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VOL. II, No. 3.

RUINS OF XKICHMOOK,
YUCATAN

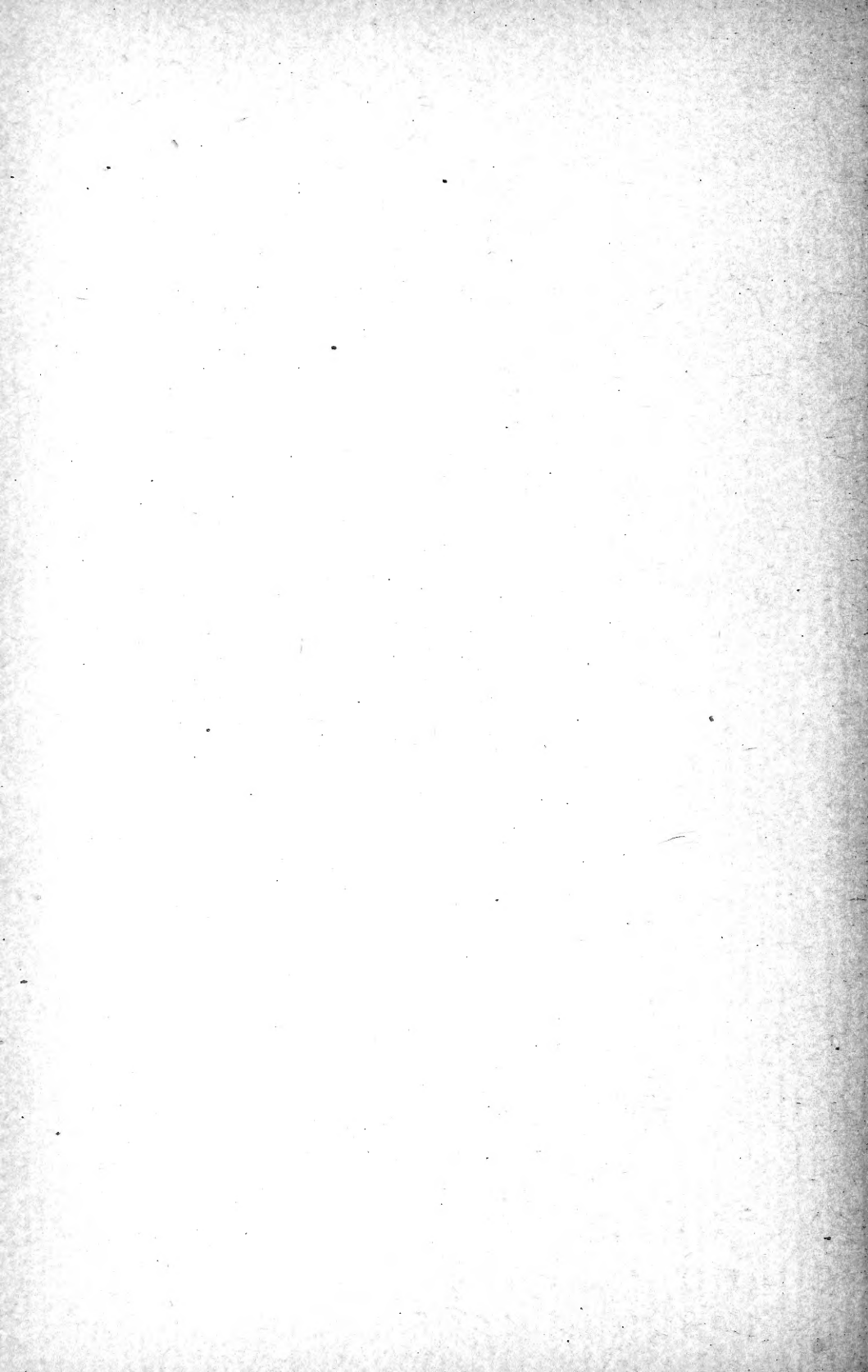
BY

EDWARD H. THOMPSON,
Field Assistant.

GEORGE A. DORSEY,
Acting Curator, Department of Anthropology.



CHICAGO, U. S. A.
July, 1898.



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NOTE.

The following paper on the ruins of Xkichmook was prepared by Mr. E. H. Thompson during the summer of 1896, at which time he was engaged in conducting archæologic investigations in the ruins of Yucatan for the Field Columbian Museum. Grateful acknowledgment is made of the valuable services of Prof. W. H. Holmes, of the United States National Museum, in reviewing and editing the manuscript and in supervising the preparation of the illustrations.

GEORGE A. DORSEY,

Acting Curator, Department of Anthropology.

CHICAGO, July 14, 1898.

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INTRODUCTION.

The group of ruins called Xkichmook by the natives was discovered by me in 1886, and early in February, 1888, a paper was read before the American Antiquarian Society recording the discovery, and briefly describing the journey and such features of the monumental remains as had most strongly impressed themselves upon my mind afterwards. The observations made during this first visit were necessarily imperfect and superficial, and it was not until early in 1891 that I was enabled to commence an exhaustive study of these interesting ruins. The result of my investigations, extending over a period of seven years, have been, by the kind liberality of Mr. Allison V. Armour, placed at the disposal of the Field Columbian Museum. The specimens obtained are now preserved in that institution, and the various plans and drawings, as well as copies in color of the mural paintings, have been submitted with this report.

The name Xkichmook signifies, in the Maya language, *the buried beauty*. I think, however, it was not the intention of the native name-giver to call it thus, but rather *Xkichmul*, a word formed from *Ichil* (between) and *mul* (hill)—a very suggestive and appropriate name, for the place is surrounded by ranges of high hills. *Ichmul* is by the rules of the Maya language feminine, and must have the feminine prefix X. The same linguistic custom also requires, for the sake of euphony, that between the X and the initial vowel the consonant *k* shall be interposed, and thus is formed the word *Xkichmul*. Notwithstanding this inference, I shall continue, as heretofore, to call the group Xkichmook. This name was probably the bequest of some wandering native, who, after the manner of his kind, chose to call it by a tersely descriptive term. In like manner Xlabna (old houses) and Xlapac (old walls) are rechristenings. Some ancient groups, as Uxmal, Chichen Itza and Mayapan, may have had their original names brought down through the centuries to the present, but this would be difficult to prove.

The ruin group of Xkichmook lies six leagues south of Xul (about 140 miles south of Merida and forty or fifty miles east of Campeche), in a narrow valley between a series of rocky hills, and has to be approached by precipitous paths over the hill-sides and thence down

the beds of dry arroyos whose yearly freshets wash away all vegetation. Following these washes progress is possible, but at best the approach is extremely difficult.

The valley has a general trend to the southeast. Its level bed of lime rock, a recent formation, geologically speaking, is in places covered with a deep layer of *Kankab* (red earth) produced by erosion of the surface formations, and in other places is absolutely destitute of any soil save the thinnest layer of vegetable loam. Upon the surface everywhere is a sparse forest-growth of thorny trees and chaparral. An immense terraced incline, partly natural and partly artificial, forms the northern approach to the group of ruins. Commencing with a series of ruined steps flanked by walled embankments, it extends upward at a moderate angle until at a distance of 187 feet from the base it reaches the foot of a second great terrace, upon which stands Edifice No. 1 and various less conspicuous structures. The accompanying map, Pl. XXVI, shows the ground plans of these buildings and indicates the terracing in a sketchy way. Surrounding the central group are other ruins, some of which are included in the map, while still others lie beyond its borders and are shown in separate figures.

Excavations were made at many points, walls were uncovered and traced, cisterns were cleaned out, graves were examined and many objects of art were procured. Pottery and flaked stone implements were plentiful, but polished implements and specimens of sculpture were exceedingly rare.

THE PALACE.

EDIFICE No. 1.

Edifice No. 1, or the Palace, as the natives term it, is a most imposing structure. It is 64 feet high and, raised by terraced substructures, it towers 80 feet above the surrounding level, while its massive northern walls loom up like the face of some grim fortress; and, in truth, who can tell how many fierce frays have in the ancient time taken place in the shadow of these walls! This is the principal edifice of the group and is a composite structure, forming, with its two wings, three sides of an inclosure too irregular to be called a hollow square, with the open portion facing the south. The central portion (seen from the southeast in Pl. XII, from the northeast in Pl. XIII, and from the northwest in Pl. XIV), is a massive pile, fully 60 feet high, faced with worked stone and terminating in a much smaller upper structure of two rooms, probably a shrine or *K'u*. A wide staircase, its foundation a solid mass of rubble faced with carved stone ornaments, occupies fully one-third of the whole southern front, and extends upward to the narrow terrace in front of the shrine.

The chambers of the lower story are ranged on the sides of this great stairway. Those upon the west of the stairway are two in number, and are measurably well preserved. The principal façade is partially destroyed, but the roof is still intact and gave me shelter for many days. The central portion is entirely covered with sculptured ornament. The façade of the western wing—a five-chambered structure—is plain below, but the upper zone is a mass of projecting ornamental work, partly in stone and partly in stucco. The serpent motive is a prominent feature in the embellishment, pervading it more fully, perhaps, than in any other ruin I have seen save Uxmal and Chichen Itza.

The eastern wing, a structure of five rooms, two of which are still preserved, is now detached from the main building by a narrow open space that was once probably covered. Its façade is almost unadorned. An undulating band of rosette-like ornaments projects

from the otherwise plain surface of the entablature, producing an artistic though simple effect. Sunken columnar ornaments break the monotony of the lower wall at intervals, and a curious cleft or vertical channel divides the façade between the two well-preserved chambers. This channel resembles the water gutter of modern buildings, but is the only thing of the kind that I have yet found. At Uxmal and in other ruin groups I discovered that the drainage of the roofs, and of some terraces even, was carried off by curiously wrought gargoyle-like water-spouts of stone.

As is the case with most of the larger edifices of these groups of ruins, the Palace appears to be the result of successive periods of growth. It would seem that the central portion had been completed, and that time left its mark upon the wall before the wings were added, and the eroded surface was hidden beneath the new material. The second story also appears to occupy the site of an older structure whose demolished wall helped to form the later structure. The newer building seems to be identical in style with the old. Contrary to the theories of some writers on these ruins, there appears to have been no Renaissance in the building art in Yucatan. The growth seems to have been gradual from the simple lair in the rocks, the cave dwelling and the wattle and withe hut, to the grandest monuments of the peninsula. The true theory is the simpler. As the group of buildings grew, the principal structures must needs be larger to satisfy the needs of the people; additions were made as called for and with as little trouble as possible. The builders did not often remove the casing stones of an old wall that was to be built against, but left them to strengthen the structure which, as time went on, might require the addition of another story. In some instances, where the stone ornamentation of the upper wall space was especially intricate and projecting, they did remove the more complicated portions, utilizing them elsewhere. All of the chambers are finished in the usual style; the roof is vaulted with the Maya arch; the thick walls are faced with dressed stone, the joints being imperfectly broken and often concealed beneath one or more thin layers of extremely hard white stucco. The floor is built up with layers of rubble and finished with a smoothly burnished surface of concrete, once white but now turned to tawny yellow hue by long use.

Five of the Palace chambers have platforms at one or both ends of the rooms, raised about 18 inches above the floor and about 2 feet wide. (See Figs. 23 and 24.) Their shape and size would indicate that they had served for seats, beds or tables.

I have found similar features in nearly every group of ruins in

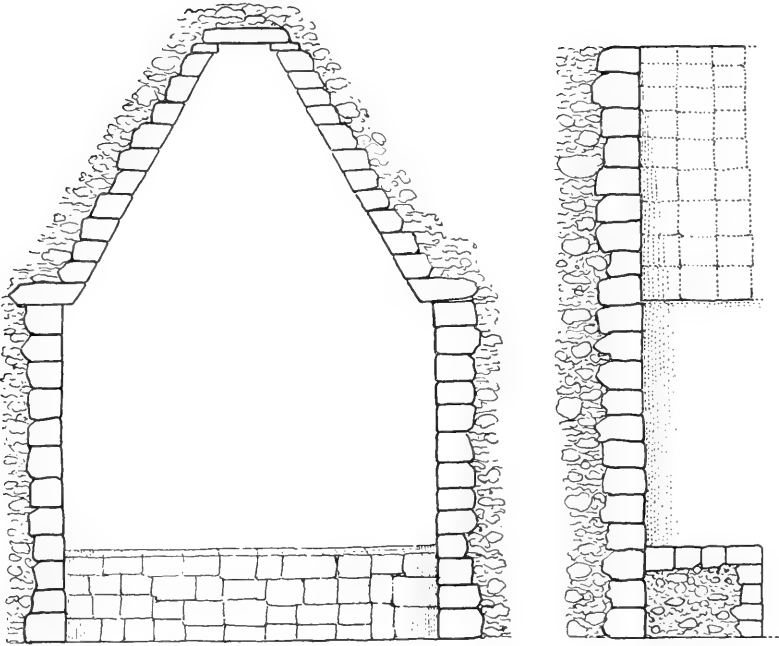


FIG. 23. SECTION OF CHAMBER, WITH FRONT VIEW OF STONE PLATFORM.

FIG. 24. SECTION OF END OF CHAMBER, WITH SECTION OF STONE PLATFORM.

Yucatan. About ten per cent. of the existing chambers, so far as my observation extends, have or once had these seats. In some the vertical sides are finished in dressed stone. This is the case in several of the chambers at Uxmal. At Labna and also at Chichen Itza I have found them covering a larger section of the floor. One, at Labna, covered nearly half the floor of a large chamber. Most of them are masses of solid material, but one that I found at Uxmal was hollow, and in the cavity was a rough and worn stone figure or idol. The structure was in a very dilapidated condition, and the stone image may have been placed within at a later period to hide it from observation.

Upon the northeast corner of the great terrace is a mound 16 feet high (mound 3 on the general plan) which was probably terraced. The crowning edifice, if there ever was one, must have been of a perishable nature, possibly constructed of wood and palm leaves. Upon the terrace between the Palace and this mound are two raised circular spaces 12 feet in diameter, about a foot high, enclosed by cut stones and filled in with rubble. Fronting the principal stairways in most of the structures in this group are placed similar circles, the dimensions varying considerably. Most of them have in the center a cylindrical stone; some of these appear to have been stellæ or phalli, and others mere pedestals. In most cases they appear to have been imbedded in lime, cement or rubble.

Occupying the same great terrace, 90 feet east of the east wing of the Palace, lies the much ruined Edifice No. 7, described further on. Upon the southeast portion of this terrace are meandering wall outlines, the remains of chambers now destroyed or possibly, in some cases, of walls that were never finished. On the extreme southwest corner is one of those diminutive edifices, the counterparts of which, found in ruins on the east coast (El Meco and others), have given rise to the idea that they were constructed by a race of pigmies. There appears, however, to be no good foundation for this theory. The diminutive structures were doubtless built for some purpose quite commonplace among the people of that time, but which has not survived the changes brought about by the Spanish occupation.

EXCAVATIONS.—Under the great mass of debris and fallen stone work that covered the floor of the upper chamber or sanctuary, marked 9 in the plan of the Palace, were found various fragments of incense burners and human figures in hard burned clay. In the floor material of the ruined Chamber No. 17 of the eastern wing, 6 feet beneath the floor surface and almost flush with the foundations of the southern

wall, was found a well-built cavity of dressed stone. It was apparently an empty grave, but no sign existed of its having been used as a burial place. Excavations made in the accumulated debris and into the floor structure of the diminutive chambers, marked *a* on the plan, yielded various fragments of terra cotta objects.

EDIFICE No. 2.

Southeast of the Palace group is the raised terrace that supports Edifice No. 2. This terrace is composed principally of earth held in position by walls of rough-hewn stone. The northeast end holds a mass of stone material of unknown use. I am inclined to believe it to be the foundation of some unfinished building. The edifice itself is a small unpretentious structure of two chambers raised upon a terrace about 4 feet high.

EXCAVATIONS.—Superficial excavation revealed the outlines of the edifice as shown upon the map, and the character of the masonry is well brought out in Pl. XV. Excavations beneath the floor surface of Chamber No. 1, at a depth of 1 foot and 8 inches, brought to light a rude sepulchre which was hardly more than a simple cavity in the stone filling. This cavity contained the much decayed fragments of a human skeleton. They had, apparently, been gathered up from some previous resting place and thrown into this cavity in a promiscuous heap. No signs of an earthen vessel or even of an ornament were found in the grave. Continuing the excavation into the material of the substructure, we found at a depth of 2 feet the remains of a second floor of an older structure. Apparently, this latter had been built partly above and upon the site of a still older edifice. This I have often found to be the case among these ruins. In the debris material I found many fragments of objects in terra cotta. Similar excavations in the floor material of Chamber No. 2 revealed, at a distance of 3 feet from the northern wall, a well-made grave 3 feet long by 1 foot 4 inches wide and 2 feet deep, which contained many human bones and teeth, all much decayed. In the material just above the grave I found many terra cotta fragments of vessels and figures. These votive offerings were evidently broken and thrown upon the half-covered grave. As in the excavations of Chamber No. 1, we found here signs of a previous floor. Continuing to the depth of 3 feet more we came to the bedrock and consequently to the limit of our excavation at that point. All the way from the surface down we found potsherds in great variety.

EDIFICE No. 3.

Southeast of Edifice No. 2 is Edifice No. 3, a low structure of five rooms. It occupies a terrace 6 feet high, and is approached both on the north and south by flights of stairs extending the entire length of the structure. This building, with its series of steps faced with upright stones as they appeared after excavation was complete, is well shown in Pl. XVI.

EXCAVATIONS.—Having by exterior excavation exposed to view the terrace and walls yet standing, we commenced on Chamber No. 1. In clearing out the fallen material that filled the chamber nothing of interest was found except a curious black stone head. Chamber No. 2 yielded nothing of exceptional interest. A few interesting potsherds were found.

Chamber No. 3 had in the floor material bones and teeth, but if they were placed in a grave it was so like the ordinary cavities in the large stones forming the foundation of the floor that we did not recognize it. These excavations in the foundation material were always continued until undisturbed material was encountered.

Chamber No. 4 contained in the debris upon the floor three *kas* (stones for grinding). These stones were of the usual form and shape of those used by the ancients; they are cylindrical in shape, and from 6 to 8 inches long, and about 2 inches in diameter. (See Pl. XXV.) They are quite different from those in use at the present day. It may be stated here that many of the hollowed stone troughs (*haltunes*), supposed to have been water receptacles, may well have been some kind of mortar or *matatl*. I have found that the cavities hollowed out in the *haltunes* generally correspond to the cavities that would be produced by the abrasion of one of these small stone rollers. It is also very noticeable that these utensils generally have their sides much worn and polished, as if by constant rubbing. These were probably used for other purposes besides the grinding of corn. Much pigment, principally oxide of iron, to produce which much grinding and trituration must have been necessary, was used about the great structures.

In the interior of Yucatan there still exists a small Indian *pueblo*, where the natives of the region go to purchase red earth for coloring and decorating pottery. As soon as circumstances permit I shall visit and study this region, and report more fully upon the subject.

In the floor material, referred to above, at a depth of 2 feet, we found a grave and a curiously formed earthen jar. The grave was so placed that it rested upon the foundations of the eastern wall. It was 3 feet long by 1 foot wide, and $1\frac{1}{2}$ feet deep. It was well built of unhewn stone, and held, besides fragments of much decayed human bones and teeth, a shallow earthen vessel, several beads of green stone, a flint implement, and many potsherds.

Investigations in the floor material of Chamber No. 5 brought to light a well-preserved burial place, at a depth of 2 feet 5 inches from the ancient floor surface. This grave was of unusual length, and shaped like a coffin, being 5 feet 3 inches long, 1 foot 6 inches wide at the head, and narrowing down to 10 inches at the foot. Mere traces of a skeleton were found, the bones being reduced to dust. Just above the place where the shoulder of the body would have been was a wide-mouthed earthen vessel, the mouth of which was covered by a circular shallow vessel of hard burned clay, placed over it in an inverted position. These vessels and their contents, apparently ashes, were preserved with special care.

EDIFICE No. 4.

Edifice No. 4 is on the east side of the structure above described, and is separated from it by a narrow space only 5 feet wide. The chambers of this structure, nine in number, one being still intact, surround a solid, rectangular core of stone and rubble. This ruin, as it appeared when the forest trees and undergrowth were removed, is seen in Pl. XVII.

EXCAVATIONS.—This edifice was thoroughly investigated down to the very bed-rock of the foundation. Many broken vessels and potsherds were found, some of very interesting character, but perhaps not worthy of special mention.

Chambers Nos. 1 and 2 yielded no facts or specimens worthy of note. In Chamber No. 3, at a distance of 2 feet 11 inches beneath the floor surface, and 2 feet from the northern wall, a sealed jar was found imbedded in indurated red earth mortar. The jar was nearly filled with earthy matter, and was covered with a disk of hard, burned clay, once neatly cemented into place with clay, but wrenched away by myriads of rootlets. In the same room, and at the same depth, 5 feet from the doorway, near the base of the northern wall, was a curious circular opening, 2 feet in diameter and 3 feet in depth, filled with human bones in a fragmentary state. Among them were

several teeth filed in curious shapes; the others were in the natural state. Near these bones was found a jade bead; directly above them were nine sea shells, and some green stone pendants, covered by a shallow, circular vessel of hard, burned clay, cracked but otherwise perfect. Close by this deposit was dug up a wide-mouthed vessel of hard, burned clay in perfect condition. It was found in an upright position, the mouth unprotected, and filled to the brim with earth. In Chamber No. 4, at a distance of 4 feet from the door, in the northern wall, and at a depth of 2 feet, we found a similar circular deposit of bones. Investigation yielded nothing more of special note. In Chamber No. 5, at a depth of 15 inches beneath the floor, we encountered the remains of a previous floor. Continuing the excavations, at a depth of 2 feet beneath the second floor, we found a large earthen jar. The mouth was covered with the usual earthenware disk. Further excavation yielded no noteworthy results. Potsherds were found everywhere.

EDIFICE No. 5.

Southeast of the southern extremity of the great terrace, where it grades off almost imperceptibly into the natural level of the region, lies a large, high terrace of many turns and angles, shown in the plan, Pl. XXVI. Upon the southern margin of this is a single-storied structure of five rooms, raised upon a small secondary elevation; it is reached by a series of interrupted stairways, of rather unusual character, as may be seen on the plan. This building, as exposed by our excavations, is shown in Pls. XVIII and XIX. A second structure, or rather wing, attached to the main structure at its eastern extremity, and like it facing toward the north, has four chambers.

EDIFICE No. 6.

Nearly the whole of the eastern line of the rectangular portion of the terrace mentioned above is occupied by the ruins of Edifice No. 6, which in plan is a simplified copy of the Palace. The solid mound, upon which once rested an oratorio or an altar, is flanked upon each side by a series of two chambers, and a broad stairway ascends from the level of the general terrace to the platform. In front of the stairway was the raised circular space holding the usual phallus or stella. Excavation developed nothing of interest.

EDIFICE No. 7.

This edifice is on the main terrace, about 90 feet eastward of the Palace, and is intimately connected with that structure, as shown in the plan, Pl. XXVI.

When first examined all that could be noted of this ruin was a platform having upon its eastern edge a high, featureless mound. Excavation gradually developed the outline of a walled structure, one-storied and single-chambered, raised on a terrace 30 feet high and facing an enclosed courtyard. It communicated by stone stairways of various dimensions with the terrace facing it. (See Pl. XX.)

During the excavation of this ruin, fragments of incense-burners, potsherds and various objects of hard-burned clay were found. The material of the mound consists of a filling of large field stones, averaging a foot in diameter, surrounded by a mortar facing. The terrace upon which the substructure rests seems to be entirely artificial. Often the ancient builders took advantage of a natural elevation to aid them in the construction of a mound. I have often found a good-sized hill scaled down, cut into and built up in such a manner that it had all the appearance of an entirely artificial mound.

EDIFICES NO. 8, NO. 9 AND NO. 10.

Five hundred and twenty feet west of the principal structure of this group, is a group of three mounds that excavation shows to have been true edifices, but now reduced by time or other destructive agencies to formless masses of ruins. They do not appear in the general plan, but ground plans are given in Figs. 25, 26 and 27.

The structures thus briefly referred to are such as were originally exposed to view, or have been brought to light by means of the pick and shovel. Between and surrounding these lie many terraces and mounds, some detached and some in groups. They are rarely symmetrical. Often they seem to be an agglomeration of terraces of different levels, built and added to as additional room was called for. To describe these would be a useless labor. The accompanying plans are sufficient.

EXCAVATIONS (EDIFICE NO. 8).—Edifice No. 8 (Fig. 25) appeared at first glance to be simply an ordinary mound, so utterly was it ruined.

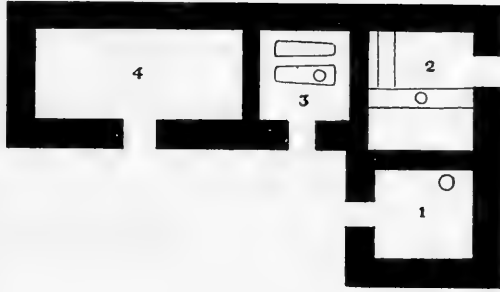


FIG. 25. PLAN OF EDIFICE No. 8.

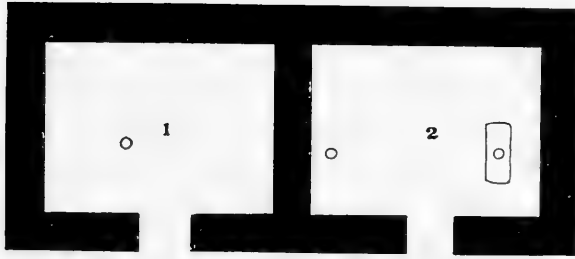


FIG. 26. PLAN OF EDIFICE No. 9.

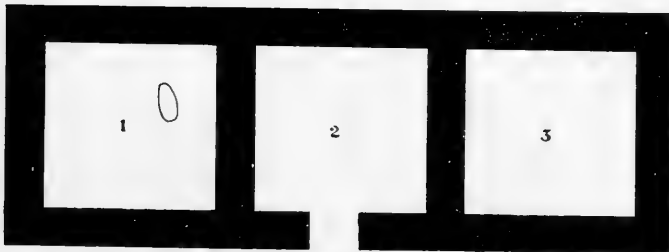


FIG. 27. PLAN OF EDIFICE No. 10.

The roof-stones found here and there told the story of its original character, and excavation was continued until the bed-rock itself stopped the work. At the distance of a foot beneath the surface of the floor we found traces of an older floor. Buried a foot deep in the material of the floor was a rude grave and a shallow earthen dish inverted over a heap of human bones. Near by were fragments of clay figurines and potsherds. Beneath these objects was a third floor, and a few inches deeper still another. This is the first time I have found so many floors. A foot deeper we struck a filling of great stones that continued down to the bed-rock and yielded nothing of note.

Fifteen inches beneath the floor of Chamber No. 2 we found a curious wall-like ridge of mortar, and resting upon it an earthen vessel. The ridge of mortar was built upon a level floor, under which were found various portions of a human skeleton. Beneath these vestiges of the ancient people was a third floor, and further excavations revealed a second ridge of mortar in the northwest corner of the room; this was 3 feet long by 1 foot wide and $1\frac{1}{2}$ feet high. Beneath this ridge were found human bones which fell into dust at the touch, and many potsherds. This mound rested upon a fourth floor, and 2 feet beneath this was the undisturbed hardpan. One foot beneath the floor of Chamber No. 3 we came upon a second floor, and 1 foot beneath the surface of this, resting upon a leveled surface, were two burial places, coffin-shaped, like those found in Chamber No. 5, Edifice No. 3. Grave 1 was 6 feet long, 1 foot 7 inches wide at the head, tapering gradually to 1 foot 3 inches wide at the foot and 1 foot 3 inches deep. The bones in this grave were so broken and mixed (evidently by small rodents) that no idea could be obtained of the original position of the body. At about one-third of the length of the grave from the wider end was found a shallow earthen vessel overturned, and beneath it were the crumbling remains of a skull.

Grave No. 2 was of the same general shape and size as No. 1, but held only much-decayed human bones and potsherds. Chamber No. 4 yielded only potsherds of no special interest.

EXCAVATIONS (EDIFICE NO. 9).—This edifice (Fig. 26) also appeared at first to be a large, shapeless mound, but excavation revealed a structure of two chambers, and in Chamber No. 1, at a depth of 9 inches beneath the floor, one small earthen jar and the fragments of several other vessels were found. Excavation in Chamber No. 2, at a depth of 2 feet 8 inches beneath the floor and 2 feet from the west

wall, brought to view a burial place 3 feet long by 1 foot 3 inches wide, and 1 foot 3 inches deep. The human bones encountered therein were very much decayed, and the fragments of a skull were covered by an inverted shallow vessel. Besides this were found some beads, among them one of jade, and various potsherds. In the material of the foundation, upon the east side of the room, we found a small earthen jar upright and intact which must have been placed in position by careful hands many centuries ago. Scattered about were many potsherds and ashes, but no traces of human bones.

EXCAVATIONS (EDIFICE NO. 10).—Edifice No: 10 (Fig. 27) was a mere mound, concealing within its mass, however, a ruined three-chambered structure. Excavation in Chamber No. 1 yielded many potsherds, and in the southeast corner was a rudely formed cavity holding a heap of badly decayed bones and human teeth. Chamber No. 2 contained an accumulation of potsherds, while Chamber No. 3 held potsherds and two cylindrical rubbing stones, the surfaces of the latter being highly polished by attrition.

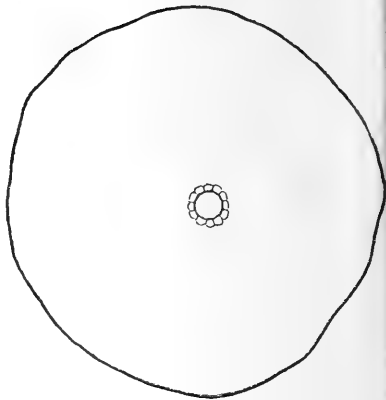
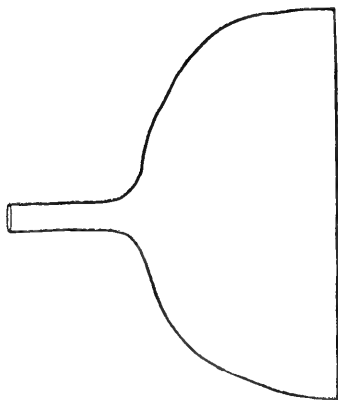
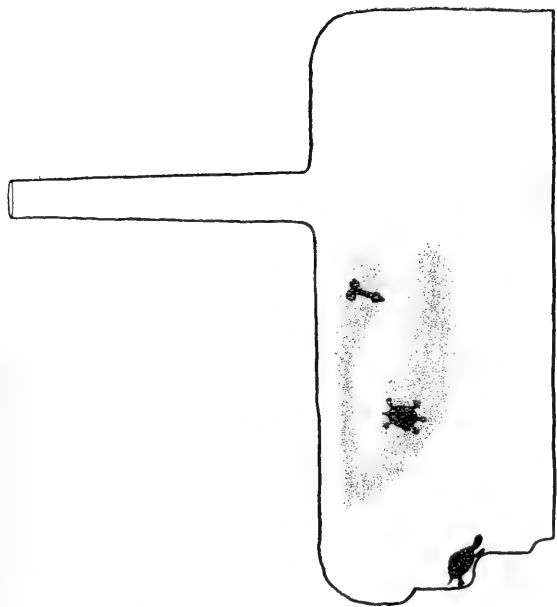
MOUNDS NOS. 1 AND 3.

Mound No. 1 (see ground plan, Pl. XXVI) showed no evidence of having supported a superstructure. There were three graves in a very ruined state, which contained several earthen vessels, nearly or quite complete, as well as many potsherds. Excavation of Mound No. 3 revealed two graves even more completely ruined than those found in Mound No. 1. They held several vessels of the usual pattern—one being a shallow dish with base serrated on the edge—fragments of human bones much decayed, and some stone beads.

MISCELLANEOUS EXCAVATIONS.

Besides the excavations already described, investigations in terraces and other places yielded fragments of a large number of vessels, some of which are of an interesting character. Several were perfect, or nearly so, among them being one of unusual type—a medium-sized jar, with cord holders or handles inside the mouth. There were found also obsidian knife blades, cylindrical rubbing stones, stone macerators for separating plant and bark fibre, flint axe-heads, worked





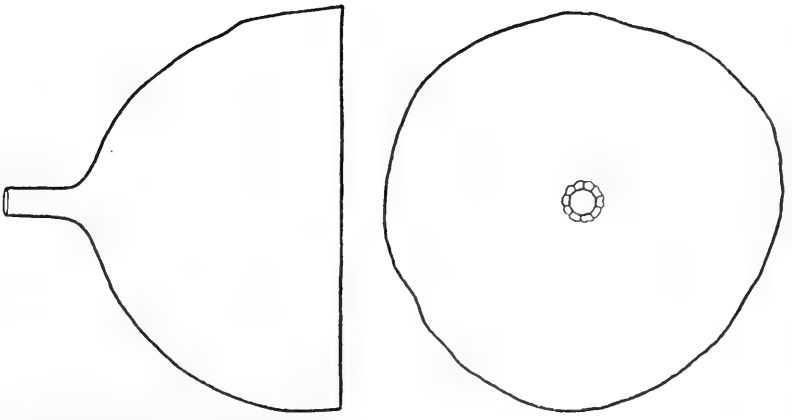


FIG. 30. CHULTUNE No. 2.

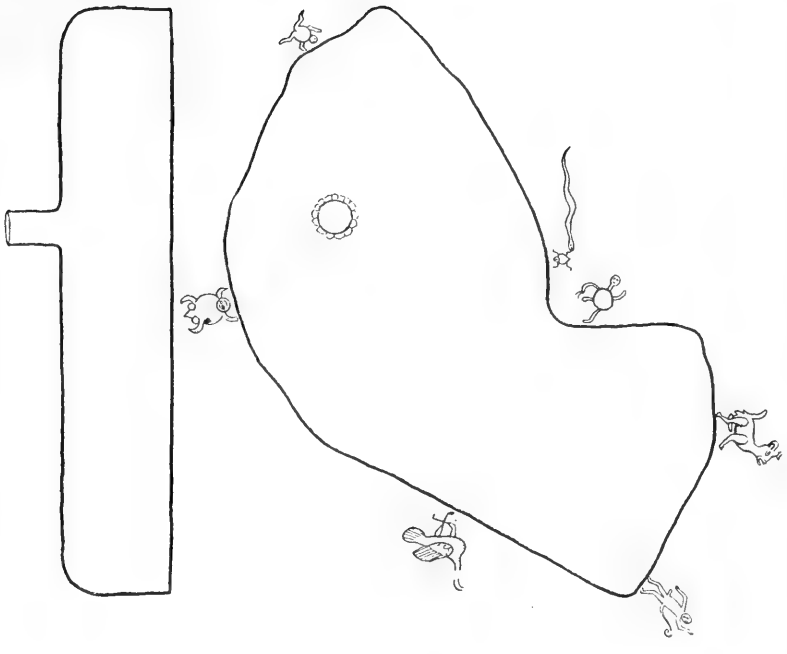
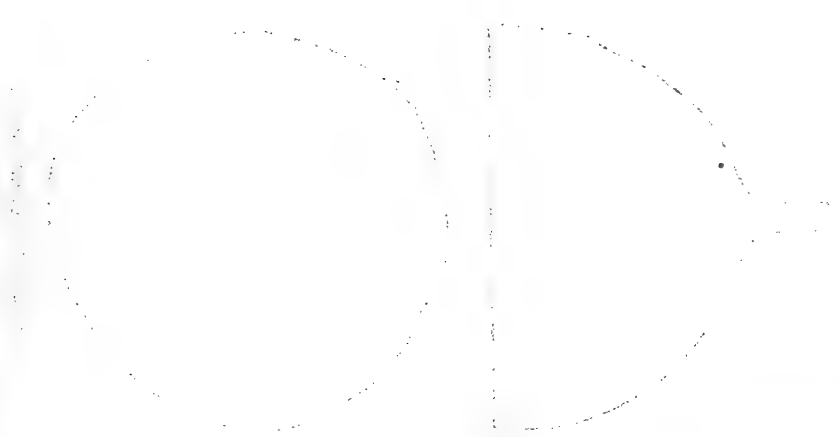


FIG. 31. SECTION OF RESERVOIR, 3 LEAGUES NORTHEAST OF XKICHMOOK.



flints of various kinds, chalcedony chips, beads of jade, chalcedony and terra cotta, hammer-stones, with fragments of idols and stucco figures. Many of these objects are illustrated in the accompanying plates.

CHULTUNES OR RESERVOIRS.

Throughout this ruin group, as is the case with most ruins distant from natural water supply (cenotes or water caves), we found many subterranean chamber-like reservoirs intended to receive and hold the rain water falling during the rainy season. Generally each principal structure has one or more of these reservoirs, as may be seen in the plan. As a rule they are in the terrace substructure of the building or cluster of buildings to which they belong, though sometimes they are dug in the ground. They are of course filled with debris and choked by vegetable growth, and require to be cleaned out before examination can proceed. Some are merely the pits made in getting out the white earth used in building. The walls are in all cases finished with a thick coating of white stucco. The builders of these structures sometimes took advantage of the plastic nature of the stucco to model upon the surface various figures in high relief.

Reservoir No. 16 is a low chamber with a curiously long slender orifice that barely permitted the passage of my body; it had painted upon its walls a phallic emblem and the figure of a turtle. A plan and profile of this cistern appears in Fig. 28, and similar examples are illustrated in Figs. 29 and 30.

Three leagues northeast of Xkichmook lies the Indian ranche of Nucuchtuk, built on the site of a small group of ruins. Within the group I encountered and excavated a most singular chultune. It was extremely shallow and, unlike the previously described examples, was quite close to the surface and very wide. Its walls have a most curious assortment of figures worked in stucco. Close by the orifice upon either side were two nondescript figures, and distributed around the walls were an ape, a wild turkey, a deer-like animal, a serpent and a frog. These are shown imperfectly in connection with the section of the reservoir in Fig. 31. I have personally explored the depths of more than a hundred chultunes, but this exceeds in interest any other I have found.

Excavation in the other reservoirs yielded water jars, generally in fragments, beads, lance heads and rubbing stones.

In the ruin group of Labna many of the chultunes were closed

by means of heavy stones cemented over the mouth, and many contained fragments of human bones, but in Xkichmook none were sealed and no human bones were found in them.

INCISED FIGURES.

Upon the northern wall of Chamber No. 7, which is on the west side of the stairway of the Palace, we found the rudely incised devices reproduced in Figs. 32 and 33. They consist of geometrical figures that might have been used in some prehistoric boys' game, fragments of a head-dress with *penaches* and long flowing plumes, a rudimentary human figure and various hieroglyphics. The work does not seem to be of a serious or significant nature, but rather the random effort of some young idler, who used his flint or obsidian knife with the same disregard of parental warnings that characterizes the modern youth wielding his keen-edged jack-knife.

MURAL PAINTINGS.

Mural paintings once covered the inner wall surfaces of a large number of chambers in most of the ruin groups of Yucatan; in fact I have never found these ruins without some traces of pigment upon walls or ceiling. Sometimes the work is hardly more than outline drawing done in thick lines of intense blackness. In other places a dark brown pigment was used, and often lines of figures or glyphs in red, blue, green, brown and yellow embellished the walls. Unfortunately these paintings have for the most part disappeared, being represented to-day only by detached patches of color or bits of form, interesting and valuable as the only traces of the color-art still left us, but nearly valueless to the historian or the student of art. Chichen-Itza alone of all the ruin groups has furnished mural paintings so nearly intact that the subjects they present can be intelligently studied; these paintings have been faithfully copied and thus preserved to science. Would that this had been the case with the hidden chambers at Tilam. These when opened were found to contain mural paintings like those at Chichen-Itza, but they were neglected and before coming to my notice were completely destroyed.

At Xkichmook the flat under-surfaces of the ceiling stones of the vaulted chambers seem to have contained the most elaborate designs;

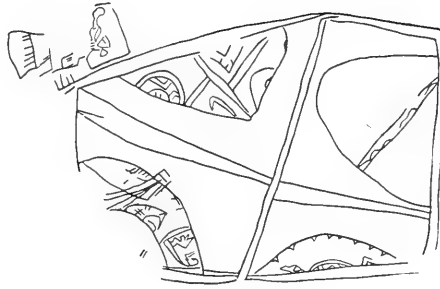


FIG. 32. INCISED FIGURES ON WALL OF CHAMBER NO. 7, PALACE.



FIG. 33. INCISED FIGURES ON WALL OF CHAMBER NO. 7, PALACE.



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FIG. 34. PAINTED FIGURES ON CEILING OF CHAMBER No. 11, PALACE.



FIG. 35. GLYPHS AND FIGURES IN BLACK ON WALL OF CHAMBER NO. 10.

and the work of painting must have been a very difficult art for the Mayan painter, as the task of copying was tedious and painful to the modern artist. In some cases the ceiling-surfaces were covered with stucco and worked into panels adorned with scroll work in low relief. In these panels the artist then executed his designs in color. Many interesting paintings thus placed are hidden from view by opaque coatings of lime carbonate or gypsum deposited by percolating waters.

Upon the ceiling stones of Chamber No. 11, to the east of the Palace stairway, portions of a painting were still in a measure preserved, and these were carefully copied. (See Fig. 34.) A scaffolding of poles was built up to within a short distance from the figures and the copyist did his work in a prostrate position, resting upon his back. The colors used were brown and blue, but the blue had nearly disappeared.

Upon the northern wall of Chamber No. 10, curious drawings or glyphs in strong black lines once existed. Figs. 35 and 36 show the portions still visible. The walls of the other chambers of the Palace were without traces of embellishment.

Upon the middle ceiling stone of Chamber No. 4, in Edifice No. 4, we found a painted human figure of which only the flowing head-dress, a portion of the face, and certain devices issuing from the mouth and probably indicating speech, now remain.

The mysterious red hand was found printed upon the walls of the chambers in various places, and in one place, on the crumbling stucco surface of Chamber No. 1 of the Palace, a human hand in blue pigment was found. I had become so accustomed to this seal of bloody possession in the color of blood, that this specimen was a great surprise to me. The impression was so fresh and perfect in places that even the minute lines of the skin were visible.

POTTERY.

Numerous earthen vessels were recovered, some from graves but largely from sites of use. Vast quantities of sherds were encountered, and several barrels of them, selected at various points, were collected. A study of these has not yet been made. Examples of the vases are shown in Pls. XXI and XXII.

OBSIDIAN.

It is evident, judging from the specimens found, that obsidian was a rare material in Yucatan. During my ten years' investigations among the ruins of Yucatan and Campeche, I have not found as many specimens of worked obsidian as I picked up in half an hour between the Temples of the Sun and of the Moon at San Juan Teotihuacan, Valley of Mexico. The reason for this is plain. At San Juan we were in the vicinity of rich deposits of obsidian. From the banks of the river the natives could almost point out the cliffs in which it is found, while in the river bed we observed water-worn pebbles and masses of obsidian, resembling lumps of coal.

At Xkichmook and elsewhere in Yucatan I have never found a single obsidian implement, except the slender flakes that probably served as knife blades; these are rather fragile for the ordinary uses of a knife, but some are so sharp that when dexterously used they will cut or even shave a beard.

STONE IMPLEMENTS.

In no other group of ruins have I found such plentiful traces of the ancient fabrication of flint implements as at Xkichmook. There does not appear to have been any large bodies of material from which these weapons were made, but loose, rounded, cobble-like masses of chalcedony, some a clear snow-white, others of pearly and pinkish tints, were utilized. I found sometimes quite a quantity of these nodules collected together, and close by were small heaps of chips and rejects, the latter representing all stages of implement development. These chalcedony lance and arrow heads are often skillfully chipped and very handsome. Examples of the flaked implements appear in Pls. XXIII and XXIV.

With the exception of a celt fragment made of nephrite, and the cylindrical mealing-stones illustrated in Pl. XXV, I did not find a single polished stone implement at Xkichmook.

A PRIMITIVE NATIVE.

Shortly after we commenced our investigations in this ruin group, we discovered evidences of recent human occupation in the jungle close by; so modern indeed that the embers of a fire were still fresh; and when our hunters returned with their game one day they brought with them a *sublevado* Maya Indian, one of those beings so dreaded in civilized Yucatan that the mothers themselves shudder as they hush their children's cries by the aid of the dread name.

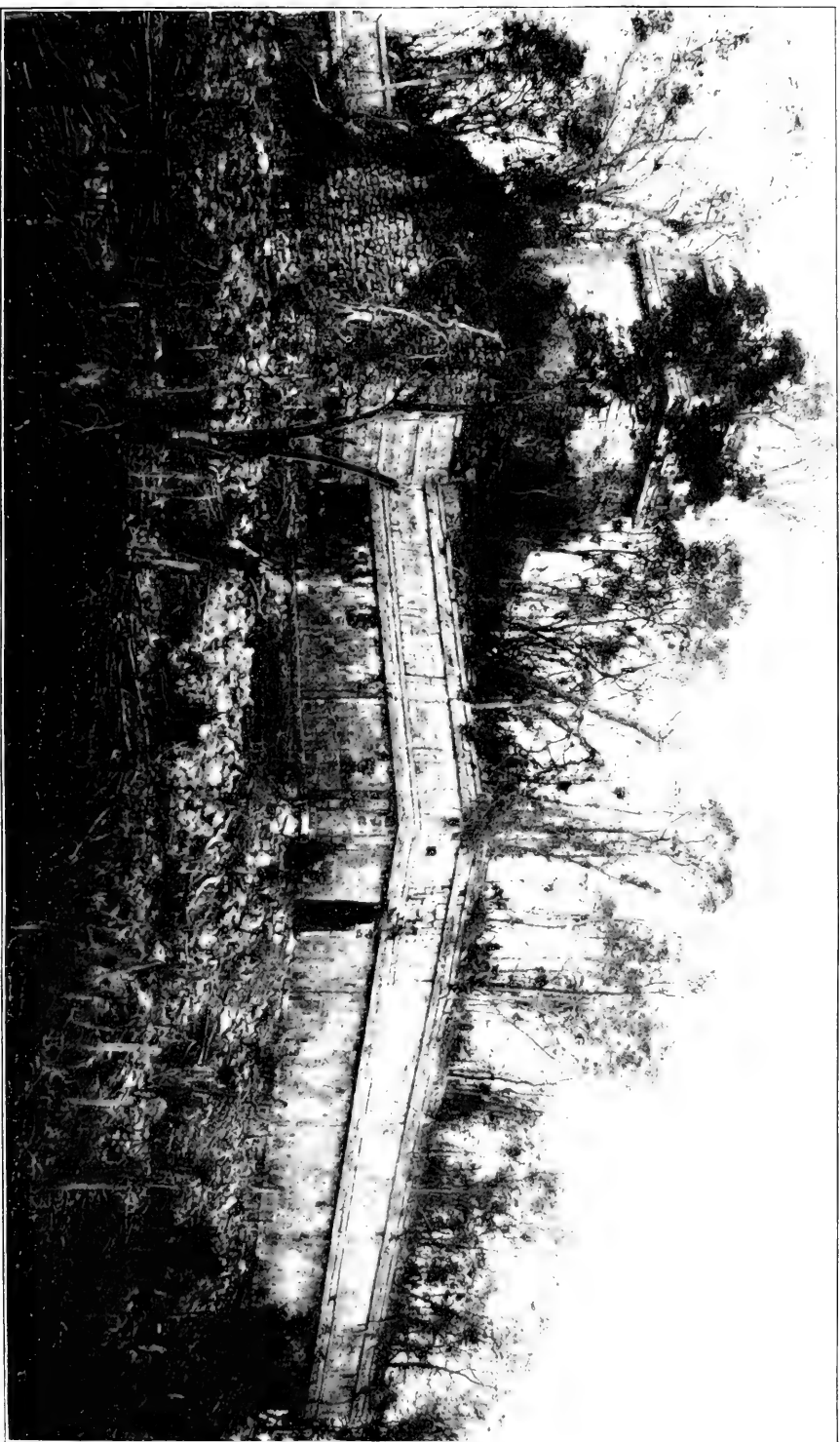
He was a strongly-built, good-looking fellow, apparently about fifty years of age. At first he was silent and sullen, but as soon as he saw that we meant him no harm and did not even intend to treat him as a captive, he unbent and became quite communicative. He said he had been living in the jungles for years. By the aid of his *milpah* (cornfield) he obtained food, and by barter with other Indians secured powder and ball for his flint-lock. He remained near us during our entire stay, and brought us game and corn. The day we left I tried to induce him to come with us, and promised him safety if he desired reconciliation with the government of Yucatan, but in vain; he had raised his arm against the whites and trusted no promise on their part. And so we left him in his forest home.



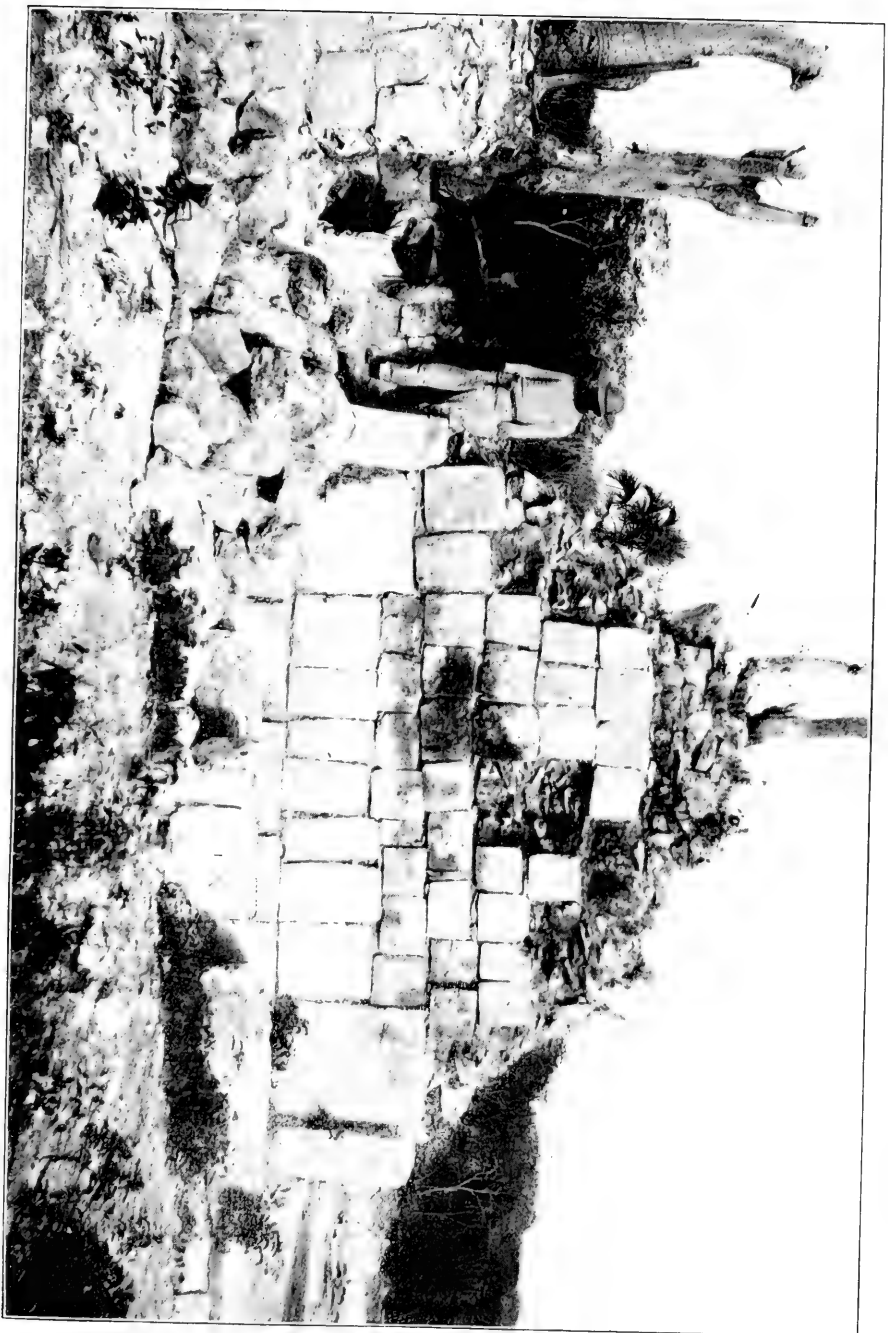
VIEW OF THE PALACE FROM THE SOUTHEAST.



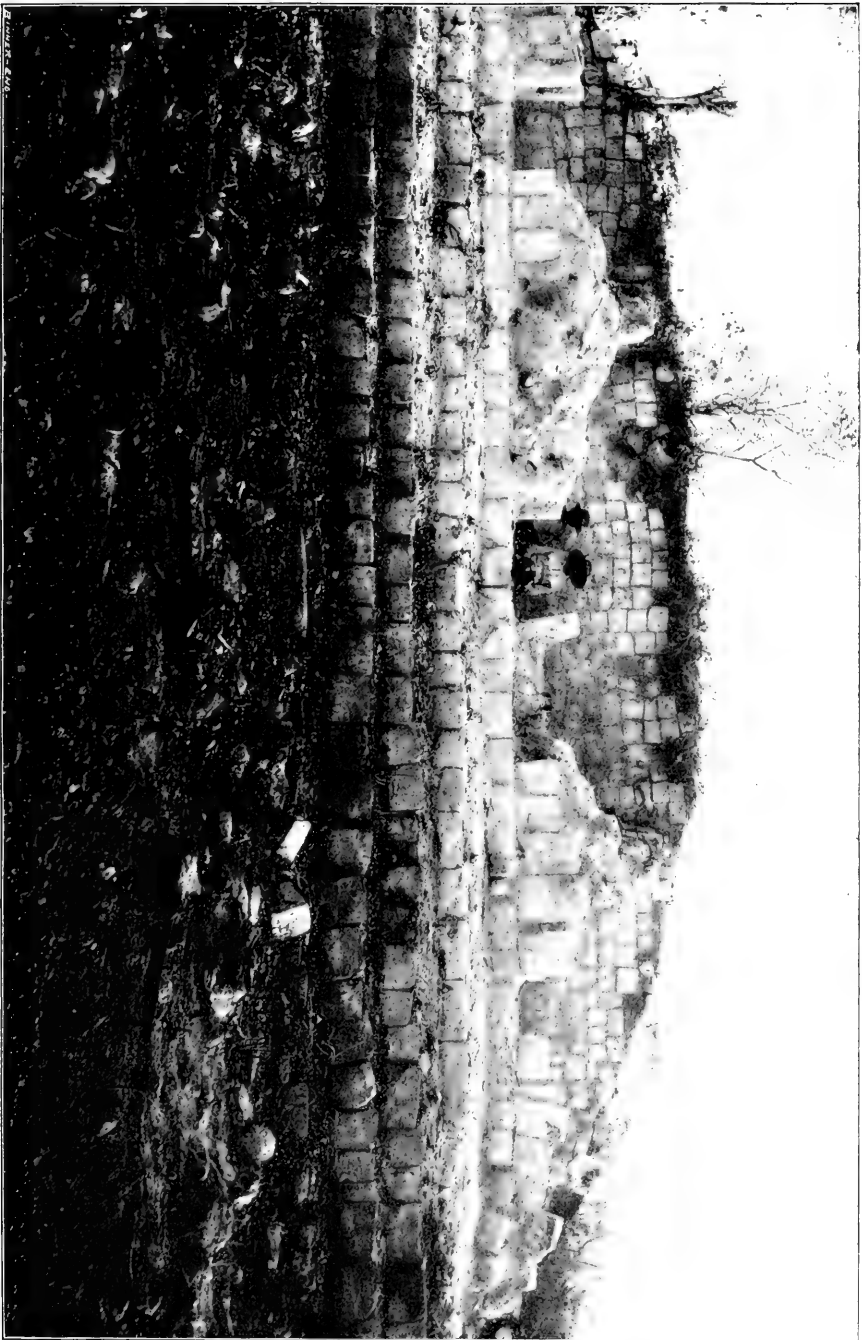
VIEW OF THE PALACE FROM THE NORTHEAST.



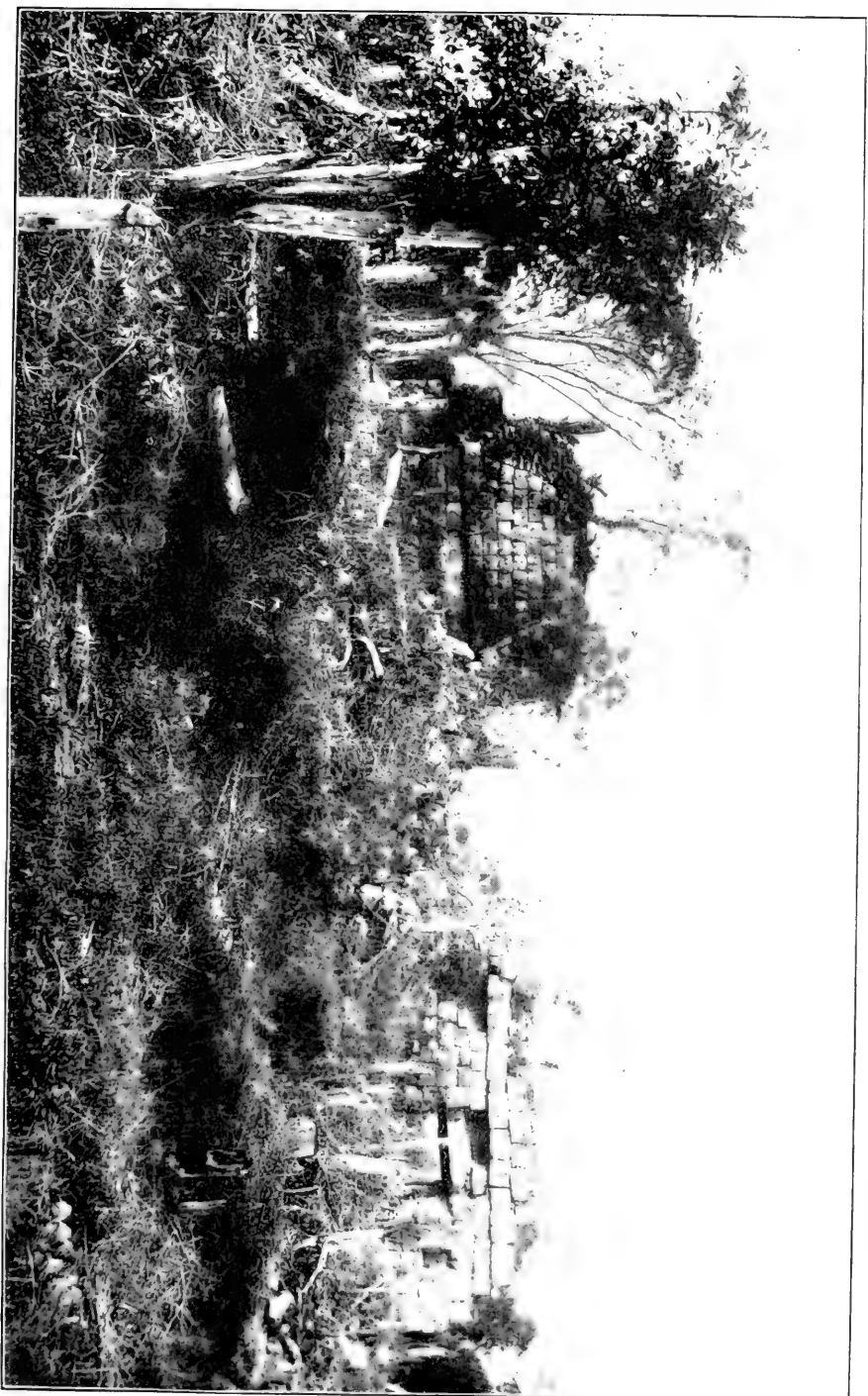
VIEW OF THE PALACE FROM THE NORTHWEST.



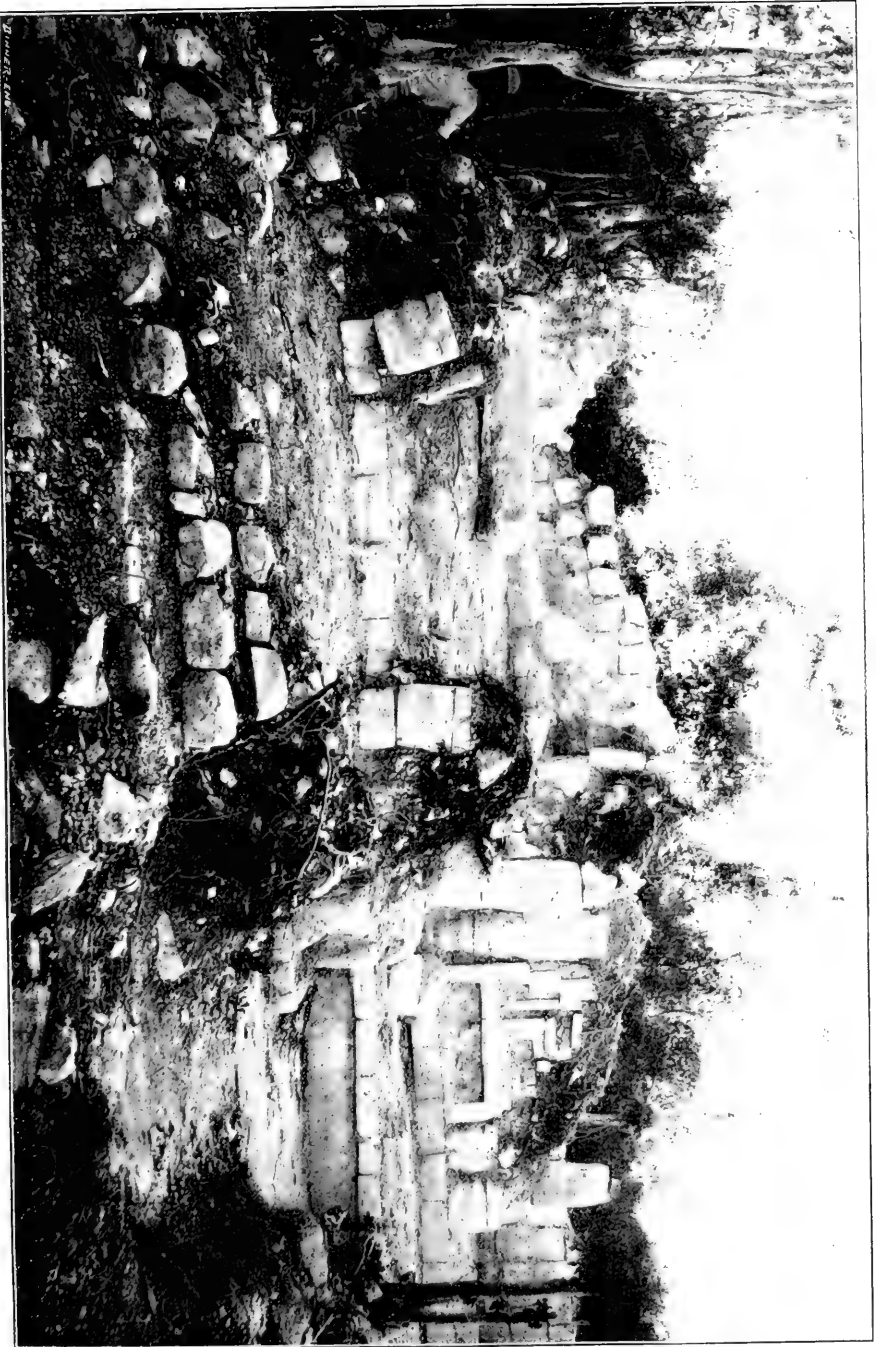
EDIFICE NO. 2, SHOWING MASONRY.



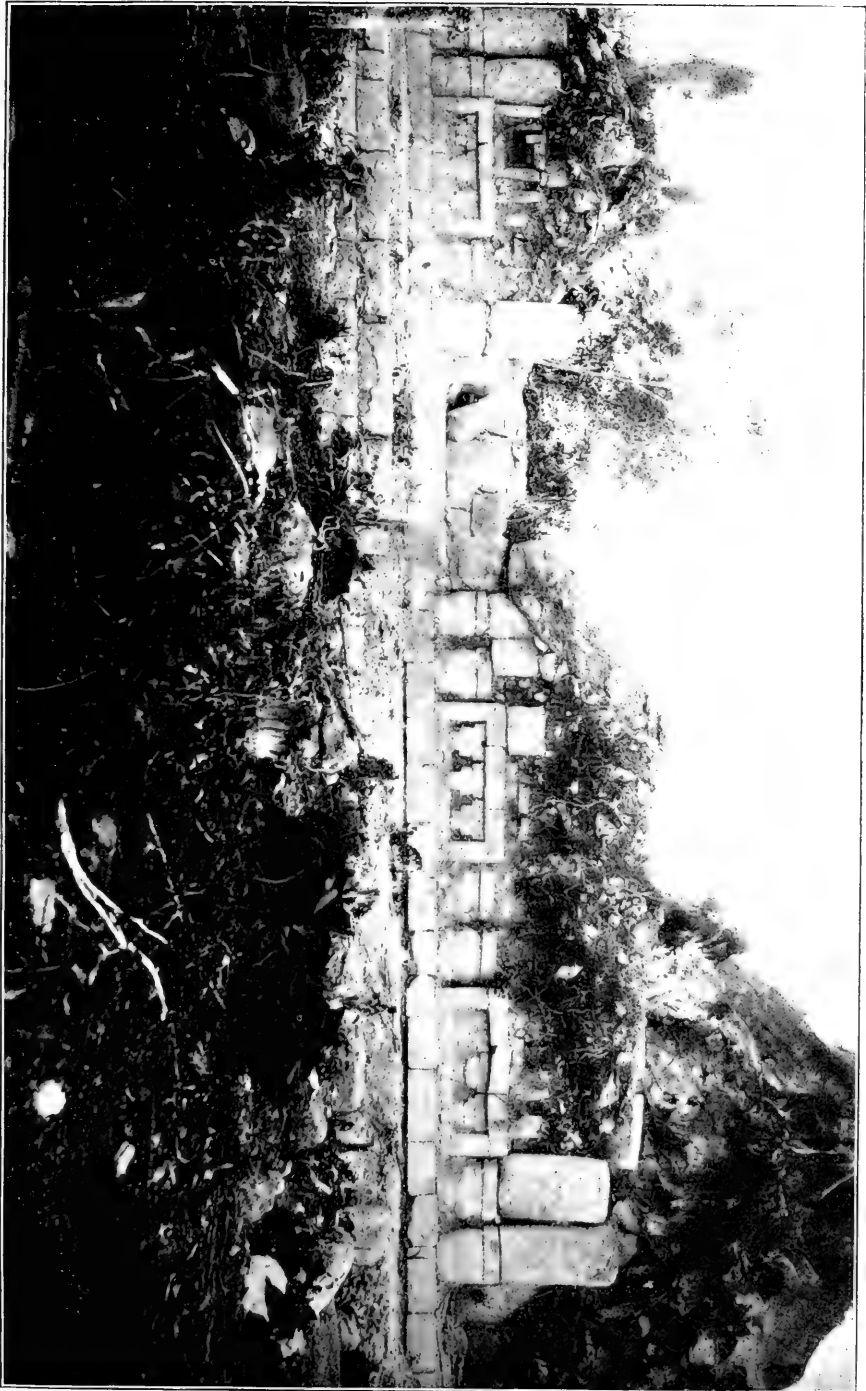
EDIFICE NO. 3, AS EXPOSED BY EXCAVATION, SHOWING STAIRWAY AND HALLS.



EDIFICE NO. 4, AS IT APPEARED AFTER REMOVAL OF THE FOREST GROWTH.



PORTION OF EDIFICE NO. 5, AS EXPOSED BY EXCAVATIONS.



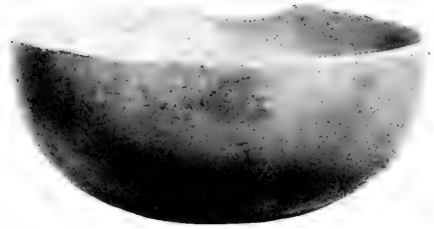
PORTION OF EDIFICE NO. 5, AS EXPOSED BY EXCAVATIONS.



EDIFICE NO. 7, AFTER EXCAVATION, SHOWING STAIRWAY AND REMNANT OF FACADE.



a



b



c



d

POTTERY. ONE-THIRD ACTUAL SIZE.

- a.* Reed vase from a Mound.
- b.* Bowl from Mound No. 1.

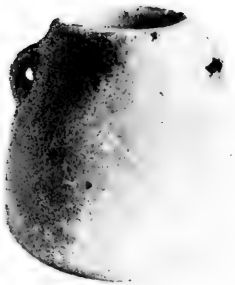
- c.* Vase from Mound.
- d.* Vase from Mound.



a



b



c

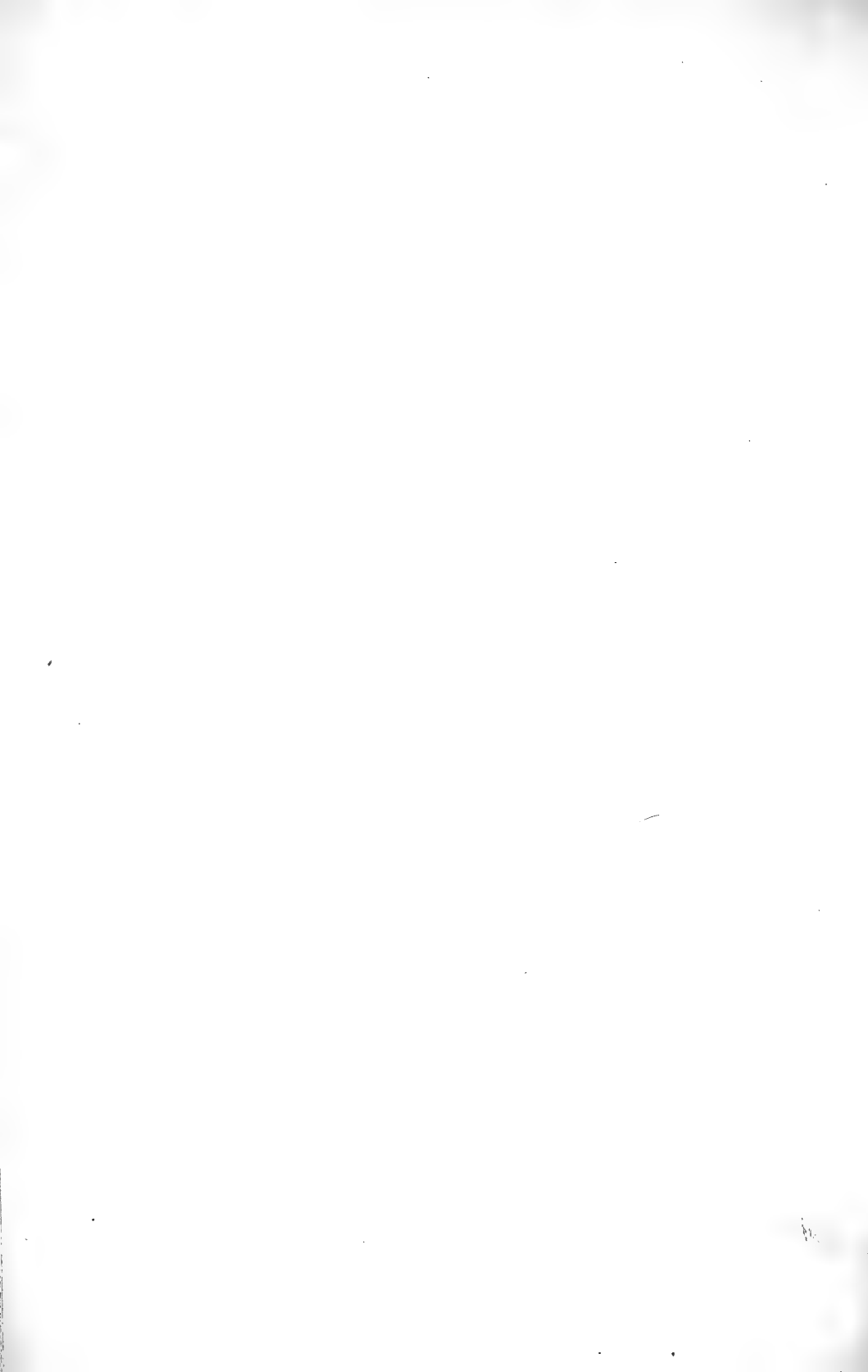


d

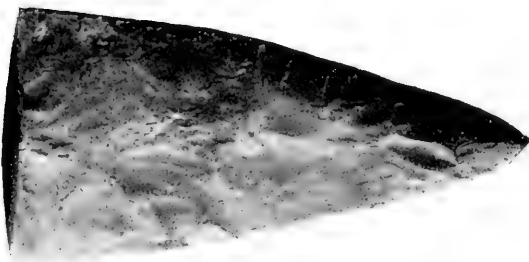
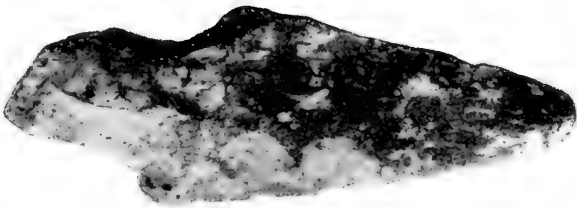
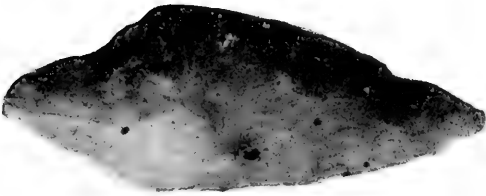
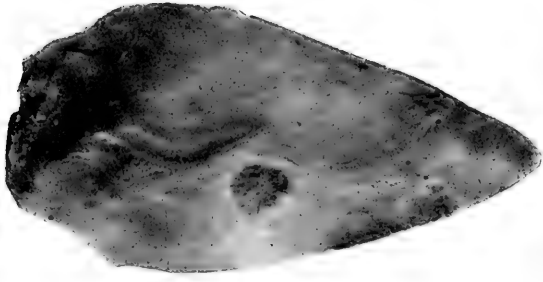
a. } Fragments of pottery from Mound.
b. }

POTTERY.

c. Small vase from Mound No. 9, Chamber 1.
d. Small black bottle from Mound No. 8.



FIELD COLUMBIAN MUSEUM.

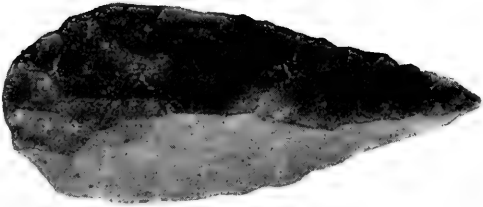
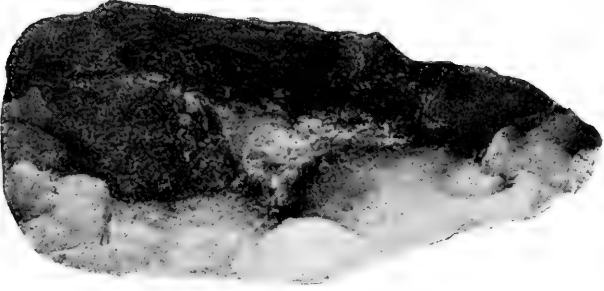


ANTHROPOLOGY, PL. XXIII.

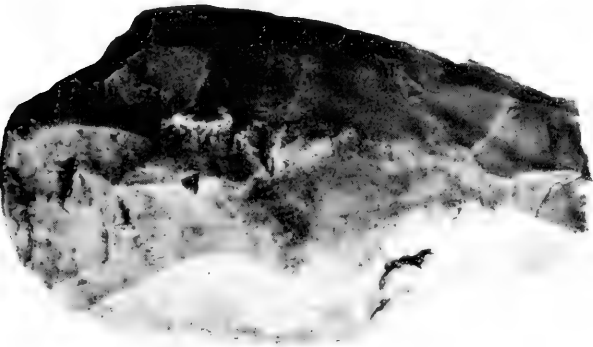
CHIPPED FLINT IMPLEMENTS FROM MOUND.



FIELD COLUMBIAN MUSEUM.

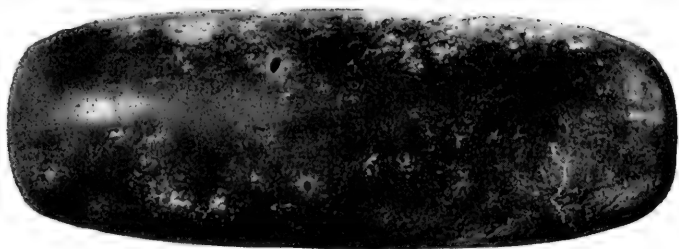


CHIPPED FLINT IMPLEMENTS FROM MOUND.

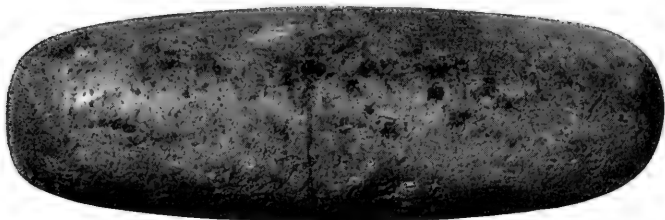


ANTHROPOLOGY, PL XXIV.





a



b



c



d

STONE IMPLEMENTS. ACTUAL SIZE.

a. Polishing stone from Mound No. 10, Chamber 4.

b. Polishing stone from Mound.

c. Stone used for grinding.

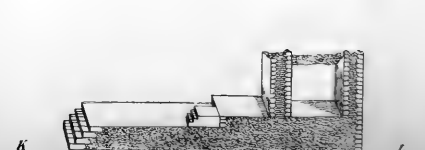
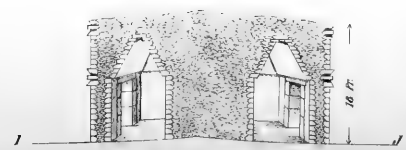
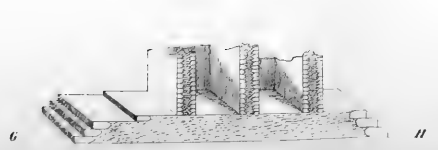
d. Stone used for grinding.



PL. XXVI. GROUND PLAN OF RUINS OF XKICHMOOK.

FIVE TRANSVERSE SECTIONS SHOWING ELEVATIONS OF GROUND PLAN.

c



FIVE TRANSVERSE SECTIONS SHOWING ELEVATIONS OF GROUND PLAN (PL. XXVI).

