

RESTORATION OF THE CASTLE OF NEWCASTLE-UPON-TYNE, VIEWED FROM N.W.

(From a Model by the late Mr. John Ventress, now in the Blackgate Museum.)

IV.—NOTES ON A RECENT EXAMINATION OF CERTAIN
STRUCTURAL FEATURES OF THE GREAT TOWER,
OR KEEP, OF THE CASTLE OF NEWCASTLE-UPON-
TYNE.

By R. OLIVER HESLOP, M.A., F.S.A.,
one of the secretaries of the society.

[Read on the 25th March, 1903.]

I propose to lay before our members some of the results of an investigation made at the suggestion of Mr. John Gibson, warden of the castle.

First, however, it may be well if I recall the circumstances leading to the enquiry, and the point to which examination was directed.

The upper stage of the great hall, as it now appears, carries the barrel vault, erected in 1810, commonly spoken of as alderman Forster's roof. Immediately below, a passage-way is carried round the four sides of the hall in the thickness of the wall, much like a triforium, or blind storey. Large openings, one at either end, under the vault, and two at each side, east and west through the spring of the arch, serve to suggest the term 'triforial gallery.' In the floor of this gallery, exactly in the middle of the passage-way in the western wall, there is a trap-door. This had long been choked with debris. On lifting it, daylight could be seen through a chink communicating with the outside face of the wall. From the street below, the orifice presented the appearance of an accidental hole, broken raggedly at its sides, where the joints of some courses of stonework seemed to be dislodged and colonies of jackdaws found their home. In a surface, presenting the symptoms of decay observable here, a cavity like this is not remarkable, and it seems to have attracted little or no attention. I cannot find a single reference to it in a description of the keep, or in any discussion held in this room; and yet I trust to be able to show you that its existence elucidates an obscure and controverted point in the design and in the internal arrangement planned by 'Mauricius Ingeniator' for his royal master, Henry II.

The west wall of the keep, it will be remembered, carries the latrine shafts and the flues from the main apartments; a wide buttress being added to compensate for these perforations. Its only mural chambers are on the level of the great hall and immediately above that floor level. So that, compared with the other faces of the tower, it is of much greater solidity than the rest. The multangular form of its north-west angle adds a further feature of almost unbroken strength to this face of the structure. From the hearth in the great hall a modern chimney breast has been built against the inside of this wall, where it has the appearance of a flat buttress, $9\frac{1}{2}$ feet wide, projecting into the hall. It rises through the barrel roof overhead, of which it is probably a contemporary work. The trap-door, above referred to, is immediately behind this buttress and it is well to note that the inner face of the wall, for the width of 9 to 10 feet, is entirely masked by this excrescent structure.

Turn with me now for one moment to the south wall of the keep as it is viewed from the great hall. A passage-way runs in the thickness of the wall at a height of about sixteen feet above the level of the floor. It is reached from the south-east newel stair, and, after intersecting the large south window splays, it is continued westward, where, after an ascent of nine steps, it terminates in a dark cul-de-sac. The ninth step reaches a landing, where, on the right hand, the indication of another step shows that a return of the stairs had been intended to be made at a right angle, so as to carry the passage upwards in the west wall. But the passage-way and steps in that direction had been built up with masonry, apparently of an early character, leaving the termination of the gallery much like the recess of a dark cavern.

Mr. Gibson pointed out that the oblique line of the stairs, if followed upward in the west wall, might correspond with the position of the trap-door in the triforial gallery above; that the great thickness of blank wall at this point suggested the possibility of a hitherto undiscovered mural chamber; and that, in any case, it was most desirable to make a thorough examination of the space immediately underneath the trap-door and to open out the masonry of the blocked stairway below, with a view to show the connexion, if any existed, between the two, and to ascertain definitely the course and purpose of the blind staircase.

Mr. Gibson's suggestion was laid before the members of the society in 1894, who willingly voted a sum of five pounds towards the explorations, appointing the late Mr. Sheriton Holmes, Mr. W. H. Knowles and the writer to superintend the excavation. Mr. Holmes immediately engaged suitable men for the work and entered upon the task with his characteristic energy. Pressure of other work and failing health prevented Mr. Holmes from embodying the conclusions obtained in a report, and by his lamentable death our society was deprived of learning the results from one whose experience in building construction and whose archaeological knowledge made his deductions the more valuable.

Mr. Knowles brought to bear the qualities of a specialist as well as his professional skill and the results obtained were largely due to the vigilance and alertness with which he superintended the work. So thoroughly, in fact, did he enter into it that he was induced to undertake a minute examination of the entire structure, having discovered discrepancies in existing plans of the building. This decided him in making an entirely new survey of the keep, an undertaking involving great detail and of such magnitude that time must necessarily elapse before its accomplishment. When that work is completed, however, we shall possess not only an embodiment of the operations now under notice, but complete and accurate descriptions of the entire fabric.

Meanwhile, I trust I may be pardoned for taking upon me to lay before the members some of the results of this interesting exploration pursued within our own walls. Let me premise, in doing so, that the anticipations of discovering a hitherto unknown intra-mural chamber proved futile. Nor were the romantic feelings, with which we followed upward, step by step, the mysterious stairway, stimulated as our work progressed. All our preconceptions, in fact, were dissipated by the results obtained. But these proved of the highest value, in other and quite unexpected directions.

Operations were begun at the trap-door in the mural gallery, but it may be better for our purpose to describe, first, the work done on the blind stairway lower down.

This was begun by removing the courses of ashlar resting on the bottom step of the blocking, where the return passage in the lower

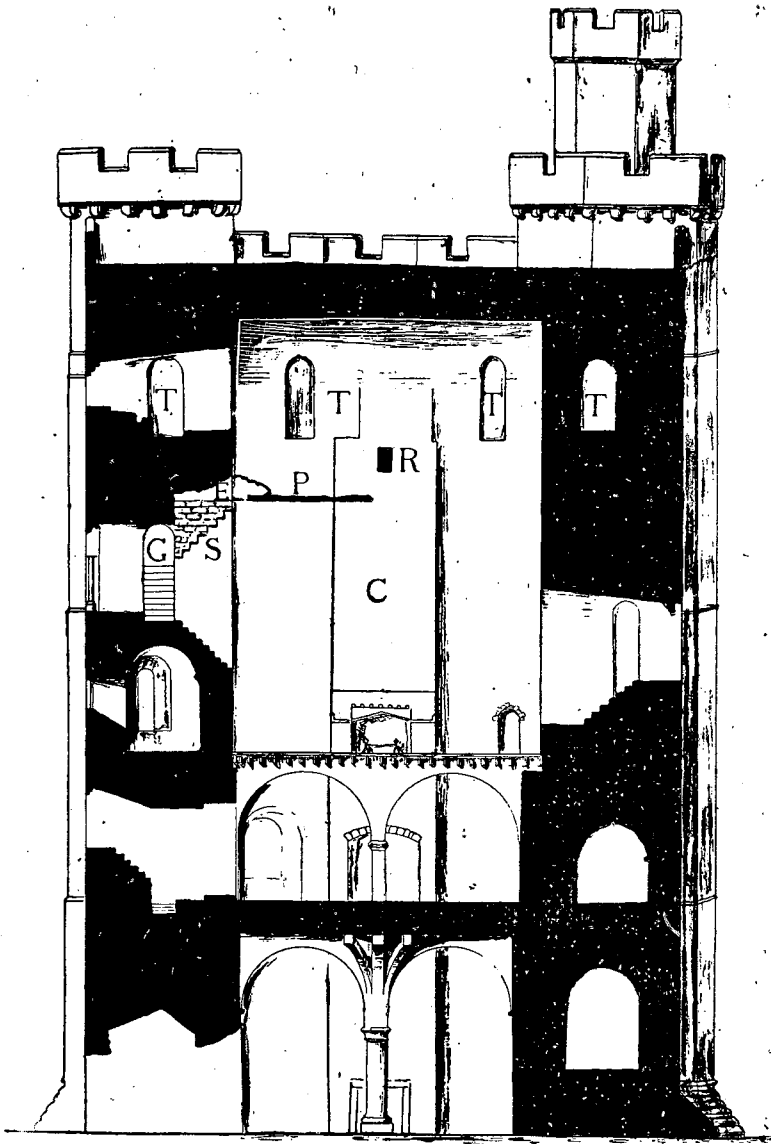
gallery was found to measure 3 feet wide by 5 feet high. Material of a more or less easily wrought character, it had been anticipated, would be found to constitute the filling behind, and the clearing out of the stairway had been supposed to present a comparatively easy task. It was soon found, however, that the backing, with which the stairway had been closed, was a compact mass of grouted walling that had set in the hardest concretion. Progress in such material was necessarily slow, as it became almost as difficult to hew as a face of solid stone. In consequence of this it was necessary to restrict the height of the excavation to that of a hole barely sufficient to admit the body of the workman employed. In this manner eight steps, having side walls on either hand, faced with dressed ashlar courses, were bared. But this facing ceased at the eighth step, where the stairs also ended abruptly. There was no landing on the level of the top step; and every indication showed that the stairs had not ascended higher. Space was hewn above and to the right and left; but it only continued into the grouting, of which the inner thickness of the wall is composed. It became evident that the excavation had been now carried into the original wall of the keep, and, consequently, that the stairs had never been constructed any higher than the eighth step. But the character of the building material found in the original wall was identical with the blocking material encountered all the way from the stair foot. So that the conclusion became certain that the filling in of the stairway had been contemporary with the building of the keep itself.

As the design of the king's architect had provided the straight mural stair; thus far excavated, it is apparent that a change of plan had taken place at this point, leading to the closing of the passage-way with the material of construction and filling it in, from side to side, upon the uncompleted stairs.

The abandonment of so important a feature of the structure may be compared with circumstances attending the operations of Henry II.'s builders.

The erection of the keep appears from the Pipe Rolls to have begun in the year 1172, continuing through five subsequent years.¹ In the expenditure of 1174 the amount spent in the operations fell to

¹ See *Archæologia Aeliana*, N.S. vol. iv. p. 63, &c. Boyle and Knowles, *Vestiges of Old Newcastle, &c.*, p. 47.



C. Chimney breast. Modern.

G. Blind gallery.

T. Triflorial gallery.

R. Outlet of Roof drain discovered

S. Stairs uncovered.

E. Excavation in solid wall.

P. Perforation; bones of Bats found.

R.O.H. delt.

£12 15s. 10d. only. The date corresponds with the invasion by William the Lion with his huge forces. 'Well sees the king of Scotland,' exclaims the chronicler, 'that he will never succeed in conquering the Newcastle-on-Tyne without stratagem.' Incomplete as was the great tower at this time, the works had, evidently, been rendered impregnable to all but an investing army provided with heavy siege artillery. The suspension of building operations is sufficiently indicated by the small expenditure of the year on the keep; and their resumption in 1175 is shown by payments amounting to £186 15s. 4d. Whether or not the stoppage of the works at this date caused a reconsideration and subsequent modification of the design, may be open to question. The facts remain that the building of the keep was interrupted during its progress; and that the architect's plan was, either at that or a later stage, greatly modified in its internal structural arrangement, as we have seen.

The excavation of the steps had been carried a distance of 6 feet 4 inches within the blocked face when the last ascending step was cleared. On digging farther into the heart of the rubble, a long cavity was disclosed, about eighteen inches to the right of and level with the uppermost step. It is of irregular form, and eight to ten inches in diameter. Probed with a rod it was found to extend for a distance of fourteen feet further immediately behind and parallel with the inner face of the wall of the great hall. Its origin and object are alike inexplicable, but it must, at some period, have had an outlet at its farther extremity; for there were found, in the recess broken into, numerous skeletons of bats. Besides these, Mr. Gibson found, by drawing a rod along, the blackened heads of clay-pipes, of the kind known as 'churchwardens.' These clay-pipes present the character of tobacco pipes in use in the nineteenth century and have probably been thrown into the open end of the cavity by workmen engaged in building up the chimney breast and the barrel vault in 1810. They quite correspond with pipes in use at that period.

In Bourne's time the castle stood roofless. He describes the entrance to the great hall from the fore-building as 'a very stately Door of curious Masonry.' From its threshold a scene of ruin and decay was looked down upon; whilst, overhead, the four-square enclosure was open to the sky. Bourne says, 'the Room has its Floor

broken down close to the Castle Wall, as indeed all the other Floors are to the top of the Castle ; so that, excepting the Floor above the County Gaol, there is not one left.² The state of ruin when Bourne wrote in 1732 continued until the year 1810. 'This noble fortress,' writes Mackenzie, 'had been long tenanted by a currier and its walls sheltered a vast number of bats ; while the Chapel was used as a beer cellar for the Three Bulls Heads public house ; but its reparation and improvement were now commenced with great spirit. The top of the Keep was arched and flagged, the battlements embrasured, a corner tower for a flag-staff raised, and the stairs and interior apartments were carefully restored to their pristine form. Twelve carronades,' he adds, 'were also mounted, to be fired on days of public rejoicings.'³ The orifice broken into had evidently been one of the retreats and hibernating places of the 'vast number of bats' just referred to.⁴ It is highly probable that the dilapidation described extended most seriously on the west wall, where the flues had probably fallen out altogether. For it was, as we have seen, necessary to build anew the entire chimney-breast from floor to vaulting. It would be in course of this reconstruction in 1810 that workmen employed left their broken and discarded tobacco pipes in this recess.

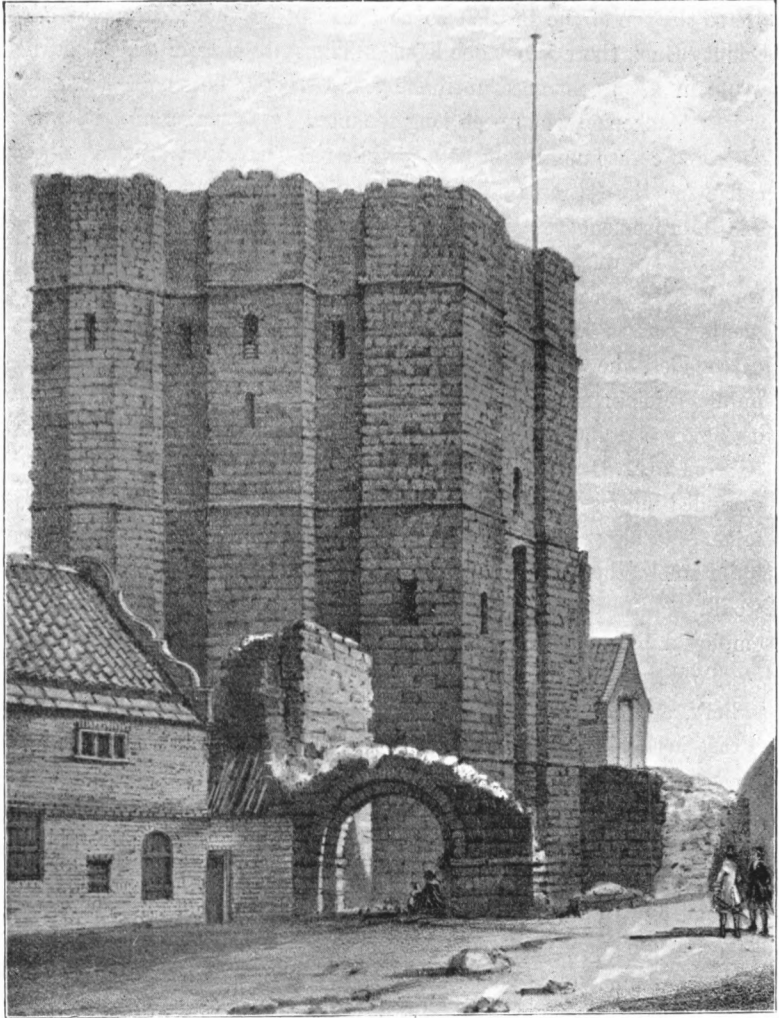
To return now to the trap-door in the floor of the west triforial gallery, and situated immediately behind the centre of the chimney-breast just referred to, it should be stated that this was merely an old door that had been taken off its hinges and laid down on the spot. It covered and afforded footing over what had hitherto been supposed to be a mere break in the floor.

The work of clearing out the debris was begun ; the special object being to ascertain whether connexion with the blind stair, just below, could be discovered. As, however, the course of the blind stair was immediately on the west of the line of the triforial gallery there seemed probability that the want of continuity in the line might be accounted for by the existence of a mural chamber between the trap-door and the blind stair. By excavating downward, whilst

² Bourne, *History of Newcastle*, p. 119.

³ Mackenzie, *History of Newcastle*, 1827, p. 97.

⁴ Bourne quotes the Millbank MS., which says it was 'full of chinks and crannies.'



WESTERN FRONT OF KEEP OF CASTLE OF NEWCASTLE IN 1811, WITH ARCH OF BAILEY GATE
IN THE FOREGROUND.

(Reproduced from Jefferson's lithograph in *Archaeologia Aeliana*, N.S. iv. 98.)

The four loops under the uppermost string course are on the line of the triforiated gallery.
The orifice below, in the centre of buttress, is the spout-hole from the roof.

the workmen on the stair below drove their cutting upward simultaneously, the intention was to meet and disclose the supposed connexion between the two extremities.

But we have already seen that the stairway only consisted of eight steps, and that evidence plainly showed it had never been continued beyond, the original plan of the structure having been relinquished as far as this feature was concerned. In an equally remarkable manner, the assumption respecting the trap-door proved false as investigations proceeded. Beneath the foot-way of the mural gallery the removal of the door revealed a mass of loose debris, a mere dense collection of material that blocked a gap almost to the floor level of the passage-way. Its loose character rendered the work of removal comparatively easy; but its quantity was sufficient to fill many carts. Very soon the hole was found to be an entrance broken through the crown of an arched passage way; and a regularly built tunnel was discovered at a depth of 6 inches below the floor of the triforial gallery. The sides of this are faced with ashlar courses of excellent masonry, exhibiting the most careful construction, and contemporary in character with the original masonry of the keep, forming an essential part of the original work. Measuring 14 inches wide by 24 inches high, from its floor to its crown, it had passed horizontally through the entire thickness of the western wall, at a height of $25\frac{1}{2}$ feet from the floor level of the great hall. Its inner termination had been entirely masked by the flue shaft built up against the inside face of the western wall in 1810. As we have seen, its outside termination is still visible from the street as a jagged hole immediately below the level of the triforial gallery. Its outer jambs are now so dilapidated that it presents every appearance of a mere accidental break, due to decay in the facing stones. Only thus, and by absence of knowledge of its internal construction, can its existence hitherto have escaped observation. Yet it is strange that its appearance, as delineated in Jefferson's lithographed view of 1811, in *Archaeologia Aeliana*, n.s. iv. page 98, has passed unnoticed. This is reproduced on the opposite page. For it is there shown as a regularly built outlet with an arched head. A closer examination of the orifice itself plainly shows that its foot-stone had been projected, though now broken off close to the face of the wall. There is no manner of doubt that

this foot-stone terminated as a projecting spout, or gargoye ; and it is equally apparent that the tunnel now disclosed is the original outlet of the drain from the main roof of the keep.

The importance of this discovery will be apparent by the fact that here we have at length found a key to a hitherto obscure and much disputed problem ; namely, the level of the ancient roof of the great hall. By this we have found the yet further unlooked for result, in discovering the character of the triforial gallery as intended by its architect in the years of the building of the keep.

Nor is this all ; for Mr. Knowles immediately began, with the instinct of a specialist, to sound the walls at the level of the spout line just discovered. This operation, conducted, not without peril, from the summit of a builder's long ladder, was duly rewarded when Mr. Knowles found indications of a second outlet from the roof-gutter, in the north-east corner of the north wall. This second outlet, however, is of a very different description from the first, just now described ; for it has the appearance of an afterthought and not of an original construction. It is, in fact, a conduit of much smaller dimensions than the first ; and it has every appearance of being dug out of an existing wall, its character being that of a roughly made hole contrasting with the carefully constructed condition of the larger orifice in the west wall.

It will be seen that we have now the means of showing the original height of the great hall from floor to roof-principals. Misled by the existing barrel roof, the height has hitherto been exaggerated, having been always assumed to be much above the level now undoubtedly revealed. With the actual position of the roof now before us, the great hall is shown to be no longer of disproportionate height, but to be an apartment designed originally upon a scale such as to enhance its stateliness, or even, it might be said, its magnificence. Its actual dimensions thus become $30\frac{1}{2}$ feet long, 24 feet broad, by $24\frac{1}{2}$ feet high to the eaves. It will be seen that the height of the roof above the floor is in keeping with the proportions of the great window lights on the north, south, and east sides of the hall ; lights which are on a scale of great dignity, and are evidently intended for an apartment of this lofty description.

By this determination of the actual original roof height it

becomes evident, that, whilst the triforial gallery presented only loops on the outside face of the walls of the keep, its large internal openings (now looking *into* the great hall) were originally lights, open to the day, and looking down upon the roof within the quadrangle of the structure. The battlements thus rose clear of and masked the roof within the curtain walls.

It should be noticed that the original roof line of the great hall did not escape the acute observation of Mr. Longstaffe, although, in the absence of information such as is disclosed by the explorations now under consideration, he advances his statement with diffidence. He points out the projection on the inside wall on the south of the great hall, which he calls its ceiling mark. A similar but less defined mark runs along the opposite north wall. These now prove to be the original gutter lines of the spouting. The triforial gallery thus becomes Mr. Longstaffe's 'fourth or defensive storey, now partly thrown into the great hall.'⁵ He also states: 'the original roof would most probably be hipped and tiled.'⁶ This is in exact accordance with the fact, now disclosed, of there being a single original outlet; that, as we see, is constructed of dimensions large enough to carry off the rainfall of the entire roof by one aperture. And this further involves the construction of a hipped roof. This form leaves all the triforial windows open to the quadrangle; and enables a continuous gutter to be carried along its four sides to the outlet.

But we have yet to account for the existence of a second, and apparently extemporized, conduit on the north-east corner of the quadrangle.

The keep had stood but 63 years when the Pipe Roll indicates, under date 1240, that its roof was covered with lead. Thirty years later, in 1270, the large sum of £67 6s. was spent in its repair.⁷ Either at this date, or at a later period, the hipped roof was renewed by another form of roof, having its ridge carried from wall to wall. This ridge closed in the single triforial windows in each of the north and south walls, their outlook now being into the great hall itself instead of upon the hips of the former roof. But the construction of a ridge roof intercepted the continuity of the four original gutters.

⁵ *Archaeologia Aeliana*, vol. iv. n. s. p. 87.

⁶ *Ibid.*

⁷ *Archaeologia Aeliana*, *supra*, p. 80.

all leading to a single exit. There thus became two gutters separated from each other by the ridged roof. That on the west side continued to carry off the water as before; whilst for the gutter on the east side it became necessary to improvise another outlet. This sufficiently explains the rough and ready character of the north-east conduit discovered by Mr. Knowles.

Having at length demonstrated the original proportions of the great hall, it may be well to notice some conjectures formerly indulged in respecting it.

In the year 1855 additional space was found to be required, in order to display properly the collection of antiquities in the possession of our society. A much favoured proposal was that of converting the great hall by the addition of an upper stage, the existing barrel vault giving place to a glass roof. 'Was there ever a room over the great hall or not?' enquired the advocate of this proposal. 'There were marks in the wall which had led some authorities to answer the question in the affirmative; supports of some kind there had evidently been, and the conclusion had been drawn that these supports had borne the floor of an upper chamber.'⁸ Fortunately, Dr. Bruce demurred to this. 'Unquestionably they must have more room,' he allowed, 'but as to the erection of an upper chamber, that, he thought, would destroy the magnificent effect of the great hall.'

A year later the subject was again urged, the same disputant once more enforcing his opinion that 'there had anciently been not one room only, but two—one over the other. There were,' he stated, 'joist-holes in the walls, showing the level of one destroyed floor.'—'No architect,' it was added, 'would ever have built, originally, so disproportionate a hall—a hall 45 feet high, and only 25 feet long and 24 broad.'⁹ Dr. Bruce, continuing to demur, was confronted with the fact of the joist-holes referred to. These, he explained, were indications of a gallery; not of an upper floor.

It is necessary to mention here that joist-holes are visible in the east and west walls at the extremities of the hall only. They are cut into the walls evidently at a late period, and for some adaptation of the structure. They had been filled and plastered over, probably during the restoration of 1810, and some were opened out by our

⁸ *Proceedings*, old series, p. 20.

⁹ *Ibid.* 86.

attendant, Mr. Gibson, who ascertained their position by sounding the wall. These beam-holes are 11 feet 3 inches from the floor of the hall and are intended for the insertion of large baulks of timber, 11 to 12 inches square, and, from their size, the intention was evidently to support a great weight. Their position is on a line intersecting the great north and south windows, and just at the level where the openings could be converted so as to be used as embrasures for ordnance, mounted on strong platforms, laid across the window splays. Galleries here, effectually blocking the windows, could have formed no part of the original construction of the hall. They are manifestly a temporary defensive expedient, hastily extemporized at some later period, to meet an emergency.

Did any such emergency present itself in the history of the keep? An answer may be found in the descriptions of the last occasion on which this fortress was besieged. In the year 1643, the mayor of Newcastle, sir John Marley, treated with the Company of Shipwrights concerning covering the castle with planks. The books of the company record the negotiation in a minute of their meeting, dated August 21, in that year.¹⁰ In the following year the character of the shipwright's beams and planks become apparent from the use made of them in the great siege of the town. We learn that the Half Moon battery was made use of by sir John Marley 'to secure the River and Key-side against the Scots, and the other Castle,' that is the present keep, 'he put into good Repair, which was very ruinous: On the former he laid great guns, for the Use above-mentioned; and on the latter he laid great Ordnance, to beat off the Guns which the Scots had laid upon the Banks of Gateshead against the Town.'¹¹ Thus, with the assistance of the shipwrights, the extremities of the great hall, as well as the battlements, were doubtless, by beams and planks, rendered capable of carrying sir John Marley's 'great ordnance' upon extemporized gun platforms. These lower wall-holes are quite in correspondence with the circumstances just described.

Mr. Gibson also discovered beam-holes in the east and west walls at a height of 24½ feet above the floor level of the great hall. These cannot have been joist-holes for an upper floor, because they are just

¹⁰ Brand, *History of Newcastle*, i. 159.

¹¹ Millbank MS., Bourne, *History of Newcastle*, p. 233.

where we must expect to find socket-holes for the roof principals, as they would correspond with the level of the outfall from the roof, now ascertained.

I may here mention that I had the privilege of going over the features just described, point by point, with our late vice-president, Mr. Cadwallader J. Bates. He entered into the investigation with enthusiasm, and recognized the deductions as to change of plan and as to the great hall. This information he subsequently embodied in the address delivered on August 1, 1899, at the commemoration of our fiftieth year of occupancy of the castle,¹² and, subsequently, in his *Descriptive Guide*, published by our society in 1901.¹³ In the former reference, whilst admitting fully the evidence of a change of plan, he expressed an opinion that the walls of the tower could not have made much progress at the date of the invasion by William the Lion [1174]. The changed plan could not therefore be connected with that event. But I have mentioned it here to show that I had not overlooked the coincidence. It is the more necessary inasmuch as about forty-eight per cent. of the total cost of the tower had been expended in 1174, and it is by no means so improbable that the height of the building had then reached the stage at which the change in plan occurs. In the second reference Mr. Bates accepts the results of the investigation, observing that, whilst, 'on the whole the evidence is against there having been any upper floor in the great hall,' there seems evidence 'that at one time or another there may have been galleries round some of the walls.' It was in consequence of the doubt here expressed that I have examined and re-examined the lower tier of joist-holes, in company with Mr. Gibson, and have come to the conclusion that the existence of galleries on massive beams at either end of the great hall admits of no doubt. The beams crossed athwart the window splays, just as sir John Marley may be supposed to have ordered his shipwrights to rig up platforms for his 'great ordnance,' as I have said. Be this as it may, it is much to have had, so far, the approval and concurrence of the late Mr. Bates upon the main questions. Would that he had been spared to elucidate this great border hold as it would have been explained under his critical observation!

¹² *Proceedings*, vol. ix. p. 126.

¹³ *The Castle of Newcastle, a Short Descriptive Guide*, etc., 1901, p. 31.

In bringing these remarks to a close, I would point out that they are intended merely as a temporary record of the explorations and their results, and as well in a very special manner to indicate the obligation of this society to our warden, Mr. John Gibson. The investigation originated in his suggestion, and the results are due to his keen interest in all that relates to this venerable fabric. This unobtrusive but enduring concern merits our recognition, for it has solved difficulties and has, as in this instance, set at rest disputed and vexed problems.

May I, for one moment further, before leaving the structural difficulties presented to us in this great tower, call attention to the niches in the walls on the stairs of the fore-building. One of these occurs on the left hand just under the mid-stair tower; the other a little higher up the stairs on the opposite hand. These have been persistently referred to as 'holy water stoups.' Now, their position on the stairway might of itself have suggested the real use of these two recesses; an examination of their form and structure conclusively determines what they have been. They were, in fact, without any manner of doubt, lamp niches for lighting the stairway.

Again, the north-west angle of the keep, differing from all three other corners in its almost unbroken solidity, and its substitution of multangular for the simple rectangular plan of the rest, has caused many speculations in accounting for its singularity. I have supposed it to have been intended to carry on its summit the platform for the great catapult of the period, and there is every reason to think this is its original purpose.

Many other problems yet present themselves. There is the aperture, some twelve feet from the ground, on the west wall of the keep, popularly known as 'the sally port.' Its evident utility for the purposes of victualling the garrison, or as an inlet for the admission of munitions of war, does not appear to have been noticed. Nor does the fact that it is an insertion, awkwardly and roughly hewn through, so as to avoid the buttress against which it opens. There is, again, its apparent contact with the works shown in the view of the ruins of the Bailey gate.

These, and other points, yet call for investigation on the part of our members, to whom, however, I must now apologize for the length of these observations.