

BAALBEC.

By R. PHENÉ SPIERS, F.S.A.

AMONG the various discoveries made by the Germans at Baalbec during their excavations in 1900-1902, the most important was that of the existence in ancient times of a lofty peristyle which was carried round the hexagonal court and on three sides of the great or altar court, thus bringing into communication by a covered way the great halls and exedræ which surrounded these courts.

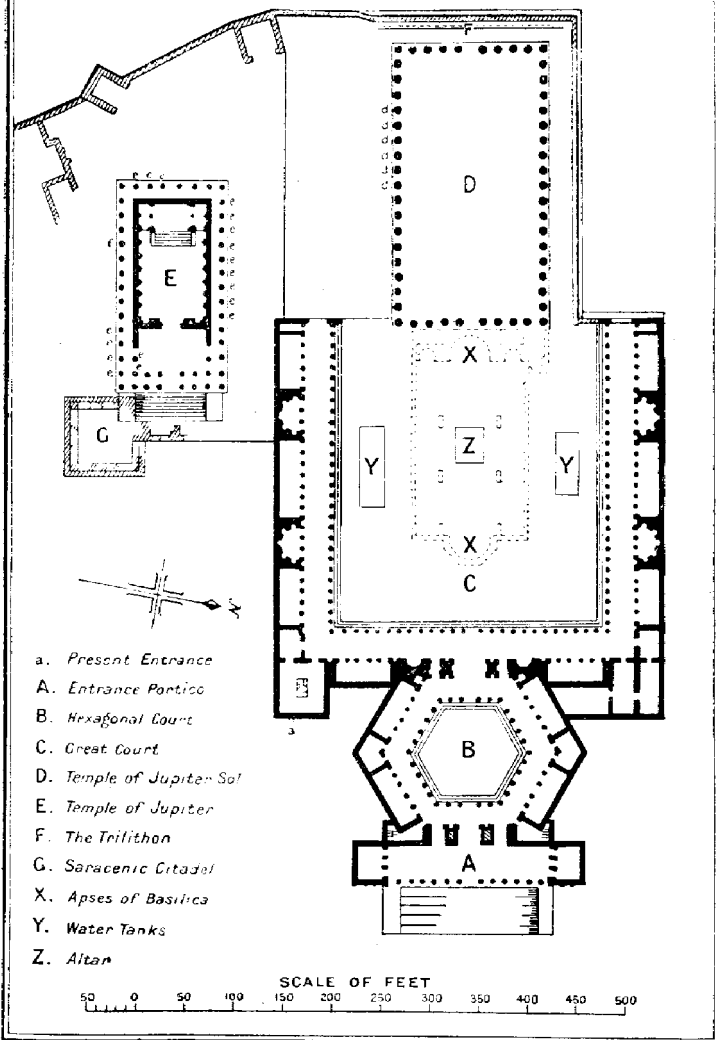
This peristyle was carried on a stylobate of three steps, remains of which were found in both courts, and although both columns and bases had long ago disappeared, the traces of the latter were still visible on the upper step, so that their position with reference to the screen of columns in front of the various halls and the pilaster responds between them were thus clearly defined. The dimensions of the base prints agreed with those of the responds, so that the height of the columns was probably the same.

The plan published herewith, originally set out according to that made by M. Joyau (Grand-Prix de Rome) in 1865, with various additions taken from the German plan, presents altogether in its completeness a very different aspect from that published by Wood in 1750, to whom, however, must be given the credit of having made one of the most marvellous surveys ever executed, so that after a century and a half it is still the principal standard work on the subject. Cassas' work, published after his death, was only completed by loans from Wood's engravings, loans which were not acknowledged by his editors, and have only become of late recognisable from the fact that in certain cases the same errors are found in both.

The discovery of the existence of this peristyle suggests an inquiry into the possible destination of the halls and exedræ thus brought into communication one with the other. By analogy with the hemicycles of the Roman Thermæ, which were the halls of declamation, where poets and orators recited their compositions or delivered their addresses, so here in Baalbec the vaulted exedræ facing the great court may have been the halls in which the priests

PLAN OF THE TEMPLES AND COURTS, BAALBEC.

d and e show the columns still standing erect on their bases. F is the column which has fallen against the cella wall.



- a. Present Entrance
- A. Entrance Portico
- B. Hexagonal Court
- C. Great Court
- D. Temple of Jupiter Sol
- E. Temple of Jupiter
- F. The Trilithon
- G. Saracenic Citadel
- X. Apses of Basilica
- Y. Water Tanks
- Z. Altar

SCALE OF FEET
 50 0 50 100 150 200 250 300 350 400 450 500

of Baal held forth in their discourses to the pilgrims who visited the shrine of their god, and brought those gifts and offerings which were quite as necessary for the support of the Pagan priests as they are now to our Christian clergy. Equally by analogy with the porticoes of the Greek shrines in Athens and at Delphi, Delos, and Epidaurus which offered an asylum or resting-place to the great body of pilgrims, who in some cases came long distances to assist in the worship of their gods, so here at Baalbec, in the rectangular halls were lodged the visitors to the shrine of Baal. At first sight the richly decorated halls seem to be of too palatial a character for such a destination, but those in Greece were all built in marble, and probably in many cases were decorated with paintings, so that they possessed the same magnificent aspect. The vaulted chambers under the great halls and the vaulted corridors under the peristyle, which were lighted through small apertures in the stylobate, served to hold the treasures of the god and the stores of provisions which would be required by the priests, and for the maintenance of the pilgrims during their sojourn there. There was also at the west end and on the east side of the hexagonal court a great open court enclosed by a wall not indicated on the plan, but the existence of which is shown by the projecting bond-stones on the rear wall of the entrance portico, and on the north-east and south-east angles of the block containing the halls round the great court, and is shown on the German plan. Here might be stalled the camels belonging to the priests or brought by the pilgrims. These theories, however, are purely speculative, put forward in the hope that someone may give other opinions respecting the destination of the various halls and vaults.

Although, according to Dr. Bliss, all the remains of the great temple were exposed and brought to light by the Germans in 1901, when all the work relative to it was then practically accomplished, so far no conjectural reconstruction has been yet published or any evidence as to the possibility of its never having been completed. Colonel Conder's statement (*Syrian Stone Lore*, p. 89, ed. 1896) that the great temple of Baalbec was a large quadrangle with a single row of pillars on each side, and without either roof, outer walls, or inner colonnades, is not borne out by the existing remains. Had the six columns remaining *in situ* of the south peristyle constituted the sole enclosure on that side, the entablature would have had the same profile of cornice on each side, but on the inner side,

facing north, its upper part is not carved but left unfinished, with sinkings to carry the stone slabs covering the peristyle in the same way as in that of the Temple of Jupiter. The walls of the acropolis, converted into a fortress by the Moslems in the thirteenth century, would quite account for the entire disappearance of all the masonry of the walls of the *cella*, on the supposition that the stones employed were not greater than those of the Temple of Jupiter.

The Great Altar.—The altar discovered by the Germans under the floor of the basilica was not a part of the solid rock, as was first supposed, owing to its megalithic appearance. It was built in stone from the quarries which supplied the trilithon, and all the material for the acropolis buildings and its foundation walls are shown in the German drawings as carried down some 25 feet, which would be about 25 feet above the solid rock. The foundations of the north side of the platform of the great temple are carried down to the rock itself, about 50 feet below the pavement of the great court.

The excavations and the clearing away of the accumulations in the great court brought to light two large *piscine* or lustration basins (YY on plan). Portion of the south basin has been built over, otherwise both are easily recognisable, and portions of the marble enclosures (about 2 feet 6 inches in height) have been recovered. These enclosures or parapets are decorated externally with miniature niches or recesses, ornamented with decorative reliefs representing conventional foliage with heads, sea-horses, sea-griffins, and garlands supported by cupids or bulls' heads. Outside the enclosure and at its foot was a stone water channel which ran round the basin.

The Great Basilica.—The plan of the Christian basilica, now cleared down to the floor, has revealed a design the nature of which would seem to be much later than was at first supposed. It has also brought to light the foundations of another apse at the east, and in which may be traced the evidence of a ritual change. According to the German discoveries, the nave of the church was separated from the aisles on either side by three great arches carried on piers, similar in design to the churches of Ruweihah and Kalb Louzy, which are referred to by De Vogüé, in his book *La Syrie Centrale*, as belonging to the sixth century. This cannot, therefore, be the church built by Theodosius (379–395 A.D.), but there is no reason why the three western apses may not have been part

of his church, especially as, in imitation of the Church of the Holy Sepulchre, the earlier apses were invariably placed at the west end. All the churches built in Syria and elsewhere in the fourth and fifth centuries had their naves separated from the aisles by columns supporting an entablature in the earlier buildings, as in Constantine's Church at Bethlehem, and later in carrying small arches.

With the large number of available columns to be found in the peristyle, the nave of Theodosius's church may have been separated from the aisles by two rows of columns carrying an entablature, and curiously enough the height of the columns of the peristyle with its entablature is the same as that of the aisle walls as suggested in the German drawings. It was, therefore, simply a question of removing stone by stone the peristyle and re-erecting it on the raised basilica platform. This basilica may have been destroyed by earthquake or fire, and when in the sixth century it was rebuilt, the architects adopted the new principle of wide arches on piers, which had this great advantage, that the altar could be better seen from the aisles. When rebuilding the church they opened out the east wall and built an eastern apse;¹ they also cut through the central apse at the west end, and built the principal entrance doorway there. The object of having three doorways in each of the aisle walls is not clear, because their sills were 7 feet 6 inches above the pavement of the court, and to enter them there must have been flights of steps to each, none of which have been traced. The outer walls of the basilica rise some 9 feet above the pavement of the church, and two of the piers carrying the arches were 18 feet above the pavement and still preserve their impost mouldings, which enabled the Germans to calculate the full height of the nave walls, restoring them in accordance with those still existing at Ruweihah and Kalb Louzy. At the west end portions of the apses rise 24 feet above the basilica paving.

Perhaps the most extraordinary fact in connection with this basilica is that its pavement was raised 7 feet 6 inches above the level of the great court, sufficient to cover over and preserve intact at all events the lower portion of the stone altar with the steps leading up to it on the east side. The Germans consider that which remains to be the platform on which the altar stood, and the priests,

¹ This apse would also be of value in resisting the thrust of the great arches of the nave, which at Ruweihah and Kalb Louzy is done by the walls of entrance porticoes.

ascending the steps, performed the sacrifices on the altar facing the east end of the temple.

The difference of level between the floor of the basilica and the pavement of the great court, 7 feet 6 inches, required an important flight of steps to ascend from one to the other, and this was provided at the east end, where a broad flight of ten steps led to a raised platform the whole width of the front of the basilica, so as to give access to the principal entrance to the nave and to two smaller doorways leading into the north and south aisles respectively. On this platform was built at a later date the eastern apse, the steps being left on each side to give access to the two side doors. An approach to the higher level, so as to enter through the central doorway formed in centre of the apse, was probably given on the south side by the lower ten steps of the original flight leading to the great temple, which are still preserved ; on the north side those steps had already been covered over by an additional chapel on that side.

Baptistery or Bath.—On the south side of the basilica and across its central axis the Germans discovered the foundation walls of a court with a covered passage round it, in the midst of which was an immense bath. This they suggest was either a swimming bath or a baptistery. Though the first destination seems out of place as attached to a basilica, the Germans say that such a feature is in accordance with a custom attested in ancient times. These walls are not shown on their section showing the existing condition of the site, so that there is no record as to their level. Moreover, they draw the Roman lustrate basin as complete with its enclosure parapet. Between the top of this parapet and the foundations of the court, as shown on Joyau's plan, there would only be an available depth of about 3 feet, which would not be of much use as a swimming bath. Regarding its designation as a baptistery, curiously enough the doorway leading to it from the south aisle is blocked up with masonry, indicated on plan as Christian work ; and a doorway at the north-east angle leads to the court, so that it does not seem to have been in direct communication with the basilica. This water tank, however, has been utilised by the Moslems at a later period, and there is an inclined passage leading from the lower court, where the Temple of Jupiter is situated, to the west side of the court surrounding it. The Germans say that the covered passage round this tank was vaulted, and they suggest the same on

their plan, but nothing is said as regards the evidence of the materials for a construction of this vault. For further details we must wait for the complete description of the results of their survey.

ON A PRINCIPAL CAUSE OF THE SALTNESS OF THE DEAD SEA.

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THE saltness of the Dead Sea has been ascribed to two causes :— (1) The accumulation of chlorides derived from the rocks of the Holy Land by solvent denudation, and (2) the cutting off of an arm of the Red Sea by the rising of Palestine in past ages,¹ with, in each case, the subsequent concentration of the solution by evaporation. There is a third cause, which is probably more important than either, viz., the atmospheric transportation of salt from the Mediterranean. The circulation of salt is a reality which must be taken into account. Brought from the sea by winds and falling in the rain, the salt is carried back to the sea by rivers, except in cases of inland lakes without outlet, where the saline solution remains for evaporation, and I have shown that in the case of an inland Pennine reservoir such a cause would produce a water as salt as that of the Dead Sea in a fraction of the time usually assigned to the Pleistocene Age.²

For the purpose of the present paper analyses of rainwater from the Holy Land are wanting; as, however, they are not at present available, I assume that the rain, like that of other lands,³ is charged with salt to a degree which varies in a direct manner with the velocity of the winds coming from the sea; it then only remains to show that the rocks are not abnormally salt bearing.

I have had forwarded to me by the Palestine Exploration Fund specimens of the rocks on which Jerusalem is built as samples of

¹ Hull, *The Phys. Geol. of Arabia Petraea and Palestine*, pp. 119 and 120.

² *Geol. Mag.*, October, 1901, p. 446; also compare J. G. Goodechild, *Trans. Geol. Soc. of Glasgow*, vol. xi, Part I, p. 84 (1898).

³ *Proceedings of the Yorks. Geol. and Polytechnic Soc.*, vol. xiv, Part III, pp. 403-408.