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## **Excavations at Berkeley Castle**

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EXCAVATIONS AT BERKELEY CASTLE<sup>1</sup>

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## OUTER GATEHOUSE AND ITS BRIDGES

OUTSIDE the gatehouse, there is an old wall, A1, the foundations of which are almost as low as the bottom of the moat that runs between the church and the outer courtyard. A1 extends several feet into the church side of the moat. The wall A2 abuts against A1 so it is probable that A1 was constructed before A2 and therefore possible that A1 is a wall on which an early drawbridge lay. The two walls A2 and A3 are now supported by a bridge built in the 19th century, but there are also the remains of two other bridges, one is of rough stone, the other of camstone. The latter is probably the one mentioned by Smyth in a paragraph in his *Lives of the Berkeleys*, II, 362.

The wall B1, the present surface of which is of rough local stone and is 15 feet below the gatehouse roadway, is strongly built. Its southwest edge marked B1 is vertical, and runs down to a depth more than 8 feet (its base was not reached). The part B2 slopes outward and seems to be a buttress supporting B1. Thus these remains probably were part of an earlier gatehouse. The lower southwest and northwest walls of the present gatehouse are 6 feet thick. They enclose a space which is lined with camstone pigeon nests and have three camstone windows that are so constructed that pigeons could enter by passing through rounded holes in the window base.

The walls C1 and C2 are of late date. They contain camstones and a few pieces of 14th and 15th century pottery. C1 seems to rest upon a rough arch 18 feet wide

<sup>1</sup> Between 1917-37.

made of large local stones constructed so as to support the outside of the wall when water accumulated below it. At the deepest point the marl rock under it is 6 feet below and has been cut so as to form part of the adjacent moat.

The cross wall C<sub>3</sub> is evidently that to which a draw-bridge extended, while C<sub>4</sub> was its middle support. Curiously neither of them is as long as the similar walls discovered at the postern gateway (see page 315).

It will be noticed that neither of these walls runs parallel to the gatehouse wall nor are they parallel to C<sub>5</sub>, but are parallel to wall A<sub>1</sub>. This makes it possible that the gateway at one time led to A<sub>1</sub>. In which case the outer road that ran to this gatehouse must have passed through the southwest corner of the churchyard.

Wall C<sub>5</sub> runs parallel or nearly so to the present gatehouse archway wall. It extends a considerable distance on either side of the gap between C<sub>4</sub> and C<sub>5</sub>. The part on the north is manifestly earlier than the polygon tower outside it; unfortunately it could not be examined at its south end, there being a large drain running there, but it should be noted that the vertical wall C<sub>6</sub> which runs across the southern polygon is parallel to it.

This latter wall, however, does not seem to be a similar structure; its stones are rougher nor is it so carefully built. Wall C<sub>5</sub> on its western side slopes downward at an angle of 6½ inches per vertical foot. As the ends of the holes marked C<sub>7</sub> are vertical, wall C<sub>5</sub> could not at this point have been any higher because the two edges would meet.

The holes C<sub>7</sub> are 8 feet deep at the west and were constructed to receive the counterpoise of a drawbridge that extended over the moat at least as far as C<sub>3</sub>. The east ends of C<sub>7</sub> slope downwards. The small walls running across C<sub>7</sub> are of later date. Outside the west end of C<sub>7</sub> and 8 feet below the present road level, horizontal holes about 9 inches square were found. These two holes did

not penetrate right through wall C5, and so probably contained horizontal pieces of wood<sup>2</sup> upon which vertical wooden posts, which supported the drawbridge, oscillated to and fro.

Running alongside the northern hole C7, and similarly near the southern hole, the plan depicts 4 square openings. These were evidently places in which wooden posts were held. The two westernmost are the widest (about 7 by 8 inches) and both of them slope downwards towards C5. The others are nearly vertical. Evidently these posts were the structure that enabled the drawbridge to be manoeuvred. The northern end of C5 was traced as far as is shown in the plan, but it was not the definite finish of the wall; it is possible that the approximately square 7 foot structure C8 is of a different date. C8 is, however, earlier than the remains which run across it. The polygon wall abuts against wall C5 and so is later.

The southwest end of C6 was built before the surrounding polygon. The same thing applies to the wall marked D1 but its western end is earlier than C6. D1 is the present wall which supports the outer courtyard terrace and is an ancient structure, but its southwest side, marked by a dotted line, is more modern in the sense that its original outer edge has been removed. The part at its east end, D3, shows a thickness of 6 feet. This fact together with the discovery of the remains marked D2, which were found to be at the same depth as the bottom of D1, and probably are the foundation of a buttress, confirms the 6 foot thickness of D1. These buttress remains are of camstone, and may have been built in the 16th century. Evidently D1 was the southern curtain wall of the outer court.

Close to the northern polygon the remains marked E1 are that of a wall through which a gutter passes; it

<sup>2</sup> Horizontal holes similar to these and even now containing the wooden pieces (G4) are still in place just outside the postern gateway.

probably joined the adjacent polygon wall, and so would be part of the northern curtain wall.

E2 shows the excavated remains, containing a good deal of camstone, of a powerful buttress that supported this curtain wall, but where the wall itself was actually built, could not be definitely found, because systematic excavations could not be carried out on account of the trees that grow in the moat.

Incidentally E2 remains are on almost the deepest part of the moat.

### BARBICAN WALL

We call it a barbican because, although possibly built at an earlier date than when the word barbican was used, its actual structure gave a similar method of defence. It is the wall F1, about 7 foot thick and runs across the keep moat, where it is solidly built. Its western end cannot be traced further than a few feet past wall F2; possibly because the surface of the wall that leads to the backyard has here been lowered. Nor can one see exactly how it was connected to the keep, because just at this point there are a number of important drain pipes.

The wall F2 is not so well built and is of a later date than F1. Its foundation lies at the bottom of the moat that runs on the north side and close to F1. The two walls F3 are also poorly constructed. F4 also is later than F1; it rests on a kind of arch that was built in the keep moat. This ditch was a means of defending the barbican wall, it runs from the keep moat as far as the west side of wall F2. Doubtless it became, at a late date, a means of draining the building that lay between F1 and F3 which possibly then was a stable.

Taking into consideration the size of F1, its construction and its ditch, it is safe to assume that it was built as a means of defence.

The remains of wall F5 show that it was not very well constructed, but it may have been the other side of the

road that led to the inner court, in which case the northern projection found near its western end may be the remains of a gateway. As F5 runs parallel to D1 it probably was the inner side of a building.

The remains found at the eastern edge of D1 are hard to understand. The L-shaped structure was built at the same time as D1, but the two pieces that run between it and F5 are later (part of one of them actually rests on the top of D1).

The wall F6 is not vertical on its eastern side, it slopes at a steep angle (see section II) and starts from the bottom of the moat. It is an early construction and probably was part of the wall that must have enclosed the moat, but its northern end which runs away from the moat and is vertical is hard to explain.

The elevation marked section III illustrates an excavation that was cut across the moat outside the gatehouse entrance. The outer edge of the moat is about 37 feet away from the gatehouse, but there are no remains of the wall upon which the drawbridge or the fixed bridge must have rested ; as the outer edge of the moat is considerably further away than wall F6, the latter gives no information about it. Wall F7 shown on the plan and part of it in the elevation has an approximate level surface 3 feet above the bottom of the moat ; its south end abuts against the wall of the muniment room and its surface is about 8 inches below a doorway there, but does not coincide with the doorway jambs, and so may not have had anything to do with them. It is, however, possible that its northern end at one time led to the bastion A latrine passage.

The northwest corner of the muniment room cuts into wall F6 and so is of a later date ; the western end of this room is supported by stone work, the lower parts of which slope so markedly that at one time it must have been a structure which drained the adjacent moat. This will be apparent when we consider the elevation marked section II.

Here the horizontal line marked A is 6 inches above the doorway and represents the 10 inch projecting edge of the wall above. The line B is the upper end of this projecting wall and here is only 4 inches away from the wall above it. As the faces of these upper walls are vertical they probably were constructed at the same date ; and since the upper projected edge is made of carved Ashlar stone and runs round the Renaissance chimney (marked N on the plan) they were built in Renaissance times. Added to this, since the line A represents very inartistic work and is well below the ground surface we can assert that the moat was at that time filled up.

The utility of the doorway found at the end of wall F7 is hard to explain, because the original structure of the muniment room must have been different. Its floor runs across this doorway about 3 feet above the base. This floor is at the same level as that of the adjacent bookroom. Between the two rooms there is a passage running through the 10 foot thick wall which separates them. The bookroom<sup>3</sup> side of this passage has a stone doorway the sculpture of which is of the 14th century.

On the south side of this passage, there is a latrine shaft which extends right up to the top floor and runs down to the level of the lower terrace. Here there was a stone arched entrance. On the south wall of the muniment room and near its west end but below its floor level an arched entrance is still visible. The bottom of this opening is considerably lower than the terrace. Its width is 3 feet and its depth is 5 feet. Leading into this space below the muniment floor and almost opposite this opening, the remains of what might have been a large drain-hole was found near the bottom of the muniment room north wall.

<sup>3</sup> The ceiling of the bookroom and therefore the floor of the room above it is now about 18 inches lower than it was originally.

## CURTAIN WALL OF THE INNER COURT

The following remarks are confined to observations made during structural repairs. On page 325 it is mentioned that the bookroom may have been at one time a stable ; if so, the curtain wall would join it somewhere to the north of its entrance doorway. As a matter of fact, some wall remains were found there but they did not seem to be of a sufficiently early date. Also when the floor of the library (*i.e.* the ground floor room that is 15 feet on the east side of the bookroom) was reconstructed, the remains of a wall that ran across it and joined the present curtain walls were exposed. These remains, however, were considerably less thick than 6 feet, and so could not be the original curtain wall. It should be realized that the bookroom floor is 2 feet 6 inches lower than the library and its east wall is 6 feet thick. The west wall of the library is modern ; and as the part that projects outside the curtain wall is not shown in the pictures (see page 318) this also is later than the 17th century.

## POSTERN GATEWAY

This gateway passes through the curtain wall, about 14 feet east of bastion C. On the outside, the opening had been converted into the window of a water closet which had a door between it and the billiard room. The stone sides and arched top of the window showed that it was originally a Tudor doorway. At the top of the curtain wall and almost vertically above this gateway, there is a projecting structure which unmistakably was a means of pouring molten lead or boiling oil on attackers attempting to enter the passage.

On the courtyard wall of the billiard room (looked at from the inner courtyard) there are the remains of a Tudor arch that covered a doorway. As these remains are just opposite the postern doorway, they are probably the

inside ends of a passage that led to the postern gate in Tudor times.

Outside the billiard room part of the curtain wall and leading downhill the filled up moat has been excavated. The lower part of this moat is lined with stones which slope at an angle of 45 deg., and they rest against a set of thinnish camstones that are erected vertically.

#### POSTERN DRAWBRIDGE

Some 12 feet from the postern gateway, and running parallel to the curtain wall, the remains of an almost vertical wall marked G1 on the plan were found together with the foundations of two other walls marked G2 and G3. Obviously these three walls were those on which a drawbridge lay.

Two horizontal pieces of wood marked G4 are also visible; they have a vertical hole that does not pass completely through them, and so probably vertical wooden posts were placed therein. But the fact that a small circular horizontal hole (probably holding an iron bar) runs into and through each of these vertical holes makes it almost certain that the vertical posts were able to oscillate to and fro. It should be noted that the distance between the two G4s is greater than the distance between the horizontal holes found in the wall near the gatehouse that is marked (C5). Wall G1, however, does not seem to be of as early a date as wall (C5). The excavation of the moat near the postern showed that G3 was the foundation of a wall that gave access to the drawbridge, and it extended some length into the moat. The length of the three walls makes it clear that a considerable amount of traffic took place there.

#### EXCAVATIONS ON THE BACKYARD

Excavations showed that the keep moat ran alongside the keep wall as far as the chapel bastion, and then continued downhill near the curtain wall. The section (IV)

excavated close to the bastion C and running between the wall H1 showed that H1 is built in the deepest part of the moat. This took place after the wall G3 had been pulled down. H1 is very poor work, its outer surface is made of badly cut camstone. In the drawing of section iv it will be seen that there probably had been a small wall built on the pitching, 12 feet away from, and running parallel to, H1; this implies that there was a wooden bridge between the two, and therefore was constructed after the postern drawbridge had been suppressed.

Running at right angles to H1 its western edge was traced as far as is shown in the plan; the wall there is but one foot high. The remains H2 shown beyond this are big stones found much lower down and are definitely earlier in date than H1. Their mortar is similar to that found in the structure marked H3, added to which the southern edge of H3 runs several feet under the modern wall (dotted line), but as the excavation had to be stopped, it is impossible to say what this building was.

J1 is built of large but not carefully cut stones and is 3 feet thick. It supports a modern wall. Its eastern end is but one foot above hard marl, while its western end comes merely in contact with the remains marked J2. Between these two ends an excavation on the north side of the wall was made.

It showed that the ground had been cut away and the wall rested on the bottom of what must have been a moat. The deepest part, containing one or two cut stones, was about 20 feet away from the east end of J2 and the wall there ran 8 feet down; it, however, did not actually reach the hard marl of the moat. The eastern end of the wall seemed to be that shown in the plan, but further excavation there could not be made.

J2 is the remains of a very thick and carefully built wall placed on the edge of the moat (section v); its mortar is similar to that of wall J3, which is the foundation of the

outer court curtain wall that started from the east end of Thorpe's tower.

Both the south and west edges of J2 abut against hard marl, which itself has been cut down to the same level as the top of the existing stone remains. The southern part could not be traced further away than 6 feet, but the western side extended about 12 feet, and at J4 a few stone remains were found; in neither case was it possible to find the shape of the building. So although it is almost certain that J2 and J3 were connected together, it is impossible to say how or when this took place.

Wall K1 is 6 feet 6 inches thick. Its northern end rests partly on the eastern edge of the moat that runs under J1; the northwest corner is 4 feet deeper than northeast. Both corners of its southern end are 4 foot high. The surface of the wall is nearly horizontal and 3 to 4 feet below the ground. Thus K1 ends at the edge of the keep moat and runs diagonally across the moat found under wall J1; hence we can say that this latter moat joined the keep moat somewhere near wall H1.

Wall K1 is fairly built; some camstones were found to be part of its inner construction, but although camstones on the outside of a wall show they were put there in Tudor or later times; if inside, they may be earlier.

Walls K1, J1 and the lower part of L1, which runs at right angles to K1, are fairly well built and apparently have the same mortar, so they probably are the remains of one building. As this building was run across the moat it must have been later than the adjoining curtain wall—the camstone found in K1 confirms this. The actual date cannot be determined.<sup>4</sup>

Part of the western edge of wall L2 was built on the eastern edge of K1, and the east end of the upper part of L1 turns to the south and is supported by the western

<sup>4</sup> A tobacco pipe was found in the part of the moat that abutted against the eastern wall of Thorpe's tower—this makes it probable that the moat was still in existence after A.D. 1650.

part of K1. Obviously these two, which are poorly built, formed a passage that led to the room containing the fireplace and flagstone floor shown in the plan. Obviously L2 and the upper part of L1 are later in date than the building K1 and J1. The large fireplace shows that this building was of some importance. The date of these buildings is hard to ascertain.

The late 17th century pictures do not show any building here, but two of them have lines that probably represent the position where a sharp angled roof ended; one picture gives this abutment as taking place against the keep, while the other indicates that it was further east. An examination of the keep wall does not show anything there, but just above the postern doorway there are slight changes in the structure of the wall that may be what the picture represents.

It should be mentioned that although we have evidence that the moat outside the inner court curtain wall was not filled in before the 18th century, yet the part under wall J1 might have been filled up earlier.

The walls marked M1, M2 and M3 apparently are of the same, but rather late, date. Part M1 seems somewhat better built than the other two. At the western end of M1 the wall ends vertically. It here supports the present curtain wall. On the north side of all three the marl slopes rapidly downwards. It starts close to M1; a few feet away from M2, and still further away from M3. On these slopes a large number of cut stones were found, so it is possible that the outer court curtain wall was somewhere near here, but as its remains at J3 and those marked J2 cannot be traced any further than shown in the plan, its actual position is uncertain.

The dotted line M4 represents the southern wall of the present stone bridge that carries the road and gives access to the kitchen garden. But the bottom of this wall is of earlier date than the upper part and its southeast end originally ran several feet further on. It also seems

to have been several feet thick. On the west end the underwall of M<sub>4</sub> turns southward, and its edge can be traced at least 5 feet, but its end cannot be found, because a large drainpipe is placed there. All this may mean that a large bastion was at one time built here.

#### THE KEEP

- (A) Running along the east-west diameter of the circular part of the keep wall, the remains of a cross wall, about 3 feet 6 inches thick, were found. This wall is composed of a series of pointed arches and has a height of about 8 feet.
- (B) By means of sounding and subsequent excavations two 3 feet 6 inches cut stone square pillars were exposed. Their depth was similar to that of the cross wall. The surface of both pillars and wall are some 3 feet below that of the ground level; this level is about 19 feet above the adjacent inner courtyard.
- (C) The remains of a small opening about 3 feet high and 1 foot 6 inches wide was found high up on the keep wall. It faces the outer gate house, and is almost in line with the cross wall mentioned in (A).
- (D) The access to the meurtriere that lies close to and on the north side of the Norman chapel was found. On the keep side of this opening, there are remains of a carved Norman arch. Inside there are some steps that lead upwards towards the adjacent Norman chapel, but the examination of the wall that separates the two places showed no signs of a doorway. There was, however, an indication that a small oblong opening was there at one time; it was fairly high up.
- (E) Below the Norman chapel floor steps leading down to the well underneath it were found. The height between the top step and the underpart of the floor above was barely six feet.

*Deductions.* The cross wall (A) together with the two piers (B) makes it certain that the northern half of the keep was a built up area, because obviously the square piers must have supported a wooden floor. As the cross wall runs parallel to the Thorpe's tower wall, we can say probably the two are parts of one structure; but as the cross wall is arcaded it is possible that the southern half of the keep was also roofed over, especially as the arcades showed no signs of having been door-closed. The little opening (C) seems to have been a small window, but it may have been an opening through which iron chains worked a drawbridge that gave access to the top of the building constructed on the north side of the barbican. The keep wall below (C) was in too delicate a state for it to be examined to see whether there were the remains of a doorway there. As the floor giving access to the meurtriere is 6 feet 9 inches below the floor of the adjacent Norman chapel and as the steps mentioned in (D) are far apart it is clear that when the meurtriere window was constructed there could not have been any connexion between the two places; possibly the small opening between them was a hagioscope, thus enabling a prisoner to watch the priest. But if the Norman arched entrance is in its original position and the floor of the chapel was three feet lower down than the stairs led to the chapel, (E) shows that when the steps leading to the well were constructed the chapel floor was at its present level; but the steps themselves may have been built after the keep was partially filled up with soil. The date of this latter operation is unknown. On the other hand the print of the castle in Sir Robert Atkyns's history, the date of which is 1712, shows that the Norman chapel inner wall was not in existence nor is its floor shown; hence we can assume that it was partially destroyed during the Cromwellian siege.

## REMAINS FOUND CLOSE TO AND OUTSIDE THE KEEP

(A) Soundings and excavations show that a moat surrounded the major portion of the keep. It ran from the western side of bastion B past bastion A then on to the north side of bastion C (between B and C no excavations could be made). This moat, on the western side of bastion A, was connected to another moat that went in a southwest direction outside the inner courtyard entrance and ran under the present muniment room ; it was traced down the hill slope as far as the lower terrace. On the north side of bastion C, the keep moat was connected to another one that ran in a southeasterly direction close outside the curtain wall of the inner courtyard. Inside this courtyard the outer edge of the keep moat ends close to the west side of bastion B, and but a few feet away from the keep wall.

(B) The upper part of the keep wall and that of the bastions rest on a plinth, which projects about 14 inches. The top of this plinth slopes upwards at an angle of 30 deg., and it is at a horizontal level, so its height above the ground varies considerably. Between Thorpe's tower and bastion A on the west side of the keep, excavation showed that this plinth extends right down to bed-rock, but in the inner court it rested on another and lower plinth that has a level surface and projects 6 to 8 inches. The lower plinth does not go round bastion A, but apparently encircles bastion B ; its level is some 2 feet below the ground surface and probably was originally level with the courtyard itself.

(c) In the inner court there are three pilasters between bastions A and B. They start from the lower plinth. At the bottom they are 3 feet wide and, projecting 4 to 6 inches (the width of the plinth on which they are constructed), rise vertically until they reach the plinth above ; they then begin to lessen both in width and in projection, finishing near the top of the keep with a width of 15 inches and a projection of only 6 inches. There are

three pilasters, evenly distributed round bastion B. On bastion A, in a position corresponding to that on B the remains of what might be the easternmost pilaster were found ; part of it was above and part below the roof of the adjacent Great State bedroom. As partial excavation failed to show that the lower plinth went round bastion A, it is not possible to decide where this pilaster, if it was a real pilaster, ended. Underneath the steps on the north side of and near the keep doorway, the remains of what may have been a pilaster were found on bastion C.

About 20 feet above the courtyard, all the pilasters,<sup>5</sup> even the upper part of the one found on bastion A, are made of tuff stone.

At the same height, and extending upwards the same distance, tuff stone forms a junction between bastion B and the keep wall. None of these stones are L-shaped, but some of the tuff stones forming the pilasters on the curtain wall near the Great Hall, probably built at a later date, are L-shaped.

It should be noted that the keep walls lying between the pilasters are not truly semicircular nor are those on bastion B. All of them are slightly flattened out, some more than others. In one case the wall on one side of the pilaster leaves it at an angle which is not the same as that on the other side, nor do they start at the same distance behind the pilaster face. All this may be due to faulty reconstruction.

(D) Careful examination showed that the stones (whether tuff or not) connecting bastion B with the keep wall are correctly bonded in the sense that every alternate keep wall stone projects into the bastion while the other bastion stones enter the keep wall. A cursory examination of bastion C gave the same result.

<sup>5</sup> It should be noted that the mortar used in these pilasters is not the same as that of the adjacent walls. Also the mortar in this part of the keep wall both inside and outside varies enormously.

(E) The outer wall of bastion A extends 10 feet below the level of the courtyard. It enclosed a semicircular shaft. When discovered, this shaft contained about 20 feet of earth and other materials which, when removed, had a pronounced unpleasant smell. About 2 feet above the stone bottom of the shaft and on the circular side, there is an opening about 8 feet high and 2 feet 5 inches wide. It has cut ashlar stone jambs, and its arched top is one single stone. This opening leads to a passage that runs through the bastion wall, the outer end being but 5 feet high and formed of ashlar stone, with a curved head. The stone floor between the two openings slopes downwards from inside out. In the shaft and about 15 feet above the bottom, there are at the northeast corner the remains of a small shaft cut into the wall. It probably ran as high as the first floor.

(F) The bastion passage joins another one outside, and the latter runs 12 deg. more to the south. Its western wall had less prominent remains than those on the opposite side and was of very poor construction. The better built wall, built of good stone, ran at least 8 feet distant from the bastion.

*Deductions.* (A) shows that the keep moat was not concentric with the keep and therefore is of an earlier date. Unfortunately, proper excavations could not be made, so its original shape is not known. It might have been a moat cut outside an oblong Roman fort, or outside an elipsoid pre-Roman burial place. Another possibility is that there was a small keep in existence here before Henry II gave Robert Fitzharding permission to build the Castle, and this may have belonged to Robert's wife's ancestors.

From (B), (C) and (D) it can be assumed that the keep and its bastions and pilasters were built simultaneously. As the pilasters are only found on the inner court side of the keep, they were built from an artistic point of view. This implies that the court was also under consideration,

a probability that is enhanced when one remembers that the keep moat only ran as far as the southwest side of bastion B, and apparently started from the northwest side of bastion C. Thus the curtain wall being of a later date than the keep, it probably replaced a wooden palisade.

The latrine passage (E) will give some information. The peculiar direction of the part running through the bastion wall shows that although the moat inside the courtyard was filled up, yet part of it must have remained south of bastion A. A trench excavation made on the southeast side of the outer latrine passage wall, and running as far as the eastern arch of the gatehouse, showed nothing but large flat stones lying one above the other and having almost no mortar between them. The excavation was stopped when 6 feet deep, but the bottom of the stone filling had not been reached.

Thus it is probable that the moat, when the wooden palisade was in existence, ran in a southerly direction from outside bastion A. When the southeastern wall of the outside latrine passage was constructed, possibly at the time the outer curtain wall was being built, the moat must have run outside it, and a drawbridge was placed there. If this be so it will be evident that this passage wall must have run considerably further on than the remains show and the drawbridge placed sufficiently far away from the bastion so that its outer end could rest on solid ground, the keep moat being in the way. This difficulty may partially explain why the wall runs 12 deg. further south than the inner latrine passage. Incidentally it may be pointed out that a drawbridge oscillating in this direction would mean that the roadway leading to it must have been close to the barbican wall, and thus would enhance the latter's defensive value. Also it is obvious that if the wall was one on which a drawbridge worked, then the original gateway wall must have been constructed on the courtyard side and would abut against bastion A

slightly west of the pilaster remains. The position of the present gatehouse (it is early Gothic) and its outer wall (which runs against the keep to the west of bastion A) shows that possibly the outer latrine passage ran far enough so that its entrance would be south of the draw-bridge.

If so, then the construction of the Renaissance chimney marked on the plan might be the reason why the passage was given up. Probably the brick remains found in the outer wall of this passage are those of an early Tudor repair.

Consider now the present gatehouse. Its four walls southwest of the gateway are about 6 feet thick. The ground room floor (the present bookroom) is 10 feet below the inner court and was, tradition says, a stable. This may be true, because the construction of the doorway, which is Gothic, shows that it could be entered from the outside of the curtain wall and the doorway itself is wide enough for horses to pass through it. The door hung about 4 feet 6 inches away from the outside of the wall, which is 5 feet 6 inches thick, and opened inwards. Outside and above the actual doorway the wall rests on a pointed arch, and between it and the part thus supported there is a 6 inch gap which leads right up to the floor above. Doubtless this gap enabled the defenders to shoot any attackers that were trying to enter the so-called stable.

#### ENTRANCE TO THE KEEP

(A) The lower part of a pilaster on bastion B, the upper part of which is still visible, is almost totally enclosed by the lower part of the southwest wall of the forebuilding which embraces the stairs that lead to the Norman entrance doorway of the keep.

(B) The upper part of this enclosing wall does not coincide with the lower; alongside the bastion its outer surface is 9 inches further northeast, but the two walls coincide at the south corner.

(c) A partial excavation, some 6 feet deep, of the platform that the stairs lead to, and is outside the keep doorway, showed that the keep wall was vertical while the inner side of the other three walls sloped outwards (see plan). These three walls had been carefully built, and their structure shows that they enclosed an open space.

(d) Starting about one foot above the platform and 12 feet away from the top of the stairs, there is on either side an 8 feet vertical cut stone  $2\frac{1}{2}$  inch projection. On the side facing the stairs, the projections are at right angles to the wall, but on the doorway side they slope towards the wall. The one on the keep wall has unmistakably been inserted after the wall was built, but the opposite one seems to be part of the wall itself; this latter wall runs parallel to the line joining the jambs of the keep doorway.

(e) The original archway leading into the keep was 7 feet 9 inches wide and has a Norman arch. It was partially filled in at a later date, leaving a 3 feet 5 inches wide doorway that is surmounted by a slightly pointed arch. Outside the stone jambs of the latter but within the Norman doorway, some 5 feet above the doorstep, the remains of two horizontal 6 inch square holes were discovered.

(f) On the inside of the keep wall, several feet above the Norman arch, the remains of a large cavity was found.

*Deductions.* (A) shows that the forebuilding must be later in date than the keep, and (B) that its upper part is later still. It is probable, if the excavations mentioned in (c) had been carried out as far as the bottom of the enclosed space, the northeast end would have shown that it reached the level of the courtyard.

If this be true then we have a plausible explanation. The outer wall of this enclosed space would be the inner wall holding a platform that did not come in contact with the keep, nor would the stairs that lead up to it do so.

Between this platform and the keep doorway there would be a drawbridge worked by men in such a way that when raised it closed the doorway.

When the inner court curtain wall was built, it was necessary to give a means for its defenders to enter the keep should they be driven there by the attackers. Of course, this could have been done by placing a bridge between the northeast end of the platform and the curtain wall, but as this bridge could only be a permanent one, it would not be the best means of defence. So another method was used.

The large doorway leading into the keep was reduced in size. The wall on the inner edge of the platform and the stone jambs mentioned in (D) were constructed. Also the steps close to bastion C that lead down from the curtain wall, and those coming from the forebuilding, were built.

The bastion steps gave access to the side of a drawbridge, which, although reduced in width, still oscillated in the same way as its predecessor, but the forebuilding stairs led to a large bridge that oscillated in such a way that when not in use the larger part rested against the stone jambs described in (D), and when in use the vertical larger part was lowered so that it came to rest on the top of the stairs and the passengers were able to reach the other drawbridge and thus enter the keep. The peculiar value of this arrangement was that the wall built on the inner edge of the old platform prevented attackers in the courtyard from firing at the defenders who were leaving the curtain wall, and when the large bridge was resting against the projections described in (D) the defenders were also protected from attackers who might run up the stairs. And even if the curtain wall had been captured, the keep doorway was still protected by the bridge that rested against it.

*Thorpe's tower.* (A) Thorpe's tower consists of two towers forty feet apart joined together by a broad wall

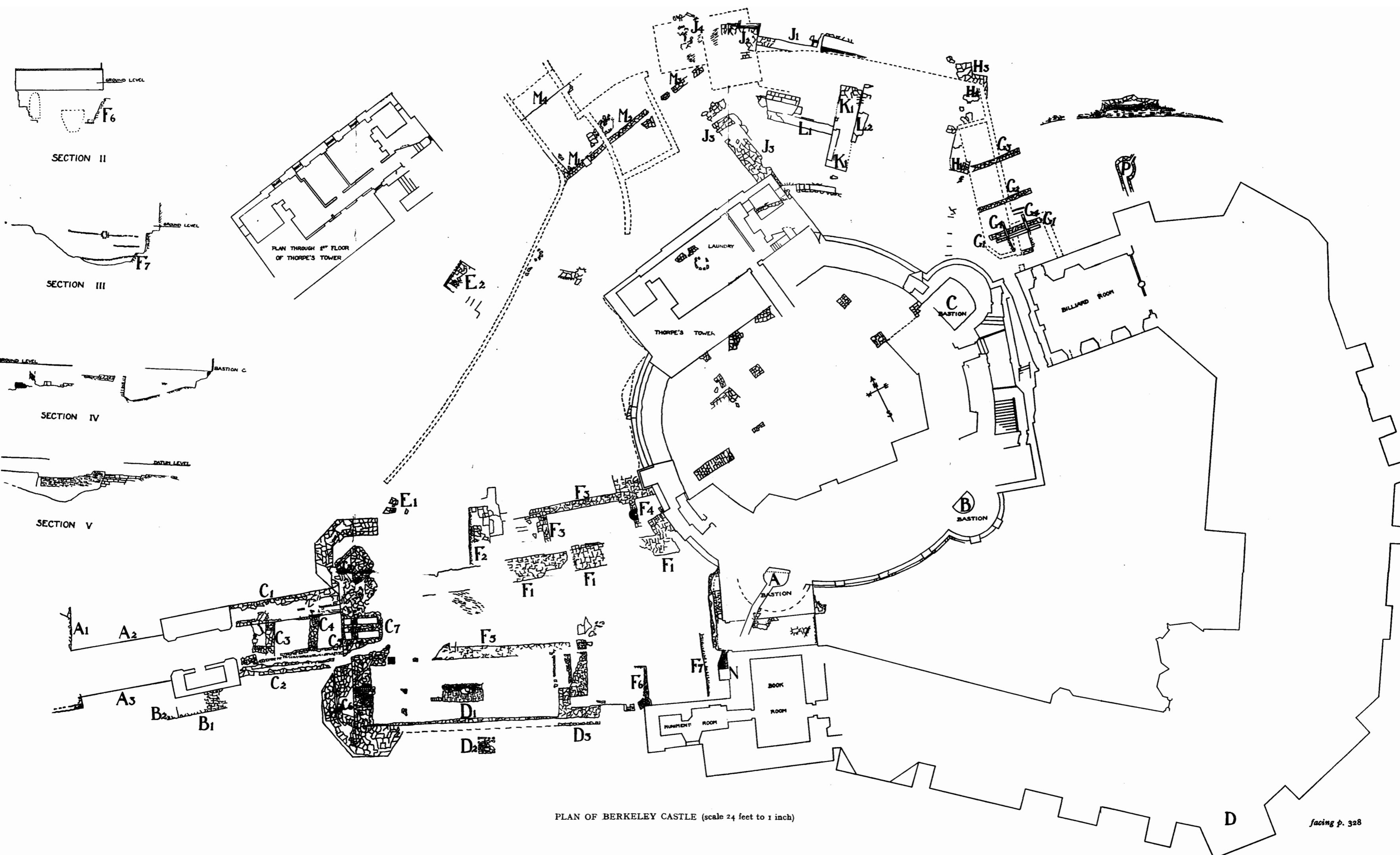
some 13 feet thick. The eastern tower contains a circular staircase that leads to the top of the joining wall, and then runs to the top of the tower. Both towers are supported outside the keep by buttresses, of which the western one seems an original structure, but the eastern is, in fact, the remains of a curtain wall that ran northwards from the keep. This wall was 6 feet thick and runs across what originally was the 9 feet deep part of the keep-moat ; outside the moat its foundation is some 18 inches below the ground surface (shown at E in the plan) then abuts against marl rock.

(B) Soundings were made on the east side of the laundry, and the undisturbed marl was found to be about 10 feet below the ground, showing that the moat ran here.

(C) On the north wall of the eastern tower, a doorway made of tuft-stone cut in the 1st half of the 14th century, was discovered. It possibly gave access to a stairway, and its base is 3 feet above the present ground surface inside the keep. This doorway is 3 feet wide and  $9\frac{1}{2}$  feet high, and is shown in the plan.

(D) On the north side of the wall joining the two towers there are the remains of two openings vertically above one another. The upper one is close to the top of the wall and at the bottom is rectangular in shape. Its outer width is 2 feet 6 inches, but inside it is considerably wider. Its height is 7 feet. The sides and what remains of the semicircular top are made of ashlar. The other opening is 4 feet wide and has a semicircular head made of large cut stone. Unfortunately its original base is no longer in existence. Doubtless it was the outer entrance of a passage that ran through the wall. The distance between it and the doorway of (C) is 5 feet. The distance between its arched top and the opening above is 11 feet, and its centre is 8 feet west of the eastern buttress.

(E) Close to the eastern tower and inside the buttress, there are the remains of a shaft that runs up from the



PLAN OF BERKELEY CASTLE (scale 24 feet to 1 inch)

ground level to 18 feet above the first floor. The bottom of this shaft was not excavated.

(F) There are remains of doorways showing that Thorpe's tower must have been considerably higher than it is at present and that the wall adjoining the two towers also was higher.

*Deductions.* From (A) and (B) we may be sure that the keep moat went round and close to the north side. The direction of the newly discovered wall foundations together with other excavations described later makes it certain that the eastern tower buttress is the remains of the curtain wall that probably was destroyed during the Cromwellian siege of the Castle.

At one time the space enclosed between this curtain wall and the barbican wall was called the stable court.

The doorway in (c) may have led to the buildings erected against this curtain wall; or it may have given access to the shaft mentioned in (E) which possibly was a latrine. Its date corresponds with the statement that Thorpe's tower was reconstructed (see page 334). The upper opening in (D) might have been a means of access to the roof of the outer curtain wall buildings, and the lower one part of the passage leading to the buildings themselves.

#### THE PUBLISHED STATEMENTS

On page 23 of Smyth's *Lives of the Berkeleys* (vol. 1) he says, under the heading Robert Fitzharding, 'Accordingly the Castle was built at Berkeley' . . . 'Howbeit at the first erection of the Castle it onely comprehended the inmost of the three gates and what is within the same. The two utmost and all the buildings within them being the additions of Maurice eldest sonne of this Robert'.

On page 92 of Smyth's *Hundred of Berkeley*, he says, 'Duke Henry . . . came in person to Berkeley: howbeit it is certaine that at this first buildinge the Castle contained noe more then the inmost of the three gates

and the buildings within the same ; for the two unmost gates and all the buildings belonging unto them (save the keepe) were the additions of the Lord Maurice '.

These two statements agree only if we take the inmost gate to mean the entrance to the keep, in which case the polygon towers gate was considered as part of the route gate house.

On page 66 Smyth (vol. 1) says<sup>6</sup> ' When this Lord Maurice had shortly after somewhat enlarged his Castle of Berkeley, and had for the better fortification thereof by making a ditche on the North side cut a little of the ground of the church yard belonging to the church of Berkeley (which on that part adjoineth) the Abbott and Convent soe pursued him by ecclesiastical censures . . . that they make himself to cast durt upon his owne face, and like a schoolboy by his deed to saye . . . for redemption and pardoning of my offence comitted by mee upon the church yard of Berkeley in making the ditch about my Castle I doe give unto the church of Berkeley five shillings rent for ever issuing out of my Mill under my castle, and I give also to the said Abbot and monastery . . . the tithes of the pawnage of Michaelwood, and of Appleridge, and of Okeley and of Wootton Parks . . . in . . . alms for ever '.

Assuming that Maurice was fined for cutting a ditch on the north side of the castle, it is difficult to decide where actually this work took place. It is improbable that Smyth uses the word north technically, but if it were so, then ' Northern ditch ' would mean either that outside the part of the inner court curtain wall which abuts against the keep, or the part of the outer wall which runs parallel to Thorpe's tower wall.

<sup>6</sup> A 13th century Latin copy of the original document says, ' the ditch which I made from the cemetery of Berkeley round my Castle '. The question is where was the cemetery in those days ? Remains have been found both in the keep and on the north side of the excavation mentioned on page 335 which make it possible that the cemetery at one time occupied a considerable area on the SE. side of the church.

It is probable, however, that Maurice did not build the outer court curtain wall. The datable parts of the inner court wall show that it was still being constructed in A.D. 1182: the cut stone arches of the inner court gate house are of a similar date, and although the gatehouse has been reconstructed, the arches were most probably part of the original building, and there being a moat outside, there must have been a drawbridge. If this drawbridge was the main entrance to the Castle, Maurice must have designed an elaborate means of defence nearby; therefore, unless the barbican wall was of later construction we must assume that it, together with the moat outside it, were Maurice's work.

That the barbican was built for defence purposes is clear; it had a moat outside it, and close to where it came in contact with the keep, there is a passage (on the keep ground floor level) that leads to a doorway which probably gave access to the top of the barbican wall, thus showing that its level was but 18 feet above the ground.

It is difficult to see why the barbican joined the keep so far away from the drawbridge, but as the original outer wall of the gatehouse must have been to the east of the latrine passage it may be that the western half of bastion A gave a sufficient means of defence. Consider the west end of the barbican wall. The good stone work runs from the keep up to and just past the wall F2; further on the marl has been smoothed off and on it were some poor small stone remains the north and south edges of which could not be determined, nor was it possible to be sure of where the wall ended. Thus the original end of the barbican cannot be determined.<sup>7</sup>

At the west end of wall F5 there are some remains of a cross wall of poor construction, but close by it was found

<sup>7</sup> It may be mentioned that south of where wall F2 comes in contact with the barbican the three iron supports of a very heavy four foot metal bell were placed on large concrete foundations—so that this part of the southern edge of the barbican is difficult to follow.

that the stone marl had been smoothed and levelled obviously for the foundation of some other building ; perhaps this was for the barbican gateway arch. This latter discovery, together with finding that the end of the barbican moat is but just past wall F2, seems to show that the inside edge of the barbican gateway was here.

If this be so, then we can say that the inner curtain wall together with the barbican were Maurice's work, but as the former was not finished before A.D. 1182, and Maurice died 8 years later, it is unlikely that he built the curtain wall of the outer court. The probability that this is true is enhanced when we remember that the churchyard ground is about 13 feet higher than the ground near the barbican, so the curtain wall would also have to be considerably higher, and, being only 30 feet away, it would obviously make the barbican defence method useless.

Thus Smyth's statement that Maurice was fined for taking some of the churchyard ground does not necessarily apply to the outer court curtain wall. It may mean that the barbican itself was an encroachment, or possibly Maurice, when building the inner court curtain wall, placed the northern part further out than the original wooden palisade. If, however, the barbican was built shortly after Robert Fitzharding retired to the Bristol religious community (about 1165), then Maurice may later on have built the outer curtain wall as a better means of defence.

The date at which this wall was built cannot be ascertained. It could be done if one were able to compare its structures with that of the keep and inner court curtain walls, but as these walls have been strengthened by inserting therein cement and sand this possibility no longer exists.

On page 168, vol. 1, under the heading Thomas the second (1245-1321), Smyth says ' this lord built of newe ' (1313) ' one of the gatehouses of the Castell of Berkeley during which tyme, which lasted all the winter and

springe followinge, hee withdrew himselfe to the Castle of Gloucester, whereof hee had the keepinge'. This statement is so exact that we may be sure that Smyth had definite evidence that one of the gatehouses really was 'built of new'. But the expression has two meanings, either a gatehouse was pulled down and rebuilt, or a new gatehouse was built in a new position.

In 1313 there were three gatehouses in existence; the outer gatehouse, the one at the end of the barbican wall, and the inner court gatehouse. Thus Smyth's statement means rebuilding. If Thomas the second left Berkeley because the Castle could not be defended then it is probable that it is the barbican gatehouse that was pulled down and replaced by the polygon towers, because in this rebuilding it is obvious that a considerable part of the adjacent curtain wall must also have been pulled down, thus making the Castle defence very difficult. If this statement is true it gives us the date of the polygon towers.

The building of the polygon towers would also necessitate the reconstruction of the barbican drawbridge; and this might explain why a large cut stone on which a drawbridge oscillated was found on the south side of the northern tower, but being upside down it could not be exactly in its original position.

On page 308, vol. I, under the heading Thomas the third (1293-1361) Smyth says 'In the same yeare (1328-1329) . . . hee somewhat built but more beautified, his Castle of Berkeley, the rather against the marriage of his only sister, and the receiving thither his own wife'.

The chapel next to the Great Hall has some Norman remains, but there is other stonework the date of which is about 1328. It was found that the original floor level was considerably lower than it is at present, so, as the ceiling of the room below, which is supported on stone arches and rises higher than the original Norman floor, these arches are probably Thomas the third's work. As the remains of similar ceiling arches were found under the

drawing room and the muniment room, we may put them down to the same date.

On page 308, vol. 1, Smyth says, ' In the 16th of Kinge Edward the third ' (1342) ' this lord (Thomas the third) of new built (then ruinated) the great high Tower of the north part of the keep in Berkeley Castle, called at this day Thorps<sup>8</sup> Tower ' . . . ' fetching most of the stones by boat from Seavern, And the Tuft stone from Dursley by land '.

Evidently this proves that Thorpe's tower was in existence before 1342, but excavations in the laundry outside it failed to show the remains of any other building. It should be mentioned that the passage described on page 328 although having Norman stone arched entrances, is, at the top, built of brick, and therefore there must have been a still later new structure here.

The Severn stones are no longer obtainable. It is said that they came from an island not very far from the entrance to the Gloucester Canal, and tradition says it could only be excavated at low tide. Incidentally the camstone which is mentioned above is a soft stone not used for building walls that had to resist attacks; this stone came from Newents quarries near Dursley.

On page 309, vol. 1, Smyth says ' Thomas the third (in 1344-1345) built the newe worke at the Castle (soe then called) which is that part without the keep on the north-east next the little parke and next to the great kitchen, the roof whereof Henry VII brought from Wootton, as tradition tells us '. This may refer to the present passage that now leads to the backyard and runs between the keep and the present billiard room; but as this billiard room wall seems to be of a later date, it is unlikely. It might be the construction of a passage that led to the postern gateway, the inner and outer gateways of which

<sup>8</sup> Traditions say that Thorpe is the name of the family whose duty it was to man this tower—they are said to have inhabited Wanswell's Court, a farm which even now has remains of an early date.

are still visible. Or perhaps it refers to a courtyard stone stairway that led to a passage that gave access to the rooms above the billiard room. At the bottom of these stairs there is a stone doorway which might be gothic, but at the top the remains of a camstone doorway, which was early Tudor in design, were found; other similar remains were also detected in one of these rooms. But as it has already been shown that Thomas the third constructed stone arches to support ceilings, it may be that Smyth refers to the big stone arches that support the billiard room east wall, and the still greater arches that are in what at one time was the bakehouse next to the kitchen.

On page 12, vol. II, Smyth says under the heading Thomas the fourth (1352-1417), 'Hee much enlarged the ditch . . . by taking a part of the churchyard which he recompensed with an yearly rent of 6s 8d'. This statement probably refers to the outer court moat but whether the word 'enlarged' means widening or lengthening it is difficult to say. If it means widening, then what happened is obvious, but if lengthening, it cannot refer to cutting the moat round the outside of the outer gatehouse because the Castle remains, marked B on the plan, seem to be somewhat earlier in date. It may be, however, that he built some square bastions outside the outer court curtain wall, and this would necessitate an increase in the length of the moat or widening it—see note below.<sup>9</sup>

On page 362, vol. II, Smyth says 'This lord also made of new the stone bridge leading into Berkeley Castle which before was a draw bridge of timber, and set up those faire stone pillers and buttresses whereby the keep and great kitchen seeme supported'. The date given is 1586. Also on page 260, *The Hundred of Berkeley*, he says 'And what remained of the stones of this chapel

<sup>9</sup> Note that building the northern polygon towers probably made it necessary to cut the moat further north.

and hospitale<sup>10</sup> uncarried away by others, Henry Lord Berkeley about the 20th year Queen Elizabeth ' (1578) bought ' wherewith hee built the arched stone bridge leading into the first gate of Berkeley Castle, where a wooden drawbridge was before '. The remains of stone bridges outside the gatehouse are still visible. The earlier one is that made of camstone and is the one mentioned above ; but it must have been destroyed in the Cromwellian siege, because one of the pictures mentioned on page 318 shows that at that time (the end of the 17th century) wooden boards lay there. There are also a considerable number of cam stone buttresses, so it is probable that the chapel and the hospital were built therewith.

Leland's *Itinerary* (c. 1540) say about Berkeley Castle ' It is no great thing. Divers towers be in the compass of it. The ward at the firste gate is mitey strong and a bridge over the ditch to it. There is a square dungeon tower in the Castle '. The first gate refers to the outer gatehouse, and at this date had not been reconstructed by Henry. As Leland does not call the bridge a drawbridge, it may be that even then there was a fixed wooden bridge there. The square tower probably refers to Thorpe's tower.

The following extracts from various accounts give definite information.

1591. ' Humphrey Reade gent received £20 to the use of Lord Berkeley for and towards the making of the new bridge of the Castle of Berkeley by William Bower '.

1594. ' Paid for pitching the bridge at the Castle of Berkeley 48 yards ; paid for pitching 52 yards without the bridge '.

Both these refer to the camstone bridge.

1601. ' Paid . . . for felling and squaring two trees in Micklewood for the bridges at the middle gate '.

<sup>10</sup> Refers to Longbridge Hospital founded by Maurice the First in the 12th century.

1601. ' Paid . . . for 17 day's work felling and squaring and laying the two bridges at the two gates '.

These two extracts obviously refer to the bridge outside the polygon towers<sup>11</sup> and the one outside the inner court gatehouse; as they are not called ' Drawbridges ' and are stated to be ' laying ', we can be sure that they were fixed.

1601. ' Paid for removing the earth and rubbish lying at the new bakehouse door which drove the water into the great kitchen '.

Jeayes' Catalogue of the Muniments at Berkeley (page 282) states that people were paid for building a great part of the great kitchen between 1604 and 1607. Obviously these two statements show that considerable work was being done in this part of the Castle.

1699-1700. ' Paid Robert Harris for 14 days pulling down the gatehouse and coachway; also 18 men levelling the outer court. Similarly in 1701 paid for poles for pulling down the towers.

These three statements are evidence, which is confirmed by one of the pictures mentioned on page 318, that part of the outer yard curtain wall was still in existence. The cost of levelling the outer court shows that considerable work was done here and, as already stated, it has made it impossible to find out where the barbican wall originally ended. G. T. Clark<sup>12</sup> states that ' In 1646 the outworks were destroyed, and the arms, ammunition and drawbridge removed to Gloucester '.

This statement, if correct, is important because we know that there was no drawbridge at the entrance to the outer court nor probably inside it, so the word drawbridge must refer either to the keep doorway or the postern gate. As one of the pictures mentioned on page

<sup>11</sup> Note that on page 313 we state the moat outside the inner court gatehouse was filled up in Renaissance times; this on the assumption that the chimney was built at that time.

<sup>12</sup> *Trans. B.G.A.S.*, 1876, 1, 132.

318 shows that the moat outside the postern gate was in existence at the end of the 17th century, and the woodwork upon which a drawbridge oscillated to and fro is even now in its place, it is possible that this is where the drawbridge lay: the more so when we remember that keep drawbridges were generally replaced by fixed means of access at an earlier date.

We will now endeavour to find out when the moat outside the billiard room was filled in. Nearby and running east from the eastern wall of the churchyard and adjacent road, a very deep depression is now in existence. Its length is 60 yards, its average depth about 5 yards and average width 22 yards. Thus 6600 cubic yards were extracted, a quantity enough to fill the moat. That this excavation was not done before the end of the 17th century is probable because none of the pictures mentioned on page 318 show it. But one of them depicts ladies and gentlemen walking along a path which appears to lead to the present backyard passage, or to the postern gateway. This path seems to come from the present grass-covered private roadway that is about one mile long and has very old elm trees on either side of it. Thus we may say that at that date this side of the Castle probably was the garden. Incidentally the remains of a considerable number of paths are still visible there and it should be noted that the present terrace<sup>13</sup> running outside the inner courtyard curtain wall is not shown in these pictures—so access to this garden must have been either through the postern gate or the backyard gateway.

Consider now the bastion which is close to the east end of the billiard room. This bastion contains on the ground and upper floors nothing but water closets. Near the

<sup>13</sup> This terrace is shown in Sir Robert Atkyns' *Ancient and Present State of Gloucestershire* published in 1712. A rough estimate of the amount of soil required to erect this terrace and to fill the moat is equal to the amount derived from the excavation just mentioned.

bottom of its outside wall and completely below the ground level the usual arched stone entrance to a latrine was found, but close to the stone work that filled up this opening the structure marked P on the plan was discovered. This structure, which can be dated as 18th century work, is a stone drainpipe that runs from the latrine into a cesspit and must have been built when the moat was being filled up.