

## Glastonbury Abbey.

### SECOND REPORT ON THE DISCOVERIES MADE DURING THE EXCAVATIONS, 1908-9.

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THE account of the first season's work, as recorded in the *Proceedings* of the Somersetshire Archæological and Natural History Society for 1908, covers a period of seven months, ending about the third week in December of that year. To summarize the principal results, it may be said that as a consequence of the excavations undertaken by the writer on behalf of the Society, there had been discovered at the east end of the Abbey Church the footing walls of a rectangular chapel whose longitudinal measurement, when added to that of the church itself, yielded a total interior length rather less than 570 feet, demanding, as then appeared, an addition of something over 24 feet to bring it into harmony with the total measurement of 594 feet given in the Elizabethan inventory quoted by Warner, which was regarded as an interior measurement. It seemed also that a further extension might be looked for on the following grounds.

(1). The statement made by Leland, that Abbot Whiting had "performed some part" of the building of Edgar's Chapel, which might be read as implying an extension of, or addition to, Bere's work.

(2). The fact known to the older antiquaries of the XVIII or previous century that a retro-chapel with an apsidal end, whose original dimensions indicated a considerable length, existed in this position. This fact is recorded in the old plan preserved by Warner, in which the retro-chapel with its apse is marked in dotted lines to the east of the retro-choir, and a second plan of the same chapel (also with apsidal end) but of a very different length, and marked "the retro-chapel according to its original dimensions," is also figured on the sheet.

(3). The clear statement of Hearne and other antiquaries that the total length of the Abbey was 580 feet.

(4). The measurement of length for this chapel, given by the Elizabethan commissioner as 90 feet; a figure doubtless approximate only, but too greatly differing from the revealed dimension of the rectangular footing to be reconciled with it.

Largely in view of these reasons, therefore, the writer put forward a plan, Plate I in last year's *Proceedings*, in which a further anticipated extension was shewn in dotted lines, projecting eastward from the discovered footings, an angular form being suggested instead of the vague semi-circular one given in the old plan of the Abbey.

This was done, as the form seemed more probably correct, being more consonant with the XVI Century practice in building.

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The footings of the rectangular chapel having been cleared, together with the foundations of the buttresses, a sharp rise in the clay bank was encountered, and a face of hard clay, nearly vertical, several feet in height, was exposed, stretching across from north to south just clear of the line of the eastern buttress footing. (A to G on Plan).

The southern part of this presented a front parallel to the footings of the east wall of the chapel—that on the north fell back slightly, giving rather more room at the north-east angle than was required for the footings, but an inspection of the



whole of the base footings of the east wall and its buttresses revealed the fact that owing to a wrong setting-out, these had been laid in at a very incorrect angle, and the necessary correction had been made on the superior footing which thus diverged greatly in its direction from the lines of the foundation on which it stood. This difference has been carefully preserved in the restoration of the footings (A, K, J, etc., on Plan), and may be seen at its greatest in the foundation of the buttresses at the south-east angle and first bay of walling on the south.

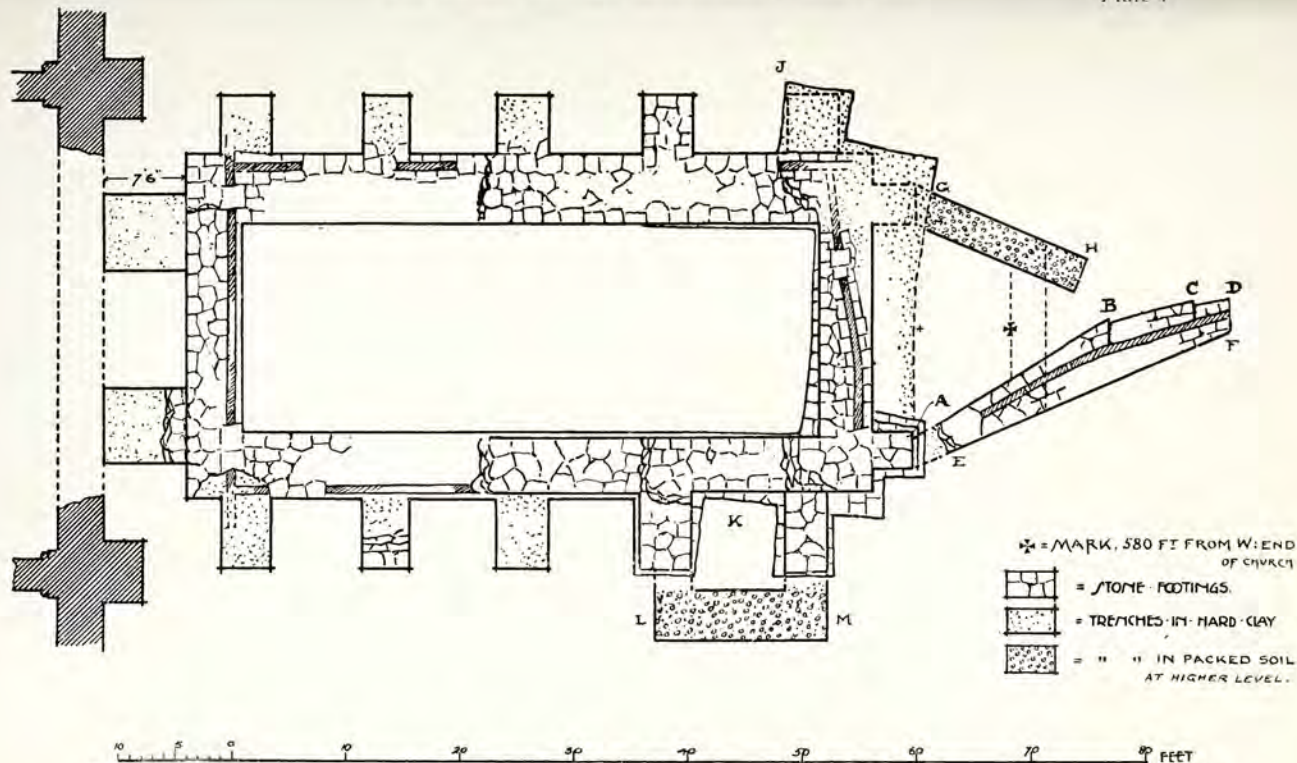
The error is so excessive as to point to some great carelessness in setting-out, since the theory of a deliberate change in direction is untenable.

The uniform surface of the clay bank to the eastward of the chapel footing having been exposed, it became possible to make a closer examination of this, with a view of discovering any possible trace of an extension. The south-eastern buttress shewed a well-built square return, without any trace of a toothing or junction for further building. (A on Plan).

That in the north-east had been taken down so completely that only a few stones remained in the trench, and the sharp sinking in the clay, whose sides formed the building trench, were the sole positive guide to the form. Here therefore no evidence of a junction could be expected.

The clay bank to the east contained no trace whatever of old trenches filled in—in fact it was quite undisturbed throughout; but above it there was a superincumbent layer of compacted rubble some feet in depth, and it became evident that if any further footings existed they must be looked for in this upper stratum.

The clay bank represented a natural rise in the subsoil, whose face had been trimmed vertically to avoid stepping the footings at this point, and to give them a depth more in keeping with that of the rest. Evidently however any continuation of footings must be far shallower, as the clay rose upwards of 4 feet above the lower level.



Complete Plan of the footings, including those of the presumed Apsidal Extension discovered subsequently to the publication of the 1908 plan, which showed the same feature in a conjectural form.





The first examination of the face of the rubble filling over the clay yielded no clue, although it was to be expected that, following the habitual precedent, any trenches for apse footings should have been immediately visible by nature of the material they contained, *i.e.*, freestone débris and sand, instead of dark rubble and clay.

Just before the New Year however, in bright sunlight, a faint brown discoloration became visible in the bank as a vaguely rectangular patch a little to the north-east of the point opposite the south-east return buttress. The face was dug out for a slight depth when the marks of a trench became visible, and about 2 feet within, the remains of a stone foundation were revealed. (E on Plan).

On opening up, this proved to be a substantial footing of 3 feet width gradually widening out as we followed it, and trending in a north-easterly direction. The outer edge was the best marked and was inclined at an angle of approximately  $65^{\circ}$  with the lateral axis of the chapel. On uncovering the top surface the wall appeared to be double, the inner section diverging inwards so that at the point marked B on Plan it had spread to a width of 5 feet.

The interior of the wall was afterwards cleaned out, and found to contain a square drainage channel, similar to those discovered below.

This seemed to account for the increase of thickness towards its eastern end.

A similar wall was searched for on the north side. The bank was once more examined, and a very faint mark was detected in the same position relatively to the footings westward of it.

On working inwards, the clear evidence of the former existence of a wall was encountered, as the trench was found, and this was well and clearly marked, of an uniform width of 3 feet, with smooth level bed, terminating with a square face and shallow step at the east, and filled with the usual conglomeration of freestone débris, containing fragments of carved

or moulded stone and encaustic tile, and little bits of stained glass. (G, II, on Plan).

The inner side of the trench was, however, formed in the made ground over the clay, and presented the appearance of having been filled in and consolidated by pressure, rather than cut in plastic or cohesive material, like those of Bere's work below. This was additional evidence that at one time a wall had existed in the trench, for if the trench had been excavated with the spade it would, in view of the want of cohesion in the rubble soil, have been rough and well nigh formless.

But if viewed as a trench formed by the packing of rubble and earth against an existing wall, then, on the removal of that wall, would be seen just such a regular face as was here encountered. The filling of loose freestone and building refuse in the trench was however quite good evidence of a former building, and the situation of the trench was such as proved it in all essential respects a fellow to the other.

The sides were parallel, and inclined at an angle of  $67^{\circ}$  or thereabouts to the lateral axis of the chapel, the difference in inclination between the outer line of this wall and that of the wall on the south side being too slight to affect the symmetry of the building over. The error is far less than that found in the more carefully built walls of Bere's chapel, and in any case it must be remembered that these represent the bottom course of underground footings and, as such, would not necessarily shew any great precision in setting-out.

Something in the nature of a damp-course of thin slabs or flagstones remained, covering the westward end of the wall on the south side, but over the spreading portion it had been removed. Along the edges of the water-drain or channel, which was about 9 inches square in section, it was easy to see that a series of flat cover-stones had been removed, from the irregular depressions remaining in the surface of the masonry.

The extra thickness was probably carried no higher, and



there is no reason to suppose that the superincumbent wall was otherwise than regular and of normal thickness.

The two converging walls marked the sides of a theoretical apse of semi-hexagonal form, and the next thing necessary was to search for evidence of the cross wall which should unite them, and mark the eastern face of the apse.

The ground between was excavated and found to be filled with loose soil, but no trace of walling appeared. The filling was of a very mixed nature, containing a few fragments of building refuse, and it was evident that there had been general disturbance of the soil at this spot. A few small remains of encaustic tile and glass were gleaned from the mass—but nothing considerable. Some of the glass was of a different nature to that which had previously been encountered, being much thicker, of a beautiful azure-blue colour, figured with geometrical or scroll-like forms in a grey semi-opaque line, whereas the glass generally found was thin, richly painted with opaque colour, having a deep-red brown surface tint, and of a most perishable nature, going to pieces at a touch.

In Kerrich's *Diary*, to which allusion was made in the former paper of this series, there is a notice of a discovery which took place about the year 1813 upon the lawn of the Abbey House, at a spot which, to judge by the rough sketch which the writer gives in his journal, may be deemed to be not far from the position of this apse. Here, says Mr. Kerrich, a great find of encaustic tiles, glass, and architectural fragments was made just under the grass of the lawn. He indicates on his plan a roughly circular patch. This discovery, which we may be sufficiently sure was but the prelude to a wholesale removal of the objects discovered, would, if the locality were identified, sufficiently account for the disturbed condition of the area within the apse and the loss of the walling at the end of it.

Marks of a trench shewing the position of a former east wall were sought for, but without success. The only sign detected



of the position of such a wall was at a point a little further to the east than the corresponding termination of the northern trench, and approximately 20ft. 4ins. from the angle of the s.e. return buttress of the rectangular chapel.

Here the stone fell away on an alignment roughly north and south, and the excavator reported the termination of the wall. This point is marked on the Plan (Plate I) by a line drawn across the inner part of the wall (inside the drainage channel). As the cutting here was in stiff clay there seemed little likelihood of a further extension (since all the trenches hitherto met with have been filled with loose material). But recently it has been thought better to obtain more absolute data, especially with regard to the drainage channel which did not shew any bend or termination.

The result of the recent excavation has been to lay bare a further extension of rough walling, 8 feet in length and of a width of nearly 5 feet, within which the drain is continued, currented apparently in an easterly direction, and bending slightly to the south of its original trend (*vide* plan). Beyond this again the drain has been traced for a further 4 feet, where it runs into the deeper ground beneath the boundary fence. Here the thick wall ceases, and a narrow section commences, as will be seen by the plan. (B, C, D, on Plan).

It would be highly interesting to carry this investigation further, as the mass of clay filling above shews the work to be of ancient date. A deep shaft was sunk sometime ago in the ground immediately to the south of this part, and it shewed a deposit of stiff clay to a depth of 10 feet where a deposit of blackened stakes and bones was encountered, similar to that which was subsequently found crossing the Edgar Chapel, and is described on a further page. The wall containing the drain lies of course at a height far above this deposit, and only a few feet to the north.

The nature of the ground on the other side of the wall yet remains to be determined, but, on present evidence, the wall



THE EDGAR CHAPEL, GLASTONBURY ABBEY, 1909.

Bird's-eye View of the restored foundations.

(From the N. pier of the Choir Arch).

*From a Photograph by F. Bligh Bond.*





would appear to be of the nature of an old boundary or retaining wall, perhaps on the edge of a moat or ditch of by-gone days—and upon the western end of which the apse of the chapel has been constructed, with due addition of thickness.

Although the search for the missing east wall of the apse was not successful, yet the position of the two converging footings was such as to suggest the former existence of a three-sided apse as the most reasonable theory to account for their existence, and in this connection the break in the masonry of the southern wall, with the occurrence of stiff clay filling immediately beyond it, may be read as corroborative.

There remained one other problem, whose solution might yield proof of the correctness of this theory; namely, the estimation of the true length of the chapel. The question arose: "Would it not be possible, on existing data, to arrive at the true position of the missing wall?"

To attain this result it would be necessary first to re-measure carefully the interior length of the Abbey in its several parts, then to compare these measurements with those given in the Elizabethan inventory, and write off any difference found in the latter, so that the general total of 594 feet should be tested, and if proved wrong, discarded, or, at least, modified.

The result would then have to be compared with the general measurement of 580 feet given by Eyston and quoted by Hearne,<sup>1</sup> and a just estimate of the length arrived at. If the resulting estimate of length were found to bring the true interior measurement to such a point as would yield a symmetric figure of three equal faces for the apse, then the proposition might be regarded as proved.

The series of individual measurements of the Abbey were accordingly most carefully taken, and the comparison duly made, with the result that the Elizabethan commissioner was proved to have been short in his paces, for he made the choir

1. See Hearne's "*Little Monument, &c.*," also "*A compleat and authentic History of the Town and Abbey of Glastonbury,*" by a Physician (XVIII Century).

5 feet longer than the actual measure, and the nave 4 feet longer.

Evidently, therefore, at least 9 feet must be deducted from his total of 594 feet, and probably more than 9 feet seeing that a proportionate discount might very reasonably need to be taken off his estimate of the length of the Edgar Chapel ('Chapter House'), which he puts at 90 feet.

We thus find our true total approximating to that other recorded general measurement of 580 feet or 200 paces—a measurement authenticated by a careful writer of old days, and accepted by others following him, so that this dimension has been handed down and even until the present year has appeared in the pages of a popular guide.

It may be conceded that Elizabeth's commissioner had a far more tedious task in attempting a general measurement of the whole interior of the Abbey than the antiquary of 150 years later, for in the former days the frequent obstacles which must have existed, in the shape of screens, reredos, tombs, flights of steps, etc., would have rendered accurate pacing well nigh impossible, whilst later, the visitor to the ruins would find the way lying open before him through the levelling and clearance of the smaller features.

Hence it is reasonable to prefer Hearne's measurement of 580 feet to the 585 or less which our analysis of the Elizabethan total now leaves us.

On this assumption a careful measurement of 580 feet was made along the central axis of the Abbey Church, from the interior face of the west wall of St. Mary's Chapel, to the eastward, and a stake placed at the point reached. A line drawn through this point north and south to a junction with the two converging side walls was found to give a symmetrical figure to the apse, and thus bore witness to the accuracy of the old statement.

The central axis of the Abbey Church, on which the measurements were set out, lies almost true east and west, and



the Edgar Chapel is very symmetrically placed in relation to it, being in this respect very different from the old chapel at the west end which is oriented rather to the north of true east.<sup>2</sup>

The centre line of the Edgar Chapel was carefully laid down and produced eastward through the apse, with the result that the angular divergence of the two side walls was definitely ascertained, and the real symmetry of their outer edges demonstrated. The fan-shaped spread of the south wall brought its furthest point to within a few inches of the axial line produced, but its outer corner lay 6 feet from the centre, whilst that of the north trench lay about 6ft. 6ins. out.

The clearance of the south side of Bere's Chapel revealed the presence of an old footing trench running parallel to the south wall, at a distance of about 9 feet from it, and united to the two last buttresses to the eastward by cross-trenches for junction walls. (L, M, on Plan). The footings were on a much higher level than those of the chapel, and were filled with loose freestone dust, all masonry having been removed. They apparently denoted the position of a sacristy or perhaps a small chantry chapel attached to the Edgar Chapel at this corner. It will be remembered that similar small attachments between the buttresses are to be seen in connection with other buildings of this nature and period, such as the Lady Chapel of Gloucester Cathedral.

A word must be said as to the levels of the chapel floor. The fact that all the walling encountered was underground masonry, or footing wall, and the second fact, that at the eastern extremity, the remains of walling approached an elevation of 7 feet above the level of the choir grass, shew that, at all events at or near its eastern end, the floor of the Edgar Chapel could hardly have had a less elevation than 8 feet above the floor of the retro-choir. This implies that the approach contrived by the builders through the middle space of

2. Like the Parish Churches of Glastonbury, and that of St. Michael on Tor Hill.

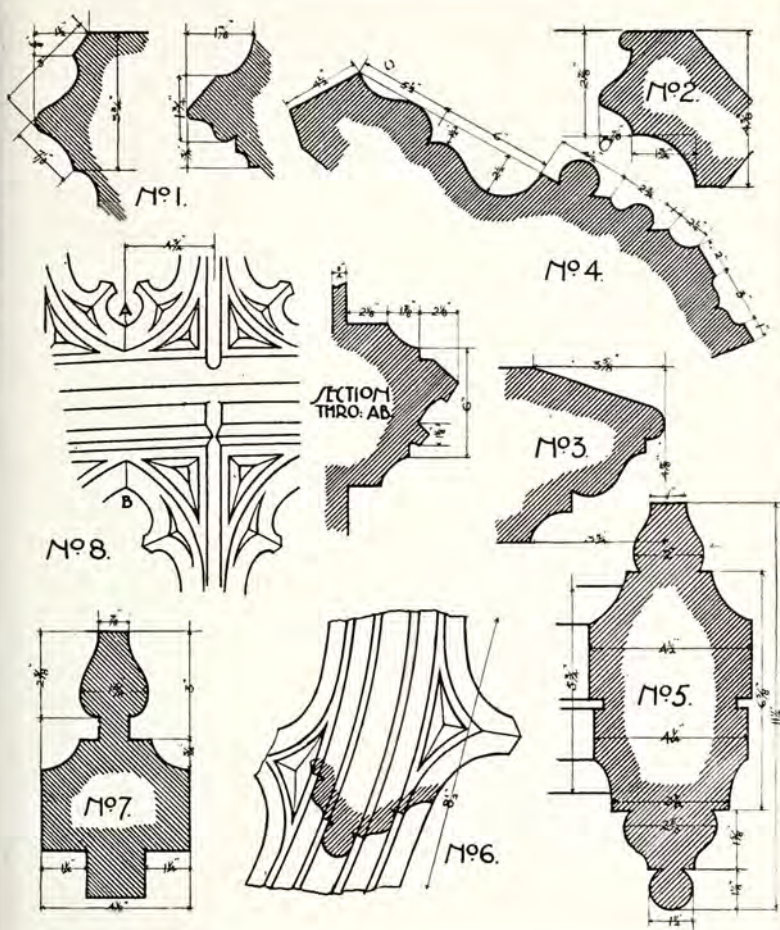


the five chapel divisions of the retro-choir must have assumed the form of a staircase of many steps.

It would appear then, that in order to contrive a proper approach to his new chapel Abbot Bere had made use of an original chapel which existed here, and having gutted it and removed the east wall, formed it into a passage way. There is ground for believing that this original chapel would have projected about 12 feet beyond the outer line of the east wall of the Abbey Church, as the footing trenches which were encountered at this point are uniform in depth and approximately also in width with those of the existing walls of the retro-choir, and seem to be a continuation of them. The cross wall, which forms the west wall of the Edgar Chapel, is also laid at the same depth, but immediately beyond this there was found a sharply cut rise in the clay which strongly suggested that the older building must have terminated at this point. All the foundations of the Edgar Chapel lying eastward of this point are much shallower, especially on the north side where they at once rise to a level of 3 feet above that of the west wall, and are thence graded upwards to the east. The bottom of the footings of the east return wall of Bere's Chapel were found at a level very little below that of the Abbey choir floor, and was about 5 feet above those of the west wall of the Abbey walls adjoining. Professor Willis, in his "*Architectural History of the Abbey*," published a plan in which just such a central projection is shewn eastward of the retro-choir as is suggested by the levels discovered.

*Architectural Details.* Many of the fragments of stonework discovered in the trenches were sufficiently perfect to give a very fair idea of the general nature of the mouldings and the form of some of the principal architectural features. A selection of these is given in Plate III, in which some of the mouldings are drawn to scale. They include the following :—

1. A moulded capping, as for an octagonal or semi-octagonal pier.



GLASTONBURY ABBEY.

Architectural Details from the Edgar Chapel Excavations, 1908-9.





2. Another capping, probably of similar form.
3. A moulded cornice or internal string.
4. A massive jamb, probably part of an archway.
- 5 and 6. Section of mullion and elevation of fragment of tracery of the windows.
7. A vaulting-rib, suitable for light fan-work.
8. A portion of the tracery panels of fan-vaulting, without doubt a part of the roof of the chapel (section and elevation).

A large number of further details have been rescued, but these are in a fragmentary state and will need careful measurement and study before their real nature can be stated.

Perhaps the most interesting stone discovered is that which is now preserved in the middle of the chapel. It is a large boss which clearly once formed the intersecting point of a series of ribs united at the crown of the vaulting. On the lower side are the remains of undercut carving, sadly mutilated but still shew traces of a remarkable depth and richness of treatment. The upper side is flat and contains a lewis hole, and radiating from the centre are the grooves cut by the mason as a key to the position of the twelve ribs whose intersections are worked upon the stone. Four main ribs are shewn at the four cardinal points, and between them eight lighter ribs.

*Restoration of the Plan.* The true position of the footings of the Edgar Chapel having been ascertained either by the discovery of the original stonework, or by the record yielded by the clay sides of the trenches, it was decided with the concurrence of the Abbey Trustees that the whole plan should be permanently recorded and rendered intelligible to all persons concerned, by the laying out of the line of the foundations at a convenient level above the surface of the grass. To do this it was necessary to bring up the level of the deeper footing to the surface, and at the same time the space inside the walls was levelled down and the eastern parts of the footings with their substantial masses of old walling were properly exposed to view. As a necessary protective measure these were re-pointed

and their upper surfaces covered with an additional layer of stonework flushed up with cement, the whole of the lower portion being finished at an uniform level in a like manner, thus making the plan complete. The high-level footings of the work in the apse and annexe on the south side of Bere's Chapel, conjectured to be the work of Abbot Whiting, were treated in a like manner, only a portion of the original wall on the south side of the apse, with its drainage channel, being left in its original state for the present by request of the Trustees. In order to prevent the disintegration of the high clay bank on which these portions rested, it was faced with dry masonry, without mortar, and this walling of dry stones will be seen in the photograph (Plate II) running right across the site between the rectangular chapel and the apse, with a return at the south-east corner. The wall of the interior space of the chapel was cut down to a level surface uniform with the choir of the Abbey, and this involved the removal of virgin clay and marl for an average depth of 1 foot and of a superincumbent layer of old rubble filling which rose several feet higher. In the removal of this material the mark of an old trench or hollow depression, full of refuse, was cut through, and this was found to contain remains of bones, pottery, and fragments of stakes or hurdles thoroughly blackened, and bearing traces of *vivianite*, pointing to the fact that a settlement must have existed here some centuries before the chapel was built. The fragments of a circular shaft was discovered embedded in a vertical position upon a flat stone exactly half way between the north and south footings of the chapel, and this appears likely to have been a mason's mark for the rough setting out of the chapel.

The remains in this excavation were seen by Mr. Arthur Bulleid, F.S.A., and the pottery was examined by Mr. H. St. George Gray.

Mr. Bulleid wrote as follows on January 31st, 1909:—"I paid the Abbey a visit, but could not make out anything definite about the deposit of black earth, etc., in the Edgar Chapel. The deposit was about a foot thick in its deepest part, and contained pieces of wood lying horizontally; one or two



small fragments of oak appeared to have been cut square, but the majority of pieces looked like brushwood. Mixed up with the deposit were a few ox, sheep and wild boar bones, none of which were charred so far as I could make out.

Mr. Gray wrote as follows on July 23rd, 1909 :—" The six fragments of unglazed pottery found below the level of the foundations of the Edgar Chapel, 1908, have been sent to me for examination. They consist of a rude, brittle, hard-baked quality of earthenware containing a large percentage of small grains of quartz, and typical of late Norman or mediæval times. The fragments are of quite a similar character to mediæval pottery which I found at Castle Neroche, near Taunton, in 1903, and in the mediæval deposits of silting in the great fosse at Avebury, North Wilts ; and similar also to fragments which I have examined from Castle Orchard, Pen Pits, Somerset ; from Downend, near Bridgwater ; from Maddington Church, Wilts, etc. There are two pieces of rim among the Glastonbury Abbey fragments. One is ornamented on the top of the rim in a similar style to the fragment from Castle Neroche figured in *Proc. Som. Arch. & N. H. Soc.*, XLIX, pt. ii, Pl. iii, fig. 10. The other fragment, the rim of which is ribbed lengthwise, *may* possibly be of earlier date than the other five pieces ; but, on the whole, I think it should be ascribed to the same period as the other fragments found in the same position."

*Other Excavations.* In addition to the site of the Edgar Chapel, some research was made in the choir of the Abbey with the object of determining the dimensions and position of the High Altar, and the plan of the east wall of the choir proper. The result was successful and will be detailed in a subsequent communication.