

several large stones until it was at an altitude of four feet from the cave bottom of to-day, and directly under a spot where the drops of percolating water fell; in time the percolation not only filled the haltun with water, and thus supplied the means with which to quench the thirst



FIG. 8.—ROCK CARVINGS, CAVE OF LOLTUN. †.  
After tracing by E. H. Thompson.

of the cave-dwellers, but coated the whole structure—base stones and haltun inside and out—with a transparent and thin, but constantly increasing, coating of lime. To-day the structure stands, a solidified, rounded mass of white lime. Through the several inches of transparent envelope the ancient haltun can still be seen.

Within the northern wall surface of Chamber 3, there is a small opening leading into a large cavity, in fact a small chamber capable of holding comfortably several persons. The opening from the large chamber into this small one is skillfully barricaded and made smaller by large stones so arranged as to appear to be the work of nature, and this effect is heightened by the uniform film of mould dust that covers all the lower portion of the cave. In one corner a haltun, or water-trough, had been cunningly sunk into the floor surface and projected so far each way that the water dripping constantly from the stalactite points of the outer wall could be utilized by the occupants of the chamber without detection or exposure. In another corner, charred wood and ashes were found, beside postherds and flint chips. This instance is but one of many similar ones that are seen in the chambers of the cave.



FIG. 9.—ROCK CARVINGS, CAVE OF LOLTUN. †.  
After tracing by E. H. Thompson.

I have found a great many of these haltunes in various portions of the cave. Chamber 3 contains the largest number of any of the chambers I have visited. In order to furnish data for the future worker, we took a haltun of ordinary size, the present location of which is about twenty-five feet northwest of Inscription 7, and carefully removed the crystalline envelope of lime. This coating, two and one-half inches thick upon the outer rim of the cavity, three and one-half inches thick on the inner bottom, and one and one-fourth inches thick upon the outside structure of the haltun itself, was removed with considerable difficulty. This accomplished, the legend "E. 1888" was

chiselled in letters half an inch deep upon the side of the haltun nearest the passage-way. The haltun was then restored to its original position, and left until succeeding years, possibly centuries, and renewed deposit shall make it serviceable to science by recording the rate of stalagmitic deposit.

The entire year might be spent in this cave with good results to science; but it was not deemed advisable to spend a long time during one season in the cave. Constant exposure to the cold, damp air and the sudden changes of temperature, as each day the laborers ascended and descended, caused coughs and colds until, from pure humanity for the health of our faithful natives, we were forced to leave cave work, and migrate to the high and drier region surrounding the Labná group.

REPORT OF EXPEDITION OF 1890-91.

DECEMBER 1st of the season of 1890 found us again at the cave.\*

The engineering work done by Mr. Paige, and the excellent photographs made by Mr. Sweet, during the previous season, enabled us to get started on direct investigation in a very short time.

About half-way down the descent from the surface to the first chamber, there is a ledge shelf, or cleft, so deep and sheltered as to be



FIG. 10.—PERFORATED SHELL. †.  
Ornament.

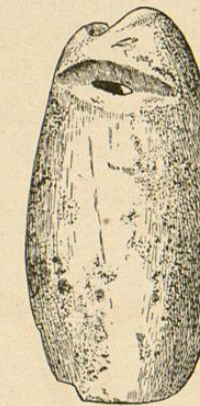


FIG. 11.—PERFORATED SHELL. †.  
Ornament.

almost a chamber. This seemed a promising field for investigation, as its position would naturally lead us to expect fruitful results.

Carefully dividing the shelf floor into sections, for systematic investigation, we commenced the excavation. The earth as it was dislodged was carefully inspected *in situ*, and the sides of the cuts carefully examined and worked into with hand, brush, and small trowel. The observations were minutely made and noted, and the loose earth was carefully sifted.

\* The expedition this season consisted of EDWARD H. THOMPSON, *Director*, and MARSHALL H. SAVILLE, *Assistant and Photographer*.



The accumulated deposit upon the shelf was naturally much less in depth than that upon the chamber floor. In no spot was it over three feet, and the average depth from surface to bed-rock was one foot and three inches; for the first three inches it was a composite of bat excrement, bird feathers, mole, bat, and rat bones. Potsherds, few in number, were found where the rains had worn away the upper deposit of material.

The second three inches consisted of fine dust, stalactite tips, small animal bones, and many teeth and snail-shells.

Beneath these two superficial deposits commenced the actual traces of the ancient people who made this cave, if not a home, at least a station in their life's journey.

The contorted surface of the floor of the shelf made any epoch-marking stratification impossible.

Beneath this detritus of six inches was a thick stratum of mingled earth, potsherds, and fragments of rock. At a depth of five and ten inches beneath the surface of this deposit I thought I could detect somewhat regular deposits of ashes approaching true culture layers, separated by a depth of two inches of brown earth and rock fragments; but these strata, if strata they are, were so broken by faults as to make authentic data of the kind impossible.

This small chamber, barely five feet square, yielded rich results, much richer, relatively, than the excavations in the Inscription Chamber.

We had the good fortune to encounter two small hollows in the bed-rock that evidently had once served as "caches." One of them held several of the handsomest obsidian knives that I have ever seen; while

the other held many chalcedony chips, evidently newly chipped and unused when buried. One of these obsidian knives was presented to Don Antonio Fajardo, for the owner of the lands embracing the Cave of Loltun, and the remainder are now among the specimens at the Museum. Two of these are illustrated on Plate VII.

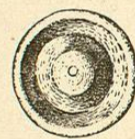


FIG. 13.—ORNAMENT  
CARVED FROM SHELL. †

Fig. 2 a. Fragments of an elaborate incense burner, portions of which still hold the bright colors of red and white, are among the interesting objects exhumed; also, a very artistic ornament of pink shell, carved in the form of a flower (Fig. 12).

Chipped flint implements, fragmentary objects of burned clay, some still showing bright colors, ornaments carved from pearl and conch shells, clay pellets like the nineteenth-century boys' marbles (Plate VII. Fig. 1 b), bone awls and needles, beads and unworked pebbles of yellow stone, hammer stones, and broken spear-points are among the specimens brought

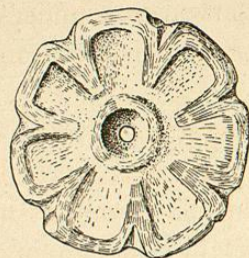


FIG. 12.—ORNAMENT  
CARVED FROM SHELL. †

to light by the excavation of this shelf chamber. Many of these specimens are illustrated upon Plates VII. and VIII.

In the mingled ash and refuse material, filling a hollow in the rock floor six feet from the west wall and nine feet from the south, were found fragmentary portions of human bones, much decayed, and human teeth filed into curious forms.

Close by these bones were little heaps of hard clay pellets, resembling marbles, which probably were the pellets that once served as sounders in the hollow feet of tripod vessels, of which our excavations of last season gave the Museum several fine examples.

The floor of Chamber 3 was marked into sections for systematic working, as in the previous instance. The sections excavated were thus worked down to hard-pan, or rock bottom. In places this is a hard-packed, yellowish earth of an ochreous nature, totally unlike the red earth of the surrounding country. In others, it is a crystalline limestone. This hard-pan is also subject to great inequalities. In places it is barely three feet beneath the surface. In others, not many yards distant, it has several times that depth. It seems to consist of ancient channels, probably hollowed out by the action of running water when the cave was new, and of ridge-like protuberances, — gigantic stalagmites.

The average depth of excavation made this season was four feet, although many side and test excavations reached a much greater depth. These excavations were made and worked with great care, under the constant supervision of Mr. Saville or myself. The earth, before it was dislodged, was subjected to careful inspection *in situ*, and suitable observations were made and noted. The earth material was then taken in baskets and carried to a large sieve, where, as it passed slowly through the meshes, it received a searching investigation.

Many side and test excavations were made in order to study the extent and character of the deposits. These excavations were either narrow trenches or circular pits reaching down to the actual bed-rock, and in cases where the rock bottom gave an uncertain sound as if it might be a rock fallen in early times from the roof, and not the actual floor, long steel tapping chisels, nine feet long and a half-inch in diameter, were brought into use. They cut into the lime rock easily and quickly, and soon proved the truth of the matter. In one place we drilled seven feet into the floor, and as at that depth a light steel test-rod rang as clear as a bell, we knew there was at least two yards more of solid rock material, and we concluded to accept as a fact the idea that we had encountered the primitive floor of the cave.

After our work was finished, in deference to the expressed wish

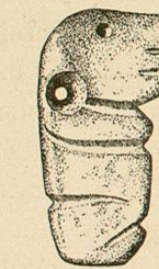


FIG. 14.—CARVED  
STONE PENDANT. †