EXCAVATIONS AT CHALICE WELL, GLASTONBURY

BY PHILIP RAHTZ

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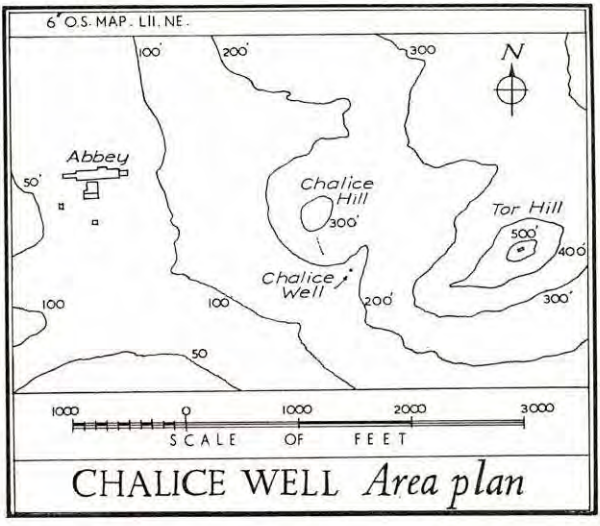


FIG. 1 *Crown Copyright Reserved*

SUMMARY. This report describes trial excavations around Chalice Well; the well was possibly a small free-standing structure built over a spring; it is probably of early medieval date, though additions have been made in more recent times. The area was frequented in Mesolithic times and a few Iron Age, Roman and medieval sherds were also found.

INTRODUCTION. The excavation was arranged by the Chalice Well Trust and was financed by the Russell Trust through Mr. David Russell. Its aim was to determine whether any archaeological evidence could be found which would substantiate the numerous traditions that the Chalice Well was a nucleus of early Christian settlement. Four men were employed for six weeks during May—July of 1961. I should like to thank Major W. Tudor Pole, the Chairman of the Trustees of the Chalice Well, and Mr. William

Higgs, the resident Trustee, for their co-operation and useful advice in carrying out this work; the staff at Chalice Well for their hospitality and lively interest and assistance; voluntary helpers, particularly the boys of Glaston Tor School who, under their master, Mr. Charles Frear, helped with the digging; Margaret Gray, who supervised the excavation and recording; Dr. C. A. Ralegh Radford, who has given me advice and encouragement throughout the excavation and in the preparation of this report; and the specialists who have contributed scientific and other appendices.

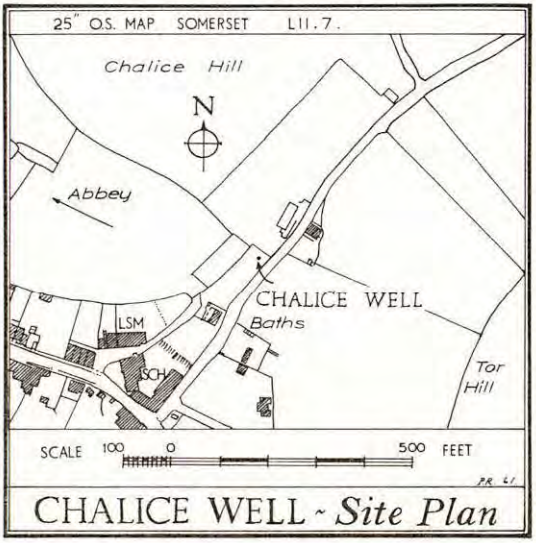


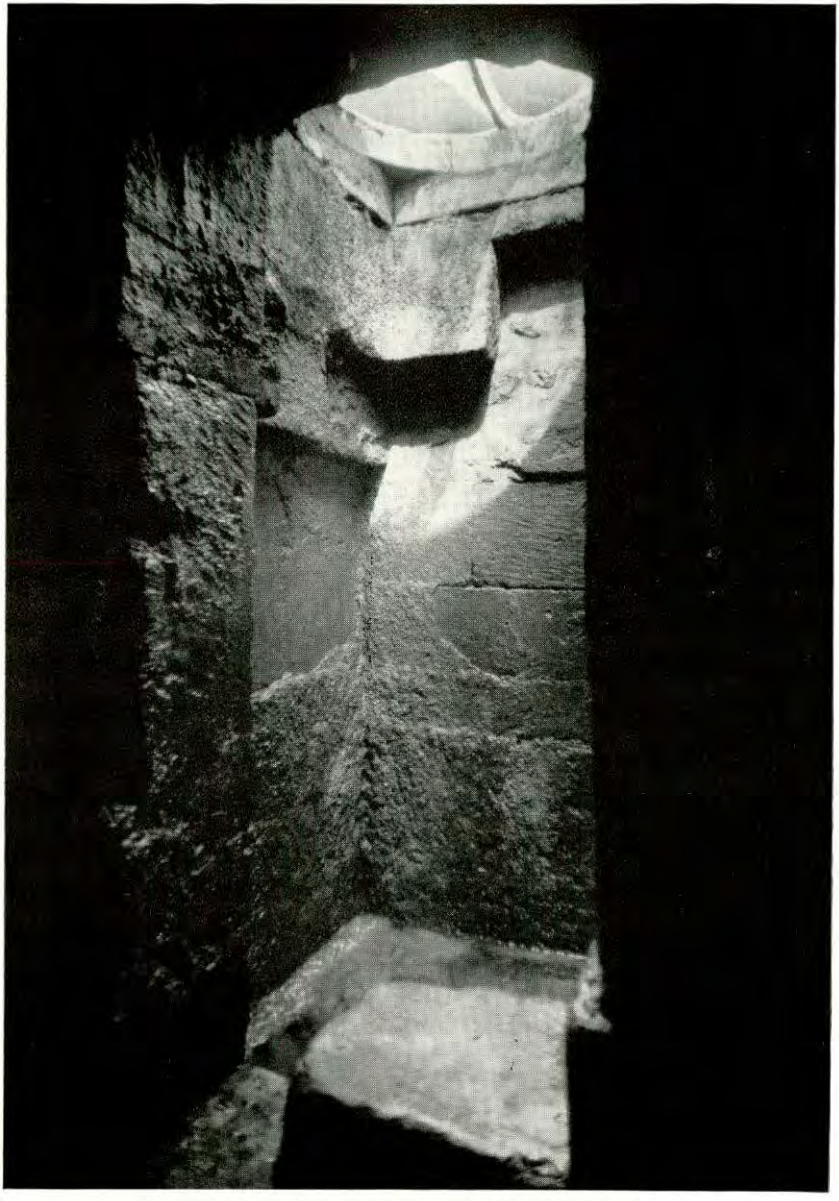
FIG. 2 *Crown Copyright Reserved*

THE SITE. (Fig. 1—Area Plan and Fig. 2—Site Plan). Chalice Well was built over a major spring yielding some 25,000 gallons each day which rises from the lower part of a deep cleft cut between Chalice Hill and Tor Hill, just below the 200 ft. contour.

THE GEOLOGY. Dr. M. Curtis, Curator of Geology at the City Museum, Bristol, visited the excavation; the following paragraph is based on his observations.

The upper part of the cleft cuts through the Middle Lias strata, but the lower part reaches the Lower Lias. Rocks of Middle Lias age

PLATE XV



CHALICE WELL, GLASTONBURY — The Interior of the Well

Well-houses at Mount Grace Priory, Yorks (p. 159)

Photos.: Martin Biddle

were seen *in situ* in the three highest trenches (3, 4 and 6 in Pl. XVII A). These consist of yellow micaceous sandy shales, with some harder bands and containing abundant belemnites. An impression of the ammonite *Pleuroceras* was found in the highest trench (3 in XVII A), indicating that this was still in the Middle Lias. According to Woodward,[1] the Middle Lias at Glastonbury consists of a considerable thickness of micaceous shales and sands, and these rest on clays; springs are thrown out at the base of the sands. Richardson[2] (1928, p. 184) gives the following description of Chalice Well: "This is a chalybeate spring issuing from the Sandy Beds of the Middle Lias in the grounds of Tor House in the valley between Tor and Chalice Hills. It yields about 1,000 gallons per hour, and gives rise to a stream that flows by a paved course along part of Chilkwell Street and down Bere Lane to near the Abbey Barn". Small deposits of calcareous tufa were observed in some of the trenches, particularly the trench close to Chalice Well itself. (5 in XVII A).

There is no evidence that the spring rising below the Well has been instrumental in making the cleft, unless it formerly rose at the head of the valley; the spring is not dependent on fluctuations in the local rainfall or water table; there is, in times of heavy rain, enough water derived from the slopes round the cleft to cause a stream to flow. This would be enough to cut deeply into the slopes; evidence of such deep cutting was seen in the excavation.

THE HISTORICAL BACKGROUND. The earliest references[3] to Chalice Well are medieval, in the "Great Chartulary" of Glastonbury Abbey; in 1210 it is referred to as "Chalcwelle", in 1256 as "Chalcwell", in 1305 as "Chalwelle" and as "Chakwelle" and in 1306 as "Chalkwell". The road close by was "Chalcwellestrete" in 1265 and Chilkwell Street today. There is no evidence for a medieval or earlier origin for the name of "Chalice Well". The alternative name of "Blood Spring" is presumably derived from the reddish-brown iron deposit which the water precipitates. The Chalice Well and its water became famous in the 18th century, when a spa developed at

[1] H. B. Woodward, *The Jurassic Rocks of Britain*. Vol. III, The Lias of England and Wales (Yorkshire excepted). Mem. Geol. Survey, 1893, p. 208.

[2] L. Richardson, *Wells and Springs of Somerset*, Mem. Geol. Survey, 1928, p.184.

[3] I have based this paragraph on the booklet issued by the Chalice Well Trust—"*Chalice Well, Glastonbury: a Short History*" by Miss F. Hardcastle, M.A., and I have not referred to the sources which are there quoted; the reader is referred to this for more details about Chalice Well.

Glastonbury; a Pump Room and Bath House were built and drew great crowds, such as that of May 5th, 1751 when 10,000 people invaded the town; the spa was revived in the early 19th century and the water is still taken for its healing powers. An immersion bath of the spa still exists in the garden of Chalice Well and there is little doubt, as discussed below, that the Inner Chamber of the Well belongs to this period of activity.

In the earlier part of the present century, the site was owned by Miss Alice Buckton, who built an open-air theatre in the orchard above the Well; the platform of this still exists with traces of other buildings close by (see XVII A). There are also cress-beds of recent date in the valley.

After many changes of fortune, the well and its environs have been acquired by the Chalice Well Trust who will safeguard the area for posterity.

FIG. 3[4] THE WELL. This consists of a "well-shaft" roughly square, with sides externally 6 ft. and internally 3 ft. 5 ins. and an *inner chamber* on the west side of irregular pentagonal plan;[5] there is now some evidence, discussed below, that the *well-shaft* may originally have been a free-standing building which was gradually buried in deep silt; and that the inner chamber was constructed from a ground-surface not far removed from that of the present day.

The *well-shaft* (Pl. XV) is constructed from large squared blocks of local Blue Lias; some retain traces of diagonal tooling. The total depth is 9 ft. The stones of the lower 5½ ft. are clearly undisturbed, but above this the blocks project irregularly for the distances shown in the shaded areas with cut-away and worn surfaces. It is suggested that these upper stones are the remains of a corbelled roof; this may originally have been continuous or it may have had an opening. Above these stones there has been some heightening in recent times, up to the level of the present concrete surround, which is now a foot below the level of the surrounding garden. The walls of the shaft are bonded at the corners as shown on the elevations. The joints are tight and there are remains of what appears to be original mortar between the stones. Most of the lower joints are heavily encrusted with lime deposit. Two feet from the base, in the south wall, are two

4 Without special equipment, it was difficult to ensure the accuracy of the orientation of this plan; no reliance should be placed on it without re-checking.

5 Or hexagonal; there is a slight angle in the SW. wall.

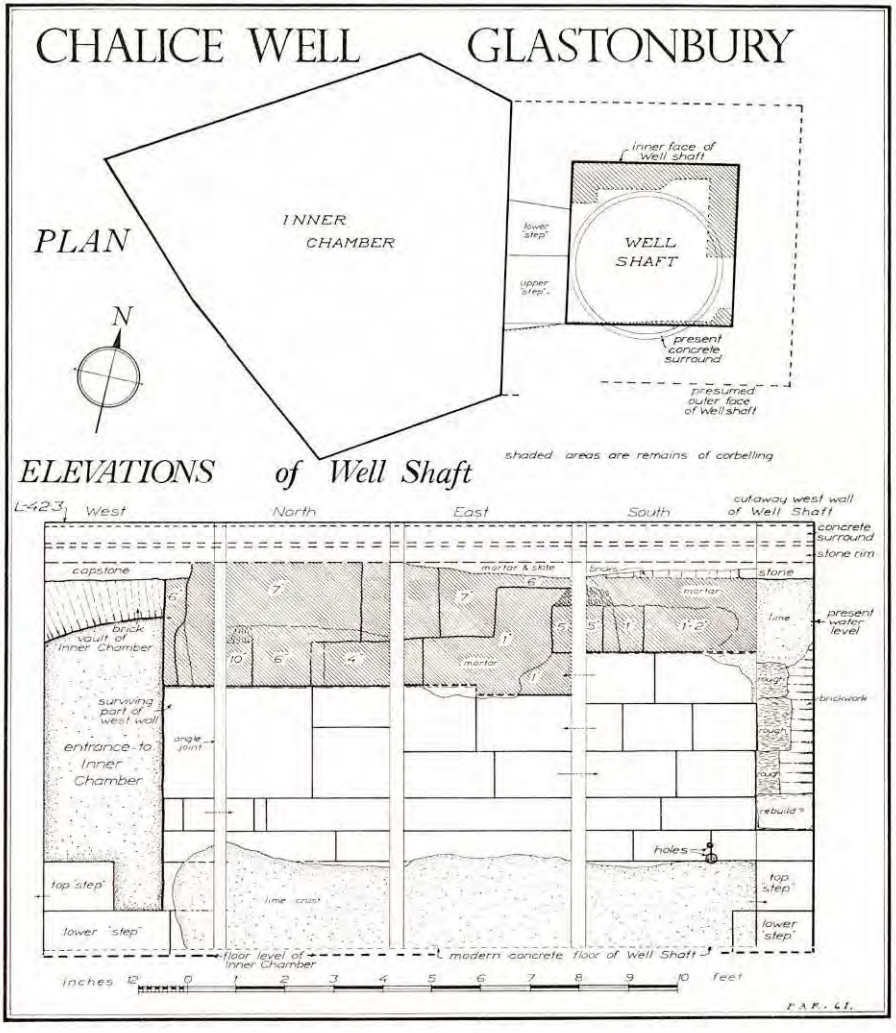


FIG. 3

holes; the stone to the east of these was removed. The holes were seen to be drilled through the thickness of the wall (15 inches); the lower one (2 ins. diam.) was horizontal and the upper one (1 in. diam.) sloped down to merge with the lower one on the outer edge. The outside edges of the stones here were seen to have dressed surfaces

and the soil beyond appeared to be a mottled brown clayey silt. The reason for the drilling of these holes is not clear. They might be for an outlet drain with or without a lead pipe as discussed below. The present floor of the well-shaft is of concrete, laid in 1960 when a pipe was inserted into the spring (under the west wall). This was to tap pure water for the drinking fountain in the garden; before this was done it was reported that the spring rose from a gravel bed, level with the floor of the inner chamber.

The west wall has been mostly cut away, leaving only part of the wall on the north side and two "steps" at different levels at the base; the cut-away sides show signs of rebuilding. There are some small holes on the north side which appear to be bolt-holes and suggest that there has formerly been a door or gate in this side of the well-shaft, now leading into the inner chamber. The east side of the inner chamber is formed by the outer side of the west wall of the well-shaft. Here, as in the south wall, the outer face is of dressed stone; the thickness of the west wall is 15 inches. There is, however, a discrepancy of 3 inches between the thickness of 15 inches shown by the removal of the stone from the south wall and the apparent thickness of the S. wall visible at the SE. corner of the inner chamber; the reason for this cannot be found without excavation. The inner chamber is thus built on to the outer face of the well-shaft and accessible only through the west wall of the latter. The lower courses of the inner chamber are built of large slabs of coarse-grained limestone laid alternately in high and thin courses; the upper part is built partly of the same stone but with courses of brick; the roof is an elliptical vault of bricks.

The well has been examined by Mr. A. R. Dufty and Dr. C. A. Ralegh Radford; Mr. Dufty suggested that the style of the masonry of the well-shaft is characteristic of the late 12th and 13th century; Dr. Ralegh Radford informs me that the use of local lias in large squared blocks occurs in the abbey in the 12th century, before the fire of 1184 and not later; thus the stones of which the well-shaft is made are consistent with a date before 1184 or with a re-use, shortly after this date, of stones salvaged from burnt buildings. The recent excavations at the abbey have shown that the water supply in the 12th century was drawn from sources north of the church. The channel bringing water to flush the reredorter has been found running obliquely from NNE. to SSW. under a corner of the east

range; after the fire of 1184, this channel was disused and cut through by the foundations of the new east range. The new reredorter was flushed with a water supply drawn from sources further to the south, towards Chalice Well. Dr. Ralegh Radford suggests that this was the occasion for the construction of the well-shaft, designed to collect and systematise an improved water supply for the use in the new buildings of the late 12th or early 13th century, probably *c.* 1220. On these grounds, therefore, it seems reasonable to date the original well-shaft to early medieval times and probably to the early 13th century. The water would have been taken in pipes of lead or wood by a gravity feed to the abbey which is over 100 feet lower than the well.

The original well has been so far described as a well-shaft which is what it looks like at the present time;[6] but there is evidence from the 1961 excavation described below, which raises the possibility that the medieval ground level was nearer to that of the base of the well. It is conceivable that the "shaft" was in fact partly or wholly above ground level, as a free-standing building up to 8 ft. high and some 6 ft. square. Whether as a building or a shaft, it was presumably built over or around the spring to safeguard the supply from contamination and from muddy silt which would clog the pipes of the supply line; the water would be drawn off from the base or top through an opening either in the west wall at the level of either of the two steps, through the drilled holes noted in the south wall (though these seem hardly large enough for the purpose), or from nearer the top. The evidence described below suggests that if the shaft was originally a building, it was gradually buried in silt in the centuries following its construction.

Certainly it was from a level nearer to that of the present day that the *inner chamber* was constructed. Dr. Ralegh Radford suggests that the lower part of the walls of this are not older than the 17th century and probably date from *c.* 1750 when the spa became popular. The upper part he suggests is not older than the late 18th century and could date from the revival of the spa in the early 19th century. It is difficult to understand why the inner chamber should have been built to such a curious and irregular plan; the east side was clearly

6 Both shaft and inner chamber are normally full of water to the level shown in Figure 3; this overflows through a hole near the roof of the inner chamber; but both can be emptied by a drain in the floor of the inner chamber.

determined by the existing well-shaft, but the other sides were not governed by any such considerations. Nor is the purpose of the inner chamber clear; the spring provides sufficient head of water to supply the spa buildings lower down the valley and there would seem to be no need to create a larger reservoir of water at the source. The only suggestion that can be made is that the inner chamber was a sedimentation tank to ensure a clean supply from the overflow. Cutting 5 located the outer side of the SW. wall of the inner chamber and showed that the thickness of the wall was about 2½ ft. (see p. 155).[7]

THE EXCAVATION (XVII A). Eight cuttings were made (1 - 8), near the wall and in the orchard further up the valley; their object was to determine the ground level in earlier periods and to try to find evidence of human settlement. Their sequence and position was determined by the evidence accruing from each, but they are here described in order from the upper part of the valley to the lower.

Cuttings 3, 4 and 6 were trial holes to test the possibility of occupation of the east slopes of the upper valley. They were negative but showed evidence of deep cutting by a stream-bed. A typical section of these is of *Cutting* 3 (Fig. 4). Here the natural lias clay and marlstone (G) were overlaid by F which might be a buried soil; above this was D, interpreted as a hill-wash with pan layers; all these were cut by the stream-bed (layer C) extending down to nearly 8 ft.; a few fragments of bone were found down to a depth of 2½ ft. This stream-bed had evidently silted up and was replaced by others, culminating in the present one in the centre of the valley.

Cutting 4 was similar, with the stream-bed cutting to a depth of 7 ft. and a few scraps of bone down to a depth of 3 ft.

Cutting 6, some 20 ft. lower in height than Cutting 3 was similar, though here there was 2 ft. of modern debris on the west side of the hole and more extensive hill-wash on the east side, so that the natural (without marlstone) was not encountered until a depth of 7 ft. was reached on this side; the stream-bed layers were rather more complex and some bone fragments were found at a depth of 6 ft. on the west side. The almost total absence of finds in these three holes appears to preclude the possibility of ancient occupation in the upper part of the valley.

The largest trench was *Cutting* 2 (Fig. 5) across the valley by the theatre (XVII A). This was excavated to a depth of over 8 ft.;

[7] See also footnote 4 about the accuracy of Fig. 3.

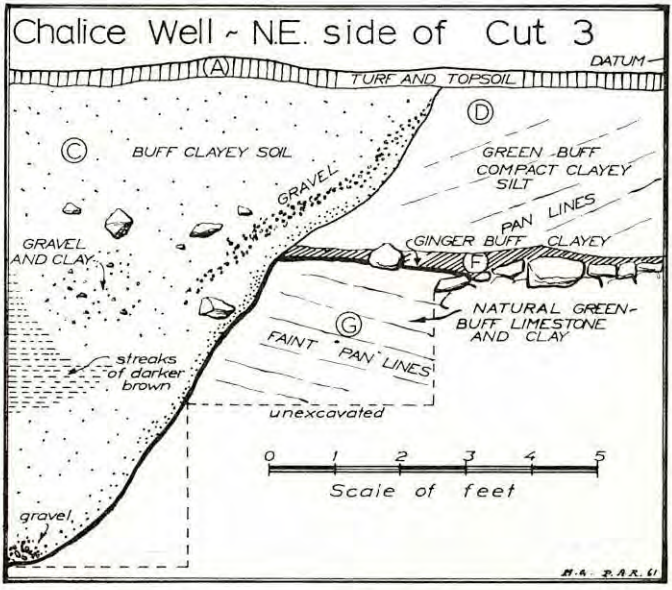


FIG. 4

this was some 4 ft. below the water table, but a severe collapse caused us to abandon the cutting. Finds and debris of Victorian and later date accounted for the top 3 ft. in the central part. Below this was a recent buried soil (F) over a thick layer (D) interpreted as hill-wash, and containing four medieval sherds on the NW. side. Below this was a compact greenish silt (layer O), containing one flint; this covered layer K which had a limy concretion of uncertain nature but probably of an origin similar to tufa deposits. This was thin in the central part but dipped sharply on the SE. side into what appeared to be a ditch (F. 4) cut through the side of the valley from N.- S. K contained a piece of post-medieval tile; this demonstrates that both the Iron Age sherd in the same layer (p. 161) and the medieval sherds above were derived from other places. Corroborative evidence for this limy deposit being of comparatively recent date was later found in other cuttings. Below K was a brown silt P containing some bone fragments, flints, and a Roman sherd (p. 161); these finds appear to be similarly derived, as this layer apparently cut away layer L on the SE. side, which contained a small fragment of brick. The brown silt P appeared to go deeply into the stream-beds

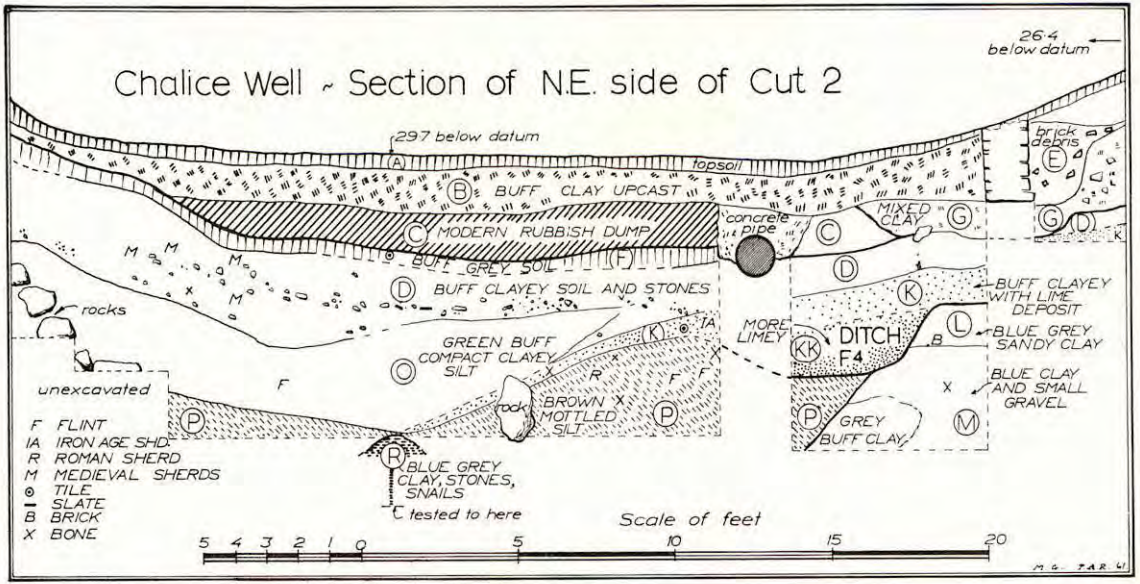
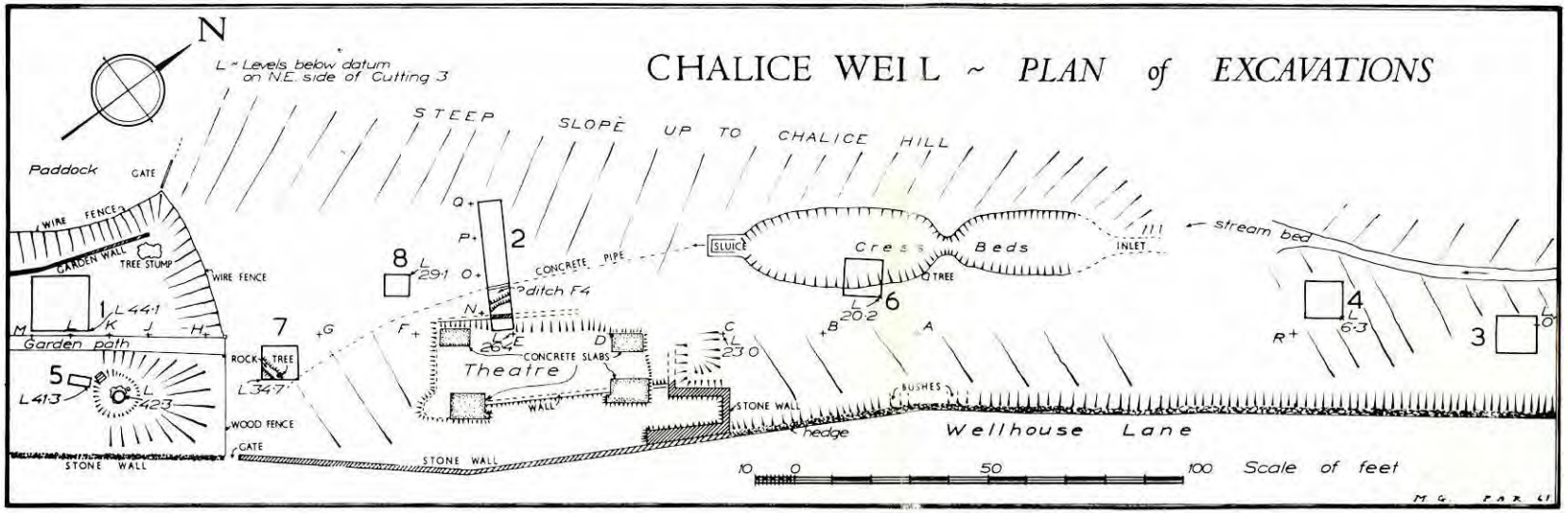
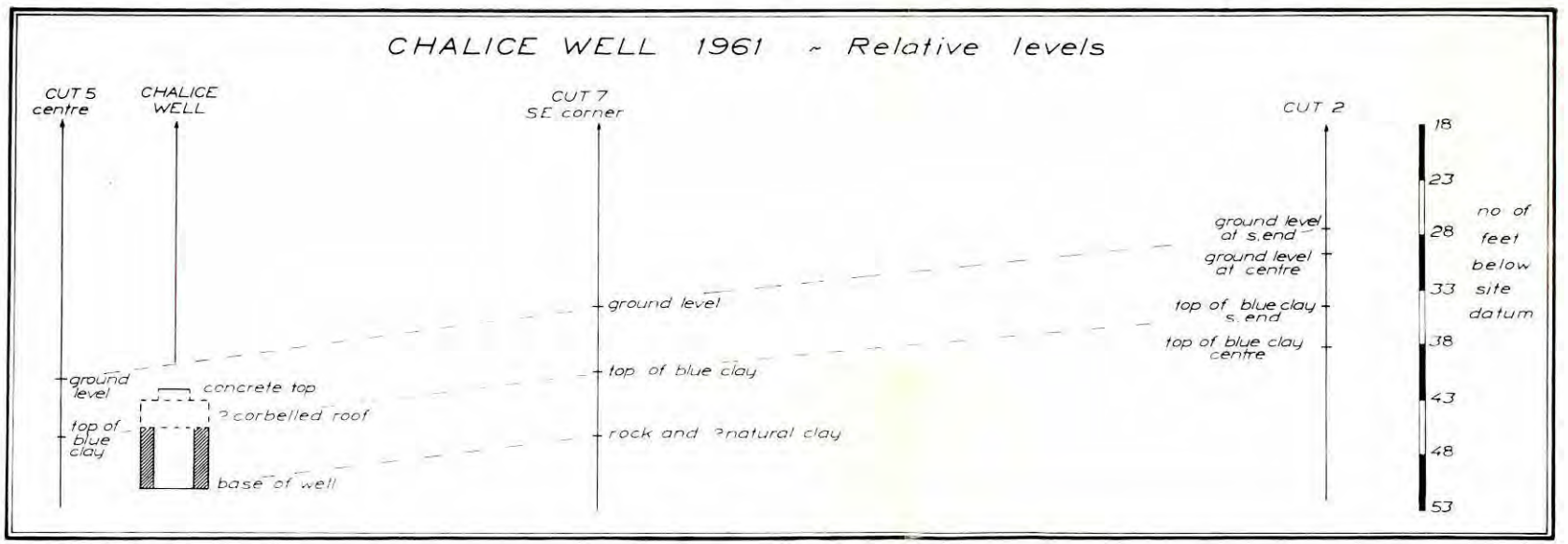

Chalice Well ~ Section of N.E. side of Cut 2
26·4 below datum
29·7 below datum
topsoil
brick debris
BUFF CLAY UPCAST
MODERN RUBBISH DUMP
concrete pipe
MIXED CLAY
BUFF GREY SOIL
BUFF CLAYEY SOIL AND STONES
BUFF CLAYEY WITH LIME DEPOSIT
rocks
GREEN BUFF COMPACT CLAYEY SILT
MORE LIMEY
DITCH F4
BLUE GREY SANDY CLAY
unexcavated
BROWN X MOTTLED SILT
BLUE CLAY AND SMALL GRAVEL
GREY BUFF CLAY
BLUE GREY CLAY, STONES, SNAILS
tested to here
F FLINT
IA IRON AGE SHD
R ROMAN SHERD
M MEDIEVAL SHERDS
TILE
SLATE
B BRICK
X BONE
Scale of feet
5 4 3 2 1 0 5 10 15 20

FIG. 5

PLATE XVII (a)



(b)



on either side of a ridge of blue-grey clay (R); the surface of this at least was not natural as it contained snail-shells; layers of L and M on the east side were similar with some bone fragments. Cutting 2 was thus inconclusive; the finds were few and clearly derived and it was evident that silting of the valley had been very considerable, even in recent times.

Cutting 8 was dug to test the continuity of this stratification towards the south; the upper two feet here were similarly modern debris and below this was a thick layer of mixed clay and soil, with much limy concretion, some tile and brick fragments with a few 18th century sherds. This continued down to a depth of 6 ft. (35 ft. below datum)[8] where a brown silt was encountered, similar to layer P in Fig. 5; this suggests that layers D and O end somewhere between Cuttings 2 and 8; here the valley begins to open out. The brown silt in 8 was tested with an auger to a depth of 37 ft. 3 ins. below datum.

Cutting 1, on the west side of the well, showed similar mixed clays and lime deposit to a depth of nearly 4 ft., containing fragments of 18th century pottery and sack bottles; at 45 ft. below datum a blue clay was reached, but further excavation was impossible because of restricted space. *Cutting* 5, by the well, showed the outer face of the wall of the inner chamber; the outer edge of the roof vault was found at a depth of 3 ft. (44 ft. 3 ins. below datum) and the wall projecting 7 ins. further out than this; the construction trench for this part of the inner chamber (probably 19th century) was visible as a cut-away through layers of limy clayey soil from a level not far from the present surface with mixed clayey limy soil with brick and tile. There was a layer of mixed grey-blue and buff clay at 46 ft. below datum and grey-blue clay at 46 ft. 9 ins. which was not excavated.

The most conclusive evidence was found in *Cutting* 7, on the slope above the well, where the greatest depth was reached (Fig. 6). A - C were modern layers, and D was probably a recent buried soil. E was a limy deposit, presumably equating with that found in the other cuttings; here it was demonstrably of 18th century or later date because of the clay pipe well below it in layer F. Between D and E was a dark brown concretion which was probably a pan layer laid down in marshy conditions. F was similar to, and probably equated with, layer P in Cutting 2 (Fig. 5); it contained flints, 18th century

[8] Datum is ground level on NE. side of Cutting 3, at NE. end of plan, XVII A.

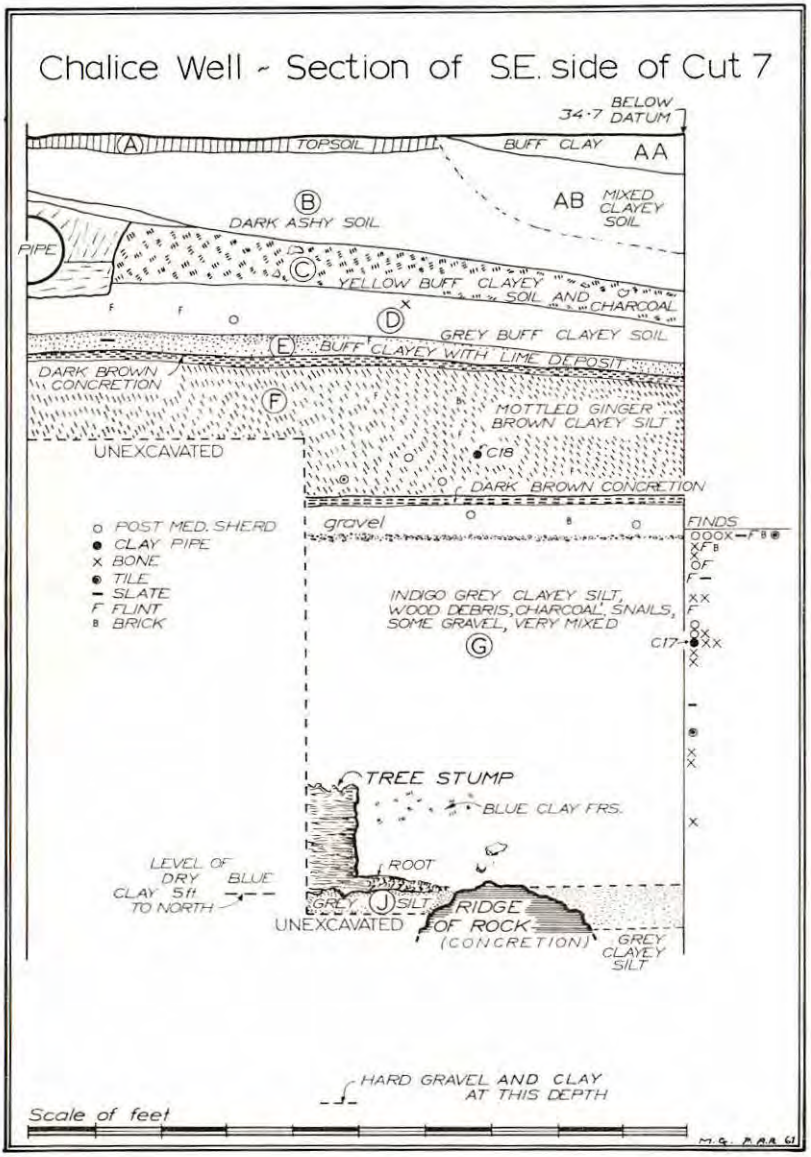

Chalice Well - Section of S.E. side of Cut 7
BELOW 34·7 DATUM
TOPSOIL
BUFF CLAY
AA
AB MIXED CLAYEY SOIL
DARK ASHY SOIL
PIPE
YELLOW BUFF CLAYEY SOIL AND CHARCOAL
GREY BUFF CLAYEY SOIL
BUFF CLAYEY WITH LIME DEPOSIT
DARK BROWN CONCRETION
MOTTLED GINGER BROWN CLAYEY SILT
UNEXCAVATED
C18
DARK BROWN CONCRETION
POST MED. SHERD
CLAY PIPE
BONE
TILE
SLATE
FLINT
BRICK
gravel
FINDS
INDIGO GREY CLAYEY SILT, WOOD DEBRIS, CHARCOAL, SNAILS, SOME GRAVEL, VERY MIXED
C17
TREE STUMP
BLUE CLAY FRS.
ROOT
LEVEL OF DRY BLUE CLAY 5ft TO NORTH
GREY SILT
RIDGE OF ROCK (CONCRETION)
UNEXCAVATED
GREY CLAYEY SILT
HARD GRAVEL AND CLAY AT THIS DEPTH
Scale of feet

FIG. 6

sherds, a 17th - 18th century clay pipe (p. 163) and fragments of brick and tile; another dark brown layer was at its base, perhaps another former ground surface. Below this was blue-grey clay (G) with a thin layer of gravel near its surface.[9]

Underneath this, finds were relatively numerous, with the key find of a 17th century (p. 163) clay pipe at a depth of 8 ft. (2 ft. down in this layer and 42 ft. 7 ins. below datum) and other 17th century sherds nearby; lower down the only finds were bone, slate, tile and wood fragments at depths shown in Fig. 6, but the layer continued to a depth of 11 ft. 9 ins.; on the lowest part of the layer was a remarkable find, the stump of a yew-tree, which had the remains of roots and was apparently *in situ* where it had formerly grown; it may have been an ancestor of the yew trees which grow by the well at the present time. The water content of 730% indicates a date in Roman times.[10]

At the base of layer G, a stiff dry blue clay was reached in the centre of Cutting 7; this is probably natural, but too mixed to be the Lower Lias clay *in situ*; it sloped away steeply to the south below a grey silt (J); J lay either side of an E.- W. ridge of very hard dry white and buff tufaceous concretion; to the south of the ridge it was tested to a depth of 8 ins. and to the north of the ridge was augered to a depth of 3 ft. 5 ins. where hard white gravel and dry clay were encountered.

CONCLUSIONS. Without excavation on a much larger scale, which would be very expensive and difficult at such depths and in such material, any conclusions about the nature and date of the deposits around Chalice Well can only be tentative.

The significant layer, found in the lower cuttings, is the blue-grey clay or clayey silt. It is not certain whether this layer is indeed of

[9] Layer G was only excavated in the southern quadrant; its surface coincided with the water table but it was penetrated with the aid of a pump.

[10] Professor R. D. Preston, F.R.S. of the Astbury Department of Biophysics, Leeds University, writes (16/5/62) as follows:

"The water content of the wood turns out to be 730% which would date the wood back to early Roman times. The general appearance and feel of the wood also suggest to me that this wood dates back to about 300 A.D. This is of course on the assumption that the wood has been lying under water-logged conditions continually since burial and that there has been at no time any bacterial or fungal attack. I can see no signs of any attack at the mement."

The wood stump has been kindly conserved by Taunton Museum, and is now (1964) displayed at Chalice Well.

similar origin, nature and date wherever it was found. To judge by the levels of the surface of the layer, as found in Cuttings 2, 7, and 5, it extends down the valley with a sloping profile, as shown in XVII B, with a drop of 10 ft. between Cuttings 2 and 5. It is thus apparently not a silt accumulating horizontally against any kind of dam or barrier, but rather a hill-wash derived from the sides and upper part of the valley. Dr. Derek Findlay of the Soil Survey, has kindly examined a sample of layer G in Cutting 7 (Fig. 6) and comments:

"I can find nothing in this material that could not have been derived locally from the rocks at higher levels, *i.e.* the Middle and Upper Lias. Although there is a fair amount of Lower Lias colour, the large silt and fine sand fractions are strongly micaceous and of Middle-Upper Lias nature. In the coarser gravel are many fragments of Belemnites, suggesting that the Well may be in the Belemnite Marls at the top of the Lower Lias where these are overlain by siltier and sandy beds — a natural site for a spring. Apart from saying that Middle-Upper Lias strata are liable to fairly rapid wasting by spring action, I don't think one could say much about rate of accumulation based on the grade of the material."

The blue layer was waterlogged, and in Cutting 7 this had apparently been constant enough to preserve wood, possibly since Roman times. Here the surface of the blue clay corresponded roughly with the water table, but in Cutting 2 the water-table was higher than the blue clay.

It is suggested therefore that the layer is a hill-wash, being deposited in wet conditions, the water being not that from Chalice Well, but a spring further up the valley. The *dating* of its accumulation is less certain. It is possible that the layer was more plastic when deposited and later, than it was found to be on excavation. Finds might have moved downwards by gravity and other causes from the level in which they were deposited. Nevertheless on the face value of the evidence from Cutting 7, it would seem that in Roman times the layer was absent. A tree was growing, presumably in a soil with a high organic content. By the 17th century, however, there was at least 4 ft. of the blue layer, and after this date there was rapid accumulation of a further 8 ft., though the upper 4 ft. of this was due to dumping. The piece of *slate* at a depth of 9 ft. in Fig. 6, and probably the piece of tile just below, might indicate the medieval level here.

The rate of accumulation demonstrated for recent centuries might indicate that all the blue layer had accumulated since medieval times, though it possibly began in the Roman period or later.

It is possible, therefore that the ground level in early medieval times was considerably lower than it is now, certainly near Cutting 7, and probably around Chalice Well itself (see XVII B). If this is accepted then it would appear that the well-structure itself was at least partly above ground level, *i.e.* that it was in fact a *well-house*,[11] a small free-standing building, *c.* 8 ft. high and 6 ft. square, as the dressed outer faces of the "shaft" might suggest.

This suggests a reason for the rapid and deep accumulation of silt; while the spring was flowing freely, the ground around, for some distance around it, would have been kept clear of silt, and would remain at a constant level, *i.e.* the rock in Cutting 7. But when the well-house was built, the spring could no longer exercise the same scouring effect and silt and hill-wash would build up rapidly. The suggested date for the building of the well, in the 13th century, would be consistent with the accumulation of some 4 ft. of silt by the 17th century and a further 4 ft. to recent ground level. This

[11] *cf.* other well-houses:

(a) Haughmond Abbey, Shrops., a rectangular building, from which water is fed to fishponds (J. C. Dickinson, *Monastic Life in Medieval England* (1961), p. 7 and pl. 4b).

(b) Canons Ashby (Dickinson, *op. cit.* p. 7).

(c) St. Trillo's Chapel, Rhos-on-Sea (Caernarvon), 11 ft. × 8 ft. × 7 ft. high, said to be 6th century.

(d) Two at Mount Grace Priory, Yorks.; one is *c.* 4 ft. high, plus a steeply pitched stone roof of a further 3 ft., with a monolithic lintel over the doorway; the other is roughly 6 ft. square, and *c.* 4 ft. high, plus a further 4 ft. of stone roof. (Plate XVI).

(e) Structures in the water-works plan of the London Charterhouse (plan in Dickinson, *op. cit.* p. 51).

(f) Structures in plan of Christ Church, Canterbury (*c.* 1165). (see R. Willis, *The Architectural History of the Conventual Buildings of the Monastery of Christ Church in Canterbury* (1869), pp. 158-81, 196-204, esp. fig. 33 opp. p. 161).

(g) 14th century well-house in the garden of the palace of the Bishops of Bath and Wells.

I am indebted to Messrs. Martin Biddle and Lawrence Butler for these references.

It should be said that the concept of Chalice Well as a free-standing building is not new: it was suggested as long ago as 1886 in *Proc. Glast. Ant. Soc.* for that year, p. 24.

argument may apply to the area immediately around the well, but it is doubtful whether these factors could affect the silting of the valley as far up as Cutting 2.

The interpretation of the structure as a well-house does not necessarily follow from the evidence. Dr. C. A. Ralegh Radford thinks that the structure was unlikely to have been a free-standing building; he thinks the well-shaft was made from re-used dressed blocks; he suggests that it would not stand, and would be unnecessarily high; he thinks the post-medieval finds in Cutting 7 are not in their original position. Further excavation round the Well itself would be the only way of determining the level from which it was constructed.[12]

The existence of ancient occupation levels or structures in the lower part of the valley or around the well remains an open question but the few stray finds in the levels excavated suggest at least some "frequentation" of the area from early times. Twenty flints were found, which are probably Mesolithic[13] (p. 161). There is a single sherd of Iron Age pottery, probably of Iron Age A (p. 161); this is the first Iron Age sherd found at Glastonbury outside the marsh villages, apart from some found in the rampart of Ponter's Ball.[14]

There was a single Roman sherd[15] (p. 161), and four medieval ones (p. 162).

If further excavation is ever contemplated, it should be undertaken only if expert advice can be obtained as to the best way of excavating deeply over a large area below the water table, either mechanically or partly by hand. There are two areas that could be explored: (1) That around the well itself; it would be worthwhile to

12 Note that there was not apparently blue clay just outside the structure where the stone was removed (p. 148); but there may have been contamination or disturbance here.

13 Other Mesolithic flints are in the collections of Glastonbury Museum (now being re-organised; inf. from the late W. F. Rankine); and from Shapwick Heath (inf. H. S. L. Dewar).

14 In the early part of this century: inf. Dr. Ralegh Radford.

15 Roman sherds have been found in Glastonbury in the following places: (1) on the Tor summit (one in 1964 excavation); (2) in the Abbey, in material brought from an unknown source in the 12th and 13th century (*Glastonbury Abbey*, by Dr. C. A. Ralegh Radford, Pitkin Pictorials, 1964, p. 3). (3) In a mound (Mount Site) at Mill Lane, near the station. (*Proc. S.A.S.*, 72 (1926) pp. 52-54; and (4) at foot of north slopes of Wearyall Hill (inf. John Morland, whose grandfather dug here in the 1920's).

uncover the whole of the well structure and check the exact relationship of it to the strata around it. (2) The large area in the lower part of the orchard between the Well and the long Cutting 2 of 1961. This would establish conclusively whether there was any early settlement just above the spring, of Christian or pre-Christian date.

THE FINDS

FLINTS. Twenty flints were found, including one chert flake. Mr. A. M. ApSimon of Queens University, Belfast, has kindly examined these and contributed the following note:

"This small collection consists of blades and fragments of blades and cores, patinated white. One blade (Fig. 7, no. 1) seems to have been used as an awl, but there are no finished implements. The small size of the blades is suggestive of Mesolithic date. Mesolithic flint implements are often found close to springs but in this case no more than a few casual visits to the spring need be implied by the flints. A single unpatinated waste flake is probably of later date."

Details are as follows: (white-patinated except where otherwise indicated)

Cut 1, post medieval layers: blade, possibly used as awl (bulb of percussion retained (Fig. 7, no. 1).

Cut 2, layer O: 2 frs. small blades.

Cut 2, layer P: 1 scrap and 1 small blade fr. (Fig. 7, no. 2).

Cut 5, post-medieval layers: 1 bluish waste flake, 1 unpatinated flake.

Cut 6, topsoil: 1 chert flake, 1 waste flake.

Cut 7, layer D: 1 brown-stained core fr., 1 blade fr.

Cut 7, layer E: 1 fr.

Cut 7, layer F: 1 scrap, 1 core fr., 1 flake.

Cut 7, layer G: (all in top 6 ins. of layer): 3 core frs., and butt of blade, bulb of percussion retained (Fig. 7, no. 3).

Cut 7, layer H: 1 blade fr.

?IRON AGE SHERD (p. 153) hand-made, $1'' \times \frac{3}{4}''$, $\frac{3}{8}''$ thick, soft granular soapy black, red-brown surface on outside; slightly convex; similar to some Iron Age A pottery from Chew Valley Lake,[16] but possibly earlier.

ROMAN SHERD (p. 153) $\frac{3}{4}'' \times \frac{1}{2}''$, $\frac{1}{5}''$ thick, hard fine sandy grey, dark grey surfaces, prob. 2nd century or later.

16 *H.M.S.O.* publication forthcoming by writer.

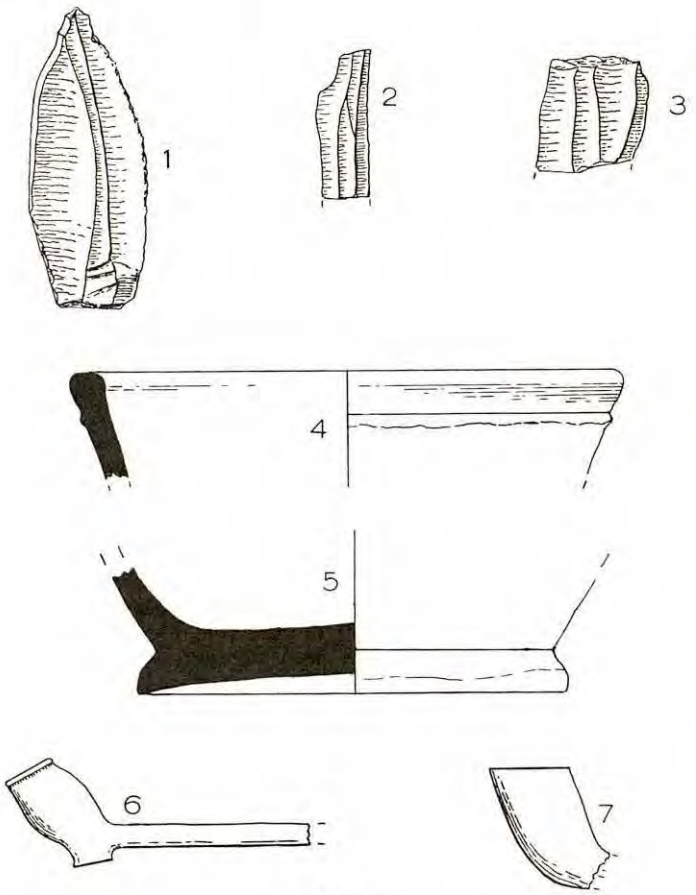


FIG. 7

MEDIEVAL SHERDS (all from Cut 2, layer D, Fig. 5)

(Marked) 1. Grey sandy, patchy olive-green glaze on interior, dull green glaze on cream slip outside, two 4-tooth combings at 45 degrees to each other; in comb incisions glaze appears brown.

2. Hard, sandy thin grey, reddish interior surface, cream slip outside, overall mottled bright green, yellow and black-green glaze.

173. Soft pale, red-brown, micaceous, patchy yellow-brown glaze.

174. Dark grey-brown gritty, reddish exterior for one-third of thickness.

All of these are probably of 14th century date, or possibly 15th.[17]

POST-MEDIEVAL POTTERY, probably 17th century

Fig. 7, no. 4: rim sherd, very hard dark red, black-brown glaze inside and on rim, outside dull dark purplish-grey surface. (Cut 7, layer G, 6 ft. from turf).

Fig. 7, no. 5: half of base, hard grey flaky, orange-purplish surfaces, olive-green patchy glaze, "crackled" inside, and spots of it outside. (Cut 7, layer G. 7 ft. 9 ins. from turf).

CLAY PIPES

Fig. 7, no. 6. Oswald type 4a (*c.* 1620-1650), rouletted groove, no mark. (Cut 7, layer F).

Fig. 7, no. 7. Oswald type 9 (*c.* 1680-1730), no spur or foot. (Cut 7, layer G).

17 *cf.* Chew Valley Lake *op. cit.* and Cheddar series (also *H.M.S.O.* forthcoming by writer).