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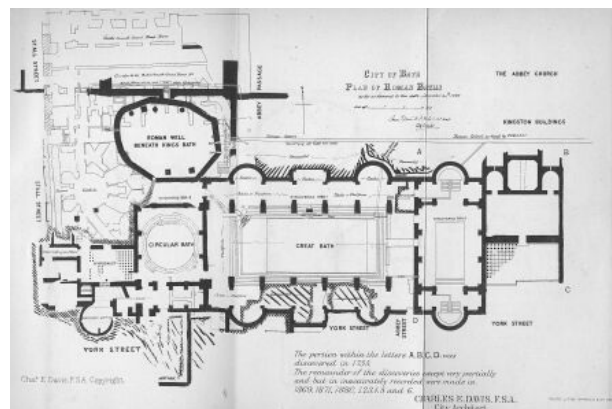
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(Plate V.)

ON THE EXCAVATIONS OF THE ROMAN BATHS AT BATH.

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Leland, on his visit to Bath in the year 1530, with tolerable fulness describes the baths, and after completing his description of the King's Bath goes on to say "Ther goith a sluse out of this Bath and servid in Tymes past with Water derivid out of it 2 places in Bath Priorie usid for Bathes: els voide; for in them be no springes;" and further on he says "The water that goith from the Kinges Bath turnith a Mylle and after goith into Avon above Bath-bridge."

These two sentences have hitherto been difficult of explanation, but the excavations, which it has been my good fortune to superintend, and the discoveries I have made, have fully explained Leland's meaning, at the same time that I have brought to light the great Roman Bath, which I purpose describing in detail in this paper, writing only of previous excavations and those I have conducted in connection with this work, so far as their description may the more fully render my account perfect of the Great Bath itself. I desire to confine my paper within such limits as the

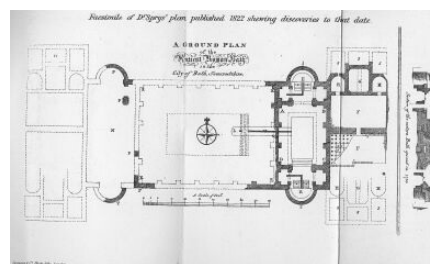
space afforded me in this Journal necessarily imposes.

Some time during the last century the ruins of a mill wheel were found to the south of the King's Bath. I have in my excavation discovered the *mediæval* sluice that led to this wheel. Leland speaks of "two places in Bath Priorie used for Bathes els voide."

{5} In a map of Bath preserved in the Sloane Collection of the British Museum, drawn by William Smith (*Rouge Dragon Pursuivant at Arms*) a few years previous to 1568,¹ is an open bath immediately to the south of the Transept of the Abbey called "the mild Bathe."² This, or at any rate what I may consider was the "mild bath," I found in my explorations beneath the soil at a situation in York Street, connected with the Hot-water drains, the bath being still provided with a wooden hatch, and of the dimensions of a good sized room.³ The other place mentioned by Leland was discovered in 1755, and this discovery led the way to the excavations of a great bath (afterwards called Lucas's Bath), when the eastern wall of the great Hall of the recently found bath was first laid open, although from its position not having been properly noted previous to its being covered up, its situation remained unknown for nearly 130 years.

{6} In Dr. Sutherland's "*Attempts to revive Ancient Medical Doctrines*," (page 16), *et infra*, he says: "In the year of our Lord 1755⁴ the old Priory or Abbey house was pulled down. In clearing away the foundations, stone coffins, bones of various animals, and other things were found. This moved curiosity to search still deeper. Hot mineral waters gushed forth and interrupted the work. The old Roman sewer was at last found; the water was drained off. Foundations of regular buildings were fairly traced." An illustration of these discoveries is given in Gough's "Camden," and a plan of them was published by Dr. Lucas and again by Dr. Sutherland (*Pl. V.*) copied in 1822 by Dr. Spry with discoveries to that date (*Pl. VI.*), and by Mr. Phelps, the latter re-published by the Rev. Preb. Scarth in his *Aquæ Solis*, 1864. I have, in part, myself and also when assisted by Mr. T. Irvine (the architect, under Sir Gilbert Scott, of the restoration of the Bath Abbey), examined the small portion of these discoveries that are still left *in situ*. I quote Dr. Sutherland, 1763, p. 17, for an account. "Assisted by Mr. Wood, architect," Dr. Lucas examined the ruins as they then appeared. He gives the following description: "Under the foundations of the Abbey house, full 10ft. deep, appear traces of a bath, whose dimensions are 43ft. by 34ft. Within and adjoining to the walls are the remains of twelve pilasters, each measuring 3ft. 6in. on the front of the plinth by a projection of 2ft. 3in. These pilasters seem to have supported a roof.⁵ This bath stood north and south. To the northward of this room, parted only by a slender wall with an opening of about 10in. in the middle, adjoined a semi-circular bath, measuring from east to west 14ft. 4in., and from the crown of the semi-circle to the partition wall that divides it from the square bath 18ft. 10in. The roof of this seems to have been sustained by four pilasters, one in each angle and two at the springing of the circle. This bath seems to have undergone some alterations, the base of the semi-circle is filled up to about the height of 5ft., upon which two small pilasters were set on either side from the area, between two separate flights of steps into the semi-circular part which seems to be all that was reserved for a bath. In this was placed a stone chair 18in. high and 16in. broad. The two flights of steps were of different dimensions, those to the west were 3ft. 9in. broad, those to the east 4ft. 2in. Each flight consists of steps 6in. thick, and seem to have been worn by use 3½in. out of the square. These flights are divided by a stone partition on a level with the floor. Along this division and along the west side of the area, a rude channel of about 3in. in depth was cut in the stone. The floor of this bath seems to be on a level with that of the square bath. Eastward and westward from the area and stairs of this semi-circular bath stood an elegant room on each side, sustained by four pilasters. Separated by a wall stood the *Hypocausta Laconica*, or *Stoves*, to the eastward. These consisted of two large rooms, each measuring 39ft. by 22ft. Each had a double floor, one of which lay 1ft. 9in. lower than the area round the square bath. On this lower floor stand rows of pillars composed of square bricks of about 1¾in. thick and 9in. square. These pillars sustain a second floor composed of tiles 2ft. square and 2in. thick, over which are laid two layers of firm cement mortar, each about 2in. thick, which compose the upper floor.

{8} "To the northward, separated by a wall of 3ft. 11in., stood the other *Hypocaustum*, with a door of communication. The floor of this is about 18in. higher than the other. These two rooms are set round with square-brick tubes of different lengths, from 16in. to 20in. in length and 6¾in. wide. These flues have two lateral openings of about 2in. square, 5in. asunder. These open into the vacuum between the two floors and rise through the walls. The north wall of the last stove was filled with tubes of a lesser size, placed horizontally and perpendicularly. The stones and bricks between the pillars bear evident marks of fire, while the flues are strongly charged with soot, which plainly points out their uses.



(Plate VI.)

{9} "Heat was communicated to these flues by means of *Praefurnia*. In the middle of the northern wall of the second stove, the ruins of one of these furnaces appear. It consists of strong walls of about 16ft. square, with an opening in the centre of about 3ft. wide, which terminates conically in the north wall of the stove 2 ft. wide where part of the broken arch bears evident marks of fire. About the mouth of the furnace there were scattered pieces of burnt wood, charcoal, &c., evident

{14} the soil, I owe the ability to reveal what had been hidden since the destruction of the city of Bath in the year A.D. 577.¹⁰ The stopping up and destruction of the drain prevented the water from flowing away, so that the buildings of the baths were filled with water of a height until it reached the level of the adjoining land, covering, as a guardian, the lead and other valuables. Soil then gravitated into the ruins and thus further assisted in preserving the antiquities, so that they were altogether hidden from the people who re-built the ruined city of Bath, and from those who in successive generations succeeded them. The subterranean "passage traced 24ft." from the western side of Lucas's bath, "at the end of which was found a leaden cistern," was not in any way Roman work, but mediæval, and was formed some time after the construction of the Abbey house, as an aqueduct for the hot water with which the soil was saturated. This construction is the only evidence of an early discovery of this eastward wing of the bath, indeed the only evidence of mediæval work of any kind in connection with the baths, except the enclosure of the various springs or wells. The King's Bath, the Cross, and the Lepers' Bath were simply the wells or cisterns of the springs which were bathed in to the damage of the purity of the water, without dressing-rooms of any kind.

{16} This concludes the particulars of the important discoveries which we possess of the last century, which were then correctly believed to be only portions of still greater baths.¹¹ In 1799 (or, as I believe, in 1809, the more correct date) a portion of what has proved to be the north-west semi-circular *exedra* of the Great Bath was found, and six to nine years later a part of the south-west rectangular *exedra* of the same bath. The discovery of 1799 (or rather 1809) is shown on the Rev. Prebendary Scarth's map as being the northern apse of a bath on the western end of the great bath, as suggested by Dr. Sutherland's plan and was to correspond with Lucas's Bath. The semi-circular *exedra* discovered subsequently to a deed dated Sept. 1808 (therefore in that year or subsequently) is also figured by the Rev. Prebendary Scarth, as on the south end of the same western bath and a piece of a rectangular *exedra* as the eastern wall of this western bath and the boundary between it and the Great Bath.

{20} All these fragments I have lately proved to be portions of the great Roman Bath (*Plates VII. and VIII.*), and being within instead of without that building. The Rev. Prebendary Scarth omits altogether to figure the southern rectangular *exedra*, found at the same time as the last named discovery. He also omits the discoveries made in 1809 (?) beneath the houses at the north-western end of York Street. In 1790 very valuable discoveries were made in digging the foundation of the present Pump Room. Many writers have treated of them and expressed opinions as to the character of the work and the meaning of the design, and Mr. Scharf, in *Archæologia*, Vol. XXXVI., has done ample justice to these most interesting vestiges: They have been described by Pownall, Lysons, Warner, Collins, Scharf, Tite, and Scarth, as being portions of a Temple of the usual type, dedicated to Sul Minerva. Whitaker, in a review of Warner's History of Bath, printed in the *Anti-Jacobin*, Vol. X., 1801, differs from all these writers, although believing the remains to be a portion of a temple, and thought they were a part of a building of the form of "*a rotunda*," as the Pantheon. "*The Pantheon of Minerva Medica*, an agnomen very similar in allusiveness to our prænomen of *Sulinis*, for Minerva is noticed expressly by Ruius and Victor in their short notes concerning the structures of Rome, as then standing in the Esquiline quarter. The form of a Pantheon is made out by the multiplicity of niches,... and such, we believe, was our own Temple of Minerva at Bath." It would occupy too much space were I to attempt to add to this paper my views of this discovery, but I may briefly say, that I am satisfied that they were not the remains of a Temple, but a portion of the central Portico and grand Vestibule of the Baths. I have not gone fully into the reasons that induced Whitaker to believe that the discoveries showed that the building was a Rotunda, but it is curious that he should have thought they had a similarity to the Pantheon at Rome, which antiquaries since his time have proved was not 'built for a temple, but that it was an entrance hall or vestibule of the Baths of Agrippa, although it is doubtful if the Rotunda was built at the same time as the Portico, which was, without doubt, erected B.C. 27.

{22} The grand Roman enclosure of the Hot well (*Pl. VII.¹²*) (which I have lately discovered and excavated, beneath the King's Bath, on the south of this principal Portico) is again utilised, and forms a tank for the mineral water, from which are fed the baths and fountains with water, pure as it rises from "depths unknown," and secured from any possibility of contamination in its passage, through the newly discovered water ducts and drains of the Romans.

{23} In 1871, whilst making some necessary excavation to remedy a leak from the King's Bath that apparently ran beneath Abbey Passage, I found that the hot water, that was reached through layers of mud, Roman tiles, building materials, and mixed soil, was one and the same with the hot water of the Kingston Bath that then occupied the site of the Bath called Lucas's Bath, discovered in 1755; and the levels were the same. I pumped out this water with powerful pumps, emptying by so doing the Kingston Baths. This enabled me to sink to a depth of 20ft., passing in so doing a flight of four steps at the point (A) on the plan (*Pl. VIII.*), to the bottom of a bath which was coated with lead.¹³ Being compelled by the then owner of the Kingston Baths to discontinue pumping, I was obliged to abandon my work; and having little hope that I should ever be allowed to recommence it, I removed a portion of the lead, which proved to be a thickness of about 30lbs. to the foot, placed on a layer of brick concrete 2in. to 2½in. thick, and this again on a layer of freestone 12in., or rather a Roman foot 11-5/8in. in thickness, which was again bedded on rough stonework, the depth of which I could not ascertain. Fortunately I did not again fill in the soil, but arched it in, building walls of masonry to keep it in position. The Corporation having obtained

possession of the hot water supplying the Kingston Baths, I should rather say, the right to the water that leaked from the King's Springs, I again drained off the water, maintaining it at a low level by a laborious excavation and re-construction of the Roman drain which was conducted at great expense for two or three years. This drain I followed several hundred feet until it reached the great well previously mentioned, making various and important discoveries; but, as I have already read a paper on this subject before the Society of Antiquaries of London, which will shortly be in the press, I will not repeat it here, but avail myself of the space allotted me in the Transactions of this Society for an account of the Great Bath, which I have, in great part, laid bare, soliciting a pardon if the account is somewhat tedious.

The bath, placed in a great hall 110ft. 4½in. long by 68ft. 5in. wide, is about 6ft. 8in. deep. The bottom, 73ft. 2in. by 29ft. 6in.¹⁴ is formed as described in the last page.¹⁵

{24} The lead in sheets (of about 10ft. by 5ft. square) was turned up at the edges and *burnt*, not soldered together, but these joints are in many cases now imperfect. This well secured bottom, or floor, appears to have been placed in position, rather to keep the hot water from ascending into the bath from the springs beneath than to make the bath water-tight. Enclosing the bath all round the four sides are six steps, the sixth landing the bather on the *Schola*, or platform. The riser of the bottom steps varies in depth from 15in. to 11in., with a tread of 14in., the next riser is 14in. with a tread of 11in., as also is the next step and the one following. The step above has a rise of 12in., and a tread of 14in. This step was scarcely covered with water, but it is evident the water flowed over it when bathers agitated it. The riser or the step above, 10in. to 12in., completes the flight and helped to keep the water within proper bounds, giving a total depth of 6ft. 8in. to the bath, and from 5ft. 9in. to 5ft. 11in. for the water. These steps are quite devoid of lead (except, in places, the riser of the lower step and at the north-west corner), and it is not clear whether they had at any time such a covering, although I am inclined to think so, as it evidently went beneath the piers and under the central pedestal. At the bottom step, in the north-east corner, was a bronze sluice. The frame of this sluice, with an opening of 13in. by 12in., I found in position when I excavated my way up the drain, but I was obliged to remove it in order to force my way into the bath. It has not been replaced, but is preserved in the Pump Room, and weighs more than 1 cwt. 2 qrs. An overflow was provided, immediately above the hatchway, by a grating 15in. wide that was doubtless of bronze also, but it had been removed, the stud-holes in the stones alone remaining.¹⁶ The extreme surface of the water measured 82ft. 10in. by 40ft. 11in. and was a parallelogram, except that the north-western angle was cut off by the steps being carried obliquely in three tiers from the bottom a length of 7ft. at an angle of 39° with the western end. Resting on the platform, formed by these three steps, is a quarter circle pedestal,¹⁷ on which stands a large stone 6ft. 8in. long and 9in. thick, over-hanging its base, and presenting a concave line towards the bath with an *ovolo* section in its thickness. This stone spans a large channel 2ft. 3in. wide, within which is fitted a very thick lead pipe, gradually narrowed *horizontally* and turned up under the *ovolo* concave stone. Through this aperture the mineral water was thrown into the bath in a sort of spray, so that it might be cooled in its passage. A deposit from the water is incrustated over the stone and pipe several inches in thickness, until the petrification entirely stopped the flow of water, which was then compelled to flow *over* instead of under the stone.¹⁸ The water was conducted a distance of 38ft. in the thickness of the lower pavement (which I shall presently describe) of the *Schola*, the stone being removed a width of 2ft., the bed being concreted. On this was laid a lead pipe which filled the whole orifice, but, unfortunately, a length of 25ft. of it has been removed. This conduit takes a diagonal direction, and leads direct to the north-west angle of the hall, turning beneath a large doorway in the western wall, when it again resumes its original direction (the pipe, where perfect, is 1ft. 9in. by 7in. deep), as far as the outer surface of the wall of the octagon well. At this point the wall of the well is not original work, and the pipe is cut off. I have no doubt that it was at one time carried up vertically until it reached the level of the surface of the water of the well, which was about 2ft. 6in. higher at the least, thus giving a sufficient elevation to the "spray" into the bath. Another bronze hatchway, which must have been here, has been stolen in mediaeval times, its having been less than 2ft. below the bottom of the King's Bath making it accessible, whilst the 25ft. length of the lead pipe beneath the *schola* must have been stolen much earlier, and in all probability on the destruction of the baths in the sixth century. In addition to the arrangement for the supply of mineral water to the baths, which must have been capable of affording a flow of water, very nearly, if not exceeding, the yield of the spring, there was also another, which I have every reason to think was for the delivery of cold water, and conveyed in a lead tubular pipe of 2¼in. in diameter. A length of 25ft. 6in. of this pipe, in its original position, has been found and laid bare. It is made with a roll along the top, and burnt, as was usual before the invention of "drawn pipes." This pipe is particularly interesting as there are also in it two soldered joints at intervals of 9ft. in the method of making which we have clearly not improved on the work of our Roman predecessors. This pipe starts from the same point in the north-west angle of the hall as the other supply, and is sunk in the lower pavement of the *schola*, which (wanting the pipe) is continued to the centre of the north side of the bath, where stands a stone pedestal 3ft. 3in. long, 1ft. 6in. wide, and 2ft. 6in. high. This pedestal has small vertical rails, or balusters, at the angles and on the shorter sides, and that towards the bath has some appearance of having once had a tablet of either bronze or marble inserted in it. At the top is a circular hole 3½in. in diameter, through which the pipe previously mentioned must have passed. The upper portion of this pedestal is sculptured, and much mutilated, and appears to me to be the drapery covering the feet of a figure that has perished. It is true that the work bears some resemblance to a small recumbent figure; but if so it is not worthy of the name of sculpture, as it is in the worst taste,

{25}

{26}

{27}

{28}

and altogether out of keeping with the architecture or the other sculpture we have found.¹⁹ There are several grooves in the *schola* for branches of this pipe: 1st. The continuation of it to the northern semi-circular bath of 1755. 2nd. From the first soldered joint to baths on the north of the Great Bath. 3rd. Along the western end of the latter to baths on the south, and along the *schola* to the south circular bath of Lucas's. Beneath the mutilated sculpture is a second pedestal, or plinth, perfectly plain, with the upper surface sunk to a level corresponding with a similar indentation on the third step. Within this must have stood a marble on bronze sarcophagus, the base of which was 6ft. 9in. long by 2ft. 5in. wide. The water flowing through the aperture previously described would run into the sarcophagus (I use the word in its modern sense) and from it into the bath. This water was not poured in sufficient volume to perceptibly cool the bath, but was provided for the thirst of the bathers. In the modern baths of Bath there is no such provision.

The hall enclosing the bath I have already spoken of as 110ft. 4½in. long by 68ft. 5in. wide. It has been completely thrown open since this paper was read at the British and Gloucestershire Archæological Society, in 1884. These excavations are open to the sky, excepting on the east end (over which Abbey Street, at a height of 23ft. is carried on a viaduct, which I have erected).²⁰ The platform, or *schola*, surrounding the bath (measuring the original surface of the upper floor) is 13ft. 9in. wide on the four sides. This platform was formed by a layer of large freestone 9in. to 10in. thick, laid on the level of the top step but one, on a solid bed of concrete. Above this was another layer of concrete, and possibly on this, when the baths were first erected, a mosaic of tesserae; but that, if it ever was there, has all disappeared, and its place has been supplied with paving, mostly of freestone also, of inferior thickness to the lower paving. Very little of this remains, and what there is is much fractured and worn; indeed not only is this paving much worn, but the lower paving also where the traffic was the greatest. I have given in the plan (*Pl. VIII.*) almost every detail of these floors, and shall speak of them again further on. The general appearance of the place is symmetrical, but there are remarkable variations and inaccuracies that point to the fact that the juxta-position of this bath with other buildings, of which we have at present no knowledge, must have rendered these variations necessary, ultimately interfering with the completion, architecturally, of the building.

On either side, north and south, are three recesses, or *exedrae*, two of which are circular and one (the centre) rectangular. The south rectangular one is 17ft. wide by 7ft. deep; the north one is nearly a foot wider, and one foot less in depth. Greater variations exist in the circular recesses; for, commencing in the western one, on the south side, the width is 17ft. 3in., and the depth 7ft. 6in.; the eastern one is 14ft. 3in. wide, and 6ft. 9in. deep; the *exedrae vis-a-vis* on the north is 17ft. 3in. wide, and 8ft. 4in. deep; the remaining one, to the west, is 17ft. wide, and 7ft. deep. I give these dimensions irrespective entirely of the pilasters which are attached to the walls on either side the reveal of the recesses, and in the rectangular recesses in the enclosing angles also. Piers are now standing on the margin of the bath, dividing the north and south sides each into seven bays. These piers are built with solid block freestone, but as there are continuous vertical joints on either side of the central division of each pier, it is clear that an alteration was made in the design either previous to its entire completion or subsequently.

I will endeavour to describe the bath as originally designed. Along the margin of the bath, north and south, stood six piers, equally divided (about 14ft. apart), as far as the length of the bath, but allowing a lesser distance from the attached pilaster at either end. These piers are cut out of a block (in plan, 2ft. 10½in. from east to west by 2ft. 8in. from north to south), so as to form a pilaster of three inches projection on either face. As the original pilasters on the north and south walls do not correspond with these piers, I am led to conclude that the *schola* and *exedrae*, north and south, were not vaulted at first, and were the only portion of the hall that was roofed, and that the roof was only of timber, supported by an arcade, the arches not exceeding 17ft. in height, and that the eaves of the roof of about 22ft. in height dipped towards the bath. This was a very usual arrangement in the *Atrium* of a Roman house with the *impluvium* in the centre. A *crypto porticus* would thus be formed on the two longer sides of the bath, but the *schola* on the east and west ends was open to the sky. Practical experience, either on the completion of this plan, or previously to its entire execution, led to its abandonment. At any rate a roof over the whole was found essential to the comforts of the bathers. The piers were accordingly strengthened. Pilasters were erected, projecting 2ft. 9in. into the bath, with smaller pilasters on the other side projecting on the *schola*, 1ft. 4in. by 1ft. 11in. wide; and *vis-a-vis* to these pilasters corresponding ones were affixed to the side walls. Unfortunately this brought into prominence the irregularity of the size and position of the *exedrae*, and the pilasters were affixed correctly with reference to the arcade, as was absolutely necessary, but more or less trespassing on the width of the opening of these recesses, and notched into the original pilasters.

None of the piers, or pilasters, at present exist to a height exceeding 6ft. to 7ft. The base is a rude form of the Attic base; and we have found several fragments of the capital, or impost, of the smaller pilasters, from which the arches sprang, but I have not been so fortunate as to recognise any of the larger capitals, and but few fragments of the cornices, and but one piece that I can identify as the frieze 1ft. 6in. deep by 2ft. 4in. long, on which are 5 incised letters 6¼in. long S SIL. The *schola* was then arched in north and south, and the bath spanned by an arch. The vaulting that spanned the side arcades, and the centre (where the abutment was not sufficient for arches formed in the ordinary way of tiles or stone), were built of brick boxes, open at the sides, and wedge-shaped, 1ft. long, 4¾in. thick, and 7¾in. wide at the wider end, set in the usual mortar, a greater or less number of rings of these boxes being used according to the span. These

{34}

arches were made out by an extra quantity of concrete on the under side for decoration, and on the upper in the case of the great arch, so as to form a roof, the well-known roll and flat Italian tiles being embedded in the mortar. Many and large fragments of this roof were found lying on the deposit that had partially filled the ruins previous to the fall of the roof, and are still carefully preserved. A large fragment, 18ft. long by about 3ft. wide, and 1ft. 9in. thick, that has slipped down, as it were, from the western end, in the position in which it was discovered, was formed of solid tiles, with an arch of tiles 1ft. 8in. long,²¹ the roof having sufficient abutment on this side for a solid construction.²² This arch gives the form of the window that lighted the bath on the western end.

{35}

The vaulting of the side aisles, or rather that over the *schola*, was arched from pier to pier longitudinally and transversely, the quadrangular spaces being in all probability simply groined; but a fragment of box tiles found almost leads one to think that these spaces were vaulted by a domical vault, springing either from pendentives in the angles of the vaults, more common in later work, or from a slight cornice on a level with the apex of the arches. The vault, if there was one, over the semi-circular *exedrae* must have been hemispherical. From the number of roofing tiles of local stone, shaped into hexagons, found, I think these arcades were roofed in with them, placed overlapping each other, giving a very good effect. Similar tiles were dug up at Wroxeter, and I have found slates of the same shape in the Roman villa I have been excavating for Mr. Chas. I. Elton, F.S.A., M.P., at Whitestaunton Manor. The form of these slates deserves copying; a roof covered by them is far lighter than that of rectangular slabs and more picturesque. The walls on the sides towards the hall, and externally, so far as I have been able to ascertain, are covered with the usual red plaster, shewing that they were internal walls; but from a piece of dentilled, or rather blocked, cornice, which fits the curve of one of the *exedrae*, I believe the walls were carried up on the north and south above the roofs of the adjoining rooms and corridors of the baths, so that they formed a feature in the elevation and afforded a broken skyline to the composition. The vault over the centre rose considerably above these walls, a portion of the centre of which may have been partially open for the emission of steam and the admission of light. Some square blocks of lead, that were the yotting of bars of metal, rather favour this idea, and suggest that these metal bars were a portion of the machinery by which a brazen shield (*clipeus*) was suspended, or secured, so that by raising or lowering it the temperature of the hall might be regulated as described by Vitruvius. In the excavations we found an *ante-fixa* that must have fallen from some portion of the roof. It appears to be intended for a lion, but it is much broken.

{36}

I have prepared a sketch section of the bath (which I hope to communicate on a future occasion), transversely and a part longitudinally, in order that a description may the more readily be understood, adopting, in my restoration, the established rules of proportion of Classical architecture, which may, more or less, have been strictly adhered to when the baths were built; indeed, in the best specimens of Roman work a licence was given to the architect as to detail and proportion, that was refused him on the Classical revival. The pilasters of these baths spring, as I have said before, from an Attic base, of somewhat coarse proportions, 14in. high.²³ The attached pilasters that supported the arcade that was carried longitudinally along the bath are without a base; they must have been, within a few inches, more or less, not lower than 10ft. in height, including the impost moulding, of which there are fragments. The arches springing from them would be about 14ft. wide. I have not been able to find any fragments of the archivolt. The pilasters that supported the arches which crossed the *schola* have bases similar to the larger pilasters. I can hardly speak positively of their elevation or that of the arches, but I am inclined to think the height of the impost moulding was raised, so that the arch, although a smaller span, was the same in height as the longitudinal arches.

{37}

The great pilasters, fronting the bath, stand on plain pedestals, breaking forward into the water, on which rested the Attic base, the shaft with Doric (?) capital rising 18ft. above. A complete cornice, the architrave (which we have) and frieze, gave an additional height of nearly 5ft. This cornice ran over the arcade horizontally, but breaking forward the projection of the pilasters about 2ft. 7in. Over this cornice, I conclude, were semi-circular openings, of the same span as the arch beneath, with an architrave of 5 in. to 6 in. A circular vault crossed the bath from pilaster to pilaster, groined with the semi-circular arches just mentioned. Light may have been admitted divisionally in the centre of this great vault, as I previously mentioned, as well, as by the semi-circular arches in the "*clear storey*." The extreme height from the floor of the *schola* to the under side of the vaulting may have been as much as 23ft., whilst the height of the central vault above the floor of the bath could not, I estimate, have been less than 48ft. 2in., exceeding by 5ft. the height of the famous Ball Rooms of the Bath Assembly Rooms, and by 14ft. that of the Grand Pump Room.

{38}

Many architectural fragments have been found during the excavations of the Great Bath, several portions of columns 2ft. 6in. diameter at base, and several sections of Corinthian foliage with the volute of a capital, of unusually artistic and powerful work; some smaller columns, a fluted shaft, and a Composite capital of debased character; but the four most remarkable fragments are pieces carved on both sides out of blocks about 1ft. 9in. thick, by 1ft. 6in. high. They are each from 2ft. 6in. to 2ft. 9in. long, and are curved, the chord being about 1-9/16in., in a length of 2ft. 6in. The first fragment is a cornice, or impost, carved on both sides, in three tiers: the upper, a *cima* with a leaf; the middle division, a Greek fret, not quite similar on each side the stone, and below is a running ornament. The cornice does not project sufficiently to be the cornice of a building, and, as it is decorated on either side, it could not have been intended for a string-

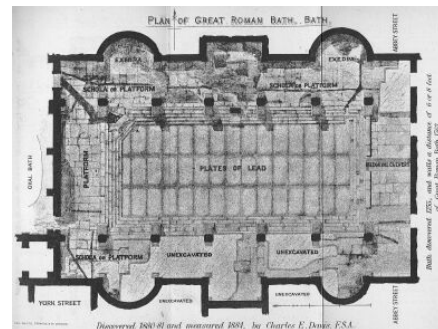
course, as none of the walls are so thin as these stones, although I at first thought it might belong to one of the semi-circular *exedrae*. The curve is struck with a shorter radius than even the smallest recess. I think it is the capping of the back of one of the semi-circular stone seats, called by the later Romans a *stibadium*. If this formed the seat in the north-western recess, there would be ample room behind it (3ft. 9in.) to pass by. The next fragment must have been fixed beneath this or a similar capping, and is also carved on each side; the convex side having an adaptation of the well-known honeysuckle fairly drawn, whilst the convex side of it, with the exception of a floriated panelled pilaster in the centre, is the work of an accomplished sculptor. On the right of this pilaster, slightly recessed to admit of relief, is the naked right thigh and leg of a figure that must have stood 1ft. 6in. high. Although only a fragment, this is a most charming piece of work, the action and anatomy of the limb being perfect. On the left side is a similar panel, a headless draped figure, with feet bare, holding a circular shield which rests on the thigh, whilst the limb is bent as if ascending a rock that is slightly indicated. On the third fragment the honeysuckle pattern is on the concave side, whilst the sculpture is on the convex, the arc of which corresponds with the last described. On this there are two niches only, and the figures are much more mutilated. The left figure has a flowing mantle, the only leg remaining being bare from the thigh downwards; the foot and the head are gone. The figure on the right is fully draped, the head is lost, and the right hand much mutilated; a musical instrument, like a guitar,²⁴ or rather a mandolin, rests against the left breast, held in position by the left hand. The fourth fragment has the honeysuckle on both sides, with the flower well carved on one of them. It is a great pity that so little of this superb work is left, and that what there is should be so mutilated.²⁵

This account of the Great Bath will, I hope, be sufficiently complete if I describe the entrances and conclude with a few particulars of the pavement (although many discoveries of considerable interest might be made, I have no doubt, in the latter), omitting a detailed examination as being tedious.

I believe there were five entrances to this bath, two of which remain. In the western wall, on the south, is one leading from other apartments (a hypocaust, hall and bath), which I shall on a future occasion describe. It is 4ft. 3in. wide. Double doors and hinges have been inserted in this doorway, and the base and a portion of a pilaster cut away most barbarously to receive them. On the north, on the same wall, and fronting the northern *schola*, is a doorway similar to the last, which has been walled up in Roman times, the wall which closed it being covered with the red plaster that covers all the work not being faced freestone. A third doorway, similar in every respect, was at the eastern end of the northern *schola*, as I infer from the lower paving being much worn in that direction. A fourth doorway was in the eastern wall to the south, but not south enough to face the southern *schola*, and a fifth was between these two. Of these three doorways, the first of them is still hidden by soil, and the second and third are obliterated with modern walling; a portion of the architrave of one was found near, but their position is well marked by the footmarks in the stone.

I should not omit mentioning the mark of a wooden seat in the northern rectangular recess, and the place of a wooden rail for clothes, that was let into the pilaster at one end with the *slot* in a pilaster at the other.

In my plan (*Pl. VIII.*) I have endeavoured to show the massive lower paving and the fragmentary upper pavement. Both are much worn; and, where the upper pavement has disappeared against the upper step of the bath, especially the step on the western *schola*, it has been worn down on the inside to the depth of several inches. The lower pavement through the south-western door is worn in holes, and across by the angular fountain are similar wearings, marking "a short cut" into the northern *schola*; and this is continued in a less degree to the other doors,—save the north-western one, where the upper paving in part exists, showing that this doorway was closed before the baths were allowed to get so shamefully out of repair. This sadly dilapidated pavement must have caused considerable inconvenience to the bathers, and could only have been put up with by those too poor to incur the expenses of repair; the baths therefore were continued to be used by less prosperous citizens than those who provided them. Is not this a strong argument that the Romans left behind them, when they abandoned Britain (A.D. 420), a people almost as great lovers of the baths as themselves, with, however, less ability to maintain them; and that the residents of Aquæ Sulis daily frequented them during the 150 years that succeeded until the city was overthrown by our more immediate ancestors, who destroyed before abandoning it to desolation?



(Plate VIII.)

The springs flooded the courts and corridors of the Thermæ until the washings of the land filled them. Rushes, withies, and trees grew beneath the shadow of its ruins. Bathancastra (Akemancastra) was founded;²⁶ the memory of the baths was lost; its architectural magnificence was the quarry of the builders, who little dreamt that beneath the soil was buried the rich treasure which we in this century, and those who have preceded us in the last, have had the privilege of laying bare.

The Romans left behind them in Bath a Palace of Health and Luxury unequalled except in Italy.

In making some excavations (1885) beneath the Cross Bath, the walls of the Roman well were found, and at a considerable depth two altars, which are placed for exhibition in the Great Bath. One of these is a plain rectangular altar; the other is carved on three sides, having on the front face two figures (Æsculapius offering a lamb to Hægiea), on another side a serpent coiled round the trunk of a tree, and on the third sculptured side a dog with a curly tail (see Professor Sayce and Rev. Preb. Scarth).

Footnote 1:[\(return\)](#)

Mr. Peach, in the preface to "the Historic Houses in Bath," page 5, quotes 1572; but this is the date of the completion of Mr. Smith's book, the drawings of which occupied many years.

Footnote 2:[\(return\)](#)

Mr. Smith gives a list of "Wonders in England": 1st. "The Baths at ye City of Bath are accompted one although yet they are not so wonderfull seeing that ye Sulphur and Brimston in the earth is the cause thereof but this may pass well enough for one."

Footnote 3:[\(return\)](#)

Evidently the ruin of a portion of the Roman Thermæ, repaired in the 12th or 13th century.

Footnote 4:[\(return\)](#)

Monday, August 18, 1755, Bath. A most valuable Work of Antiquity has been lately discovered here. Under the foundation of the Abbey House now taking down, in order to be rebuilt by the Duke of Kingston, the workmen discovered the foundations of more ancient buildings, and fell upon some cavities, which gradually led to further discoveries. There are now fairly laid open, the foundations and remains of very august Roman baths and sudatories, constructed upon their elegant plans, with floors suspended upon square-brick pillars, and surrounded with tubulated bricks, for the equal conveyance of heat and vapour. Their dimensions are very large, but not yet fully laid open, and some curious parts of their structure are not yet explained.—(*Gentleman's Magazine*.)

Footnote 5:[\(return\)](#)

In the library of the Society of Antiquaries is a drawing of this bath with an imaginary restoration.

Footnote 6:[\(return\)](#)

A correspondent in the *Bath Chronicle*, purporting to be Richard Mann, the builder employed under me to excavate the greater portion of the discoveries, but whose services were dispensed with, quotes the above as follows: "Adjoining to the inner walls of the central bath there are bases of Pilasters, as in Lucas's between the walls and the bath. There is a corridor paved with hard blue stone eight inches thick." The full-stop being placed at the word "bath," instead of before the word "between," gives to the quotation a totally different meaning from that conveyed by Dr. Sutherland.

Footnote 7:[\(return\)](#)

Fac-simile Pl. V.

Footnote 8:[\(return\)](#)

In the plate the reference describes the bath to be 90ft., but in the text of Sutherland the dimensions are given as 96ft. which agrees with the scale on the plan.

Footnote 9:[\(return\)](#)

These baths and adjoining rooms occupied the block between Church Street and York Street, including Kingston Buildings.

Footnote 10:[\(return\)](#)

"But the old municipal independence seems to have been passing away. The record of the battle in the chronicle of the conquerors connects the three cities (Bath, Gloucester, and Cirencester) with three Kings; and from the Celtic names of these Kings, Conmael, Condidan, or Kyndylan, and Farinmael, we may infer that the Roman town party, which had once been strong enough to raise Aurelius to the throne of Britain, was now driven to bow to the supremacy of native chieftains. It was the forces of these Kings that met Ceawlin at Deorham, a village which lies northward of Bath, on a chain of hill overlooking the Severn valley, and whose defeat threw open the country of the three towns to the West Saxon army."—*Green's "Making of England,"* p. 128.

Footnote 11:[\(return\)](#)

As there have appeared in local papers considerable discussions as to these baths, I quote from one of the letters the following as being remarkably clear and explanatory:—

"In 1755, Dr. Lucas discovered a Roman bath, east of, and immediately adjoining, the Great Bath, which is now attracting so much attention. Lucas's Bath stood north and south—an important fact to bear in mind, as the great Roman Bath stands east and west

—and measured 43ft. by 34ft. But this was not all. 'To the north of this room,' he says, 'parted only by a slender wall, adjoined a semi-circular bath, measuring from east to west, 14ft. 4in.' After the publication of Lucas's 'Essay on Waters,' the ground was further cleared away, and there appeared another semi-circular bath to the south, of the same dimensions as that to the north. The extreme length of Lucas's bath—including the N. and S. Baths, exclusive of the central semi-circular recesses—would be, roughly speaking 69ft.; and this fact should be carefully borne in mind, as we shall see presently to what use it was turned. Dr. Lucas's discoveries were pushed one stage further by Dr. Sutherland, who in his work entitled 'Attempts to revive Ancient Medical Doctrines' (1763) clearly indicates (*Pl. V.*) that he was on the track of another bath, the Great Roman Bath, in fact, with which we are now so familiar. His words are as follows: 'From each, corner of the westernmost side of Lucas's Bath, a base of 68ft., there issues a wall of stone and mortar. These walls I have traced six or eight feet westward under that causeway, which leads from the Churchyard to the Abbey Green. When, as we may suppose, they have run a length proportionable to their width, they compose a bath which may indeed be called great, 96ft. by 68ft.... From the westernmost side of Lucas's Bath a subterraneous passage has been traced 24ft., at the end of which was found a leaden cistern, raised about 3ft. above the pavement, constantly overflowing with hot water. From this a channel is visible in the pavement, in a line of direction eastward, conveying the water to Lucas's Bath' (pp. 20-21). Thus then in 1763 (1) the north and south walls of the great Roman Bath had been traced 6ft. or 8ft. west of Lucas's Bath. (2) Furthermore, starting from the centre of the west side of Lucas's Bath, a line had been traced to the east steps of the great Roman Bath. These are plain historical facts, open to everyone who will look into the plans of our baths, as given by Sutherland in 1763, and by Prebendary Scarth in his 'Aquæ Solis' in 1864. But our City Architect has been charged with suppressing these facts for his own glorification. Now, Sir, I think no unprejudiced man, who has heard Major Davis's addresses and read his books, can justly bring this charge. If I mistake not, he fairly stated the case in 1880, both in his address before the Society of Antiquaries, and in his lecture at the Bath Literary Institution. He has most certainly concealed nothing in his published works 'The Bathes of Bathe's Ayde' and 'Guide to the Roman Baths.' In the former work he says (p. 81), 'Dr. Sutherland indicates a large bath westward of that which had been discovered in his time, in fact there can be little doubt that the steps at the eastward end of a great bath had then been found;' in the latter, whilst alluding to the published plans of Sutherland, he says (p. 10), 'These plans indicate a large bath westward of that discovered in 1754 (? 1755), in fact the eastward steps of a bath had then been found.' Here then is a full and candid admission of all the facts known about the great Roman Bath in the middle of the last century; and this anyone can see by reference to the map in Prebendary Scarth's 'Aquæ Solis'—the diagram (copied from Spry) there being almost similar to Sutherland's conjectural plan of the baths, except that the section of Lucas's Bath, correctly represented in Sutherland's map is figured upside-down by Spry and Scarth. It is quite clear what Sutherland knew of the great Roman Bath; it is equally clear that when he proceeded, on the strength of his very limited observations, to draw a conjectural plan of the whole bath, he fell into absolute errors, such as, commonly enough, spring out of hasty generalisations based on scanty data. Thus, he gives the dimensions of the enclosure of the great bath as 96ft. by 68ft.; whereas, as a matter of fact, they are 111ft. by 68ft. How is this discrepancy to be explained? 'A Citizen' in your last weekly issue, says 'The alleged discrepancies in the measurements, which Mr. Davis has used to prove his case, are but the differentiations of the external measurements with the sinuous subterranean windings.' These are indeed brave words, indulged in rather to diminish Major Davis credit than to rescue Sutherland; but a truer explanation of the real discrepancies stares any man in the face who will open Dr. Sutherland's work. There is no occasion to be wise beyond what is written: 'When, as we may suppose, they have run a length proportionable to their width, they compose a bath, which may indeed be called great, 96ft. by 68ft.' The fact is, Sutherland supposed that the dimensions of the great Roman Bath would observe the same relative proportions as Lucas's Bath. The room of Lucas's Bath, let it be remembered, was 43ft. by 34ft., or rather 30ft. 6in. from the face of the pilasters. In other words, the length was equal to the diagonal of the square of the base. Then, having observed that the base of the room of the great Roman Bath—formed by the length of Lucas's Bath—was 68ft., Sutherland assumed that its length also would be equal to the diagonal of the square of base, namely 96ft. This patent error, assuming that the unknown would have a relative correspondence with the known quantities, was the fruitful source of many more. (1) The dimensions of the outer rectangular area formed by the room of the great Roman Bath being false, the dimensions of the inner rectangular area formed by the water surface of the bath were necessarily false also. (2) Steps were observed at one end only of the water surface of Lucas's Bath; therefore it was inferred that steps would be found at one end only of the water surface of the great bath, the eastern end as figured in the maps of 1763 and 1864, whereas we now know that steps run all round. (3) The *exedrae* at the back of the *schola* having no existence in Lucas's Bath, were omitted from the conjectural plan of the great Roman Bath. (4) Lucas's Bath being a plain hall without piers, Sutherland assumed the same form for the hall of the great Roman Bath, and altogether omitted the arcades that divide it into three aisles. (5) Not to dwell on other errors built on the baseless fabric of conjecture, it is evident that Sutherland imagined a system of baths existed west of the great Roman Bath similar in all respects to that known to exist east of the great Roman Bath. But here, again, theory has been upset by facts. And now is a fitting opportunity to draw attention to what has been actually discovered west of the great Roman Bath, namely, the octagon Roman Well, which I should be disposed to consider Major Davis's greatest discovery, though I observe that hostile critics take no notice of this, possibly because it is beyond the region of dispute. If any one, able to point what he reads, still believes that the great Roman Bath was ever practically opened up in the last century I would refer him to Mr. Moore's able and suggestive paper, entitled 'Organisms from the recently discovered Roman Baths in Bath,' read to the members of the Bath Microscopical Society, in May,

1883. Once more I insist that we must clearly separate what Sutherland knew from what he conjectured. Indeed, Sutherland himself fairly draws the distinctions. On page 21 he says, 'This ground plot is exhibited in the plate annexed, as far as the earth is cleared away. The remainder is supposed, and drawn out in dotted lines.' These dotted lines represent a vast *terra incognita* covering, practically, the whole of the ground recently opened up. That the existence of the great Roman Bath has been transferred from the region of conjecture to the region of fact we owe entirely to the enthusiasm and unwearied zeal of Major Davis, and no fair mind can deny him the credit of being the practical discoverer of the great Roman Bath. More credit than this he has never claimed; less than this only the churlish and envious will grudge him."

Footnote 12:[\(return\)](#)

Pl. VII. gives a correct plan of former discoveries as far as I have been able to ascertain, and these I have made up to April 19th, 1884.

Footnote 13:[\(return\)](#)

The water, on ceasing pumping, rose to a height above the lead of 7ft. 6in.

Footnote 14:[\(return\)](#)

The dimensions must not be taken to be quite correct in all cases, as there are discrepancies and inaccuracies in the building that prevent measurements being always reliable.

Footnote 15:[\(return\)](#)

This bath is drawn to a large scale in Pl. VIII.

Footnote 16:[\(return\)](#)

The construction of the steps to the baths deserves remark (some of the stones being 10ft. long). The depth of the riser to the steps that were beneath the water is unusually deep, and the treads narrow. This is compensated by the increased buoyancy of a human body when immersed, or partially immersed, in water. The steps have, on the contrary, a shallower rise and a wider tread when they approach the top. The next notable point is the formation of the tread of the upper flooded step. This is grooved by a somewhat circular sinking, from 4 to 5in. wide, immediately against the riser of the topmost step. Everyone frequenting a public bath must have noticed the dashing of the water against the wall or upper step, and the nuisance created from the breaking of the water against it. The grooving would remedy, I believe, this annoyance, as the little waves of water would be made to take a curved form before reaching the step; consequently the water would fall back into the bath instead of dashing over the surrounding platform. And in the ends of every upper step but one, and on the steps lower down, have been square sockets, cut in the stone and filled up again with pieces of stone. These mark the position of balusters to a hand-rail for the use of bathers that were removed some time previous to the abandonment of the baths, and the stones were inserted. These hand-rails were doubtless of bronze, and therefore of value.

Footnote 17:[\(return\)](#)

A statue of some size doubtless stood on this pedestal.

Footnote 18:[\(return\)](#)

This deposit must, from the thickness, have taken several years to form, and the fact of its being of precisely the same character as the present deposit from the mineral spring is an evidence of the unchanging nature of the water.

Footnote 19:[\(return\)](#)

With reference to the sculpture, one piece, of debased character, has been found—a Minerva with a breast-plate, helmet, and shield in *alto relievo* within a niche.

Footnote 20:[\(return\)](#)

The house over the bath having been purchased by the Corporation, the Antiquities Committee (of which Mr. Murch was chairman) with a liberal subscription from the Society of Antiquaries, the Duke of Cleveland, and many noblemen and gentlemen of Bath and the neighbourhood, bore the expense of the removal of the soil from the bath and the general opening out of the rains, the arches beneath the Poor Law Office and the Viaduct supporting Abbey Street.

Footnote 21:[\(return\)](#)

The arches in the adjoining apartment west of this were built of a sort of a tufa.

Footnote 22:[\(return\)](#)

On the falling of the roof one of the piers was thrust out of the perpendicular, the upper half toppling over, and the lower would have again returned to its original position had a stone not fallen into the vertical joint, catching the pilaster as a wedge. The pier is still fixed out of the perpendicular by the stone in the joint.

Footnote 23:[\(return\)](#)

The bases of the columns found, on the contrary, are most carefully designed and of most delicate proportions, which appear to justify the belief that the bases of the pilasters were never completely *worked*, or that they were coated with plaster and decorated as in the western bath, now being excavated.

Footnote 24:[\(return\)](#)

Professor Middleton considers this a cornucopia.

Footnote 25:[\(return\)](#)

A small drawing of these pieces I shall also on a future occasion communicate.

Footnote 26:[\(return\)](#)

"The foundation of a monastery by an under-King of the Hwiccas [Osric, Nov. 6, A.D. 676,] within its walls, reveals to us the springing up of a new life in another of the cities which had been wrecked by Ceawlin's inroad, the city of Bath."—*Green's "Making of England,"* p. 356.

Professor Earle throws some doubt on the authenticity of the record.

Printed at the Herald Office, North Gate, Bath.

{45}



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{47}

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