon alone."

(Fig. 17, Nos. 1 and 2.) A two-tile pattern, showing a Dragon.

The Dragon is not described by itself in the Bestiary, but it is noticed incidentally as flying away from the panther, and as being afraid of the doves upon the Tree of Life.

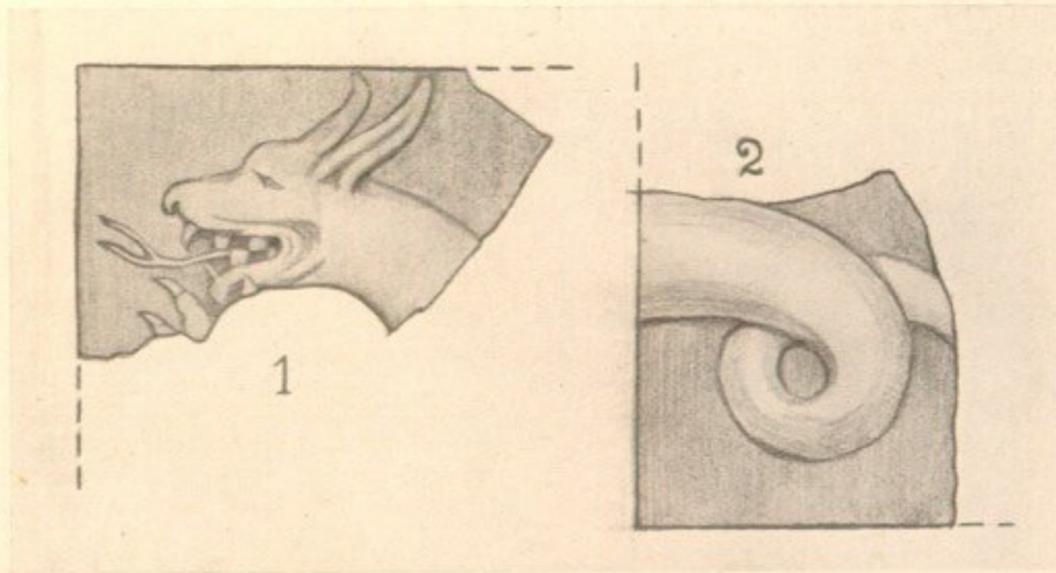


Fig. 17. North Berwick Convent: Fragments of "Dragon" Tiles.



Fig. 18. North Berwick Convent: "Dragon," "Griffin," and Border Tiles.

(Fig. 18, No. 1.) A two-tile "Dragon" pattern represented by a tile containing the tail with a clustered foliaceous ending.

(Fig. 18, No. 2.) A two-tile "Griffin" pattern, represented by a tile containing the hind-quarters with a foliaceous tail.

The Griffin, according to the Bestiary, "is a kind of bird which inhabits the deserts of India, where it can find nothing to eat. This bird is so strong that it can fly away with a live cow and carry it to feed its young with. The griffin signifies the Devil, who carries off the wicked man to the deserts of hell."

Border Tiles.

(Fig. 18, No. 3, and fig. 19, No. 1.) Set between two corded rods, a pattern composed of three corded embossed rings separated, and double fleur-de-lys, with stalk and bud ornamentation at the ends of the tile.

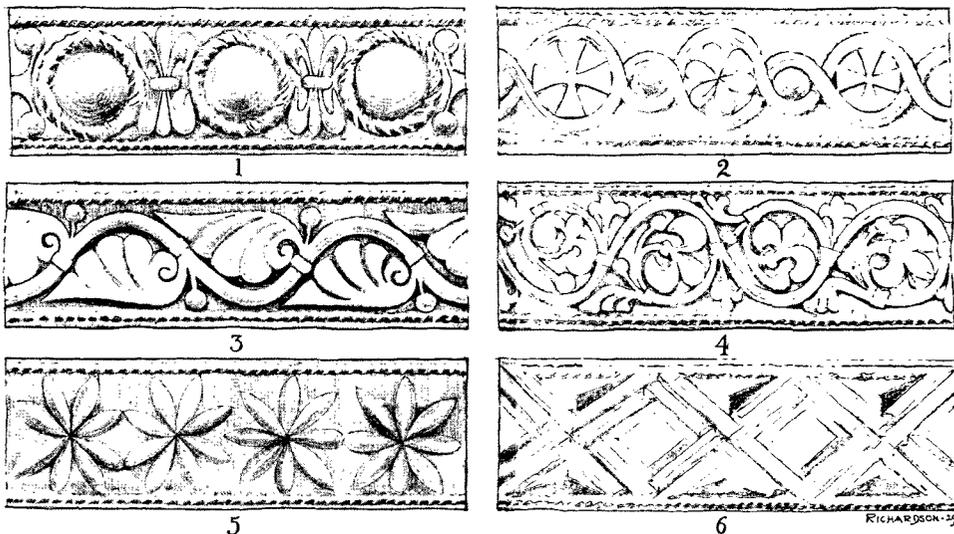


Fig. 19. North Berwick Convent: Border Tiles restored.

(Fig. 19, No. 2.) Set between two corded rods, interlaced bands forming large and small circular loops, the central loop contains a six-petalled flower, and the two other large ones contain a cross pattée—the small loops contain embossed rounds.

(Fig. 18, No. 6, and fig. 19, No. 3.) Running stem and conventional leaf-pattern with berry, set between two corded bands.

(Fig. 18, No. 5, and fig. 19, No. 4.) A running pattern composed of stem and lily flower scroll, with bud and leaf set between two corded bands.

(Fig. 18, No. 4, and fig. 19, No. 5.) Set between a border similar to the others, four eight-petalled flowers.

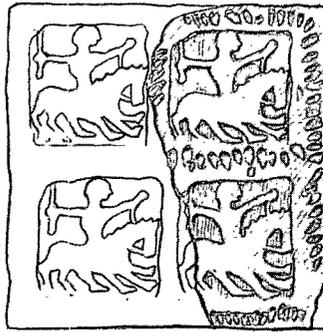
(Fig. 19, No. 6.) A geometrical pattern composed of two interlacing double rods set saltirewise between two corded lines, the triangular and lozenge-shaped spaces have sloping sides.

GLENLUCE ABBEY.—TILES WITH STAMPED PATTERN.

Two tiles of this class were found during the 1898 excavations in the Choir of the Abbey Church and the Chapter House.¹ One is represented by a large half-hexagon tile ornamented with an oak-leaf



2



1



3

Floor Tiles.

Fig. 20. From near Abbeville, France.

From Glenluce Abbey.

From St Colombe les Sens, France.

and acorn design, set within an indented border. The other, when complete, has been a tile of unusual character with four imprints from the same stamp (fig. 20, No. 1). The design is a horse and horseman rendered in archaic manner, each panel being surrounded by crude indentations. The horse motif is rare, it occurs on two stamped tiles recorded in France; one of these—now in Le Musée Céramique de Sèvres²—came from near Abbeville (Somme) (fig. 20, No. 2), the other is at the Monastery of St Colombe les Sens (fig. 20, No. 3). These tiles are

¹ *Archaeological Collection of Ayrshire and Galloway*, vol. x. p. 203, pl. i, fig. No. 4.

² I was allowed to examine and draw the floor tiles at this museum by kind permission of the Director, to whom I am indebted.

considered unique,¹ and, like the Glenluce example, they are of thirteenth-century date. A fragment of the Glenluce tile is in the National Museum. The tile was $4\frac{1}{2}$ inches square when complete and is unusually thin, measuring only $\frac{5}{8}$ inch in depth, and it is of a hard clay with a green glaze.

DORNOCH CATHEDRAL.—INLAID
TILE.

This tile (fig. 21), which also is of thirteenth-century date, is in the National Museum. It is ornamented with a network pattern composed of small triangles alternately inlaid with white slip. The design has its origin in a mosaic floor pattern. The tile is probably French or Flemish, and measures $4\frac{3}{8}$ inches square by 1 inch deep.



Fig. 21. Dornoch Cathedral, Inlaid Tile.

TILES FROM SECULAR BUILDINGS.

DIRLETON CASTLE.—TILES WITH RAISED PATTERNS, LATE
SIXTEENTH CENTURY.

In addition to one complete example, fragments of at least nine

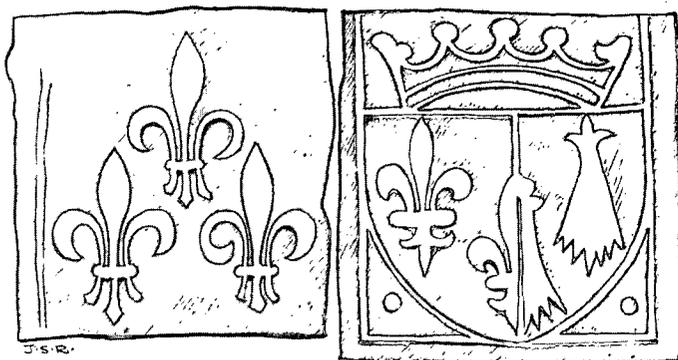


Fig. 22. Sixteenth-century French Fireplace Tiles in Le Musée Céramique de Sèvres.

different tiles of a character not unlike the French examples, shown in fig. 22, were found amongst the debris on the vault top and under the

¹ Forrer, *Fliesen-keramik*.

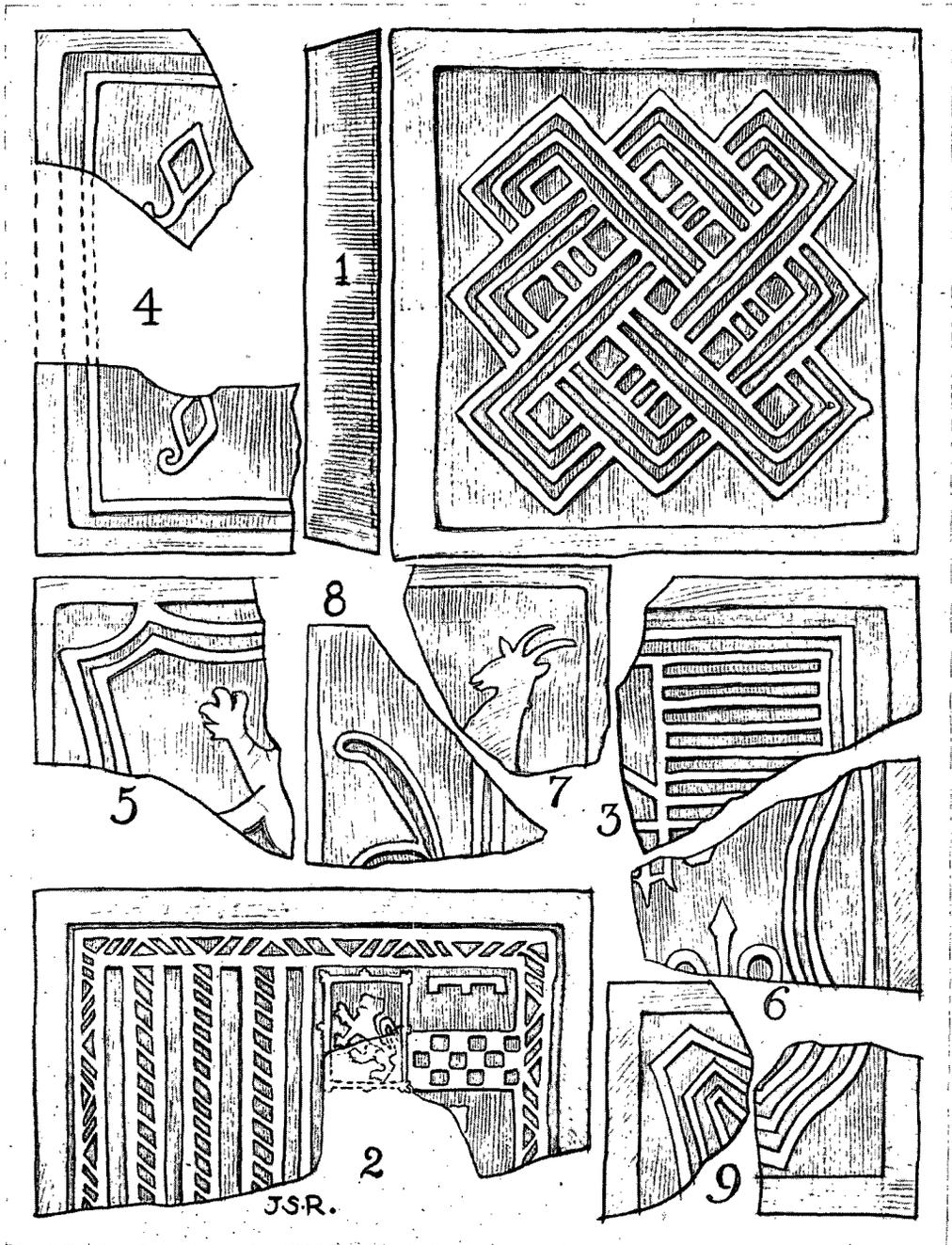


Fig. 23. Floor Tile and fragments found at Dirleton Castle.

floor level of the private chamber on the first floor of the Ruthven Lodging.¹ The various designs, mostly heraldic, have been stamped by

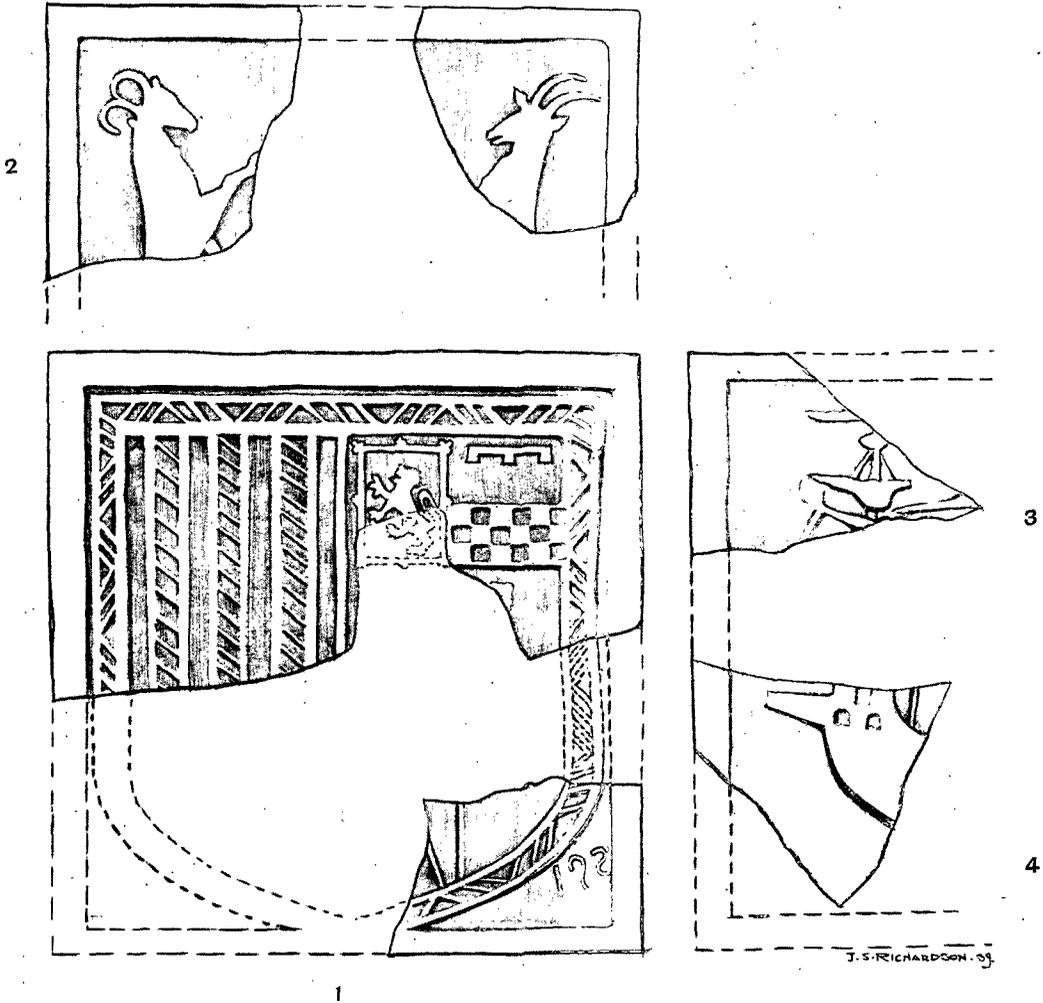


Fig. 24. Fragments of Floor Tiles from Dirleton and Tantallon Castles.

means of a wooden die, leaving a plain margin. The tiles are made of a light-coloured clay containing sand grit; they are well baked and glazed with a greenish colour. In the floor setting a number of plain

¹ *Inventory of Ancient Monuments (Scotland): County of East Lothian, No. 27.*

tiles have been used along with the ornamented ones. The tiles are of a uniform size, measuring $7\frac{1}{4}$ inch square by $1\frac{1}{8}$ inch deep; the sides have a pronounced slope inwards towards the base.

(Fig. 23, No. 1.) A geometrical pattern, composed of a square and two rectangles of three bands, set diagonally and interlaced. A similar tile has been found at Crichton Castle.

(Fig. 24, No. 1.) Fragments only. A heraldic shield charged with *Ruthven* impaled with *Stewart*, for William, Earl of Gowrie and his wife Dorothea Stewart. At the sinister bottom corner is a maker's stamp.

(Fig. 23, No. 3.) A fragment only. Part of Haliburton coat of arms, showing an indication of the bend on the first quarter, for *Haliburton*, and the second quarter, three bars for *Cameron*.

(Fig. 23, No. 4.) Fragments only: showing mascles (?) with a tail.

(Fig. 23, No. 5.) A fragment only. The dexter upper corner of a heraldic shield bearing a Lion Rampant within a tressure representing the Royal Arms.

(Fig. 23, No. 6.) Fragment of the sinister side of a heraldic shield charged with three fleur-de-lys within a tressure, probably for France.

(Fig. 24, No. 2.) Fragments of the upper part of a tile showing the *Ruthven* coat of arms: supporters—a Ram on the dexter and a Goat on the sinister.

(Fig. 23, No. 8.) Fragment with part of a design, indefinite.

(Fig. 24, No. 3.) Fragment of the upper part of a tile showing a part of the masts and yards of a ship.

TANTALLON CASTLE.

(Fig. 24, No. 4.) Fragment of the lower part of a tile similar to the last, showing the prow of the ship.

MORHAM.—TILES WITH RAISED PATTERNS

Two fragments of tiles of different design recovered from the bed of a stream, now in the National Museum. The one (fig. 25, No. 1) is the sinister upper corner of a tile and contains part of a fleur-de-lys. The other (fig. 25, No. 2) is a fragment of the sinister side of a tile. With the exception of a small fleur-de-lys the other features are too fragmentary to be recognised.

LINLITHGOW PALACE.—TILE WITH STAMP PATTERN.

(Fig. 25, No. 3.) A whole tile, $7\frac{5}{8}$ inches square by $1\frac{1}{4}$ inch deep, with an impressed panel $3\frac{1}{4}$ inches and a few fragments of the same have

been found along with plain green glazed tiles of similar size. The design consists of the letters T and M joined together by a love-knot and set within a shield-shaped panel. It is probable that the T is intended

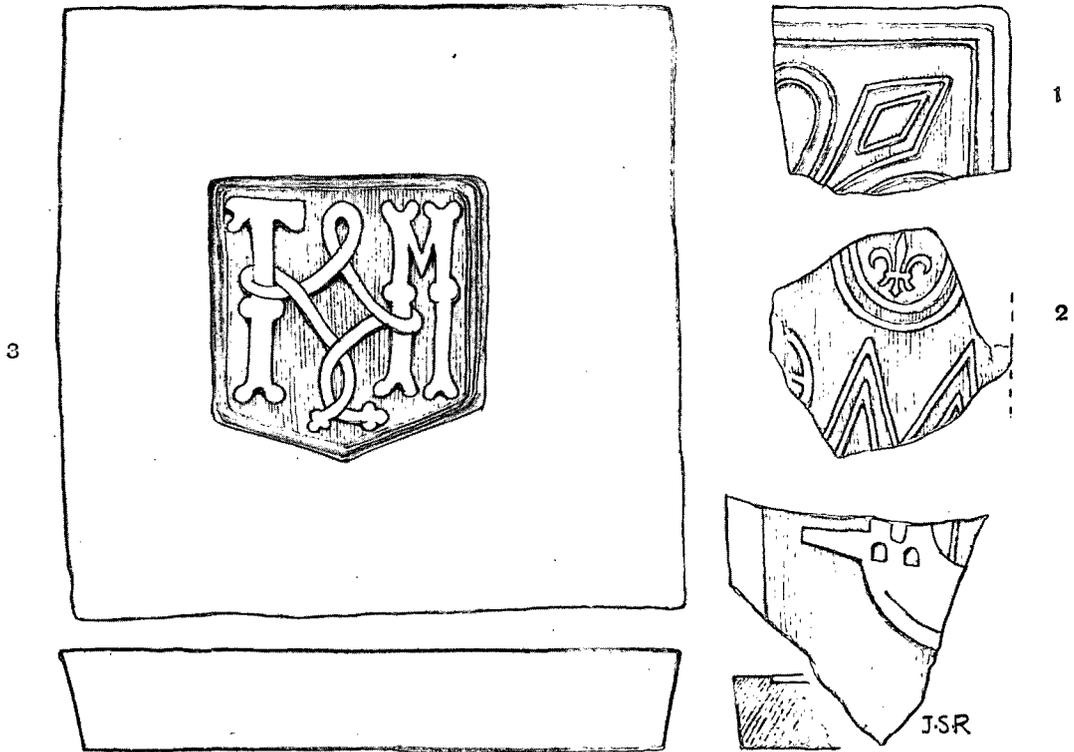


Fig. 25. Floor Tile from Linlithgow Palace, and fragments from Morham and Tantallon Castle.

for an I, and that the device refers to James IV. and his Queen, Margaret Tudor. In a Flemish miniature¹ depicting the Queen kneeling before an altar this device appears on the altar frontal.

ADDITIONAL.

Plain floor tiles of different sizes and coloured glaze have been found at the monasteries mentioned and also at the Cathedral, St Andrews; Blackfriars, St Andrews; St Adrian's Priory, Isle of May; Dunfermline

¹ This is in a *Book of Hours* of the Ghent and Bruges School and of early sixteenth-century date. In the Vienna Library (MS. 1897).

Abbey; Balmerino Abbey; Red Friars, Peebles; Kinloss Abbey; St Magnus Cathedral, Kirkwall; Forhaven, Angus, and Crichton Castle.

Flat roofing tiles of a light-red or buff colour, occasionally glaze spotted, were in use in Scotland during the twelfth and thirteenth centuries. Examples have been found at Melrose Abbey, North Berwick Convent, St Andrews Priory, St Adrian's (Isle of May), and Inchcolm Abbey.

MONDAY, 11th March 1929.

PROFESSOR THOMAS H. BRYCE, M.D., F.R.S.,
Vice-President, in the Chair.

A Ballot having been taken, the following were elected Fellows:—

JOHN GRANT, 27 Comely Bank Street, Edinburgh.

THOMAS MATHIESON HALLIDAY, c/o Messrs Barton & Sons, 11 Forrest Road, Edinburgh.

JAMES H. MACDONALD, M.B., Medical Superintendent, Howford House, Hawkhead Asylum, Glasgow, S.W. 2.

The following Donations to the Museum were intimated and thanks voted to the Donors:—

(1) By JAMES FOSTER, Rodger Street, Anstruther.
Iron Breech Block of Cannon, from Fife.

(2) By JAMES S. RICHARDSON, F.S.A.Scot.

Part of a square flooring Tile and two oblong border Tiles, thirteenth century, from the Cistercian Convent at North Berwick. (See previous Communication by Mr Richardson.)

Large Scraper of black Flint, from Wimereux, near Bologne, France.

(3) By FRANCIS BUCKLEY, Tunstead, Greenfield, Yorkshire.

Three old Scottish Silver Tea-spoons. One has a feather-edged stem and bears the maker's marks A.S., for Alexander Spence, 1783, the

town's mark, a castle for Edinburgh, and the head of George III. The other two have handles of French fiddle pattern; one bearing the maker's mark W.G. and a castle for Edinburgh, and the other the maker's mark D.F.

- (4) By JOHN A. FAIRLEY, 3 Barnton Gardens, Davidson's Mains, Edinburgh.

Two Gingerbread Moulds of Wood, measuring $24\frac{3}{4}$ inches by $4\frac{3}{8}$ inches by $\frac{3}{4}$ inch and $20\frac{3}{4}$ inches by $5\frac{1}{8}$ inches by 1 inch, the first bearing eight matrices in the form of men, animals, and other designs on one side, and five matrices in the form of animals and other objects on the other side; the second mould has three matrices on each side in the form of men and animals. The former has the initials I H S, and the latter the initials G H burnt on the two edges.

- (5) By JOHN OVENS, Mansfield, Foulden, Berwickshire.

Jet Plate and a Barrel-shaped Bead from the necklace found in a short cist at High Cocklaw, near Berwick, and a Knife of black Flint (fig. 1), finely worked on both faces, measuring $4\frac{3}{16}$ inches in length and $1\frac{3}{16}$ inch in breadth, found on the same farm.

- (6) By JAMES MACPHERSON, F.S.A.Scot.

Hand Bell, measuring $2\frac{7}{8}$ inches in height and $3\frac{3}{8}$ inches in diameter, with the initials M K and date 1616, from St Andrews.

- (7) By J. C. DUNLOP, F.R.C.P., Drumbeg, North Berwick.

Silver-gilt Medal of the Beggars' Benison Club, of upright oval shape, in its original case.

It was announced that the following objects had been purchased for the Museum:—

Torc formed of a narrow twisted band of Gold, the ends hammered into hooks set at right angles to each other, measuring $4\frac{1}{2}$ inches in diameter and weighing 7 dwts. 12·8 grains, from the hoard found at The Law, Urquhart, Morayshire, in 1857.



Fig. 1. Flint Knife from High Cocklaw, near Berwick. (†.)

(Mr Thomas Yule, F.S.A.Scot., and Mr James Curle, LL.D., F.S.A.Scot., each contributed towards the purchase.)

Food-vessel of buff-coloured clay, fragments of a Necklace of Jet or Shale, and an oval Knife of black Flint, finely flaked all over the back but undressed on the under side, measuring $2\frac{1}{2}$ inches by $\frac{1\frac{3}{8}}{16}$ inch by $\frac{9}{32}$ inch. Found in 1898 in a short cist at High Cocklaw, near Berwick. (See subsequent Communication by J. Graham Callander, F.S.A.Scot., Director of the Museum.)

The following Donations of Books to the Library were intimated and thanks voted to the Donors:—

(1) By J. GRAHAM CALLANDER, F.S.A.Scot.

Zur Steinzeit Ostasiens. Oswald Menghin. Wien, n.d.
Studier öfver den Yngre Stenåldern i Norden och Västeuropa. Norrköping, 1912.

(2) By LÉON COUTIL, Honorary Fellow, the Author.

Villa Agraria et Théâtre Romain d'Andeleius.
Cimetière Mérovingien et Carolingien de Villevenard (Marne). Le Mans, 1913.

Monastère Mérovingien et Carolingien de Pental à Saint Samson de la Roque (Eure). Beaugeney, 1925.

Mors de Bride Gaulois de Léry (Eure) et de Verna (Isère)—Mors Mérovingiens de la Cheppe (Marne), Fère-en-Tardenois (Aisne) et Etrigny (Saône-et-Loire)—Etude sur les Mors à Liberté de Langue du XIV^e au XVIII^e siècle. Le Mans, 1927.

Les Vases à figure humaine et les bobines de Glozel (Allier). Le Mans, 1927.

Anneaux et Bracelets en schiste (Origines du Glozelien). Le Mans, 1928.

It was announced that the following Books had been purchased for the Library:—

City of Nottingham Art Museum, Nottingham Castle. Margidunum: an Account of the Excavations on the Site of the Roman Station on the Fosse Way, near Bingham, Notts. By Felix Oswald, D.Sc., B.A., F.S.A., F.G.S.

Castle and Town: Chapters in the History of the Royal Burgh of Edinburgh. By David Robertson, M.A., and Marguerite Wood, Ph.D. Edinburgh, 1928.

The Skull of Lord Darnley. By Professor William Wright. *Nature*, 5th January 1929.

The Archæology of the Channel Islands. By T. D. Kendrick, M.A. Vol. I. London, 1928.

Life and Work of the People of England. By Dorothy Hartley and Margaret M. Elliot—Early and Middle Renaissance. The Sixteenth and Seventeenth Centuries. London, 1925; also Later Middle Ages. The Fourteenth and Fifteenth Centuries. London, 1928.

South Africa's Past in Stone and Paint. By M. C. Burkitt, M.A., F.S.A., F.G.S. Cambridge, 1928.

The following Communications were read:—

I.

THE EXCAVATION OF THE ROMAN FORT AT MUMRILLS, NEAR FALKIRK. BY SIR GEORGE MACDONALD, K.C.B., F.B.A., LL.D., D.Litt., F.S.A. SCOT., AND ALEXANDER O. CURLE, F.S.A. SCOT., F.S.A.

Printed at the end of the volume.