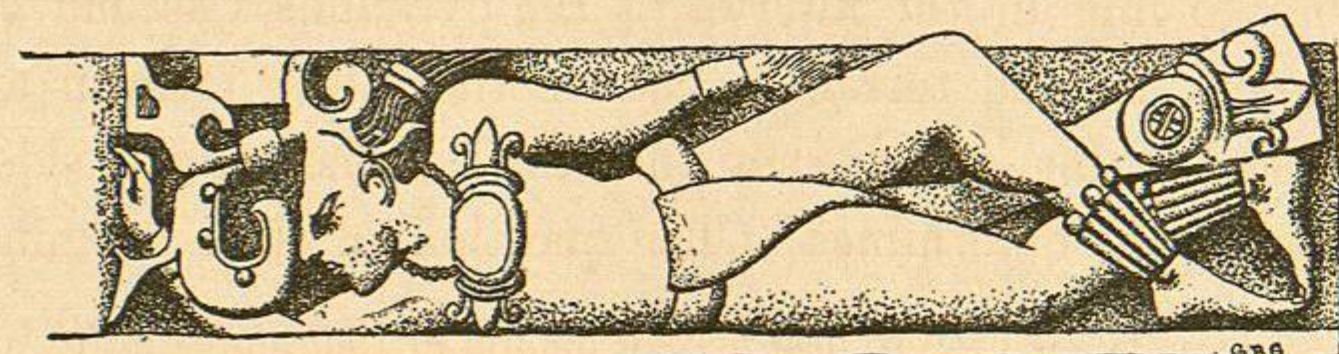


PLAN OF OPERATIONS.

It is the object of the Peabody Museum to preserve the ruins from the injuries to which they have been subjected in the past, and from which they have suffered greatly since Stephens' day. The chief source of these injuries is in the indifference of the natives, who, attracted to the valley by its fertility, do not hesitate to break up a structure or monument to get material for their fences and houses. The monuments have suffered also from fires built near them by the natives in burning brush. To prevent further destruction from these and similar causes, a stone wall has been built around the principal group of ruins, and they have been placed in the charge of a keeper, Captain Don Juan R. Cueva, the faithful companion of the exploring parties, who, in this capacity, resides at the ruins throughout the year.

The rainy season at Copan begins about the middle of June, and lasts till the end of December. During the intervening months the excavations cannot be successfully carried on. The season opens with a series of violent thunder-storms, which continue with increasing recurrence until the end of July, when the rains become less violent, but fall constantly. During the months of March, April, and May the heat is intense during the middle of the day, but the mornings and evenings are cool and pleasant.

The plan of operations adopted in the field is as follows: The whole area on which any remains are found has been divided into square sections. Before a detailed examination is begun on any particular group of ruins or locality, it is carefully surveyed and located on an outline map of all the ruins. Each group of structures is in this way assigned to its proper place on the map, which will thus represent with absolute exactness the whole site of the city, with the shape and character of its structures, as well as the natural topography of the valley. If the group consists of buildings, they are entirely cleared of debris, and then carefully measured and drawn upon an enlarged plan of its corresponding section. Wherever sculptured monuments or hieroglyphic inscriptions are found, they are both photographed and moulded in paper or plaster, to be reproduced in the Museum at Cambridge for further investigation and study.



RESTORATION OF SCULPTURE ON A STEP OF HIEROGLYPHIC STAIRWAY. (See page 22.)

DETAILED DESCRIPTION OF THE RUINS.

THE plan (Plate I.) shows the central group of ruins and the contiguous parts. The nomenclature of the different parts so far as given by Maudslay has been adopted. The principal ruins are grouped about what has been called the Main Structure (Plate II.), a vast irregular pile, rising from the plain in steps and terraces, and terminating in great terraced elevations each topped by the remains of a temple. (See plan, 11, 16, 20, 21, 22, 26.) The summit of the highest of these is about a hundred and thirty feet above the level of the river. Of the temple* with which each of these elevations was crowned only the foundations and parts of the lower walls now remain in position. The place where each stood is a heap of fragments, and the slopes of the pyramids and the terraces and pavements below are strewn with the ruins of these superb edifices. The walls of the buildings and the outer casing of the pyramids and terraces are built of stone, neatly cut in flat-faced oblong blocks, and laid in parallel rows, occasionally with mortar, but generally without. All these stone walls and casings appear to have been plastered, and the plaster decorated with paintings; but only slight traces of these remain.

Little attention seems to have been given to breaking joints in the stone work; and while generally some care seems to have been taken to prevent the joints in contiguous rows from falling together, no definite system of breaking joints was adhered to. This is rather surprising when we consider the nicety with which the blocks were cut, and the perfect regularity of the rows. The slopes of the pyramidal foundations are built in terraces about five feet high and five feet broad, or in steps consisting of single or double rows of stones, the step or terrace being generally, if not always, covered on top with a layer of mortar cement.

The interiors of all the raised foundations and pyramids, so far as known from excavations made, are filled with rough stones and clay, which show signs of having been very carefully laid for solidity and strength. It is not unusual to find in the interior of the pyramids a second casing, or at least secondary walls and terraces; but whether these form in any instance complete interior casing, or whether they are confined to one side or part of a side, has not been determined. The question of their meaning has been

* The same number is used to designate a mound or the temple on its summit.

complicated by the discovery of similar walls below the foundations of some of the pyramids. These underground walls can best be seen on the river front (Plate II. 1) where the face of the exposed cliff formed by the action of the river presents patches of faced wall more than half-way down. It was probably the existence of these walls that led to the erroneous belief in what has been called the great wall of Copan.

Mr. Maudslay seems to have been of the opinion that the object of these interior walls was to strengthen the structure and bind it together. But the conditions under which they are found seem to preclude this theory from general application, although it may very well apply to particular cases.

Mr. Owens, who gave a good deal of attention to the problems presented by the river front, was inclined to believe that these underground walls marked different stages in the development of the structure, and were in fact the remains of older buildings that had been occupied for a time and abandoned in the gradual building up of the great complex structure to its ultimate form. The cause of this abandonment of buildings now beneath the foundations of others can be readily ascribed either to the changing tastes and requirements of the people or to the pride of rulers for whose glorification the works and dwellings of their predecessors had to be sacrificed to give place to temples in their honor. There is some actual evidence in the condition of the buildings, as we find them on the surface, to support the theory of a gradual alteration in the shape and size of the buildings: Temple 50 was built against the side of Pyramid 16, its wall resting on the terraces. In the eastern end of Temple 22 a doorway was found walled up. Two lower chambers in Temple 20 were found filled with clay and rubble, and their doorways closed by walls. All this would seem to indicate a gradual addition of new features accompanied by abandonment of older parts. It can readily be seen how a process of this kind carried on for centuries, without any well-designed plan to adhere to or any definite idea to carry out, would result in a great complex mass of structures like that of Copan to puzzle and perplex the explorer.

There are other evidences that point to several successive periods of occupation. The river front presents what looks like at least three great strata, divided by floors or pavements of mortar cement. If these floors mark the various levels corresponding to different epochs in the history of the city, the question of the age of the ruins becomes still more complicated; for between each successive period of occupancy there is the period of silence, the length of which can only be inferred from the thickness of the superimposed stratum. The questions thus raised by the results of the first investigations can only be settled after extended exploration and study.

In the interior of the Main Structure are two enclosed courts, their floors, paved with mortar cement, being sixty-five feet above the level of the river. One of these, the Eastern Court, is entered from the south by a narrow passage, between Mounds 16 and 18, formerly closed at its southern end by a thick wall, now broken down in the centre. The sides of the court are built up with solid stone-work in seats or terraces as in an amphitheatre. About the centre of its eastern side the terraces have been torn away and a deep pit made underneath, revealing the end of a tunnel which leads to the vertical face of the cliff overhanging the river. This pit also gives access to a small chamber directly beneath the inner end of the tunnel. The following is quoted from Maudslay (page 31):—

“Palacio in his description mentions the ‘two caves or passages’ the openings of which can be seen on the face of the river-wall, and which have given to the ruins the name of ‘Las Ventanas,’ or ‘The Windows.’ . . . The floor of the passage is level, and the interior is faced with stone, and is just large enough for a man to crawl through. The top of the passage is a little below the level of the court; it was closed on the land side, and I think not intended again to be opened. A deep pit was dug here by Colonel Galindo, shown in the plan, which now gives access to the passage.

“A few feet from the end of this passage, but at a greater depth below the level of the court, is the subterranean vault, . . . which was broken into by Colonel Galindo. The vault and passage do not seem to have had any connection with one another. The following is Galindo's description of his discovery:—

“Through a gallery scarcely 4 feet high and 2½ feet broad one can crawl from this square through a more elevated part of the temple overhanging the river, and have from the face of the precipice an interesting view. Among many excavations, I made one at the point where this gallery comes out into the square. I first opened into the entrance of the gallery itself, and digging lower down I broke into a sepulchral vault whose floor is 12 feet below the level of the square. It is more than 6 feet high, and 10 feet long, and 5½ feet broad, and lies due north and south, according to the compass. It has two niches on each side, and both these and the floor of the vault were full of red earthenware dishes and pots. I found more than fifty, many of them full of human bones packed in lime; also several sharp-edged and pointed knives of *chaya* (a brittle stone called *italli* by the Mexicans), and a small head, apparently resembling death, its eyes being nearly closed and its lower features distorted. The back of the head is symmetrically perforated by holes; the whole is of most exquisite workmanship, and cut out or cast from a fine greenstone, as are also two heads I found in the vault, with quantities of oyster and periwinkle shells brought from the seashore in fulfilment of some superstition. There were also stalactites taken from some caves. All the bottom of the vault was strewn with fragments of bones, and underneath these a coat of lime on a solid floor.”

“There is another similar passage lower down the cliff and further to the north. We made a ladder and succeeded in entering this passage and crawling to the further end, which we found closed with a stone wall. It is about the same length as the first passage described.”

On the plan (Plate I.) the tunnel is indicated by dotted lines, and the vault is shown in the same way in its place beneath the terraces, which are shown continuous above the vault, and not broken as they are at present.

All the accounts of this tunnel contain several errors. Its real dimensions are: Height, 3 feet; breadth at bottom, $2\frac{1}{2}$ feet; length, $65\frac{1}{2}$ feet. The floor is not level, but has a downward slope toward the river of about three feet in the whole length, the floor at the inner end being on a level with the floor of the court.

The following description of the tunnel is from Mr. Owens' field notes:

"The walls of this passage are built of well-dressed stones of the same kind as had been used for building purposes throughout the ruins. In the construction of the tunnel a foundation of three rows of stones cemented together was first laid, the stones of the central row being flat and undressed and of greater length than the stones forming the row upon either side which support the side walls of the tunnel. Throughout nearly the entire length of the passage each side wall, up to the spring of the arch, consists of four courses of stone of nearly equal thickness. At the western end of the passage, however, but three courses of larger stones are employed, and the south wall at this point begins with only two courses, one large stone taking the place of two. The south wall changes from three to four courses, $8\frac{1}{2}$ feet from the west end. A corresponding change in the north wall takes place 15 feet from the same end. The arch springing from the side walls is of the horizontal type, and there is nothing peculiar in its construction.

"All the side stones are laid in cement, but I could not see that their surface had ever been plastered, or that any cement had been used to secure the cap-stones which consisted of large flat stones about a foot thick, and long enough to reach almost to the outer edge of the widest side walls.

"The floor of the passage was of cement, slightly convex and about three and a half inches thick midway between the walls.

"The central row of stones forming a part of the foundation has been removed for the distance of seventeen feet from the east end, and only eleven feet of the cemented floor at the western end of the passage is in place."

Maudslay's authority for the statement that the tunnel was closed at the inner end (or land side), and not intended to be opened again, is not apparent; but he probably derives it from Galindo's statement that he "first opened into the entrance to the gallery itself," which therefore must have been closed previous to his excavation. This was undoubtedly the case; and the lower row of stones forming the first seat or terrace rising from the floor of the court still remains. It is, however, by no means certain that a smaller aperture did not connect the shaft with the court at a higher level. A case apparently of this kind exists in the second tunnel referred to by Maudslay. This is some distance farther north and lower down, and is thus described by Mr. Owens:—

"As we found it, this tunnel was open about 40 feet, the end being closed by rough stones imbedded in cement. Small boys were employed to enter and remove the filling. As the cement was very hard, the work progressed very slowly; but after following the side walls for about fifteen feet they were rewarded by coming to the end of this filling, and for 65 feet beyond the tunnel was practically empty. The entrance to this inner part was scarcely large enough for a man to crawl through, being only 17 inches wide and 13 inches high. The width remained the same throughout the entire length; but the height and character of the roof changed remarkably, and there was a constant downward slope toward the river. At one place what appeared to be a triangular watercourse came down through the roof at an angle of 30 degrees. On the floor were found a few potsherds, some bone needles, jade beads, and shell ornaments. This inner end of the tunnel is about 115 feet from the face of the cliff, and about 40 feet below the surface. I am not able to say positively for what it was originally intended, but it was probably a watercourse, as its floor is level with what seems to have been an old plaza now buried 40 feet below the surface."

Directly opposite the pit dug by Galindo, on the western side of the court, is the stairway referred to on page 29 and figured on page 17 of Maudslay's work, and called by him the Jaguar stairway. A broad flight of steps leads to a narrow platform. At a short distance from either end is a large figure of a jaguar, rampant, as is supposed by Maudslay, inserted in the wall. Above the platform two steps extend the entire length of the court, and above these a narrow stairway of six steps leads to the elevated platform that separates the eastern court from the western. In the centre of this stairway is a structure carved on the face into a huge dragon's or serpent's head, holding in the extended jaws a large grotesque human face.

Upon the platform above is what looks like the stone foundation (25) of an oblong building, but there are no signs of any building having stood upon it. To the west of this, directly above the Western Court, are the ruins of a building, close to the eastern wall of which is Sculpture Z, discovered in April, 1893. At a short distance to the south, close to the side of Pyramid 16, are the remains of a building (50), explored by Saville and Owens in 1891-92.

The following account of this building (Plate III. 1) is taken from Mr. Saville's report:—

"Two mounds are represented on Maudslay's map, but before excavation they presented an L-shaped mass of earth and cut stones at the base of the pyramid. The part which is called the eastern wing extends from east to west at the base of Pyramid 16, and looks more like a mass of debris, fallen from the building above, than the remains of a separate structure. The western wing extends north from the western end of the eastern wing, running parallel with, and close to, the edge of the terrace above Stela P in the Western Court.

"The trees were first felled and burned, and the mound was cleared of the mass of stones on the surface which were then thrown down the terrace into the southwest