

## Glastonbury Abbey.

### FOURTH REPORT (1910-11) ON THE DISCOVERIES MADE DURING THE EXCAVATIONS.

BY F. BLIGH BOND, F.R.I.B.A.

#### THE REFECTORY.

THE excavation of the East Alley of the Cloisters, together with a portion of the southern walk, brought the point of operations to the immediate neighbourhood of the traditional site of the Refectory, of which, again, no visible traces remained, though certain general plans were extant, which furnished a rough indication.

These were, primarily, that of Hollar (1655), in which the "aula" of the monks is shown as a rectangular building abutting upon the south side of the cloister for its whole length.

In Hollar's day the great western gable wall of this building was still standing, and he gives it a height of 80 feet, and a breadth of 20 paces, *i.e.*, 58 feet<sup>1</sup> (which we may take to be an external measurement and inclusive of flanking turrets or buttresses). According to the sketch perspective which he gives (on a very small scale) it may be assumed that the building still retained in his day a portion of its south wall also, this being in a ruinous condition, but showing a range of tall windows along this side.

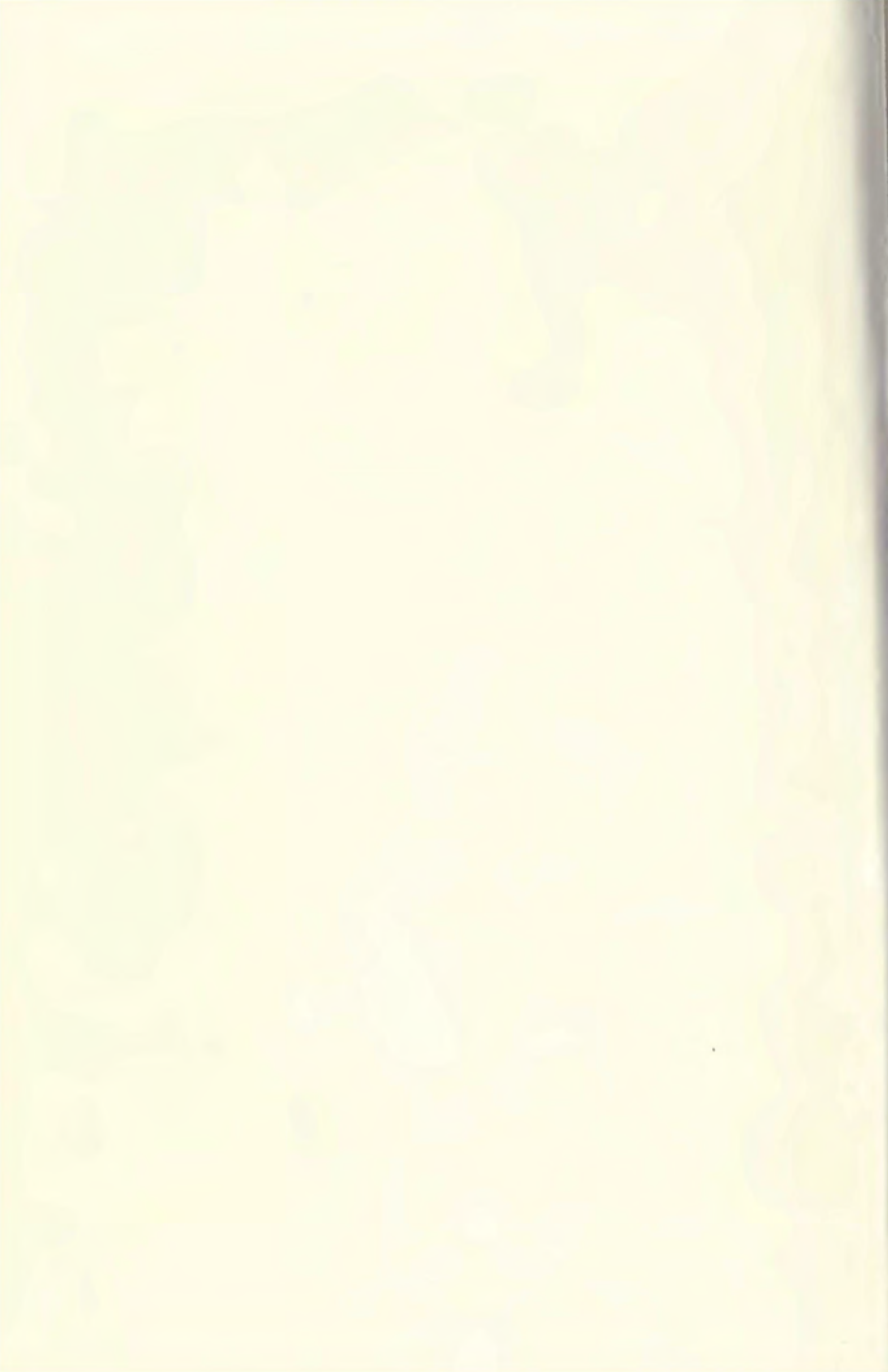
According to Hollar's plan, the Abbot's House stood a little way off, at the s.w. of this building, and the connection no longer subsisted.

1. Aulæ caenobij caput cujus latitudo fuit xx pass; altitudo lxxx ped.

PLATE I.



GLASTONBURY ABBEY. 1911.



Although he does not show it, it is yet certain that, in Hollar's time, the sub-vault of the Refectory was still entire, for we read of its demolition in the early years of the XVIII Century, when it was sold by contract, and the material used for the erection of a local market-house. This is mentioned in records of the period, one of which was noted last year by Mr. John Morland, of Glastonbury, and it is also the subject of an interesting paragraph and sketch embodied in the "Diary of John Cannon, of Mere" (the MS. lately in possession of Mr. Felton, of Weymouth).<sup>1</sup>

After the destruction of this vault, certain of the foundations remained visible for a considerable time, and furnished the date for the subsequent plans figured by Stukeley and Phelps—but no attempt at accuracy distinguishes these plans, which were therefore useful only as a general corroboration of the fact that in this Abbey the Refectory occupied the position usual in great Benedictine houses.

Indeed, these XVIII Century plans are not only inaccurate but misleading, seeing that they suggest a second hall lying contiguous to the first, along its south side—a position which a little reflection would show to be impracticable, seeing that such an enclosure of this large building on the south would not only deprive the Refectory of its best source of lighting, but would make the sub-vault a tomb-like enclosure, without possibility of light or ventilation, since it would then have been built in on three sides, leaving no means of access of light and air except only at the west end.

Now, the length of the Refectory is traditionally given as 111 feet,<sup>2</sup> and a vault of this length, if not illuminated down one side at least, would be a veritable dungeon—unthinkable in view of the useful functions of such buildings. Hence the

1. "A Large market-House built by William Strode Esquire, out of ye ruins of a large Vault in ye Abbey. And a common Tradition goes for that reason they have lost their Market w<sup>ch</sup> before ye Building of it was a fine Market."

2. From transcript of Elizabethan inventory in Warner's "Glastonbury," p. lxxxvi.

interpretation placed upon Hollar's diagram, in which a building free on its south side is suggested, might be deemed correct, and this is borne out amply by the results of excavation.

Contact was first established with this vault at the N.E. corner, where the laying bare of the footings revealed a substantial residue of stonework. The north wall footing, about eight feet in thickness, was found at a level of from two to three feet below the cloister floor, and a good deal of its ashlar face remained on the south side, running down to the floor of the vault, which was discovered at a depth of approximately 4ft. 9ins. below the original level of the cloister floor.

The east wall of the vault was much more perfect, and forms a very interesting feature (Plate I). It stands for an average height of about four feet, and is built of squared freestone rubble, plastered on the face, a section at the N.E. angle rising to upwards of six feet in height, with an angle respond still *in situ* supporting a worked impost, with three chamfered groin-ribs springing from the same, and giving the key to the height of the vault and its general contour. (See elevation, Plate III). The respond stands upon a square chamfered base, and the shaft, which is simply a section of XII Century work, with keeled  $4\frac{1}{2}$ in. roll, and hollow, is 3ft. 1in. in height. This work is obviously a piece prepared for some other purpose (probably for inclusion in a clustered shaft of the XII Century church) and made to do duty here, in conjunction with numerous other fragments of a like date. Upon this rests a 12in. square impost, chamfered on the salient angle and on the under edges, and from which spring a cross rib and two wall ribs. The cross rib is  $10\frac{1}{2}$ ins. in diameter, with plain splays, each 7ins. on face, and a 2in. nosing.

Attached to the east wall, at intervals of about five feet, are a series of ashlar piers with chamfered edges. The chief and central one, dividing this wall into equal halves, is two feet in width, and 10ins. in projection, with chamfers  $3\frac{1}{2}$ ins. on face, and each of the two sections of walling, north and south of

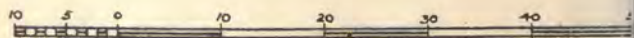
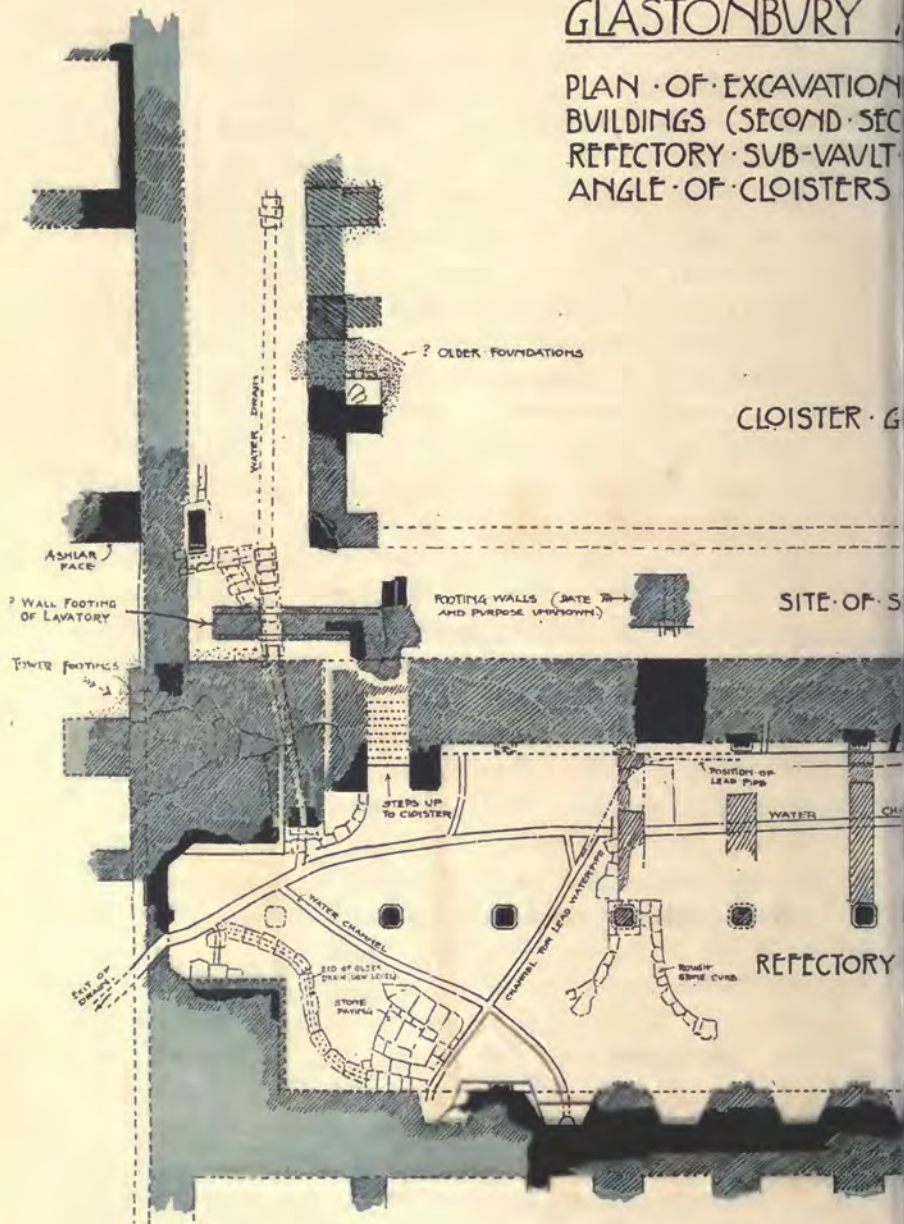
THE HISTORY OF THE

REIGN OF CHARLES THE FIRST  
BY JOHN BURNET



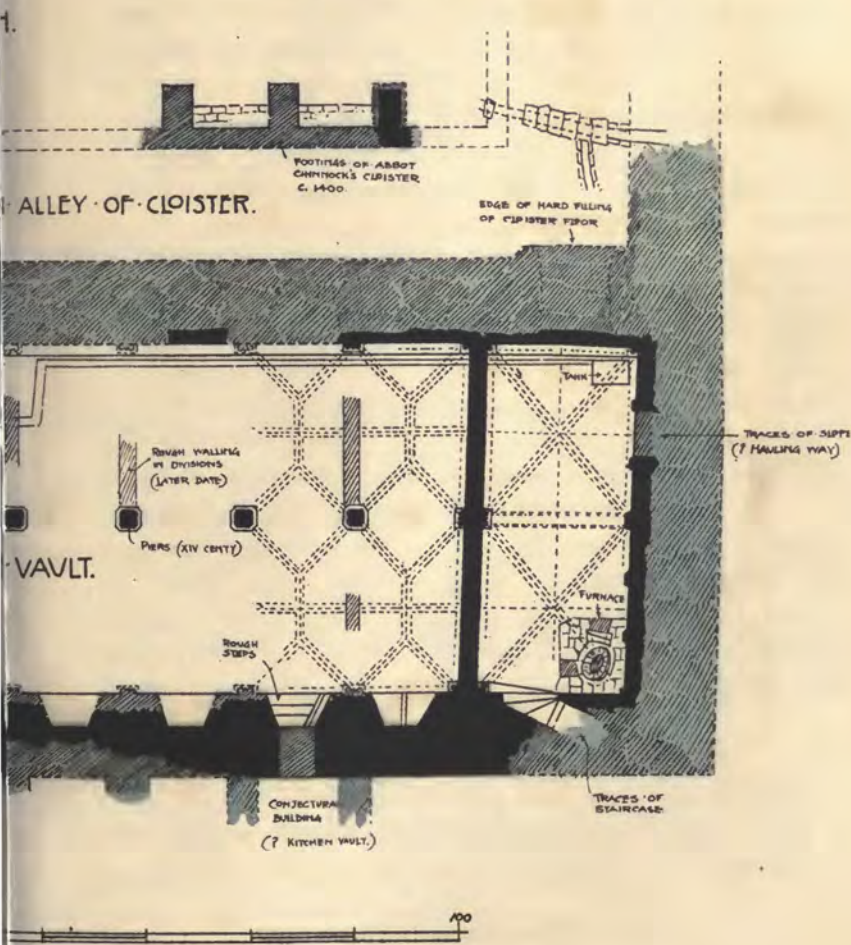
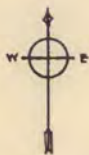
# GLASTONBURY

PLAN OF EXCAVATION  
BUILDINGS (SECOND SEC)  
REFECTORY · SUB-VAULT  
ANGLE OF CLOISTERS



SCALE OF FT

F · THE · MONASTIC  
D) INCLUDING · THE ·  
· SOUTH · WEST

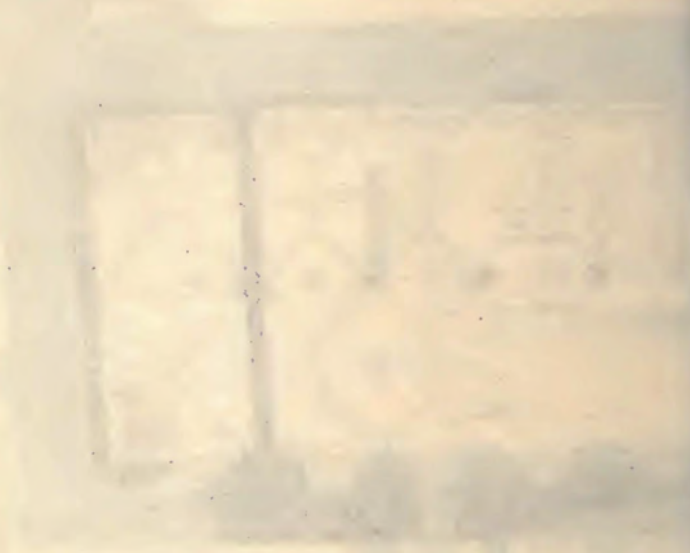
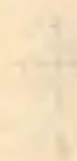




1875

W. H. ...

...



same, is further divided into three nearly equal bays by lesser piers (four in total), about 12ins. in breadth by 5ins. projection.

The central of the northern three bays had the appearance of a partly blocked-up entry, possibly a staircase, but more probably a rolling-way for casks. It was faced up with rather rough ashlar, in large square blocks, to a height of two feet or so above the floor, and there were marks on the stone cheeks of the opening indicative of a former vertical continuation of the filling.

These cheeks ran back in ashlar for a short distance only, about 2ft. 6ins. at a height of 2ft. 6ins., and the bottom edge of the facework finished on a raking line, beneath which nothing appeared but rough rubble facing. This plainly showed that a slope or steps had impinged, the marks being more suggestive of a slope. The filling was partly cleared, and has recently (Oct. 18, 1911) been taken down on one side, with the result that it is shown to be comparatively modern, and consists largely of old window-tracery of XV Century type with some cloister detail built in, in good grey lime mortar, very different from the sandy yellow composition met with in the old work. The inference from these data seems to be that there originally existed in this aperture a slope or rolling-way for casks, but that in later times (after the dissolution of the Abbey) this was pulled out, and the aperture between the piers built up for its whole height with old ashlar work.

In the north wall, close to the N.E. angle is a small orifice for fresh water, which, on discovery, was still running. It empties into a square sinking or dipping-pool in the floor, 3ft. by 2ft. 5ins., and about 15ins. deep, whence a channel in the floor leads the overflow down along the north wall westwards.

#### KILN.

At the S.E. corner of this portion of the vault the remains of a kiln or furnace with two doors were found, having a cup-shaped formation over the fire-doors for a height of

about two feet, at which level the marks of the fire-bars, or grate, are visible in the masonry.

Close to the furnace door came the south wall, in which are traces of a turret stair. The cellar was then cleared to its western limit, and proved to be a narrow one, divided from the main vault lying westward, by a well-built stone partition two feet thick, having ashlar faces, and divided centrally in its length on each face by moulded responds of XII Century type, consisting of twin keeled shafts of 7ins. diameter engaged with a small intermediate roll, and having moulded bases resting on square plinths with pyramidal stops, the whole being very similar to some of the features found in the crypt of the "Galilee" of St. Mary's chapel.

The cellar roof was thus divided into two bays, a northern and a southern one, and these central responds supported the diagonal ribs of both sections.

Another water-channel, still conveying water, was found underlying the stone pavement of the floor at the south end of the east cellar, and this runs through the division wall into the cellar to the westward where it debouches on to the open floor, since the level of the greater cellar is, on the average, about a foot lower than the eastern section.

The width of this eastern enclosure is about 14 feet, a little wider than the cloister alley, of which it forms the continuation in plan, and it appears almost certain that it underlay the avenue from the cloister to the southern part of the monastic buildings, this being the normal position for such a passage, as we see it at Westminster, where the "dark cloister" leads out of the other at the S.E. angle, in a southward direction. The length of the cellar from north to south is 33 feet 6 ins., and this is the breadth of the greater vault beyond.

The height from the floor to the crown of the vaulting as developed from the portion existing is eight feet, which, allowing for the depth of the ribs, and for a further 18ins.

for the thickness of the roof, would indicate a level for the floor of the "dark cloister" of fully six feet above the actual cloister alley. Hence there would have been a considerable flight of steps at the S.E. angle of the cloister, leading up to this back passage-way.

#### THE REFECTORY SUB-VAULT.

The westward side of the division wall was cleared early in 1910, and a drop of about 12ins. was proved to the floor level of the space beyond. Against the centre of the wall another coupled respond was found, back to back with the first, and agreeing in character with it. The plinth stands at a level only 4ins. below the first, and it is probable that the level of the smaller cellar was at one time only by this much higher than the other, and has been since raised, as there are traces of an underlayer of paving, and the northern part of this cellar has evidently been banked up with concrete to retain the water in the dipping-pool and channel.

#### ARCHITECTURAL RELICS.

Among the *débris* at this end of the vault were a number of carved and moulded fragments of Douling freestone. These consisted of : (1) Numerous sections of chamfered or splayed roof-ribs ; (2) Sections of window-tracery, of XV Century character, including traceried transom-bars, as well as arched heads, finely cusped and with bold and good mouldings ; (3) Part of a large door-head, with several orders of mouldings, probably from the cloister entrance ; (4) A good deal of miscellaneous work from the cloisters, including moulded divisional piers, very similar to those at Wells ; sections of vaulting ribs showing sunk tracery, and what appeared to be wall-panelling of a like character (Plate III) ; (5) Portions of a stone screen having trefoil-headed tracery openings, and a very good series of mouldings ; connected with this are fragments of a rich stone cornice, having in its hollow a series

of five-petalled roses of the conventional English type, united by a trailing stem—a very beautiful form of ornament—(Fig. 1); (6) Portions of three or four figures of seated



Fig. 1. Detail of Stone Cornice found in Refectory Vault near the east end, Glastonbury Abbey.

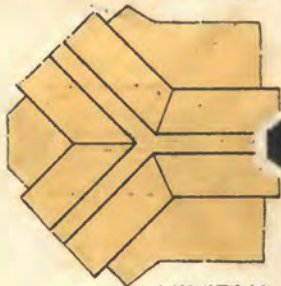
ecclesiastics in full canonical dress, which appear to have rested upon shallow semi-octagonal brackets projecting from the same cornice.

The screen had an inner series of plainly arcuated heads, and from the fact that its fragments were found, almost all of them, lying along the westward side of the division wall of the cellars, it may be reasonably inferred that the screen, when entire, ran overhead between the "dark cloister" and the Refectory, giving light to the former and access to the latter. Upon the screen would have been space for a gallery, and the presence of a "pulpitum" is evidenced by the occurrence of a salient angle in one of the main mullions, showing that the front of the screen was broken forward to form a projecting bay; (7) Some XII Century sections and an XI Century cushioned cap; (8) Numerous flooring tiles from floors at a superior level; (9) An Early English foliated capital in shell marble, discoloured by fire.

#### LARGE VAULT.

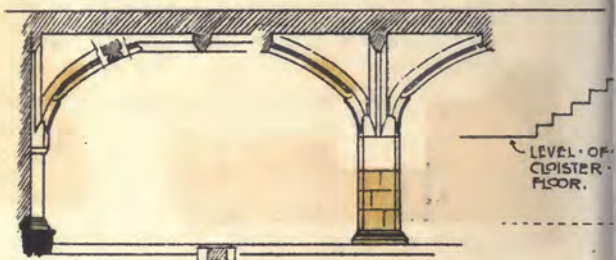
During 1910 almost the entire area of the Refectory sub-vault was excavated, and this work was completed early in 1911, having altogether taken about fifteen months to ac-





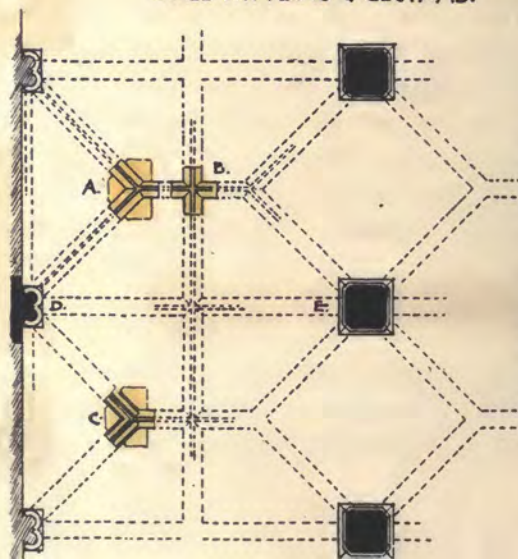
VAULTING RIBS  
AT A.

VAULTING RIBS  
AT B.



5 10 15 20 FEET.

SCALE FOR PLANS & SECTIONS.



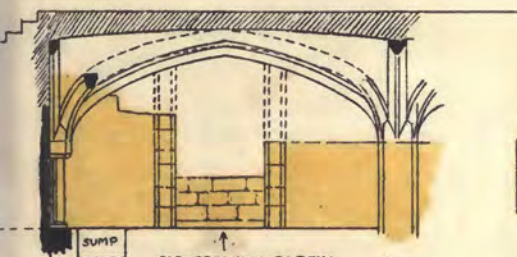
TWO BAYS OF WESTERN  
PORTION OF CELLAR.

SCALE FOR DETAILS.

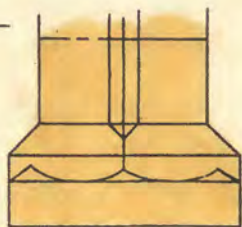
INCHES



VAULTING RIBS AT C.



OLD OPENING PARTLY  
BLOCKED, SHOWING  
TRACES OF SLOPE.



BASE OF PIER  
AT D.



ONE BAY OF HALF  
EASTERN PORTION  
OF CELLAR.



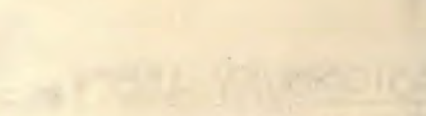
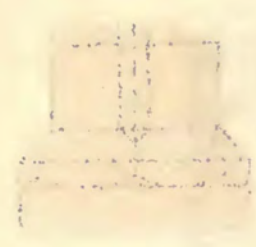
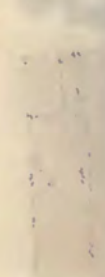
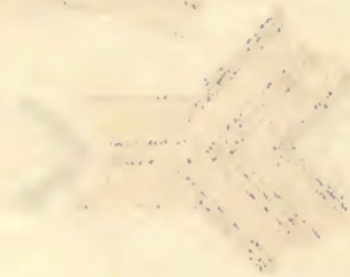
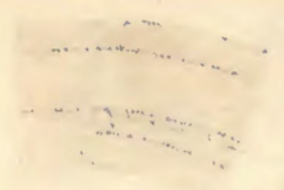
ANGLE OF  
PIER AT E.



GLASTONBURY ABBEY

REFECTORY SUB-VAULT  
PLAN OF GROINING WITH DETAILS





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complish. Sufficient is left of all the walls to determine with accuracy the plan, which shows a vast rectangle, measuring 111 feet from east to west, commencing at the division wall aforesaid.

This area is divided into ten bays of equal, or nearly equal, width, namely 11ft. 1in. or thereabouts, and the span of the vault is divided into two bays of 16ft. 9ins. each by a central series of piers two feet square, of which most of the plinths remain; and these are moulded rather nicely, being executed, some in a granular stone of the Doulling type, and others in a much harder variety, of smoother texture. The long percolation of water in the sub-soil has disintegrated two or three of the eastern plinths, washing out the soluble salts to a marked extent.

The mouldings of the plinths indicate a XIV Century character, and may be the work of Abbot Fromond (1303-1322) who is credited with the commencement, or rebuilding, of the "Aula" or "Great Hall."

The vaulting of the cellars was of a curious nature, and the plan has been, by good fortune, recovered and can be reconstructed with precision. It presents the same abnormality of a flat crown, that we see in the remaining section of the "Galilee" crypt, namely, that the cross-ribs do not meet at a four-way junction at the central apex, but fall short, the northern pair and the southern, each coming to a Y-shaped junction with a straight and flat central segment, which, in its turn, carries the intersection of the longitudinal rib (Plate III). The filling is of tufa blocks in solid pyramidal masses, and the tufa masonry is laced with freestone bands. Large lumps of this material lie about the floor, and still show the curved faces very clearly. In certain states of the atmosphere they still exhaled the strong musky smell of the wine-vault—a fact rather remarkable after the long lapse of years.

The weakness of the flat crowns seems likely to have caused a serious degree of subsidence, if we may judge by the fact

that massive walls of later insertion are visible, crossing most of the bays from north to south, between the pillars. Under the footing-stones of one of these came to light a small silver coin of Henry VI, from which we may estimate the date of these massive insertions.

In one bay are traces of a door of communication close beside the pillar, which has been cut or socketed for a door-post ; and another shows a doorway at about the middle of its southern section. This is the first from the eastern end.

#### THE MONKS' KITCHEN.

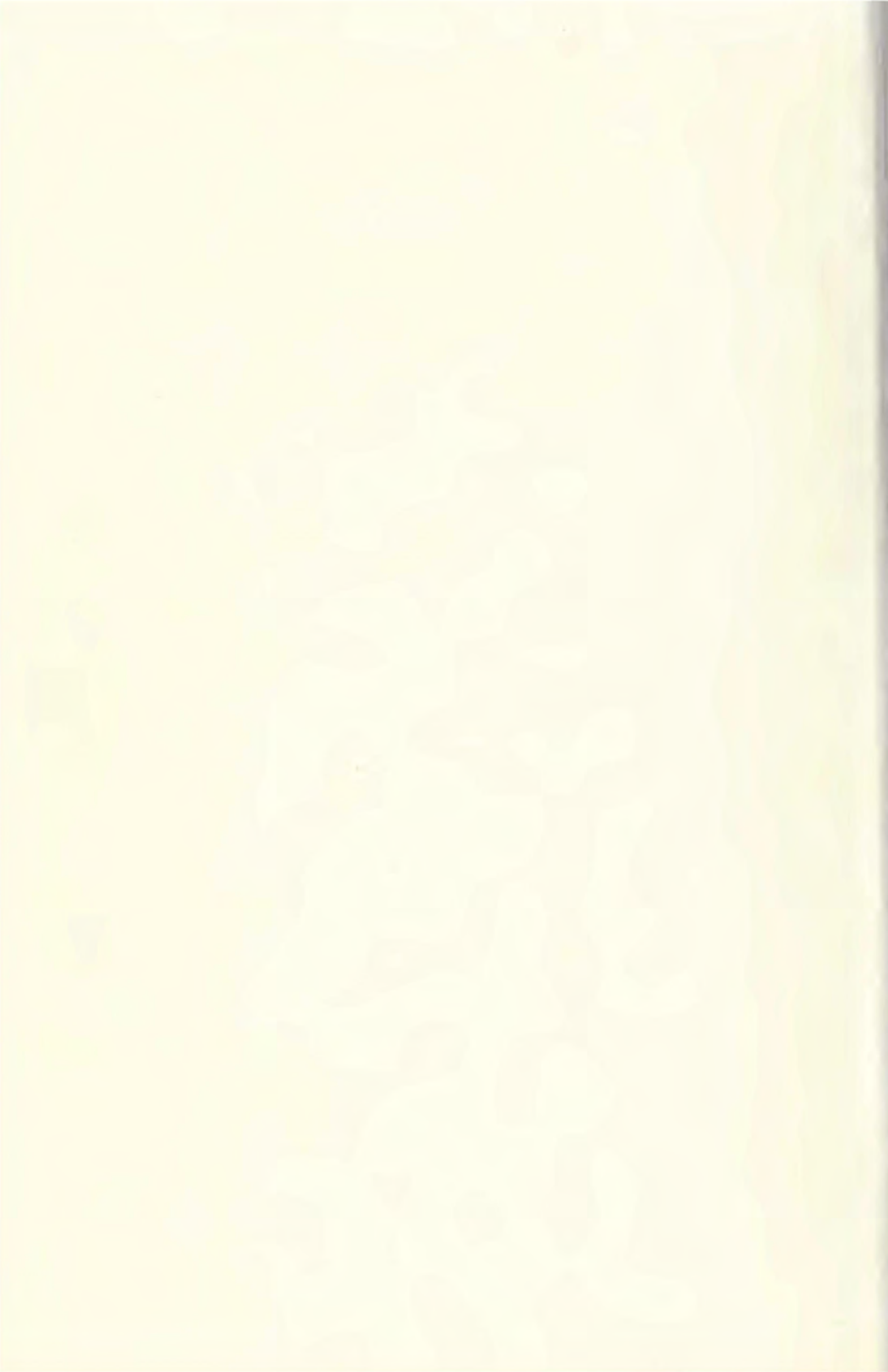
The whole of the south wall, which is very solid, shows the embrasures of windows, which appear to have existed in all but one bay—the second from the east—in which a series of steps takes the place of a vertical wall under the cill-line. Here, also, a gutter-course runs in from the south, and its channel crosses the floor to a junction with the main water-channel. Traces of a building adjoin the south wall outside this bay, and marks of an old kitchen-midden, with fragments of chicken-bones, egg-shells, pikes' heads and bones, oyster-shells, etc., denote the near neighbourhood of a former kitchen. It is suggested that the kitchen of the Refectory may have occupied this site. (Readers will understand that the fine building known as the Abbot's kitchen, still standing at a considerable distance to the south-west, was not built for the service of the community, but for the Abbots and their guests.) The external face of the south wall of the Refectory, where free, shows a roughly-chamfered plinth of lias stone and a shallow buttress breaks between each window.

A little more than half-way down the north side of the cellar, a piece of soldered lead water-pipe was found fixed in the channel near the wall, and the course of this was traced thence diagonally by a shallow channel in the floor, over to the s.w. corner of the building, where the basement of the Abbot's House adjoined. That this pipe brought the



GLASTONBURY ABBEY, 1911.  
One of the Piers of the Sub-Vault.

*W. Tully, photographer, Glastonbury.*



Lord Abbot his domestic supply of drinking water, we cannot doubt. Unfortunately, the small section of lead pipe remaining free has been broken off by mischievous children, so that only the end is now visible. A part, however, is preserved for exhibition in a future museum of Abbey fragments. The raised area of the floor at this point, indicated on the plan by a double concavity, is difficult of explanation, and may, perhaps, mark the site of the fall of a section of vaulting which was not entirely cleared away when the structure was demolished.

At a point close to the n.w. angle of the vault, and in the north wall, are remains of a doorway in which are the marks of a stone stairway leading up to the cloister walk, and a recent clearance of the ground to the northward has revealed massive foundations extending back some 16 feet (inclusive of the thickness of the north wall), suggestive of a building somewhat of the nature of a tower at this point, abutting into the cloister avenue, and possibly containing another flight of stairs, leading up thence again to the Refectory, or still further, to the range of buildings over the west cloister. These foundations give an addition of breadth at the west end, which explains Hollar's measurement of 58 feet for the gable wall of the Refectory. Alongside the northern face of this massive block is another strip of masonry which, from its position, appears in all likelihood to be the footing of a lavatorium against the inner wall of the cloister here. The presence of a high-level water-drain commencing at this point is corroborative. This west wall of the Refectory sub-vault is of great thickness (14 feet) and it is traversed in its centre by a deep recess, about 14 feet wide, forming a bay for light and air, which could have been admitted freely here from the west, where the ground was lower, as the position of an external plinth-course testifies.

The two end sections of the cellar at the west were vaulted in a curious manner, having only the springers and crown in

the plain splayed section, and growing out of these, by quaint elbow-like junctions, are seen the double rolls and hollows of the XII Century section used in the great church (Plates III and v). There is a pillar here standing to about three feet above the plinth (Plate IV), and around it were found, in good order, the rows of voussoirs almost in the position in which they fell, and the Y-shaped junction-stone to the south of the central line. This series has been turned over on its back, and laid out to show the plan of the vaulting.

The western part of the crypt shows a floor raised one step above the rest, and there are evidences that this was a later improvement, since a lower set of floor-drains, disused and built over, are in evidence at the western end.

The principal channel was covered by the flooring slabs, under this part of the cellar, but is only an open gutter for the former part of its length, the paving being dished very neatly for the purpose.

Quite near the west wall, several sections of excellent window-tracery (late XIV or early XV Century in type) were found, bearing marks of fire, and I believe these must be from the Refectory windows. Other fragments of the same order and series came to light at different points, and, from a study of these pieces, a fairly approximate reconstruction of the pattern of these windows may be made. Plate v shows some of these fragments of tracery, also a few sections of the curious vaulting-rib, set up for better observation.

#### ENCAUSTIC TILES.

The examples found of these were numerous and interesting, and must be the subject of a special communication. They vary in every essential character, and are, obviously, of all dates. One is a border- or dado-tile, being the representation of armed knights on horseback, of XIII Century pattern.

There is one small piece of foreign work—part of an arabesque, in brilliant glaze, of buff, blue and black. In the



GLASTONBURY ABBEY, 1911.

*W. Tully, Glastonbury.*





floor-tiles of native make, many variants in the quality of manufacture and design may be noted, from the roughest to the most refined, and in some cases there are three or four such variants of a single design.<sup>1</sup>

One freestone fragment remains to be specially mentioned. It is a shield bearing the cross and martlets of St. Edmund of Canterbury, and in its original position would have capped a circular shaft against the wall, being supported by a carved angel. Such an ornament may very well have formed one of a series along the Refectory wall, at the height of the string or cornice, and it is likely that they would have acted as corbels to the roof-trusses, since it may be regarded as almost certain that the Refectory roof was a timber frame, and not a stone vault.

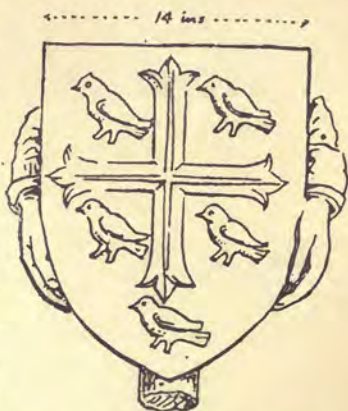


Fig. 2. Stone Shield with Arms of St. Edmund of Canterbury, Glastonbury Abbey.

The season 1910-11 witnessed, in addition to the excavation here detailed, the recovery of the foundations of the Dunstan Chapel, and of the great North Porch of the Abbey Church; but the description of these interesting features is necessarily held over until next year, owing to exigencies of space. A short popular account of them has been allowed to appear for the satisfaction of visitors to the Abbey, and is on sale locally.<sup>2</sup>

1. From the abundant presence of spoilt tiles, warped or vitrified, some bearing marks of having been used up as building material, it seems clear that the source of these was local, and the circumstance inspires a hope that the original kiln of their manufacture may be found within the Abbey walls. The local clay is suitable for the work, and a brickyard existed within the enclosure about half a century ago.

2. "Recent Discoveries at Glastonbury Abbey" (Goodall, Glastonbury, price 6d.)