

THE CARACOL
AT CHICHEN ITZA, YUCATAN,
MEXICO

BY
KARL RUPPERT



PUBLISHED BY
CARNEGIE INSTITUTION OF WASHINGTON
1935

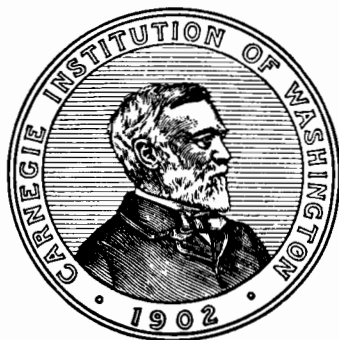


AEROPLANE VIEW OF CHICHEN ITZA, LOOKING NORTH.

Photograph by Rosal Cámara

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THE CARACOL

INTRODUCTION

Chichen Itza, as one of the large centers of the Maya New Empire, readily lends itself to an intensive program of archæological investigation. Dating from the close of the Old Empire and showing within its precincts influences of late Nahua incursion, it furnishes in the remains of these periods an extensive and varied field for study.

Believing that a type structure for each period should be studied and preserved, the Caracol was selected for investigation, as a preliminary survey showed that it was by far the most interesting and best preserved of the comparatively few round structures in the Maya area and the only one of this type at Chichen Itza. Another reason for the selection was its location in a quarter of the city in which all other important structures are of the Middle period A. D. 1000 to 1200. Furthermore, the orientation of the deep windows in the upper part of the tower, which has long led to the supposition that this was an astronomical observatory, called for its investigation, and the building being in a state of near collapse demanded that immediate steps be taken for its preservation.

LOCATION

The Caracol is located in the southern part of the Federal Archæological Zone as established by the Mexican Government and surveyed in 1924 by J. O. Kilmartin (fig. 350, map in back cover pocket). This figure and the aerial photograph (frontispiece) show the position of the Caracol (3C15) in relation to neighboring buildings, such as Maudslay's House No. 6 (3C11),¹ the Red House (Casa Colorada, 3C9) and the House of the Deer (Casa del Venado, 3C7) to the northwest; the Monjas and associated structures (4C1), the largest group of buildings dating from the Maya Period, and the Temple of the Wall Panels (Templo de los Retablos, 3C16) of the Nahua Period,² all lying to the south; and to the southeast the Akabtzib (4D1), on stylistic grounds probably the earliest building in the city. Indeed, with the exclusion of the Temple of the Wall Panels and a few minor structures, this area contains the largest nucleus of pure Maya buildings at Chichen Itza.

NAME OF THE COMPLEX

The name *Caracol*, which in Spanish means "snail" or possibly is a contraction of the expression *escalera de caracol*, "winding staircase," was applied to the building because of the spiral stairway in the core of the tower. John Lloyd Stephens, the American diplomat, traveler and archæologist, visiting Chichen Itza in 1841, used this name in describing the structure.³ How long prior to that time the designation may have been used is not known, but it is obviously of Post-Conquest origin.

To date, the Caracol and the Casa Redonda⁴ are the only round buildings in the Maya area that have been excavated; however, other round buildings are found at Mayapan, Muyil, Paal Mul, Oxthindzonot, Island of Cozumel and possibly two (2B3 and 3B1) found

¹ Maudslay, 1895-1902, Vol. III of plates, pl. II.

² Ruppert, 1931.

³ Stephens, 1843, Vol. II, p. 298.

⁴ Pollock, 1929. A monograph on the Casa Redonda and other round buildings is in preparation by H. E. D. Pollock.

in 1932 during the survey of the northwest section of Chichen Itza. A cursory examination of these seems to indicate that only the one at Mayapan, which has but one annular chamber, is in any way similar to the Caracol.

HISTORY OF THE SITE

Bishop Diego de Landa, the earliest and most important of the Spanish chroniclers of Yucatan, writing in 1566, in a brief description of Chichen Itza makes no mention of the Caracol,¹ but in a passage describing the round tower at Mayapan, a city said to have been built by Kukulcan who previously had reigned at Chichen Itza, he says:

“And that they also made another round [temple] with four doors differing from all those in that land and many others besides the round [one].”²



FIG. 1—THE CARACOL. CAMERA OBSCURA DRAWING MADE IN 1841.

From John L. Stephens' "Incidents of Travel in Yucatan," Vol. II, 1843.

Landa's definite association of Kukulcan with Chichen Itza, where this prince later became the patron deity of the city, and his equally definite statement that Kukulcan founded Mayapan and among many other structures there built "another round temple with four doors," while it does not constitute direct reference to the Caracol at Chichen Itza, may be accepted as our first historical notice of the occurrence of this type of building in Yucatan.

¹ Landa, 1864.

² Landa, 1864, pp. 64, 66.

B. N. Norman, an American, visited Chichen Itza February 10 to 15, 1842. His description of the Caracol and his drawing, which were the first published, are inaccurate.¹ J. L. Stephens, who spent a fortnight at the site in the spring of 1841, and again visited the site in 1842, was the first writer to give a clear, though very general description of the Caracol.² Frederick Catherwood, the English artist who accompanied him, made the second reproduction of the building to be published³ (fig. 1).

Augustus LePlongeon, a French archæologist, visited Chichen Itza in 1875. He does not seem to have left any written observations on the Caracol but made a ground-plan and cross-section of the structure which are now in possession of Mrs. Henry Field Blackwell, of Los Angeles, and through whose kind permission they are reproduced (fig. 2). Désiré Charnay, another French archæologist, visited Chichen Itza in 1872, returning a decade later for more detailed study. His description of the Caracol is very brief and less complete than that made by Stephens 40 years earlier.⁴

The first description, with accompanying plan, elevation and photographs, giving an architectural presentation of the building is that of A. P. Maudslay, the English explorer, who spent six months at Chichen Itza in the winter and spring of 1889.⁵ Henry N. Sweet, of Boston, Massachusetts, was photographer of this expedition and made the photographs shown in figures 3, 4 and 239 by the old wet plate process.⁶ The Austrian explorer, Teobert Maler, visited Chichen Itza many times during the last decade of the Nineteenth Century, taking numerous photographs, including at least one of the Caracol (fig. 5), but he left no published description of the site.

The next description of the Caracol is that of the American archæologist, geologist and artist, William H. Holmes, formerly chief of the Bureau of American Ethnology of the Smithsonian Institution and later Head Curator of Anthropology of the United States National Museum, who visited Chichen Itza in 1895. Holmes' description, with ground-plan and admirable section,⁷ gives the clearest exposition of this building heretofore published. The cross-section of the tower proper is here republished in figure 6, the ground-plan in figure 7.

Eduard Seler visited Chichen Itza in 1903 and again in 1907. His description adds nothing to previous contributions. It may be well to mention that Seler definitely assigns the building to the later Mexican Period.⁸

From 1907 until 1923, when Dr. Sylvanus G. Morley discovered a stela and a circular stone, carved with hieroglyphs, on the floor of the niche dividing the upper stairway, no further contributions were made.

NATURE OF THE STRUCTURE

No excavations had been made at the Caracol up to the time Carnegie Institution of Washington undertook its investigations. The number of times the whole complex had been cleared of vegetation is not known. It was, however, cleared in 1889 by Maudslay,

¹ Norman, 1843, pp. 118, 119.

² Stephens, 1843, Vol. II, pp. 298-300.

³ Stephens, 1843, Vol. II, plate facing p. 298.

⁴ Charnay, 1887, p. 349.

⁵ Maudslay, 1889-1902, Vol. III, text, pp. 20-22, and 1895-1902, Vol. III, plates 20, 21, 22.

⁶ Maudslay, 1895-1902, Vol. III of plates, plates 21, 22.

⁷ Holmes, 1895, pp. 115-120, figures 33, 34 and plate XII.

⁸ Seler, 1902-1905, Vol. V, No. 3, pp. 197-388. See also Vol. I, No. 19, pp. 674-678.

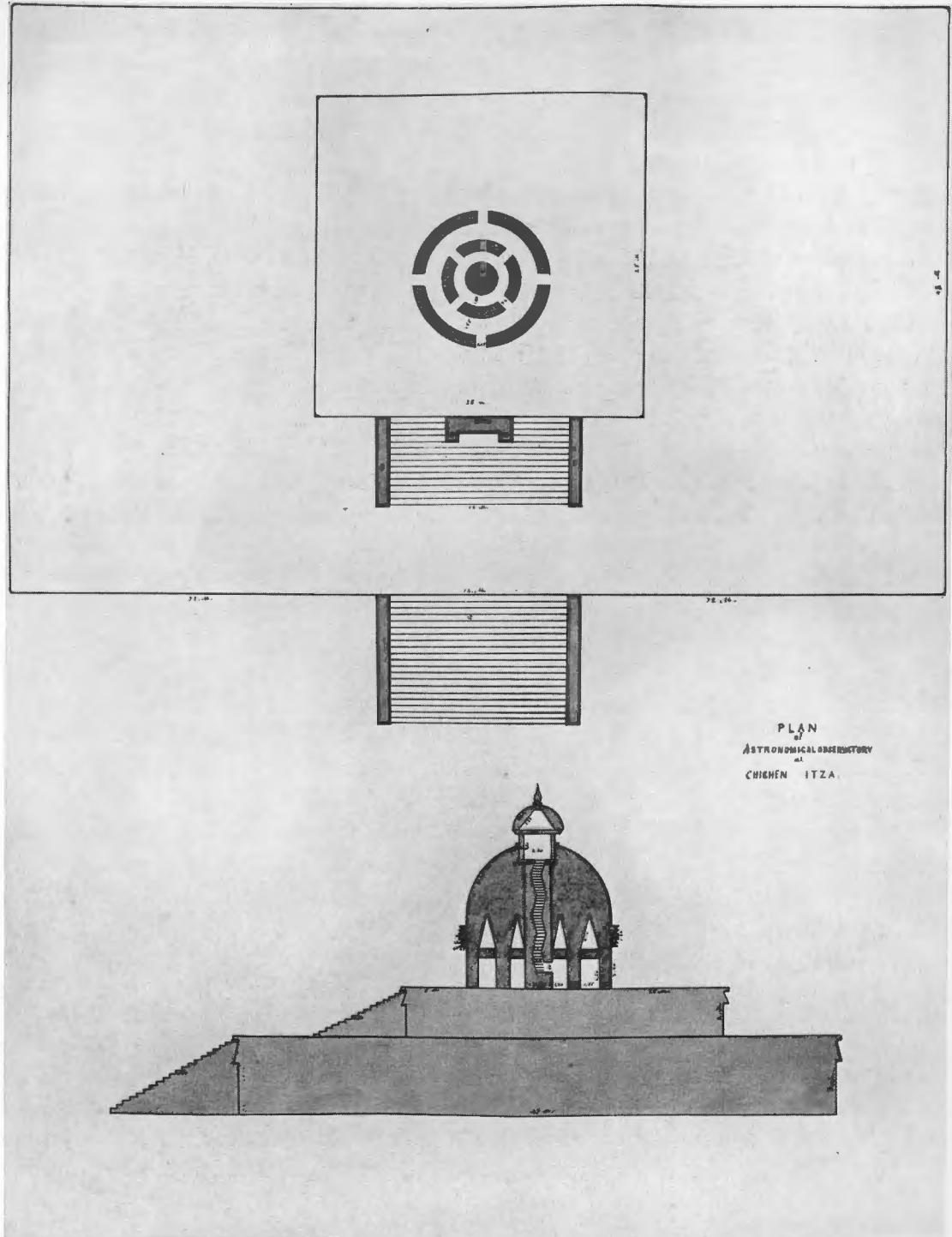


FIG. 2—GROUND PLAN AND ELEVATION OF THE CARACOL.
 Made by Augustus LePlongeon in 1875. Reproduced through kindness of Mrs. Henry Field Blackwell.



FIG. 3—SOUTH SIDE OF THE CARACOL.

Photographed in 1889 by Henry N. Sweet. From Maudslay's "Biologia Centrali-Americana," Vol. III, plate 21a.

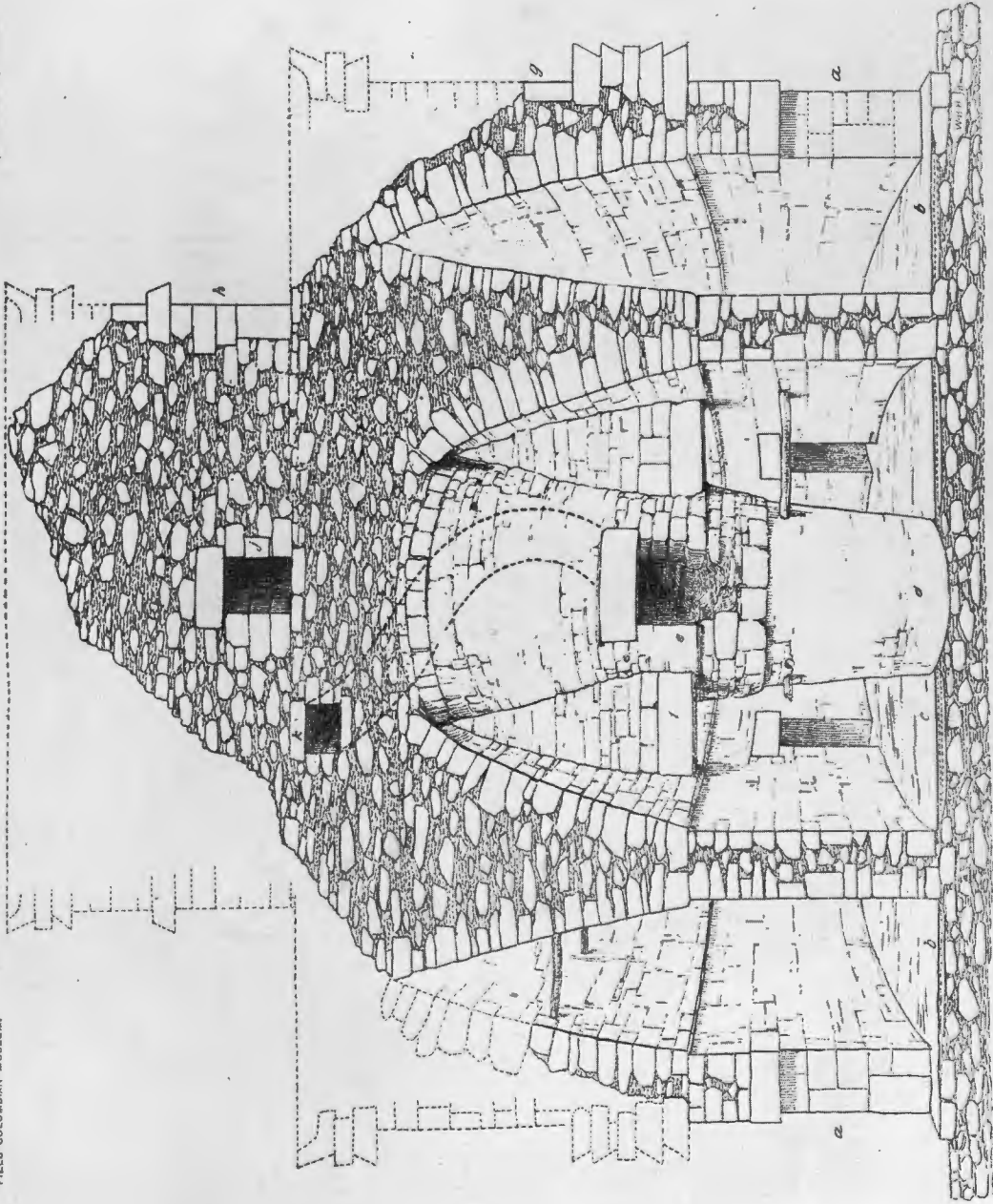


FIG. 4—WEST SIDE OF THE CARACOL.

Photographed in 1889 by Henry N. Sweet. From Maudslay's "Biologia Centrali-Americana," Vol. III, plate 21b.



FIG. 5—CARACOL, WEST SIDE, PHOTOGRAPHED BY TEOBERT MALER IN 1892.



GRAPHIC SECTION OF THE CARACOL OR ROUND TOWER, WITH HYPOTHETIC PROFILE.

FIG. 6—GRAPHIC SECTION OF THE CARACOL TOWER WITH HYPOTHETIC PROFILE.

After Holmes

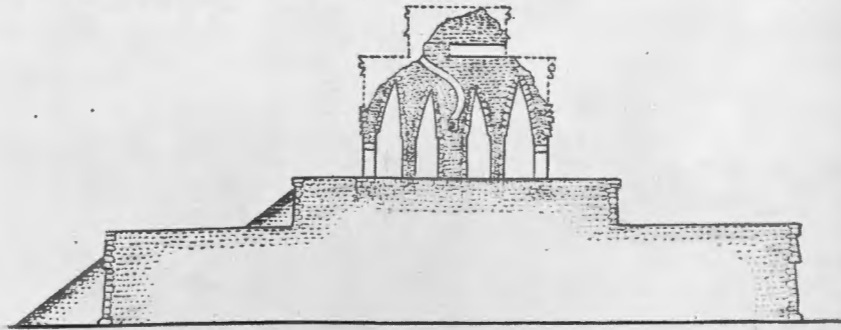


FIG. 33 SECTION OF ROUND TOWER OR CARACOL.
With its terraces and hypothetic profile of upper portion of turrets.

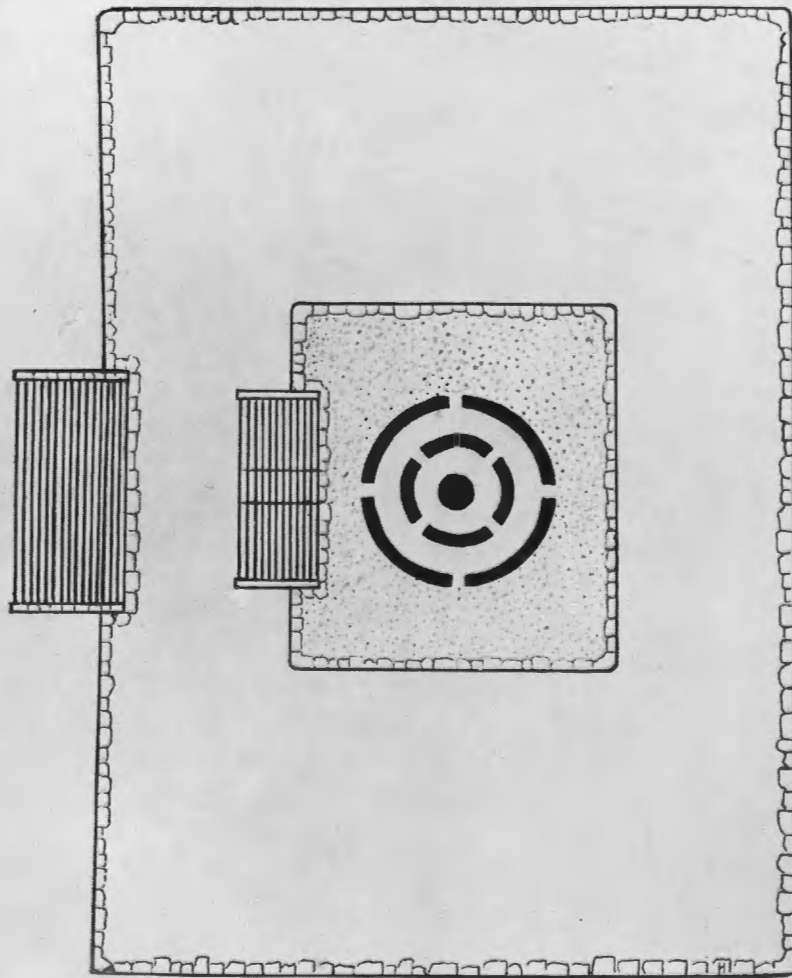


FIG. 34. PLAN OF ROUND TOWER OR CARACOL
With its terraces and stairwells. Dotted surface indicates upper platform.

FIG. 7—PLAN AND SECTION OF THE CARACOL.

After Holmes

as is shown in his plate No. 21 (fig. 3),¹ and in recent years, after the establishment of the Federal Archæological Zone, portions of it were kept bushed by the Mexican Government. Though the complex showed the effect of centuries of abandonment in its crumbling walls and fallen masonry, there could be seen a great lower platform, with traces of its stairway still visible on the west. Rising on this great lower platform was a second, with its stairway also to the west. Above the second platform rose the tower itself, and though in a state of ruin and covered by the material which had fallen from its upper section, the plan and some of the details of architecture could be discerned. To this general architectural plan there were added, probably toward the close of the building activity at Chichen Itza, three major increments: I, West Annex; II, South Annex; III, Northwest Temple. None of these, however, may be regarded as having formed an integral part of the construction.

The main structure and two of the three non-integral additions are described in this report. The South Annex (page 270; fig. 349) has been reserved for future consideration since only preliminary excavations and studies of it have been made. With this single exception the following report aims at complete presentation of the Caracol complex.

INVESTIGATION OF THE CARACOL BY CARNEGIE INSTITUTION OF WASHINGTON

The first work on the building was done by O. G. Ricketson jr. in 1925, when the entire upper part of the tower was strengthened by resetting the loosened stones in cement so that any danger of shifting of the deep windows from their present positions was eliminated.²

During 1926 the work at the Caracol was carried on by J. Eric Thompson, who, assisted for a short time by Robert A. Franks jr., cleared the western half of the outer chamber of débris and repaired the upper stairway. At the end of May 1926, through an arrangement with Dean Edgell, of the Harvard School of Architecture, Dr. Kenneth J. Conant, of the University faculty, visited Chichen Itza for the purpose of making architectural restorations of certain buildings, among others the Caracol.

The writer of this report directed the project from 1927 until its completion in 1931. Dr. Ricketson, who had begun the investigation in 1925, did not return to Chichen Itza the following year, having been placed in charge of the Uaxactun Project, and Mr. Thompson, who continued the study in 1926, accepted a position at the Field Museum of Natural History in Chicago. The writer devoted twelve weeks of the 1927 field season to work at the Caracol. The excavation of both the outer and inner chambers was completed and 14 meters of the five-member molding were replaced. The remains of a small unit-room building, the Northwest Temple, were uncovered on the lower terrace at its northwest corner.

No work was done at the Caracol in 1928; however, in 1929 the writer resumed investigations. During the seasons of 1929, 1930 and 1931, H. E. D. Pollock assisted in these studies. The most important discovery made during the 1929 season was the

¹ Maudslay, 1895-1902, Vol. III of plates, plate 21.

² Brief reports upon the work at the Caracol are contained in the Year Books of the Carnegie Institution of Washington, Nos. 24, 25, 26, 28 and 30.

circular platform buried within the upper rectangular platform. During the same season the stairway of the lower platform was examined and its repair begun; the repair of the five-member molding was completed except for the section on the east which had fallen *en bloc* and was left as found; the West Annex was excavated and repaired, though the study of the early platform buried within it was deferred until 1930; a preliminary study was made of the South Annex. The following year, 1930, the examination of the upper platform was continued and an earlier circular platform was found encased within the circular one found the previous season. The repair of the stairway of the lower platform was completed; the excavation and study of the South Annex was continued. The 1930 field season saw the completion of the excavation and repair of the Caracol, except for the southeast corner of the lower platform, which was repaired in 1931.

UNDERLYING PRINCIPLES INVOLVED IN THE REPAIR

In the investigation of the Caracol more than its mere excavation and study had constantly to be borne in mind: preservation had to be considered, further deterioration prevented, the building made understandable and left as an example of the art of the ancient Maya. The repair of the Caracol was governed by these four fundamental principles, which, being so closely allied, no one could be utilized without consideration of the others.

1. Preservation involved the replacement of fallen sculptured elements where their original positions were known, for if left lying about they become meaningless and are soon lost. As an example, the serpent balustrades and the masks over the doorways were replaced; the five-member molding, the south side of the lower platform, the upper platform and the arches were repaired. Where it was necessary to rebuild walls and constructions which were to support heavy superstructures or sculptured motifs that were to be replaced, the component stones were first numbered and charted before they were taken down to be relaid in cement mortar.

2. It was necessary to check further deterioration that might cause complete demolition and consequent loss as a subject for archæological study. This was accomplished by the use of cement forced into the interstices between loosened stones, as on top of the tower and around the horizontal shafts associated with the second story; the pointing of standing walls, such as those of the inner and outer chambers of the tower, and the capping of the parapets of the upper and lower platforms and the walls of the Temple of the West Annex.

3. The structure must be made understandable; that is, tell its story of plan, construction and building sequence. Where facing walls are in a state of near collapse, they must be repaired in whole or in part so that the student may know their extent and form, as for example the facing of the low platform associated with the lower stairway, on the north rising vertically, on the west with a batter.

Above the five-member molding, the facing has been repaired to its known height, thus the plan of the builders—to raise this zone vertically—is made clear. The building back of a section of wall between the recessed windows of the tower has made it possible

to visualize the lower zone of the upper story. In this instance, however, the stones defining the orifices of the shafts were marked with a chisel, indicating that these stones are *in situ* and are not stones replaced during repair by the Institution. A cross-section of the wall and arch of the tower, left exposed on the southeast, where the block of masonry has fallen *en masse*, shows the construction of that wall, the great five-member molding, the stones of the first member cut with long tenons to support its upper members, and the type of stone used in the arch.

Trenches, shafts and pits were made to study the *embutido* or inner fill, to expose early constructions buried within later ones and to determine building sequence. If the structure was to be left understandable, some of these trenches must remain open, for example, those exposing portions of the inner and outer circular platform, the stylobate, and the early and late platforms of the West Annex.

4. The structure must be left as an example of the art of the ancient Maya. Any restoration which destroyed the proportions and symmetry of the building had to be avoided. Care had to be exercised that the mass and line of the structure should not be destroyed and the whole preserved so that it might be studied and compared with examples of the architecture of other peoples. Always it must be borne in mind that the final result should not destroy the atmosphere of antiquity.

ACKNOWLEDGMENTS

The writer wishes to acknowledge assistance given by the many individuals who have helped in one way or another in the pursuit of this investigation.

First, to Dr. A. V. Kidder, Chairman of the Division of Historical Research, to Dr. Sylvanus G. Morley, in charge of the Chichen Itza Project, to Dr. Morris Steggerda, Dr. Oliver G. Ricketson jr., J. Eric Thompson, Harry E. D. Pollock, John S. Bolles, A. Leicester Hyde and W. L. Lincoln, whose advice, continued help and encouragement have always been at the disposal of the writer.

Second, to the many officials of the Mexican Government: the successive Ministers of Public Education, under whose jurisdiction the investigation has been carried out, Dr. J. M. Puig y Causaranc (Dec. 1, 1924, to July 31, 1928), Professor M. Sáenz (Aug. 1 to 31, 1928), Lic. Ezequiel Padilla (Sept. 1, 1928, to Dec. 31, 1929), Lic. A. Sáenz (Jan. 1 to Oct. 9, 1930), Lic. C. Trejo y L. de Trejada (Oct. 9 to Dec. 9, 1930), Dr. Puig y Causaranc (Dec. 10, 1930, to Oct. 22, 1931), Lic. Narciso Bassols (Oct. 22, 1931-); to Sr. José Reygadas y Vertiz who served as Jefe del Departamento de Anthropología 1925, Director de Arqueología 1926-29, Jefe de Oficina de Monumentos Prehispánicos 1930, and Jefe del Departamento de Monumentos 1931; to Sr. Ignacio Marquina, Jefe de Oficina de Monumentos Prehispánicos 1931; to the resident inspectors of the Direccion de Monumentos Prehispánicos, Señores Eduardo Martinez Canton and Jose A. Erosa Peniche; to other officials of the Direccion de Monumentos Prehispánicos who have visited Chichen Itza from time to time, Sr. Frederico Mariscal, Sr. Eduardo Noguera, Sr. Juan E. Palacios, Sr. A. Garcia and Sr. Emelio Cuevas.

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Finally to the many Maya workmen whose faithful and untiring labors have made this study possible, the writer's appreciation for their friendly cooperation is most gratefully acknowledged.

November, 1933

KARL RUPPERT

DESCRIPTION OF THE CARACOL

In a monograph dealing with the Caracol, a complex showing numerous changes in plan, alterations and additions, the many details and measurements which must of necessity appear become tedious to the reader as well as to the writer. To present the subject as clearly and intelligibly as possible, it has seemed best to describe the various units in the apparent order in which they were constructed: the lower platform, the upper platform, the tower proper and the late additions, such as the Northwest Temple and the West Annex.

THE LOWER PLATFORM

The lower platform rises to an average height of 6 meters above the basal terrace. It is roughly rectangular, having medial measurements of 51.50 meters east and west by 66.90 meters north and south (fig. 348). The western face has an orientation of 27.5° E. The platform is composed of the outer facing and the *embutido* or inner fill.

THE FACING

LOWER ZONE

A cross-section of the facing of the platform shows a battered lower zone inclined 6° from the vertical and rising from the basal terrace to a height of 4.60 meters (fig. 8 A). The masonry is of limestone blocks, varying somewhat in size and shape, roughly worked, the face generally left unfinished (fig. 9). The blocks having rather long tenons averaging 40 cm. in length, the facing of the platform is not applied as a veneer but forms a more integral part of the platform as at the House of the Deer, the Red House and the Monjas. The rounded corners, also present in the platforms of the above-mentioned structures, are likewise formed of roughly worked stone. Throughout is noted the abundant use of small stones for chinking.

OVERHANGING APRON MOLDING

Above the battered facing rests a heavy apron molding which overhangs from 50 to 55 cm. It has a height of 1.42 meters and rises at an angle of 27° from the vertical (figs. 8 B and 10). The stones forming the lower course average 2 meters in length, 1 meter in width and 33 cm. in thickness. The tenons of these stones had of necessity to be very long in order to counterbalance their overhang and support the weight of the stones in the subsequent courses which have relatively short tenons (fig. 11). The stones in the great overhanging molding are more carefully faced than those of the lower zone. The batter was constructed by laying the stones in horizontal courses, the exposed faces first having been beveled.

The stones at the corners and those abutting on either side are triangular in horizontal section, the apices of the tenons converging to a common point and the outer faces cut to form a convex curve (fig. 12). These stones are so highly specialized that they could be used in no other place.

BAND MOLDING

Resting on the apron molding is a 30-cm. band which overhangs 25 cm. (figs. 8 C and 11). The facing of the band shows a slight batter at some points, but it was not deter-

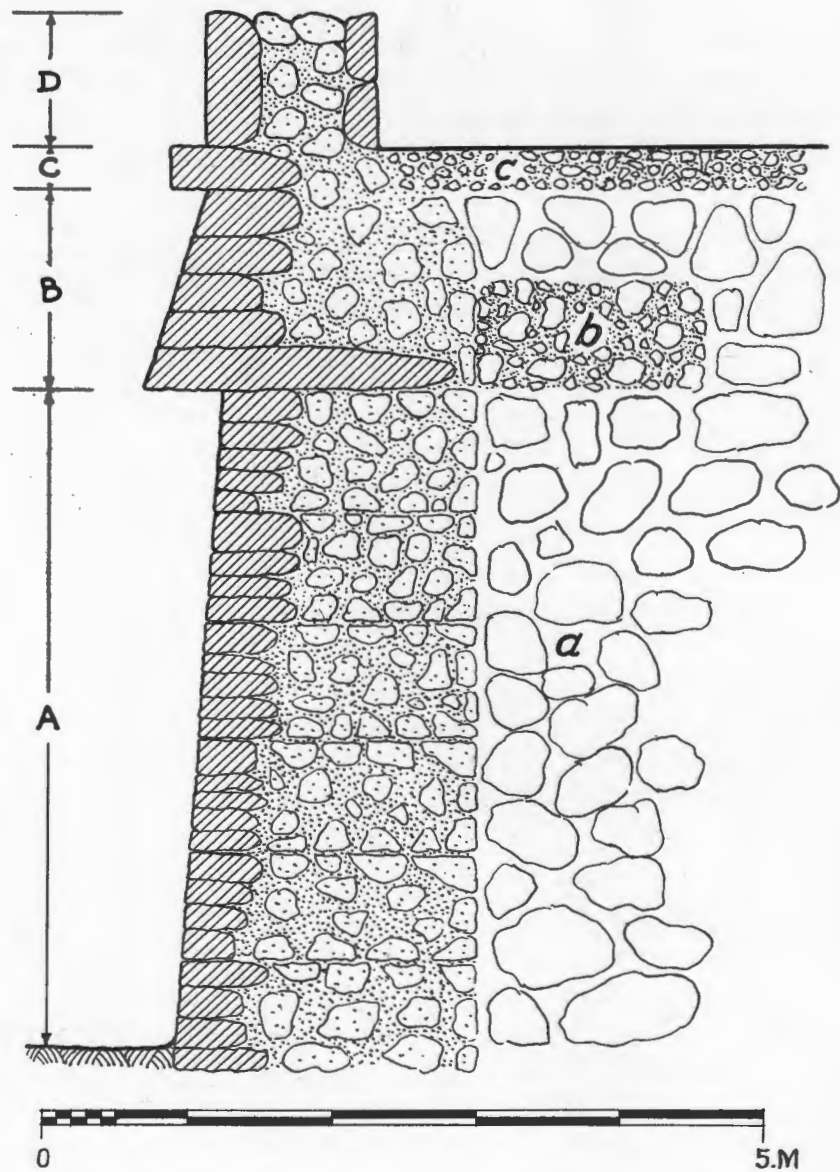


FIG. 8—SECTION THROUGH FACING OF LOWER PLATFORM.

A, lower zone; B, overhanging apron molding; C, band molding; D, parapet.
a, loose embutido inside of facing wall; *b*, pocket of small stones; *c*, small stones with much mortar directly beneath lime plaster floor.



FIG. 9—LOWER PLATFORM, SOUTH SIDE, LOWER ZONE.
Masonry of roughly worked blocks with relatively long tenons.



FIG. 10—LOWER PLATFORM, SOUTH SIDE.
To the right are some large stones of the great apron molding recovered during excavation.



FIG. 11—OVERHANGING MOLDING, BAND AND PARAPET OF THE GREAT LOWER PLATFORM,
WEST SIDE NEAR SOUTHWEST CORNER.



FIG. 12—LOWER PLATFORM.

Specialized stones of southwest corner of first course of overhanging molding. In the repair the broken corner stone is supported by two steel rails let into grooves cut on under side of stone.

mined whether this was intentional. In constructing the corners, the same principle was used as that in the corners of the apron molding.

PARAPET

A parapet rises above the band molding and completes the outer facing of the platform (figs. 8 D and 11). It is set back 25 cm. from the edge of the band and has a width varying from 1.04 to 1.22 meters. The original height is not known, but in places it was found *in situ* rising 94 cm. above the vertical band.

On the west side, south of the platform stairway, the parapet was constructed of wall stones which had been carefully dressed and are fairly uniform in size (fig. 13). On the south and east sides the stones are much larger, some measuring 83 by 55 cm., and are generally set on end (fig. 14). The portion of the parapet still remaining on the north is formed of small stones, many measuring not over 14 by 20 cm. (fig. 15).

The occasional use of band molding stones, the introduction of a single sculptured vertical cornice stone at the southeast corner, the failure to lay the masonry in courses and the great difference in size of stone leads to the inference that the material in the parapet is here reused.

At various points in the parapet at the floor level of the platform are small rectangular openings which doubtless served as drains (figs. 13 and 347). On the inside face of and abutting the parapet, 1.82 meters south of its terminus at the platform stairway, was found a block of solid masonry 88 cm. square by 27 cm. high, made up of faced and unworked stones (fig. 347). This masonry block probably served to divert drainage water from the stairway into a small opening through the parapet directly south of the masonry block. The drain measures 21 cm. in height by 15 cm. in width and opens onto the level of the top of the band molding. A second drain, 3.25 meters south of the first, has an opening through the parapet measuring 20 by 22 cm., while a third, located 5.57 meters south of the second, has an opening slightly larger, measuring 25 cm. in width by 30 cm. in height (fig. 321, *a*). The remains of a small stairway were found 1.77 meters south of the last-mentioned drain (figs. 321 and 322). This stairway, 2.43 meters in width, including the two balustrades each having a width of 40 cm., had been built against and over the parapet and gave onto the roof of the West Annex (page 257). A drain 2.08 meters south of the stairway has an aperture in the parapet measuring 21 cm. square (fig. 321, *b*).

While only four drains were found in the south parapet, there is little doubt that more existed but were destroyed with the collapse of the molding and facing wall of the platform.

On the inner side of the parapet the orifice of the westernmost of these drains was formed by chipping away a small section of two contiguous stones. The opening measures 20 cm. in height by 10 cm. in width. In line with its exterior orifice is a portion of a waterspout, the broken end of which extends only to the edge of the band molding on which it rests. The lower margin of the exterior orifice of the drain is 7 cm. above the band molding, which gives sufficient space for the introduction of the waterspout.

During the excavation at the base of the south side of the lower platform, at its western end, three broken waterspouts were found; with the collapse of the platform facing, these may have fallen from drains similar to the one just described. For the most part the drains open on a level with the top of the band molding, which was not possible when



FIG. 13—CARACOL AND WEST ANNEX.
On the west side, south of the stairway, four small drains were found opening through parapet of lower platform.



FIG. 14—SECTION OF EAST PARAPET OF LOWER PLATFORM.



FIG. 15—SECTION OF THE NORTH PARAPET.

Small opening at right is perhaps a drain. Traces of lime-mortar surfacing of lower platform floor may be noted.

waterspouts were associated with them. A second drain is 9.6 meters to the east of the first. Two others are spaced at intervals of 3.22 and 3.52 meters, respectively.

In clearing the débris from the inside of the fallen parapet at the east end of the south side, a number of crudely worked roof *adornos* of the "G" type¹ were found (fig. 246, *i*; see page 195).

Only a single drain remains in the standing section of the east parapet. The opening is 17 cm. high by 8.8 cm. wide. A block of masonry 58 cm. south of the drain extends 90 cm. inward from the parapet against which it is built (fig. 16). It has a width of 97 cm. and a height of 45 cm. The west face is formed of a single worked stone, the south is formed of a vertical cornice stone with its plane face upward. The cornice stone, here reused, is badly weathered but still clearly shows that at one time it was ornamented with



FIG. 16—BLOCK OF MASONRY BUILT AGAINST PARAPET OF LOWER PLATFORM.

a sculptured border. In the section of the north parapet remaining intact is a single drain, the opening of which measures 22 cm. high by 11.4 cm. wide. The parapet at this point has a width of 1.09 meters (fig. 15).

On the west side, north of the stairway, only the inner facing of the parapet remained *in situ*. A block of masonry 32 cm. high, 1.07 meters wide and projecting 50 cm. on to the platform had been placed 3.27 meters north of the end of the parapet as limited by the stairway (fig. 17). It is formed of two large stones, rests on the floor of the terrace, abuts the parapet and, like the one to the south of the stairway, probably served to direct water into a drain. To the north of the block of masonry the parapet had entirely fallen. In making repairs at this point a drain was placed through the reconstructed parapet, as the necessity of providing means for quick run-off of water during heavy rains was well indicated.

¹ Morris, 1931, Vol. I, p. 33.

An inclined element, set on the floor of the platform, 25 cm. from the parapet and leaning toward it, with a slope of 40° from the horizontal, begins 30 cm. from the masonry block and extends 1.67 meters southward (figs. 17 and 18). It is formed of five stones and resembles a similar element sometimes found at the back of a bench, as at the North Colonnade, the Northwest Colonnade¹ and the Mercado.

MASONRY OF FACING WALL

The mass of masonry of the facing wall of the lower platform, which also serves as an enclosing support for the loose *embutido* of the platform, is tremendous. This massive wall varies in thickness from 1.50 to 2 meters and with only slight deviation rises to a height of 6.32 meters (fig. 8).

In the great lower zone horizontal levels were established; five were noted on the south side having heights of 83, 76, 78, 80 and 75 cm., respectively (fig. 8). Vertical divisions of these levels or tasks were not observed. At the top of the lower zone the masonry was leveled and roughly smoothed (fig. 10). It is reasonable to suppose that this level, as well as the others, was built continuously throughout the facing wall before the erection of the subsequent task was undertaken. Once the lower zone was completed it was allowed to set and dry for a time in order to sustain the weight of the apron molding. With the completion of the molding a new level was again established before laying the vertical band. The parapet rises directly above the band molding (figs. 8 and 11).

REPAIR

The repair of the facing of the platform, which includes a section to the north of the stairway, the southwest and southeast corners and large sections on the south, was carried out during the seasons of 1929, 1930 and 1931. The extent and progress of the work is illustrated in figures 10, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 44, 53 and 54. Of special note is the replacement of the first course of the overhanging apron molding at the southwest corner. The tenon of the corner stone was broken off so that it was necessary to support it by two steel rails embedded in the *embutido* of the wall and let into grooves cut on the under side of the stone (fig. 12).

EMBUTIDO

The great mass of *embutido* of the lower platform totals over 20,000 cubic meters. To examine the nature of this *embutido*, two test trenches were made in the great lower platform in line with the approximate east-west axis, one to the east and the other to the west of the upper platform. Shortly after the east trench was opened, it was noted that beginning 25 cm. below the surface the south side was defined by a roughly laid dry masonry wall (figs. 31 and 32). It has a bearing of N. 73° E. and was traceable from the eastern edge of the upper platform to the portion of the large drain still remaining on the edge of the lower platform (page 43). This wall, 3.65 meters in height, was uncovered to its base where it rests on open *embutido*.

Two fragments of the lower jaw of a stone serpent were found on the north side of this wall, 90 cm. east of the drain and 50 cm. below the floor.

¹ Morris, 1931, p. 55.



FIG. 17—PARAPET OF LOWER PLATFORM, NORTH OF STAIRWAY, AFTER EXCAVATION.



FIG. 18—PARAPET OF LOWER PLATFORM, NORTH OF STAIRWAY, REPAIRED.

Beyond inclined element is a masonry block which perhaps served to deflect water into a drain through the parapet.



FIG. 19—CARACOL, VIEW FROM THE MONJAS.
Southwest corner of lower platform before repair.



FIG. 20—SOUTHWEST CORNER OF LOWER PLATFORM AFTER REPAIR WAS COMPLETED.



FIG. 21—LOWER PLATFORM, SOUTHWEST CORNER. REPAIRING LOWER ZONE.



FIG. 22—REPAIRING OVERHANGING APRON MOLDING.



FIG. 23—LOWER PLATFORM, SOUTHWEST CORNER. REPAIRING OVERHANGING APRON MOLDING.



FIG. 24—REPAIR OF OVERHANGING APRON MOLDING, BAND AND PARAPET COMPLETED.



FIG. 25—RAISING BROKEN CORNER STONE OF FIRST COURSE OF OVERHANGING APRON MOLDING AT SOUTHWEST CORNER OF LOWER PLATFORM.



FIG. 26—SOUTH SIDE OF LOWER PLATFORM, LOOKING TOWARD SOUTHWEST CORNER. REPAIR COMPLETED.



FIG. 27—LOWER PLATFORM NORTH OF STAIRWAY, BEFORE REPAIR.



FIG. 28—LOWER PLATFORM, SOUTHEAST CORNER, BEFORE REPAIR. EAST END OF SOUTH ANNEX IN FOREGROUND.



FIG. 29—CARACOL. VIEW FROM THE MONJAS.

Southeast corner of Lower Platform before Repair. View taken in 1930 after the South Annex had been partially excavated.



FIG. 30—CARACOL. VIEW FROM THE MONJAS.

Southeast corner of lower platform, repaired. View taken in 1931. One year's growth of vegetation practically hides the South Annex.



FIG. 31—EAST TRENCH IN LOWER PLATFORM FOR STUDY OF THE *embutido*.
Dry masonry wall extends under the upper platform. View looking west.



FIG. 32—EAST TRENCH IN LOWER PLATFORM.
Dry masonry wall followed to depth of 3.65 meters. View looking east.

The west trench, opened at the base of the upper stairway and in line with its recess, extends west to the inner side of the wall on the buttress behind the stairway of the lower platform (page 43).

Extending out from under the upper platform stairway, 3.5 meters south of the north balustrade is a wall of dry masonry, which bears N. 71° W. to the wall resting on the buttress behind the lower stairway (fig. 34). The south side of the wall is roughly faced and was followed to a depth of 5.90 meters, when, due to the great danger of the *embutido* caving on the workmen, the trench floor was sloped to the south. A north-south wall, 3 meters below the surface and 1.63 meters west of the upper stairway, abuts the east-west wall. It was followed 4.57 meters to the southern limits of the trench. The trench was opened to the natural limestone which was encountered at a depth of 8.15 meters. A layer of red earth 2.53 cm. thick rests on this natural limestone.

The human head in stone shown in figure 35 was found in the west trench 91 cm. below the surface of the platform and 1.52 meters west of the first riser of the upper stairway. The lower section, the collar inscribed with hieroglyphics, was found 60 cm. west of the head and 1.20 meters below the surface. The total height of the head, with collar, is 20 cm.

While preparations were being made to open the trench, four flagstones were noted set in the floor 3.20 meters west of the base of the upper platform stairway and in line with the east-west axis of its recess. The position of the stones was charted before they were removed, so that when the trench was closed they might be returned to their original location.

SKELETAL MATERIAL

Almost immediately after excavations for the trench were started, skeletal material was encountered, of which there were six definite areas of centralization. The first area noted was 15 cm. below the floor, in line with the north edge of the flagged area and 3.70 meters west of the basal step of the upper platform (fig. 36). The skeletal material consisted of the right side of a mandible, including the ascending ramus, fragments of a child's skull and portions of the long bones of the arm (fig. 38). The second area, 15 cm. south of the first, contained the horizontal ramus of a mandible, portions of at least two humeri and skull fragments. The third area was 55 cm. south of the second and 35 cm. below the surface. A right humerus, ulna and radius lay on top of a mandible. Below the mandible were portions of a pelvis, beneath which, in turn, were skull fragments (fig. 39).

Between the second and third areas and 45 cm. below the surface were skull fragments and a right ascending ramus. Directly beneath these were fragments of the long bones of the leg, which had been wedged in between large stones of the *embutido*. This constitutes the fourth area.

The fifth area, lying 23 cm. below that just described, may be only a continuation of the latter. It contains portions of two mandibles, left clavicle of a very young child and fragments of the pelvis, all of which were in a pocket formed by the stones of the loose and open *embutido*. Black earth was noted around the bones.

The sixth area was 3.24 meters from the base of the stairway and at a depth of 96 cm. (fig. 39). In it were included the left femur of a child (condyles lacking), the left femur of a young adult, the left ramus mandibulæ of a child, skull fragments and small sections of radii and ulnæ.



FIG. 33—LOWER PLATFORM OF CARACOL, WEST TRENCH.
Skeletal material and shell beads were found scattered through the loose fill to a depth of 5 meters.



FIG. 34—WEST TRENCH, LOWER PLATFORM.
Dry masonry wall extends out from under stairway. The home-made winch was used to aid in raising material to the surface.



FIG. 35—STONE HEAD WITH HIEROGLYPHIC COLLAR FOUND IN WEST TRENCH
OF LOWER PLATFORM.
Height of specimen, 20 cm.



FIG. 36—EXCAVATIONS STARTED FOR EXAMINATION OF THE *embutido* OF LOWER PLATFORM WEST OF UPPER PLATFORM STAIRWAY.

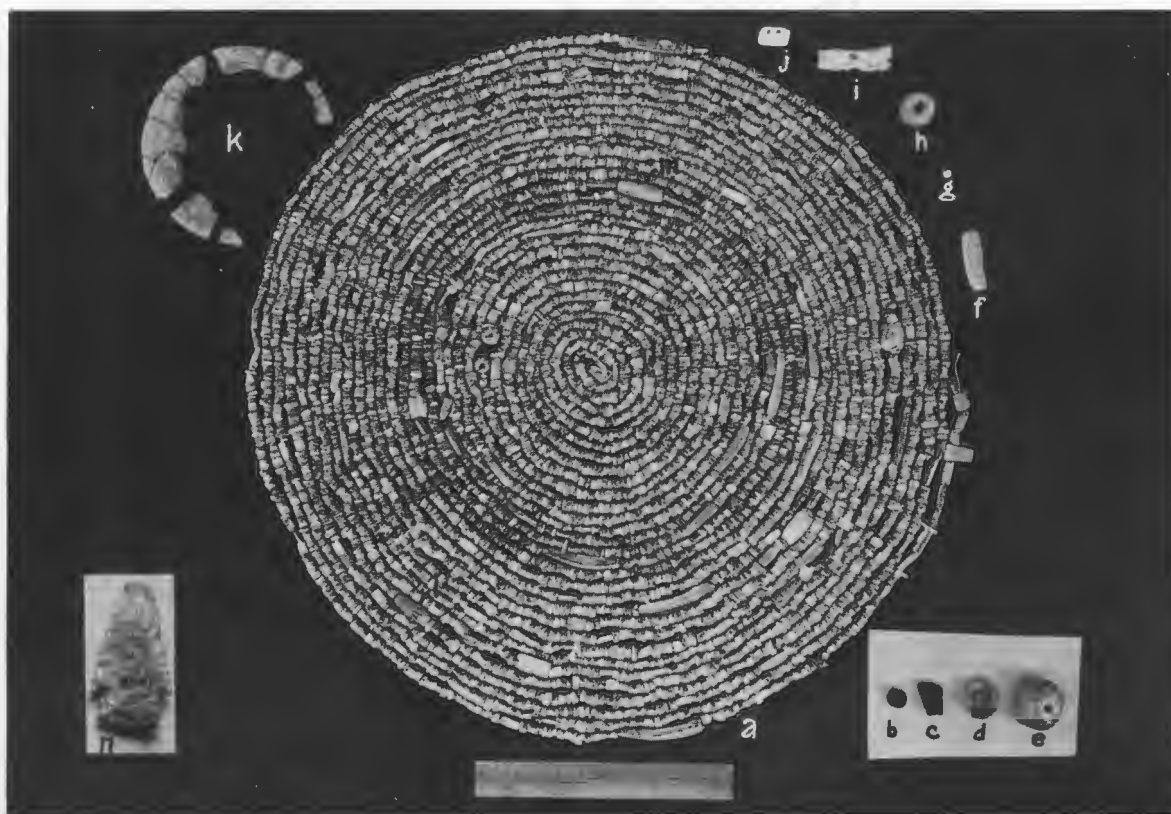


FIG. 37—MATERIAL RECOVERED IN WEST TRENCH OF LOWER PLATFORM.

a, 5627 beads of the columella of the conch shell; *b*, pellet of pitch; *c*, piece of pyrite mosaic; *d*, jadeite button; *e*, green stone bead; *f*, flat piece of shell; *g*, pearl; *h*, green stone bead; *i*, toe-bone of deer; *j*, green stone pendant; *k*, pieces of sandstone disc; *l* and *m*, jadeite beads; *n*, chipped point 4.4 cm. long.



FIGS. 38 AND 39—CARACOL, LOWER PLATFORM, WEST TRENCH.
Skeletal material was encountered soon after trench was opened.

In addition to these centralized areas, like material was found scattered through the loose *embutido* over an area 4 meters square and to a depth of 4.80 meters. As the *embutido* was undisturbed, the skeletal material must of necessity have been scattered through it at the time the platform was built.

Dr. Morris Steggerda, of the Institution's Department of Genetics, identified the skeletal material and has supplied the following notes and table:

"The bones are obviously those of children, and of one or two very young adults, therefore they are even more fragile and fragmentary than those of the burial in the upper platform [page 119]. Twelve pieces of mandibles were identified, and, curiously enough, all of them showed the mental process. It is quite probable that these mandibles represented all the skeletons of this burial.

"It will be noted from table 1 that only one mandible contained a third molar, and in four jaws the permanent incisors had not yet made their appearance but were embedded in the alveoli. The teeth show only a small number of cavities (eight in the two hundred and forty molars). It will be noted that there are a greater number of molars than can be associated with the twelve mandibles. The identified long bones and others are listed in table 1 but give only a small indication of the total number of bodies buried."

TABLE 1—*Skeletal Material from the West Trench in the Lower Platform*

Name of bone	Children and young adults			Remarks
	Right	Left		
Appendicular skeleton:				
Humerus.....			10	Very fragmentary, 1 piece possibly an adult. Only the head of one radius is present.
Radius.....			4	
Ulna.....	1	1		
Scapula.....			2	
Clavicle.....	1	2		1 pair of clavicles obviously of a very young child.
Femur.....	2	3		
Patella.....		1		
Calcaneus.....			1	
Astragalus.....			3	
Digit Bones.....			9	
Axial skeleton:				
Sternum, Manubrium.....			1	
Vertebrae:				
Thoracic.....			7	
Cervical.....			7	
Skull:				
Temporal.....	6	4		
Mandible.....			12	All young. 1 mandible with third molar. 4 mandibles in which permanent incisors had not erupted.
Teeth:				
Incisors and canines.....			215	6 with cavities.
Pre-molars and molars.....			240	8 with cavities.

ARTIFACTS

Shortly after the skeletal material was encountered, beads were also found scattered through this section of the *embutido*. The first noted were 3.35 meters west of the base of the upper stairway and 1.52 meters below the platform floor and at times closely associated with skeletal remains (fig. 33). In other places they were unassociated and appeared as if scattered through the fill as it was built. They extended over a somewhat greater area than the skeletal material, the greatest depth at which they were found being 5 meters. Some found at levels below the skeletal remains may have trickled through the loose *embutido*.

The beads, of which a total of 5628 were recovered, are flat, cylindrical and round. They were made of the columella of the conch shell (genus *Strombus*) and vary in color from white and pink to deep red (fig. 37, *a*).

In addition to the beads of conch shell, other material of equal importance was recovered, including the following, as shown in figure 37:

- 1 small pellet of pitch (*b*).
- 1 piece of pyrite (marcasite) mosaic 1.9 cm. long (*c*).
- 1 jadeite button having a diameter of 2 cm. and a thickness of 0.6 cm. It has two grooves cut on one side. The button was found at a depth of 4.56 meters (*d*).
- 1 green stone bead 2.8 cm. in diameter and 1.9 cm. thick. It is somewhat melon-shaped and divided into five segments. The bead was found at a depth of 3.14 meters (*e*).
- 1 flat piece of shell 3.8 cm. long by 1.1 cm. wide (*f*).
- 1 pearl 0.6 cm. in diameter and 0.15 cm. thick, found at a depth of 4.87 meters. The pearl is pierced with an eyelet through one face (*g*).
- 1 green stone bead found near (*d*), 1.5 cm. in length and 1.9 cm. in diameter. It had possibly been subjected to fire (*h*).
- 1 deer toe badly burned (*i*).
- 1 green stone pendant having two perforations. It had a length of 1.9 cm. and a width of 0.9 cm. (*j*).
- 12 pieces of sandstone disk which had a diameter of approximately 12 cm. (*k*).
- 2 jadeite beads having lengths of 2.6 and 2.9 cm., respectively (*l* and *m*).
- 1 chipped point of mottled gray opaque stone 4.4 cm. long by 2.5 cm. wide (*n*).
- 1 small green stone bead or button (not illustrated).

METHOD OF OPENING TRENCH

The trench extended 5.30 meters west from the base of the stairway and had a width of 4.70 meters north and south. When initially opened it was narrow, so that as soon as a depth of two meters had been reached it was necessary to widen it at the top to relieve the pressure and safeguard the workmen from a possible cave-in, and also to allow for the study of a greater area. Shortly afterward, when it was deepened, danger of caving again became apparent. Since there was no further object in widening the trench, as it already included more than the area containing the skeletal material and beads, some other method had to be devised to prevent the loose fill from caving.

To accomplish this as effectively and cheaply as possible, the workmen were instructed to build an open wickerwork frame around the sides and extending to the bottom of the trench. The frame was made of twigs and poles tied together with *liana*; the size of the mesh being slightly smaller than the large stones of the *embutido*. Poles were placed across the trench at various levels and tied to the frame to prevent the wickerwork from being crushed in by the *embutido* (fig. 40). The support once in position, excavations were resumed until danger of caving was again obvious and required attention. Work in the trench was immediately stopped until the wicker frame with cross poles was carried to the new base. The framework was thereafter extended as new levels were established (figs. 41, 42).

This method of supporting loose *embutido* proved so adequate that it is recommended for use in excavations where such a device is necessary. The material for the wicker frame was easily procured in the outlying bush and the only expense involved was the labor. In the construction of the support the component parts, being relatively light in weight, were

easily handled by the workmen. The work proceeded rapidly, since the principle involved was not new to the workmen but the same as that used in placing the framework for the thatched roofs of the native houses and, coming within the scope of the workmens' knowledge, required little supervision.

The open mesh of the framework permitted unobstructed study of the *embutido*, and the use of the framework as a ladder facilitated close examination of the *embutido* at any point.

The trench, sloping slightly inward from top to bottom, was extended to the natural limestone, 8.15 meters below the platform floor. While it was shallow the large stones of the *embutido* were easily removed, but as soon as a depth of two meters had been reached the workmen were not able to lift the stones out of the trench. The material was then removed by means of a home-made winch placed on planks over the trench (fig. 43). Before taking out the stones the workmen brushed them carefully to remove dirt and beads which had become lodged in the pockets and cavities. The beads were then separated from the dirt as well as possible and deposited in a container provided for them. The dirt was placed in a box and raised to the surface by means of the winch, and was then turned over to another group of workmen who washed it on a screen. By washing, a great many beads were recovered which otherwise would have been lost as they were not easily discernible, being encrusted with lime and dirt.

The repair of the facing of the south side of the lower platform afforded a further opportunity to study the *embutido*. A pocket of small stones with chips, perhaps refuse from the quarries, entirely lacking mortar, and an occasional large unworked stone, was noted 3.65 meters from the southwest corner of the platform and extending 10 meters to the east (figs. 8, *b*, and 44). The pocket is on a level with the top of the lower zone of the platform and 1.60 meters inward from its edge. It varies in width from 1.50 to 2 meters and is 78 cm. in height.

The results of these investigations indicate that the *embutido* was built up in construction units or individual tasks or jobs; the dry masonry walls, placed without apparent plan or system in the fill, serving to hold in place the stones which were brought in, perhaps by a particular group of workmen assigned such a specific task.

The material of the *embutido* is for the most part composed of large rough fresh unworked stone, some small chips and pockets of refuse from quarries or whatever material was at hand. No horizontal levels seem to have been established nor was lime mortar used.

TOP OR FLOOR OF PLATFORM

In the construction of the floor of the platform (fig. 45) a stratum of stones 20 cm. in thickness, in which there is only a trace of mortar, was placed on the open *embutido*. On this, in turn, rested a 25-cm. layer of small stones laid in heavy lime mortar. This was firmly packed and roughly smoothed at the top. The final surfacing was a 3.8 cm. layer of mortar, well trowled and painted a brick red. Sections of this final surfacing, in an excellent state of preservation, were found at the northern limits of the platform where the floor joins the parapet (fig. 15).

An olla made of Striated Porous Grey Ware was found, badly broken, 25 cm. below the floor of the lower platform and 1.14 meters north and 8.50 meters west of the northeast

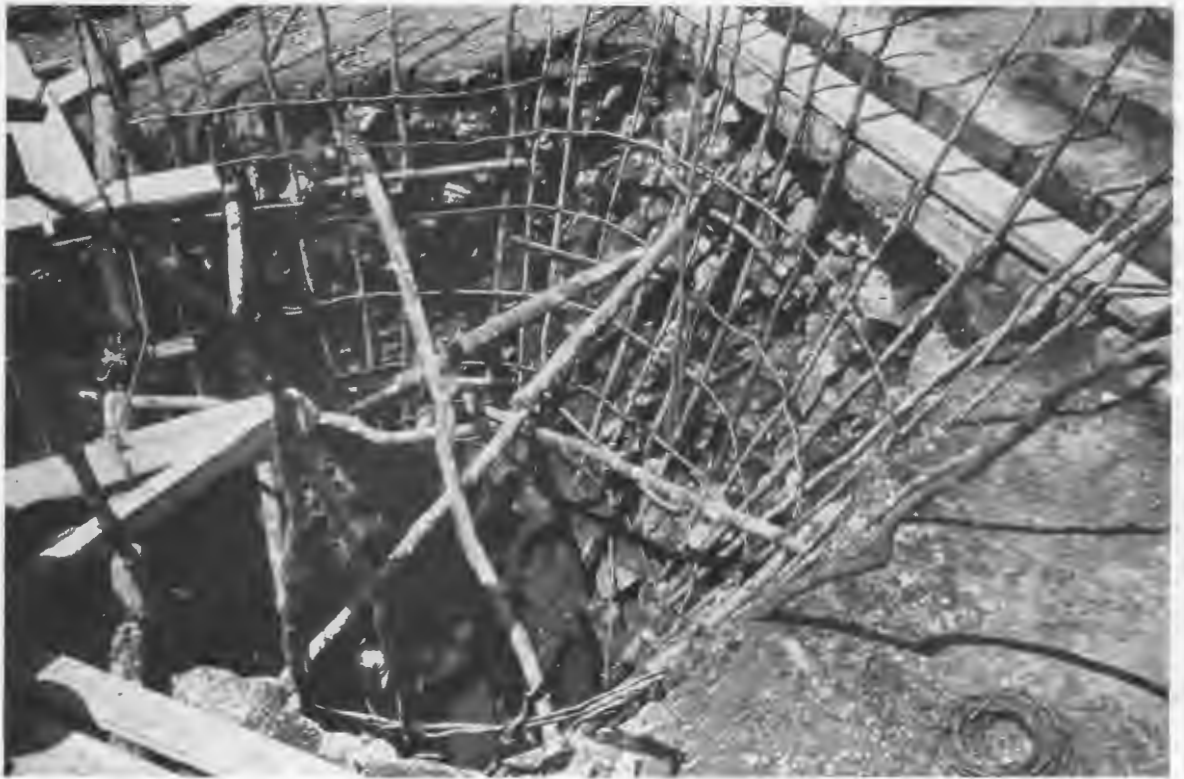


FIG. 40—WEST TRENCH, LOWER PLATFORM.
First stage in placing wicker frame to prevent caving.

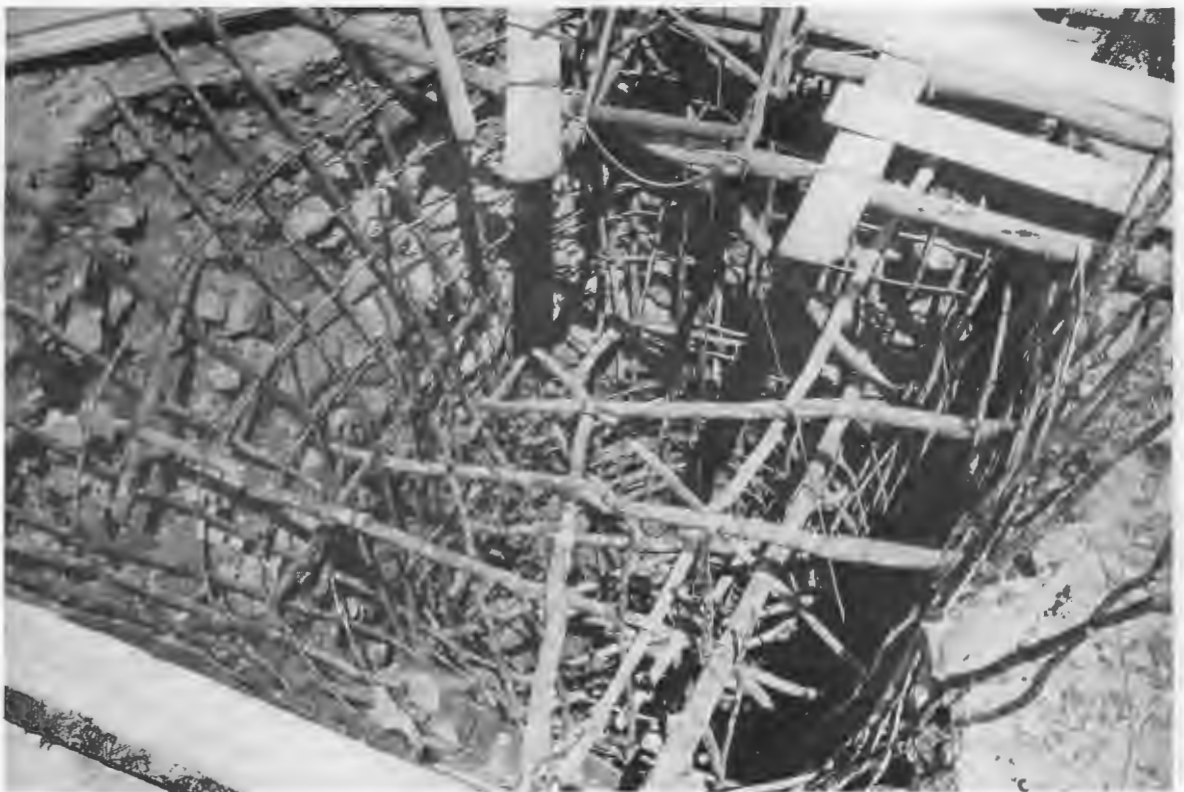


FIG. 41—WEST TRENCH, LOWER PLATFORM.
Wicker frame extended as new levels were established. Workman may be seen at base of trench.



FIG. 42—WEST TRENCH, LOWER PLATFORM.
View from top of Caracol tower.



FIG. 43—WEST TRENCH, LOWER PLATFORM.
A home-made winch placed on planks over trench was used to aid in removal of material.



FIG. 44—CARACOL, LOWER PLATFORM, SOUTH SIDE.

A pocket of small stones with chips, perhaps refuse from quarries, with an occasional large, unworked stone, entirely lacking mortar, was noted on a level with top of lower zone.



FIG. 45—FLOOR OF PLATFORM, SOUTH OF UPPER STAIRWAY.

Rests on the open *embutido* and is formed of a 25-cm. layer of small stones laid in heavy lime mortar. The final surfacing was a 3.8 cm. layer of mortar well troweled and painted red.



FIG. 46—TRIPOD DISH OF SLATE WARE.
Served as a cover to the olla shown in figure 47. Diameter, 29.5 cm.



FIG. 47—OLLA OF STRIATED POROUS GREY WARE.



FIG. 48—TWO OF SIX TRIPOD BOWLS RECOVERED IN TALUS OF FALLEN
NORTHEAST CORNER OF LOWER PLATFORM.
Diameter of bowl on left 15 cm.

corner of the upper platform (fig. 47). It was half filled with ashes in which there was some charcoal. Resting on top of the ashes were the pieces of a broken tripod dish of Slate Ware which may well have served as the cover of the olla (fig. 46). The dish has a diameter of 29.5 cm. and a height of 9.5 cm.

Six tripod bowls of Red Lacquer Ware were found in the talus resulting from the collapse of the northeast corner of the lower platform. They have average diameters and heights of 13.8 cm. and 5.4 cm., respectively. Traces of blue paint were noted on the interiors of four of the bowls (fig. 48).



FIG. 49—OPENING IN FLOOR OF LOWER PLATFORM GIVING INTO PASSAGEWAY WHICH HAS ITS OTHER ORIFICE IN OVERHANGING APRON MOLDING ON EAST SIDE NEAR SOUTHEAST CORNER.

PASSAGEWAY THROUGH APRON MOLDING

An opening in the platform floor, measuring 83 by 61 cm. (figs. 49, 50, 346 and 347), is 8.23 meters north from the southeast corner of the platform and 1.06 meters from the inside facing of the east parapet. It gives into a passageway, formed of four irregular steps, which opens through the facing of the great overhanging molding (fig. 51, *a*). The passageway is 61 cm. wide and its height from floor to soffit, formed of stone slabs, varies from 58 to 73 cm. This difference is due to the steps and corresponding variations in the ceiling level. The opening of the passageway in the facing of the molding measures 60 cm.

in width by 68 cm. in height. The sill is one of the large stones of the first tier of the molding. The side walls are of faced stones. No plaster was noted on the walls, floor or ceiling.

A second passageway on the east side of the platform is 24.53 meters north of the one just described. Here the great molding and a portion of the platform have fallen so that there remain only the two inner steps and a section of the south wall 1.11 meters in length. Another such passageway is on the south side in an approximate line with the north-south axis of the platform (fig. 347). At this point the facing of the great molding had fallen with a consequent destruction of the exterior opening of the passageway (figs. 51, *b*, and 53). The floor, side walls and roof, except for the section near the outer edge, were in a good state of preservation. A section of the west wall was formed of an extremely large beveled cornice stone (fig. 52). In size and plan this passageway is approximately identical with that on the east side (figs. 50 and 54).

The use of the passages is not known; they may, however, have been built to provide for quick run-off of water during times of heavy rainfall.

STAIRWAY

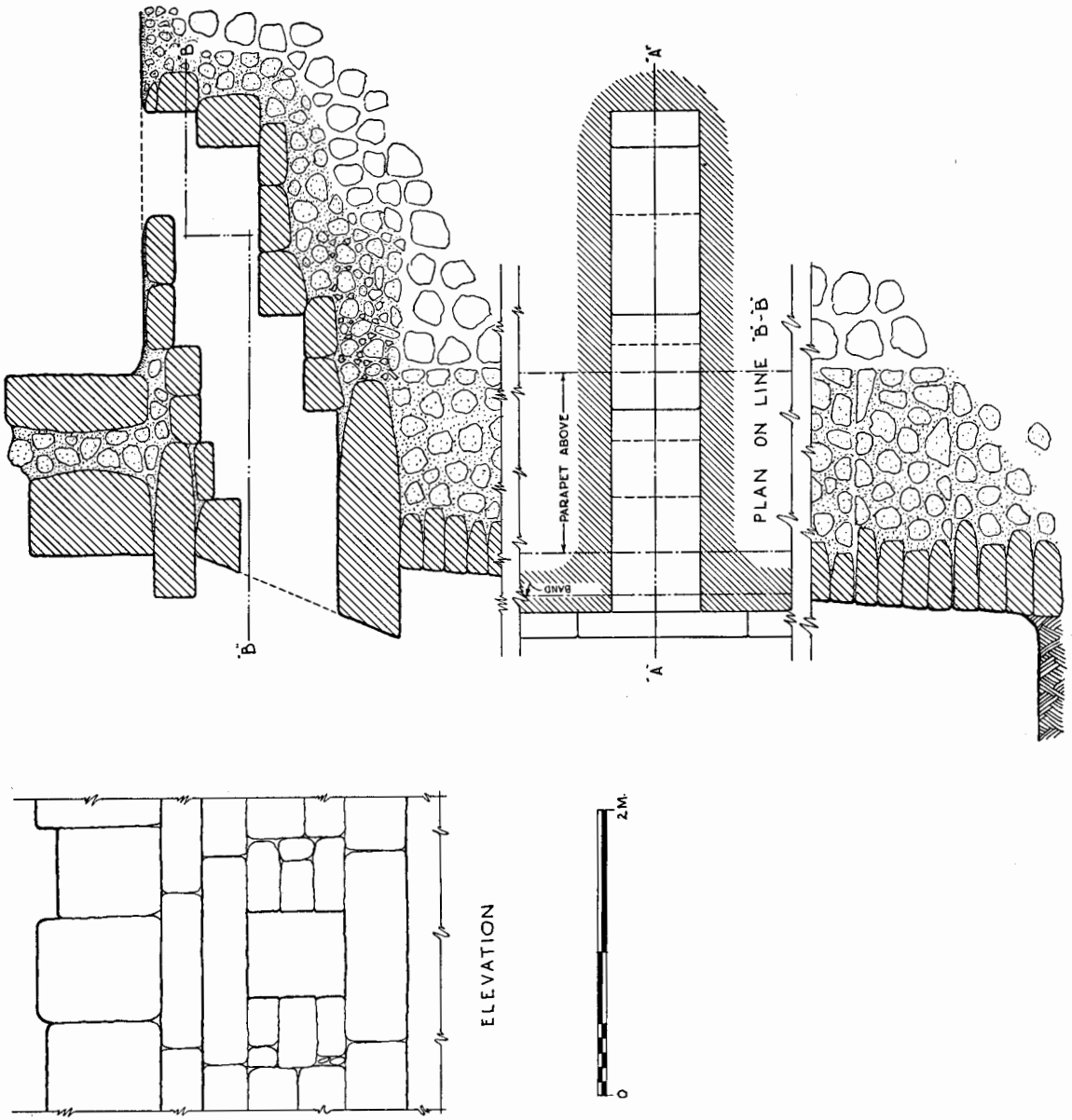
FIRST STAIRWAY

The stairway is centrally located on the west side of the lower platform (fig. 55), and while it has undergone several changes, the original plan has, in the main, been followed. In its construction the platform facing was omitted for a distance of 13.56 meters. A masonry buttress and surmounting wall, contemporaneous with the platform, were built in this unfaced section.

The mass of masonry of the buttress projects 95 cm. from the line of the base of the platform (fig. 56, *a*) and, rising from the same level, slopes inward so that at the lower margin of the beveled molding it is in alignment with the facing of the platform (fig. 57). The buttress was crudely constructed (figs. 62 *a*, and 79), for the most part entirely of unfaced stone, and was very heavily plastered on the front or west side as well as on both ends. Though the plaster was applied quite heavily, the unevenness and irregularity of the masonry is apparent (fig. 63).

At the top of the buttress, set in 45 to 60 cm. from the edge, a wall rose to the height of 1.70 meters (figs. 57, 62, *b*, and 79). The wall, like the buttress, of which it may well be only a continuation, is made up of very rough masonry laid in much mortar. The buttress, and the wall which it supports, seemingly had no other purpose than to retain the loose fill of the platform during the construction of the stairway.

At the time of building the platform, a general level for the basal terrace was established (fig. 57 E). It is represented by a well-packed and polished red-painted lime-plaster floor which was encountered at all points on the west side where test pits were made. This floor rounds up against the platform facing and also against the sides and front of the buttress (fig. 63). The plaster covering the buttress seems to be a continuation of that of the floor. An earlier level had been established 57 cm. below the floor. The lower zone of the platform and the buttress extend 5 cm. below this level (figs. 58 I and 59), which is quite uneven and shows no sign of having been carefully smoothed or painted and perhaps represents little more than a working level. The fill between these two levels is of rough unworked stone with only a small amount of mortar (fig. 58 H). Below the working level



SECTION ON LINE 'A-A'

FIG. 50—DRAWING SHOWING PASSAGEWAY THROUGH OVERHANGING APRON MOLDING OF LOWER PLATFORM.



FIG. 51—SOUTHEAST CORNER OF LOWER PLATFORM.

a, opening of east passageway through great overhanging molding; *b*, opening of a similar passageway on south side.



FIG. 52—LARGE, BEVELED CORNICE STONE.

Part of west wall of south passageway through overhanging apron molding.



FIG. 53—LOWER PLATFORM, SOUTH SIDE.
Facing of opening of passageway in apron molding has fallen.



FIG. 54—LOWER PLATFORM, SOUTH SIDE.
Platform facing and opening of passageway repaired.



FIG. 55—CARACOL REPAIR COMPLETED AT END OF 1930 SEASON.
View from the Red House. Stairway of lower platform is centrally located on west side.

the fill (fig. 58 K), of small stones and reddish-black earth, has a depth of 16 cm., where a limestone ledge was encountered (fig. 58 L).

A shaft under the stairway beginning at the north side and extending 4.57 meters to the south, a pit at the southern limits of the buttress to the underlying limestone and a trench made through the *embutido* at a central point in the stairway were all used to trace the extent of the buttress, its relation to the platform and stairway and to follow the red floor which extends, with an unbroken surface, continuously across the front of the buttress. No stairway nor trace of one was found rising directly from this early floor, except the stairway giving onto the low platform to be described in the following paragraphs.



FIG. 56—EXCAVATIONS FOR STUDY OF LOWER PLATFORM STAIRWAY, NORTH SIDE.

The buttress, *a*, rises from same level as lower platform facing. Facing wall, *b*, of early stairway is in line with and gives off directly from end of buttress.

The first construction in the building of the stairway was the erection of a large low platform in front of the buttress and resting directly on the red-painted plaster floor (figs. 57 E and 64). The platform has a length of 26.97 meters, thus extending for a distance of 6.70 meters beyond either end of the buttress (fig. 347), a width of 6.90 meters and rises an average of 1.85 meters above the basal terrace. A series of four steps (figs. 64 and 65) giving onto the low platform has treads 1.03 meters in width and risers 28 cm. in height, except the first riser which is somewhat greater.

An examination at the base of the first riser disclosed various floor levels. The uppermost (figs. 60 A and 61), a good floor with a decided reddish tinge, which, however, was not

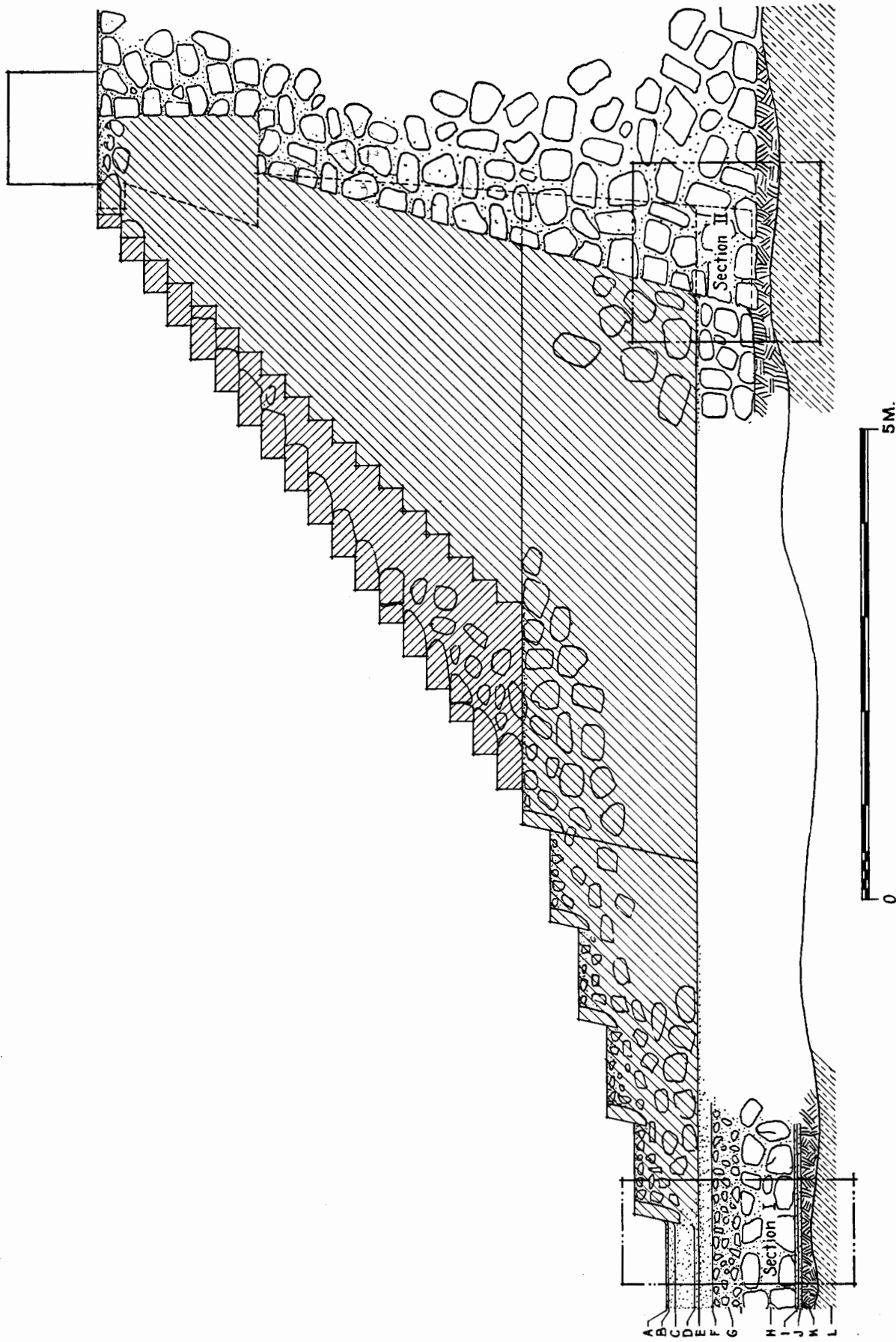


FIG. 57—SECTION THROUGH LOWER PLATFORM STAIRWAY SHOWING DEVELOPMENT AND GROWTH.



FIG. 59—LOWER ZONE OF PLATFORM.

Extends 5 cm. below red-painted lime plaster floor which rounds up against platform facing and sides and front of buttress.

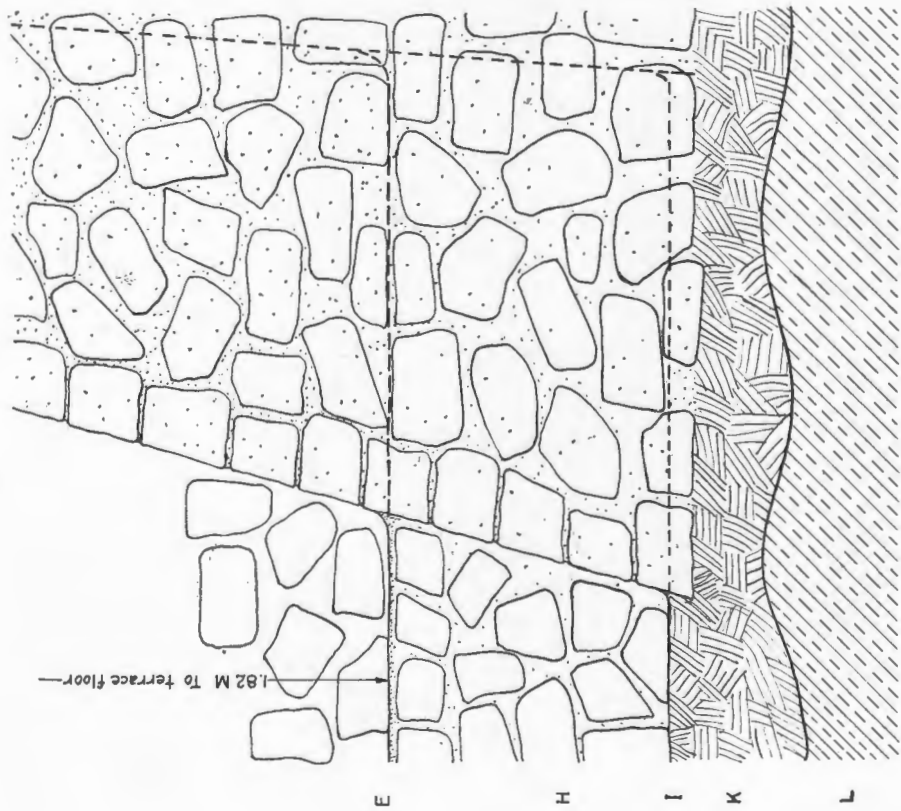


FIG. 58—SECTION II AT BASE OF LOWER PLATFORM STAIRWAY (see figure 57 for location).

E, very hard, red-tinted floor; F, working level; H, *embuido*; I, working level; K, layer of reddish-black earth; L, natural limestone.

traceable throughout the entire length of the step, is 33 cm. below the tread. A second floor (fig. 60 B), in color yellow with some red, is 35.5 cm. below the tread. An earlier very hard-packed red-tinted floor (fig. 60 C) is easily traceable across the front step, rounding up against it, as well as against the low stairway platform and the lower zone of the great main platform. This floor is 43.1 cm. below the tread of the first step. A fourth floor (fig. 60 D), 63 cm. below the first tread, curves up in line with the riser. It is very rough, not easily followed and doubtless represents only a working level. A fifth (fig. 60 E), a very hard-packed red-tinted floor, is 69.8 cm. below the tread. It extends under the step and low platform of the stairway and curves up against the great lower platform of the Caracol. This is the same floor which was found under the early West Annex platform. Below this floor, at a depth of 15 cm., a rough working level (fig. 60 F) was encountered, which extends under the stairway and rounds up against the large platform. Where this floor curves up against the great lower platform it is but 2.5 cm. below "E." Below this working level is a 30-cm. fill of earth and small stones (fig. 60 G). The *embutido* (fig. 60 H), which is of large unworked stone, has a depth of 57 cm. A layer of black earth 2.5 cm. in thickness (fig. 60 I) and beneath this a layer of *sascab* 2.5 cm. in thickness (fig. 60 J) lie below the *embutido*. A layer of reddish-black earth (fig. 60 K), varying in thickness as it follows the contour of the natural limestone (fig. 60 L), was next encountered. At this point the limestone is 1.90 meters below the first tread of the stairway.

The stones forming the first riser vary in length from 30.4 to 50.8 cm. The stones of the risers are elongated and somewhat flat and were set on end. The treads were made of large unworked stones as a base with a capping of small stones, all set with a great quantity of mortar. The four lowest risers have a gradient of 78° with the horizontal, and the fifth a gradient of 65° (fig. 65). The flight of steps is 21.48 meters wide and is placed symmetrically in relation to the low platform. The portion of the west facing of the platform, 2.59 meters in length, which was exposed at either end of the stairway, rises with a batter equivalent to that of the fifth riser, while the north and south faces of the platform rise vertically (figs. 64 and 66). The southern end of the low platform was later covered by the late West Annex platform (fig. 64; page 245).

EARLY STAIRWAY

A flight of steps rising from the low platform remained to be constructed before access could be gained to the great main platform (figs. 57 and 67). Investigations have shown that the first stairway built was torn out and replaced by a second. The early stairway had a width of 13.56 meters, which was indicated by remains of its facing walls at either side (fig. 68, *a*, showing north side). The walls are in line with the ends of the masonry buttress, are built against its west face and give off directly therefrom (fig. 56, *b*) and, while partially razed, were found extending to within 2.97 meters of the western edge of the low platform (fig. 69). The plastered floor of the low platform, which was applied at that time, rounds up against the side walls of the stairway. As the floor associated with the walls is known to have extended only slightly over 2.30 meters inward from the edge of the low platform it is a fair assumption that 67 cm. of the facing wall was removed when the stairway was razed.

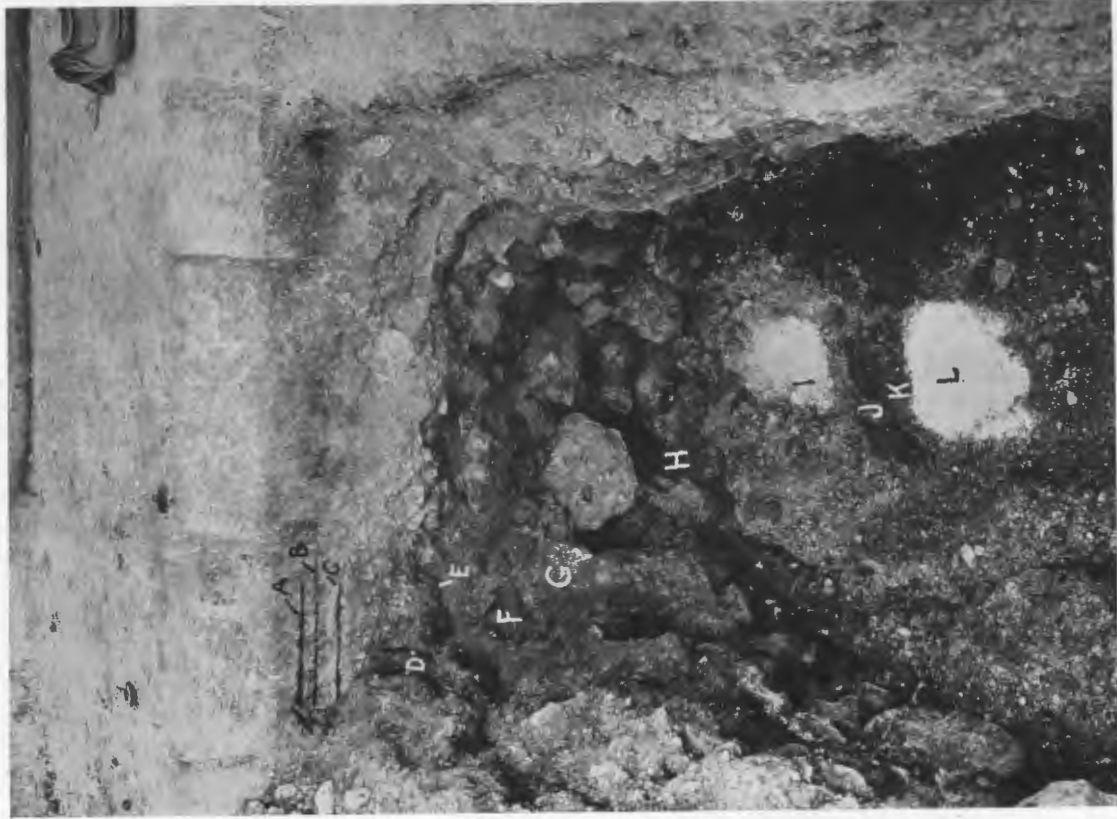


FIG. 61—TRENCH AT BASE OF LOWER PLATFORM STAIRWAY.

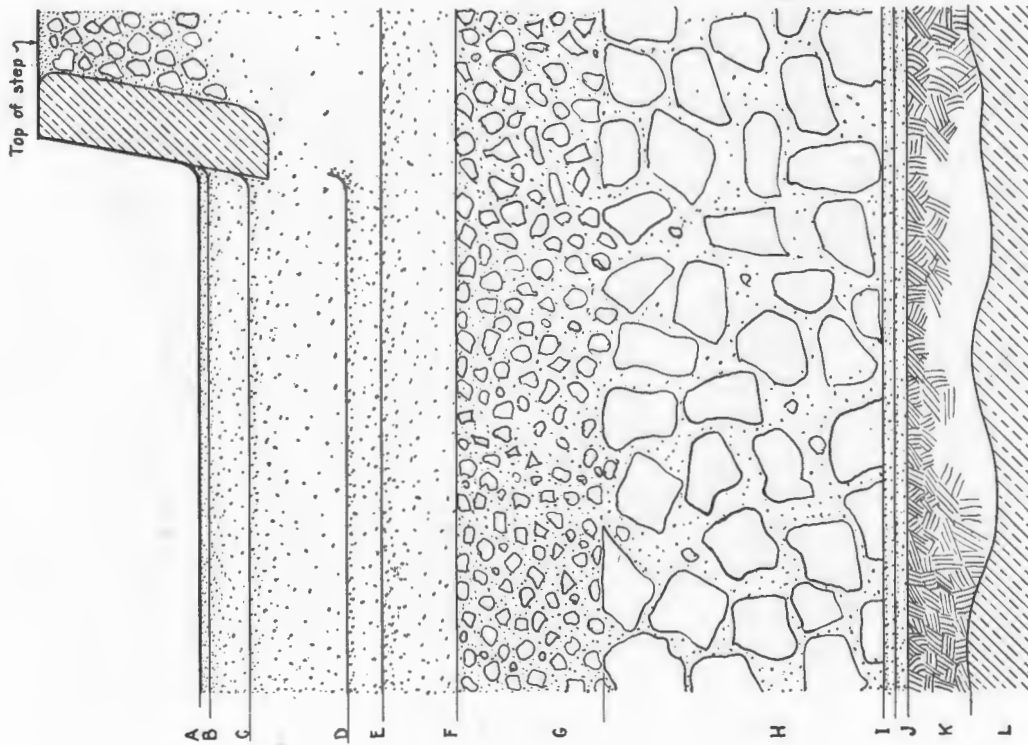


FIG. 60—SECTION I AT BASE OF LOWER PLATFORM STAIRWAY
(see figure 57 for location).

A, well-finished floor, not traceable throughout entire length of step; B, second floor, in color yellow; C, very hard, red-tinted floor; D, working level; E, very hard, red-tinted floor; F, working level; G, 30 cm. fill of earth and stones; H, *embutido* of large, unworked stones; I, 2.5 cm. layer of black earth; J, 2.5 cm. layer of *sasab*; K, layer of reddish-black earth; L, natural limestone.



FIG. 62—TRENCH IN THE *embuido* OF LOWER
PLATFORM STAIRWAY TO STUDY NATURE OF
FILL AND BUTTRESS.

Rising above and resting on buttress, *a*, is rough masonry wall, *b*.



FIG. 63—PIT MADE FOR THE STUDY OF BUTTRESS BEHIND STAIRWAY.

The red-painted lime plaster floor rounds up against buttress. Unevenness and irregularity of the masonry is clearly seen.



FIG. 64—VIEW OF CARACOL FROM RED HOUSE AT CLOSE OF 1930 SEASON.



FIG. 65—FOUR STEPS, WITH BROAD TREADS, FORM LOWER SECTION OF STAIRWAY GIVING ONTO LOWER PLATFORM.



FIG. 66—STAIRWAY GIVING ONTO LOWER PLATFORM.

North end of platform associated with lower section of stairway rises vertically, on the west or front rises with a batter equivalent to that of fifth riser.

None of the worked stones of which the stairs were built were in position or found in the fill, so that the type used is not known. The location of the first riser of the stairway is, however, indicated by the upward curving of the plaster floor 2.36 meters from the western edge of the low platform. The stairway rose at an angle of approximately 47° from the horizontal. The fill behind the stairs was quite open and loose and no worked stones were noted. There was no indication that the original stairway had balustrades.

LATE STAIRWAY

The late stairway rose 34 cm. inward from the western edge of the low platform and was built directly on the plastered floor which had been placed in front of the early stairway (figs. 70 and 79). Not including the side facing walls, it had the same width as the earlier and rose at an angle of 35° (figs. 57 and 67). The backing, placed between the steps and the loose fill of the early stairway, contains much mortar and is solidly packed. A number of horizontal strata in the fill seem to represent arbitrary levels established in the course of laying the steps (fig. 71).

The late stairway is composed of 18 steps, the vertical risers measuring 25 cm. and the treads 35 cm. The stones of the stairs are variform (fig. 73); some are specially cut, having the vertical face the exact height of the riser for placement on the long tenon or tread of the step below; others, like wall stones, entirely lack tenon or tread. One example of definite reuse of material was a sculptured stone found *in situ* (fig. 72). It is in the seventh riser, 1.52 meters from the south balustrade. The stone is 24 cm. square and sculptured with a rosette design. Similar stones were reused in the late stairway leading to the third-story chamber of the Monjas. It is within reason to suppose that plain stones, which had been salvaged from the early stairway, were also reused in the late stairway of the Caracol.

BALUSTRADES¹

As the stairway was found in a poor state of preservation, there is some doubt as to whether the standing portions of the facing walls at either side belonged to the late stairway. They were, however, unnecessary as they were replaced by its facing walls, which, 45 cm. in width, rest on the plastered floor of the early stairway, abut its facing walls and the lower zone and molding of the main platform (fig. 74). A second plastered floor was laid on the terrace and curves up against the side facing walls of the late stairway.

The capping of this wall was formed of large blocks, averaging 45 by 55 cm., carved in deep relief representing intertwined serpents (fig. 75). The stones have a longitudinal concavity on the under side (fig. 76), which conforms to a convex setting of the final course of the *embutido* on which they rested. Such a construction served to prevent side slipping of the large sculptured capping blocks. In workmanship and technique, the sculpture has its counterpart in the balustrades of the upper platform (page 129) and at the Temple of the High Priest's Grave.

At the base of the stairway, on the north and south, capping blocks were found *in situ* (figs. 77 and 78). While no serpent tail pieces were found at the bases of the balustrades,

¹ While there has been some discussion as to the use of the term "balustrade," the writer feels that since precedent has been so long established for its use in this connection, there can be no question as to the meaning implied.

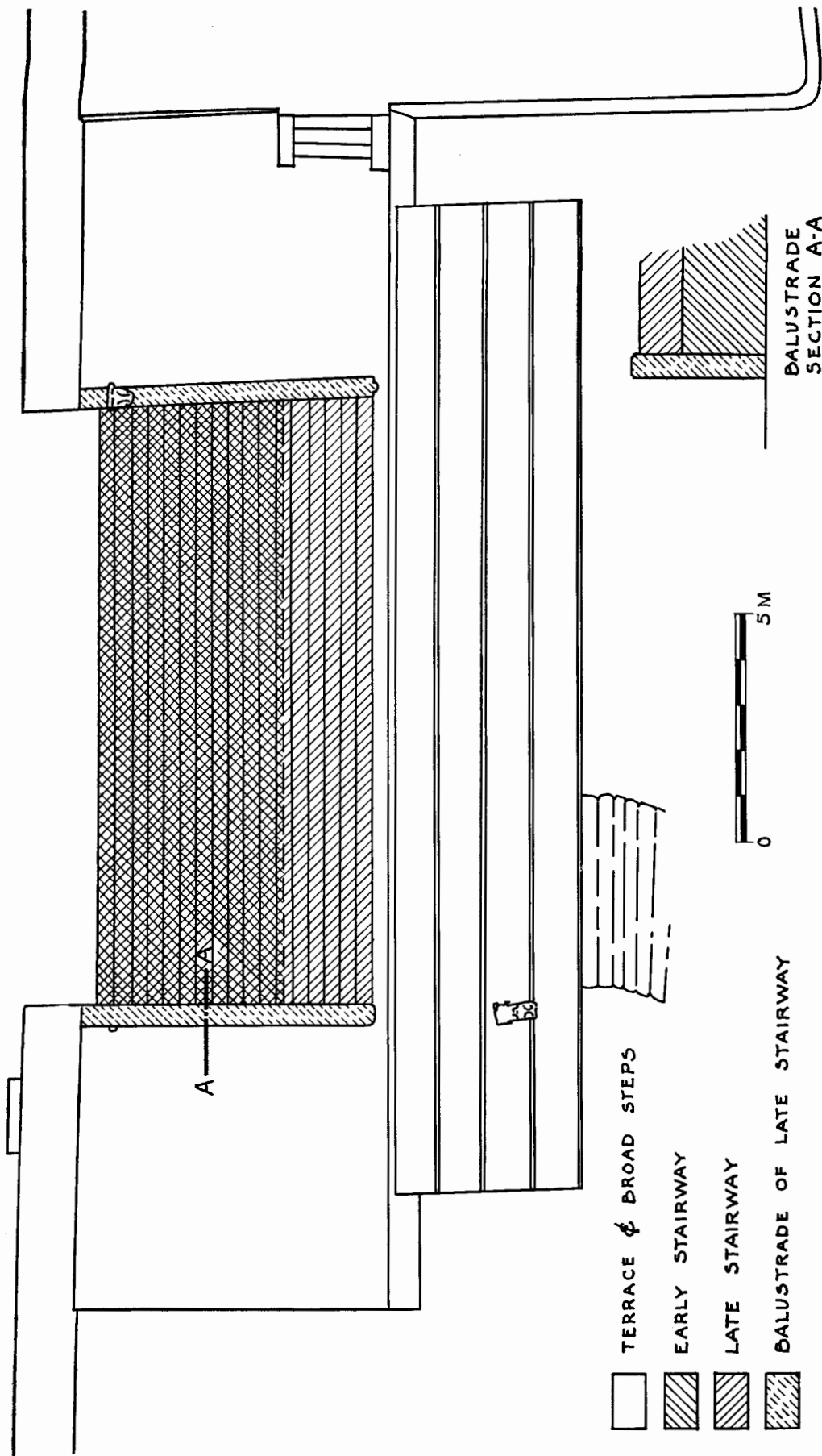


FIG. 67—PLAN OF LOWER PLATFORM STAIRWAY SHOWING SUCCESSIVE STAGES OF GROWTH.



FIG. 68—UPPER SECTION OF LOWER PLATFORM STAIRWAY, NORTH SIDE.
a, facing wall of early stairway; *b*, facing wall of late stairway.



FIG. 69—UPPER SECTION OF LOWER STAIRWAY, SOUTH SIDE.
a, facing wall of early stairway; *b*, facing wall of late stairway.



FIG. 71—FILL BEHIND STAIRWAY OF LOWER PLATFORM SOLIDLY PACKED.



FIG. 70—TRENCH, LOWER PLATFORM STAIRWAY.
The fill, *a*, behind the late staircase was built directly on the plastered floor in front of the early staircase.



FIG. 72—LOWER PLATFORM STAIRWAY.

Sculptured stone used in seventh riser and 1.52 meters from southern limits of steps.



FIG. 73—LOWER PLATFORM STAIRWAY BEFORE REPAIR.



FIG. 74—LOWER PLATFORM STAIRWAY, SOUTH SIDE.
With facing walls abutting lower zone and molding of great lower platform.



FIG. 75—LOWER STAIRWAY, NORTH SIDE.

Some of large blocks carved in representation of intertwined serpents which capped side facing walls were found on surface. *a*, part of a large serpent head was found on second broad tread of stairway.

and no heads which may unquestionably be associated with the bases, in all probability two intertwined serpents were represented. One with its head at the top of the balustrade, the body wreathing downward terminates with its tail at the base; the other with its head at the base, its body intertwined with that of the first, terminates at the top. Precedent for this arrangement is in the balustrades of the upper platform stairway. The serpent bodies are represented in lateral view, except on the final stone, where one is depicted turning over to the ventral side (figs. 79, 80, 82 and 83). With this stone the balustrade terminates in a great masonry block in which is tenoned a projecting serpent head.

An L-shaped stone cut to fit vertically between the body and the projecting head of the serpent is of special note. For the most part the sculpture on the long arm of this stone represents the ventral plates of the serpent, thus connecting the final stone of the sloping balustrade to the ventral plates as sculptured on the lower jaw. The stone projects 18 cm.

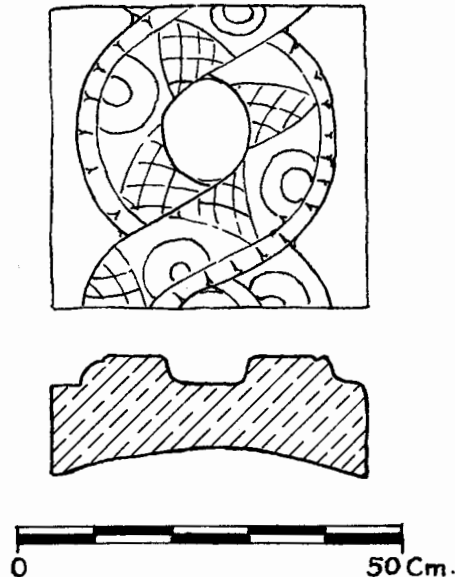


FIG. 76—SCALE DRAWING OF CAPPING BLOCK OF SIDE FACING WALL OF UPPER PLATFORM STAIRWAY.

beyond the outer edge of the balustrade, with the short arm extending upward along the side of the serpent head. While the tops of the upward projections of these stones of both balustrades were broken off, enough remains to show that they represented the tails of the serpents (figs. 82 and 83).

The head replaced at the top of the south balustrade, during the repair of the stairway by Carnegie Institution (fig. 84), undoubtedly came from this position, as it was found in the débris directly below (fig. 85). It projects 45 cm. from the masonry block in which it is tenoned and differs in form from other serpent heads associated with the stairway or noted elsewhere in the city. The lip of the lower jaw is not horizontal as is generally the case, but slopes upward toward the back of the mouth (figs. 81 and 86). Thus the lower and upper jaws are more nearly the same length than is commonly noted in other serpent heads found at Chichen Itza. The ever-present volute on either side of serpent heads, just back



FIG. 77—LOWER PLATFORM STAIRWAY.
Sculptured capping block of north balustrade found *in situ*.



FIG. 78—SCULPTURED CAPPING BLOCK OF SOUTH BALUSTRADE
FOUND *in situ*.



FIG. 79—STAIRWAY OF LOWER PLATFORM.
Trench exposing buttress and vertical wall behind stairway.



FIG. 80—PERSPECTIVE DRAWING OF SERPENT HEAD AT TOP OF SOUTH BALUSTRADE,
LOWER PLATFORM STAIRWAY.

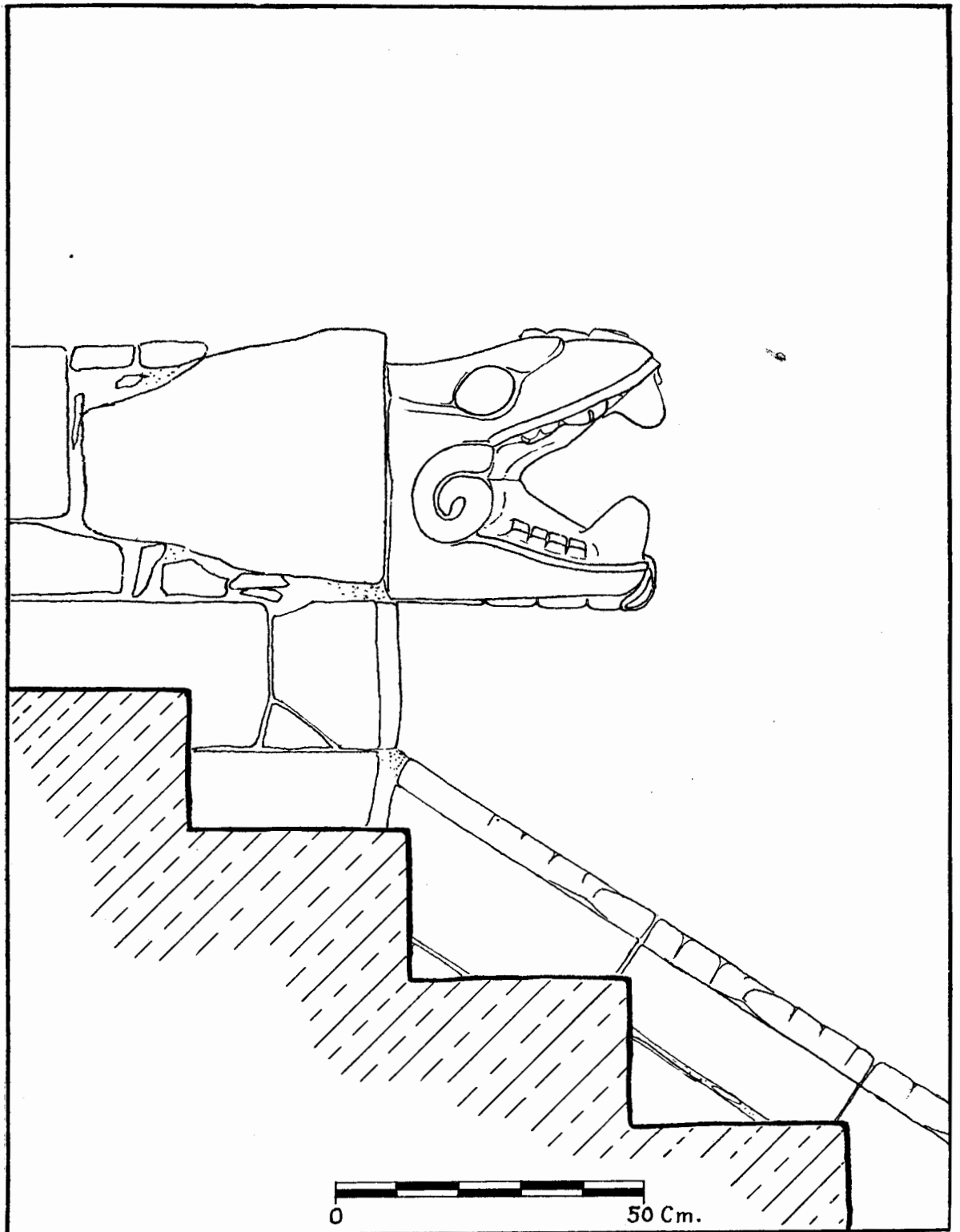


FIG. 81—SCALE DRAWING OF SERPENT HEAD AT TOP OF SOUTH BALUSTRADE OF LOWER PLATFORM STAIRWAY.



L-SHAPED STONE REPRESENTING VENTRAL PLATES AND TAIL OF A SERPENT.

FIG. 82—Specially cut to fit between body and serpent head at top of north balustrade.



L-SHAPED STONE REPRESENTING VENTRAL PLATES AND TAIL OF A SERPENT.

FIG. 83—Specially cut, placed between body and serpent head at top of south balustrade.

of the mouth, here differs somewhat; on the right side of the head, originating with the upper lip, it curves downward (fig. 86), while on the left side, originating with the lower lip, it curves upward (fig. 80).

The manner of finishing the lower ends of the balustrades is not definitely known. Of the 16 or 18 necessary stones, only 10 were found belonging to the south balustrade and 13



FIG. 84—REPAIR OF SOUTH BALUSTRADE OF LOWER PLATFORM STAIRWAY.
Serpent head ready to swing into position.



FIG. 85—SERPENT HEAD FOUND IN DÉBRIS ON LOW PLATFORM.
It had fallen from its position at top of south balustrade.

to the north. Even though no stones sculptured with the intertwining serpent motif were found between the serpent head on the second tread of the broad steps (fig. 87, *b*) and the stones found *in situ* at the base of the north balustrade, it is possible that the sculptured stones continued to such heads for both balustrades and were later removed, or the gap may even have been filled with plastered rubble.



FIG. 86—LOWER PLATFORM STAIRWAY.
Serpent head replaced at top of south balustrade.



FIG. 87—LOWER PLATFORM STAIRWAY SHOWING FOUR SERPENT HEADS RECOVERED DURING EXCAVATIONS.
a, serpent head with great square tenon; *b*, serpent head found on second broad tread of the stairway and in line with north balustrade; *c*, small serpent head found on second broad tread of the stairway; *d*, small serpent head found on the *sache*. All heads were left where found

SERPENT HEADS

A large serpent head recovered among others during the excavation of the stairway was fashioned with a great square tenon. It was lying to the south of the medial east-west line of the stairway and on the third broad tread (figs. 64, 87, *a*, and 90, *a*). The mouth has the common horizontal lower lip and long curving upper jaw. The under side of the lower jaw is sculptured in ventral plates which, together with the tenon, is proof that at one time the head projected from a masonry mooring. Since the original location of this head was not known, it was left where found.

Part of another large serpent head, represented by the portion back of the mouth and the large squared tenon, was found on the second broad tread (figs. 64, 75, *a*, 87, *b*, and 90, *b*) and in line with the north balustrade. The remaining portion of the head, the open mouth, was half buried in the terrace 1.52 meters west of the stairway and also in line with the north balustrade. This head is similar to the one previously described, to which it may well have been a companion. In the position found the use of the head is secondary as the under side of the lower jaw, sculptured in ventral plates, presupposes that it was originally so placed that the sculpture was visible. Later the head was intentionally placed on the second broad step forming the base of the balustrade, which is indicated by masonry rubble and a single faced stone *in situ* on the south side between the back of the tenon and the third riser of the stairway. The companion head first described may at one time have rested on the same step but in line with the south balustrade.

Two small heads, differing stylistically from each other, were also recovered. One rested on the second broad tread and to the north of the east-west axis of the stairway; the second was found on the *sacbe*¹ 2.43 meters west of the first step and 1.21 meters south of the line of the north balustrade. As the original location of these two small serpent heads was not known, they also were left where found (figs. 87, *c* and *d*, and 90, *c* and *d*). Figures 64, 88, 89 and 90 illustrate the repair of the stairway.

SACBE

A short secondary step is built against the first riser of the lower series of steps, 4.44 meters south of the northern limits of the stairway. It has a tread 66 cm. in width, which is 30 cm. below that of the first broad step, and has a length of 4.19 meters. Giving off from the step and at approximately the same level is a road paved with stone flags, which extends 36.5 meters in a northwesterly direction to the south wing of Building No. 3C11. The road or *sacbe* (figs. 91 and 347) is 4 meters wide and constructed of thin stones averaging 22 cm. square, which are carefully faced on the upper surface.

A short inclined element, also formed of thin stones dressed on one face, was noted near the step, giving off on either side of the *sacbe*. These stones have an average length of 25 cm., rising from the horizontal at an angle of 30°. On the north side of the *sacbe* the inclined element begins 30 cm. from the step and is 2.23 meters long (fig. 92). On the south it is 2.36 meters long and overlaps the corner of the step 10 cm.

A small platform outlined with wall stones, their faced sides upward, is parallel to and 6 meters west of the base of the stairway (figs. 91 and 347). It measures 1.80 meters north

¹ *Sacbe* is the name used by the present day Maya Indians of Yucatan for an ancient roadway. The word means "white road."



FIGS. 88 AND 89—REPAIRING LOWER PLATFORM STAIRWAY.



FIG. 90—LOWER PLATFORM STAIRWAY.

Repair completed. *Sacbe* in foreground. *a*, *b*, *c* and *d*, serpent heads found during excavation of stairway.



FIG. 91—*Sacbe* LEADING FROM BASE OF LOWER PLATFORM STAIRWAY TO SOUTH WING OF BUILDING 3C11.



FIG. 92—STEP BUILT AGAINST FIRST RISER OF GREAT STAIRWAY AND INCLINED ELEMENT ON NORTH SIDE OF THE *Sacbe*.



FIG. 93—CARACOL. VIEW OF WEST SIDE TAKEN IN 1925.



THE CARACOL TOWER.

FIG. 94—*a*, rises directly above the first circular platform, *b*; *c*, second circular platform and bench.



FIG. 95

—East side, looking south. The tower rises directly above first circular platform. At left is fallen block of five-member molding together with a section of arch and second vertical zone. Monjas in background.

and south by 1.30 meters east and west and 14 cm. high. The northeast corner of the platform projects 60 cm. onto the *sacbe*. Continuing south from the platform and apparently contemporaneous is a somewhat larger partially paved area now in a state of ruin (fig. 347).

UPPER PLATFORM

When investigations of the upper platform were first undertaken it appeared as a unit construction, an assumption which, however, later proved unfounded. The facing of the platform which had fallen, as well as the great mass of material from the collapse of the



FIG. 96—PIT BELOW EAST DOORWAY OF CARACOL TOWER EXPOSING SECTION OF FIRST CIRCULAR PLATFORM.

The facing is plain except for two three-member moldings and vertical cornice. To right is the second circular platform which encloses the first. *a*, orifice of weep hole.

tower, helped to cover the platform and thus made excavation quite necessary before any knowledge of its true nature could be ascertained (fig. 93).

In its final form the upper platform, quadrilateral in shape, measured 21.0, 24.0, 21.0 and 22.15 meters on the north, east, south and west, respectively (fig. 348). The vertical facing was built to a height of 3.04 meters where the band molding, overhanging 17 to 20 cm., rose to form the parapet. On the west a stairway, divided through its central axis by a niche, is flanked on either side by intertwined serpent balustrades. This, however, represents the fourth or final period in the building of the platform which eventually

supported the superstructure or circular tower. To make clear the various building stages, as revealed during the excavations, they must be considered in chronologic order.

FIRST CIRCULAR PLATFORM

Perhaps the earliest construction resting on the large lower platform is the solid circular masonry platform, discovered in 1930, which rises to a height of 3.69 meters and at the top is 10.97 meters in diameter (figs. 105, *a*, and 344). Its center located at approximately the junction of the north-south and the east-west medial axes of the lower platform, it lies directly beneath and coincides with the circumference of the Caracol tower (fig. 94, *b*).

FACING

The facing of this platform is plain except for two three-member moldings and a vertical cornice (figs. 96 and 97). An examination of its base showed that the lower zone rests on a layer of small stones, beneath which is the open fill of the great lower platform.

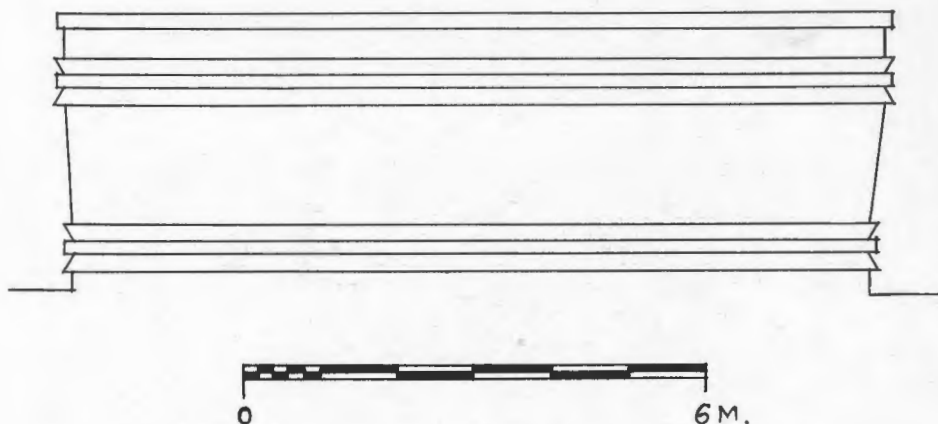


FIG. 97—ELEVATION OF FIRST CIRCULAR PLATFORM.

The circular platform does not rest on a well-defined floor nor does such a floor give off from it. At the base of the lowest vertical zone a roughened area of mortar curves up against its side, which, however, in no sense resembles a floor but is the first bit of mortar laid when the fill around the platform was built. The initial plain zone rises vertically for a height of 33 cm. and is formed of a single course of stone.

Resting on this plain lower zone is a three-member molding formed of a lower apron member, 22.8 cm. in vertical height, projecting 15 cm., its face receding at an angle averaging 62° , a 15-cm. vertical band projecting 10 cm., and an overhanging beveled member 23 cm. thick with an average slant of 72° . Set inward 10 cm. from the outer point of the overhanging beveled member, the medial plain zone rises to a height of 1.55 meters. The top of this plain zone overhangs its base an average of 8.8 cm. Above this is a second three-member molding similar to the first from which, in turn, rises a 38-cm. plain zone. To complete the facing of the circular platform is a vertical cornice 19 to 20 cm. in thickness which overhangs 7.6 cm. From the top of the upper plain zone to the base of the first plain zone, as shown in the pit on the east side, there is an overhang of 22.8 cm. On the western side this overhang is only 8 cm.



FIG. 98—SECTION OF FIRST CIRCULAR PLATFORM AS UNCOVERED NEAR EAST DOORWAY OF CARACOL TOWER.

Cord-holders are seen to right of doorway.

The stones of the facing of the circular structure are of good quality and similar in texture to those used in the tower. In the vertical zones they are fairly uniform in size, the exposed faces showing pecking marks resulting from abrasion which produced the finished surface. The corners of the stones are relatively square and carefully worked. Lacking long tenons for embedding in the *embutido*, the facing was applied as a veneer. No special effort was made to break joints, and throughout there is an almost total absence of chinking.

The individual stones forming the various members of the moldings, more often cut straight than with a slight curve, encircle the platform in a succession of planes, the curve to be attained by means of successive layers of plaster (fig. 98). The face of the circular platform had been covered with but a single layer of plaster, the primary coat, the surface of which was roughly striated and lacked any trace of color. The top of the platform was finished with a thin application of roughly troweled lime mortar on the solid *embutido*.

EMBUTIDO

A pit made in the floor of the inner room of the tower, between the southwest doorway and the central core, through the hearting of the circular platform to its base, and into the open *embutido* of the large lower platform, permitted a careful examination of the material used and the method of laying the fill. No faced stones, salvaged from abandoned or razed structures, were noted. Fairly large unworked stones, clean and showing no sign of weathering, perhaps brought directly from the quarries, formed the major part of the *embutido*. Small stones were used for chinking, which, together with a great quantity of mortar, united the mass into an extremely compact whole. The *embutido* of this circular platform is by far the most solid of any encountered in the Caracol complex.

The fill was built up in horizontal layers or tasks which extend through the circular platform, the cubic content of the layers being limited only by the height of the specific task. Five layers were noted which, starting at the base of the structure, have respective heights of approximately 33 cm., 60 cm., 1.54 meters, 60 cm. and 57 cm. The heights of these layers or horizontal levels correspond to those of the moldings and plain zones of the exterior facing of the circular platform. As each level was completed, the mortar was applied more heavily at the top, roughly surfaced and allowed to dry before the next level was commenced. This is proved by the fact that the material of any given task is not embedded in the mortar of the preceding, as it would be had the mortar been fresh when a subsequent level was built.

WEEP HOLES

The vertical pit in the *embutido* of the platform revealed a series of small shafts or weep holes which presumably allowed for a circulation of air through the great mass of masonry to keep the solidly built structure free from moisture.

The weep holes, in general, originate somewhere near the center of the platform and radiate to its periphery, not, however, always in a straight line nor horizontal. As the upper or the lower margin is formed by either the top or bottom of a task, the levels are relatively constant. The shafts average 10 cm. in width by 20 cm. in height. The masonry is merely the rough *embutido* of the platform left unsurfaced, except for a short distance inward from the orifice, where the shaft is usually plastered and carefully smoothed.

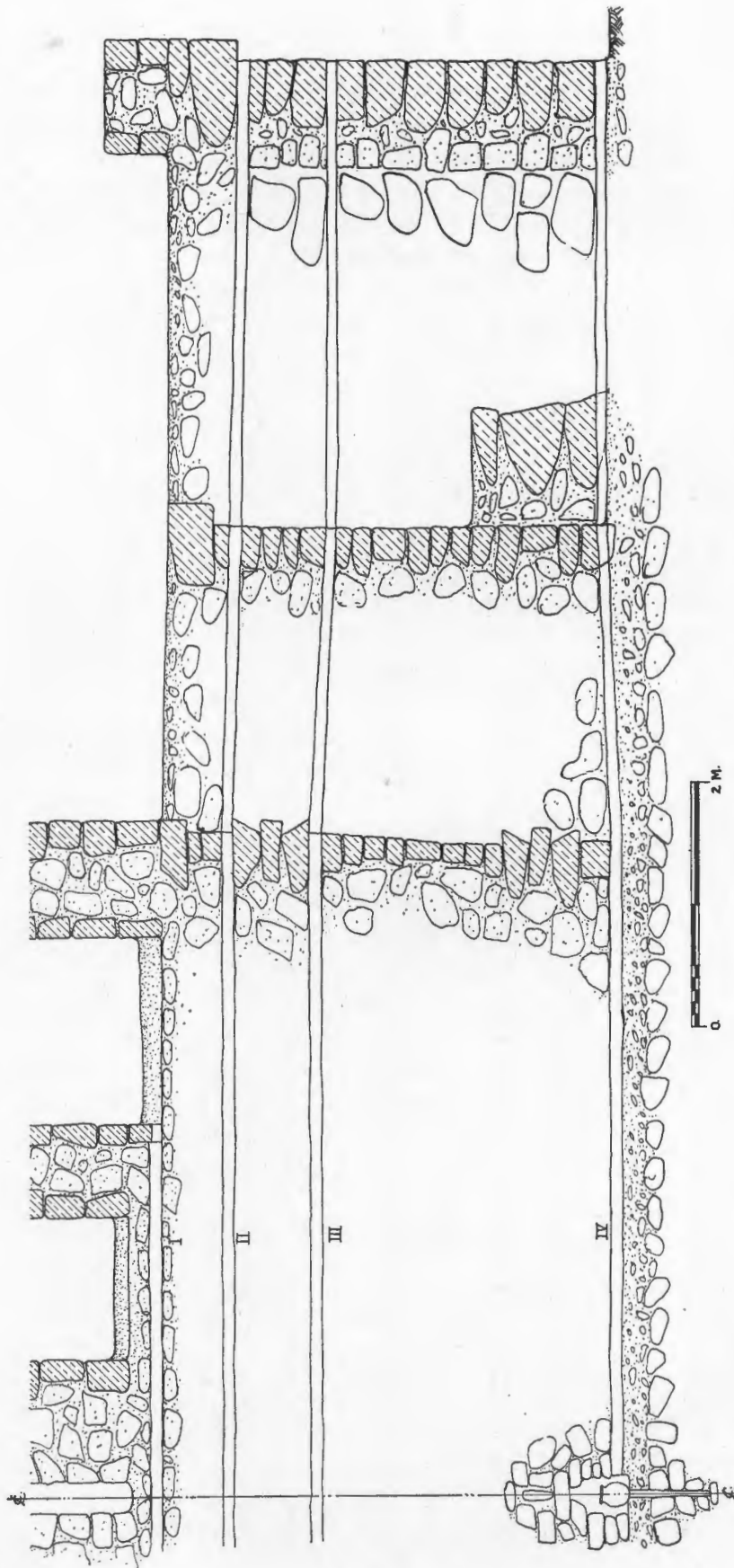


FIG. 99—DIAGRAMMATIC SECTION THROUGH HALF OF UPPER PLATFORM SHOWING LOCATION OF FOUR LEVELS OF WEEP HOLES.

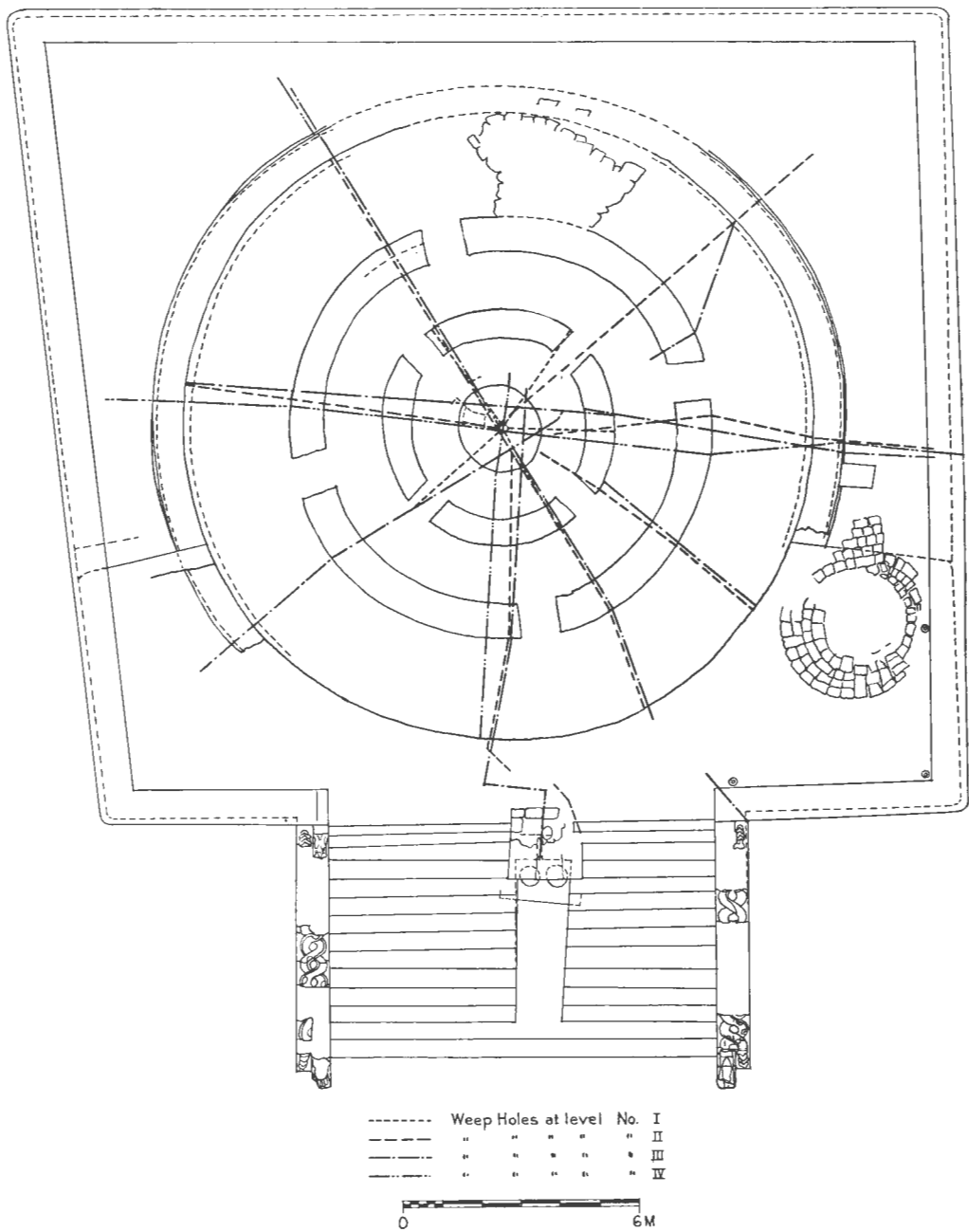


FIG. 100—PLAN OF UPPER PLATFORM SHOWING LOCATION OF WEEP HOLES.

The orifice of each shaft, roughly rectangular, oval or round, is carefully formed by chipping away a section of the edge of one of two contiguous facing stones of the plain zone. The openings, which invariably appear in the plain zones, average 10 cm. in height by 7.6 cm. in width.

The weep holes associated with the first circular platform are at three general levels (figs. 99, 100 and 343). The first group is on a level with the top of the upper three-member



FIG. 101—STONE-LINED CIST AT BASE AND IN CENTER OF FIRST CIRCULAR PLATFORM.

a, north weep hole giving out from cist; *b*, opening in floor of cist giving into a vertical shaft 69 cm. in depth.

molding (fig. 99, No. II, and fig. 100, No. II). Seven openings of shafts at this level were noted on the platform facing. The orifice of the shaft to the north of the east doorway of the tower is seen in figure 96. It measures 10 cm. in height by 7.6 cm. in width.

The second level of shafts is at the base of the upper three-member molding (fig. 99, No. III, and fig. 100, No. III). For this series of weep holes there are nine openings, all at the top of the medial plain zone just beneath the apron member of the molding. The

orifice of one of these shafts, north of the east doorway of the tower, has a diameter of 7.6 cm. and is plastered for a distance of 20 cm. inward from the platform facing, where the weep hole has been blocked with mortar.

The third or lowest level is at the base of the platform (fig. 99, No. IV, and fig. 100, No. IV). While the orifices of none of these shafts were found, the shafts themselves were noted giving out from the cist located at this level in the center of the platform (fig. 101). The shafts have bearings of N. 24°30' E., N. 65°30' W., S. 37°5' E. and S. 65°30' W. These weep holes are very roughly fashioned and have average measurements of 12 cm. in width by 20 cm. in height.

Another level was encountered when examination was made of the tower. This level, the uppermost, in which there are five weep holes, is 24 cm. below the floor of the inner room of the tower. The shafts open on the working level of the floor of the outer room; however their orifices were later closed by the red-tinted finishing floor curving up against the wall. The arrangement of these weep holes is seen in figure 100, No. I, and further discussion thereof is left until the consideration of the tower (see page 217).

During the examination of the *embutido* of the circular platform, lateral drifts at various levels were made from the original pit into the center of the great mass to determine the extent of the vertical shaft in the core of the tower noted in 1925 by Oliver Ricketson jr.¹ (page 225).

This vertical shaft does not extend into the *embutido* of the circular platform under consideration, but terminates at a point 27 cm. above the five weep holes, or on a level with the base of the facing of the masonry core of the tower (page 225).

CIST

At the base of the principal exploratory pit a lateral drift was made extending into the center of the platform. Directly in the center thereof, and resting on the layer of small stones and mortar which here served as the top of the lower platform, is a stone-lined cist (figs. 99 and 343). It is roughly circular in plan and has a diameter of 31 cm. and a height of 48 cm. (fig. 101). The walls of the cist are formed of the *embutido* of the platform left unfaced and unplastered. They slope inward toward the roof, which is formed of a single stone slab.

Above the slab is a vertical shaft 30 cm. in height by 15 cm. in diameter. A large stone had been placed on end in this shaft and the interstices tightly packed with mortar and small stones.

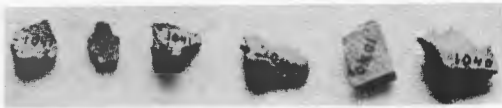
An opening in the center of the somewhat concave floor of the cist, which is of un-troweled mortar, gives into a vertical shaft having a depth of 69 cm. and a diameter of 6.3 cm. The upper 17 cm. of the shaft are roughly lined with mortar showing vertical striations which would tend to indicate that the shaft had been formed by placing wet mortar around a pole which was withdrawn after the mortar had partially set.

The use of the vertical shaft is not known. It, like the one above the cist, may have been a weep hole to allow for circulation of air through the mass of masonry to keep it free from moisture, or perhaps where a pole had been set, with a string looped over it, to

¹ Ricketson, 1925, p. 266.



a



b



c



d

FIG. 102—OLLA AND ACCOMPANYING MATERIAL FOUND IN STONE-LINED CIST.

a, olla, height 22 cm.; *b*, six fragments of human skull; *c*, shell ornament 3.5 cm. in greatest dimension; *d*, portion of sandstone disc, original diameter 12.7 cm.

serve in describing the circular form of the facing walls during the construction of the inner circular platform.

OLLA

An olla, 22 cm. in height, of Striated Porous Grey Ware, had been placed in the cist directly over the small opening in the floor (figs. 101 and 102, *a*). The olla was half filled with earth, in which the following material was distributed without apparent plan:

Several pieces of a sandstone disk, which, when fitted together, proved it to have had a diameter of 12.7 cm. and a thickness of approximately 0.35 cm. (fig. 102, *d*). The disk is plane on one side. On the other it is plane to within 0.5 cm. of the edge, whence it slopes with a slight curve to the margin. A yellow deposit on the disk is similar to that noted on the one found at the northwest corner of the Temple of the Warriors.¹ Seven small fragments of pyrite mosaic for which J. M. le Grange, who identified the material, has supplied the following notes:

“Pyrite (Fe.S) probable variety: marcasite, very common iron mineral, the variety marcasite being more generally found in flat tubular shapes, whilst pyrite more often occurs in cubes when perfectly crystallised. More often this sulphide of iron is decomposed at the surface of the ground but may be preserved in lime stone or other gangues (matrices) at the surface. As this material is one of the commonest in nature, no especial significance can be attached to its occurrence at any particular point. When the mineral is fresh and undecomposed, or if repolished, it is a brassy-yellow colour and has a metallic lustre. It therefore has a decorative value. On exposure for some time to a moist atmosphere it oxidises and assumes a brown colour due to the formation of a thin film of oxide. It is a hard brittle mineral and will take a good polish. The samples submitted all had apparently been artificially treated, as *only one side* was perfectly *polished*, the other being merely flat and possessing no polish.”

A single stone button 1 cm. in diameter and 0.4 cm. in thickness, one face of which was painted red. A shell ornament 3.5 cm. long and 0.2 cm. thick. Only one face of the ornament was carefully smoothed and polished (fig. 102, *c*). Fragments of the skeletons of 41 short-tailed shrews,² *Cryptotis mayensis* (Merriam).³ Six fragments of human skull bone. The largest fragment has a length of 2.4 cm. and a width of 1.5 cm. (fig. 102, *b*).

ABSENCE OF STAIRWAY

The facing of the circular platform, except beneath the portion of the five-member molding fallen *en bloc* from the southeast quadrant of the tower, was uncovered to a depth of 1.45 meters, 25 cm. below the base of the upper three-member molding. Sections of the facing of the platform beneath the block of fallen molding, 4.80 meters in length, were examined by tunneling from either side.

At two points, one to the north of the east doorway of the tower and the other to the south of the west doorway, the entire facing was laid bare. This disclosed the fact that the moldings and cornice completely encircled the platform. No stairway was encountered nor was there any indication on the platform facing where a stairway may have existed. The writer does not know of a single instance at Chichen Itza where, with masonry stairway contemporaneous to platform, the moldings extend the entire distance under the stairway.

¹ Morris, 1928, p. 297; 1931, Vol. I, p. 182.

² Smith, 1931. At Uaxactun Mr. Smith found the skeletons of 104 shrews in a mortuary vessel.

³ Specimens identified by Glover M. Allen, Museum of Comparative Zoology, Cambridge, Mass.

Had the original plan of the builders included a masonry stairway, it seems unlikely that the moldings would have encircled the platform. While there is no evidence on which to base the assumption, a stairway of wood may, however, have existed.

After the study of the platform facing had been completed the trench was filled, except for the two sections exposing the entire facing. That on the east was left open to the base of the circular platform. The walls of the pit were lined with cement-laid masonry and a pipe rail placed at the top suffices as a guard. The second pit, filled to within 20 cm. of the under side of the base of the upper three-member molding, was also lined with masonry.

SECOND CIRCULAR PLATFORM

A second circular platform enclosing the first was discovered in 1929 (figs. 94, 95, 103, 104, 105, *b*, 344 and 347). At its top the platform has a diameter of 16.35 meters and rises to within an average of 5 cm. of the height of the inner circular platform.

This outer platform, like the inner, does not rest on a well-defined floor, but rises from the layer of small stones which formed the capping of the open fill of the *embutido* of the great lower platform. The base of the platform facing is 6.3 cm. above that of the base of the inner circular platform.

FACING

The entire facing of the second circular platform was found intact, except for that section beneath the portion of the five-member molding of the tower which had fallen *en bloc* thrusting the platform cornice outward from its position on the vertical plain zone.

The vertical facing rises 2.98 meters to a 38-cm. band cornice which overhangs 20 cm. and completely encircles the platform (fig. 106). The masonry of the vertical zone is much cruder than that of the inner platform. The stones vary in size from small (10 by 12 cm.) unworked to large (25 by 43 cm.) irregularly shaped blocks only crudely pecked on the surface. The corners of these stones are round, rather than square as in the masonry of the facing of the first circular platform, and as a consequence much chinking was necessary (fig. 94). The tenons average 50 cm. in length, thus forming an integral part of the *embutido*, rather than a veneer.

The vertical cornice, formed of a succession of plane faces, is built of stones of varying size, and often a single stone only was used to effectuate its height. At most, only two courses were used, which always varied in thickness. The stone having the longer tenon was invariably placed underneath. The surfacing of the cornice stones shows considerable individual variation; some were only roughly worked, while others were dressed with utmost care.

A single layer of rough untinted plaster covered the cornice and vertical zone (fig. 107). At the base of the platform this plaster rounds out, forming a rough floor.

BENCH

A bench surrounds the base of the platform, except for a 12.19-meter section on the west (fig. 347).

This bench is built against the rough layer of plaster of the platform facing and averages 1.08 meters in width at the base. Its facing rises with an average 75° batter to a height of 96 cm. Above the batter rests a 20-cm. vertical cornice which projects 10 cm. The bench has an average width of 91 cm. at the top and an average total height of 1.09 meters.

NORTH END OF BENCH

The end of the bench on the north is roughly finished, but not more so than the battered facing. A single elongated stone used at the corner is faced on the battered side, as well as on the vertical end (fig. 110). This corner stone was not set on the rough floor associated with the platform facing, but rests on a base of small stones and mortar 7-cm. thick (fig. 109).

There is no cornice overhang at the end of the bench, the facing rising vertically from the base to the top. The end facing was roughly smoothed with lime mortar, not as if intentionally plastered, but more as though the mortar was rubbed down when setting the stones. The plaster on top of the bench rounds slightly downward at the end.

SOUTH END OF BENCH

An examination of the end of the bench on the south was somewhat complicated by the construction of the south section of the east wall of the first rectangular platform, which here abuts the second circular platform (fig. 111). As is seen in figure 114, the plaster of the platform facing extends behind the bench. There is no indication on the plastered facing of the circular platform that the bench continued westward beyond the south section of the east wall of the rectangular platform, nor was there any indication, by fill or by the upward curving of the floor, where the base of the batter would logically have been located.

It was not the intent of the ancient builders to make the bench continuous around the circular platform, since the north end is quite definitely terminated. The south end was found unfinished at the point of juncture of the circular and rectangular platforms. West of the wall of the rectangular platform the *embutido* surrounding the late circular platform, as shown in figure 114, extends inside of a projected line of the bench; therefore, had there been an extension of the bench farther to the west, it was torn out previous to the placement of the *embutido* and the building of the rectangular platform.

The first course of stone forming this section of the wall of the rectangular platform abuts the first course of the bench batter (fig. 113, *d*) which extends 15 cm. into the facing of the wall. The second course of stone of the rectangular platform (fig. 113, *a*) projects inside the line of the batter of the bench, which was possible as the second course of the bench batter at this point is missing. The cornice of the bench abuts the wall of the rectangular platform.

From the evidence presented, as gained through the excavations, there is little question but that the rectangular platform (page 97) was built before the bench was completed.

MASONRY OF BENCH

In general the masonry of the batter of the bench rises in two courses. The stone used varies as to form, shape and finish; and while for the most part it was crudely and roughly worked, good faced stone, crude unworked stone, a section of a large round corner stone, perhaps from some platform, all were used in the construction.

The bench was built with little precision, is irregular and does not carry the same degree of batter throughout (fig. 112). The plaster at the base of the facing of the bench curves outward to the floor which is badly broken and not traceable beyond a few centimeters.



FIG. 103—VIEW OF CARACOL FROM NORTH.
Second circular platform is shown enclosed by the later rectangular platform.



FIG. 104—VIEW OF CARACOL TOWER AND SECOND CIRCULAR PLATFORM FROM NORTH.
a, orifice of weep hole; *b*, roughly laid wall dividing *embutido* of western section of rectangular platform in two tasks.

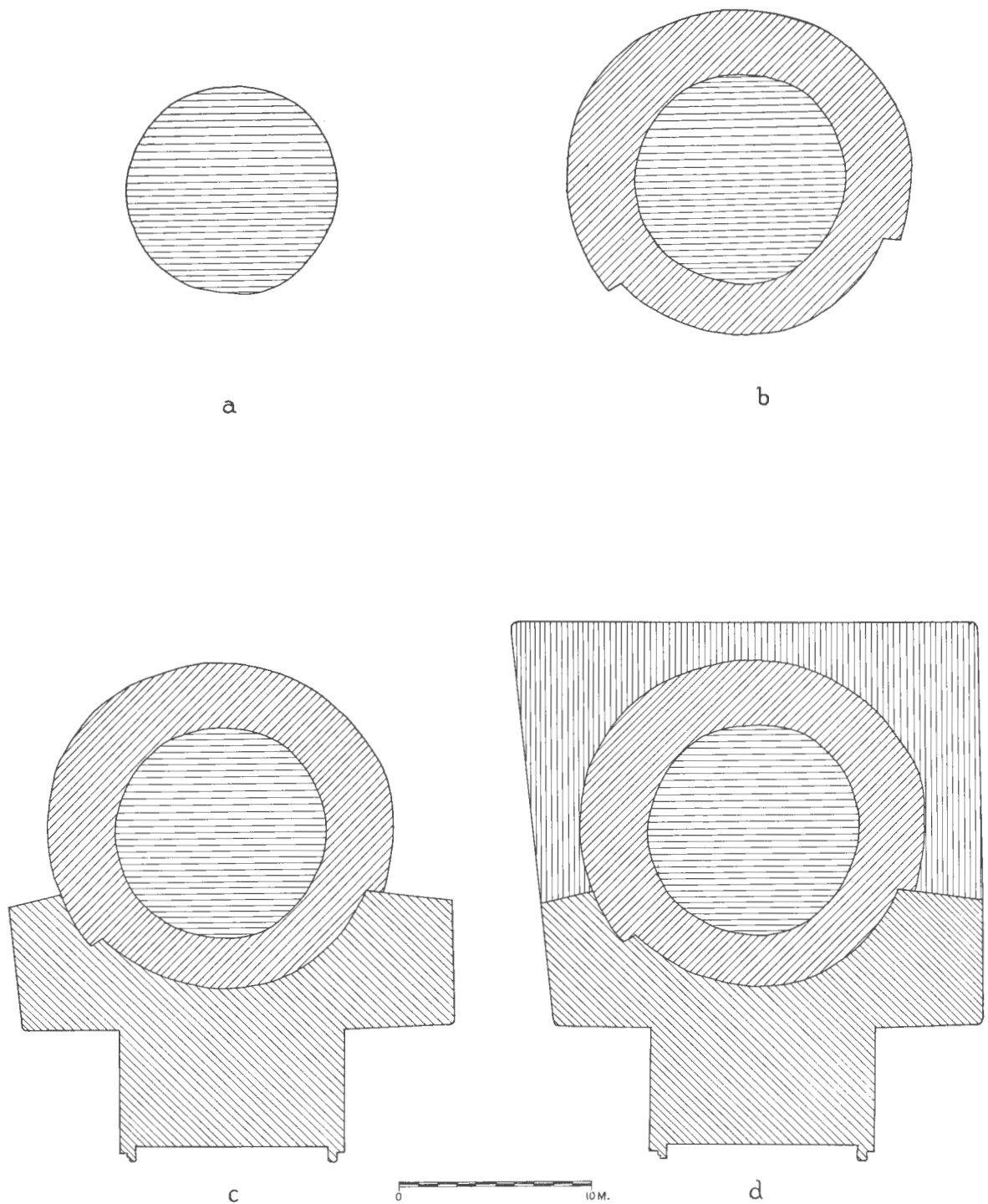
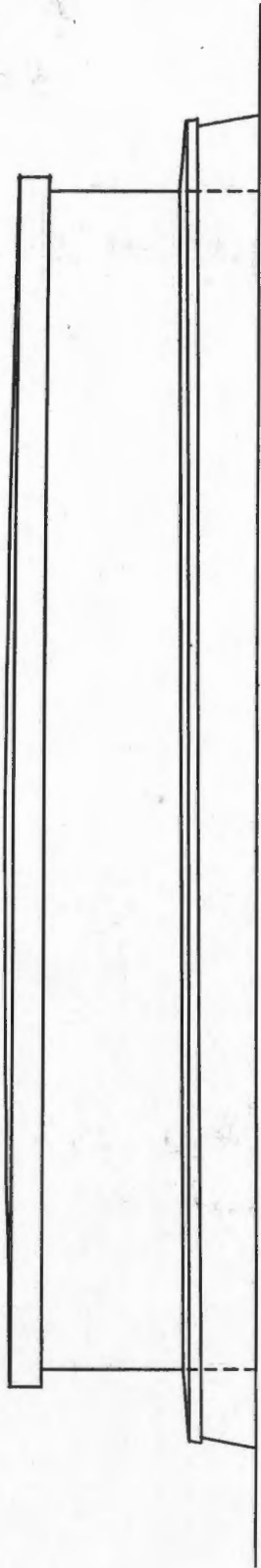


FIG. 105—PLANS SHOWING DEVELOPMENT AND GROWTH OF UPPER PLATFORM.

a, first circular platform; *b*, second circular platform enclosing the first; *c*, western section of rectangular platform enclosing approximately western third of second circular platform; *d*, the circular platform now entirely enclosed by addition of eastern extension of rectangular platform.



0 6 M.
FIG. 106—ELEVATION OF SECOND CIRCULAR PLATFORM.



FIG. 108—SECOND CIRCULAR PLATFORM ENCLOSED ON WEST SIDE BY RECTANGULAR PLATFORM.



FIG. 107—SECOND CIRCULAR PLATFORM, NORTH SIDE. Man leans against north portion of east wall of rectangular platform.

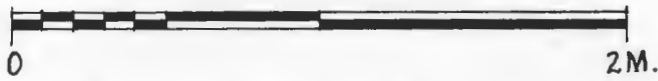
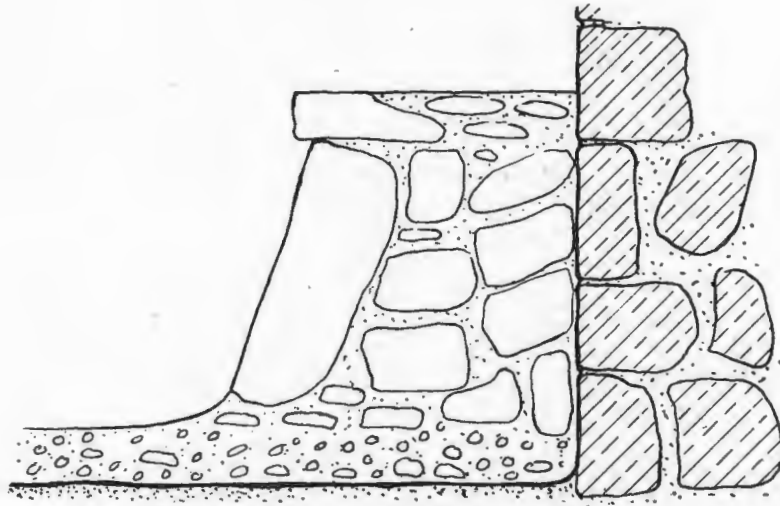


FIG. 109—END OF BENCH, NORTH SIDE OF SECOND CIRCULAR PLATFORM.



FIG. 110—END OF BENCH, NORTH SIDE OF SECOND CIRCULAR PLATFORM.
A single elongated stone is used at the corner.

Unfaced, faced and sculptured stones were used for the cornice. The unfaced stones show crude chipping, without any attempt having been made at pecking or working down the surface. The faced stones are carefully dressed. The sculptured stones, all carrying the same design, intertwined rope and curtain motif, are here unquestionably reused. In their reuse, it was necessary that the stones be reduced in thickness to that of the cornice, either the curtain or rope motif having been cut away (figs. 115 and 116). In laying the stones, no uniformity was maintained; either decorative element was placed at the top.

The top of the bench was covered with a heavy layer of lime plaster, which curved down over the cornice, completely hiding the sculpture.

MASONRY BLOCK

On the south, built against the bench, 1.60 meters from the east wall of the rectangular platform, is a masonry block (fig. 117) formed of roughly worked stone, with much mortar and heavily plastered; it has a width of 60 cm., a height of 38 cm. and projects 91 cm. from the base of the bench.

EMBUTIDO

The trench made for the purpose of examining the facing of the inner circular platform (page 78) also allowed for the study of the *embutido* between the inner and outer circular platforms.

The facing of the inner circular platform was entirely enclosed by a rough masonry wall, seemingly built as a single task (fig. 118). It has a width of 1.77 meters at the base and rises with a batter to the height of the inner platform, where it has a width of 81 cm. This wall, built of large unworked stone laid in mortar, is roughly faced. Between it and the large facing stones of the outer circular platform the *embutido* is very solid. No horizontal levels were noted. In the course of the examination of the *embutido* only four worked stones were encountered. One, a 19-cm. beveled cornice stone, was found in the northwest quadrant 90 cm. below the top of the platform. Three stones were uncovered in the pit south of the west doorway of the tower. Two, although they do not fit together, are possibly fragments of a single metate, inasmuch as the groove in both stones is 15 cm. wide by 17 cm. deep. The other stone, a portion of an elaborated colonnette, has a height of 30 cm. With the completion of the excavations, these stones were placed in the masonry-lined pit to the south of the west doorway.

WEEP HOLES

All of the weep holes, which have their orifices in the face of the inner circular platform, have extensions through the *embutido* of the outer platform and open through its facing (figs. 99, 100 and 104). The weep holes, as they extend through the *embutido*, are roughly fashioned. While, in general, they maintain the same levels as in the inner circular platform, some variation was noted. The bearings of the shafts closely follow those established in the first circular platform. The orifices are somewhat larger and less carefully formed, due, perhaps, in some measure, to the difference in quality of the masonry of the facing of the two platforms.

Four weep holes were found on the lowest level, three of which open through the bench; the fourth, on the west, where the bench is not present, opening directly through the facing of the platform (fig. 100). One on the north has its orifice 7.60 meters east of

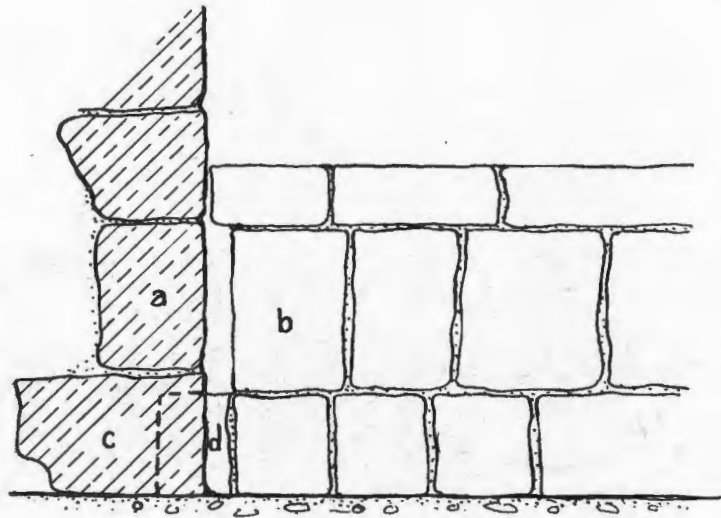


FIG. 111—*a*, south portion of east wall of the rectangular platform; *b*, second circular platform; *c*, bench of second circular platform.

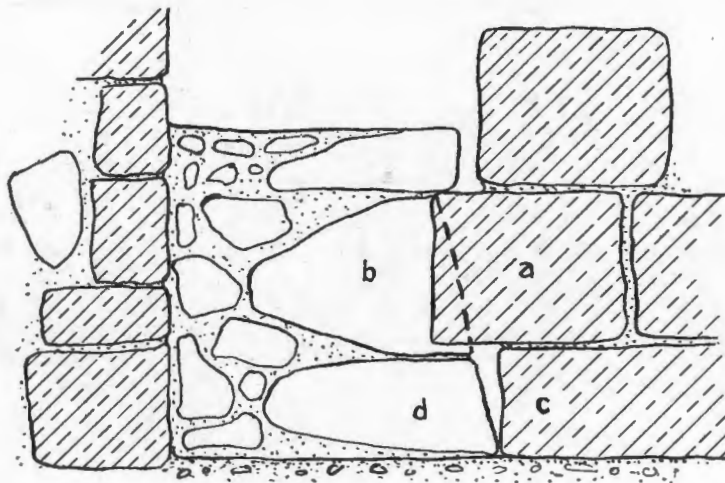


UPPER PLATFORM.

FIG. 112—*a*, north portion of east wall of rectangular platform; *b*, second circular platform; *c*, bench of second circular platform.



South Elevation



West Elevation

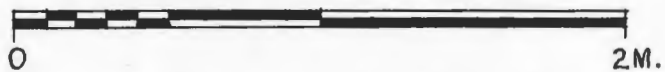


FIG. 113—SECTION AND ELEVATION OF END OF BENCH, SOUTH SIDE OF SECOND CIRCULAR PLATFORM.

the north end of the bench; 8.80 meters farther to the east is the orifice of another, but no opening was found for this weep hole through the facing of the inner circular platform. One to the south opens 43 cm. east of the block of masonry. The orifices are all at floor level.

ABSENCE OF STAIRWAY

Throughout the examination of the facing of the platform, no trace of a stairway was noted. The section on the west side of the platform, not occupied by the bench, would have been the logical place to have built a stairway. The extension of the cornice across this area, together with the plaster on the platform facing, might possibly indicate that here no stairway ever existed.



FIG. 114—END OF BENCH, SOUTH SIDE OF SECOND CIRCULAR PLATFORM.

Plaster of circular platform continuous behind bench.

The trench surrounding the platform, made during the excavations for the purpose of examining its facing, was refilled except for sections on the south and north where the surrounding *embutido* was walled off by cement-laid masonry (figs. 119 and 120).

RECTANGULAR PLATFORM

WESTERN SECTION

A further change in the plan of the upper platform was the construction of a rectangular platform which enclosed approximately the western third of the circumference of the late circular platform (figs. 105, *c*, and 347). This rectangular platform measures 22.15 meters on the west, 6.40 meters on the south and 6.50 meters on the north.

The section of its east wall which extends 3.50 meters south from the northeast corner abuts the facing and rests on the top of the bench associated with the circular platform, against which it also abuts (fig. 112).



FIG. 115—UPPER PLATFORM, NORTHEAST SIDE.

Embutido or fill enclosing outer circular platform is very loose and open. *a*, extension of weep hole from base of bench through *embutido* of rectangular platform; *b*, sculptured stone reused in cornice of bench.



FIG. 116—UPPER PLATFORM, NORTHEAST SIDE.

a, extension of weep hole from base of bench through *embutido* of rectangular platform; *b*, position of sculptured stone is reversed from that shown in figure 115, *b*.



FIG. 118—ROUGHLY FACED MASS OF MASONRY SURROUNDING THE
FIRST CIRCULAR PLATFORM.



FIG. 117—MASONRY BLOCK BUILT AGAINST BENCH ON SOUTH SIDE OF
SECOND CIRCULAR PLATFORM.



FIG. 119—EXCAVATION OF NORTH SIDE OF SECOND CIRCULAR PLATFORM.



FIG. 120—MASONS WALLING OFF NORTH SECTION OF TRENCH TO LEAVE PORTION OF SECOND CIRCULAR PLATFORM EXPOSED.

The southern section of the east wall, from the southeast corner to its abutment against the circular platform, measures 4.30 meters (fig. 111).

EASTERN SECTION

The final change in the plan of the platform was the extension of the north and south walls of the first rectangular platform to the east (figs. 105, *d*, and 347). In this form the platform measures 20.65 meters on the south, 24 meters on the east and 21 meters on the north; the west dimension remaining the same. The north and south facing walls of the extension about the northeast and southeast rounded corners of the western section of the



FIG. 121—NORTH SIDE OF UPPER RECTANGULAR PLATFORM.
Northeast corner of first section of this platform is standing except for cornice.

rectangular platform and extend eastward as projected lines of the respective north and south sides of this western section.

The east walls of the first rectangular platform abut the outer circular platform at the north and south, and the eastern section of the circular platform is enclosed by this eastern extension. Since it is the writer's belief that the eastern section of the rectangular platform was added even while the western section was under construction, the architectural features of both will be considered under a unit heading.

FACING

Rising to a height of 3.04 meters, the vertical facing of the platform is finished by a band cornice overhanging 12.5 to 20 cm. The height of the cornice is not known, but it



FIG. 122—EAST SIDE OF UPPER RECTANGULAR PLATFORM, SOUTHEAST CORNER.



FIG. 123—UPPER RECTANGULAR PLATFORM, EAST SIDE.

The facing has fallen outward with the stones retaining their relative positions.



FIG. 124—VIEW TAKEN IN 1925 OF UPPER PLATFORM AND TOWER, LOOKING TO SOUTHEAST.



FIG. 125—SMALL PORTION OF THE PARAPET.
Found *in situ* on south side of eastern section of rectangular platform.



FIG. 126.—STAIRWAY OF UPPER RECTANGULAR PLATFORM.
A single block of stone, *a*, forms terminus of parapet of platform at northern limits of stairway.
Men are sifting earth which came from niche dividing stairway.

may have been 38 cm., the same as that of the outer circular platform against which it abuts (fig. 111), unless the cornice, at the time of the construction of the first rectangular platform, rose to form the parapet. This, if true, presupposes either the extension of the parapet around the eastern section of the circular platform, for which, however, there is no evidence; or more probably it suggests a change in the plan of the rectangular platform itself after construction was under way, which is evidenced by the eastern extension.

The cornice stones on the southern section of the east wall of the first rectangular platform were found *in situ* (fig. 111). On the north they were not found (fig. 112); either they had been removed or had not been emplaced. Though the corners of the vertical zone at the northeast and southeast are round, the cornice stone found *in situ* at the southeast corner was a plane cornice stone, and while at the northeast corner the vertical zone had partially fallen (fig. 121), no cornice stone with rounded corner was found in the débris. Had these corners ever been finished with rounded stones, the stones were removed when the rectangular platform was extended to the east (page 101).

While the greater portion of the south facing wall and cornice of the eastern extension was standing intact, that on the north and east sides, as well as the northeast and southeast corners, had fallen (figs. 122, 123 and 141). The facing has the same height as the western portion and, like the latter, rises vertically to the overhanging cornice, which, in turn, rises vertically to form the parapet.

PARAPET

The parapet of the eastern and western sections of the rectangular platform, like the cornice, is continuous. The cornice rises vertically forming the outer facing of the parapet, which, though badly fallen, was found to vary in width from 88 to 96 cm.

The terminus of the parapet on the inner side of the balustrade at the north limits of the stairway, a single block of stone measuring 93 cm. long, 50 cm. wide and 38 cm. thick, was found *in situ* (figs. 124 and 126, a). This stone was found set on edge, thus giving the parapet at this point a width of 93 cm. and a height, above the top step, of not less than 50 cm.

On the south side of the stairway a single stone 88 cm. in length formed the terminus of the parapet and defined its width at this point. A small portion of the parapet *in situ* on the south side of the eastern section of the rectangular platform (fig. 125) has a width of 95 cm.

Drains were not found in the sections of parapet remaining *in situ*. It is probable, however, that small drains similar to those found in the parapet of the lower platform were here also used. In the repair and reconstruction, small drains were placed at the floor level through the parapet on the south, east and north sides to allow for the quick run-off of water.

FLOOR

The floor on the top of the platform is 54 cm. above the base (fig. 127), or 20 cm. above the top, of the first course of the cornice of the final rectangular platform, the top of this first course of stone being at the same level as the top of the cornice of the outer circular platform (page 87; fig. 111). No floor level was noted at the top of the first course of the cornice associated with the western section of the rectangular platform, which is further

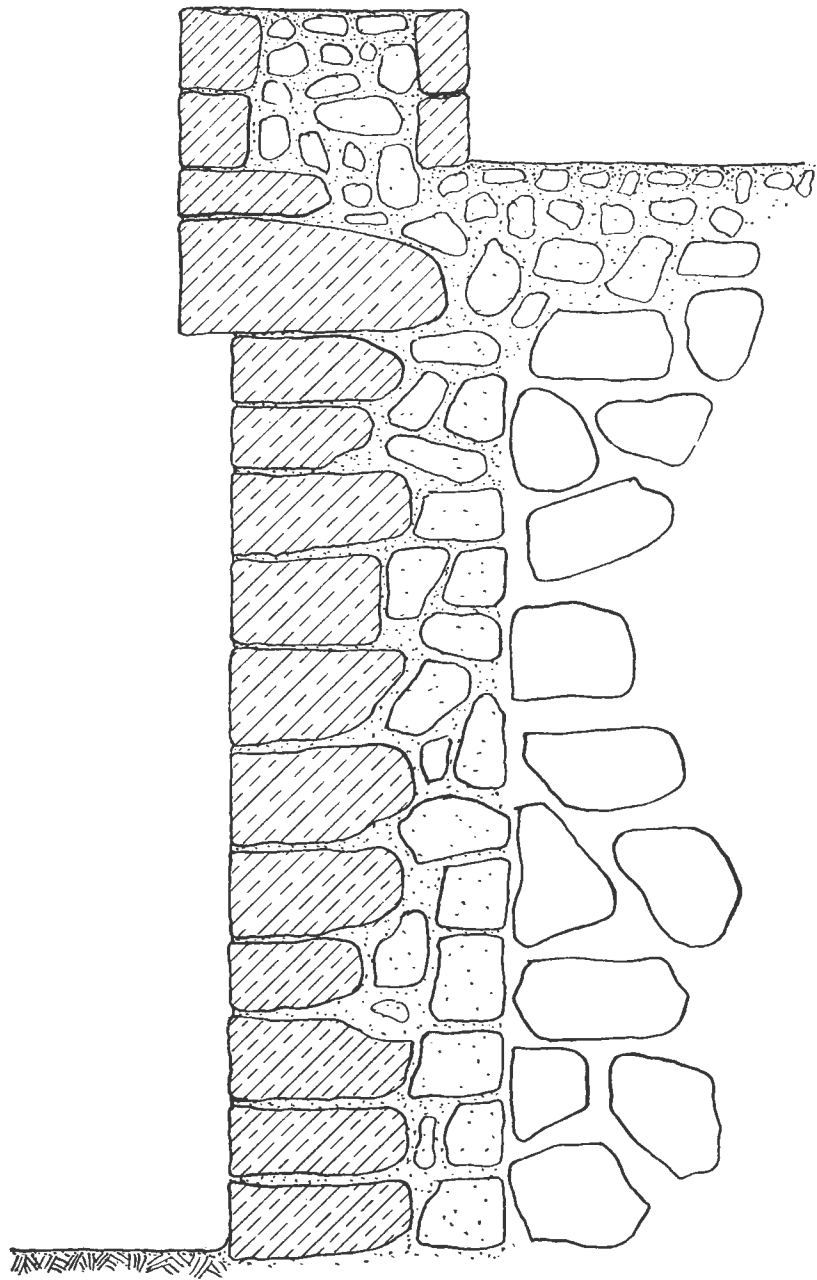


FIG. 127—SECTION THROUGH FACING OF UPPER RECTANGULAR PLATFORM.

proof that the eastern section and parapet were under construction before the western section was completed.

Only traces of the finished floor were found, as it was destroyed by the collapse of the platform walls as well as by the impact of material falling from the tower. The floor was formed of small stones embedded in mortar on which had been placed a heavy layer of red-tinted lime plaster (page 225).

An excellent specimen of Plumbate Ware, a jar 13 cm. high and 11.5 cm. in greatest diameter, was found by Dr. Ricketson in 1925 in the débris on the upper platform directly below the standing section of five-member molding (fig. 128, *a*).

FLAGGED AREA

On the floor of the upper platform in the southwest corner (figs. 130 and 347) is a stone-flagged area, the purpose of which is unknown. The area, roughly circular in shape, has an average diameter of 3.80 meters. An extension of the stone flagging which projects over the eastern limits of the first section of the rectangular platform increases the overall east-west measurement to 4.70 meters. In the center is an unpaved area 2 meters in diameter. Excavations at this point showed undisturbed *embutido* similar to that throughout the rectangular platform.

The flagstones were carefully worked and dressed and are relatively thin. They are voussoir-shaped, having two sides parallel and the other two truncated sectors, so cut as to fit into the sectors of the circular area and were placed in concentric rows, the widths of which remained fairly constant. Only occasionally was a single stone large enough to serve in two rows. The stones of the eastern extension are rectangular.

BANNER SUPPORTS

Set in the platform floor and directly within the line of the parapet, were stone rings which probably served for the reception of poles from which banners were suspended. Three rings were found *in situ*; one at the southwest corner, a second approximately 4 meters east of the southwest corner (fig. 130) and a third on the west side, south of the terminus of the parapet at the south limits of the stairway.

The rings average 17 cm. in thickness and 25 cm. in diameter. The diameters of the orifices vary from 6 to 10 cm. The stone rings were placed so that their upper surfaces were on a plane with the floor of the platform. Other stone rings, which probably served a like purpose, were found in the débris during excavation of the fallen facing walls of the platform.

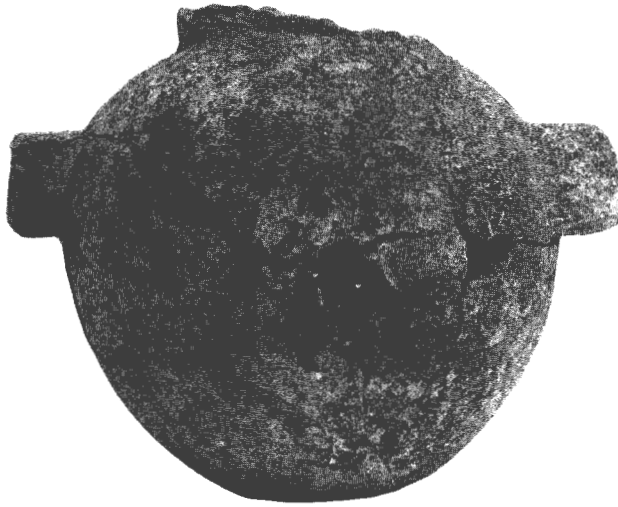
MASONRY OF WESTERN SECTION

The masonry of the western section of the rectangular platform shows considerable variation. In the north section of the east wall the stones vary in size from small (10 by 14 cm.) to large (84 by 104 cm.) and have tenons averaging 45 cm. in length. The outer surfaces of the stones are roughly pecked and the corners more or less rounded, with a consequent liberal use of chinking (fig. 112). The masonry of this section is better than that of the outer circular platform, but not comparable to that of the inner circular platform.

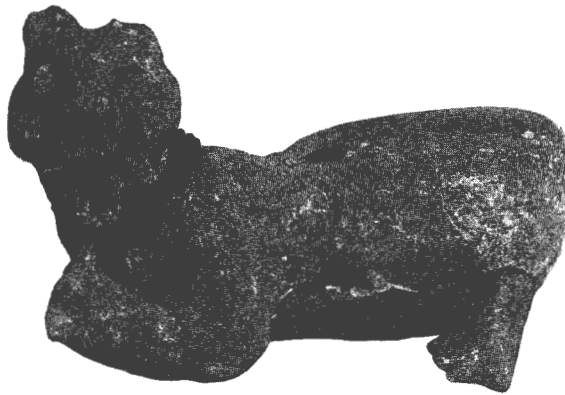
Much of the north as well as the west facing of the platform had fallen (fig. 131). On the western side the stones of the first course are large and carefully worked. Considerable chinking and use of smaller stones is seen on the south, where most of the original wall



a



b



c

FIG. 128—MATERIAL FOUND DURING EXCAVATION OF TOWER.

a, jar of Plumbate Ware, height 13 cm.; *b*, jar of Red Lacquer Ware, height 16.5 cm.; *c*, tiger effigy of Porous Grey Ware, length 19 cm.



FIG. 129—SOUTHEAST CORNER OF FIRST SECTION OF
UPPER RECTANGULAR PLATFORM.

Second stone from the top carries L-shaped design in shallow intaglio.



FIG. 130—FLAGGED AREA ON FLOOR OF UPPER RECTANGULAR PLATFORM.

A stone ring is seen, set in floor, near parapet.



FIG. 131—NORTHWEST CORNER, UPPER PLATFORM.
View taken in 1925 before excavation.



FIG. 132—EXCAVATION OF NORTHWEST CORNER OF UPPER PLATFORM.



FIG. 133—SOUTHWEST CORNER OF UPPER PLATFORM.
Photograph taken in 1925 before excavation.



FIG. 134—SOUTHWEST CORNER OF UPPER PLATFORM UNDER REPAIR IN 1929.



FIG. 135—UPPER PLATFORM, SOUTH SIDE, UNDER REPAIR.



FIG. 136—UPPER PLATFORM, SOUTH SIDE. REPAIR COMPLETED IN 1929.

a, sculptured stone found *in situ* near base and in south face of eastern section of platform; *b*, orifice of weep hole.



FIG. 137—NORTHEAST CORNER, UPPER PLATFORM, BEFORE EXCAVATION IN 1927.



FIG. 138—REPAIR OF NORTHEAST CORNER OF UPPER PLATFORM IN 1929.



FIG. 139—NORTHEAST CORNER OF UPPER PLATFORM AND TOWER.
Repair completed in 1929.



FIG. 140—NORTHEAST CORNER OF UPPER PLATFORM AND TOWER.
View taken in 1930 after uprights had been removed from beneath five-member molding and platform cleared of débris. *a*, opening left in facing of platform to give access to trench exposing north side of second circular platform.



FIG. 141—UPPER PLATFORM AND TOWER.
Photograph taken in 1925, showing southeast corner before repair.



FIG. 142—UPPER PLATFORM AND TOWER.
View of southeast corner taken in 1930, after repair was completed.



FIG. 143—UPPER PLATFORM.

Southwest quadrant of second circular platform and south end of bench. The *embutido* is loose and open.



a



b



c



d

FIG. 144—CARACOL UPPER PLATFORM, WEST SIDE.

a and *b*, olla of Striated Porous Grey Ware buried in floor of western section of upper rectangular platform; *c* and *d*, two obsidian flakes found in the olla.



FIG. 145—OLLA BURIED IN THE *Embutido* SURROUNDING SOUTHEAST QUADRANT OF OUTER CIRCULAR PLATFORM.



FIG. 146—OLLA OF STRIATED POROUS GREY WARE BURIED IN *Embutido* SURROUNDING SOUTHEAST QUADRANT OF OUTER CIRCULAR PLATFORM. IT CONTAINED PARTIALLY CALCINED HUMAN BONES.

stands *in situ* (fig. 141). The southern section of the east wall is made up of fairly large well-dressed stones with a relatively small amount of chinking (fig. 111). The corners of the platform are rounded. The use of a sculptured stone was noted at the southeast corner, where the second stone from the top bears a C-shaped design in shallow intaglio (fig. 129). The masonry of the facing wall has an average thickness of 90 cm. The inner limits are clearly defined by the roughly laid retaining wall of the *embutido* (fig. 132).

The plaster on the south side of the outer circular platform extends behind the abutting east wall of the rectangular platform. The single layer of rough plaster on this section of the abutting east wall does not round off onto the circular platform. Small stone chips were wedged between the east wall and the circular platform.

MASONRY OF EASTERN SECTION

The masonry of the eastern section of the rectangular platform varies but slightly from that of the western section. This is shown in figure 123 where the wall has fallen outward with the facing stones retaining their relative positions. A single sculptured stone, reused in the south facing of this section, was found *in situ* (figs. 136 and 153). It is of interest to note that the decorative motif on this stone, the curtain and rope design, is similar to that found on the sculptured stones reused in the cornice of the bench associated with the outer circular platform.

The repair of the upper rectangular platform is shown in figures 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142 and 158.

EMBUTIDO

The *embutido* is of large, irregularly shaped stones (fig. 143) and is much less compact than that of the outer circular platform, due to the use here of a smaller amount of mortar. The *embutido* of the western section was built in two tasks limited by a roughly laid vertical wall (figs. 104 and 108) in line with the east-west axis of the north section of the stairway.

The *embutido* of the eastern section of the platform is similar to that just described. No horizontal or vertical levels, indicating the extent of tasks, were noted.

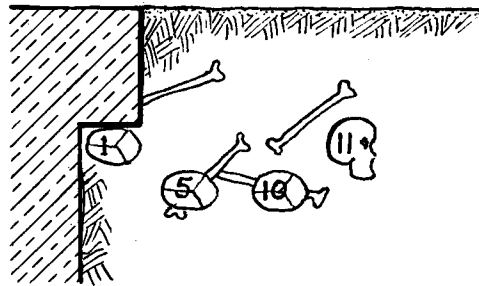
BURIALS

During the examination of the *embutido* of the rectangular platform, two types of burials, cremation and inhumation, were encountered. The cremated remains were found in two ollas, one of which was 10 cm. below the floor in the northwest section of the platform, 3.60 meters south of the north parapet and 1.67 meters east of the west parapet (fig. 144, *a*). This olla, made of Striated Porous Grey Ware, has a diameter of 35 cm. and a height of 38 cm. and was found in a fair state of preservation except for the upper portion which was badly broken (fig. 144, *b*). It was one-third filled with ashes, in which were found traces of burned human bones. Beneath the ashes and resting on the bottom of the olla were two obsidian flakes having lengths of 10 and 11 cm., respectively (fig. 144, *c*, and *d*).

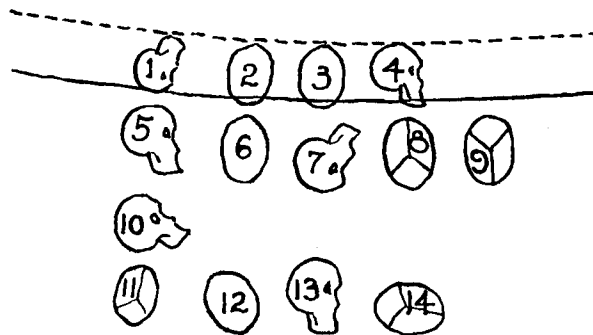
The other olla was also made of Striated Porous Grey Ware. It had a diameter of 20 cm. and was badly broken (fig. 145). It was found 1.98 meters west of the east parapet and 5.69 meters north of the south parapet, its base was 48 cm. below the platform floor. It contained ashes and portions of partially calcined human bones (fig. 146), but no funeral

offerings. A bowl of Slate Ware, badly broken, which had a diameter of 8 cm., was associated with the olla and may well have served as its cover.

The uncremated remains were buried between the outer circular platform and the masonry block dividing the upper portion of the stairway. The bones extended from 17 to 65 cm. below the surface and not more than 80 cm. west of the cornice of the circular platform. The first indication of their presence was the discovery of cranial fragments



Section



Plan .

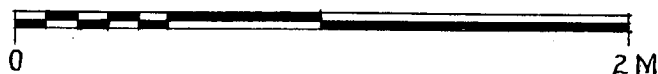


FIG. 147—BURIALS AT WESTERN EDGE OF SECOND CIRCULAR PLATFORM.

belonging to at least 14 individuals. Scattered through the fill were 18 different mandibles, complete or in part.

The skulls had been placed in four definite rows (fig. 147). The first row, in which there were four skulls, was directly under the overhanging cornice, the skulls touching the facing of the circular platform (figs. 148 and 149). Skull No. 1, at the north end of the row, was placed with its facial portion to the south, the occiput to the east. North of the skull and on a level with it was an innominate bone. Skull No. 2, directly south of No. 1, was



FIGS. 148 AND 149—HUMAN BONES FOUND BURIED BETWEEN OUTER CIRCULAR PLATFORM AND MASONRY BLOCK DIVIDING UPPER PORTION OF STAIRWAY.



FIGS. 150 AND 151—SKELETAL MATERIAL FOUND BETWEEN OUTER CIRCULAR PLATFORM AND MASONRY BLOCK DIVIDING UPPER PORTION OF STAIRWAY.

quite fragmentary but its position was well indicated. Skulls Nos. 3 and 4 were placed directly south of Skull No. 2. Skull No. 4 rested on the left side, with its face to the south.

The second row, in which there were five skulls, Nos. 5, 6, 7, 8 and 9, lay to the west of the first row and at the edge of the cornice. Skull No. 5, directly west of Skull No. 1, lay with the occiput to the west, the facial portion to the south. An atlas and three other cervical vertebræ were associated with it. Except for the facial portion, this specimen was in a relatively good state of preservation. Skull No. 6, directly south of Skull No. 5, was quite fragmentary. Skull No. 7 had the facial portion to the south, the occiput to the east. Lying on top of the skull was a mandible. Skull No. 8 lay with its face to the west, the occiput downward. Portions of a pelvis were directly beneath it. Fragments of ribs were found 25 cm. to the west and slightly above the level of the top of the skull. Skull No. 9 was so fragmentary that its orientation could not be determined.

Skull No. 10 lay to the west of Skull No. 5. All the skulls were found on approximately the same level, directly beneath the overhanging cornice, except Skulls Nos. 5 and 10, which were 17 cm. below the base of the cornice. Skull No. 10 lay with the facial portion to the south, the occiput to the west. The parietal bones were broken through and rested on the mandible, which was intact. The western limits of the occiput lay 50 cm. from the platform cornice. An atlas and a second cervical vertebra were associated with the skull. Directly below it was a male pelvis, beneath which, in turn lay long bones of the arms and legs and a mandible. The long bones extended toward the south between the second and third rows of skulls. A left ascending ramus lay south of the pelvis and on the end of the long bones.

Skulls Nos. 11, 12, 13 and 14 formed the fourth row, Skull No. 11 lying directly west of Skull No. 10. The skulls in this row were fragmentary. Wedged between the skulls were a few long bones, together with some of the smaller bones of the appendicular skeleton; the major portion, however, was beneath the skulls, placed with no attempt at orderly arrangement, orientation or the segregation of the bones of the individual skeletons nor their association with any specific skull (figs. 150 and 151).

From the position of this material and the fact that stones were wedged in between bones as if purposely, there can be little question that this represents reburial. Associated with the bones were sherds of a plain incense burner of Porous Grey Ware and the lower jaw and two vertebræ of a deer.

The photographic record of the material *in situ* is incomplete. Due to the extreme heat on the day it was removed all but four photographs were failures, and even the four obtained have a pebbled effect.

Dr. Morris Steggerda, who identified the skeletal material, has supplied the following notes and table:

“The bones of this burial were of adults (male and female) and children. As the greater number of the bones collected were in a fragile condition, it would be practically impossible to make complete measurements of them. However, as will be noted in table 2 there are three skulls from which most of the head measurements might be obtained. There are also three complete mandibles, although they do not belong to the three skulls just mentioned. One or two complete long bones of both arms and legs could be measured, but the determination of the sex of these is difficult, due to the condition of the bones.

"From the table it is apparent that there were at least twenty-four persons represented in this burial, basing judgment upon the twenty-four right and twenty-four left temporal bones. There were also sixteen obviously different mandibles.

"If the bones of the appendicular skeleton alone are considered, it would seem probable that there were only ten or twelve persons represented, and not twenty-four, for, if we count both children and adults and consider only the bones of the right side of the body, we find eleven humeri, ten radii, eleven ulnæ, twelve femurs, nine scapulæ and eleven clavicles. A possible explanation of this might be that, in this reburial, the skulls, somewhat better preserved, were easily moved, the other bones of the skeletons being more fragile, were lost or not moved.

"Of the one hundred and eighty-five teeth found in this collection, there were only fourteen with cavities. Many of the teeth were very much worn, and none showed signs of dentistry."

TABLE 2—Skeletal Material from the Upper Platform

Name of bone	Adults		Children		Remarks
	Right	Left	Right	Left	
Appendicular skeleton:					
Humerus.....	9	7	2	2	
Radius.....	9	9	1		
Ulna.....	10	7	1		1 right and 1 left adult are entire.
Scapula.....	7	8	2	1	
Clavicle.....	6	6	5	1	
Femur.....	10	10	2	2	
Patella.....			5		
Tibia.....	7	7	1	1	
Fibula.....	1				Also several fragments.
Calcaneus.....	5	5			
Astragalus.....	4	4			
Digit bones.....			73		
Pelvis.....					Many fragments.
Axial skeleton:					
Ribs.....	16	6			
Sternum:					
Manubrium.....			4		
Gladiolus.....			2		
Vertebrae:					
Cervicle.....			19		6 axes, 5 atlases (1 child)
Thoracic.....			72		
Lumbar.....			23		
Sacral.....			2		Well preserved
Skull:					
Temporal.....	24	24			Plus 2 unidentified as to side; 1 incus.
Mandible.....			16		11 middle aged, 4 old and 1 child; 3 mandibles entire and possibly 3 more based on fragments.
Cranium.....					Broken pieces very fragmentary.
Hyoid.....			1		Possibly diseased.
Teeth:					
Incisors and canines.....			76		No cavities.
Pre-molars and molars.....			109		14 with cavities.

WEEP HOLES

The weep holes noted in the outer circular platform continue through the *embutido* of the rectangular platform. The shafts were fashioned by placing two rows of rough stones on an unfinished level of the *embutido* and capping with large irregular unworked stones (fig. 152). As in the *embutido*, only a small amount of mortar was used.

As the weep holes proceed outward from the circular platform, with the exception of those at its base, they show decided changes in their bearings and the levels maintained are less constant. The extension of the shaft of the weep hole noted on the east side at the base of the bench (page 97) is shown in figure 116. The weep hole which had its orifice at the south base of the bench of the circular platform, 43 cm. east of the block of masonry

(page 97), was continued through the *embutido* of the rectangular platform to the new orifice at the floor level beneath the sculptured stone in the south facing (fig. 153). The two shafts in the circular platform directly above the one just described were traceable south through the *embutido* to within an average of 70 cm. of the platform facing. The probable orifice of one shaft is shown in figure 153.

Much of the facing of the rectangular platform having fallen, the orifices of the weep holes were encountered in only a few instances. On the west side of the rectangular platform three were noted. One, in the south facing wall of the stairway (fig. 136, *b*) where it abuts the platform facing, is 33 cm. lower than the earlier orifice of the same weep hole in the facing of the outer circular platform. A shaft through the *embutido* gives off



FIG. 152—MANNER OF CONSTRUCTING WEEP HOLE FROM ITS ORIFICE AT BASE OF BENCH ON NORTH SIDE, THROUGH THE *Embutido* SURROUNDING OUTER CIRCULAR PLATFORM.

from the orifice of a weep hole in the circular platform, 81 cm. below its cornice and north of the west doorway of the tower. For a distance of 1.52 meters, the bearing of the shaft is the same as in the circular platform, whence, turning southward, it continues for approximately the same distance, then turning westward it continues to the orifice in the east wall of the niche dividing the stairway (fig. 156). The orifice in the niche is 1.2 cm. lower than the orifice in the circular platform. A shaft gives off from the circular platform 68 cm. above the weep hole just described. It extends in an irregular line to its orifice in the next to the last riser and on the south side of the masonry block, dividing the upper section of the stairway (fig. 154).

Opening downward from the lower margin of the shaft, a short distance in from its orifice and under the block of masonry at the top of the stairway, is a roughly lined masonry cist averaging 43 cm. long, 20 cm. high and 23 cm. wide. In the cist was an olla of Striated

Porous Grey Ware (fig. 155) partially filled with ash and fragments of charred human bones. The top of the olla was 76 cm. below the top of the platform, 1.05 meters south of the north edge and 10 cm. west of the eastern edge of the masonry block.

STAIRWAY

On the west is the stairway giving onto the rectangular platform. It has a width of 10 meters, not including the two balustrades. Rising at an angle of 29° to 30° from the horizontal, it is composed of 15 steps, the heights of the risers varying from 20 to 26 cm.,



FIG. 153—SCULPTURED STONE REUSED IN SOUTH FACING OF EASTERN EXTENSION OF RECTANGULAR PLATFORM.

a, weep hole which opened at base of bench on south side of outer circular platform has new orifice below reused, sculptured stone; *b*, probable orifice of a second weep hole.

and the widths of the treads from 28 to 52 cm. The treads also show individual variation which, in some cases, is as much as 10 cm.; the most regular treads occurring toward the base of the stairway. Some variation is also noted in the individual risers, the gradients, however, being relatively constant. For the most part the stones were seemingly cut for use in the stairway, having vertical faces or risers and long tenons serving as treads.



FIG. 154—ORIFICE OF A WEEP HOLE IN NEXT TO LAST RISER OF STAIRWAY AND ON SOUTH SIDE OF MASONRY BLOCK WHICH DIVIDES UPPER SECTION OF STAIRWAY.



FIG. 155—A ROUGHLY LINED MASONRY CIST BENEATH SOUTHEAST CORNER OF MASONRY BLOCK GIVES OFF FROM WEEP HOLE WHICH HAS ITS ORIFICE IN NEXT TO LAST RISER OF STAIRWAY.

An olla, *a*, of Striated Porous Grey Ware was found in the cist.



FIG. 156—UPPER PLATFORM AND TOWER.

a, orifice of weep hole in east wall of niche.

The first two steps are continuous, above which the stairway is divided in its central east-west axis by a recess or niche averaging 1.34 m. in width and extending 4.34 meters eastward from the base of the third riser. A cut stone platform, rising above and overhanging the east wall of the niche, continues to divide the stairway to its upper limits (fig. 173).

Examination of figures 93 and 124 shows an extra step at the top of the north section of the stairway, abutting the north terminus of the parapet and extending to within approximately a meter of the masonry platform at the top of the niche. Photographs (figs. 73, 93, 124 and 156) taken before and after the stairway had been repaired¹ show the step still in position. It was not a part of the original plan of the stairway, inasmuch as it was made up of cornice and wall stones placed in alignment without mortar, rested on the floor of the platform, was found at the top of only the north section of the stairway and abutted the south face of the northern terminus of the parapet.

This extra step, set inward 20 cm. from the outer edge of the parapet, may have been the remnants of a low wall or continuation of the parapet erected by the ancient builders to block off the north section of the stairway.

As the stones, resting on the platform floor and not being set in mortar, would soon be dislodged, they were removed when the trench was opened for the study of the western section of the outer circular platform. With the repair of the structure these stones were not replaced.

BALUSTRADES

The balustrades were part of the original plan of the stairway, as a shaft through the facing wall on the south into the stairway fill did not reveal end facing walls in line with the limits of the steps. The facing walls, 83 cm. in width, finish the north and south limits, respectively, of the stairway.

Except at the top and bottom, where the head and tail of the serpents are separate stones (fig. 157), the side facing walls were capped with large blocks averaging 83 by 81 cm., carved in deep relief to represent intertwined serpents (fig. 124). On the under side these stones are longitudinally grooved like those capping the side facing walls of the lower stairway (fig. 76). As is seen in figures 156, 159 and 347, of the eight or nine stones necessary to form the body of the serpent, only three were found belonging to the north balustrade and two to the south.

The general arrangement of the serpents, with the head of one and the tail of the other at the top, the bodies intertwined the length of the balustrade, terminating at the base with the tail of the former and the head of the latter, is similar to that of the stairway of the lower platform (page 56). At the High Priest's Grave, the balustrades of each of the four stairways are in the form of the intertwined body of a single rattlesnake, head and tail at base, the tail stone L-shaped, the rattles projecting beyond the line of the balustrade (fig. 160).

At the base of each balustrade the head and rattles were found *in situ*. The serpent head at the base, as well as the one at the top, was on the inner side, the rattles on the outer. The serpent tail belonging at the top of the south balustrade was found in the talus below. This stone, sculptured on the top and faced on one side, could have been

¹ Repaired by J. Eric Thompson in 1926.

intended only for the south or outer edge of the balustrade. The upper end is specially cut with a bevel to allow for its placement against the cornice of the platform which it abuts.

The head belonging at the top of the south balustrade was not found. The head for the top of the north balustrade, somewhat broken and badly weathered (fig. 161), was found on the basal terrace 20 meters west of the northwest corner of the lower platform. The base of the stone, from which the head projects, shows a new method of placement in the balustrade. The common method is that used in the lower stairway balustrade where the head projects from the vertical facing of a masonry block.¹ Here, however, the balustrade terminates in two capping stones which maintain the same angle as the remainder of the balustrade. One of these stones is carved to depict the rattle of the serpent. The other



FIG. 157—BASE OF SOUTH BALUSTRADE OF UPPER PLATFORM STAIRWAY.
HEAD AND TAIL OF SERPENTS ARE SEPARATE STONES.

depicts the projecting head rotated through an angle of 180°, facing out directly over the back of the serpent body. This block of stone, sculptured on the top and faced on one side only (fig. 161), like the block of stone on which the rattles of the tail are carved, could fit in no other place. The tail of the serpent at the top of the north balustrade was found in the débris north of the stairway.

NICHE

The niche in the central axis of the stairway measures 1.19 meters at the west, 1.34 meters at the east and has an average length of 4.32 meters (figs. 162, 163 and 181). Its three walls, that is, the north, east and south, are formed of carefully dressed stones. The north and south walls also serve as the facing of the sides of the inner limits of the divided

¹ Morris, 1931, Vol. I, p. 48 and fig. 33; and same volume, Northwest Colonnade, p. 54 and fig. 35.



FIG. 158—UPPER PLATFORM AND TOWER REPAIRED.

Photograph of southwest corner taken in 1930.

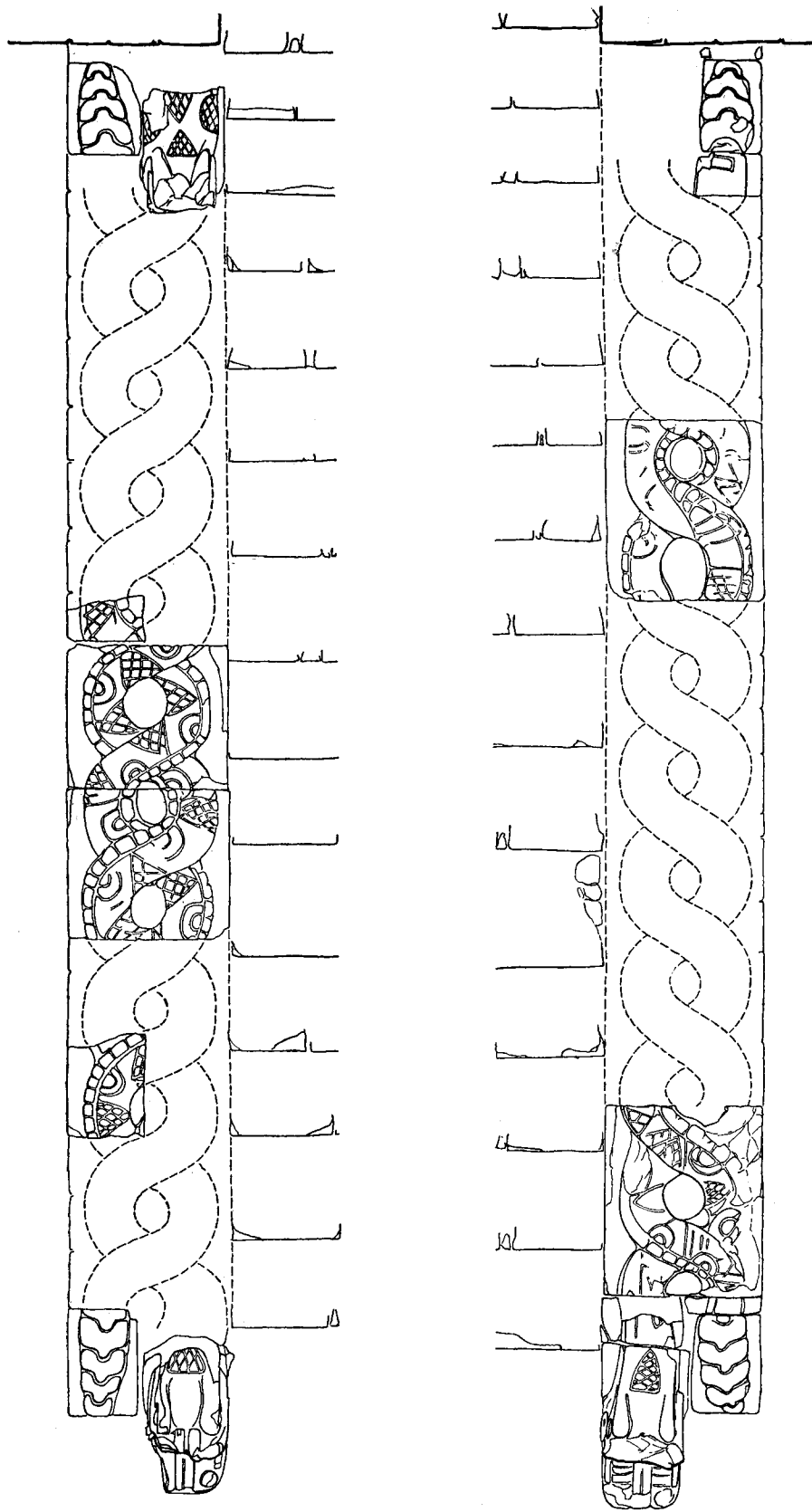


FIG. 159—SCALE DRAWING OF SERPENT BALUSTRADES OF UPPER PLATFORM STAIRWAY.



FIG. 160—SCULPTURED STONES CAPPING SOUTH BALUSTRADE OF EAST STAIRWAY AT HIGH PRIEST'S GRAVE.

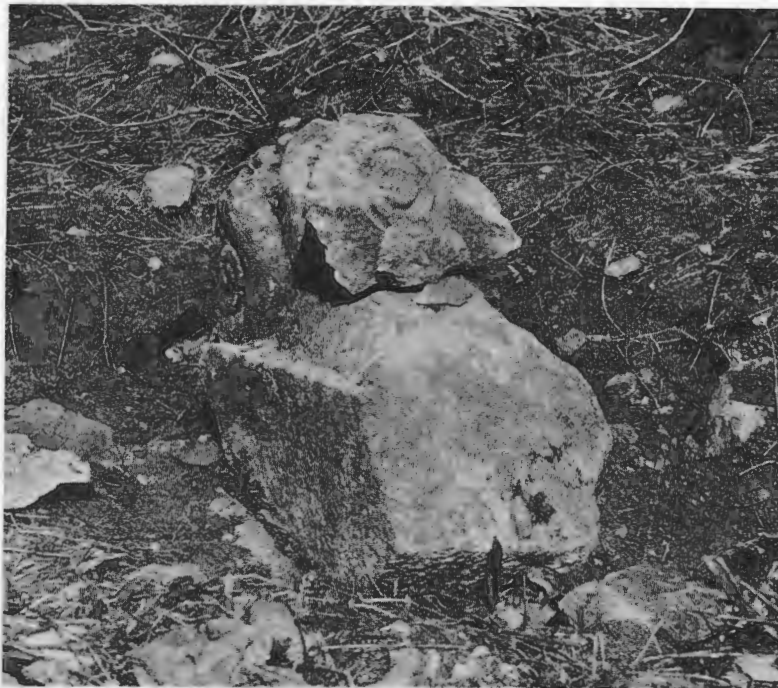
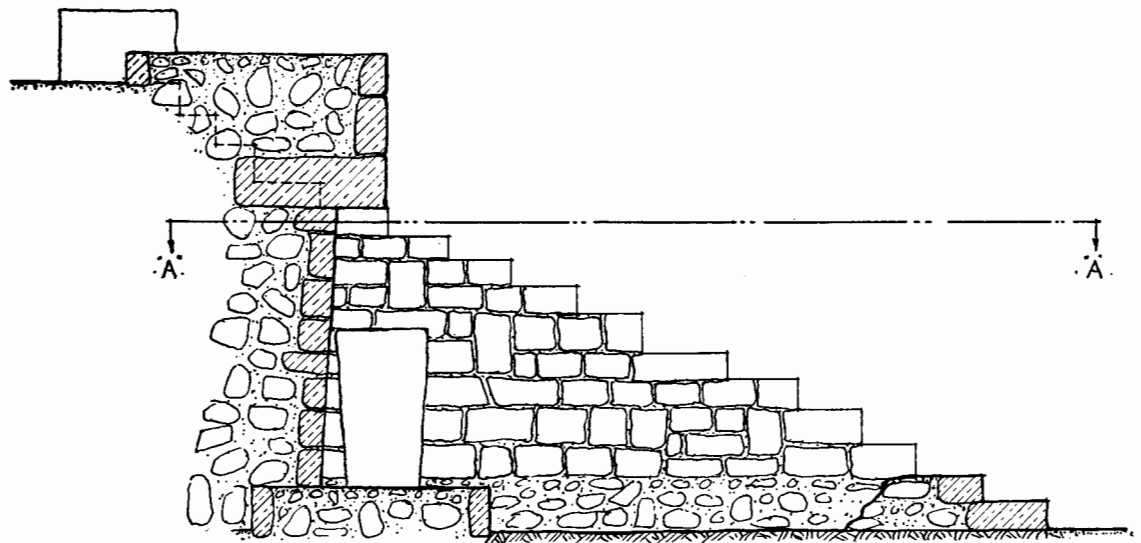
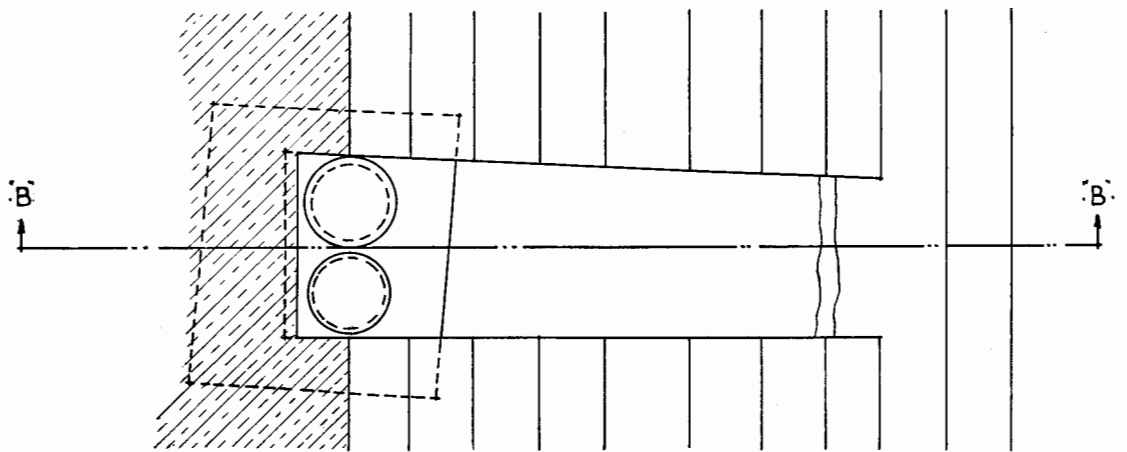


FIG. 161—SERPENT HEAD BELONGING AT TOP OF NORTH BALUSTRADE, FOUND ON GREAT BASAL TERRACE.



· Section on line B-B ·



· Plan on line A-A ·

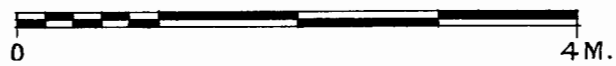


FIG. 162—PLAN AND SECTION OF NICHE AND STYLOBATE.

stairway. The east wall, rising directly from the top of the stylobate (page 144) to a height of 2.05 meters, has an overhang of 11 cm. from base to top.

FLOOR OF NICHE

At the west the floor of the niche is on the same level as the second tread of the stairway, whence it slopes upward 12 cm. to the east wall. The floor of lime plaster, badly destroyed by material falling from above, was indicated on the facing walls of the niche.



FIG. 163—NICHE AND MASONRY BLOCK DIVIDING UPPER PLATFORM STAIRWAY.

In 1923, Dr. Morley found a stela and a circular stone in the niche, upon which he reported as follows (figs. 164, 165, 166, 167 and 168):

“At Chichen Itza on March 6 a new stela was found in the niche between the double stairway on the west side of the second terrace leading to the Caracol or Round Tower. This monument has 132 hieroglyphs sculptured on its front, sides and top, and is the longest inscription yet found at this site. It has not yet been possible to decipher the date, although its hieroglyphs are well preserved.

“Underneath this stela was found a large circular stone with a projection for tenoning it into a wall. On the front of the round part, twelve human figures are sculptured in two lines before an altar, arranged as if engaged in some sacrificial rite. A double row of hieroglyphs around the periphery completes the carving on this unique piece of Maya sculpture.”¹

¹ Morley, 1923, p. 262.



FIG. 164—STELA AND CIRCULAR STONE FOUND IN NICHE DIVIDING UPPER PLATFORM STAIRWAY.
Stela, *a*, broken in two large sections and a number of small fragments. Circular stone, *b*, lay on floor of niche.



FIG. 165—STATUETTE OF SEATED HUMAN FIGURE, *a*, FOUND ON NORTH COLUMN OF STYLOBATE.



FIG. 166—FRONT OF STELA FOUND IN NICHE DIVIDING STAIRWAY OF UPPER PLATFORM.



FIG. 167—RIGHT SIDE OF STELA FOUND IN NICHE DIVIDING STAIRWAY OF UPPER PLATFORM.



FIG. 168—CIRCULAR STONE FOUND IN NICHE DIVIDING UPPER PLATFORM STAIRWAY.

Deposited in Museum of Archeology and History in Merida, Yucatan.

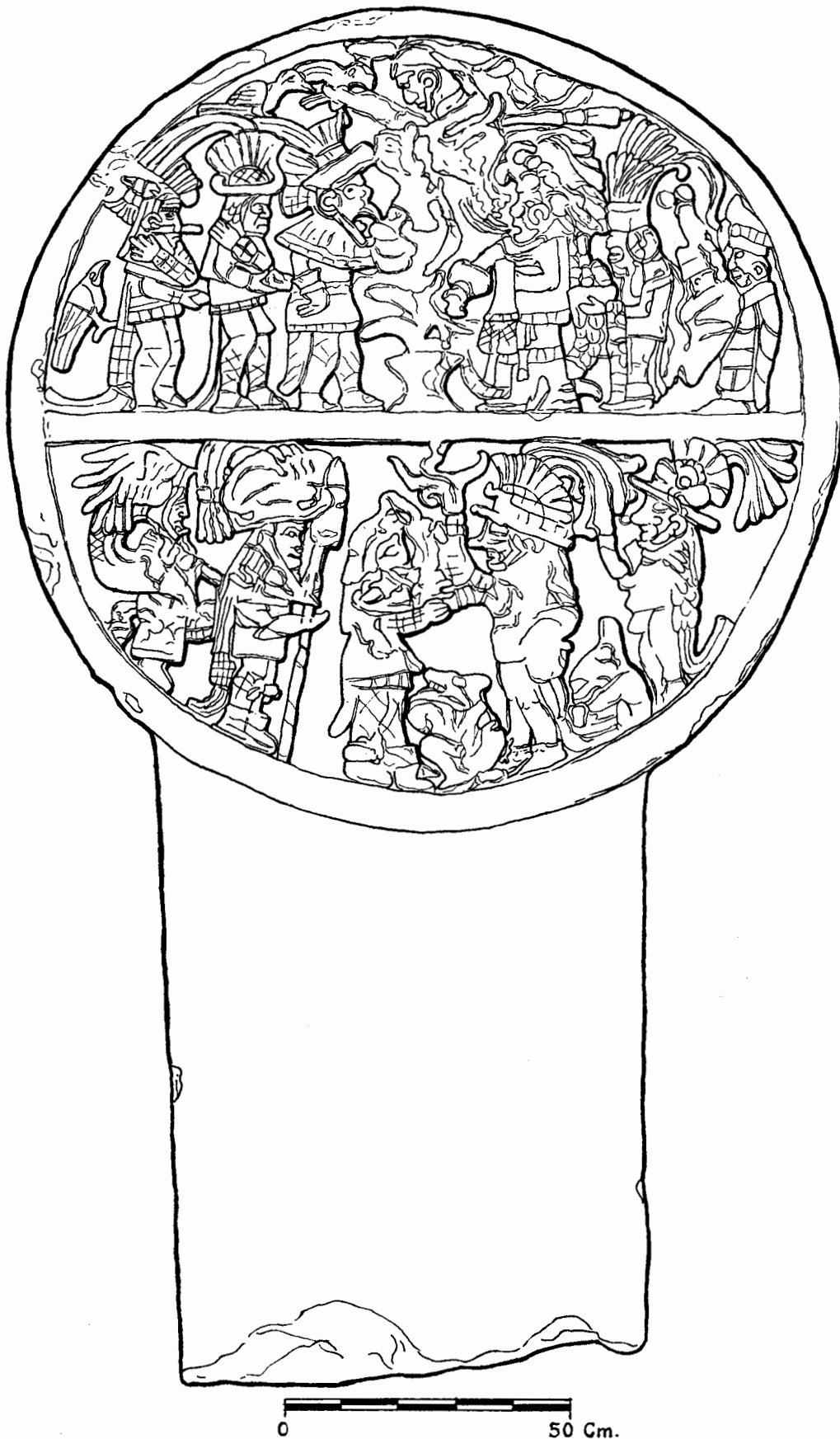


FIG. 169—DRAWING OF SCULPTURED CIRCULAR STONE FOUND ON FLOOR OF NICHE DIVIDING UPPER PLATFORM STAIRWAY.

The stela is 1.75 meters long, 83 cm. wide and 38 cm. thick. On the face there are 84 glyph blocks arranged in 14 rows of 6 each, and on one side and the two ends are 48—a total of 132.

The sculptured circular stone has a diameter of 73 cm. and a thickness of 24 cm. The tenon has a length of 48 cm. and a width of 43 cm. (figs. 168 and 169). In 1923 both stones were deposited in the Museum of Archæology and History in Merida. A discussion of the glyphs on the stela and circular stone appears in the Appendix by Dr. Morley.

BURIALS IN FLOOR OF NICHE

Scattered throughout the dirt fill to a depth of 48 cm. below the floor of the niche were found fragments of human bones. However, there were also two foci of concentration of this material; one on the southern side of the niche, 83 cm. from the east wall, and the other 2.36 meters from the east wall and in line with the east-west axis. The skeletal material includes: 43 molars and premolars, 33 incisors, 24 canines, 1 lower jaw, 1 right and 1 left tibia, 1 humerus, 1 clavicle, 2 ulnæ, 1 atlas and fragments of ribs, long bones and skulls.¹

In the concentration on the south side were portions of a skull, 39 cm. below and 7.6 cm. north of the lowest stone of the south facing of the niche. Pieces of ribs were found 20 cm. east of the skull and 48 cm. below the surface. In the other focus of concentration were cranial fragments, two humeri and one tibia. Associated with the bones was the following material:

- 90 beads, mostly of green stone. Of these 12 are tubular, the longest measuring 2.0 cm. One has been perforated both longitudinally and transversely (fig. 170, *c*).
- 4 fragments of green stone beads, two round and two tubular. One of the latter has been split lengthwise, the other apparently unfinished when broken.
- 2 pieces of obsidian blades (fig. 170, *b*).
- 5 sherds of Polished Black Ware (fig. 170, *a*).

MASONRY BLOCK ABOVE EAST WALL OF NICHE

Resting on top of the east wall, from which they project 35 cm., are three stones having a combined length of 1.98 meters (fig. 164). The western face of the stones, 40 cm. in height, is in line with the eleventh riser of the stairway. The niche here having a width of 1.35 meters and the three stones a total length of 1.98 meters, 25 cm. of the north stone and 38 cm. of the south stone rest on the eleventh tread of the respective north and south sections of the stairway (figs. 126, 162 and 163). These three stones formed the base of the western facing of a block of masonry placed at the top of the east end of the niche and between the two sections of the stairway (page 129).

The block was in such a poor state of preservation that accurate measurements could not be taken. The east-west measurement was approximately 1.90 meters; the block extending onto the platform 40 cm. east of the line of the top step.

The hieroglyphic stone, sculptured on one face and the top and the two ends, which was found on the floor of the niche must presumably unless here reused, have been placed with the sculpture exposed, permitting the glyphs to be read. In the most likely position the stone may have been placed on top of the masonry block with its sculptured face to the west, in which case it is possible that the circular stone was tenoned into the face of

¹ Identifications by Dr. Steggerda.



a



b



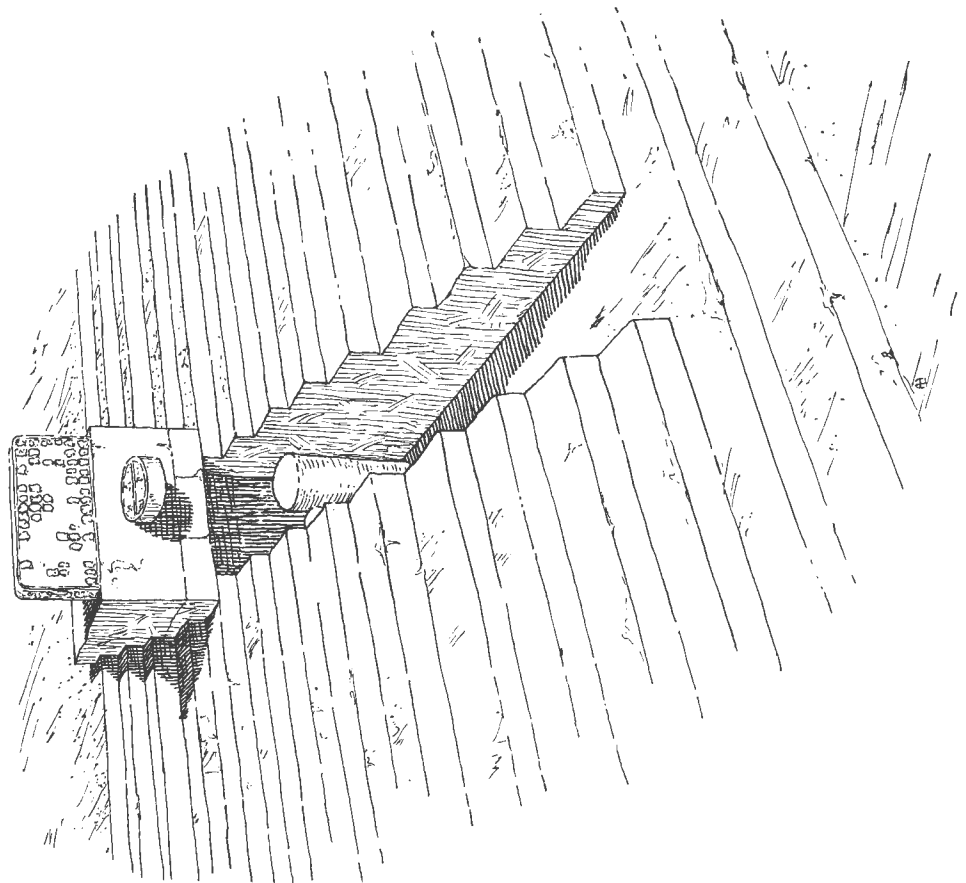
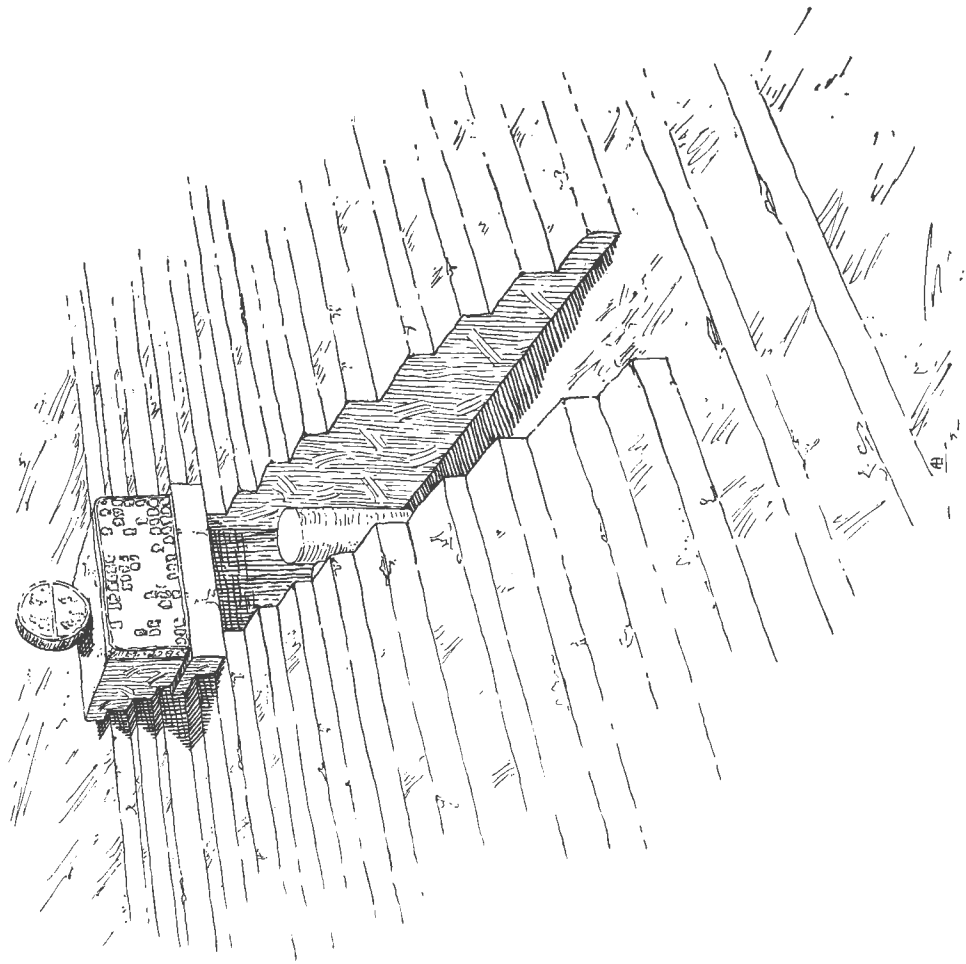
a



c

FIG. 170—MATERIAL RECOVERED IN FILL BELOW FLOOR OF NICHE DIVIDING UPPER PLATFORM STAIRWAY.

a, 5 sherds of Polished Black Ware; b, 2 pieces of obsidian flakes; c, 90 beads, mostly of green stone.



FIGS. 171 AND 172—SUGGESTED RESTORATIONS OF MASONRY BLOCK.

the block directly beneath it (fig. 171). An alternative position was with the plain side resting on the three stones forming the base of the masonry block and the plain face against the *embutido*, in which case the masonry block had a height, on the west, of not less than 1.24 meters (fig. 172). The length of the hieroglyphic stone being 1.75 meters, the base stones would project 11.5 cm. at either end. The southeast corner of the block of masonry was entirely destroyed so that no north-south measurements of the east face could be made. This measurement was, however, no doubt approximately 1.75 meters, the same as that of the sculptured stone forming the western face.



FIG. 173—CUT STONE PLATFORM OR MASONRY BLOCK RISING ABOVE AND OVERHANGING EAST WALL OF NICHE AND DIVIDING STAIRWAY TO ITS UPPER LIMITS.

The facing of the masonry block, except for a portion on the east and north, had fallen. The section on the east, 22 cm. in height, is formed of a single course of stones averaging 40 cm. in depth. The *embutido* is made up of medium-sized unworked stones set in mortar in which was found embedded a single drum of a round column measuring 71 cm. in height by 33 cm. in diameter (fig. 173).

INCENSARIOS

Lying scattered about on top of the lower platform and uncovered during the excavations of the upper platform and tower were 58 complete and broken limestone *incensarios*. They have an average height of 35 cm. and diameter of 32 cm. A recess let into the top of

each has an average diameter and depth of 16 and 12 cm., respectively. In plan the *incensarios* are round, oval or rhomboidal.

A human face was carved on one side of each, the various characterizations of which, together with the head-dress, allow for classification into at least three groups, as follows:

- Type I. Head-dress, simple band which hangs down on either side of the face. Mask. Large mouth. Carving crude (fig. 175, No. 21).
- Type II. Head-dress rises with two folds and hangs down on either side of face. No mask. Small mouth. Receding forehead often delineated. Carving good (fig. 174, No. 1).
- Type III. Elaborate fan-shaped head-dress with rays extending out on sides and top. Eyes enclosed in squares (fig. 175, No. 24).

Some of the *incensarios* may have been associated with the tower itself, as two were found relatively high in the débris on the upper platform. It is believed that some were placed on the parapet of the upper platform (figs. 339 and 340), as six (fig. 174, Nos. 4, 5, 6, 7, 8 and 9) were found at approximately 3-meter intervals in the débris across the south base of the platform (fig. 180).

It is possible that others, found scattered on the top of the lower platform, may have been associated with its parapet, for which, however, there is no definite proof. During the excavations across the south side of the lower platform near the southwest corner three *incensarios* were found on the basal terrace (fig. 176). Portions of two others were in the débris between the West Annex and the stairway of the lower platform (fig. 177, *a, b*). These may have fallen from the parapet or may have been associated with the West Annex.

Of the 63 *incensarios* from the Caracol, 18 from the upper platform were deposited in 1929 in the Museum of Archaeology and History at Merida. At the close of the Institution's 1930 field season 24 of them (figs. 174 and 175), including the six that seemingly came from the parapet of the south side of the upper platform, were replaced in what may well have been their original positions.

The remaining 16 from the upper platform (figs. 178 and 179) were placed, with other sculptured material found during excavations, on the east side of the top of the lower platform; the five uncovered at the base of the lower platform were left where found.

STYLOBATE

At some time previous to the building of the rectangular platform and stairway, a stylobate was raised on the floor of the lower platform. It is 33 cm. in height, has a north-south measurement of 2.14 meters and an east-west measurement of 1.79 meters (fig. 162). The sides are faced with dressed stone. The *embutido* is made up of medium-sized unworked stone set in lime mortar. The sides, as well as the top were carefully plastered.

The floor, as it curves outward from the base of the stylobate, was traceable only 2 or 3 cm. On the west the base is 1.2 cm. below that of the stairway and 17.1 cm. below that of the outer circular platform.

The lower drums of two columns are set 15 cm. into the floor of the stylobate, 48 cm. from its western facing (fig. 181). The drum on the north, rising 70 cm. above the floor, has a diameter of 51 cm. at the base, which gradually increases to 57 cm. at the top. The south drum, rising 1.15 meters above the floor, has a diameter of 46 cm. at the base and 55 cm. at the top.



FIG. 174—*Incensarios* RECOVERED DURING EXCAVATION OF UPPER PLATFORM AND TOWER.

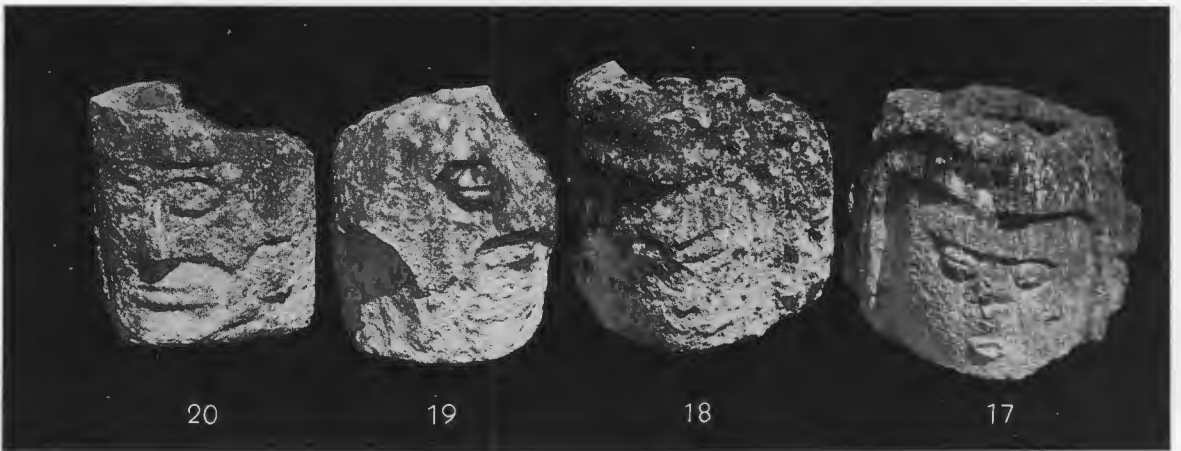
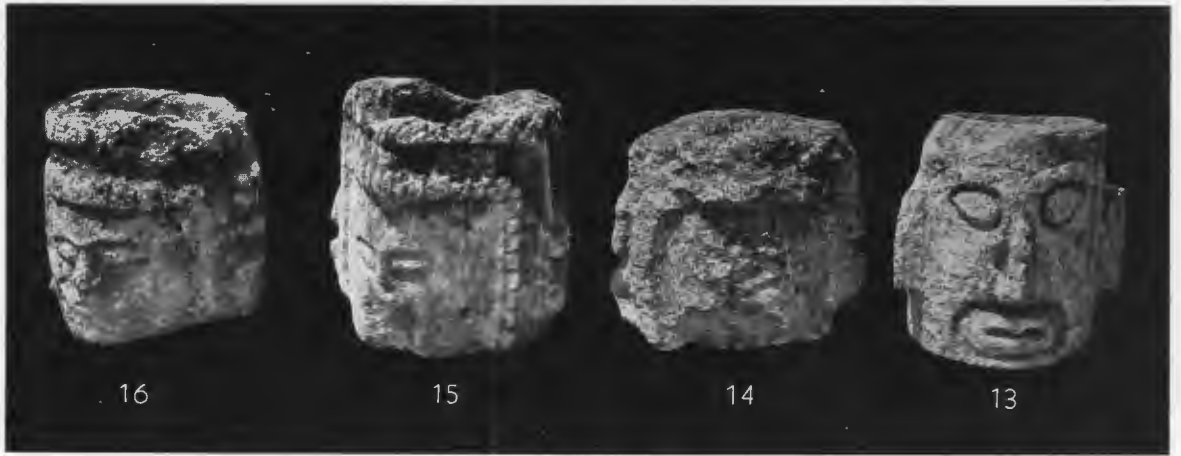


FIG. 175—*Incensarios* RECOVERED DURING EXCAVATION OF UPPER PLATFORM AND TOWER.



FIG. 176—THREE *Incensarios* FOUND AT BASE OF SOUTHWEST CORNER OF LOWER PLATFORM.



FIG. 177—SCULPTURED MATERIAL RECOVERED IN DÉBRIS BETWEEN WEST ANNEX AND STAIRWAY OF THE CARACOL, LOWER PLATFORM.
a and *b*, portions of two *incensarios*.



FIG. 178—FOUR *Incensarios* FROM SOUTHEAST SIDE OF UPPER PLATFORM.



FIG. 179—*Incensarios* RECOVERED DURING EXCAVATION.

Nos. 1, 2, 3, 4, 5, 6 and 7 are from north side of upper platform; Nos. 8, 9, 10, 11 and 12 from east side of upper platform.



FIG. 180—ONE OF SIX *Incensarios* FOUND IN DÉBRIS AT SOUTH BASE OF UPPER PLATFORM, AS THOUGH FALLEN FROM PARAPET.



FIG. 181—NICHE DIVIDING STAIRWAY OF UPPER PLATFORM. FACING WALLS OF NICHE REST ON STYLOBATE.

The north half of the top of the stylobate and the column drum set therein, as well as the north half of the east and west sides, the entire north side and the floor giving off from this half had been painted black. The corresponding south half, the floor giving off therefrom and the column drum set in the top had been painted red.

A deposit of ash and charcoal, 11 cm. in depth, was found resting on fragments of the floor to the east of the stylobate. The ash and charcoal beginning 78 cm. north of its southeast corner extended 83 cm. to the north and were traceable for a distance of 60 cm. to the east. Mixed with the ash were sherds of sub-Plumbate Ware, Porous Grey Ware and a Grey Ware with raised knob decoration. There were also fragments of burned bird bones.



FIG. 182—EAST WALL OF NICHE PARTIALLY REMOVED TO SHOW THAT WALL RESTS ON STYLOBATE. EASTERN EDGE OF STYLOBATE SEEN THROUGH OPENING.

As the floor giving off from the stylobate was badly damaged, chronologic relation to other constructions, such as the outer circular platform, could not be determined. However, it definitely antedates the rectangular platform, as the stairway and niche of the latter rest upon it.

The east wall of the niche directly east of the columns rests on the stylobate 53 cm. inward from its eastern edge (fig. 182). On the north, the west face of the stylobate extends under the stairway and facing of the niche for a distance of 43 cm., while on the south it extends under the stairway and facing wall a distance of 27 cm. (fig. 162). The base of the north and south facing walls of the niche are here 15 cm. above the top of the stylobate (page 130), the floor of the niche covering the lower 20 cm. of the columns.

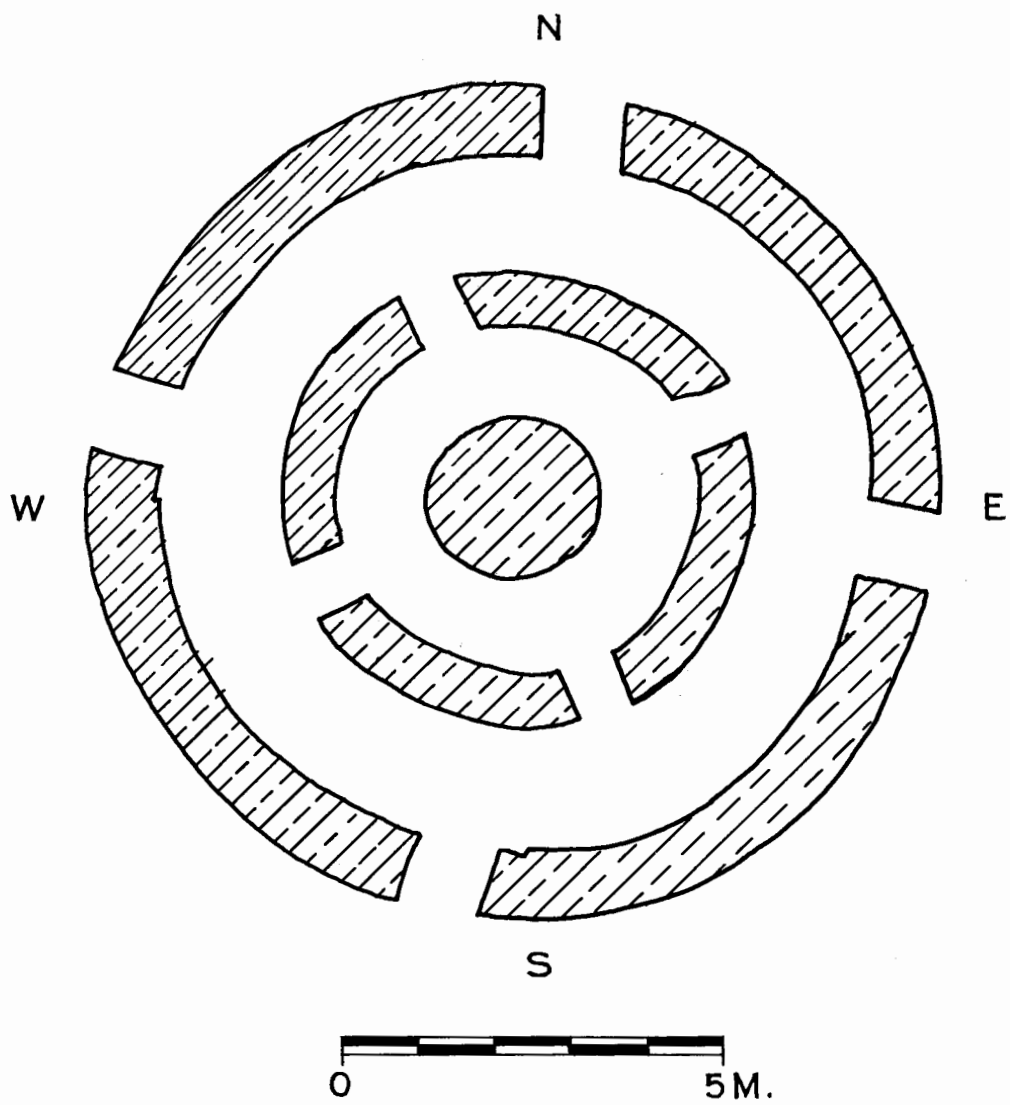


FIG. 183—PLAN OF TOWER.



Photograph courtesy of Field Museum of Natural History
**FIG. 184—SECTION OF TOWER SHOWING LOWER ZONE
AND FIVE-MEMBER MOLDING.**



Photograph courtesy of Field Museum of Natural History
FIG. 185—WEST DOORWAY OF TOWER.
Doorway was cleared of debris in 1926.

TOWER

Rising from the upper platform is the round tower, the crowning architectural achievement of the complex. It rests directly above and on the inner circular platform (page 78) and is centrally located with respect to the top of the upper rectangular platform (figs. 95, 98, 103 and 344). In plan the tower is circular, having a diameter of 11 meters, with two concentric walls enclosing two annular chambers and a central core (fig. 183).

The outer wall has an average thickness of 93 cm. (fig. 184) and is pierced by four doorways, one on each of the four sides—north, east, south and west. The inner wall has an average thickness of 74 cm. and is also pierced by four doorways which, though not quite equally spaced, are placed approximately midway between those of the outer chamber.

Before excavations were started, there appeared a section of the west facing with its five-member molding and a portion of the second story jutting skyward (fig. 131) as though emerging from the great mass of fallen stone.

The west doorway was more than half filled with débris (fig. 185) and the exteriors of the north, east and south doorways were entirely hidden by fallen stones. The detritus in the outer chamber directly inside the western doorway had a depth of a meter and sloped upward to the east where the material from the collapse of the vault had entirely filled the chamber. The débris in the inner chamber had an average depth of one meter. The west window and portions of the south and southwest recesses of the second story had not fallen.

OUTER FACING

LOWER ZONE

The lower zone of the structure has no sculptured decoration and rises vertically to a height of 3 meters. The masonry shows considerable variation. Between the west and north doorways where the lower zone was standing in a good state of preservation (fig. 186) the stones in the three lower courses are small, averaging 24 cm. by 19 cm., fairly well squared, but roughly dressed, and the use of chinking was noted. In the courses above, they are large, averaging 38 cm. by 40 cm., carefully dressed and there is an almost total absence of chinking. Toward the top of the zone, small stones were again used. North of the east doorway (fig. 98) and east of the south doorway (fig. 188) they are somewhat uniform, large and carefully worked. For the most part, there was no definite attempt made to lay the stones in courses. Tenons are generally absent on the larger stones, though they are almost invariably found on the smaller ones. Only an occasional trace of rough untinted plaster was noted.

Eight hands (right and left) pictured in red, perhaps imprints, were noted on the face of the structure at the level of and above the lintel of the west doorway.¹ Only one hand, that on the second course above the lintel and in line with the south jamb, was painted on plaster, the others appearing directly on the stone. Three red hands were painted on the west face of the lintel, two on the course of stone directly above and two north of the lintel.

Color noted on the facing of the lower zone is considered in the section dealing with the doorways (page 197).

CORD-HOLDERS

Three cord-holders or dumb-sheaves were placed on either side of the doorways on both the outer and inner facings of the wall (figs. 98 and 187), except for the west doorway which

¹ Lothrop, 1924, p. 60.



FIG. 186—VIEW OF CARACOL TOWER FROM NORTHWEST IN 1925 WHEN REPAIRS WERE FIRST UNDERTAKEN.
Section of five-member molding shown was found *in situ*.



FIG. 187—VIEW IN OUTER ANNULAR CHAMBER OF TOWER.
West doorway. Cord-holders, *a*, were placed at either side of all doorways.



FIG. 188—TOWER BETWEEN SOUTH AND EAST DOORWAYS.



FIG. 189—MASONRY, NORTH DOORWAY OF TOWER.



FIG. 190—NORTH DOORWAY.

Facing stones numbered so that when taken down to be relaid in cement mortar they could be returned to their original positions.

had four on the inner facing. They were made by cutting a semicircular groove at the edge of one end of a wall stone, leaving a central core or pin which served as the block, the plane face of the block being part of the dressed face of the stone.

This type of cord-holder is not uncommon. While found in other buildings on stones which are set so that it is at either the top or the bottom, here, with but one or two exceptions, the cord-holder is at the bottom of the stone.



FIG. 191—NORTH DOORWAY, INTERIOR OF
OUTER ANNULAR CHAMBER.

REPAIR OF FACING WALL

To safeguard the western section of the lower zone the use of only a small amount of chinking was required, as it was found in an excellent state of preservation (fig. 186). The north (fig. 189), east and south walls (fig. 188) had completely collapsed or were held *in situ* by the débris on either side. In other places seepage of rain water had carried away much of the mortar binding together the stones of the facing and the *embutido*, leaving only a skeleton wall standing. Where such conditions were found, the facing stones were first numbered (figs. 190 and 191) and charted and then taken down. They were then reset in cement mortar in their original positions.

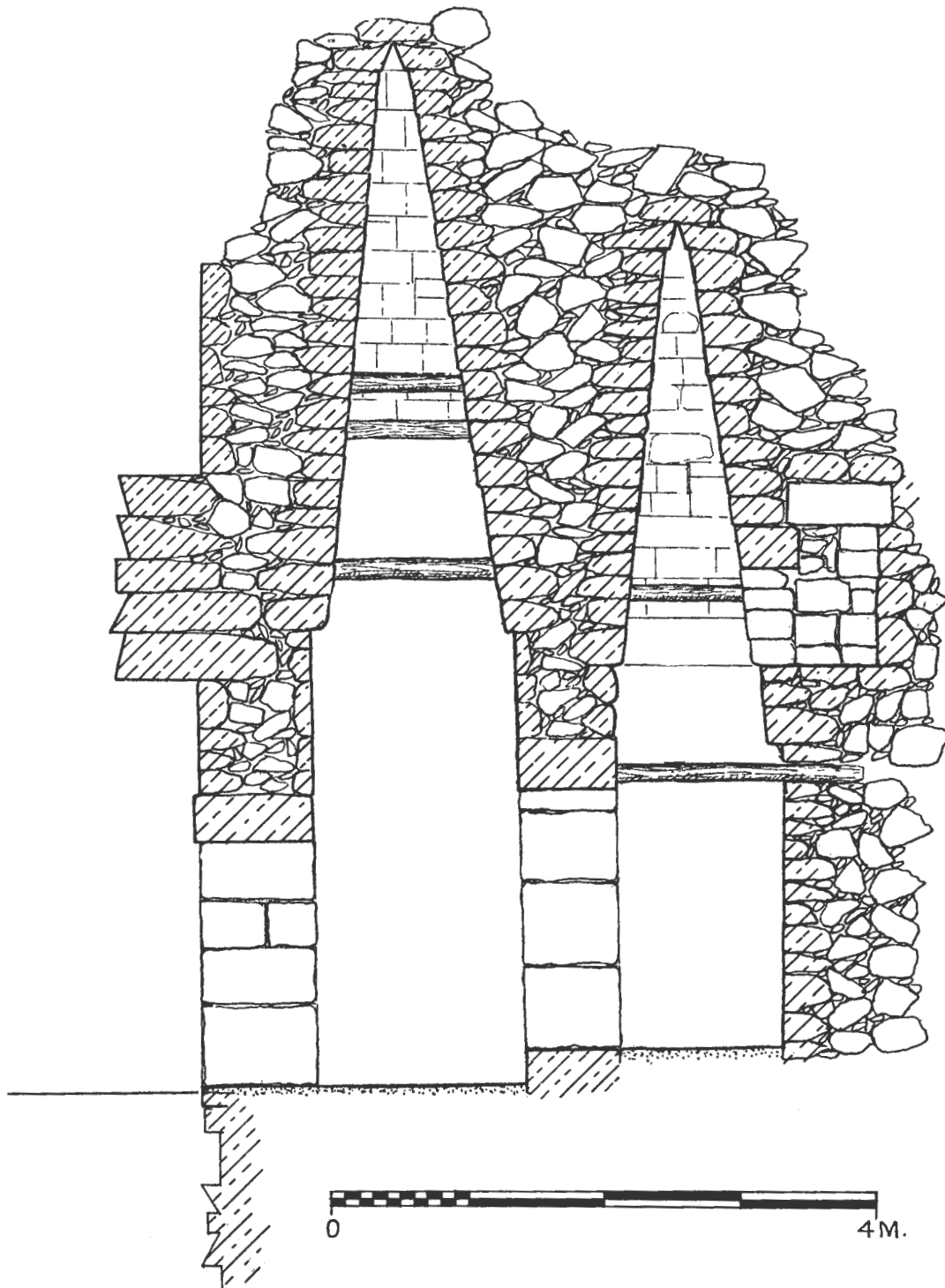


FIG. 192—PARTIAL SECTION THROUGH TOWER.



FIG. 193—CARACOL TOWER.

The five-member molding, the only example of its type so far reported in the Maya area is formed of two lower apron members and two overhanging beveled members separated by a band. Traces of plaster still remain on molding. Photograph taken in 1925.

FIVE-MEMBER MOLDING

Resting on the plain vertical zone is a five-member molding, the only example of its type so far reported in the Maya area. It shows some variation in the measurements and overhang of the different members and more particularly in the angles at which they rise. This is due to the irregular working of the stones and was no doubt remedied to some extent by the plaster finishing.

The molding is formed of two lower apron members and two overhanging beveled members separated by a band (figs. 192 and 193). The measurements here given are those taken above the west doorway. The lower apron member, rising at an angle of 64° to a height of 34.2 cm., overhangs the vertical zone 60 cm. The second apron member, rising at an angle of 75° has a height of 30 cm. and overhangs the top of the first by 8.2 cm.

The 22.8-cm. band projects 15 cm. from the top of the second apron member and its face is plumb with the outer edge of the first and fifth members of the molding. At some points on the circumference, the projecting edges of all five members are plumb. The fourth member of the molding, a 31.6 cm. overhanging beveled member, rises at an angle of 76° from the horizontal and its base is set 15 cm. inward from the face of the band. The fifth and final member of the molding, also an overhanging beveled member, is set inward 7.6 cm. from the outer edge of the fourth and rises to a height of 33 cm. at an angle of 67° from the horizontal.

The stones have been carefully worked and dressed. Some are cut with a slight curve, but for the most part the molding extends around the tower in a series of plane faces. The stones of the first member are extremely large. The tenons are of necessity very long, since this member has an overhang of 60 cm. In some cases the tenon is coextensive with the thickness of the outer wall of the structure, when the butt of the tenon forms the facing of the outer circular room (fig. 194). Such stones have a length of 1.50 meters.

The plaster remaining on the section of molding *in situ* was fragmentary (fig. 193). One fragment on the under side of the band curves downward onto the second member. This bit of plaster, not over 2 cm. in thickness, was made up of 47 distinct and separate coats or washes. A similar remnant of plaster was noted on the upper side of the band curving upward onto the fourth member. Another section, on the vertical surface of the fourth member and curving upward onto the fifth, was composed of 50 coats of plaster. The paper-like thinness of the laminae and the absence of any color made an accurate count difficult.

A curved groove, perhaps a cord-holder, was noted on one or both of the vertical sides of each of the stones of the first member of the molding (figs. 195, 196 and 206). The arc of the groove, averaging 10 cm. in length, extends from the battered facing downward to the bottom or under side of the molding. The groove became invisible, except for the openings on the battered facing and under side, when the stones were placed in position, as each new stone hid the groove on the one next to it. Where the molding was found *in situ*, some of the grooves were filled with mortar, others were open. These were at first thought to represent special designatory construction marks indicating to the workmen the stones that should be used for the first member of the molding.¹ Later the same type of groove was noted at the Iglesia on the stones of the overhanging apron molding which rises

¹ Ruppert, 1927, p. 251.



FIG. 194—CARACOL TOWER. SOUTHWEST QUADRANT OF OUTER ANNULAR CHAMBER.
Butt of tenon, *a*, of first member of five-member molding forms facing stone in chamber.



FIG. 195—SECTION OF THE FIVE-MEMBER MOLDING.

A curved groove, perhaps a cord-holder, is seen on vertical side of stone of first member.



FIG. 196—CURVED GROOVE ON VERTICAL SIDE OF TWO OF THE STONES OF FIRST MEMBER OF FIVE-MEMBER MOLDING.



FIG. 197—IGLESIA OF MONJAS GROUP.
Groove or cord-holder, *a*, in apron molding which rises directly above plain lower zone.



FIG. 198—CARACOL, UPPER PLATFORM AND TOWER, EAST SIDE.
a, block of fallen molding.

directly above the plain lower zone (fig. 197). Since these stones at the Iglesia are in a sculptured molding and could not have been placed other than in their proper position, there was no need for a designatory mark. It is more probable that the grooves served as cord-holders for the suspension of some form of decoration or offering.

As the stones of the molding were uncovered during the excavations, those of the first member were generally easily distinguished by their great size; however, when any question arose, the groove on the vertical side of the stone at once indicated that it belonged to the first member. Since the stones of the fifth member were so nearly the same size as those



FIG. 199—BLOCK OF FALLEN MOLDING WITH SECTION OF UPPER VERTICAL ZONE.

Stones of collapsed lower zone are seen below molding.

of the first and the individual stones of both varied in size, allocation was made certain only by the presence or absence of the grooves.

BLOCK OF FALLEN MOLDING

An interesting example of structural failure and collapse is seen on the east side of the tower where the wall failed and 4 meters of the five-member molding, together with a section of the outer wall of the arch (fig. 95) and a section of the vertical zone (fig. 199) above the molding 1.16 meters in height, had slumped downward and forward toward the edge of the platform, with the individual stones still retaining their relative positions (figs. 141, 198 and 347).



FIG. 200—CARACOL TOWER, SOUTH SIDE.

Only a small section of five-member molding had been replaced before the 1927 season began.



FIG. 201—SECTION OF FIVE-MEMBER MOLDING REPLACED IN 1926 IS SUPPORTED BY WOODEN UPRIGHTS.



FIG. 202—EXCAVATIONS WITHIN EAST DOORWAY OF OUTER ANNULAR CHAMBER.



FIG. 203—CARACOL UPPER PLATFORM AND TOWER.

Repair of five-member molding completed, except for section that had fallen *en bloc*, which was left as found as an interesting example of structural failure and collapse.



FIG. 204—PORTION OF FIVE-MEMBER MOLDING OF SOUTH SIDE REPAIRED IN 1927.



FIG. 205—PORTION OF FIVE-MEMBER MOLDING OF NORTH SIDE REPAIRED IN 1927.

At the time of the collapse of the molding, only the upper portion of the wall supporting it gave way. The lower portion of the wall was, however, in such a poor state of preservation (fig. 202) that it was held in position only by the débris piled against it. After the area had been cleared, some of the stones of the collapsed wall were found beneath the molding (figs. 199 and 203).

REPAIR OF MOLDING

The first section of molding was replaced in 1926 under the supervision of J. Eric Thompson. Comparatively little of the molding was replaced in 1926, as is shown in figures 200 and 201, photographs taken before the 1927 season began. When work started in 1927, 8.62 meters of the molding were in position. During the season, 7.30 meters of molding were replaced on the south, carrying it eastward to the south edge of the section of molding which had fallen *en bloc* (fig. 204). On the north, 6.70 meters of molding were replaced (fig. 205). In 1929 this repair was continued around to the east for a distance of 7.90 meters. At the close of the season the entire five-member molding was again in position, except for the section which had fallen *en bloc* (fig. 203); this it was thought advisable to hold as found in its collapse, to vividly illustrate a phase in the disintegration of the building.

It is of interest to note that with the replacement of the five-member molding, all the stones bearing the curved groove on the vertical sides had been used.

The greatest single task in the repair of the Caracol, employing the greatest amount of time and the handling of heavy materials, was the restoration of the five-member molding. This was facilitated by the use of chain blocks and the skill of the native workmen in handling ropes and erecting scaffoldings. As excavations proceeded on the upper platform, the material of the molding was separated so that component stones might be reset as nearly as possible in their relative original positions. This was comparatively easy with respect to the first member, because many of the stones had fallen onto the platform and were lying in the order of their original position in the molding, and because of the groove on the vertical sides (fig. 206).

In the repair, only a small section of the first member was replaced before the other members were superimposed. As each stone of the first member was located, wooden uprights, extending from the platform floor to the under side of the molding, were used to support the stone until the other members were placed above and the cement mortar had set (fig. 207). The upright supports were left in position until the following season.

Before a stone could be raised, scaffolds were built and the supporting uprights cut and held in readiness. The stone was securely bound with ropes and hoisted by means of a chain block (fig. 208). Guy ropes were necessary to prevent the stone, as it was being raised, from striking the scaffolding or scraping the facing of the lower zone (fig. 209). When the stone was brought to the top of the vertical zone it was swung into position. If too large for the workmen to pull into position by hand, a second chain block was used (fig. 210), which was placed inward from the first and as the tension on the latter was slackened it was taken up by the former. When the stone was in position, the vertical uprights were placed under it to help support the weight of the overhang. Figure 216 shows a steel rail resting on the tenon of a stone and extending into the *embutido* of the wall.

When the tenons were unduly short, this method was employed to give additional bearing on the stone.

In cases where the tenon was broken off, two grooves (fig. 211) were cut on the under side of the stone (figs. 212 and 213), which was then raised (figs. 214 and 215) slightly above the top of the vertical wall and the upright supports placed in position (figs. 215 and 217). Sections of steel rails, cut to appropriate lengths, were laid in cement mortar on top of the wall and the stone was then allowed to settle into position, the rails fitting in the grooves (fig. 218). The *embutido* resting on the rails supported the weight of the overhanging molding stone.



FIG. 206—MANY STONES OF FIRST MEMBER OF FIVE-MEMBER MOLDING FELL ONTO PLATFORM IN THEIR ORIGINAL ORDER. GROOVE ON VERTICAL SIDE READILY IDENTIFIES STONES.

SECOND VERTICAL ZONE

Set inward 60 cm. from the outer point of the final member of the five-member molding, the second vertical zone, if not finished with a cornice, rose to a height of 4.31 meters. At this height is the floor level of the west window and of the recesses of the upper story of the circular tower. It is, however, almost certain that the second vertical zone was finished with a cornice; thus its height may well have been reduced by approximately 80 cm. Maudslay, observing the Caracol in 1889, wrote that this section of "the wall appears to have sloped inwards."¹

¹ Maudslay, 1889-1902, Vol. III, text, p. 21.



FIG. 207—CARACOL TOWER, NORTH SIDE, REPAIR OF FIVE-MEMBER MOLDING.
Wooden uprights were used to help support molding while being replaced and until cement mortar had set.



FIG. 208—IN REPAIR OF MOLDING,
STONES WERE SECURELY BOUND
WITH ROPES AND RAISED
BY MEANS OF A CHAIN
BLOCK.



FIG. 209—GUY ROPES WERE USED TO
PREVENT STONE, WHILE BEING RAISED,
FROM STRIKING SCAFFOLDING OR
SCRAPING FACING OF
LOWER ZONE.



FIG. 210—RAISED TO PROPER HEIGHT, A
SECOND CHAIN BLOCK WAS OFTEN
NEEDED TO SWING STONE INTO
POSITION.



FIGS. 211, 212 AND 213—CARACOL TOWER, REPAIR OF FIVE-MEMBER MOLDING.

Where tenon of first member of molding was broken off it was necessary to cut grooves in under side of stone, in which steel rails were placed to give needed support for overhang of stone.



FIG. 214.—Raising stone by means of chain block.



FIG. 215.—Stone having been raised to top of lower zone, it is supported by means of uprights and planks.

REPAIR OF FIVE-MEMBER MOLDING.



FIG. 216—REPAIR OF FIVE-MEMBER MOLDING.

When tenon of a stone of first member was short, steel rails placed on tenon and extending into *embutido* gave additional bearing on stone.



FIG. 217—MOLDING STONE, WITH GROOVES CUT ON UNDER SIDE, RAISED TO TOP OF VERTICAL WALL.



FIG. 218—STEEL RAILS LET INTO GROOVES CUT ON UNDER SIDE OF MOLDING STONE, WITH THE *Embutido* TO BE PLACED ABOVE THEM, SUPPORT THE STONE.

In regard to the nature of the second vertical zone, it is of interest to present the following conclusions reached by Holmes, who visited the site in 1895:

"In studying this part of the building the very interesting question arose as to whether the exterior wall surface above this molding rose vertically or whether it sloped inward toward the upper turret. I had the good fortune to find one vertical stone, representing the first course above the molding, in place, and this I regard as conclusive proof that the upper wall-zone was vertical. This conclusion is confirmed by the fact that in all cases in Yucatan and Chiapas, so far as I have observed, where the upper mural zone slopes, it includes with it in the slope not only all the courses above the medial moldings, but the medial moldings themselves, whereas in this case the moldings are vertical [fig. 6]."¹

After clearing the vegetation and débris from above the standing section of five-member molding, a portion of the zone three courses in height, rising vertically, was found *in situ*, which conclusively proves that this zone rose vertically and further substantiates Holmes' observation (fig. 219).

PANELS

Before excavations were undertaken, some of the elements composing a mask above the west doorway were found *in situ* (figs. 156 and 238). From this and the fact that mask elements were found in the débris directly in front of the other doorways, it is safe to assume that a similar one was located above each doorway and, in the repair of the zone, masks were assembled from the material found and were so placed (figs. 220, 221, 222 and 223). The stones of the west mask as found *in situ* showed its original position as centered slightly north of the vertical axis of the doorway. Sr. José Reygadas y Vertiz, of the Secretaría de Educación Pública, was at Chichen Itza in 1927 when the mask above the south doorway was replaced. Upon his advice, this mask as well as the one on the east and on the north were centered above their respective doorways.

The arrangement of the stones in the restoration of the masks must not be considered as conclusive. It can not be said with certainty that the component stones are at present located and placed exactly the same as they were by the ancient workmen. While a stone may be in its original location, its position may be changed or a stone may be reversed as to the side of the mask on which it originally appeared. Even though restorations may be made in accordance with the original plan, it is possible that individual stones may have been incorrectly placed, either intentionally or erroneously, by the ancient masons.

A description of only the west mask is given, since the four vary only in details of sculptured decoration. The west mask has a width of 2.48 meters and a height of 1.15 meters and rests on a plain zone which rises to a height of 30 cm. above the five-member molding. It is composed of 32 stones, exclusive of the fillet-like band (figs. 223 and 224). The mouth, resting on the 30-cm. plain zone, is 88 cm. in width and is made up of six stones, three each for the upper and lower jaws. The stones on either side of the mouth are decorated with scrolls which curve downward from the upper jaw and then recurve along the outer edges of the stones. Above the center of the upper jaw rests the great curved snout. It has a width of 34 cm., a vertical depth of 20 cm. and projects 46 cm. The vertical measurement from the top of the horizontal surface of the snout, which projects 30 cm. from the line of the upper zone before curving downward, to the under

¹ Holmes, 1895 p. 119 and plate XIIg.



FIG. 219—CARACOL TOWER.
Three courses of vertical zone, *a*, above five-member molding were found *in situ*.



FIG. 220—MASK ABOVE NORTH DOORWAY OF CARACOL TOWER.



FIG. 221—MASK ABOVE EAST DOORWAY OF CARACOL TOWER.



FIG. 222—MASK ABOVE SOUTH DOORWAY OF CARACOL TOWER.



FIG. 223—MASK ABOVE WEST DOORWAY OF CARACOL TOWER.

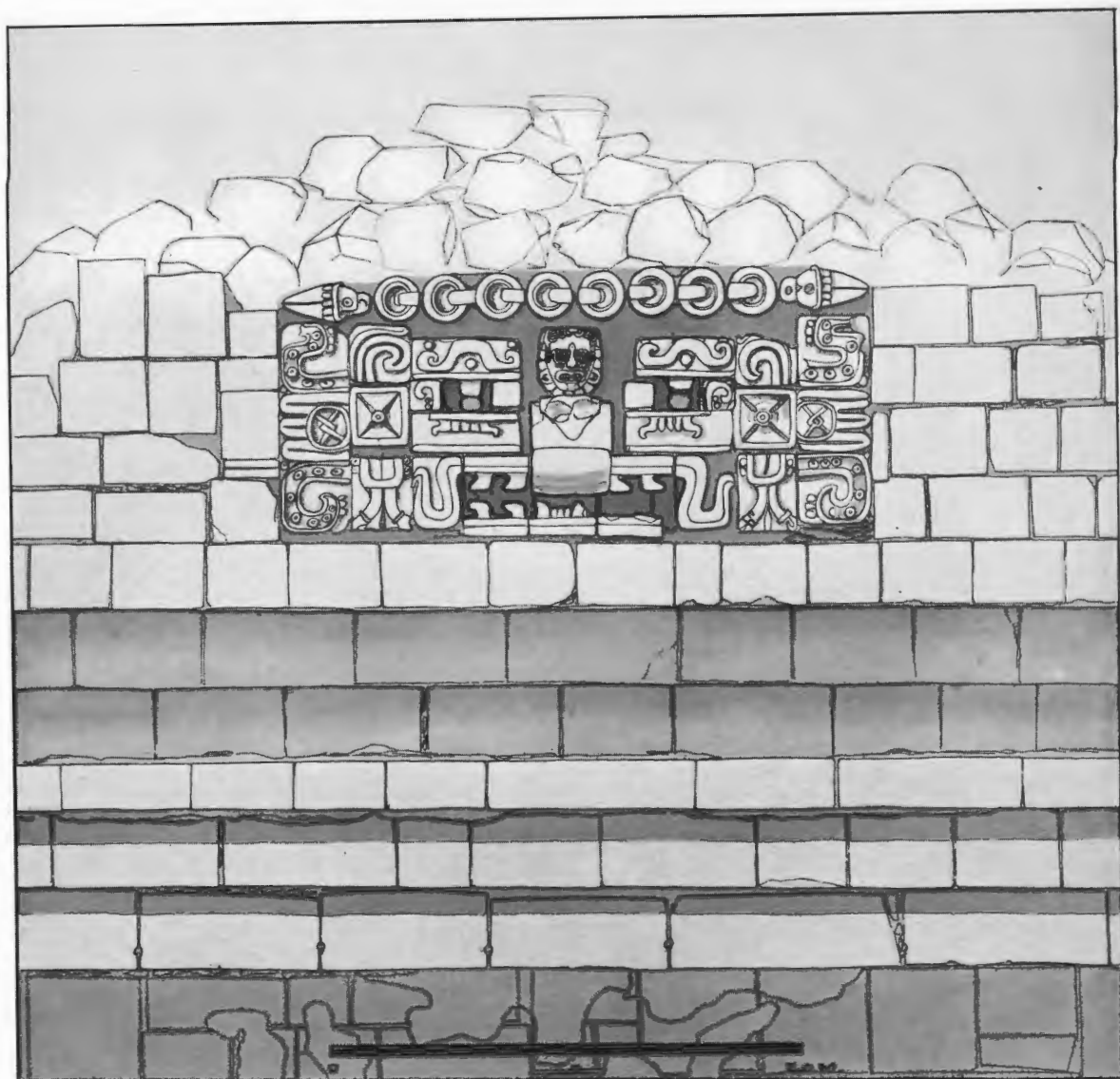


FIG. 224—SCALE DRAWING OF WEST MASK OF TOWER.

surface of the lower curve is 38 cm. Both sides are decorated with three large dots. On the upper horizontal surface near the outer edge are two short knobs, each rising 6 to 8 cm. above the surface and having diameters of approximately 7 cm. The knobs of the snout of the north mask are shown in profile in figure 107. Above the snout was a human head sculptured in the round. That replaced is a cement cast of the head from the north mask which was found during the excavations in the débris just below. Casts of the same original were also used in the south and east masks. The eye of the mask is composed of five stones; two, elongated, set horizontally and parallel, the lid being a downward extension of the upper, are separated by two small blocks, one at either end; the fifth, set in the recess behind the lid, is round and peg-like, the exposed flat surface representing the pupil. The other elements composing this mask have their counterpart in all masks at Chichen Itza, though they differ in sculptural treatment. The fillet, 21 cm. wide, is formed of seven stones. The decoration is in the form of eight rings, through which a plain band is woven. Either end of the fillet terminates in a pointed element. As restored, the masks above the north, east, south and west doorways are shown in figures 220, 221, 222 and 223, respectively.

The sculptured material recovered during excavations, besides that forming the four restored mask panels, includes that from seated figure panels, one lot of unclassified material some of which may be from masks, and the following known mask material: 17 stones (24 rings) from fillets; two pointed elements terminating fillets; one ear plug of different type than used in the restored masks; two stones from above an ear plug, one right and one left; one stone from above a lateral ear plug decoration, left side; and one stone from below a lateral ear plug decoration, left side.

The seated figure panels were composed of a central human figure, with conventional feather designs on both sides, similar to the panel above the east doorway of the Monjas East Wing (figs. 225 and 226). The seated figure from the north side of the tower, found in the débris on the great lower platform, has a height of 79 cm. (fig. 227). The neck, in the form of a dowel pin, is set in a socket between the shoulders. The seated figure, including the head-dress, from the east panel, also found in the débris on the lower platform, has a height of 90 cm. (figs. 228 and 229). The head and body, each separate stones, were furnished with tenons at the back extending at right angles to the vertical axis of the figure. The figure from the west panel is probably that noted in the niche by Dr. Morley in 1924, when he discovered the stela and circular stone (page 278; fig. 165, *a*). The figure was deposited in the Museum of Archaeology and History at Merida.

Associated with the panels were serpent bands, some of the blocks of which were sculptured with hieroglyphs. It is evident from the plain borders on the blocks, the position of the heads of the serpents and the hieroglyphs that they had all been parts of serpent bands which extended horizontally and vertically around the panels. The hieroglyphs are considered by Dr. Morley in the Appendix.

Other sculptured material found during the excavation, doubtless belonging to the panels and recovered from the west and northwest, the north, the east, and the south and southwest, is shown in figures 230, 231, 232 and 233, respectively.

So far we know the definite location of only the mask over the west doorway, a portion of which was found *in situ*. However, finding mask material in front of the other doorways

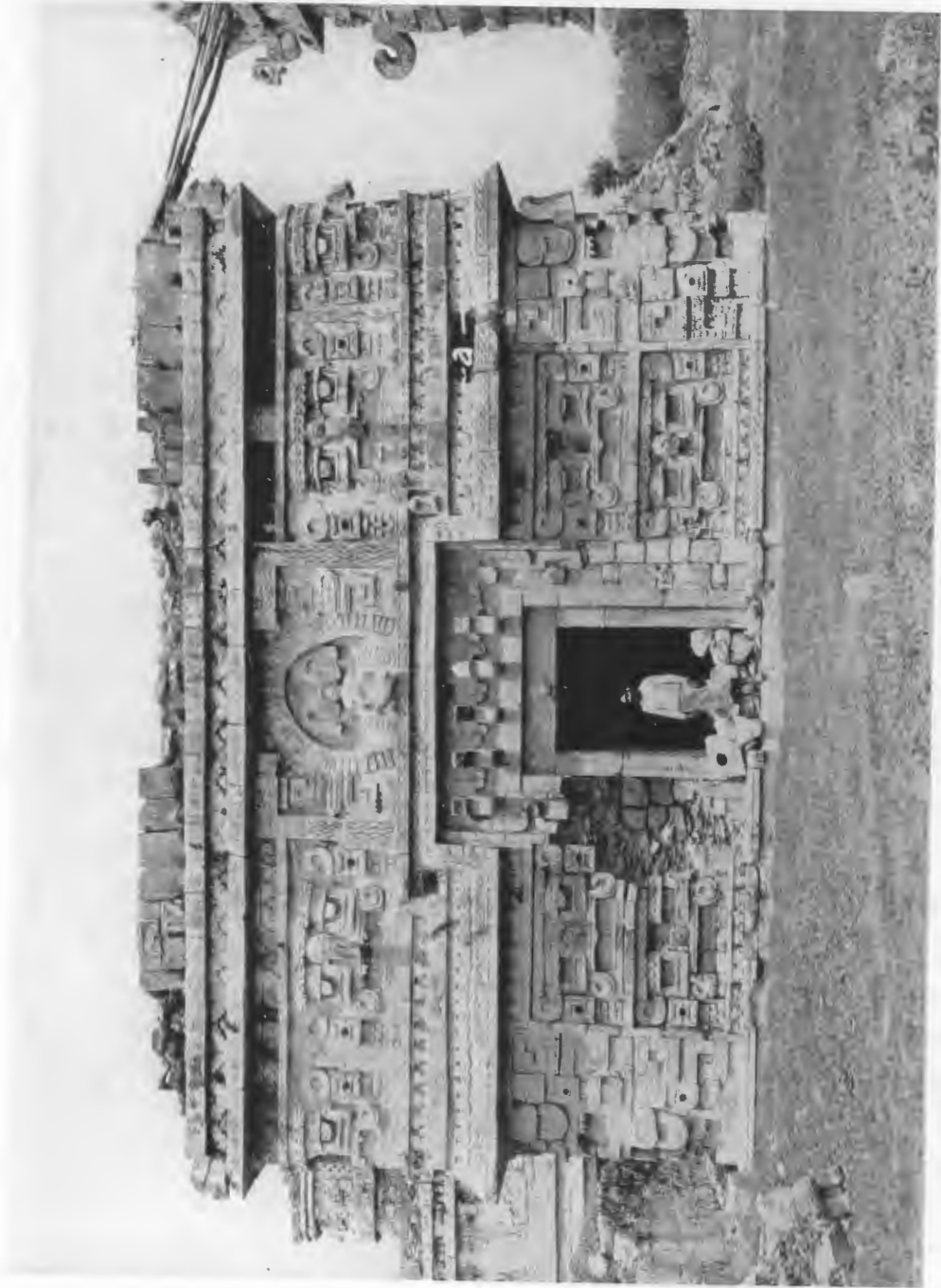


FIG. 225—MONJAS, EAST WING, EAST FAÇADE

Sculptured material recovered in excavation of Caracol tower has its counterpart in that found *in situ* in seated figure panel above east doorway of Monjas, East Wing. Four S-shaped stones similar to *a*, were found in the *embutido* of Caracol West Annex.

presupposes a similar mask in the same relative position over these doorways. Since the facing of the tower above the five-member molding had fallen, except for the few elements of the mask over the west doorway and the area between the south and east masks which rose as a plain zone to a height of at least 1.16 meters as is shown by the section of facing wall resting on the fallen block of five-member molding, none of the sculptured material found in the débris can with certainty be allocated to either the upper zone of the lower section or the upper story of the tower.

The material once located in a particular zone must then be assigned to a place in that zone. There is no absolute proof for the assignment of this material, since, as has already been said, none of it was found *in situ*. A reasonable arrangement would be the location of the seated figure panel with its hieroglyphic serpent bands above the definitely located mask, which is suggested by the carving on the back of Stela I at Quirigua.



FIG. 226—SCULPTURED STONE FOUND DURING EXCAVATION OF CARACOL TOWER SIMILAR TO STONES USED ON EITHER SIDE OF SEATED HUMAN FIGURE ABOVE EAST DOORWAY OF MONJAS, EAST WING.

The height of the second vertical zone would not allow for a panel made up of two masks and the seated figure if the zone, as suggested, was finished with an 80-cm. three-member cornice. So that if there were other masks, which from the small amount of material remaining may even be questioned, they could have been placed only in the upper zone of the second story or between the masks already definitely located. If the latter supposition be correct, it is known that there would be at least a 1.16-meter plain zone below the mask. If one mask had been used in this space, there would have been a 1.20-meter plain zone above. There is no precedent for the placement of a single mask unassociated with decorative motifs in the center of a plain area. If two masks were used, though from the very small amount of material recovered this seems improbable, the plain zone above would have had a height of but 5 cm.

While all the stones necessary to form a complete decorative panel were not recovered on any one side, the greater part of the representative elements were found. Failure to find elements is primarily attributed to the robbing of the ruins for post-Conquest constructions. Since the panels other than the masks could not be replaced with any degree of



FIG. 227—Seated figure from north side of tower.



FIG. 228—Seated figure from east side of tower.



FIG. 229—Seated figure with head-dress from east side of tower.

HUMAN STATUETTES FROM SECOND VERTICAL ZONE OF CARACOL.



FIG. 230—SCULPTURED MATERIAL RECOVERED FROM WEST AND NORTHWEST TALUS OF TOWER AND UPPER PLATFORM.



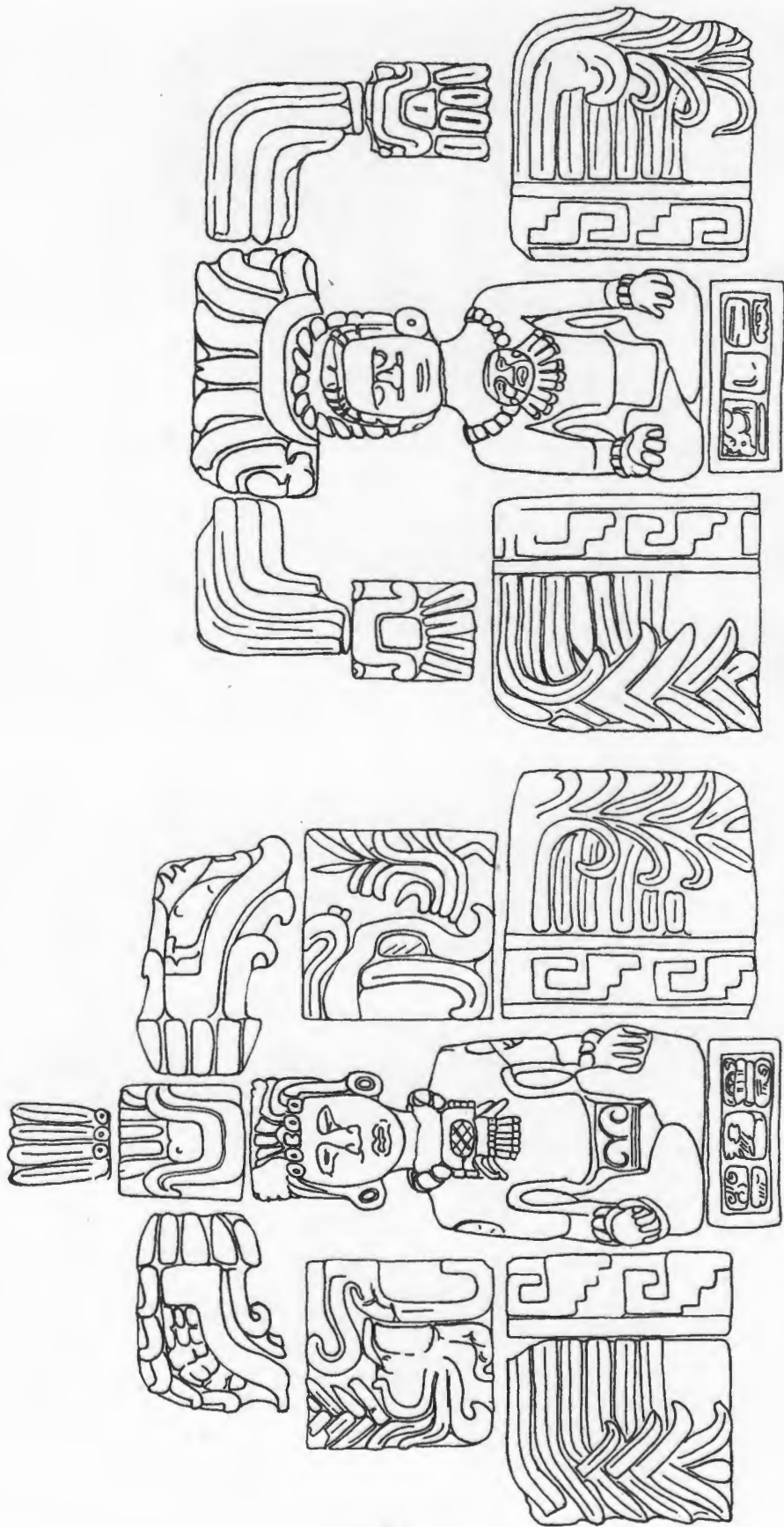
FIG. 231—MATERIAL FROM NORTH SIDE.



FIG. 232—MATERIAL FROM EAST SIDE.



FIG. 233—MATERIAL FROM SOUTH AND SOUTHWEST SLOPES OF TOWER AND PLATFORM.

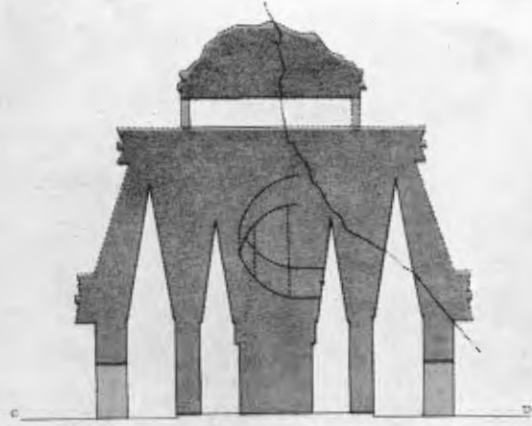


0
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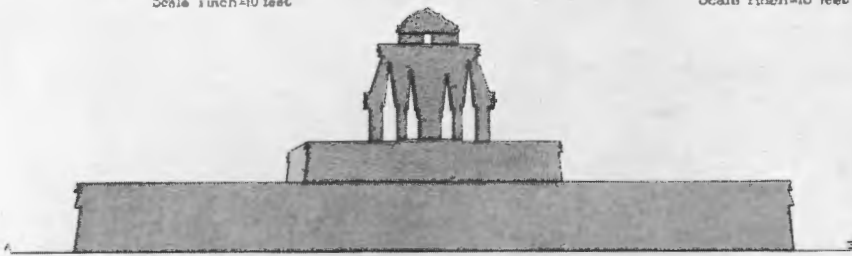
FIG. 234—TWO SUGGESTED RESTORATIONS OF SEATED FIGURE PANELS WHICH APPEARED IN SECOND VERTICAL ZONE OF TOWER.



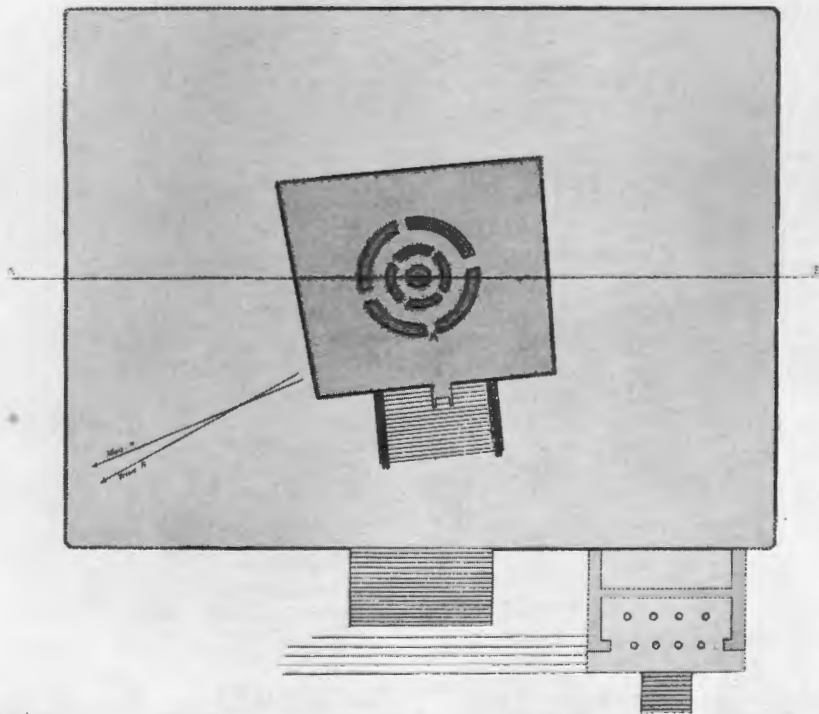
GROUND PLAN OF CARACOL
Scale 1 inch=10 feet



SECTION THROUGH C-D
Scale 1 inch=10 feet



SECTION THROUGH A-B
Scale 1 inch=30 feet



PLAN OF CARACOL AND TERRACES *May 1905* pages 20-22
Scale 1 inch=30 feet

Chief Architect.

Archaeology, Vol. III, Plate 20

FIG. 235—MAUDSLAY'S PLAN AND SECTION OF THE CARACOL.

certainty, no restoration above this point was attempted. Two suggested restorations of a seated figure panel are shown in figure 234. Dr. Morley also suggests a restoration in figure 338, with which, however, the writer is not in agreement because material recovered and definitely belonging is not included.

SECOND STORY

The vertical facing of the second story of the tower is set in 2.23 meters from the line of the first story. While badly fallen, a small section on the western side was standing to a height of 1.87 meters (figs. 219 and 341). The plain lower facing rises vertically to a height of 1.27 meters. A number of recesses and at least one long passageway had been let into the facing of the plain vertical lower zone. Of these Maudslay writes:

“Above this, again, was a level platform, on which stood an upper storey furnished with what looked like six small doorways facing outwards. Of these the doorway immediately over the lower doorway ‘A’ [west doorway of lower story] is the entrance to a small passage, 3 feet high, which probably passed right across the building to a doorway on the other side” (fig. 235).¹

Holmes adds to the description of the passageways and recesses:

“. . . such a gallery was found passing through the turret from east to west. This passageway is one of the numerous unique features of the structure. It is thirty-six inches high, twenty-two inches wide and about ten feet long, and is faced with cut-stone as indicated in the section [fig. 6]. What appears to be a door or window, seen on the west side of the summit but not visible in the drawing, is only the opening of this passage finished with jambs and lintel of cut stone. It is probable that the other openings in the tottering summit-mass, seen from the southwest, are of like character, or otherwise only dummy doorways. This point could not be determined as the masonry was in such an unstable state that it was unsafe to venture farther along the steep margins of the tower” (fig. 235).²

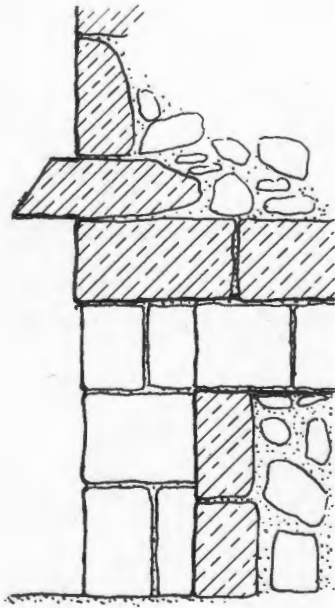
When, in 1925, Dr. Ricketson undertook the study of the Caracol only three of the “six doorways” mentioned by Maudslay were standing. Of these the one on the south is a recess or dummy doorway. It rises from the base of the lower zone to a height of 98 cm., has a width of 54.5 cm. and a depth of 38 cm. (fig. 236). An opening in the back wall measures 21.5 cm. in width by 29.2 cm. in height. The west jamb of the opening is 12.7 cm. from the west wall of the recess. The soffit of the recess and of the opening in the back wall are on the same level. The opening gives into a shaft which extends horizontally through the *embutido* to the second story chamber.

On the southwest there is also a recess or dummy doorway. It has a height of 99 cm., a width of 53.3 cm. and a depth of 34.2 cm. (fig. 237). A rectangular opening in the back wall measures 20.3 cm. in width by 35 cm. in height. The western jamb of the opening is 17.7 cm. from the west side of the recess. The soffit of the recess and of the opening are on the same level. This opening, also like the one on the south, gives into a shaft which extends through the *embutido* to the second story chamber.

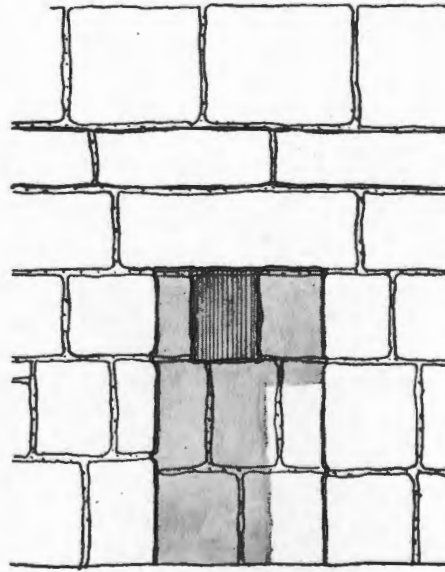
On the western side of the upper story, and opening out of the lower zone, is the doorway or window to the “passage,” which Maudslay thought “probably passed right across the building to a doorway on the other side.” The window has a height of 96 cm. and a

¹ Maudslay, 1889-1902, Vol. III, text, p. 21.

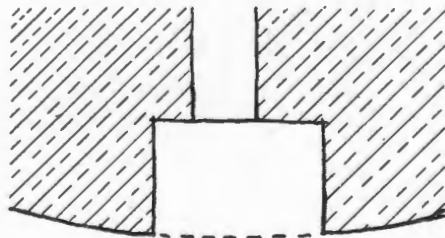
² Holmes, 1895, Vol. I, p. 119.



· Section ·



· Elevation ·



· Plan ·

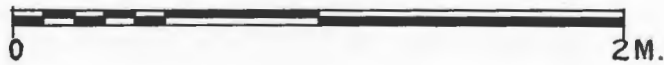


FIG. 236—SCALE DRAWING OF SOUTH RECESS, UPPER STORY OF TOWER.

width of 64 cm. The passageway into which the window opens has a length of 2.50 meters and, like the shafts of the recesses, gives into the second story room. The condition in which the structure, as well as the window, was found in 1925 and the repair during the same year is reported upon by Dr. Ricketson as follows:

“. . . work was carried out with three objectives in view: (1) to prevent the collapse of Window No. 1, (2) to support the outer wall on the west and (3) to support the outer wall on the southeast. The complete erosion of the original mortar in these last two areas necessitated the removal of dirt and fallen stones, and the replacement of stones *in situ*, laid in cement.

“It was felt that the preservation of Window No. 1, long suspected of having been used as an observatory, was the most important operation. This aperture is a rectangular passageway, 8 feet 3 inches long, 2 feet 10 inches high, and 2 feet 3 inches wide, facing West 8°30' North (Magnetic). The western jamb was found to be leaning toward the west so that it was 6 inches out of plumb [fig. 131], and the northern jamb of the eastern end rested precariously on a single rock, itself without any solid foundation. To build a buttress in order to support this latter, it was first necessary to develop a base sufficiently solid by repairing the west wall.

“Work was consequently begun at this point, directly over the West Doorway. Two conditions hitherto un-noted were revealed: (1) the necessity of obtaining faced wall-stones by searching and digging in the fallen débris to the west of the building, and (2) the extraordinarily precarious condition of the inner wall of the outer circular vault [fig. 238].

“These conditions were overcome by building up the outer wall three courses above the 5-member cornice. Wall stones from the débris below were used, and need not be replaced when final repairs are undertaken. The second condition was the more difficult of solution, as the removal of a single vault stone would have brought down the whole top. Nor could the débris above be removed, as it was the weight of this pressing down on the tenons of the wall-stones that prevented the vault itself from collapsing. Cement was forced into the spaces between the stones; after this hardened, the débris above was removed as far as possible, and more cement poured over the tenons of the vault-stones.

“The cap-stones above the vault of the inner circular corridor in the northern quadrant having fallen, these were replaced laid in cement, and from these two solid foundations a ‘skin’ of cement was built up around rocks in position until a firm support could be placed under the eastern jamb of Window No. 1. The whole top of the structure was then cemented to prevent erosion by the heavy rains, the cement being worked in between the stones after the original crumbling mortar had been removed. In this work only loose, superficial stones were removed, and no effort was spared to maintain original stones in their original positions.

The third and last area of repair mentioned above was the outer wall on the southeast. Inasmuch as the tenons of the vault-stones were exposed here the work consisted entirely in the filling-in of intervening spaces with cement and small wedges.”¹

A comparison of figure 239, a photograph taken by Henry N. Sweet in 1889, and figure 238, one taken in 1925, shows the comparatively small amount of disintegration of the upper section of the tower in the 36-year interval represented.

Aided by the picture taken by Sweet in 1889 and the material found in position, the recesses were repaired with reasonable accuracy. All stones found *in situ* were so left and incised with a cross by means of a chisel, so that, in later years, identification would be possible. The repair is illustrated in figures 158, 240, 241, 242, 243 and 244.

Above the lower zone rests a single-member apron molding 20 cm. in height. It projects 20 cm. from the facing of the second story and rises at an angle of 58° to its horizontal upper surface (fig. 236).

¹ Ricketson, 1925, pp. 265, 266.



FIG. 238—CARACOL TOWER.
View from southwest taken in 1925.



FIG. 239—CARACOL UPPER PLATFORM AND TOWER FROM SOUTHWEST.
Photographed in 1889 by Henry N. Sweet. From Maudslay's *Biologia Centrali-Americana*, Vol. III, plate 22.



FIG. 240—CARACOL TOWER, REPAIR OF SOUTH RECESS OF UPPER STORY.



FIG. 241—CARACOL TOWER, REPAIR OF SOUTHWEST RECESS OF UPPER STORY.



FIG. 242—CARACOL TOWER DURING REPAIR IN 1930.

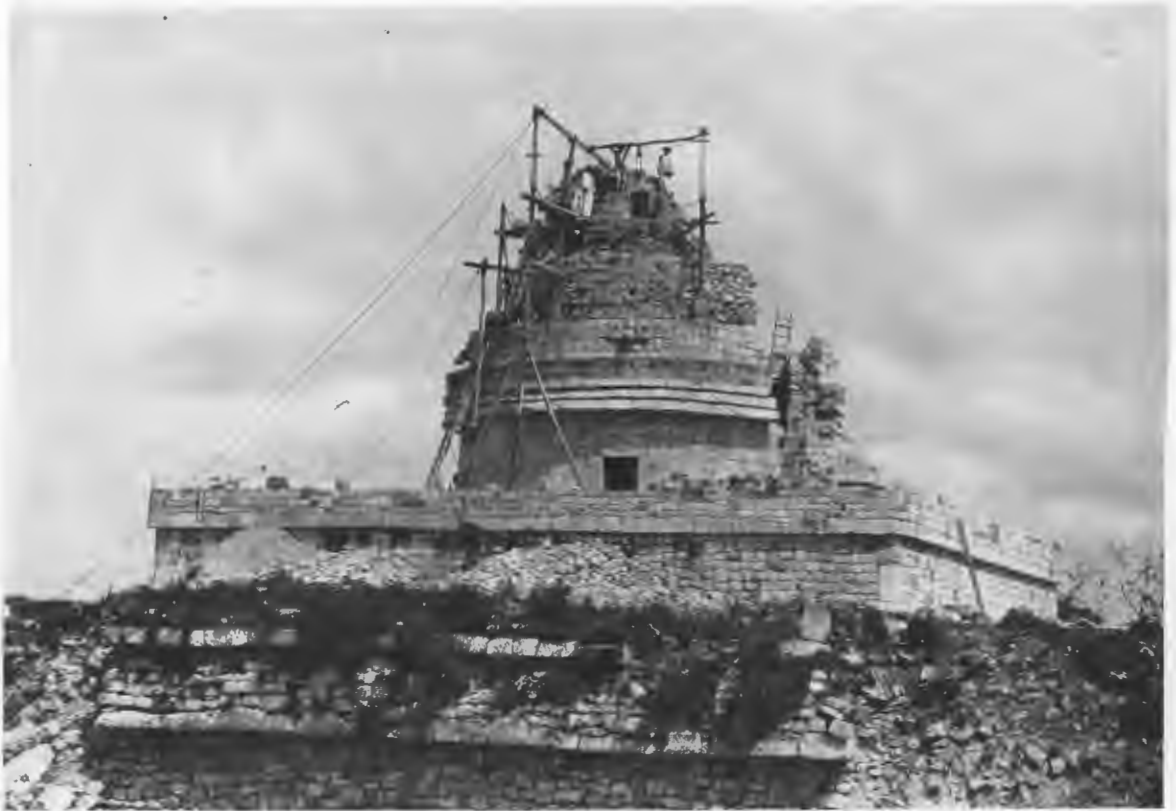


FIG. 243—CARACOL TOWER, SOUTH SIDE, DURING REPAIR.



FIG. 244—CARACOL TOWER, SOUTH SIDE, REPAIR COMPLETED IN 1930.

Set inward 7.6 cm. from the top of the angular facing of the molding and in line with the facing of the vertical zone below, rose an upper vertical zone. Of this upper zone only a single course of stone, 40 cm. in height, was found *in situ*.

Above this point the nature of the outer facing is unknown. The height of the second vertical zone was perhaps not less than 1.47 meters. This height of plain zone with the addition of a cornice would allow for the corbelled arch in the small chamber of the second story.



FIG. 245—ROOF *Adorno* USED AT THE CARACOL.

Height not including tenon, 58 cm.

ROOF ADORNOS

The topmost element of the building was presumably a row of roof *adornos* (fig. 339), inasmuch as pieces were found in the débris on all sides of the tower and upper platform. During the excavations at the northeast corner of the upper platform a single unbroken specimen was found (fig. 245). The total number recovered, as indicated by a count of upper sections, was 77. This type of *adorno* is sagittate in form and, while varying in width from 41 to 49 cm., the one illustrated has a width of 47 cm. and a height of 58 cm. exclusive of the 25-cm. tenon by which it was fixed upright in the roof. Ten different types of roof *adornos* have been recovered at Chichen Itza (fig. 246).

It is presumed that the upper zone of the second story was finished with a cornice, so that the *adornos* may well have been fixed in the roof in line with the vertical facing of the

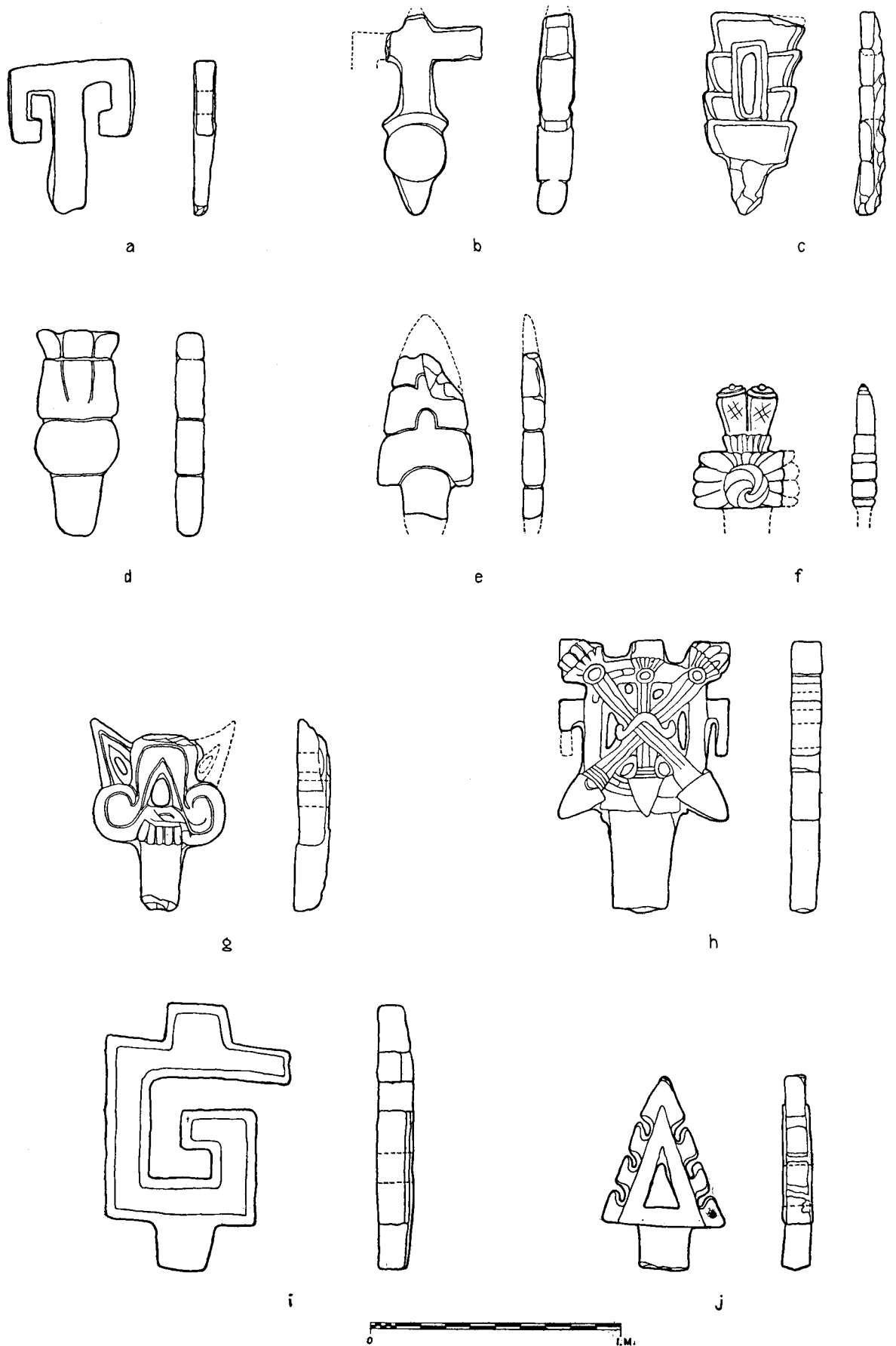


FIG. 246—TYPES OF ROOF *Adornos* FROM CHICHEN ITZA.

a, Temple of the Owls; *b*, small ruin in southwest section of city; *c*, Temple of the Wall Panels; *d*, Northwest Group; *e*, Northwest Group; *f*, Chac Mool Temple; *g*, ruins near San Francisco; *h*, Temple of the Tables; *i*, Mercado; *j*, Caracol.

tower. The placement of the *adornos* is of course not known, but even had they been so set as to touch one another, only 43 could have been used to surround the top of the tower. It is more likely that they occurred 10 or 20 cm. apart. If spaced at 10 cm. intervals, only 35 *adornos* could have been used. Where the others were located is unknown. Were they at the top of the first story of the tower? It is possible that the total number of *adornos* was even greater than 77, and if so, those not found may, like other material, have been carried away for use in post-Conquest constructions.

OUTER ANNULAR CHAMBER

DOORWAYS

Entrance to the outer annular chamber is through four doorways, one on each the north, east, south and west sides (figs. 183 and 348).

The north doorway is 1.81 meters in height and 1.05 meters in width. The jambs have average depths of 94 cm. Patches of plaster on both jambs showed yellow tinting superposed on red. On the west jamb there was the trace of a graffito¹ which had been cut through to the red-tinted plaster.

J. Eric Thompson reported finding, in 1926, the figure of a hand painted in red on the soffit of the lintel. At the time this area was excavated and the lintel repaired (1927) all trace of the hand had disappeared. The jambs were found in their original position. The lintel was broken in two pieces by a transverse cleavage (figs. 189 and 247).

In the repair of the lintel two 2-cm. holes were drilled vertically through the larger section near the line of cleavage. Short planks were placed against the soffit and by means of a screw jack the two sections were brought into alignment (fig. 249). Two steel rails, each cut to a length of 2.28 meters, were placed on top of the lintel. Two 1.2-cm. bolts, curved at one end, were hooked over the rails; the other ends, having been threaded, were inserted in the holes drilled through the lintel. Small square steel plates placed over the threaded ends of the bolts and mortised in the soffit of the lintel were drawn up tightly by nuts, thus holding the lintel in place. All crevices were filled with cement. The mortises were filled with cement the color of the stone, completely hiding the steel plates (figs. 250 and 251).

The east doorway measures 1.91 meters in height, 98 cm. in width and has a depth of 93 cm. The component stones, retaining their relative positions, had been thrust outward with the collapse of the eastern section of the structure (fig. 248).

Two layers of plaster were noted on the jambs, the earlier tinted pink, the later red. The outside facing of the doorway and of the lintel were painted with a band of blue, 16 cm. wide, the pigment being applied directly to the stone. On the inside of the north facing of the doorway traces of red pigment were noted to within 5 cm. of its edge, except in one place where it came to within 1.2 cm.

In the repair of the doorway, the three upper jamb stones on the south side were suspended by ropes and a chain block until the lower stone of the south jamb and the entire north jamb were reset, when the suspended stones were swung back into alignment and permitted to rest in their original positions (figs. 252, 253 and 254). Due to the great care exercised by the workmen in handling the material, they were able to replace these three

¹ Morris, A. A., 1930, p. 475, fig. 321 c.



FIG. 247—NORTH DOORWAY, OUTER ANNULAR CHAMBER. THE LINTEL WAS FOUND BROKEN.



FIG. 248—INTERIOR VIEW, EAST DOORWAY, OUTER CHAMBER.



FIG. 249—The lintel forced into position and braced by means of a screw jack.



FIG. 250—Steel rails placed above lintel.



FIG. 251—Steel rails resting on top of lintel. A bolt hooked over each rail extends through holes drilled in lintel and is secured by steel plates and nuts mortised in soffit of lintel.

CARACOL TOWER, NORTH DOORWAY.



FIG. 252—CARACOL TOWER, REPAIR OF EAST DOORWAY.

The jambs had been thrust outward with collapse of eastern section of structure. The three upper stones of south jamb were suspended by ropes and a chain block while lower stone was reset.



FIG. 253—Lintel suspended by ropes and chain block while jambs were being realigned.



FIG. 254—Mason resetting south jamb.



FIG. 255—Two steel rails were placed on top of lintel to give additional support to superstructure.

CARACOL TOWER. REPAIR OF EAST DOORWAY.



FIG. 256—CARACOL TOWER, OUTER ANNULAR CHAMBER.
SOUTH DOORWAY.



FIG. 257—MASONRY OF NORTHWEST SECTION OF OUTER ANNULAR
CHAMBER. NORTH DOORWAY AT EXTREME RIGHT.

jamb stones without breaking the original plaster and the mortar which bound the stones together. The lintel was unbroken, but as it was short and did not have great bearing surface on the jambs two steel rails were placed on top, projecting 35 cm. beyond either jamb, to give additional strength in supporting the superstructure (fig. 255).

The south doorway has a height of 1.82 meters, a width of 1.05 meters and a depth of 92 cm. Three layers of plaster were noted extending from the top of the west jamb onto the soffit of the lintel. The first or earliest layer was untinted; the other two had been tinted red. As the third or final layer was noted only over a very limited area, it may well represent repair of the plaster. The lintel is in good condition. In the repair of the structure neither the jambs nor the lintel were moved (fig. 256).

The west doorway has a height of 1.81 meters, an average width of 1.03 meters and a depth of 92 cm. (fig. 185). No trace of color was noted on the vestiges of badly weathered plaster still remaining on the jambs (fig. 187). Incised hatched lines noted on the plaster of the south jamb may be old, or may be of comparatively recent origin. The lintel is in good condition. Neither the lintel nor the jambs were moved during repair of the tower.

THE CHAMBER

At the floor level, the outer annular chamber has an average width of 1.54 meters. Its walls rise to an average height of 3.35 meters (figs. 192, 256 and 257). An occasional swelling at the top of either wall causes a decrease in the width of the chamber at these points of from 15 to 22 cm. which does not appear to have been intentional but due rather to carelessness in construction.

Resting on the walls of the chamber rose a vaulted arch to a height of 4.42 meters. At the point of the spring of the arch there is an overhang of from 5 to 10 cm. Less variation was noted in the amount of this overhang on the outer than on the inner wall.

MASONRY

The facing of the outer wall of the chamber is similar to that of the lower zone of the tower (fig. 257). The stones of the facing of the inner wall are much less carefully dressed and in general are smaller and more uniform in size than those of the outer. A greater amount of chinking was noted in the masonry of the inner wall (fig. 256).

A single sculptured stone was found *in situ*, reused in the facing of the outer wall; it is near the spring of the arch and in line with the east jamb of the south doorway (fig. 256). The sculpture is the guilloche and curtain motif, similar to that found on sculptured stones reused in the cornice of the bench of the second circular platform (page 94). The condition in which the outer wall was found and its repair are described on pages 153 and 156.

The masonry of the arch is well illustrated in figures 238, 258, 259, 261. Figure 257 shows the stones at the spring of the arch to be relatively large and not carefully faced, but better worked than those immediately above and generally fashioned with a slight bevel. In some places, as shown in figure 258, the stones of the inner slope at the spring of the arch are very crudely worked like those in the courses above.

The arch stones are not specialized.¹ For the most part they are long, relatively thin, with the exposed face only occasionally squared, dressed or slightly beveled (figs. 258, 259 and 261). Much chinking was used. Some of the stones of the final course on either slope

¹ Morris, 1931, Vol. I, p. 208.



FIG. 259—STANDING SECTION OF ARCH OF OUTER ANNULAR CHAMBER,
SOUTH SIDE.

Photographed in 1925. Plaster still remains on walls and arch.



FIG. 258—SECTION OF ARCH IN SOUTHEAST QUADRANT OF OUTER
CHAMBER STANDING IN 1925.

View looking south. Some of original beams in position. Fragments of south-east buttress supported by sections of beams still tenoned in inner slope of arch.



FIG. 261—SECTION OF ARCH IN NORTHWEST QUADRANT OF OUTER CHAMBER. VIEW LOOKING SOUTH. PHOTOGRAPHED IN 1925.



FIG. 260—STANDING SECTION OF ARCH OF OUTER ANNULAR CHAMBER, NORTHWEST QUADRANT. PHOTOGRAPHED IN 1925.



FIG. 262—Section of buttress as standing in 1925. View looking northwest.



OUTER ANNULAR CHAMBER, SOUTHWEST QUADRANT.

FIG. 263—Buttress and cross poles as found in 1925. View looking south.

of the vault are much better dressed (figs. 238 and 259), are carefully cut and have been fashioned with a bevel on the face. The arch was not closed with a flat cap stone, but with the two courses of stones just mentioned leaning together at the apex (figs. 192, 270 and 238). There is a slight offset at the base of these stones.

BUTTRESSES

The upper half of the vault of the chamber is divided into four quadrants by four transverse masonry walls or buttresses which span the arch (fig. 192). The buttresses are supported by four roughly squared wooden beams (fig. 256) set into the masonry at either side of the arch at an average of 1.50 meters above the offset at the spring line. Each buttress, resting directly on the beams and extending upward to the apex of the arch, has an average width of 78 cm. and on either side overhangs the outer beam by 5 cm.

The stones in the buttresses, being fairly well dressed, are better worked than those used in the arch. The buttresses were built at the time of the erection of the arch, since their terminal stones are tenoned into its masonry (fig. 262) and the stones of the arch do not extend behind the ends of the buttresses.

Although no buttress was found in perfect condition, the one in the southwest quadrant was the best preserved. The facing of its north side was practically intact (fig. 263); however, the south facing and much of the *embutido* had fallen (fig. 262). Two of the beam supports were *in situ*. The wood was identified by native workmen as *chac te* (*Caesalpinia platylaba*).¹ Fallen parts of this buttress were replaced.

The buttress in the southeast quadrant had entirely fallen except for the broken ends of two beam supports set into the inner slope of the arch and a few stones resting on these broken ends. Two views of the buttress, as found in 1925, are shown in figures 258 and 259. It was rebuilt (fig. 264).

No remains of a buttress were found in the northeast quadrant, as the arch had here almost entirely collapsed; however, it seemed quite likely that a buttress existed, and when repairs were made in this quadrant, one was raised to the height to which the arch was restored (fig. 265).

The buttress in the northwest quadrant had entirely fallen (fig. 261). Its outlines on the inner slope of the arch, from which it had fallen, indicated its size so that it could be replaced with reasonable accuracy.

CROSS POLES

In most Maya structures poles extended from one side of the vault to the other in more or less regular arrangement. In the outer chamber cross poles, in pairs, were noted at four levels. In some places the poles or beams had been broken and were found on only one side of the arch, on the other side only the sockets in which they had been fixed remain; thus their former arrangement and location was indicated. This arrangement varies slightly in the different quadrants as defined by the buttresses.

The distribution of the poles in the west half is shown in figure 266. One pair was placed 1.05 meters below each buttress and a second on the same level and midway between the first (figs. 256, 267, 268 and 269). At the second level, 1.77 meters above the offset at the spring of the arch, is a single pair approximately midway between the buttresses. The

¹ Roys, 1931, p. 231.



FIG. 264—NORTHEAST DOORWAY OF INNER ANNULAR CHAMBER. SOUTHEAST BUTTRESS HAS BEEN REPAIRED.



FIG. 265—INNER AND OUTER SLOPES OF ARCH IN NORTHEAST QUADRANT OF OUTER CHAMBER. Replaced to a height of 2.35 meters. The northeast buttress, *a*, was raised to the height to which the arch was restored.

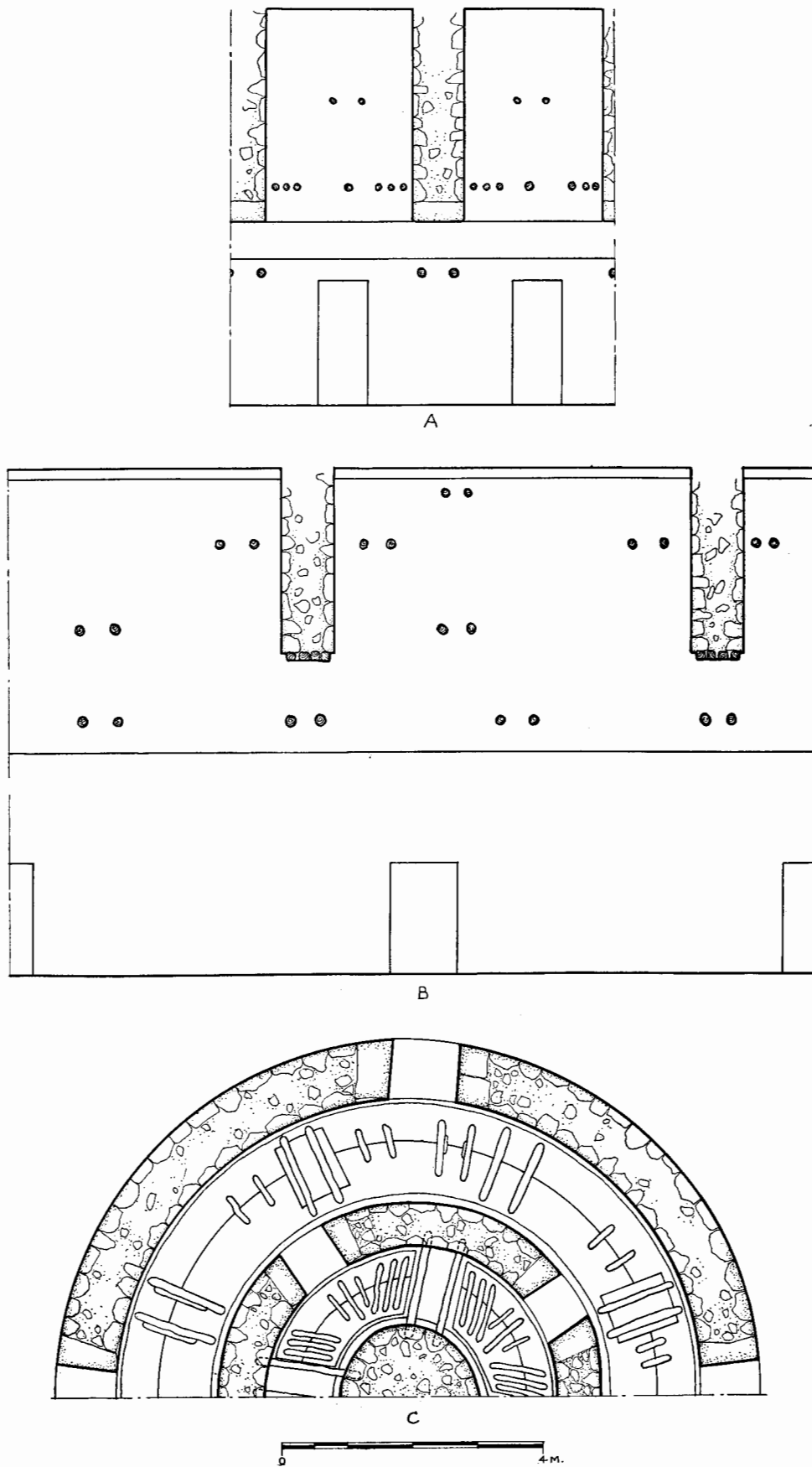


FIG. 266—PLAN THROUGH TOWER AND DEVELOPED ELEVATIONS OF CHAMBERS.

A, developed elevation of west half of inner annular chamber; B, developed elevation of west half of outer annular chamber; C, reflected plan of west half of tower showing arrangement of cross poles and buttresses.



FIG. 267—VIEW LOOKING UPWARD IN ARCH OF OUTER ANNULAR CHAMBER, WEST QUADRANT.



FIG. 268—VIEW LOOKING UPWARD INTO ARCH OF OUTER ANNULAR CHAMBER, WEST QUADRANT.

third level is approximately 1.30 meters above the second and has two pairs of poles, one on either side of the quadrant. At the fourth level, near the top of the arch, there was used but one pair of poles, located almost halfway between the buttresses (fig. 268).

ARCH, CONDITION IN WHICH FOUND AND REPAIR

Only two sections of the outer slope of the arch of the chamber remained standing when, in 1925, the Mexican Government gave permission for certain specified repairs to prevent the collapse of the Caracol. These standing sections were: one, on the western side (fig. 260), roughly corresponding to the section of five-member molding that was still *in situ*,



FIG. 269—VIEW LOOKING UPWARD INTO ARCH OF OUTER ANNULAR CHAMBER, SOUTH QUADRANT.

and, the other, an extremely fragmentary section on the southeast (figs. 258 and 259). The inner slope of the arch, from the southeast, around the south and west to the break caused by the collapse of the northwest buttress (fig. 284), was in a fair state of preservation.

Through the foresight and care shown by Dr. Ricketson in strengthening these standing sections, the building was held from further collapse until the Institution was able to undertake the excavation and repair of the Caracol as a definitive project. So skillfully and thoroughly had the work been done that no part of it was taken down or moved when contiguous sections of the arch were built.

In the final repair, the arch was closed on the west and south and around to the southeast. The inner slope required the resetting of only a few stones and careful chinking. For rebuilding the great section on the south (fig. 133), in which the inner slope and the

standing portions of the outer served as patterns, it was not necessary to use forms or supports. To close the arch the final course of stone on one side was so laid as to lean against that on the other, thus forming the apex (fig. 270).

The eastern section of the arch had entirely fallen. On the north, there remained a small portion of the inner slope, approximately 1.30 meters high. The inner and outer slope on the east and north were replaced to a height of 2.35 meters above the offset at the spring (figs. 257 and 265). However, one exception to the repair of the outer slope on the east side should be noted where the five-member molding, wall and arch fell *en bloc*. This section, as previously explained, was not restored to its original position (page 167; fig. 203).



FIG. 270—MASONS CLOSING SOUTHERN SECTION OF ARCH OF OUTER ANNULAR CHAMBER.

PLASTER

Considerable plaster remained on the standing walls and arch (fig. 259), more especially where they had not been exposed to the weather. Usually there was only a single rough layer; however, in places there was a second carefully smoothed layer which, on the inner wall of the chamber, showed traces of color.

The plaster on the wall directly opposite the west doorway, the least exposed to the weather and the best preserved, showed more color than in any other place. To the height of the top of the second course of stone the plaster had been tinted red, as a dado; that on the course of stone above the dado showed traces of red and blue pigment, without super-

imposition, which may, therefore, well be bits of mural decoration. The only other color noted at higher levels on the wall was an indication of a red-painted band 20 cm. in width, which bordered the southwest doorway.

All further traces of color or remnants of wall paintings had disappeared when, in 1927, the study of the Caracol was undertaken by the writer. The inner chamber was in an excellent state of preservation, the plaster quite intact but with no vestige of color, much less of wall paintings. However, Stephens, visiting the site in 1841, wrote "that the walls of both corridors were plastered and ornamented with paintings."¹ Maudslay corroborates this, saying "Both chambers retain a very few traces of wall-paintings,"² and J. Eric



FIG. 271—REPAIR OF OUTER WALL OF TOWER.

Northeast doorway giving into inner annular chamber is seen at left.

Thompson, in 1926, wrote that "Remains of paintings were noted on the inner wall of the outer corridor."³ In a letter to the writer, dated October 27, 1932, Mr. Thompson wrote:

"My recollections of the paintings on the walls are less vivid [than of the Prussian blue floor of the outer corridor south of main (west) entrance]. There were some pink lines, and possibly green. Jean (Charlot) came along to look at them, but nothing could be made of them. The work was crude."

INNER ANNULAR CHAMBER

DOORWAYS

Four doorways through the inner wall of the outer chamber give into the inner chamber (figs. 183 and 348). They are placed approximately midway between those of the outer wall of the tower so that they face the blank wall of the outer chamber. The lintels of all doorways were found *in situ* and unbroken. The sills are an average of 24 cm. above the working level of the floor of the outer room, or 16 cm. above the red-painted floor (See Floors of Chambers, pages 221 and 224).

The northwest doorway has a height of 1.98 meters and a depth of 74 cm., the thickness of the wall. It has a width of 74 cm. at the sill, decreasing to 73 cm. at the soffit of the

¹ Stephens, 1843, Vol. II, p. 298.

² Maudslay, 1889-1902, Vol. III, text, p. 21

³ Thompson, 1926, p. 269.



FIG. 273—CARACOL TOWER, INNER ANNULAR CHAMBER.
View through southeast doorway. A rectangular stone rounded at top was found set in floor at base of masonry core.



FIG. 272—INTERIOR VIEW, INNER ANNULAR CHAMBER, LOOKING
TOWARD SOUTHEAST DOORWAY.

lintel. Traces of two layers of plaster were noted on the west jamb. The upper or later layer had been tinted red; the earlier was uncolored. No plaster was noted on the north jamb.

The northeast doorway has a height of 1.94 meters, a width at the sill of 73 cm., which is decreased to 72 cm. at the soffit of the lintel, and a depth of 74 cm. No plaster was noted on either jamb (fig. 271).

The southeast doorway measures 1.99 meters from the sill to the soffit of the lintel (figs. 272 and 273). It has a width of 74 cm. and a depth of 73 cm. Two layers of plaster, both tinted red, were noted on the south jamb near the lintel.

The southwest doorway has a height of 1.94 meters, a width of 76 cm. at the sill, decreasing approximately one centimeter to the soffit of the lintel, and a depth of 73 cm. Two layers of plaster were noted, covering the greater part of the jambs. The first or under

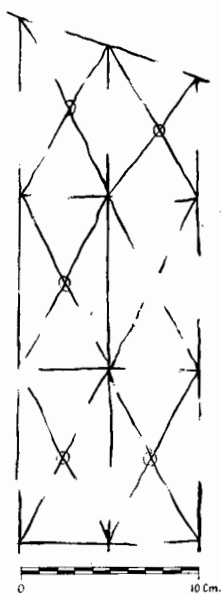


FIG. 274—GRAFFITO ON SOUTH JAMB
OF SOUTHWEST DOORWAY.

layer was untinted; the later layer was a deep red. A spot of red pigment was noted on the first layer of plaster on the soffit. A similar spot or smear was also noted on the same layer remaining on the south jamb where the red plaster had fallen away. On the same jamb near the lintel is a series of vertical lines incised in the uncolored plaster. They are roughly 1.2 cm. apart and have an approximate length of 22 cm. Below the center and on the outer half of the jamb is an incised lattice-like figure, 30 cm. in height and 10 cm. in width, which, without doubt, is ancient (fig. 274). The lines are on the first layer of plaster; most of the second or later layer has peeled off, but the incised figure was found to extend under what remains.

Three cord-holders were placed on either side of the doorways on both the outer and inner facing of the wall (figs. 194 and 272). In type and method of placement they are duplicates of those employed on either side of the doorways in the outer wall of the tower

(page 153). Set in the outer wall directly beneath the east buttress is a cord-holder of this same type. Its use here is not known.

THE CHAMBER

The inner annular chamber varies in width from 1.14 to 1.27 meters (fig. 183). The inner facing of the outer wall rises vertically from the red-tinted floor to the offset at the spring of the arch, a distance of 2.85 meters. The inner circular wall is formed by the masonry core of the tower, which has an average diameter of 2.23 meters (fig. 6).



FIG. 275—VIEW LOOKING UPWARD IN ARCH OF INNER ANNULAR CHAMBER.

Cross poles were noted at three levels. Masonry buttresses supported by stone slabs are seen at either side of figure.

The core rises to a height of 2.24 meters, increasing slightly in diameter upward, where it has an outward offset giving an overhang of 7 cm. (fig. 272). From the overhang, the core rises 61 cm., with an irregular increase in its diameter of approximately 10 cm. to the offset at the spring of the arch (fig. 192). This offset is at the same level on both walls of the chamber, but is 30 cm. lower than the corresponding offset in the outer chamber (fig. 192).

The arch rises to a height of 3.30 meters; its apex is 1.40 meters lower than that of the outer chamber.

BUTTRESSES

In the inner chamber, as in the outer, four masonry buttresses, set approximately midway between the doorways, span the arch and roughly divide it into quadrants. Each buttress is supported by a single slab of stone which averages 78 cm. in width and is tenoned into either side of the arch at the level of the offset at the spring line (fig. 272).

In Maudslay's description of the buttresses of the inner and outer chambers, the locations of the stone slabs and the wooden beam supports have been transposed. On page 21, fifth paragraph and last sentence,¹ in the description of the buttresses of the outer arch, the phrase "resting on stone lintels" should read "resting on wooden beams." In the sixth paragraph describing the buttresses of the inner arch, the phrase "supported by rough wood beams" should read "supported by stone lintels."

The masonry of the buttresses, which is comparable to that of the walls of the chamber, rises in line with the sides of the stone slabs to the apex of the arch (fig. 275). The slab supporting the buttress on the western side, though cracked, was *in situ*.

CROSS POLES

Cross poles spanning the chamber were noted at three levels (fig. 275). At the first or lowest is a single pair beneath each buttress and approximately 2 meters above the floor (fig. 266). The second is 50 cm. above the offset at the spring of the arch where, relatively close to either side of the buttresses and extending parallel to them, are three poles; a single pole on the same level is midway between. At the third level, midway between the spring and apex of the arch, are two poles 35 cm. apart and placed approximately midway between the buttresses.

Some of the cross poles were found in good condition, others broken, others evidently had been cut off with a steel ax, and in places only the holes remained, indicating where poles had been set in the wall of the arch.

MASONRY

The masonry of the central core, which forms the inner wall of the chamber, is crude and uneven. Some stones are faced, but the majority are only roughly worked. The use of much chinking was observed (fig. 272). For the most part the stones of the first course of the overhang of the core rise vertically; only occasionally is one beveled. The masonry of the inner facing of the outer wall is similar to that of its outer facing (page 153; fig. 272). The masonry of the arch is comparable to that of the arch of the outer chamber.

The repair of the inner chamber included the closing of the arch at the north, described by Dr. Ricketson (page 189), and the chinking of wall surfaces where necessary.

FIVE WEEP HOLES GIVING INTO OUTER CHAMBER

Five weep holes, which have their origin under the masonry core and are at the level of the working floor which extends under the walls of the tower, have their orifices at the base of the inner wall of the outer chamber.

The orifices of the shafts are more or less regularly placed around the periphery of the wall (fig. 100, No. I). One is slightly north of the center of the northwest doorway, a second 58 cm. west of the southwest doorway (fig. 276), a third midway between the

¹ Maudslay, 1889-1902, Vol. III, text, p. 21.

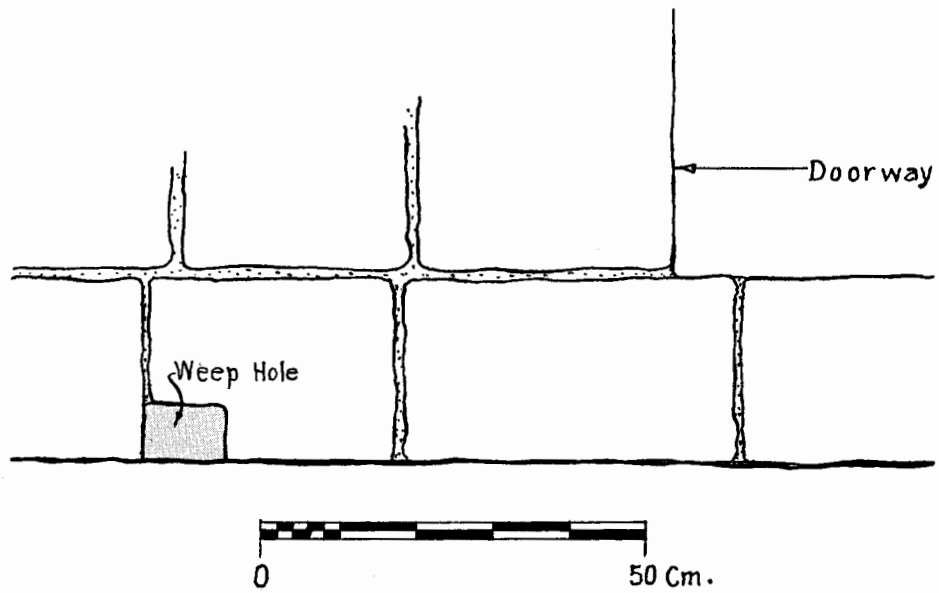


FIG. 276—ELEVATION OF ORIFICE OF WEEP HOLE WEST OF SOUTHWEST DOORWAY.

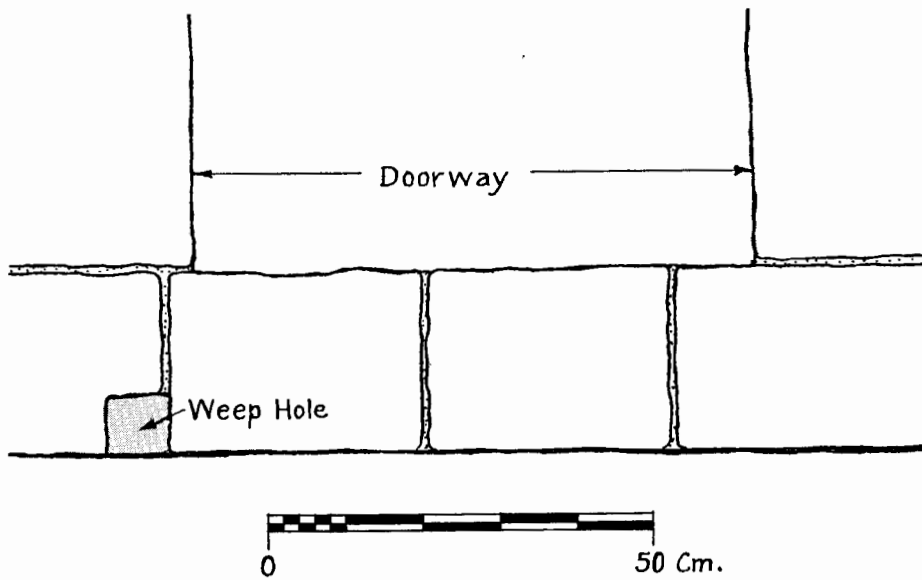


FIG. 277—ELEVATION OF ORIFICE OF WEEP HOLE, EAST SIDE OF NORTHEAST DOORWAY.

southwest and southeast doorways, a fourth directly east of the southeast doorway and the fifth is 2.5 cm. east of the northeast doorway (fig. 277).

The orifices, having average measurements of 8 by 8 cm., are formed by chipping away a section of the edge of one of two contiguous stones of the first course of the inner wall of the chamber. Since these stones rest on the working floor, only three sides of the orifices are bound by stone masonry. These orifices and their shafts for a short distance inward, like those already described (page 80), were rounded and the masonry smoothed with plaster.

The five orifices were closed at the time the red-tinted floor was laid in the outer room (page 225).

ARTIFACTS

In order to locate the orifices, it was necessary to break through the floor and cut a narrow trench around the wall. In the southeast quadrant a pottery figure of a turtle

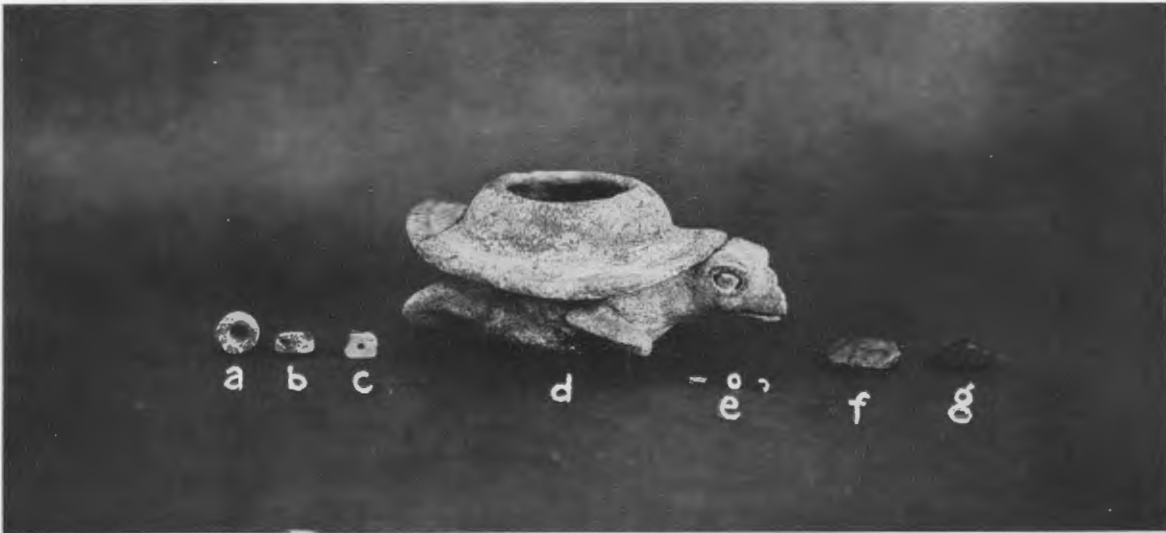


FIG. 278—POTTERY FIGURE OF A TURTLE *d*, FOUND BELOW SILL OF SOUTHEAST DOORWAY OF TOWER.

Other material illustrated was inside hollow body of turtle; *a*, bead of alabaster; *b*, shell bead; *c*, shell bead; *e*, three small shell beads; *f*, piece of green stone; *g*, jadeite bead. The turtle figure has a length of 15.5 cm.

was found between the jambs of the doorway and 22 cm. below the stone sill; it rested on the working floor and was entirely covered by the later red-tinted floor. The effigy, nicely modeled (fig. 278, *d*), has a length of 15.5 cm., a width of 12 cm. and a height of 6.5 cm. It is made of Porous Grey Ware without slip; the head is painted bluish green, except for the beak, which is yellow; the marginal plates are yellow, outlined in black. Inward from these plates to an opening in the center, the carapace is painted bluish green. Within the hollow body was found the following material:

- 1 bead, of alabaster-like stone, on which were traces of blue paint: diameter, 1.5 cm.; thickness, 0.8 cm. (fig. 278, *a*).
- 1 pinkish-yellow shell bead of irregular shape, length, 1.6 cm. (fig. 278, *b*).
- 1 bead of pink shell of irregular shape: average diameter, 1.2 cm.; thickness, 0.5 cm. (fig. 278, *c*).

- 3 small beads made of pink shell: average diameter, 0.6 cm. (fig. 278, *e*).
 1 piece of green stone, perhaps jadeite, one side is highly polished: length, 3.75 cm. (fig. 278, *f*).
 1 jadeite bead, roughly wedge-shaped, longitudinally pierced: length, 2 cm.; thickness, 1.2 cm. (fig. 278, *g*).

During the examination of the floor of the outer chamber a small cone-shaped jar (fig. 279, *a*) was found beneath the red-tinted floor within the west doorway, 5 cm. from the corner of the north jamb. The jar has a height of 5 cm. and its greatest diameter is 3.7

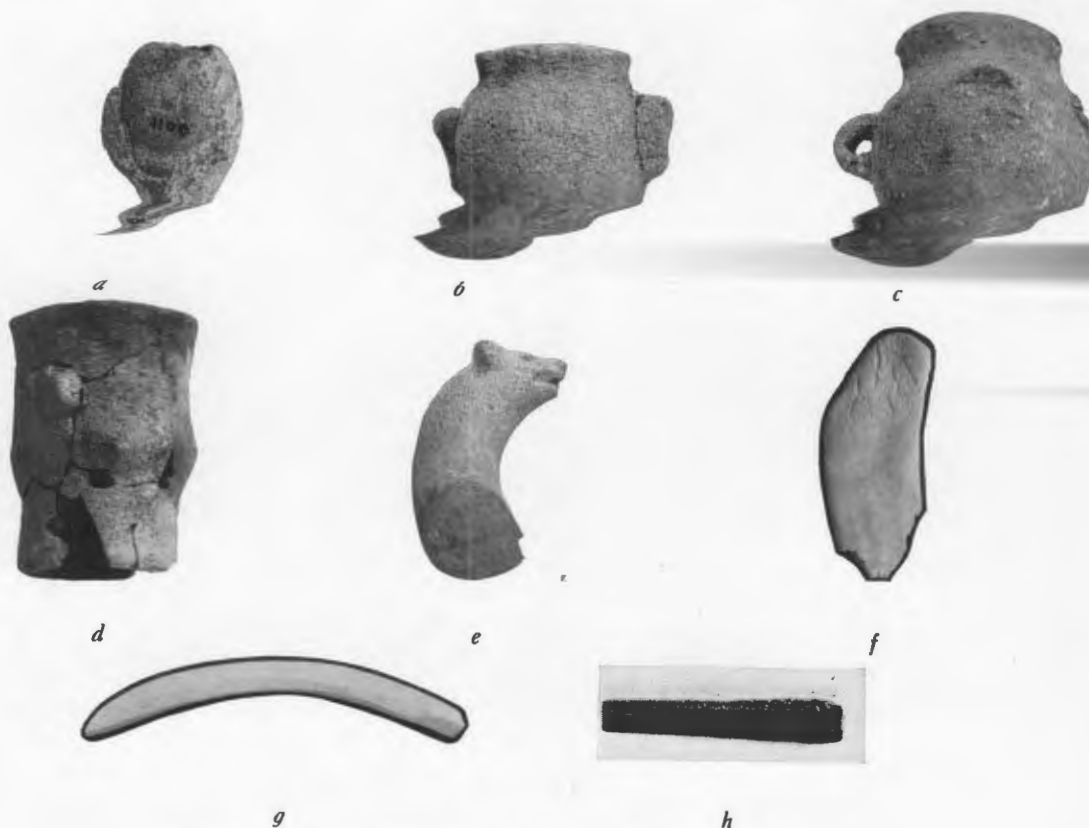


FIG. 279—MATERIAL FOUND DURING STUDY OF TOWER.

a, cone-shaped jar of Porous Grey Ware; *b*, jar of Porous Grey Ware; *c*, jar of Porous Grey Ware; *d*, incense burner of Porous Grey Ware, traces of red paint on outer surface; *e*, probably a pestle, Porous Grey Ware; *f*, piece of unworked shell; *g*, piece of worked shell; *h*, obsidian flake, broken. One-half actual size.

cm. It is made of Porous Grey Ware and was painted red over white. A single "ear" or lug on the jar was painted black. A shell bead, found inside the jar, is similar to those found in the trench at the base of the stairway of the upper platform (fig. 37, *a*).

Other material found near or in the west doorway includes a jar of Red Lacquer Ware, 16.5 cm. in height and 17 cm. in greatest diameter; horizontal handles have been welded on either side (fig. 128, *b*). There is a miniature jar of Porous Grey Ware, 6.5 cm. in height and 5.5 cm. in diameter, with a vertical lug on either side (fig. 279, *b*). Of two beads, one of shell, the other of jadeite, the former has a diameter of 0.9 cm. and is 0.3 cm. thick; the latter, roughly wedge-shaped, has a length of 1.6 cm. and a diameter of 0.7 cm. The latter

bead is unfinished, as the perforations at either end have been drilled only to a depth of 0.35 cm.

A pottery figurine of a jaguar was found by Mr. Thompson "just under the lintel of the south doorway."¹ It is of Porous Grey Ware on which traces of white paint still remain; it measures 19 cm. long, 12 cm. high and 11 cm. wide (fig. 128, *c*).

A miniature jar of Porous Grey Ware was uncovered between 5 and 10 cm. above the floor of the platform, directly east of the south doorway. Its height is 6.5 cm. and its diameter is 5.5 cm. (fig. 279, *c*).

In the fill above the floor of the outer chamber and between the south and east doorways four artifacts were recovered. The first is a small, narrow piece of worked shell 9.2 cm. in length (fig. 279, *g*); the second an obsidian blade 6.4 cm. in length and 1.1 cm. in width (fig. 279, *h*). The two other objects are of pottery. One, an incense burner, has a height of 7.3 cm. and a diameter at the mouth of 5.5 cm. It was made of Porous Grey Ware and shows heavy red paint on the outer surface (fig. 279, *d*). The other pottery object is perhaps a pestle, has a length of 6.5 cm. and was modeled with an animal head at one end (fig. 279, *e*).

A piece of unworked shell 6.5 cm. long was found in the north quadrant of the outer chamber. One end is broken (fig. 279, *f*).

A rectangular stone, 20 cm. in thickness, 27 cm. in width and projecting 50 cm. above the floor of the inner room in which it is set, was found 10 cm. from the masonry core, directly inward from the northeast doorway and below the entrance to the spiral stairway (fig. 273). The stone is rounded at the top and leans away from the masonry core. It is similar to the stone found in each of the three niches of the dais of the Caracol West Annex (page 266). The use of the stone is not known.

FLOORS OF INNER CHAMBER

The uppermost floor noted is of very hard well-troweled plaster varying in color from red to yellow (fig. 280, No. 10). At some points it is 1.2 cm. lower where it curves up against the outer wall than where it curves up against the masonry core; at other points it was found on a level with or even higher than where it joins the masonry core.

A working level, 10 cm. below the painted floor, curves up against the masonry core and extends to the outer wall of the chamber (fig. 280, No. 11). Above this surface is a layer of rough mortar averaging 2.5 cm. in thickness. Above this, small stones are laid in mortar on which, in turn, the smoothed and red-tinted floor was placed.

No finished floor seems to extend under the masonry core. The next definite level, measured at the core, is 38 cm. below the red floor and extends under the core of the tower, the outer wall of the inner chamber and the finished floor of the outer chamber, and is the working level on the top of the inner circular platform (fig. 280, No. 12). The outer wall and the outer facing of the inner wall of the tower rise from this level (fig. 280, No. 12); the inner facing of the inner wall and the masonry of the core rise from a point 25 to 27 cm. above.

On this level are five shafts or weep holes, which have their point of convergence under the masonry core and their orifices in the outer room (page 217).

¹ Thompson, 1926, p. 269.

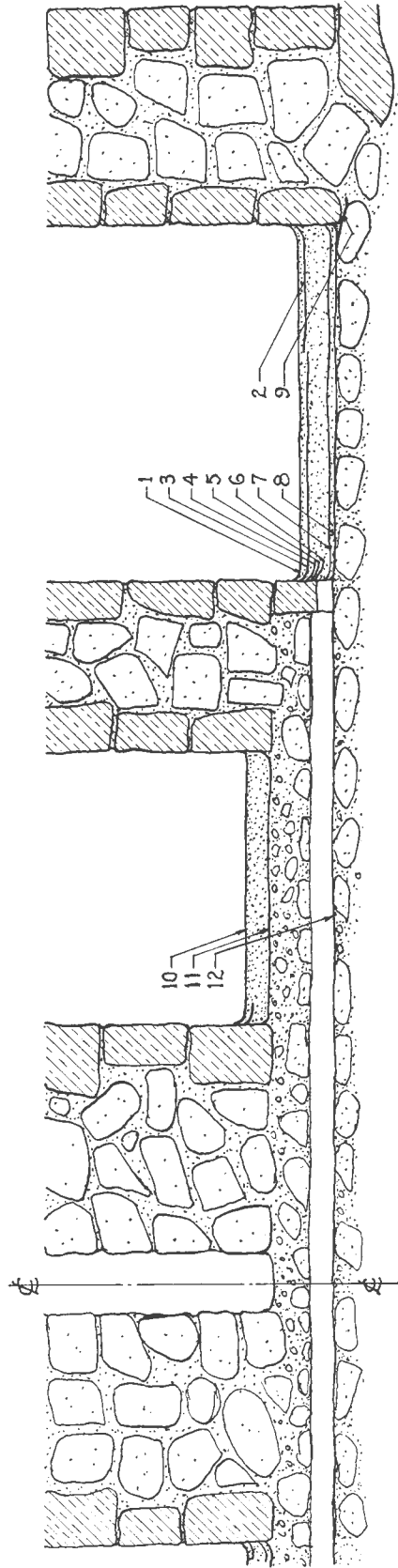


FIG. 280—COMPOSITE SECTION OF TOWER AT FLOOR LEVEL.

1, hard packed red-painted plaster floor curves up against both walls; 2, rough floor extends 50 cm. from outer wall; 3, extends 1.01 meters from wall; 4, 5 and 6, floors traceable only 2.5 cm. from inner wall; 7, working level curves up against both walls; 8, working level extending under outer and inner walls (same as No. 12); 9, crudely smoothed plaster area extending from under wall; 10, finished floor of inner chamber; 11, working level in inner chamber; 12, working level extending under tower (same as No. 8 in outer chamber).



FIG. 281—CARACOL TOWER, OUTER ANNULAR CHAMBER.
Floor levels noted between northeast doorway and outer wall of chamber.



FIG. 282—FLOORS AND WORKING LEVELS SHOWN BY PAINTED BLACK LINES.

1, curves up against outer and inner walls; 2, extends 50 cm. from outer wall and is 2.5 cm. below No. 1; 3, extends 1.01 meters from inner wall and may be same floor as No. 2; 4, 5 and 6, three levels traceable only 2.5 cm. from inner wall; 7, rough unplastered working level curving up against both walls; 8, working surface extending under both walls; 9, crudely smoothed plaster area extending from under wall.

In the northeast doorway the upper floor, 0.6 cm. thick, is tinted a deep red and rests on a second well-plastered and tinted yellow, on which there was evidence that a fire had been built. Here the working level is 7.6 cm. below the second floor.

FLOORS OF OUTER CHAMBER

The floors of the outer chamber were examined by means of a series of trenches. There was considerable variation in the number, color and levels of the floors found.

At the northwest doorway three distinct, carefully smoothed and painted floors were noted. The uppermost is from 10 to 11 cm. below the sill of the doorway. A second is 15 cm. below the sill. Both of these are yellowish red in color, extend across the chamber and curve up against the outer wall. A third, brownish yellow to slate, lies directly beneath the second and extends out into the chamber, but was not observed to curve up against the outer wall.

The floors noted in the outer chamber in front of the northeast doorway are shown in figures 280, 281 and 282. Floor No. 1 is of hard packed, carefully smoothed red-tinted plaster, curving up against the outer and inner walls. It is an average of 11 cm. below the sill of the northeast doorway and slopes upward 1.2 cm. from the inner to the outer wall of the room.

Floor No. 2 extends 50 cm. from the outer wall, against which it curves, and is 2.5 cm. below Floor No. 1. It is rough, pinkish in color and not well packed.

Curving up against the inner wall and extending 1.01 meters into the room is what has been termed Floor No. 3. It is 3.8 cm. below Floor No. 1. Where it curves up against the inner wall it is tinted blue; on the level it is pink. While this floor and Floor No. 2 may be the same, they did not join where the section was taken.

Extending out from the inner wall against which they curve, and not traceable for more than 2.5 cm., are Floors Nos. 4, 5 and 6. They have a combined thickness of 0.9 cm. and are probably not true floors but coats of plaster associated with Floor No. 3.

Floor No. 7 is a rough unplastered working level 12.7 cm. below Floor No. 1, and curves up against both walls. It is somewhat higher toward the inner wall.

Floor No. 8 is 1.2 cm. below Floor No. 7; it is the working surface that extends under the outer and inner walls and is the level of the five weep holes. Its slight upward curve against both walls is accounted for by the masons troweling mortar against the stone and the floor in setting the masonry of the first course of the outer and inner walls.

With the completion of the first circular platform the top was finished with only a rough working level. The second circular platform was then built and the top finished with a working floor which came as far as the edge of the first circular platform, but did not extend over it. In turn the first and second sections of the rectangular platforms were built and their floor laid, and in all probability, following this, the Caracol tower was raised.

No carefully worked floor was noted under the tower. On the south side, the outer wall of the tower is 3.8 cm. above the top of the inner circular platform. On the west, the jamb of the tower doorway is 0.6 cm. above the top of the inner circular platform. Had a well-finished floor ever been laid on top of the inner circular platform, some trace of it would almost certainly have been found. Only a working level extends under the tower.

The working level of the inner chamber is 27 cm. above that of the outer chamber; the masonry step, giving from the outer to the inner, rises 24 cm. above the working level of the outer. The weep holes, built in the raised section of the inner chamber and core, give into the outer chamber with their orifices on the level of its working floor. When the construction of the tower had been completed, the carefully troweled well-finished and tinted floors were laid, which raised the level in the outer chamber 13 cm., thus blocking the orifices of the weep holes.

The red-tinted floor of the outer chamber of the tower was traced through the north and south doorways, was noted curving up against the exterior wall of the tower at the north and northwest, and here was traced for a distance of 40 cm. onto the rectangular platform which, no doubt, it entirely covered.

VERTICAL SHAFT

In 1925 Dr. Ricketson reported a vertical shaft extending downward from the slope of the fallen section of the tower through the masonry core, regarding which he says:

“The third construction uncovered was a circular vertical shaft, roughly a foot in diameter, extending down through the core. No estimate of its depth could be made, as a plumb-line was stopped at about 6 feet by washed-in earth; water, however, poured down the shaft came out the core into the inner circular corridor at the spring of the arch. Complete excavations will be necessary to determine whether or not this shaft leads into a central room located in the masonry of the core, and, if so, whether or not it could possibly have been used for meridian sight of any celestial body.”¹

In 1930 an exploratory hole was made in the masonry core and the shaft was encountered 91 cm. above the floor of the inner chamber. It is lined with crudely worked stones, is irregular in shape and measures 25 cm. in cross-section. The shaft was filled with tightly packed earth and lime mortar. A second exploratory hole was made in the core at the base of its facing. The shaft has its origin (fig. 280, shaft on center line) at this level, which is 27 cm. above the working floor, extending under the tower and the floor of the five weep holes which lead outward from the center of the core. This shaft may have served the same purpose as suggested for the one found in the inner circular platform (page 84).

SPIRAL STAIRWAY

An opening in the slope of the arch above the vertical wall of the masonry core gives into a spiral passage floored with risers and treads forming a stairway which, no doubt, led to the second story. Mentioning this passageway, Maudslay writes:

“In the upper part of the central core of masonry, where it trends outwards to form one side of the vault of the inner chamber, at about the height of 12 feet from the ground (above the spot marked ‘X’ in the ground-plan [fig. 235]), there is a small opening which apparently gives access to a winding passage or stairway passing round an inner core of masonry. It may have been possible for a small man to ascend the stairway, but owing to the falling and fallen stones, it is now dangerous for anyone to make the attempt to do so.

“The stairway is broken away after one spiral is nearly completed, and now ends in an opening which can be seen amongst the broken masonry. It seems probable that it formerly connected with one of the small cross-passages in the superstructure.”²

¹ Ricketson, 1925, p. 266.

² Maudslay, 1889-1902, Vol. III, text, p. 21.



FIG. 283—OPENING IN MASONRY CORE GIVING INTO SPIRAL PASSAGEWAY.

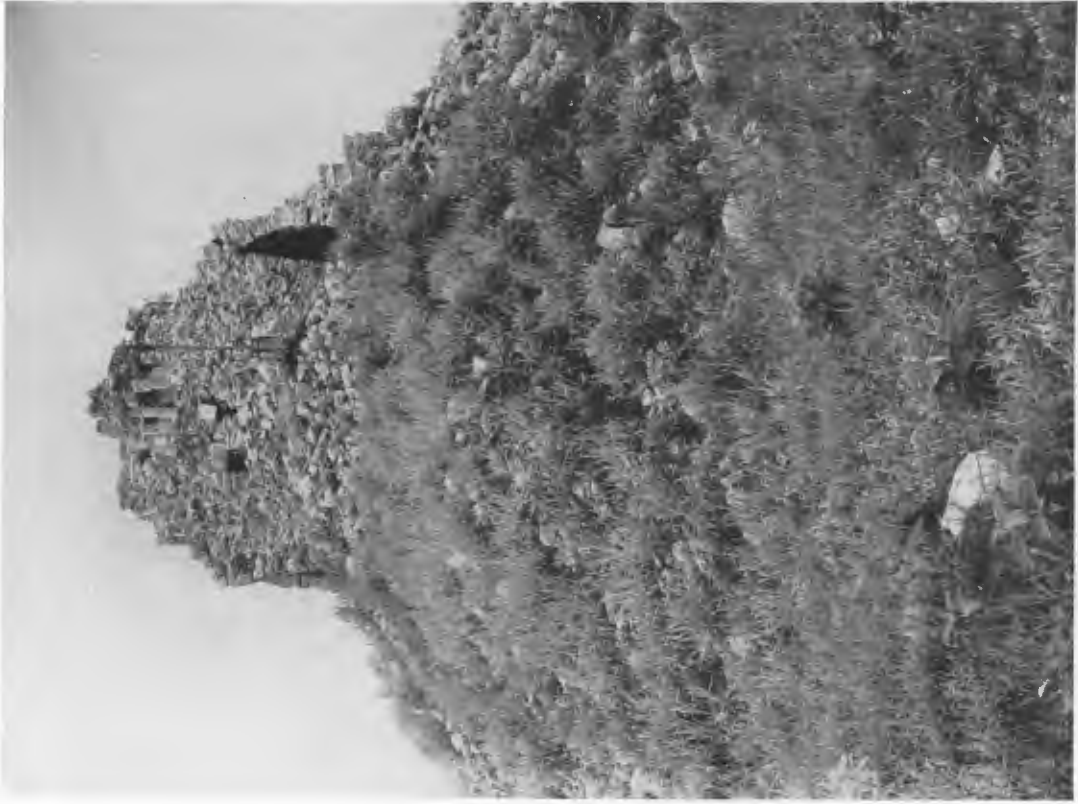


FIG. 284—CARACOL TOWER, VIEW FROM NORTHWEST, TAKEN IN 1925.

Stephens writes that—

“in one place, at the height of eight feet from the ground, was a small square opening choked up with stones, which I endeavored to clean out; but with the stones falling into the narrow corridor made it dangerous to continue.”¹

A somewhat fuller description of the spiral stairway is given by Holmes:

“The entrance to that remarkable feature of the tower, the so-called winding stairway, is shown in this drawing [fig. 6]. The opening is about twenty-two inches wide and from twenty-five to thirty-five inches high. It is capped with a heavy lintel-stone dressed with the curve of the wall; the sides or jambs are rather rudely built, and the base, though quite irregular, is carefully plastered over, showing that no well-hewn sill was ever used. This opening is some ten feet from the floor. By piling up débris I was able to crawl into the dark passage. There are irregular steps, rudely laid, the walls are reasonably smooth, and the ceiling rises in steps corresponding somewhat with the stairs. The passage turns to the right, ascending at an angle of perhaps forty-five or fifty degrees, is dark and barely large enough to permit the passage of a single person of medium size. Having crawled upward some fifteen feet, making meantime nearly one circuit of the building, my head came out among the bushes on the steep broken slope facing the northeast and a little inside of and above the apex of the outer arch. Cutting away the brush, it was not difficult to get out and creep upward to the crest, some twelve feet higher.”²

The opening of the spiral passageway in the masonry core is situated above the level of the offset at the spring of the arch and faces the northeast doorway of the inner chamber. It has a width of 52 cm. and an approximate height of 73 cm. The lower margin (fig. 283) is somewhat indefinite as though the stones of the sill had broken away. Holmes says that the sill was carefully plastered, which would indicate that it either was irregularly constructed or was plastered after breaking away. No plaster was found on the sill by the Institution workers. The floor of the passageway, directly inside the entrance, is on a level with the offset at the spring of the arch.

The jambs, as pointed out by Holmes, are rather rudely built. Specially cut stones were not used, merely the vault stones serving. The lintel over the opening of the passageway has a vertical height of 30 cm. and a depth of 42 cm. The outer facing of the lintel is worked to the bevel of the arch.

For a distance of a meter, the passageway, roughly wedge-shaped in plan, is directed toward the center of the masonry core (figs. 285 and 287). The wall to the left of the entrance is relatively straight for this distance and then turns sharply to the right, continuing with a convex curve to form the inner wall of the spiral passage. The masonry, throughout the passage as it winds counter clock-wise about the core, is of faced stone. The wall to the right of the entrance extends in a straight line 37 cm. into the core and then turns sharply to the right and continues with a concave curve forming the outer wall of the spiral passageway. It is faced with worked stones to a point in line with the third riser of the stairway (fig. 286). Beyond this only an occasional dressed stone is used.

The steps, of which 17 were found *in situ*, are very irregular (fig. 286). The risers average 22 cm. in height. The treads, as of necessity they must be in a spiral stairway, are broader at the outer than at the inner wall. The average width of the tread taken at the center is 27 cm. The seventeen risers carry the stairway to a height of 3.60 meters.

¹ Stephens, 1843, Vol. II, p. 298.

² Holmes, 1895, Vol. I, p. 118.



FIG. 285—CARACOL TOWER. ENTRANCE TO SPIRAL STAIRWAY
IN MASONRY CORE.



FIG. 286—SPIRAL STAIRWAY IN MASONRY CORE, NOT REPAIRED.

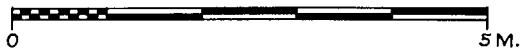
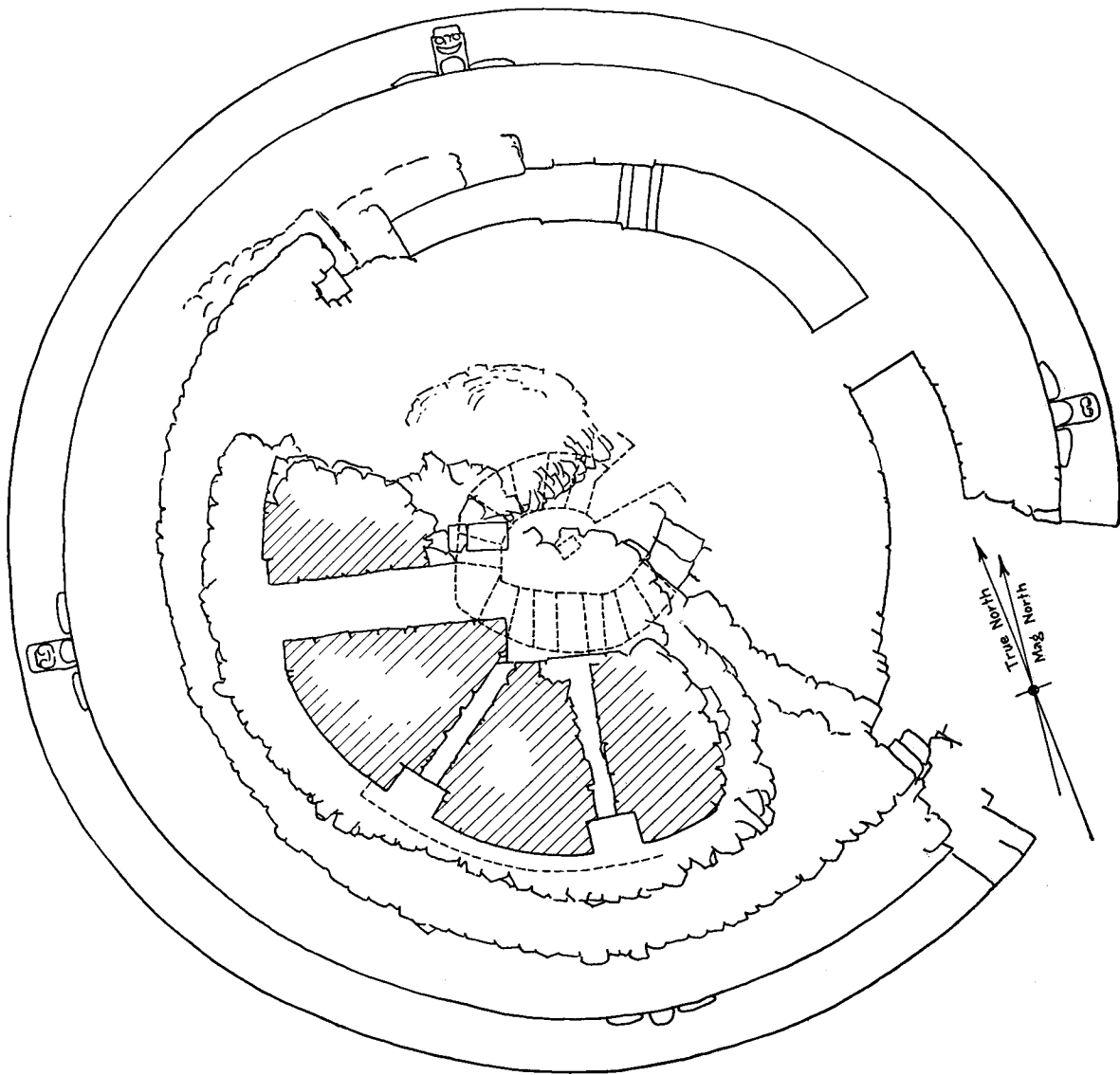


FIG. 287—SECTION THROUGH WINDOWS OF TOWER, LOOKING DOWNWARD.

To gain the floor of the upper story 10 more risers averaging 22 cm. in height would be necessary.

The ceiling of the passageway, of lintel construction, is formed of large rectangular blocks of worked stone so placed that the soffit of one bears slightly on the edge of the top of the stone below. The height of the ceiling above the stairs varies from 71 cm. to 1.09 meters, these variations being due to lack of corresponding uniformity in the spacing of the steps of the stairs in relation to the large rectangular blocks of the ceiling.

The stone which bears on the lintel at the entrance of the passageway was found in two pieces. A quadrant section had been cut out of the exposed edge of its soffit and the exposed vertical face (fig. 283). A stone which may have formed a lintel in the fallen section of the passage was found in the débris of the outer chamber 6 meters above the floor. Rectangular in form, it measures 66 cm. by 33 cm. by 17.7 cm. Across one side had been

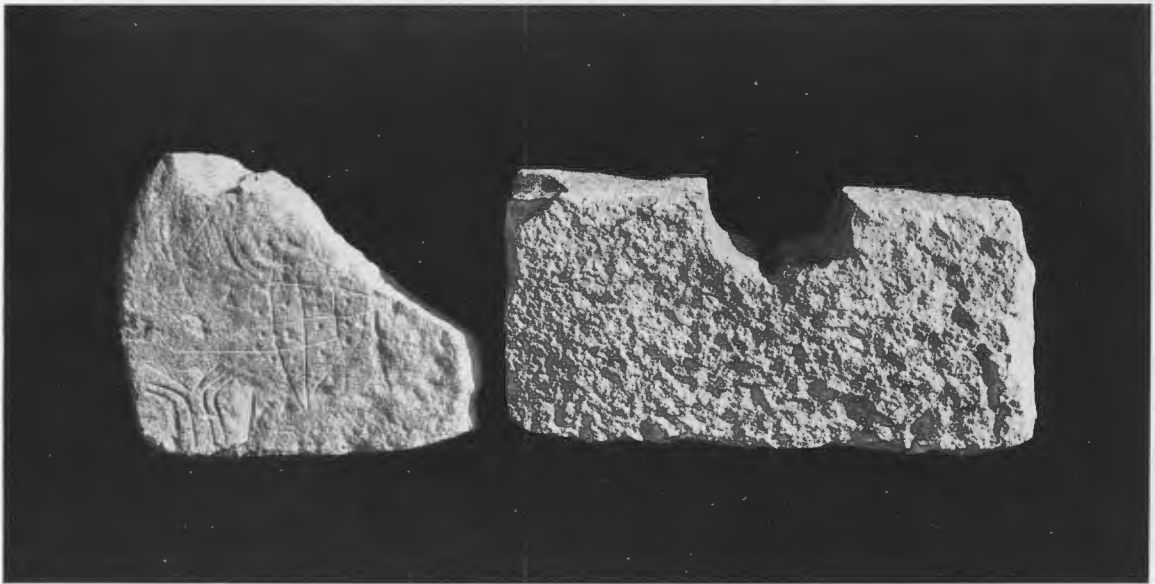


FIG. 288—STONE AT LEFT WAS FOUND IN INNER CHAMBER OF TOWER; LENGTH 66 CM. STONE AT RIGHT WAS FOUND IN DÉBRIS OF OUTER CHAMBER.

cut a semicircular groove (fig. 288) having a diameter of 16.5 cm. Within the first is a second semicircular groove, 2.5 cm. in diameter, at a point 90° from the side of the stone.

The large rectangular stone shown in figure 202, found just within and at the level of the top of the east doorway, may also have served as a lintel in the passageway.

The upper limits of the passageway as found is shown in figures 284 and 289. The point of exit of the spiral stairway is not known. Maudslay has suggested that "it formerly connected with one of the small cross-passages in the superstructure."¹ Holmes says:

"Where the original termination of the passage was located can not now be made out, but I incline to the view that it was upon the terrace floor surrounding the upper turret, or possibly in a small gallery perforating the upper mass horizontally, as such a gallery was found passing through the turret from east to west."²

¹ Maudslay, 1889-1902, Vol. III, text, p. 21.

² Holmes, 1895, Vol. I, p. 119.



FIG. 289—Photograph taken in 1925. *a*, exit of spiral passageway; *b*, vertical shaft; *c*, two *boveda* or arch stones of upper story chamber still in position; *d*, inner opening of west passageway; *e*, inner orifice of southwest shaft; *f*, inner orifice of south shaft.

CARACOL, UPPER PORTION OF TOWER.



FIG. 290—West passageway, looking west.

It seems more likely that the exit of the passageway may have been inside the second story (fig. 292) than upon the "terrace floor surrounding the upper turret," since this would necessitate building the passage over the outer arch, for which there is insufficient space.

UPPER STORY CHAMBER

Though the upper portion of the Caracol tower was badly ruined, enough remained to prove that a second story chamber at one time existed. The standing sections of the chamber include the southwest corner, a 1.77-meter section of the west wall and a 1.25-meter section of the south wall. Resting on the west wall at the southwest corner, 1.27 meters above the floor, were two *boveda* stones. Finding them in place, the height of the vertical wall of the chamber was definitely established (figs. 289 and 290). Piercing the standing walls were the inner orifices of the two shafts and the horizontal east-west passageway (page 186; fig. 287).



FIG. 291—ORIFICES OF SOUTH, *a*, AND SOUTHWEST, *b*, SHAFTS IN UPPER STORY CHAMBER.

While it must be understood that the size of the chamber is not definitely known, it may with reasonable assurance be assumed to have been built symmetrically with relation to the structure. The placement of the *boveda* stones indicates the long axis (unless the chamber was square) to have been north and south. The south and west walls are 75 cm. and 1.25 meters, respectively, from the upward projected center of the small vertical shaft in the masonry core (page 225). If the projection of the shaft is the center of the chamber, the chamber measured 2.50 meters north and south by 1.50 meters east and west and was symmetrically placed with reference to the horizontal plane of the structure.

The height of the arch is more or less problematical. The two arch stones, while not highly specialized, are roughly cut with a bevel. The stone to the south was seemingly set without an overhang. The overhang of the second stone (fig. 289) is partially due to the irregularities of the vertical face of the lintel directly below. The first stone is probably *in situ*. The second may have been moved by the fall of material from above. However, since the arches of the lower chamber were built with an offset at their spring, it may

be that a similar practice was here followed. While it is difficult to calculate the angle of an arch from only one stone on account of its irregularities, the angle as here measured is approximately 65° from the horizontal.

If the chamber had a width of 1.50 meters and the arch rose at an angle of 65° , the apex of the arch must have been 2.87 meters above the floor of the chamber; and while it may have been closed by means of flat capstones, it is reasonable to suppose that the same method used in closing the arches of the lower chambers was here employed (page 212).

The two horizontal shafts and the east-west passageway which extend inward from the outer facing of the upper story have their inner orifices in the standing section of the chamber. The inner opening of the west passageway is 51 cm. from the southwest corner of the chamber, rises from the floor level to a height of 91 cm. and has a width of 68 cm. The base of the north jamb has been thrust into the room and to the north. The soffit of the lintel of the southwest shaft (fig. 291, *b*) is at the same level as that of the west passageway. The orifice of the south shaft (fig. 291, *a*) is badly broken away, but was presumably at the same level.

In the repair of the upper section of the tower, the inner orifices of the shafts were left as secured¹ by Dr. Ricketson. The orifices in the dummy doorways or recesses of the structure were repaired. The long east-west passageway was left as at the close of the 1925 season, the repair of which is described by Dr. Ricketson (page 189). As to the possibilities of other passageways or shafts having given out from the chamber, Maudslay writes, in 1889, of—

“an upper storey furnished with what looked like six small doorways facing outwards. Of these the doorway immediately over the lower doorway ‘A’ is the entrance to a small passage, 3 feet high, which probably passed right across the building to a doorway on the other side.”²

Of the “six doorways” only three were standing in 1925. The others must have been in the northern and eastern sections which have since completely fallen. If Maudslay noted six doorways and the structure was then in a partial state of collapse, may there not have been eight doorways, one facing each of the four cardinal points and the others symmetrically located between them (fig. 292)? As to the number of openings and their placement, other than those found, nothing can be stated with certainty.

LePlongeon, in 1875, seems to have been the first to refer to the Caracol as the “Observatory.” The first intensive study of the structure as a possible “observatory” of astronomical phenomena was made in 1925 by Dr. Ricketson. At this time the measurements of the three windows were taken and their bearings read with a Brunton Compass. A comparison of these data with those secured by Mr. Bolles, with a theodolite, shows but slight variation.

The scrupulous and conscientious work done by Dr. Ricketson and the results obtained by him are best quoted verbatim. Interpolations in brackets are new data secured with the theodolite and metric measurements taken in subsequent years during the course of excavations (fig. 293).

¹ No stones were relaid, the work consisted entirely in filling the interstices with cement and small wedges.

² Maudslay, 1889-1902, Vol. III, text, p. 21.

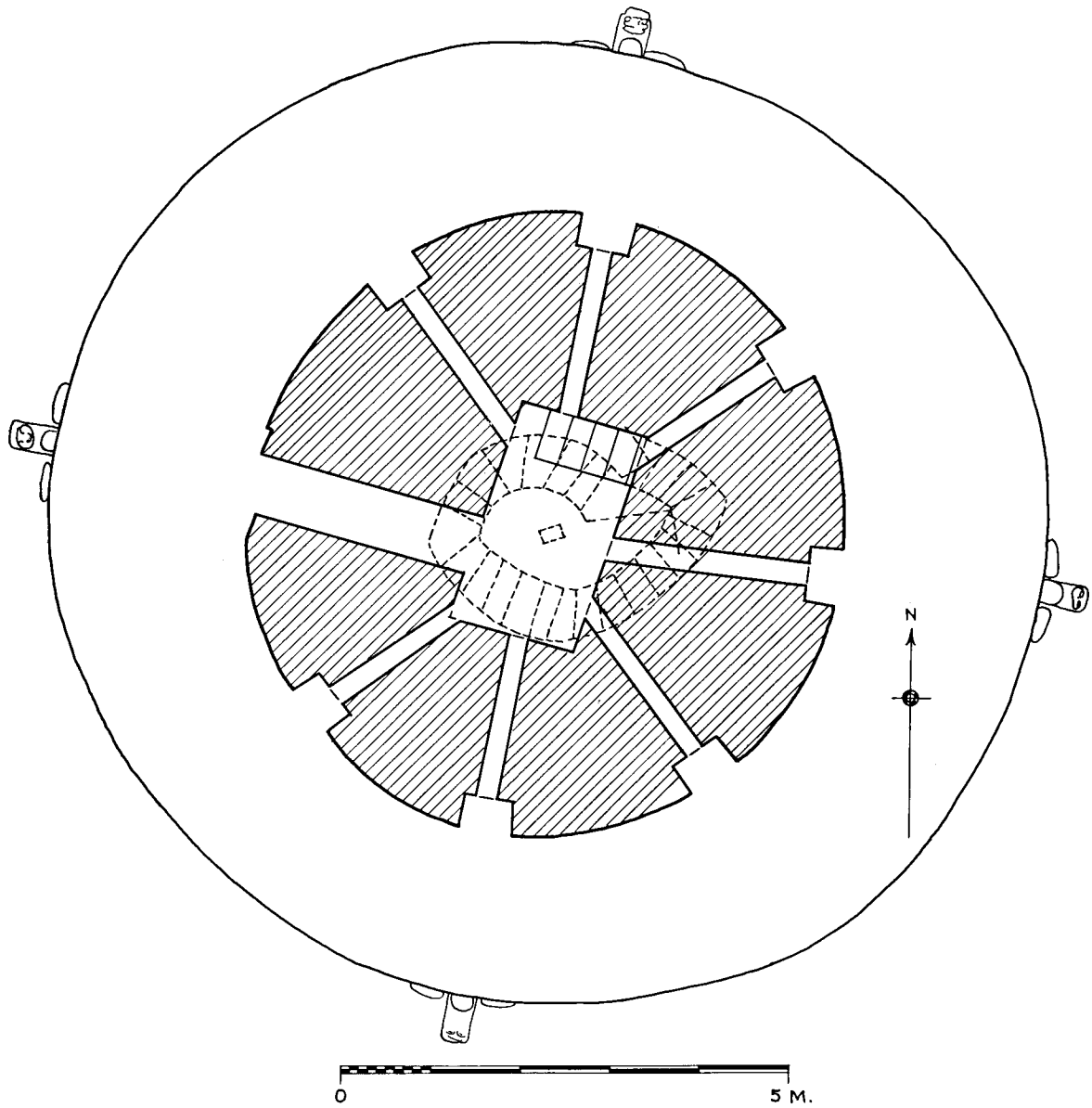


FIG. 292—SUGGESTED ORIGINAL SECTION THROUGH WINDOWS OF TOWER.

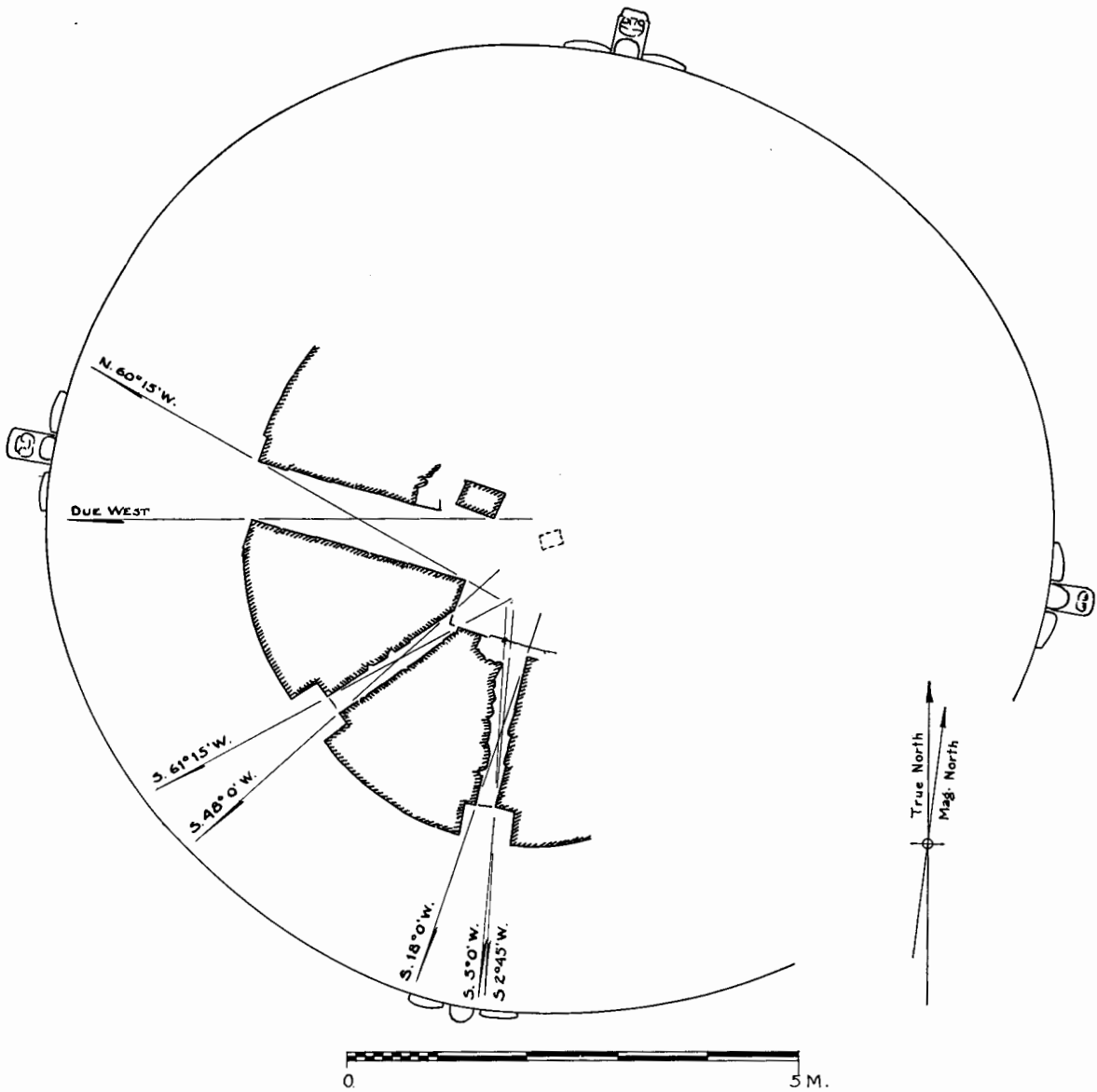


FIG. 293—PLAN OF WINDOW AND SHAFTS WITH TRUE BEARINGS.

"The removal of the loose, superficial dirt and stones revealed three new constructions of interest, whose functions, it would seem, could only have been for making astronomical observations.

"The first of these is Window No. 2.¹ It is a small, rectangular passageway, 9.5 inches [20.3 cm.] wide, 1 foot 2 inches [35 cm.] high, 5 feet 2 inches [1.56 meters] long in the mid-line, bearing South 42° West (Magnetic) [must be compensated for Mag. Dec. of 6°55']. As it is level, a view through it intersects the horizon, giving a maximum angle of vision—*i.e.* by moving the eye from one diagonal to the other—of 20°45' [13°15']. The maximum angle of vision vertically is 15°.

"The second construction was a third line-of-sight, called Window No. 3. It too is a small, rectangular passageway, 6 inches [21.5 cm.] wide, 1 foot 1 inch [29.2 cm.] high and 6 feet 4 inches [1.87 meters] long. Through this aperture the maximum horizontal angle of vision is 10°45' [15°15'], and the vertical angle 23°.

"Both of these constructions emerge through an interior wall to the east and south of Window No. 1, which, with what is left of the interior wall on its north, presumably indicates the former presence of an observation chamber at this point, now, however, entirely destroyed except for this southwest corner; and further that the probable entrance to such a chamber was by way of the spiral staircase in the core of the building.

"Observations were made through Window No. 1 at frequent intervals. The maximum angle of vision on the horizon is 30° [29°45']. It was noted that the sun set on the diagonal drawn from the northeast corner to the southwest corner on March 21, 1925 [vernal equinox], that it passed northward 15° and set along the midline on April 28, 1925, and that it then continued north, setting 5° south of the diagonal drawn from the southeast corner to the northwest corner on June 22, 1925 [summer solstice]. [This was checked in subsequent years giving similar results.] The function of this window as a solar observatory for determining the summer solstice and the equinoxes would seem, therefore, to be established.

"The results of these field observations at the Caracol were sent to the Department of Terrestrial Magnetism for analysis and the Director, Dr. Bauer, under date of June 24 [1925] has written Mr. Ricketson concerning them as follows:

" 'The description of the windows of the Caracol as given in your letter of May 30 is interesting evidence of a knowledge of practical astronomy among the early inhabitants of Yucatan.

" 'In the following notes the jambs are designated *right* and *left* as when *looking out*, and azimuths or directions are astronomical:

" '(a) Window 1. The direction, *right inner* jamb to *left outer* jamb is *due west*.

" '(b) Window 3. The direction, *right inner* jamb to *left outer* jamb is *due south*.

" '(c) Window 2. The direction, *left inner* jamb to *right outer* jamb is in azimuth 59° reckoned westward from south or *amplitude* 31°.

" '(d) Window 1. The direction, *left inner* jamb to *right outer* jamb has the same amplitude north of west (31°) as *c* is south of west.

" 'The amplitude of the Sun at setting on March 21, was 0° or due west which accords with the direction under *a*. On April 28 its amplitude was 15° north of west, hence it appeared exactly down the mid-line of window 1 as you observed.

" 'The Sun's amplitude on June 21 at Chichen Itza is 25°, consequently it will not be seen setting in the direction given under *d* as you anticipated, but about 5° farther to the left or westward.

" 'The directions *c* and *d* are the directions of the Moon at setting when its ascending node is in the vernal equinox; that is when its declination is a maximum, about 28°36'. Nothing apparently marks the direction of its setting 9½ years later when its maximum declination for the year is reduced to about 18°25' and its amplitudes become 20° north or south.

¹ "Maudslay (Biol. Centr. Americana, Vol. III, plate 21) has a photograph which shows Window No. 2. Stephens (*Incidents of Travel in Yucatan*, Vol. II, facing p. 298) also figures a drawing clearly showing Windows Nos. 1 and 2."

“Window 3 is not high enough for direct observations of the Sun at noon or the Moon at meridian passages; hence, if it was constructed for such observations, it must have been the shadows of the jambs cast by the Sun or Moon that were noted. Directions *a*, *b*, *c* and *d* mark astronomical directions of local importance whether intentionally or unwittingly, but two directions remain for which I can assign no reason at the present time.

“The above directions have been computed with the assumption that the Sun and Moon set over a practically level stretch of country. It is possible that nearby mountains, deep valleys, or other landscape features, of which we have no information, might alter the computed directions several degrees.’

“It should be noted that inasmuch as the country surrounding Chichen Itza is literally as flat as a table-top, no correction for neighboring topographic features, as suggested in the last paragraph above, has to be applied to the figures given.

“In conclusion attention should be called to the fact that the stones framing the eastern or ‘observation’ end of Window No. 1 were cemented as they stood, no attempt being made to correct their positions, even though the correction was obvious, so that all future observations may be made without fear that the corrections in the positions of the stones has in any way been conducive to or suggestive of spectacular or desired conditions.”¹

The revised data were sent to Dr. John A. Fleming, Acting Director of the Institution’s Department of Terrestrial Magnetism, and the following report, prepared by Mr. W. J. Peters of the Department, was submitted under date of February 25, 1933:

“The revised measurements of windows of the Caracol at Chichen Itza and the various azimuths are of great interest to us although they suggest no other primitive astronomical observations than were given in our letter of June 24, 1925, to Oliver Ricketson jr. In fact, the possible uses seem to be reduced, since the southern window (No. 3) as now shown precludes meridian observations, the view being restricted to a field included between S 2°45’ W and S 18°00’ W.

“Another puzzling question is the use of the variable vertical extent of the field of view which is greatest in the west window (No. 1) and least in the southern window (No. 2). One might readily imagine that a primitive people living on a broad plain, with the natural horizon almost coinciding with the mathematical, would be interested in the horizontal directions of celestial bodies at their rising and setting, since these directions are readily perpetuated by permanent marks such as window-jambs of the Caracol. But if this were the case at Chichen Itza, one would look for windows of the same if not decreasing vertical dimensions rather than the increasing ones as we pass from the southern window to the western.

“We have attempted to find local astronomical events corresponding to the azimuths of certain jambs of the windows of the Caracol, but, of course, the jambs may never have been used. It is possible that marks were placed upon or cut into the sills to indicate the various azimuths. The most important of these, visible through the western window (No. 1), would be the direction of the setting Sun when at the equinoxes and at the summer solstice. If it has not already been done, we would suggest a very careful examination of the sills for such evidence.

“The restoration or even the probable location of other windows would probably clarify the problem somewhat. If windows on the eastern and southeastern sides of the Caracol were placed symmetrically, as regards the meridian, to those already restored on the western and southwestern sides, this distribution would tend to confirm our suggestions as to their astronomical uses.

“It might be noted that the direction S 61°15’ W shown in window No. 2 is exactly halfway between N 60°15’ W and S 2°45’ W shown in window Nos. 1 and 3, respectively, but we are unable to attach any significance to the fact.

“It would be most interesting if the deviation of the axis of the southern window (No. 3) could be ascribed with certainty to the magnetic declination at the time of building the Caracol, but there is nothing but the mere fact that it does deviate.”

¹ Ricketson, 1925, pp. 266-267.

NORTHWEST TEMPLE

Remains of a small colonnaded building were found on the lower platform in the northwest corner. The lower platform had here badly fallen, carrying with it practically all of the building (figs. 347 and 348). Of the structure there still remained portions of its low basal terrace, the southeast corner of the building proper and the lower drums of three columns (fig. 294).

The basal terrace rises vertically to a height of 25 cm. and was formed of a single course of faced stones. At the southeast corner of the building the walls were found standing to



FIG. 294—NORTHWEST TEMPLE.

a height of 38 cm. From this corner the east wall was traceable one meter to the north. The south wall was traced 1.14 meters to the west, where it was finished with specially cut jamb stones. The anta thus formed projects 48 cm. westward from the inner face of the east wall. The corner stone, cut without a batter, and the facing stones *in situ* showed the façade to have risen vertically.

The columns extended across the south, or front, of the building. From the center of the first or easternmost to the end facing of the adjacent anta is 2 meters. The second column is 2.15 meters, center to center, from the first; the third 2.20 meters from the second.

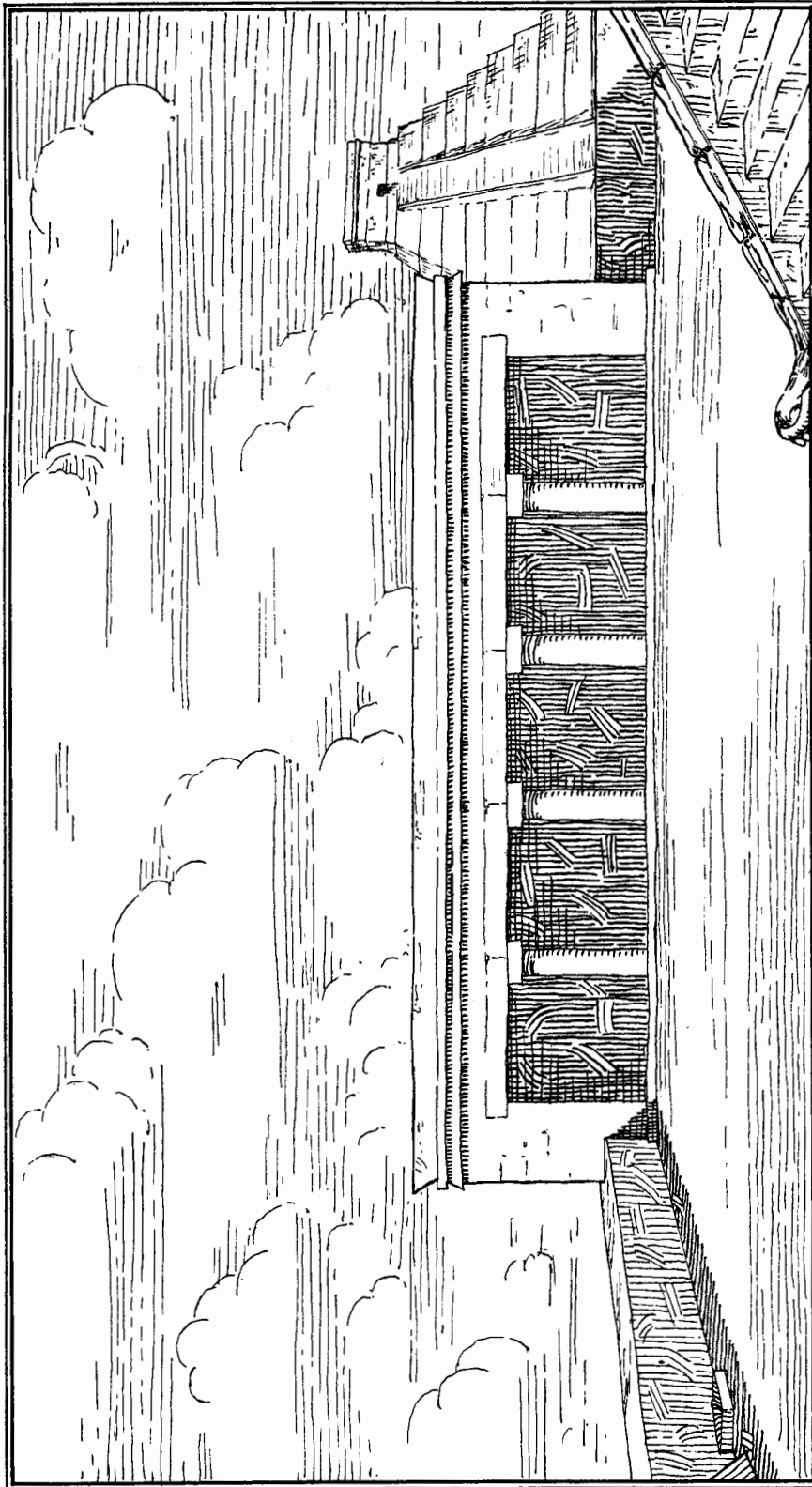


FIG. 295—RESTORATION OF NORTHWEST TEMPLE.

The columns average 40.6 cm. in diameter and were surmounted by rectangular capitals, only one of which was found in the débris. It has a length of 60 cm., a width of 46.9 cm. and a thickness of 22.8 cm.

The débris on the floor of the building, formed of stone chips and disintegrated lime mortar, and the absence of *boveda* stones either here or on the talus at the edge of the platform, leads to the assumption that the ceiling was of beams and rubble.

A fallen section of cornice 2.50 meters in length, east and west, was found lying on top of the lower platform, approximately 2 meters south of the building. Its members still retaining their relative positions showed the cornice to have been formed of a 20-cm. apron member, a 15-cm. band and a 33-cm. overhanging beveled member. This order is assumed because of the position in which the stones, as fallen outward and downward with the collapse of the building, were found on the platform, and because no parallel arrangement was found so fallen nor were stones of this type noted in the débris farther to the south, all of which implies that a cornice only was present, when the larger member is placed at the

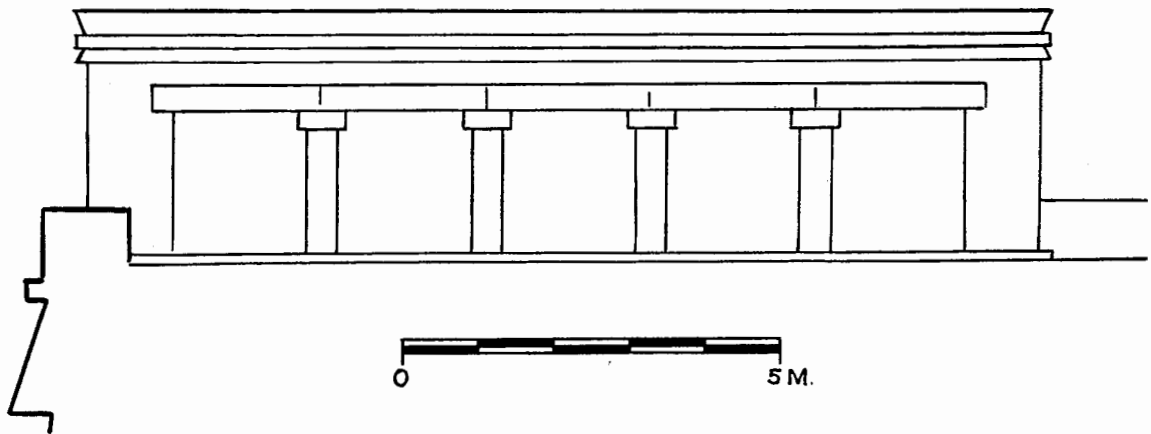


FIG. 296—RESTORED ELEVATION OF NORTHWEST TEMPLE.

top.¹ A somewhat similar arrangement was used at Tulum in Structures 3 and 4, which also had ceilings of beams and rubble.²

THEORETICAL RECONSTRUCTION

Since the building is badly fallen, its dimensions are not known. If the number of columns was ascertainable, the east-west measurement could be determined with reasonable accuracy. The lower drums of three were found *in situ*. It is reasonable to suppose that there was an even number of columns, as the use of an odd number in the portal of a building is rare.³ The distance between the east end of the building and the western edge of the great lower platform would not have permitted the use of five columns spaced at the same intervals as those *in situ*. Four may have been used and, if so, the fourth would have been located roughly 2 meters from the westernmost found *in situ*.

¹ Lothrop, 1924, p. 38, fig. 16, *c* and *d*; p. 37, "Figure 16, *c*, shows an intermediate example where it is hard to decide whether it belongs to the three-member group or whether it is a two-member form surmounted by an outward-sloping wall. In figure 16, *d*, we have an example of the two-member type in which the source from which it evolved is suggested by the slope of the top of the walls."

² Lothrop, 1924, pp. 83-84.

³ Lothrop, 1924, reports nine round columns in the portal of the oldest portion of the Castillo of Tulum (fig. 41, p. 75); seven round columns in the portal of a building at Cancuen (fig. 163, p. 153).



FIG. 297—CARACOL WEST ANNEX AFTER CLEARING OF BUSH AND BEFORE STARTING EXCAVATION.



FIG. 298—CARACOL WEST ANNEX.

Débris from temple was placed in a trough or hopper and then hauled away in a truck.

Allowing 2 meters from the fourth column to the west anta and assuming that this anta had the same measurement as the one at the east, the building had a length of 12.60 meters (fig. 348). If this assumption be correct, the west wall rested on and rose in line with the inner face of the parapet. If only three columns were used, the length would be reduced by approximately 2 meters, or to 10.60 meters and there would have been an open area between the west wall and the parapet, as between the north wall and the parapet.

The width of the building as restored on the plan (fig. 348) is 3.65 meters. Allowing for the thickness of the north and south walls (the south wall has a thickness of 58 cm.), the span of the beams would have been 2.49 meters. The span crossed by the beams which supported the arch in the Sanctuary of the Temple of the Warriors was 2.59 meters.¹

If, as suggested in the restoration (figs. 295 and 296), the façade rose vertically to a height of 2.50 meters, on which rested the surely known 68-cm. three-member cornice, the building had a total height of 3.18 meters.

WEST ANNEX

Built against the west facing of the lower platform of the Caracol and to the south of the stairway is a low platform surmounted by the remains of a two-chambered building (figs. 297 and 348). The name, Caracol West Annex, has been given to this construction because of its position in relation to the Caracol.

The excavation and repair of the West Annex were carried on during the field seasons of 1929 and 1930. The writer is indebted to Harry E. D. Pollock for assistance in the study and repair of the structure.

A description of the mound, as noted by Maudslay, follows:

"To the south of this stairway can be traced a fragmentary building attached to the basement, which it is not easy to understand. It apparently consisted of two chambers, and was approached by a stairway on the north-west side. The floors of the chambers are about on a level with the bottom of the notched cornice of the basement of the Caracol, so that this building, when completed, must have much exceeded that basement in height. Thinking it might have served as a portico, I examined the inner chamber for traces of steps leading to the terrace, but none could be found. Neither could any distinct traces of a doorway be seen in the foundation of the wall dividing the two chambers, although there can be little doubt that such a doorway must have existed. As, however, only a few inches of the height of the walls are now discernible, it is difficult to come to any exact conclusions."²

After clearing the mound of bush, it became evident that the construction consisted of a low platform on which rested a colonnaded superstructure, some of the upper drums of the columns being visible. A stairway on the west giving onto the platform was indicated by finding some of the lower steps *in situ* and surface finds of a number of the stones which had capped its side facing walls. The mound had an approximate total height of 5 meters, extended 18 meters west from the lower platform of the Caracol and some 25 meters south from its stairway.

Excavations were started at the northwest corner and proceeded to the east and south. A hopper or trough for the reception of débris was set up at the northwest corner of the platform as soon as the base of this corner had been uncovered (fig. 298). Runways, over which the waste material from the excavations was transported in wheelbarrows, were built

¹ Morris, 1931, p. 16.

² Maudslay, 1889-1902, Vol. III, text, p. 20.



FIG. 299—CARACOL WEST ANNEX, EARLY PLATFORM, SOUTH SIDE.
Facing of platform is of crudely worked stones.



FIG. 300—CARACOL WEST ANNEX, LATE PLATFORM, NORTH SIDE.
Masonry facing is of dressed stones applied as veneer.



FIG. 301—CARACOL WEST ANNEX, REPAIR COMPLETED.
View from southwest. Break in facing of south side of platform gives access to passageway across west face of early platform.



FIG. 302—CARACOL WEST ANNEX. NORTHWEST CORNER OF EARLY PLATFORM.

from the top of the platform to the hopper. This material was then hauled in trucks to the low area, or *bajo*, north of the Temple of the Warriors.¹

THE SUBSTRUCTURE

At its base the substructure measures 15.77 meters on the north, 19.65 meters on the west and 14.17 meters on the south and rises to an average height of 2.30 meters above the level of the great basal terrace (figs. 341, 342 and 348). The east side abuts the lower platform of the Caracol. The approximate eastern half of the north side rests on the low platform associated with the stairway of the Caracol lower platform (page 51; fig. 347).

The facing of the lower portion, covered by the material which fell from above, and the upper portions on both the north and south, where they were protected by the great lower platform were found *in situ* (figs. 299 and 300).

Except for the eastern portion of the south side, the facing, made up of well-worked though not carefully smoothed stones, was applied as a veneer. The eastern portion of the south side, less veneer-like and made up of very crudely worked stones (fig. 299), is the facing of the south side of the early platform which was enclosed on the west and north by the late platform of the West Annex (page 251). The facing rises at an angle varying from 74° to 78° and was finished with an overhanging apron cornice 22 cm. in height. The corners of the platform are rounded (fig. 301).

The *embutido* is made up of large, unweathered and unworked stones, the interstices loosely filled with small stones and chips (fig. 302). Mortar is entirely lacking. The *embutido* was laid up in tasks or construction units each indicated by rough walls of dry masonry which rose to the height of the platform. One such wall, noted 2.56 meters inward from and parallel to the south facing of the platform (fig. 347), extended from the masonry of the west facing to the early West Annex platform. A second task wall giving off from the first, 1.52 meters west of the buried platform, extended 91 cm. south, where it turned and could be traced 76 cm. eastward. Had this wall continued to the early platform, the content of the constructional unit could not have been more than 2.65 cubic meters.² These task walls were encountered at the time the buried platform and stairway were excavated.

STAIRWAYS

A stairway is located in the approximate center of the west side of the platform (figs. 303 and 304). It has a width of 4.75 meters including the balustrades, each of which measures 49 cm.

The three lower steps were found *in situ* (fig. 303). Of the remaining steps some of the stones were found *in situ*, some out of alignment and some completely displaced. The stairway had risers and treads measuring 20 and 26 cm., respectively, thus 12 steps were necessary to give access to the top of the platform, the stairway rising at an angle of 38°. For the most part the stones forming the steps had been specially cut and were fairly well finished.

¹ Débris from the Temple of the Warriors was placed in this same *bajo*.

² Similar constructional units in the pyramid of the Temple of the Warriors vary in content from 3.51 to 3.85 cubic meters; at the Temple of the Wall Panels they average 3.5 cubic meters.



FIG. 303—CARACOL WEST ANNEX, VIEWED FROM WEST, AFTER EXCAVATION.



FIG. 304—CARACOL WEST ANNEX, VIEWED FROM WEST, REPAIR COMPLETED.



FIG. 305—Stones of north balustrade of west stairway as found during excavations.



FIG. 306—Stones of south balustrade of west stairway as excavated.



FIG. 307—West stairway repaired. Each balustrade bears a low-relief carving of a plumed serpent.

CARACOL WEST ANNEX.

The side facing walls were capped with large blocks of stone, the under sides of which are concave longitudinally like those capping the side facing walls of the upper and lower stairways of the Caracol proper (pages 56 and 129). The stones are carved in low relief, depicting a plumed serpent (fig. 307). Only eighteen of the capping stones were recovered; nine belonging to the north side and nine to the south. Those of the north have a combined length of 2.83 meters and those of the south a combined length of 3.15 meters. This difference in length is due to the lack of uniformity in the size of the individual blocks. The basal capping stones, carved in representation of the tail of the serpent, were found *in situ*. Others were either slightly out of alignment or had fallen (figs. 305 and 306). No serpent heads were found.

The facing stones of the side walls are similar to those of the platform. Those on which the capping blocks rested were cut with one sloping side (fig. 301). The facing of the platform extends only a few centimeters behind either wall.



FIG. 308—CARACOL WEST ANNEX. NORTH STAIRWAY.

When the preparations were being made to repair the platform facing, four sculptured stones were found embedded in the *embutido* directly north of the stairway. They are carved in a modified S-shape, measure 35 cm. by 20 cm. and have tenons 45 cm. in length. Similar stones are used in the first apron molding of the east façade of the Monjas, East Wing, directly above the guilloche pattern (fig. 225, a).

On the north a small stairway rising from the platform associated with the lower stairway of the Caracol gives onto the West Annex platform (fig. 348). It has a width of 1.63 meters, not including the two balustrades, each of which measures 37 cm. The flight of stairs was composed of four steps, some of the stones of each being found *in situ* (fig. 308). The risers and treads are somewhat irregular; the former measuring 18, 24, 29 and 29 cm. and the latter 25, 30 and 30 cm. from base to top, respectively.

Side facing walls are capped with plain faced stones. The facing wall on the west rises vertically from the top of the batter of the low platform of the Caracol stairway (fig. 310).



FIG. 309—CARACOL WEST ANNEX, SEEN FROM NORTHWEST AFTER EXCAVATIONS WERE COMPLETED. MASON IS REPAIRING PLATFORM FACING.



FIG. 310—CARACOL WEST ANNEX, SEEN FROM NORTHWEST, AFTER REPAIR WAS COMPLETED. PHOTOGRAPH TAKEN IN 1929.



FIG. 311—CARACOL WEST ANNEX, EARLY PLATFORM.

A section of facing of south side of late platform was omitted to form entrance to a passage exposing western side of early platform.



FIG. 312—CARACOL WEST ANNEX. STAIRWAY OF EARLY PLATFORM.

The facing of the platform to the east of the stairway is not in alignment with that to the west. The final riser is set outward from the line of the platform cornice. On the east side of the stairway it is set outward a distance of 15 cm. and on the west side 24 cm.

REPAIR

In 1929 the repair of the platform consisted of the rebuilding of the facing and replacement of the overhanging cornice of the north and west sides. The work was first undertaken on the north and included the realignment and resetting of the stones of the north stairway (figs. 309 and 310). After the facing of the west side had been rebuilt, the west stairway was repaired.

The repair of the south side, deferred until 1930 so that a study of the buried platform might be made, included the rebuilding of the facing to its original height, except for a section at the southwest corner of the early platform. Here the facing was omitted for a distance of 2 meters, forming the entrance to a passage to expose the western side of the early buried platform (fig. 311).

EARLY PLATFORM

The first or early platform was enclosed on the north and west by the second or late platform (fig. 347). It rises to a height of 2.60 meters including the 20-cm. band cornice which has an overhang varying from 10 to 15 cm. The facing itself rises with an average batter of 76°. The top of the early and the late platform are at the same level, the difference in levels of the floors from which the two rise accounting for the difference in vertical heights.

The masonry is very crude, only an occasional surfaced stone being noted (fig. 302). The facing was intact, except for the southwest corner, which had been razed by the ancient builders when the late platform was added, and the upper portion of the south side which fell with the disintegration of the platform. The masonry of the south side is seen in figure 299. The corners were rounded. The one at the northwest, as seen in figure 302, is made up of seven very crudely worked blocks. The facing, except where it extends behind the stairway, was covered with a single very heavy layer of plaster.

A sculptured stone, reused in the facing, was noted 96 cm. south of the stairway and 40 cm. above the floor. In outline it is U-shaped, measuring 20 by 21 cm., and bears an incised figure which coincides with the outline of the stone. The edges are worked. It is not similar to the wall stones, incised with a U-shaped motif, from the upper zone of the temple, but is an element from a molding or panel, here reused (fig. 313).

STAIRWAY

Centrally located on the west side is a stairway. From base to top it was *in situ* and to date is the only stairway so found at Chichen Itza. A trench was made across the entire western side of the platform, to and including the northwest corner, for the study of the platform facing and stairway. The trench was left open and the surrounding *embutido* walled up with cement-laid masonry.

Each of the ten risers of the stairway has an average height of 25 cm. (fig. 314). The final riser is the cornice of the platform which extends behind the block of masonry at the top of each balustrade, the stairway itself having been built against the platform facing.



FIG. 313—CARACOL WEST ANNEX, EARLY PLATFORM.

At south of stairway, a stone bearing U-shaped decoration was incorporated in the masonry.



FIG. 314—CARACOL WEST ANNEX.
Stairway of early platform was found intact.

The balustrades, 35 cm. in width, are each made up of ten stones which are faced on the upper side only. At the top they are finished with a masonry block¹ (fig. 314). The west face of the block has a height of 38 cm., the upper surface, on a level with the platform, projects 53 cm. from the edge of the cornice and has a width of 35 cm., the same as that of the balustrades. Only the west face of the block, formed of a single stone, has been carefully worked. A variation in the type of masonry block used to finish the balustrades is seen in Structures 20, 21 and 25 at Tulum² and in Tulum Type Structure No. 1 between Coba and Nohoch Mul.³ These types may represent stages in a transition from that where the masonry block rises vertically from the base of the stairway, as in Structure 33, Yaxchilan, to that at the Castillo at Chichen Itza where the balustrades rise in an unbroken line to the top of the pyramid.

The facing stones of the balustrades are only slightly better worked than those of the platform (fig. 312). The final course on which rest the capping stones are not cut with a sloping side, as was noted in the stairway of the late platform (page 248). The spaces directly below the capping blocks are filled with irregularly shaped stones and chips. The side facing walls and coping and the steps were covered with a heavy layer of plaster.

The early platform rests on a red-painted well-packed floor which apparently is the same as that extending under the lower platform stairway of the Caracol (fig. 57, E). A second floor 15 cm. above the first, not as firmly packed and yellowish red in color, curves up against the early platform and is the floor upon which the late platform was built. A third, curving up against the facing of the late platform, is 22 cm. above the second.

TEMPLE

The building surmounting the late platform faced west and contained two chambers; the outer, a colonnaded hall spanned by two vaults supported by a double row of columns and the rear wall of the chamber; and the inner, spanned by a single vault supported by the masonry walls. The temple is centrally located with respect to the east-west axis of the platform. The east wall is 54 cm. from the abutment of the top of the platform against the lower zone of the facing of the Caracol lower platform (figs. 308, 329 and 342). The temple has an overall measurement of 14.8 meters north and south by 8.52 meters east and west. The terrace to the north and south has an average width of 2.60 meters. Directly in front of the temple, the terrace varies in width from 5 meters at the south to 6.55 meters at the north (fig. 348). This variation is due to the difference in length of the north and south sides of the platform.

Three bowls of Red Lacquer Ware were found in the débris, 2 meters above the floor of the West Annex platform and at the southern end of the passageway between the West Annex and the Caracol lower platform. Two of the bowls have the slip on the interior only. Traces of blue paint were noted applied on the slip on the interior of one and on the interior and exterior of another.

The outer facing of the temple was formed of a plain vertical lower zone rising to a height of 2.28 meters, on which rested a three-member molding (figs. 310, 339, 340, 341 and 342). This molding was formed of a lower 22-cm. apron member, with an overhang of 16 cm., a 15-cm. band and a 22-cm. overhanging beveled member. The outer edges of the lower and upper members and the face of the band were plumb.

¹ Balustrade on Castillo at Tulum is finished at top with masonry block. Lothrop, 1924, p. 28, fig. 4.

² Lothrop, 1924.

³ Thompson; Pollock and Charlot, 1932, pp. 16, 76.



FIG. 315—CARACOL WEST ANNEX.

Section of first member of molding, *a*, was found *in situ*; *b*, stones which formed part of stairway leading from the Caracol lower platform onto roof of West Annex.



FIG. 316—CARACOL WEST ANNEX.

Stones bearing incised U-shaped motifs formed part of decoration of upper zone of temple.



FIG. 317—Human statuette with bird beak from north façade.



FIG. 318—Human statuette from west façade.

CARACOL WEST ANNEX.

No portion of the façade of the structure above the first member of the molding was found *in situ* (fig. 315). Sections fallen *en bloc* and plaster marks on the individual members permit of an accurate restoration of the façade to the top of the molding.

Resting on the molding and set inward 16 cm. from the edge of its final member, the upper vertical zone rose in line with the lower. Its exact height is not known, but may well have been approximately one meter. This zone, except on the east where it was plain, as no sculptured stones were found in the débris associated therewith, had as decoration a large panel in the middle of each side and simple U-shaped motifs incised on some of the wall stones.

The U-shaped motifs, varying in height from 15 to 20 cm. and in width from 16 to 24 cm., range through shallow and deep curves to angular block forms (fig. 316). The incising, showing considerable variation in depth, as well as the remainder of the face of the stone was painted red. From the position in which some of the stones were found fallen from the upper zone onto the platform, there can be little question but that they were placed with the open end of the U either upward or downward. In either of these positions the stones recovered have a total length of 37 meters. The north, west and south sides of the temple have a combined length of 31.84 meters. Each panel, in which it is unlikely that any of the stones incised with the U-shaped decoration were used, was not over 2 meters in width. None of the corner stones recovered bear this motif. Thus, the area to be decorated is roughly 25 meters in length. With 37 meters of band recovered, and since only 25 meters are needed for a single band, the decoration may have been arranged in two rows; the unrecovered material had been either destroyed or reused in some construction after the collapse of the building. There is also the possibility that the incised band was never completed, or that it was not continuous in the interpanel spaces, or if a decorative band was continuous, plain stones sufficient to complete it may have been used on which the motif was painted.

The panels in this zone are similar to the statuette panels of the Northwest Colonnade.¹ The principal motif of the one on the north side, a seated human figure with a bird beak, was found in the débris 6 cm. above the terrace floor and directly below its original location. The figure, including the head-dress which is a separate stone, has a height of 64 cm. (fig. 317). Only a few of the sculptured stones which completed the panel on either side of the figure were recovered. These stones carry conventionalized designs.

The west panel had as the central motif a standing human figure, 67 cm. in height (fig. 318). The figure was found on the terrace 2 meters west of the northernmost column of the portal. The right and left arms were only partially represented. A socket had been cut into the end of the right upper arm, presumably for the reception of a pin worked on the upper end of its missing lower section. The end of the left upper arm was smoothly worked. Stones sculptured in floral and geometric designs, placed on either side of the figure, completed the panel. Even though more stones were found belonging to this panel than to the one on the north, not enough were recovered to make possible its restoration. Sculptured stones from the panels are shown in figure 319. It is presumed there was a similar panel on the south side, although no central figure or other sculptured panel stones were recovered.

¹ Morris, 1931, Vol. I, p. 63.

Resting on the upper vertical zone was the final molding. From the material recovered it is known to have been composed of three members and was similar to the one below, with the exception of the final member which measured 46 cm. in height.

STAIRWAY GIVING ONTO ROOF

The stairway built against the parapet of the lower platform (figs. 320 and 321) which gave onto the roof of the West Annex (page 17) was in a poor state of preservation, due primarily to the collapse of the West Annex. The portion resting on the lower platform of the Caracol showed it to have had a width of 1.62 meters, not including the balustrades. Two complete steps and a portion of a third were found. The risers and treads each measure 22 cm. The balustrades or coping of the side facing walls of the stairway, formed of plain faced stones, have widths of 40 cm. The roof of the West Annex rose approximately

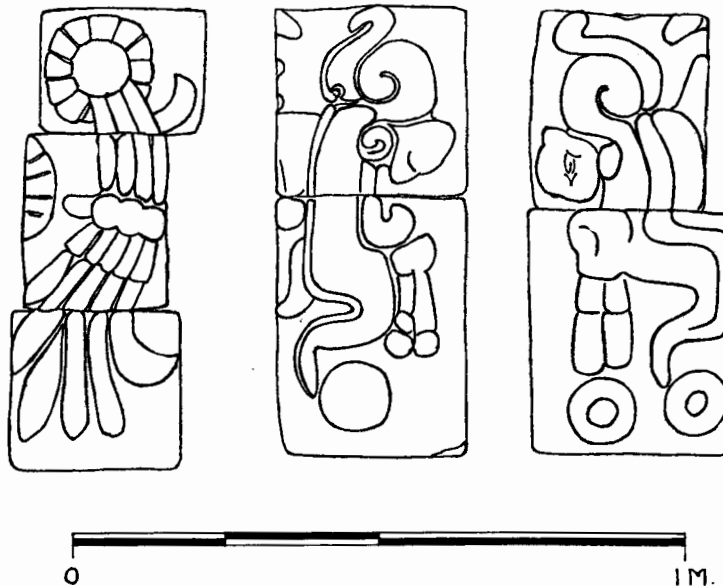


FIG. 319—SCULPTURED STONES FROM PANELS, WEST ANNEX.

1.30 meters above the top of the Caracol platform, so that six steps with 22-cm. risers were necessary to complete this flight of stairs.

During the excavation of the inner chamber of the West Annex, an arrangement of stones, problematic as to use, was uncovered 2 meters above the floor and in line with the portion of the stairway found on the lower platform of the Caracol (figs. 315, 322, 323, 324 and 325). These stones, 33 cm. in height, laid in one tier formed a low wall or step 55 cm. in width and 1.62 meters in length. At either end of this construction there was a single rectangular block of stone having a width and height equal to that of the step, except the block at the north which rose 4 cm. above the step. On the west, abutting the base of the construction, was a rectangular arrangement of vertical cornice stones having a width of 73 cm. and a length only slightly greater than that of the wall or step itself.

Beneath the construction were *boveda* stones which had fallen with the collapse of the vault, thus the inference is that it fell from the roof. Since this construction has the same width as the stairway (1.62 meters) and the two large stones at either side have widths of



FIG. 320—SECTION OF STAIRWAY BUILT AGAINST PARAPET OF THE CARACOL LOWER PLATFORM TO GIVE ACCESS TO ROOF OF WEST ANNEX.



FIG. 321—STAIRWAY FROM CARACOL LOWER PLATFORM TO ROOF OF WEST ANNEX AS REPAIRED.

a and *b* are drains through parapet of lower platform.



FIG. 322—CARACOL WEST ANNEX.

Dais, *a*, of inner chamber partially excavated. Portions of collapsed stairway, *b*, which gave from the Caracol lower platform onto roof of West Annex.



FIG. 323—CARACOL WEST ANNEX.

View through doorway of inner chamber. *a*, dais; *b*, stones which formed part of stairway giving onto roof of West Annex. Stone with incised U-shaped decoration, *c*, reused in wall facing.



FIG. 324—CARACOL WEST ANNEX.

View looking south. *a*, dais; *b*, collapsed section of stairway. Molding stones, *c*, rest on plain lower zone.

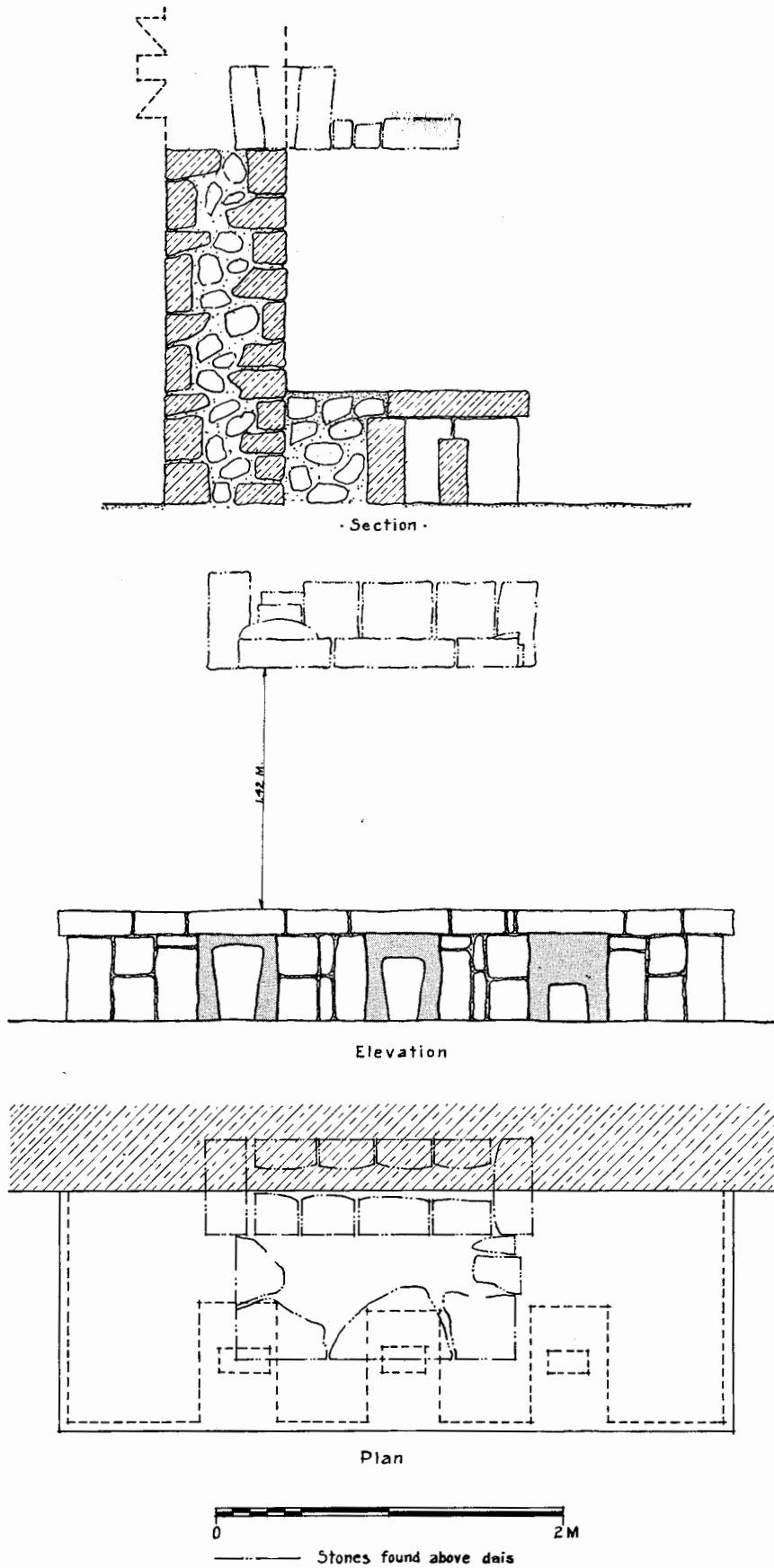


FIG. 325—PLAN, SECTION AND ELEVATION OF DAIS IN INNER CHAMBER OF WEST ANNEX, SHOWING STONES FOUND ABOVE DAIS.



FIG. 326—WEST ANNEX. CORNER APRON MOLDING STONE.

On one side, sketched in black paint is a rectangular figure enclosing a circle.



FIG. 327—FIVE OF SEVEN STONES OF HIGHLY SPECIALIZED SHAPE FOUND ON WEST TALUS OF WEST ANNEX.



FIG. 328—CARACOL WEST ANNEX, VIEWED FROM SOUTHWEST BEFORE PLATFORM WAS EXCAVATED.

a, one of seven highly specialized stones, of which six were found on platform talus south of west stairway and one on platform.

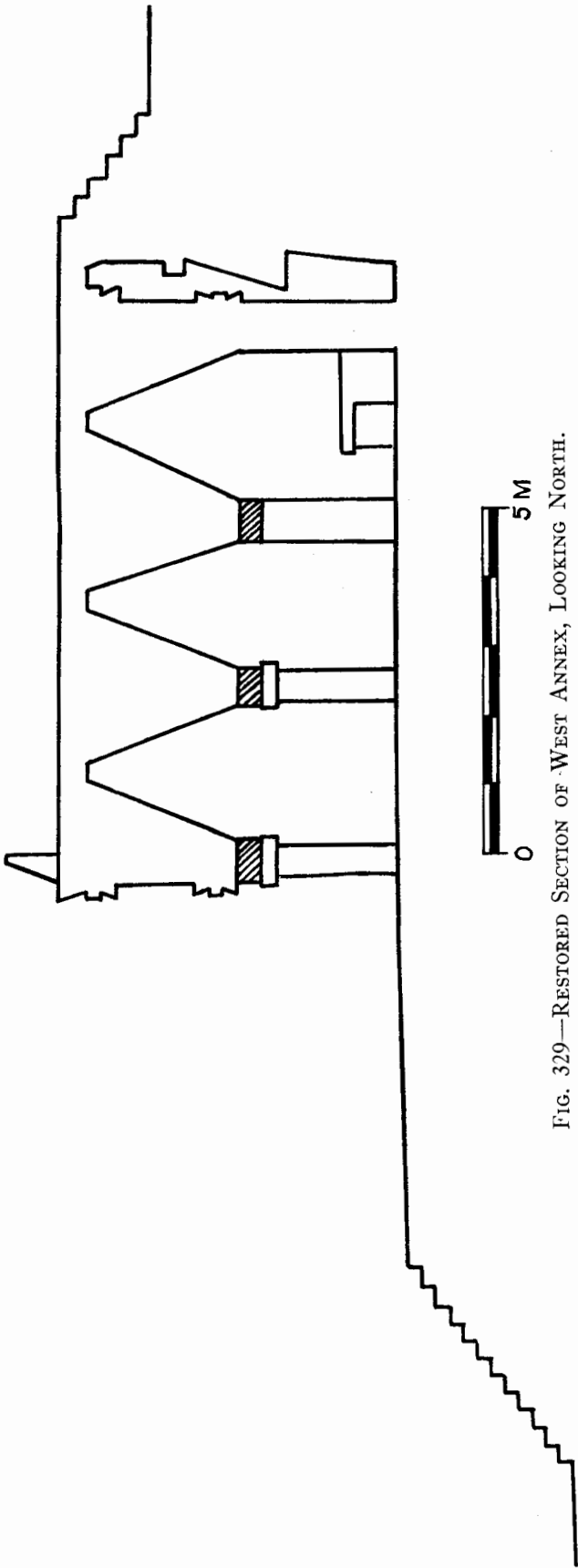


FIG. 329—RESTORED SECTION OF WEST ANNEX, LOOKING NORTH.

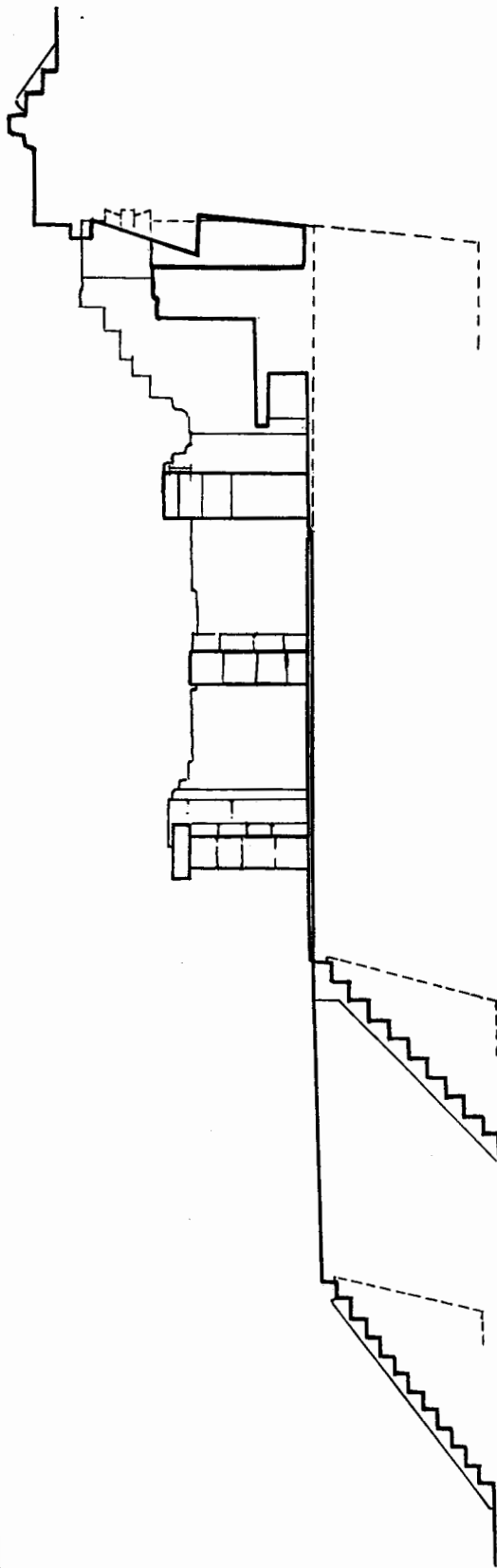


FIG. 330—SECTION THROUGH WEST ANNEX, LOOKING NORTH.

40 cm., the same as the balustrade, there can be no question but that this formed a part of the stairway.

SPECIALIZED STONE RECOVERED

An apron molding stone was uncovered near the northeast corner of the temple. On one side of the stone, sketched in black paint, is a rectangular figure open at one end, within which is a circle having a diameter of 37 cm. The sketch lines have an average width of 1.2 cm. (fig. 326).

During the excavation of the west side of the mound, seven large carefully dressed and highly specialized stones were found—six in the talus to the south of the stairway (fig. 328) and one on the platform 1.22 meters south and 60 cm. west of the north anta of the temple. The stones, with two exceptions, are 71 cm. in height, battered on one face and vertical on the other. The top, from the battered to the vertical face, measures 16.5 cm.; the base measures 40 cm. (fig. 327). The top, the vertical and the battered faces had been worked and still retained traces of plaster. Seemingly the stones had been placed side by side, their combined length being 2.41 meters. Two of the stones, each 69 cm. in height, which have one vertical end worked, may have occupied positions at either end of the row.

Finding one of these stones in the débris above the platform suggested that they pertained to the temple. Their original position may have been on the roof of the structure above the central doorway (figs. 329, 339 and 340) where they served as a lectern. At the completion of the Institution's work, these stones were placed side by side on the platform at the head of the west stairway (fig. 307).

OUTER DOORWAY

Entrance to the outer chamber was gained through five doorways in the western façade, between the four round columns and the north and south antæ. The recovery of the stones of the jamb of the north anta established the height of the portal as 2 meters. It is interesting to note that the shaft of only the northernmost column was found *in situ*, its capital alone having fallen. The doorways, from north to south, have measurements of 1.69, 1.82, 1.72, 1.69 and 1.73 meters, respectively. The columns, formed of four or five drums, have average diameters of 48 cm. and rose to a height of 1.70 meters, not including the rectangular capitals which measure 72 cm. in length, 58 cm. in width and 25 cm. in thickness.

OUTER CHAMBER

The outer chamber measures 4.17 meters in width by 12.60 meters in length. There were no openings in the sections of the north and south walls which were standing at the time the study was made. On the west are the north and south antæ, each having a length of 1 meter, and the four columns. The east wall is pierced by a single doorway giving access to the inner chamber. The outer chamber is divided longitudinally by a single row of four columns spaced at regular intervals and having the same heights and diameters as those in the portal. There were two vaults; one from the east wall to the row of columns dividing the chamber through its north-south axis and the second from this row of columns to the antæ and the columns of the portal. The widths of these vaults were 1.70 and 1.77 meters, respectively (figs. 329 and 330).

Since none of the arch stones were found *in situ*, it is not known whether there was an overhang at the spring of the arch. The *boveda* or vault stones are of the specialized type, that is, the tenons are long and thin in comparison to the overhanging beveled face. The original height of the vault is not known. Many capstones were recovered, but none showed plaster marks indicating the width at the top of the vault. The specially cut stones of the wall, the faces trapezoidal, which abutted the arch at either end were recovered in the débris.¹ The angle at which the vault rose, as calculated from these stones, was 72°. It is safe to assume that the vault did not terminate with a course of vertical stones immediately below the capstones, as such vertical stones were entirely lacking in the débris.



FIG. 331—WEST ANNEX. STONE MORTAR AND BASE OF POTTERY *Incensario* FOUND ON FLOOR AT ENTRANCE TO INNER CHAMBER.

INNER CHAMBER

Entrance to the inner room was through a single doorway 1.22 meters in width (fig. 348). At the time of excavation the jambs were found standing to a height of 1.98 meters. In all probability this was the original height since no other jamb stones were recovered and it is practically the same height as the columns in the outer chamber.

In 1927 an exploratory pit was made in the débris filling the doorway of the inner room as it was thought that it may have been spanned by a stone lintel. No lintel was found;

¹ Ruppert, 1931, p. 139.

however, the pit was continued to the level of the floor of the chamber, on which, at a distance of 1.22 meters west of the doorway, a stone mortar and the base of a pottery *incensario* were recovered (fig. 331). The tripod stone mortar, broken in two pieces, has a diameter of 24 cm. and a height of 14 cm. The base of the *incensario*, of Porous Grey Ware, has a diameter of 20 cm. and a height of 12 cm., and carries knob decorations.

The inner chamber measures 12.41 meters north and south by 2.13 meters east and west. A single capstone bearing plaster marks, showing the width of the top of the arch to have been 25 cm., was found in the north end of the chamber.

DAIS

Directly inward from the doorway and built against the back wall of the chamber is a dais measuring 3.90 meters in length by 1.40 meters in width (figs. 322, *a* and 323). It



FIG. 332—WEST ANNEX. DAIS IN INNER CHAMBER.

a, stone bearing U-shaped decoration.

rises vertically to a height of 51 cm. and is finished with a 15-cm. band cornice which overhangs 6 cm. (figs. 325, 332 and 334).

There are three niches opening in the front or western face of the dais. The level of the floors of the niches is the same as that of the chamber. The tops of the niches are on a level with the under side of the cornice. The northernmost niche, No. 1, is 77 cm. from the north end of the dais. It has a width of 44 cm. and a depth of 70 cm. The central niche, No. 2, is 52 cm. from No. 1 and has a width of 43 cm. and a depth of 66 cm. The southernmost niche, No. 3, 53 cm. south of No. 2, has a width of 44 cm. and a depth of 68 cm.

Set upright in the floor of each niche, approximately 30 cm. inward from the western face of the dais, is a well-dressed stone roughly rectangular and rounded at the top (fig. 334). These stones are similar in shape to the stone found set in the floor of the inner

chamber of the Caracol tower and directly below the entrance to the spiral stairway (page 221). The three stones have an average thickness of 10 cm. At the floor level the western face of the stone in Niche No. 1 measures 20 cm., increasing in width upward it measures 31 cm. near the top; the height of the stone is 40.6 cm. The stone in Niche No. 2 has a width of 16.5 cm. at the floor level increasing to 22.8 cm. near the top; and it has a height of 38.1 cm. The stone in Niche No. 3, rising to a height of 21.5 cm. has a relatively constant width of 22.8 cm.

Three fragments of Porous Grey Ware and a *mano*¹ were found in Niche No. 1. One fragment (fig. 333, *a*) has a length of 6.0 cm. and a diameter of 1.3 cm. and was painted red. The other two retain traces of red and yellow paint and when fitted together have a length of 11 cm. (fig. 333, *b*). A fragment of Porous Grey Ware retaining traces of red and yellow

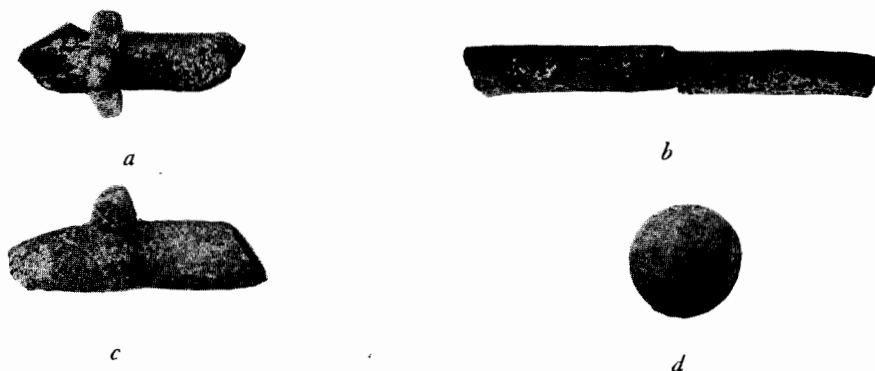


FIG. 333—MATERIAL FOUND IN NICHES OF DAIS.

a, *b*, pottery fragments of Porous Grey Ware, decorated with red paint; *c*, pottery fragment of Porous Grey Ware, decorated with red and yellow paint; *d*, quartz ball. One-half actual size.

paint (fig. 333, *c*) and a worked stone ball were found in Niche No. 2. The stone ball, probably of quartz, has a diameter of 3 cm. (fig. 333, *d*). A limestone *incensario* was found on the floor of the chamber directly north of the dais (fig. 332).

The stones facing the dais are fairly well worked and no more than two courses were used to arrive at the vertical height. One course of stones forms the vertical band, which was usually finished with care, though occasionally a rough unworked stone was introduced (fig. 332). A single long stone of the cornice served as the lintel of each niche. The corners of the dais and the north jamb of the central niche are formed of single stones. The niches are lined with wall stones.

The *embutido* of the dais is composed of medium-sized unweathered stones and chips laid in mortar. No cache was found.²

Two layers of plaster were noted on the sides of the dais, the outer layer showing traces of frescoes naturalistically portraying large yellow flowers and green leaves on a deep red background. Vestiges of geometric designs in red, green, tan and black were noted on the cornice. The top of the dais was heavily plastered and painted dull red. Traces of bluish-grey plaster were noted on the walls of the niches.

¹ Stromsvik, 1931, plate 5, *c*.

² Morris, 1931, p. 183.



FIG. 334—CARACOL WEST ANNEX.

Dais, showing northern and central niches. A recess in floor 33.8 cm. west of central niche was covered with a thin flat stone.



FIG. 335—CARACOL WEST ANNEX.

The floor recess to west of dais, 30 cm. in depth, is crudely outlined by stones of the *embutido* and showed no indication of having been plastered.

In line with the central niche and 33.8 cm. west of the dais is a floor recess measuring 15 cm. in diameter by 30 cm. in depth (fig. 335). It is crudely outlined by the stones of the *embutido* and showed no indication of having been plastered. Nothing was found in the recess. A thin flat stone, surfaced on the upper side, measuring 24 by 28 cm., served as the lid (fig. 334). The faced surface of the stone was 2.5 cm. below the well-polished lime-plaster floor.

MASONRY OF WEST ANNEX TEMPLE

Throughout there is a uniformity in the masonry of the temple. The walls, having an average thickness of 70 cm., were built of somewhat roughly surfaced facing stones, which were applied as a veneer and the fill between made up of large unworked stones, chips and mortar.

In the east wall of the outer chamber are three stones bearing the U-shaped motif. Two of these stones were noted south of the doorway and one to the north (figs. 323 and 332). Since these stones seem to have been placed without any apparent plan and were covered with plaster when first found, it is believed that they were not used with any idea of decoration. A single stone bearing a portion of this same motif was found in the north wall of the inner chamber.

Plaster was noted on many of the stones recovered from the exterior and interior of the temple. As many as eight layers of white plaster were noted on some of the stones of the east wall of the outer chamber. On the west anta were traces of bluish-black pigment which, however, did not appear on the adjacent north wall.

A 45-cm. dado of blue with traces of green and red circled the inner chamber. The same dado was noted on the door jambs and continued upward at either edge as a 6.3 cm. band. The area within the bands retained vestiges of yellow and red pigment.

FLOORS

Two floors were noted associated with the early platform which, in part, were subsequently covered by two floors associated with the late platform. These well-packed lime-plaster floors were tinted red.

On the north, remnants of the earliest floor associated with the first platform were traced 60 cm. inward from the cornice. Here the floor curves upward 2.5 cm. and continues a few centimeters to a broken edge. This floored area begins 2 meters from the western edge of the platform and has a length of 1.80 meters.

The second floor overlays the first and extends 1.82 meters inward from the north edge where it is irregularly broken away. The southern half of the back wall of the temple rests on a floor which extends 20 cm. west of the inner facing of the wall and 15 cm. south of the dais. This same floor was also noted under the eastern portion of the south wall of the temple. These remnants of flooring may indicate that a structure, measuring approximately 5 meters north and south by 6 meters east and west, was once associated with the early platform.

Overlying these floors were the two associated with the late platform which extend into the niches of the dais and curve up against the inner walls of the temple. Traces of the same floors were noted on the surrounding terrace.

SOUTH ANNEX

Excavation of the South Annex was undertaken in 1929. Since the study has not been completed, only a brief description of the three major structures so far excavated is given. The easternmost building of the South Annex has a portico, 18 meters in length, supported by two rows of round columns, from which doorways gave into a series of rooms on the north. The north walls of the rooms were built against the south base of the lower platform of the Caracol.

The east end of the portico formed one side of an arched gateway or portal to the *sacbe* which passes along the east side of the Caracol lower platform, continues for a short distance beyond the northeast corner of the platform, where it bears northeast around the *Xtoloc Cenote* and finally joins the great northern terrace supporting the Castillo, Temple of the Warriors and the Group of the Thousand Columns.

The second structure, abutting the southwest corner of the portico, has been called the **T**-House because of the shape of its ground-plan. The horizontal arm of the **T** is formed by a portico, 11 meters long, supported by five columns, with a chamber to the east entered by a single doorway. An extension of the chamber 1.60 meters to the east serves as the leg. A similar building (3E3) found to the east of the Court of the Thousand Columns is the only other building of this type found at Chichen Itza.

The third and smallest building so far excavated is a single-chambered colonnade, 11 meters long by 5 meters wide, to the northwest of the **T**-House. The structure was razed to the level of the low bench which extends along the back wall and the adjoining ends.

That all the buildings were intentionally torn down is evidenced by the fact that all the walls had been razed to within approximately one meter of the ground and the débris had been removed. It is not a question of a group of buildings abandoned while under construction, as occasional *boveda* stones were found, doorways had been blocked and plaster and paint still remained on wall surfaces.

CONCLUSIONS

SEQUENCE

The various structural units of the Caracol having been described in detail, a résumé of the building stages of the complex is indicated to clarify the chronologic sequence.

UNIT No. 1.—The lower platform (fig. 348), rising directly from the great basal terrace, represents, as far as is known, the first building period of the complex. During the study of the *embutido*, the two large trenches made in this platform did not reveal any earlier construction. It is possible that the remains of some structure may be buried in or beneath the great mass of the platform; however, the uncertainty of finding anything did not justify moving the quantity of material an investigation would entail.

The stairway of the platform shows at least one change. The first, without balustrades, resting on the low platform, was razed and the second built. The time sequence of building the second and the addition of the balustrades in relation to the other units can not be fixed. The carving on the capping blocks is similar to that of the upper stairway and at the High Priest's Grave.

UNIT No. 2—Of the units of construction resting on the lower platform, the first circular platform (fig. 105, *a*) probably comes next in sequence, though a possible exception may be the stylobate, which is to be considered under Unit No. 4.

No worked floor extended under Unit No. 2, nor were traces of such a floor found when the east trench in the lower platform was continued westward under the unit. No stairway or traces where one had been were encountered. The lower and upper moldings were continuous around the circumference of the structure, which from precedent presupposes that a stairway was not a part of the original plan of the structure. Absence of a stairway does not denote incompleteness of the unit, as it may not have been included in the plan, but lack of finished floor on top as well as at the base does.

UNIT No. 3—The next unit built was the second circular platform with its bench (fig. 105, *b*), which does not rest on a well-plastered floor, but giving off from the base of the platform was one of roughly troweled untinted mortar. Only a working level finished the top. This platform, like Unit No. 2, lacked any trace of a stairway. One may have been placed between the ends of the bench, or such may have been the intention. The fact that the cornice is continuous around the circumference of the platform is not indicative of the nonexistence of a stairway, since in the early platform of the West Annex the cornice forms the final riser. In view of the absence of a stairway and of well-finished floors on top and at the base, it is thought that this unit was not completed before construction of the rectangular platform was undertaken.

UNIT No. 4—The stylobate (figs. 162 and 347) is definitely earlier than the rectangular platform, Unit No. 5, but also the possibility of its being earlier than Units Nos. 2 and 3 must be considered. It may have been the first construction built on the lower platform. Certainly it was not a structural part of Units Nos. 2 and 3, as it had been carefully plastered and painted and deposits of ashes directly to the east indicate that it had been completed and used, while Units Nos. 2 and 3 were only crudely plastered, showed no traces of paint and are not considered as finished jobs.

The possibility of its being earlier is somewhat negated by the fact that no trace of the well-finished floor giving off from it was found extending under either of the circular platforms, unless the area may have been occupied by some structure which was completely razed before Units Nos. 2 and 3 were built.

The stylobate is 5.7 meters from Unit No. 2, this distance allowing sufficient room for a stairway, had the stylobate been associated with the unit.

UNIT No. 5—The first and second rectangular platforms (fig. 105, *c* and *d*) are designated as Unit No. 5, since excavations showed that the building of the second or eastern section began before the western section was completed and that the two were then finished as a unit.

The story told by the excavation of Units Nos. 2, 3 and 5 is one of indecision, change and quick building sequence.

UNIT No. 6—The tower, Unit No. 6, was not built immediately after Unit No. 2, the first circular platform, as the vertical face of the tower does not in all places rise in line with the cornice of the second unit, and the finished floor associated with the outer chamber extends through the doorways onto the top of Unit No. 3. Unit No. 6 may have been built directly No. 3 was completed, though the more logical presumption is that it was built after the completion of No. 5. There is no evidence to support the supposition that the inner chamber may represent an original structure and the outer chamber an addition.

UNIT No. 7—The time sequence of Unit No. 7, the single-chambered structure, the Northwest Temple (fig. 348), built on the lower platform at its northwest corner, can not be fixed beyond its relation to Unit No. 1, except on stylistic grounds, which would place it after No. 6. It is not a part of the original building plan of the complex and may have been added after all else was built.

UNIT No. 8—This unit, the early platform of the West Annex (fig. 347), was built after Unit No. 1. Other than this, little may be said in regard to its position in the building sequence of the Caracol.

From evidence secured when examining the floor levels on top of the platform, some construction at one time surmounted this unit.

UNIT No. 9—The late West Annex platform (fig. 347), Unit No. 9, enclosing Unit No. 8 on the west and north, postdates this unit as well as the low platform of the stairway of Unit No. 1, which it partially overlies.

UNIT No. 10—This unit, the colonnaded structure rising on the late West Annex platform (fig. 347), is the last in the building sequence of this section of the Caracol Complex.

UNIT No. 11—Lying to the south of the Caracol are a number of separate and distinct structures which, for the present, are grouped under Unit No. 11 and have been designated as the Caracol South Annex (fig. 349). It is later than Unit No. 1, part of the group being built against the lower platform, but its sequence with relation to No. 10 is not as yet known. This group was only partially excavated during the field season of 1929. Before the chronologic sequence of the individual structures can be ascertained, further excavations and an examination of the floor levels are necessary.

Determination of the age of the Caracol in relation to nearby buildings requires a series of trenches between it and the Monjas, the Akabtzib and the Casa Colorada. These

might show, by the extent and the superimposition of floors and terraces, its position in the building sequence at Chichen Itza. These buildings may rest on a common basal terrace, each may rest on its own, or the basal terrace of the Caracol may overlie any one or all.

FEATURES OF ARCHITECTURE

The facing of the lower platform, made up of large blocks, is not veneer-like, as in the Castillo, Temple of the Warriors, Temple of the Wall Panels, and others, but, forming an integral part of the masonry, it resembles that of the Monjas, House of the Deer and the Casa Colorada.¹ The great apron molding does not, as far as is known, have a counterpart in the Maya area. The use of a parapet at the edge of the platform has hitherto been associated only with great basal terraces.²

The use of a single feathered serpent motif on the capping stones of the side facing walls of the stairways is seen at the Temple of the Jaguars, Temple of the Warriors, Caracol West Annex, Thompson's Temple and at a number of minor structures and is associated with the Nahua Period. The intertwined non-feathered serpent motif is used at only two structures, the Caracol and the High Priest's Grave. Though the Caracol may belong to the Mayan or Transition Period, and the High Priest's Grave to the Nahua or Period of Mexican influence, it may well be that the motif on the balustrades of the later structure was borrowed from the earlier.

The block of masonry from which the serpent head projects is a continuation of the parapet and, with the L-shaped stone placed directly beneath the head, carved with ventral scales and the tail of the serpent, is a slightly different method for the upper termination of balustrades than has heretofore been encountered.

A molding near the base of a platform has not before been reported from the Maya area so that its use, only 33 cm. from the base of the first circular platform, is an innovation.

The altar-like stylobate has not been reported from other sites. The sections of the two columns found *in situ*, rising to different heights, suggest that drums necessary to complete the columns had at some time been removed. Any restoration of the stylobate would be hypothetical. Considerable importance must have been attached to the stylobate as it was left exposed in a later period of construction by the niche in the stairway.

The upper rectangular platform, like the early buried platform No. II at the Monjas, rises vertically. The upper platform, like the lower, carries a parapet, which here, however, does not end at either side of the stairway in a masonry block with protruding serpent head, finishing the top of the balustrade. A new placement of serpent head and tail in two capping stones, which maintain the same angle as the balustrade, is employed.

The most distinctive architectural feature in this, or any building at Chichen Itza, is the five-member molding on the tower. While one-, two- and three-member moldings are very common, no other with five members has ever been reported. The cord-holders, worked in the first member of this molding, form a detail noted at no other structure in Chichen Itza except the Iglesia.

The mask and statuette panels of the second vertical zone are not a new form of decoration. A comparison of the masks with those of the Monjas shows a greater similarity

¹ Morris, 1931, p. 211.

² The great basal terrace on which rests the Castillo, Ball Court, Temple of the Warriors and Group of the Thousand Columns is finished with a parapet 1 meter wide and in places still rising to a height of 60 cm.

in composition of elements than in masks from other structures in the city. The serpent band stones sculptured with hieroglyphs (See Appendix), which were in some way associated with the statuette panels, are entirely new as a wall decoration. Since this form of wall decoration had not been encountered before and none of the stones were found *in situ*, a restoration was impossible.

Highly specialized roof *adornos*¹ and stone *incensarios* are found at Chichen Itza and its environs. While belonging to the Nahua Period, they may well have been added to an early structure to bring it into conformity with a later style.²

Mention must be made of the shafts in the recessed windows and the passageway of the upper story, which were apparently for observational purposes, and as such have not been encountered before. The recessed windows preserve the architectural symmetry of the lower zone of the second story.

The ground-plan of the tower, with two annular chambers and a central masonry core, has its nearest counterpart in the circular building at Mayapan, which has a single annular chamber with a masonry core. The eight doorways giving into the two chambers are spanned by stone lintels, an architectural feature consistently used at Chichen Itza in buildings of the early period.³ Masonry buttresses spanning the arches, supported by wooden beams in the outer chamber and stone slabs in the inner, are unknown elsewhere.⁴

While interior stairways rising with several right angles are known,⁵ the spiral stairway in the masonry core is peculiar to this building.

At the West Annex there are two features of special interest which have not been reported from other sites. The first, the seven highly specialized stones, hexahedron in shape with two opposite sides cut as trapezoids, which if placed on the roof as a lectern, as suggested in the text, is a new concept. The second, the stone set upright in each of the three niches of the dais has its counterpart only in the stone directly below the opening to the spiral stairway in the Caracol tower.

USE

A definite or specific suggested use is associated with only two types of structures at Chichen Itza; ball courts⁶ for playing the game referred to in Nahua as *tlaxtli*, and the Caracol which, it has often been thought, was for observing astronomic phenomena.

¹ Lothrop, 1933, fig. 51, illustrates two stone carvings from Chuitinamit which he surmises once stood on the front edge of the roof of a structure. These stones apparently were not tenoned into the roof, and if not, can not be classed as highly specialized roof *adornos*.

Lothrop, 1924, p. 88, Temple of Initial Series, Tulum, Structure 9: "Over the door, just above the upper molding, is a modeled leg which evidently belonged to a statue seated on the edge of the roof. Examination of the roof revealed the fact that other statues had once stood on the corners."

Lothrop, 1924, p. 110, Cenote House, Tulum: "Among the débris in front of the building we found a crude stone figure representing an unknown animal. This doubtless was once finished in plaster and was one of several placed along the edge of the roof."

² This may also be the case at the Red House where an *adorno* was found on the roof, and at the Temple of the Four Lintels where fragments of *adornos* were found in the débris in front of the north doorway.

³ Stone lintels in buildings of the Nahua Period are rarely encountered; however, they have been noted over the doorway in east wall of the West Colonnade buried under the Temple of the Warriors; T-house, structure 3E3; and one small building to the southwest of Chichen Itza, 2C6.

⁴ A form of masonry buttress in the arch, of which a portion rises from the floor level is seen at Yaxchilan in Structures 20, 34, 42 and 44.

⁵ Palenque, the tower.

⁶ Nine ball courts are known at Chichen Itza: The Great Ball Court, Court east of Temple of the Warriors, Court east of Thompson's Temple, Court at southwest corner of the Court of the Thousand Columns, Red House Court, Court south of Monjas, Court at Northeast Group, Court at Chultun Group, Court one and one-half kilometers south of Piste. The last named is the only one of the nine having its long axis east and west.

In an analysis of the Caracol to determine the purpose for which it was built, its primary use must, *á priori*, have centered about the tower itself. The two annular chambers are of such unusual plan that for this alone the building would be given special consideration as having a specific use or purpose. Further, the spiral stairway and the upper story chamber with the shafts giving out therefrom attract particular attention and are deserving of special note and must be considered in designating a use for the structure.

The possible observatory value of the two small shafts has not been assignable. On the other hand, the window or passage to the west offers an apparent observatory value. As explained in the text, the diagonal from the inner right jamb to the outer left jamb is due west and is the line on which the sun sets at the vernal and autumnal equinox, about March 21st and September 21st. Further, the diagonal from the inner left jamb to the outer right jamb is within $4^{\circ}45'$ of the line on which the sun sets at the time of the summer solstice, about June 21st. The erection of the jambs in such a position as to secure these observations could hardly have been by chance. More likely it was planned and carefully thought out as the result of long observation of solar phenomena. If so, some observatory value must be attributed to the tower and passageway.

To suggest here that other windows and shafts existed and to speculate as to their bearing or use would be purely hypothetical. If the tower is to be considered as an astronomical observatory, may not the stylobate, which the writer has suggested may have been the first unit built on the lower platform, also have served a like purpose, as, for example, at the time of either equinox a beam of light passing between the two columns at sunset would strike upon some object placed to the east of the stylobate?

It is possible that observations made at various times of the year may have been used by the priests or leaders in advising the people of the approaching seasons with regard to agricultural pursuits or religious and civil events. May it not also be within reason to suppose that the Caracol might have served as a military or civil watch tower, or for communication by means of signals with outlying settlements?

In the writer's opinion, until such time as further proof may be forthcoming, perhaps in the discovery of another such building with the windows or shafts in a better state of preservation, any statement as to the use of the structure is conjectural.

APPENDIX

INSCRIPTIONS AT THE CARACOL

BY SYLVANUS G. MORLEY

The inscriptions at the Caracol are presented on five different objects or groups of objects as follows:

1. The stela found broken in two large pieces and a number of smaller fragments, in the niche between the two divisions of the upper stairway, by the writer on March 6, 1923 (figs. 166 and 167).

2. The circular stone carved with twelve human figures on its upper surface and a double band of glyphs around its periphery, also found in the same niche as the preceding by the writer on March 12, 1923 (fig. 168).

3. Nineteen blocks belonging to certain hieroglyphic serpents, which originally stood somewhere above the medial cornice. Some of the blocks (14) indicate that they had been parts of horizontally presented serpents and others (5) that they had been parts of vertically presented serpents. Some of these blocks were found in 1925 by Ricketson, others in 1926 by Thompson and the rest in 1927 and in 1929 by Ruppert, in the débris from the tower and upper platform



FIG. 336—CARACOL. THREE STONES BEARING HIEROGLYPHS RECOVERED DURING EXCAVATION OF UPPER PLATFORM AND TOWER.

Their provenance indicates that the decorative motif of which they form parts originally appeared on all sides of the tower (fig. 337).

4. Three small blocks, each presenting three glyphs. One was found by Ricketson in 1925 (fig. 336, *c*), another by Thompson in 1926 (fig. 336, *a*) and the third by Ruppert in 1929 (fig. 336, *b*). Their provenance, which in general was the same as that of the nineteen blocks just mentioned, probably indicates, as will be noted later, that originally there had been four of them, *i.e.* one for each side, and that they had probably been closely connected with the hieroglyphic serpents just mentioned (No. 3).

5. A small grotesque head having a collar inscribed with glyphs, found in 1930 by Ruppert (fig. 35).

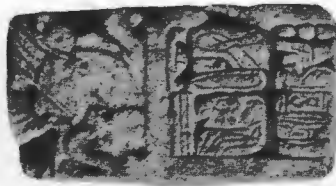
In spite of this not inconsiderable amount of epigraphic material, it must be admitted that the Caracol has not yielded a single surely decipherable date, although, as will appear below, there are several readings which have much that may be urged in their favor.

THE STELA

On March 6, 1923, the writer of this appendix noticed a corner of an inscribed stone protruding from the débris which filled the niche between the two divisions of the stairway leading to the upper platform of the Caracol. On March 12, permission for the work having been secured from the Federal Inspector of Monuments for the State of Yucatan, Mr.



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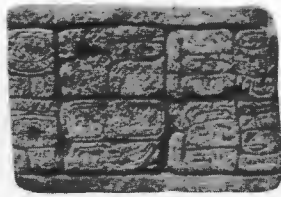
9



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12



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18



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FIG. 337—STONES FROM HIEROGLYPHIC SERPENT BAND WHICH FORM A DECORATIVE ELEMENT IN UPPER ZONE OF TOWER.

Eduardo Martinez Canton, this niche was excavated by Mr. José Erosa Peniche, the Assistant Inspector and the writer.

The excavations disclosed the fact that this stela was broken into two large pieces and a number of smaller fragments. The right half lay with its sculptured front to the ground in the forward (west) end of the niche (fig. 164, *a*). The left half, that first seen by the writer, entirely covered with débris save for one small corner, stood right side up on top of the circular stone with attached tenon (fig. 164, *b*).

Further excavation revealed that the latter also lay with its sculptured broad surface to the ground like the right half of the stela, just in front (west) of it, and also that its periphery had been sculptured with two rows of glyphs.

Against the back wall of the niche stood two columns of unequal height, that to the south being higher (fig. 165); resting on the lower column was the statue of a seated human figure without head (fig. 165, *a*), very similar to two other statues found during the excavation of the Caracol (figs. 227, 228 and 229), the possible original provenance of which will be considered in connection with the possible provenance of the hieroglyphic serpents (page 283). The following smaller objects were also recovered during the excavation of this niche:

1. A few fragments of human bones.
2. A small pottery vessel.
3. A spherical jade bead.
4. Three very small metates, each about 15 cm. long and each provided with three legs, possibly for grinding pigment or pepper; accompanying these were three grinders, each about 10 cm. long.

After the several fragments of the stela were assembled, it was found to have been 1.73 meter wide, 84 cm. in height and 37 cm. in thickness. The front is sculptured with 14 columns of 6 glyphs each, a total of 84 glyphs. This panel is surrounded by a snake with its head facing to the observer's right at the left end of the bottom border. The body of the snake forms the left border of the glyph panel and extends across the top and down the right side, terminating with tail rattles (fig. 166).

In addition to the front, both narrow edges of the stela are sculptured with glyphs as well as the top.

Except for Stela 7 at Piedras Negras, this is the only other stela now known in the Maya area which has columns of glyphs extending over its top.

The left side has two columns of 6 glyphs, or 12 in all. There are two columns across the top, each having 12 glyphs or 24 for the top, and down the right side for another 6 glyphs each, or a total of 12 glyphs for the right side. This gives a grand total of $84 + 12 + 24 + 12 = 132$ glyphs in this inscription, which makes it the longest single text yet reported at Chichen Itza.

The inscription on the front opens with the declaration of a "Tun 16" at A1, both period glyph and coefficient being unmistakable (fig. 166). It is improbable that the next glyph, B1, could have been the day on which this particular tun ended, but if so, its corresponding coefficient would seem to have been 1; the day here, if indeed B1 be a day, is 1 Ahau. It should be noted in passing that "Tun 16" occurs elsewhere in the inscription at

the Caracol: once surely at A1b on Block 17 and again probably (certainly, so far as the coefficient is concerned) at A2 on Block 5 (fig. 337).

After "Tun 16" at A1 on the front of this stela, the next sign having a coefficient is at B4. Although the sign itself is unidentifiable, the corresponding coefficient is surely 3.

Of the sign at B6a, the upper half is the moon glyph with a possible head variant coefficient to its right at B6b upper half, and the next sign, B6a lower half, also of unknown meaning, again has a coefficient of 1 or 3.

The next two glyphs having numerical coefficients are at C2 and D2; the former has the number 10 to its left, and the latter has the number 7 above it. The signs to which these two coefficients are attached, however, are both unrecognizable.

At C3 there is another sign of unknown meaning with a sure coefficient of 9 above it.

The next decipherable glyph is at C5 which records "Tun 17" with perfect clarity, the Long Count position of which is probably one 360-day period later than the Tun 16 with which our text begins. This same "Tun 17" we will probably see again recorded at O22 on the right side of the stela (fig. 167).

There are no decipherable glyphs in the fifth and sixth columns, E and F, respectively, and practically all of the seventh and eighth columns, G and H, respectively, are destroyed.

There also appear to be no decipherable glyphs in the ninth, tenth, eleventh and twelfth columns, I, J, K and L, respectively, and the next glyphs with numerical coefficients are found in the thirteenth and fourteenth columns, M and N, respectively. The glyph at M1 has a coefficient of 3 surely, and the glyph at N1, which may be the head of the North Star God, has an equally clear coefficient of 9. Thompson has pointed out that this number is in fact associated with the head of the North Star God in the form of Glyph G of the Supplementary Series¹ corresponding to the First Day.

The glyph at N3 would seem to have the day-sign Ahau as its principal element, the eyes, nose and mouth of the Ahau sign showing clearly (fig. 166), but the coefficient above is puzzling. At first sight this looks as though it were composed of 2 dots and 4 bars, giving the impossible value of 22. Closer examination, however, shows that the two lower bars are really not bars at all, but parts of a probably non-numerical superfix, and that this coefficient is therefore probably 12; in other words N3 may record the day 12 Ahau.

The coefficient 12 appears surely twice elsewhere on this stela: once at M6a upper half (also on the front) and a second time at O24 on the right side.

At N4 there may possibly be a Secondary Series. Above the main glyph, which unfortunately is far from clear, there is a sure coefficient of 6, and to the left a possible coefficient of 15 or 10. Could N4 record 6 uinals and 15 or 10 kins, *i.e.* 135 or 130 days? If so, its relation to the rest of the text is unknown.

The next glyph with a coefficient and the last one on the front of this stela is at M6a upper half, already mentioned. The coefficient here is surely 12, but the sign to which it is attached is not clear.

Summarizing the somewhat unsatisfactory results of our inspection of this inscription on the front of this stela, we have seen that it begins with a Tun 16 (A1) followed by a Tun 17 (C5) followed by the day 12 Ahau (N3) which may or may not be the closing day of one of these two tuns, which day may or may not be repeated at M6a upper half.

¹ Thompson, 1929, pp. 226, 227 and figure 2.

There are no signs with numerical coefficients among the 12 glyphs, O1-P6 on the left (north) side of this stela and only two doubtful coefficients P8 and O9 among the 24 glyphs O7-P18 across the top. The former may have had a coefficient of 2 and the latter more doubtfully one of 14.

The inscription on the right (south) side is probably the most important part of this text, since it almost certainly records the dedicatory date of this stela.

The first glyph, O19, is pretty surely the day-sign Ahau with an equally clear coefficient of 4 on the wrong side, *i.e.* to the right of the day-sign instead of to the left (figs. 164 and 167). Both coefficient and day-sign are so clear, however, that in spite of the fact that the former is on the wrong side of the latter, it seems necessary to decipher O19 as the day 4 Ahau.

The next glyph, P19, although partially effaced, seems never to have had a coefficient and therefore was probably not the month-part corresponding to the day in O19.

The next two glyphs with coefficients, O22P22, together with P19, probably record the dedicatory date of this stela in a somewhat elliptical and altogether unusual manner, though the writer is far from convinced that his interpretation is correct. The first, O22, surely has a coefficient of 17, standing above what looks like the winged Cauac variant of the tun sign, albeit with an unusual postfix. We have already seen this same tun recorded at C5 on the front of this stela. The next glyph, P22, is one of the most perplexing in the Corpus Inscriptionum Mayarum, perplexing because its three parts are so perfectly legible and yet at the same time, as combined in this glyph, so baffling and incomprehensible.

The first part is a well-known ending prefix, or superfix—here used as a superfix—extending over the entire glyph (fig. 167). This is perfectly clear and would normally indicate “The End of” the time period specified either below or to the right of it. Just below this ending sign is the numeral 10, represented by two horizontal bars, which do not quite reach to the right margin of the glyph-block. Below these, clearly and unmistakably, is the normal form of the baktun sign, the usual Cauac element repeated. Finally to the *right*, both of the 10 and the baktun-sign, equally clearly and unmistakably are three numerical dots.

What can this most unusual glyph record? Without the three numerical dots, which, it should again be noted, stand to the right and not to the left of the baktun-sign and its coefficient, this glyph would record in a perfectly regular and understandable manner “The end of Baktun 10,” which period ended on 7 Ahau 18 Zip, a date, however, found nowhere in this text.

It would seem reasonable to infer, therefore, that the unique addition of the three numerical dots in some way must change or modify the meaning “The End of Baktun 10,” but if so, how?

Leaving this point undetermined for the moment, let us pass to the consideration of the last two glyphs on the right side, O24 and P24, both of which have numerical coefficients. The coefficient of O24 is clearly 12 and stands above the glyph it modifies; below it are two rounded rectangular elements and these in turn stand above the main element which, save for its upper right corner, is missing. Both this coefficient and the sign to which it was attached probably are the same as the corresponding parts of the glyph at M6a, upper half on the front, which tentatively, though not certainly, has been identified as the day 12 Ahau and also probably the same as the day 12 Ahau, also recorded at N3 on the front.

About half of the last glyph, P24, is also missing. There seems to be an ending superfix at the top with perhaps the same ending prefix repeated below it, though this last identification is by no means certain. Below this appears to be the left half of a numerical bar and below this the upper left corner of the main element, too much of which, however, is missing to permit identification.

The writer is inclined to interpret P24 as "The End of a hotun," supplying the missing main element as the winged Cauac variant of the tun-sign. If this interpretation should be correct, O24P24 would read "12 Ahau the End of a hotun." It is interesting and may be significant that the third hotun after the end of Baktun 10, possibly recorded at P22, ended on a day 12 Ahau, *viz.* 10.0.15.0.0 12 Ahau 8 Cumhu.

Referring to O19, O22P22, it must be admitted that the explanation advanced here for these glyphs is very uncertain. The fact remains, however, that Tun 17 (O22) of the first katun after the end of Baktun 10 (P22 all but the three numerical dots to the right) ended on the day 4 Ahau (O19), *viz.* 10.0.17.0.0 4 Ahau 18 Kayab. But if this decipherment is correct, what is the meaning of the three unexplained numerical dots? Three possible explanations, which may account for the presence of these three numerical dots in P22 are given below, though the writer is satisfied with none of them:

1. It may be that instead of three numerical dots there is only one, *i.e.* that in the middle, the two flanking dots above and below being non-numerical fillers, though it must be admitted that the flanking dots look just like the middle one. If this should be true, then the probabilities are increased that P22 may record a date after the end of Baktun 10 and in Katun 1 of that baktun; that O22 may record "Tun 17" of that katun and that O19 records the ending day of this particular Tun 17, *i.e.* "4 Ahau," which written as an Initial Series would be 10.0.17.0.0 4 Ahau 18 Kayab. This reading has the support of the most probable reading of the date at O24P24 (see above) but is somewhat negatived by the fact that the dots to the right in P22 all look alike, *i.e.* that they record 3 rather than 1, which would tend to disprove the explanation.

2. It may be that if the three dots to the right of Baktun 10 at P22 are all numerical, they indicate that after the end of Baktun 10 a whole katun had passed *less 3 tuns*, or that the tun recorded here is 17 tuns after the end of Baktun 10 which tun we have already seen is actually recorded at O22, *i.e.* Tun 17.

3. It may be that the three dots at the right side of P22 indicate that three hotuns have passed since the end of Baktun 10, giving the date 10.0.15.0.0 12 Ahau 8 Cumhu; "12 Ahau, End of a hotun" may be recorded at O24P24, as we have seen. This last explanation seems to the writer the least likely of the three.

Which, if any, of these three explanations be accepted to account for O19, O22P22 in no way affects the truth of the basic fact that Tun 17 of the first katun after the end of Baktun 10, *i.e.* the katun ending on the day 10.1.0.0.0 5 Ahau 3 Kayab, ended on a day 4 Ahau, *viz.* 10.0.17.0.0 4 Ahau 18 Kayab.

In summarizing the chronological parts of this inscription, we have seen that it begins with a Tun 16 (A1) and passes to a Tun 17 (C5), which three glyphs on the right side (O19, O22P22) indicate may have been 10.0.16.0.0 8 Ahau 3 Cumhu and 10.0.17.0.0 4 Ahau 18 Kayab, respectively. If this be true, then the day 12 Ahau, recorded once surely (N3) and twice possibly M6a upper half and O24), may be the ending day of the next preceding tun, also a hotun as well, *i.e.* a Tun 15 (perhaps declared by P24) *viz.* 10.0.15.0.0 12 Ahau 8 Cumhu, and we would then have recorded here, albeit very elliptically and most

irregularly, not to say uniquely, three consecutive tun endings in the Long Count as follows, the parts actually recorded being italicized:

END OF A HOTUN

10.0.15.0.0 *12 Ahau* 8 Cumhu
 10.0.16.0.0 8 *Ahau* 3 Cumhu
 10.0.17.0.0 4 *Ahau* 18 Kayab

Possibly since the day 12 Ahau is recorded thrice and as a hotun ending once, 10.0.15.0.0 *12 Ahau* 8 Cumhu may have been the most important of these three tun endings. If dedicated on any one of them, however, this stela would have preceded the dedicatory date of the lintel at the Temple of the Initial Series by either 33, 34 or 35 tuns.

Tempting as the above interpretation may be, fortified as it is by the possible presentation of three consecutive tuns of the Long Count, one of them a specific hotun ending, the writer, nevertheless, remains far from convinced that this is the true explanation of these several glyphs.

THE CIRCULAR CARVED STONE

The circular carved stone (fig. 168 and fig. 164, *b*), as already mentioned (page 278), was excavated by Mr. José Erosa Peniche and the writer on March 12, 1923. It lay with its sculptured front to the ground, under the right half of the stela just described, on the floor of the niche between the two divisions of the stairway of the upper platform at the Caracol. The entire length (circular section and tenon combined) is 1.20 meter; the thickness is 21.5 cm.; the circular section is 73.5 cm. in diameter and the tenon 48 cm. long by 42 cm. wide.

The upper round surface is divided into two fields by a plain band perpendicular to the axis of the tenon. In the upper field there are six standing human figures, three on each side of a centrally placed altar. The figure nearest this altar on the observer's right seems to have the head and shoulders of another human figure rising above and in front of it. In the lower field there are five standing human figures, three on the left and two on the right of a seated jaguar (?). Between these two human figures on the right there seems to be another animal figure.

Around the periphery of the circular part of this stone, beginning at the point where the tenon joins the circular section and running around to the same point on the opposite side of the tenon, are inscribed 24 columns of glyphs, each column having 2 glyphs or 48 in all (A'1-X'2). There are five Ahau-signs C2, F1F2, O2, R1 and T2, respectively, all probably having the Ben-Ik superfix. Of these the fourth, O2, surely has a coefficient of 8. Indeed to read this glyph other than 8 Ahau is to put a forced interpretation upon it. In view of the fact that the accompanying stela probably shows several dates in the first katun after the end of Baktun 10, *i.e.* between 10.0.0.0.0 and 10.1.0.0.0, it is not impossible that O2 may declare the last lahuntun in Baktun 9, the corresponding I.S. for which is 9.19.10.0.0 8 Ahau 8 Xul. However, this reading must be questioned by at least two interrogation points. The glyph at O1, which is not clear, seems to have a coefficient of 1.

One point further should be noted in connection with the circular carved stone. In order to have the 48 glyphs on its periphery presented right side up, it would have been

necessary for this stone to have been tenoned into a vertical wall in such a way that the flat surfaces of the disk were parallel to the ground, and the sculptured flat surface to the sky. In order to make this point clear, it may be well to consider here not only the original provenance of this circular carved stone but also the original provenance of the stela already described.

Two arrangements have been suggested for the original positions of these two sculptures as follows:

1. That the stela stood on top of the masonry pier, dividing the upper parts of the two stairways leading to the upper platform, flush with the front face of this pier, and that the round carved stone was fastened to the vertical front (west) of this pier by its tenon with its sculptured broad face to the sky, so that the glyphs on the periphery would appear right side up (fig. 171).

2. That the stela itself formed the front face of the masonry pier just described and that the circular tenoned stone was let into the floor of this pier so that the sculptured panel on the broad circular face appeared right side up, the glyph panel around the periphery lying on its side (fig. 172).

Of these two suggested arrangements, the writer very much prefers the former. In the first place, it is the only position by which the glyphs on the periphery will appear right side up, and in the second place it permits this sculptured circular tenoned stone to serve as an altar in front of the accompanying stela, like many another carved circular altar elsewhere—the top sculptured with figures, the periphery with two rows of glyphs.

The dimensions of the masonry pier favor either arrangement, since it is 1.93 meters wide and the stela is only 1.73 meters wide, *i.e.* the pier would thus project beyond the stela 10 cm. on either side. The face of the pier is 1.09 meters high. However, since the bottom course of the front of the overhanging part is still *in situ* and measures 39 cm. high, if the stela occupied this second position, it would have projected above the floor of the pier 14 cm., *i.e.* 1.09 meters – 0.39 meter = 70 cm., and 84 cm. – 70 cm. = 14 cm.

As noted above, the writer strongly inclines to the former arrangement (fig. 171) since it is the only one by which the inscription will be presented in the correct position for reading, a compelling consideration.

THE HIEROGLYPHIC SERPENTS

Probably the most difficult problem in reconstructing the façade decoration of the Caracol is the satisfactory disposition of the hieroglyphic serpents which originally occupied positions somewhere above the five-member cornice, the blocks composing which were found on all sides of the tower, presumably indicating a decorative motif that had extended around the entire periphery.

There seem to be at least nineteen blocks of stone definitely referable to these hieroglyphic serpents (fig. 337), the classifications, dimensions and general arrangement of the design on each of which are described below:

Group A. Serpent Heads without attached glyph panels:

Block No. 1. Head facing to right 25.5 cm. high by 24.5 cm. wide (not figured).

2. Head facing to right 25.5 cm. high by 24.5 cm. wide (not figured).

Group B. Serpent Heads, probably with beginning of attached glyph-panels in that plain vertical bands follow them:

Block No. 3. Head facing to left 25.5 cm. high by 25 cm. wide (not figured).

4. Head facing to left 24.5 cm. high by 24 cm. wide.

Group C. Serpent Heads with attached horizontally presented glyph-panels (*i.e.* to be read horizontally):

- Block No. 5. Head facing to left 24.75 cm. high by 47 cm. wide.
 6. Head facing to left 24.75 cm. high by 35 cm. wide.
 7. Head facing to right 24.5 cm. high by 36.5 cm. wide.

Group D. Glyph-panels with plain marginal bands above and below (*i.e.* to be read horizontally):

- Block No. 8. 25 cm. high by 39.5 cm. wide.
 9. 24.25 cm. high by 36 cm. wide.
 10. 24.75 cm. high by 47 cm. wide.
 11. 24 cm. high by 41.5 cm. wide.
 12. 25 cm. high by 36 cm. wide.
 13. 25 cm. high by 22.25 cm. wide.
 14. 21.5 cm. high by 24.5 cm. wide.¹

Group E. Glyph-panels with plain marginal bands to the left and right (*i.e.* to be read vertically):

- Block No. 15. 37 cm. high by 24.5 cm. wide.
 16. 40 cm. high by 24.75 cm. wide.
 17. 39.5 cm. high by 25 cm. wide.
 18. 42.5 cm. high by 25 cm. wide.

Group F. Glyph-panels with plain marginal bands to right and left with serpent's tail below (*i.e.* to be read vertically):

- Block No. 19. 37 cm. high by 24.75 cm. wide.

Several points are deducible from the arrangement and nature of material presented upon these 19 sculptured blocks as follows:

1. There had been horizontally presented serpents with horizontally presented glyph-panel bodies (Nos. 5, 6 and 7).
2. These horizontally presented serpents had faced both to the left (Nos. 3, 4, 5 and 6) and to the right (Nos. 1, 2 and 7).
3. There are also horizontally presented glyph-panels of exactly the same height (25 cm.) as the horizontally presented hieroglyphic serpents, which therefore may well have been parts of the glyphic bodies of such horizontally presented hieroglyphic serpents (Nos. 8, 9, 10, 11, 12, 13 and 14).²
4. There had also been vertically presented glyph-panels of exactly the same width (25 cm.) as the horizontally presented glyph-panels are high (25 cm.) (Nos. 15, 16, 17, 18 and 19).
5. Although no vertically presented glyph-panels are found attached to serpent heads, one vertical glyph-panel surmounts a serpent's tail, the tail being below the glyph-panel (No. 19).

The following points, however, are not established from these 19 sculptured blocks:

1. Whether there were also vertically presented hieroglyphic serpents, or whether the vertical glyph-panels found (Nos. 15, 16, 17, 18 and 19) were only vertical sections of the bodies of the horizontally presented hieroglyphic serpents without corresponding heads.
2. Whether these horizontally presented hieroglyphic serpents were Double Headed (Nos. 1, 2, 3, 4, 5, 6 and 7) or Single Headed, some facing to the left (Nos. 3, 4, 5 and 6) and some to the right (Nos. 1, 2, and 7) and, in the second contingency, how were the ends opposite the tails finished?
3. What was the position of the nine blocks (not included in the nineteen blocks here under discussion) showing scales with the typical plain borders seen on all the other blocks of the hieroglyphic serpents.

The answers to these questions must come in part from a study of these nineteen blocks themselves and in part from the other sculptured blocks found during the excavations at the Caracol, which presumably had fallen from above the five-member cornice.

¹ Because of its dimensions, this block probably belongs to Group E, *i.e.* to be read vertically. In figure 337, No. 14, where it is shown, it should probably stand vertically on one end like Nos. 15 to 19, rather than lie horizontally as illustrated.

² Block 14, as just noted, should probably be presented vertically rather than horizontally.

Examining this additional material, we unfortunately find an embarrassment of riches—no less than 7 heads, 9 blocks showing scales just mentioned, and 4 tails, as shown in the table.

West and Northwest	North	East	South and West
1 piece with scales 1 tail	2 heads facing right 1 piece with scales	2 heads facing left 5 pieces with scales 2 tails	2 heads facing left 1 head facing right 2 pieces with scales 1 tail

Of this miscellaneous head, body and tail material, all the heads may be eliminated at once on stylistic grounds as having belonged to decorative motifs other than the hieroglyphic serpents here under consideration; for example, there had been at least one other series of serpents in the upper façade decoration of the tower to which some of these may well have belonged.

Concerning the nine blocks showing scales, it is impossible to tell whether any sections presenting this element are still missing. Since they are all of the same width as the hieroglyphic serpents, *i.e.* 25 cm., and since the scales are bordered by the same plain marginal bands as the other blocks of the hieroglyphic serpents, the writer is confident that they too originally formed part of this same decorative motif (fig. 338).

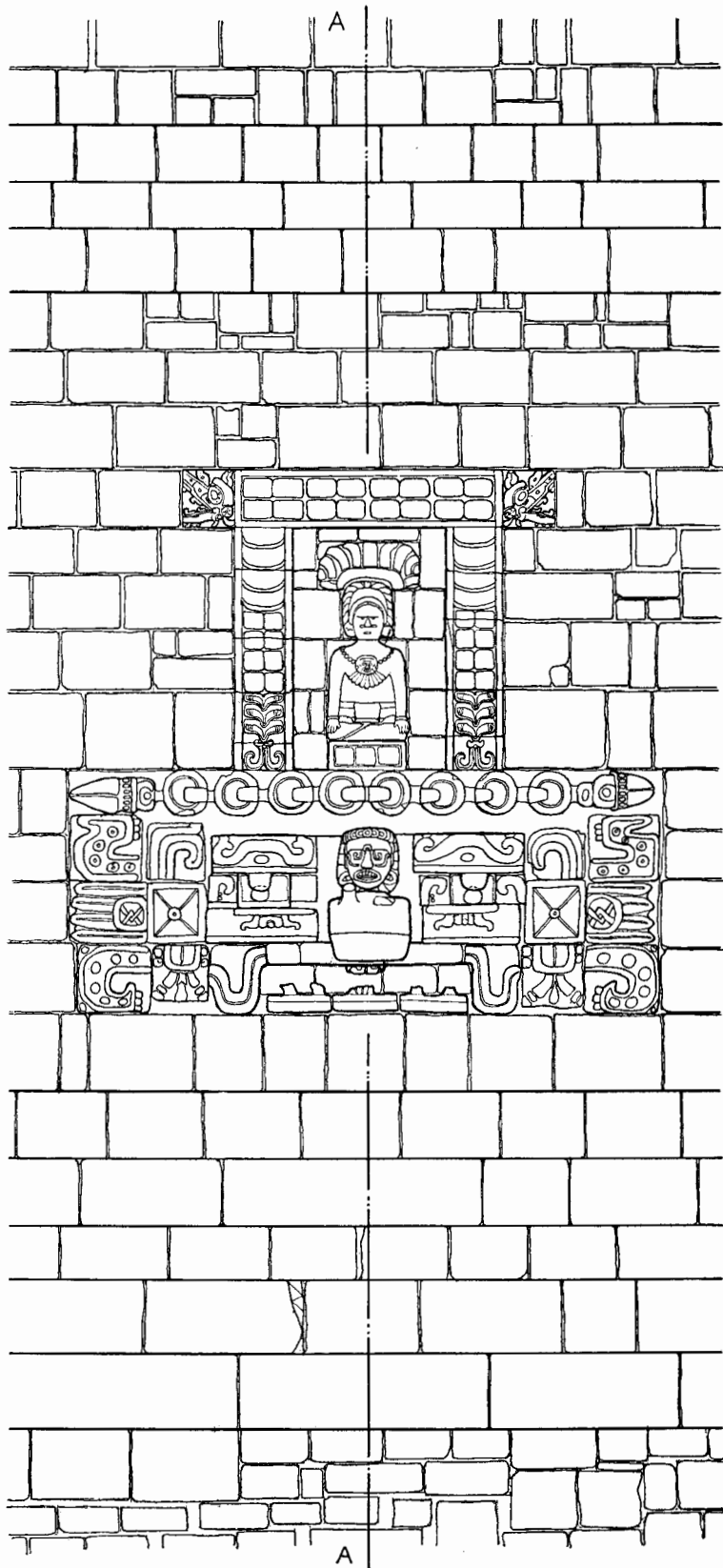
Concerning the 4 tails given in the above table, not only are these *all* without the plain borders noticed on every one of the nineteen blocks here under discussion (except the first two heads, Nos. 1 and 2), but also they average 24.5 cm. in width without these borders, which, if present, would have added another 8.75 cm., making a total width of 33.25 cm. That the tails of these hieroglyphic serpents were also provided with borders is surely indicated by Block No. 19, so it is probable that these four tail stones do not belong to the hieroglyphic serpents at all but to some other decorative motif.

In addition to these miscellaneous serpentine elements it seems necessary to bring into the picture the three seated human figures: one found in 1923 by the writer in the niche between the two stairways leading to the upper platform, and the other two found by Ruppert, one on the north and one on the east side in 1930.

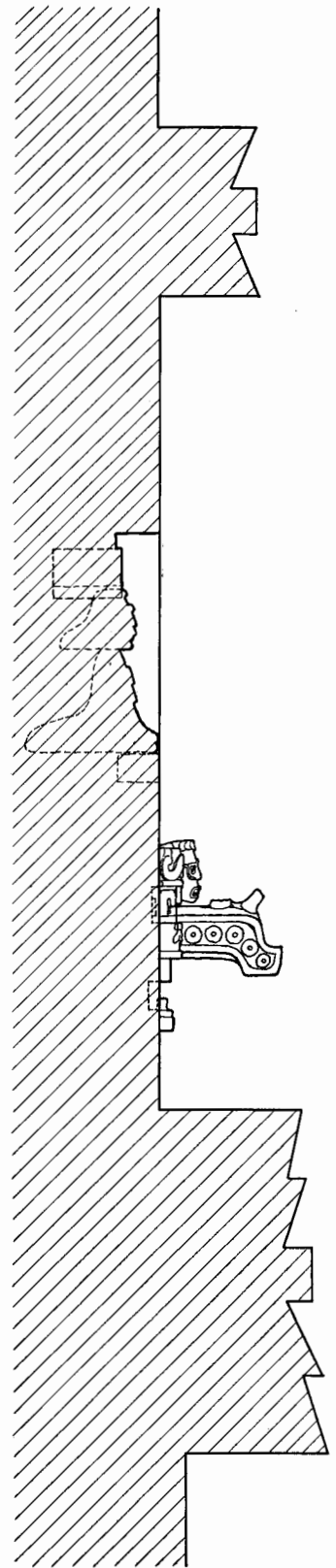
Finally there should also be mentioned the three small blocks each inscribed with three glyphs, mentioned on page 276: one found on the north side by Ricketson in 1925, the second on the west or south side by Thompson in 1926, and the third on the east side by Ruppert in 1929. These, as will appear below, were probably originally associated with the three seated figures just mentioned and the hieroglyphic serpents here under consideration.

The plain dressed stone facing of the upper zone of the Caracol remains *in situ* in one place to a height of 1.04 meters above the five-member cornice, *i.e.* between the east and south doorways. Again above the west doorway there is a section of plain dressed facing, 25 cm. high before the mask panel begins, the mask panel itself being 1.15 meters high, making a total height of 1.40 meters of known treatment in the second zone above the doorways.

From the top of the five-member cornice to the roof of the main section of the tower is a total height of 4.31 meters, leaving a section of 2.91 meters (*i.e.* 4.31 – 1.40 meter)



Elevation



Section A-A

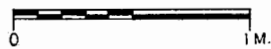


FIG. 338—SUGGESTED RESTORATION OF SCULPTURED PANEL OF TOWER.

which the hieroglyphic serpents, these seated human figures and the upper cornice must formerly have occupied.

Judging from analogous seated human figures—for example those on Stelæ 25, 6, 9 and 14 at Piedras Negras and on the back of Stela I at Quirigua, it is almost certain that the seated human figures found at the Caracol originally had occupied niches in the façade. Further, since these figures with their head-dresses have a maximum height of 90 cm. and a maximum width of 45 cm., it is obvious that the *minimum* dimensions of these niches must have been at least of this size and probably were larger, since the seated figures must have had some space above them as well as to the right and left. It seems safe therefore to assume that the niches themselves must have had a minimum height of about 1.10 meters and a minimum width of about 50 meters. The three rectangular stones (fig. 336, page 276), each presenting three glyphs, possibly may have served for the platforms or small benches in the niches upon which these figures were seated. If so, since each is 14 cm. in height, the niches must have been correspondingly higher to have accommodated them, at least 1.04 meters high (*i.e.* 90 cm. + 14 cm.).

Although only three of the seated human figures and only three of these small rectangular hieroglyphic stones were found, nevertheless it seems practically certain that originally there must have been four of each group, one corresponding to each of the four mask panels and the four exterior doorways over which the mask panels stand. Indeed, without being able to prove the point, the most probable position for the niches which held these seated statues would appear to have been somewhere above the mask panels, and the most probable position of the horizontal hieroglyphic serpents were immediately above these niches, leaving the section above the hieroglyphic serpents largely, if not entirely, undecorated.

Further, if the horizontal hieroglyphic serpents surmounted the niches, for which there is considerable precedent elsewhere than at Chichen Itza, as for example on the back of Stela I at Quirigua, then the total height of each niche and surmounting hieroglyphic serpent must have been 1.35 meters high, since, as already mentioned on page 283, each of the horizontal hieroglyphic serpents is 25 cm. high.

Finally, since the surmounting cornice, although no single element of it was found *in situ*, could hardly have exceeded 75 cm. in height, we would have a total height of 3.50 meters accounted for between the five-member cornice and the roof of the tower as follows (see also fig. 338):

Plain course above 5-member cornice.....	0.25 cm.
Mask-panel.....	1.15
Inscribed stone at bottom of niche.....	.14
Seated figure with head-dress.....	.90
Height from top of head-dress to top of niche.....	.06
Horizontal hieroglyphic serpent.....	.25
Upper 3(?)-member cornice.....	.75
	3.50 m.

But the total height from the top of the five-member cornice to the top of the main section of the tower, we have already seen (page 285), is 4.31 meters, of which 3.50 meters is accounted for as above, leaving about 81 cm. yet to be explained. The writer believes

that these remaining 81 centimeters were either concentrated in a plain zone of that height, extending from the horizontal hieroglyphic serpent to the upper cornice of the main part of the tower, as shown in the restoration in figure 338, or that it was divided into two plain zones of probably approximately equal height (40 cm. each), one between the mask-panel and the niche and the other between the horizontal hieroglyphic serpent and the upper cornice of the main part of the tower.

Block No. 19 (fig. 337) yields an important item of evidence for the correct reconstruction of the upper façade decoration of the Caracol. It will be remembered (page 284) that this block presents a vertical glyph-panel terminating at the bottom with a serpent's tail pointing downward. It will also be remembered that no serpent heads were found attached to vertically presented glyph-panels. From this evidence it may be argued that the vertically presented glyph-panels occur only as the lower sections (*i.e.* those adjacent to the tails of the hieroglyphic serpents), while the horizontally presented glyph-panels occur only as the upper sections (*i.e.* those adjacent to the heads).

On the basis of this presentation and arrangement of the hieroglyphic serpents, the restoration of the niches and their surrounding decoration has been attempted in figure 338.

The only objection the writer can see to this arrangement is that the sections of the horizontal bodies above the niches must each have served for two serpents, *viz.* (1) the serpent with head to the left, stretching backward (*i.e.* to the right) over the top of the niche and down the right side, with its tail just to the right of the sill of the niche; and (2) the serpent with head to the right, stretching backward (*i.e.* to the left) over the top of the niche and down the left side, with tail just to the left of the sill of the niche.

On the basis of this reconstruction of the niche-seated human figure-hieroglyphic serpent motif, there are still missing to complete the four presentations of this design, *i.e.* one above each of the four mask-panels, the following elements:

No. 1. 1 seated human figure.

No. 2. 1 hieroglyphic seat.

Nos. 3-5. About 1.10 meters of horizontally presented glyph-panel elements, perhaps as much as three different blocks.

No. 6. 1 serpent head facing to the left.

Nos. 7-20. About 5.72 meters of vertically presented glyph-panel elements, perhaps as much as 14 individual blocks.

Nos. 21-27. 7 serpent tails.

This number may be further reduced by drawing upon the surplus sculptured elements classified on page 285.

Not considering the possibly missing hieroglyphic stones for the moment, Nos. 3 to 5 and Nos. 7 to 20 above, the other missing stones necessary to complete these four designs may be reduced to about eleven in number as follows:

No. 1. 1 seated human figure.

No. 2. 1 hieroglyphic seat.

Nos. 21-27. 7 serpent tails.

This number is not high, and some of these sculptured stones, especially the seated human figure (No. 1) and the small hieroglyphic seat (No. 2), may well have been lost or

removed from the Caracol during the last four centuries; the chief difficulty is with the missing 5.72 meters of the vertically presented glyph-panels, Nos. 7 to 20. So many of these blocks are missing—about 14 on the basis of an average height of 40 cm. (see Group E, page 284)—that it would almost seem as though some other element had appeared together with the vertically presented glyph-panels reducing by so much the number of blocks presenting the latter design necessary to complete the sides of the four niches.

Such an element may well have been the nine blocks showing serpent scales noted in the table on page 285. As will be seen from the following table, these are all of approximately the same width as the hieroglyphic serpents, 25 cm., and all have plain borders of the same width, conditions hardly to be explained on the grounds of coincidence only, and in the aggregate these give a total length of 3.48 meters, *viz*:

No. 1.	36 cm. long	by 25.5 cm. wide
2.	34	by 25
3.	43	by 24
4.	32	by 24
5.	50	by 24
6.	32	by 25
7.	30	by 24.5
8.	50	by 24.5
9.	41	by 24.5

If these nine blocks with a total length of 3.48 meters are combined with the five blocks presenting the vertical glyph-panels (Groups E and F, page 284) with a total length of 1.80 meter,¹ all fourteen averaging 24.5 cm. in width, which the writer repeats can hardly be the result of coincidence only, and allowing a minimum of 1.28 meters for the eight tails based on the length of the incomplete tail on Block No. 19 (*i.e.* 8 x 16 cm.) there will be a combined length of 6.56 meters compared to the 8.80 meters necessary to form the eight vertical side panels of the four niches postulated here, or a shortage of 2.24 meters. If this shortage is allocated equally among the eight tails, *i.e.* for terminal tufts of feathers, curls, etc., there would be only 28 cm. missing from the end of each tail. This is such a small amount and, moreover, is no more than necessary to complete the terminal tail ornaments, *i.e.* tufts of feathers or curls, that the writer is strongly inclined to believe these nine scale blocks must have formed parts of the bodies of these hieroglyphic serpents.

Since the evidence afforded by Blocks Nos. 5, 6 and 7 indicate these scales could not have immediately followed the serpent heads and since Block No. 19 indicates that they could not have immediately preceded the tails, we are forced to conclude that, if they formed parts of the hieroglyphic serpents at all, which the writer strongly believes, they must have been interspersed with the glyph-panels themselves in the bodies of the serpents, in which position they are shown in figure 338.

The nineteen blocks presenting the hieroglyphic serpents yield some chronologic data, which serves to corroborate some of the chronologic data recorded on the stela.

Block No. 5 (fig. 337) has for its second glyph, B1, an unknown sign with a coefficient of 3, which is followed at A2 by a sign with a coefficient of 16 surely. The latter bears some resemblance to the winged Cauac form of the tun sign and, if so, we probably have a

¹ The combined length of these five blocks is 1.96 meters, but since the tail at the bottom of Block No. 17 is 16 cm. long, the combined length of the glyphic panels is only 1.80 meters long.

repetition here of the same Tun 16 found at the beginning (A1) of the inscription on the Caracol stela. The sign itself has the winged suffix and possibly the main element is a head variant form of the Cauac sign.

Block No. 6 (fig. 337) has for its first glyph (A1) what may be the day-sign Ahau with a very doubtful coefficient of 4. The writer does not wish to place any emphasis upon this reading, however, as he is too uncertain about it.

Block No. 9 (fig. 337) has an unknown sign at A2b with a coefficient of 8 above it.

Block No. 10 (fig. 337) has an unknown sign at D2a with a coefficient of 9 above it and a sure Ahau sign surmounted by a Ben-Ik superfix without any coefficient at D1b, unless indeed the asymmetrical dot to the left be the number 1, making D1b the day 1 Ahau.

The vertical hieroglyphic serpent blocks yield slightly more satisfactory chronologic material.

Block No. 16 (fig. 337) yields a Calendar Round Date at A1, A3 which in spite of some doubt may well be 5 Kan 7 Muan. The day-sign at A1 is surely Kan and the head variant coefficient to the left, although the upper part is missing, looks more like the head for 5 than anything else. Note the resemblance of the lower part of the head-dress to the normal form for the tun-sign. The next sign, A2, is surely the head variant of the kin-sign frequently found with Calendar Round Dates at Chichen Itza (note the kin head-dress and the winged postfix), and the next sign, A3, looks like 7 Muan. The coefficient is surely 7, and since the month position of Kan must be either 2, 7, 12 or 17, it is probable that A3 is the month part corresponding with the day in A1. The month-sign itself looks more like Muan than any of the other month-signs, and the prefix is one frequently used with month-signs at Chichen Itza. This date occurred once every 52 years throughout the Long Count, but before attempting to fix its position further let us continue with the inspection of our text.

Block No. 17 (fig. 337) has a sure record of Tun 16 again at A1b, both coefficient and the winged Cauac variant of the tun-sign being certain. At A3b there is an unknown glyph, a head of some sort with a certain coefficient of 1. The Tun 16 at A1b, it hardly need be pointed out, is probably a repetition of the Tun 16 at A1 on the stela and at A1 on Block No. 5.

Block No. 18 (fig. 337) is the most important block of any of the nineteen under discussion in this section, since it is the only one which presents sufficient chronologic data to make a fairly definite reading of the date possible.

The first glyph, A1, records beyond any possibility of doubt the day 3 Imix. The coefficient is the head variant numeral for 3 and the accompanying day-sign, Imix. The second glyph, A2a, is the corresponding month-part. The coefficient is surely either 9 or 14. If there is a single thick bar with an ornamental medial line extending from end to end it is 9; if there are two thin bars instead, it is 14. Without choosing finally between these two readings, the writer is inclined to decipher this date as 3 Imix 14 Yax.

The next sign at A2b is surely Tun 1, both coefficient and period glyph being certain as given. What then is the relation of this Tun 1 to the Calendar Round Date immediately preceding it?

No matter which of the two possible values of the month coefficient in A2a is chosen, it will be found that so far as Baktuns 10 and 11 are concerned, the only tuns in which

The earliest of these three readings is about a century and a quarter later than the latest of the three tun endings—10.0.17.0.0—which we have seen (page 282) may be recorded on the Caracol stela, and the latest is more than 7 centuries later.

Returning to the Calendar Round Date 5 Kan 17 Muan, probably recorded at A1, A3 on Block No. 16, it will be found that this occurred at the following Long Count positions:

10. 0. 3.12. 4	5 Kan 17 Muan	11. 1. 5. 8. 4	5 Kan 17 Muan
10. 2.16. 7. 4		11. 3.18. 3. 4	
10. 5. 9. 2. 4		11. 6.10.16. 4	
10. 8. 1.15. 4		11. 9. 3.11. 4	
10.10.14.10. 4		11.11.16. 6. 4	
10.13.17. 5. 4		11.14. 9. 1. 4	
10.16. 0. 0. 4		11.17. 1.14. 4	
10.18.12.13. 4		11.19.14. 9. 4	

Of these sixteen occurrences of this date in Baktuns 10 and 11, the three nearest the three readings of the Period Ending Date 3 Imix 9 or 14 Yax in Tun 1 at A1, A2 on Block No. 18 are as follows:

10. 8. 1.15. 4	5 Kan 7 Muan
10.13. 7. 5. 4	
11.17. 1.14. 4	

None of these is particularly significant. The first and third are about 21 years (*i.e.* 1.1.10.3) later than the first and third possible readings of the Period Ending Date on Block No. 18, respectively, and the second is about 36 years (*i.e.* 1.6.11.3) later than the second reading. Or using the next previous occurrences of 5 Kan 7 Muan in each case, the first and third readings are about 31 years (*i.e.* 1.11.2.17) earlier than the first and third readings of the date on Block No. 18, respectively, and the second is about 26 years (*i.e.* 1.6.1.17) earlier than the second reading.

THREE SMALL RECTANGULAR HIEROGLYPHIC BLOCKS

The possible, perhaps even probable, original provenance of these has been described in the preceding section, and little further can be added here concerning the nine glyphs which they present, since not one seems to have been of a calendrical nature, at least none has a coefficient, with the possible exception of the last I1 (fig. 336, *a*) which may have a numerical bar, *i.e.* 5, above it.

As noted in the preceding section, these three stones probably served as low benches upon which the three human figures were seated (fig. 338). It seems likely that originally there had been a fourth statue and a fourth one of these hieroglyphic seats, since the most probable positions for both of these elements are that they occupied the niches over the four exterior doorways of the tower. If so, neither the fourth missing seated statue nor the fourth small hieroglyphic bench stone was recovered during the course of the excavations at the Caracol.

SMALL GROTESQUE HEAD WITH HIEROGLYPHIC COLLAR

The last object presenting glyphs found at the Caracol is the small grotesque head with a hieroglyphic collar shown in figure 35.

The hieroglyphic collar is not only incomplete, sections being missing from each end, but also most of the glyphs on the single section recovered are entirely weathered away.

Of the five glyphs sufficiently preserved to study, only two, A1 and B1, have coefficients, 10 and 2 or 3, respectively; and of these only the last is attached to a recognizable sign. This (B2) seems to have recorded a moon-age of 22 or 23 days, the C and D variant of the moon sign being surmounted by a coefficient probably of 2, though possibly of 3. The remaining three glyphs are of unknown meaning.

CONCLUSIONS

The dates on the stela strongly tend to indicate that it was dedicated either in

10. 0.15. 0. 0	12 Ahau	8 Cumhu,	or
10. 0.16. 0. 0	8 Ahau	3 Cumhu,	or
10. 0.17. 0. 0	4 Ahau	18 Kayab.	

Perhaps the first is the most probable date of dedication, since it records a hotun-ending, and since none of the dates from the hieroglyphic serpents, which originally had probably framed the four niches above the five-member cornice, yield satisfactory chronologic material for dating the Caracol itself.

It is true that both Tun 16 and Tun 17 are recorded on the hieroglyphic serpents, which would indicate close connection or perhaps even identify them with the same tuns found on the stela, but the presence also of a date declared to have occurred in a Tun 1, on one of the hieroglyphic serpents, the best reading of which makes it from 1 to 7 centuries later than the dates on the stela, very considerably clouds the decipherments suggested. Indeed, the writer feels uncertain whether the stela is earlier than, contemporaneous with, or even later than the Caracol.

It seems unwise to draw more definite conclusions at the present time from the scanty and unsatisfactory material at hand for study, but if the readings suggested here may only serve to point the way to the true decipherment of the dates of this most important inscription, the longest at Chichen Itza as well as the one associated with the most unique construction at this site, the writer will be more than satisfied.

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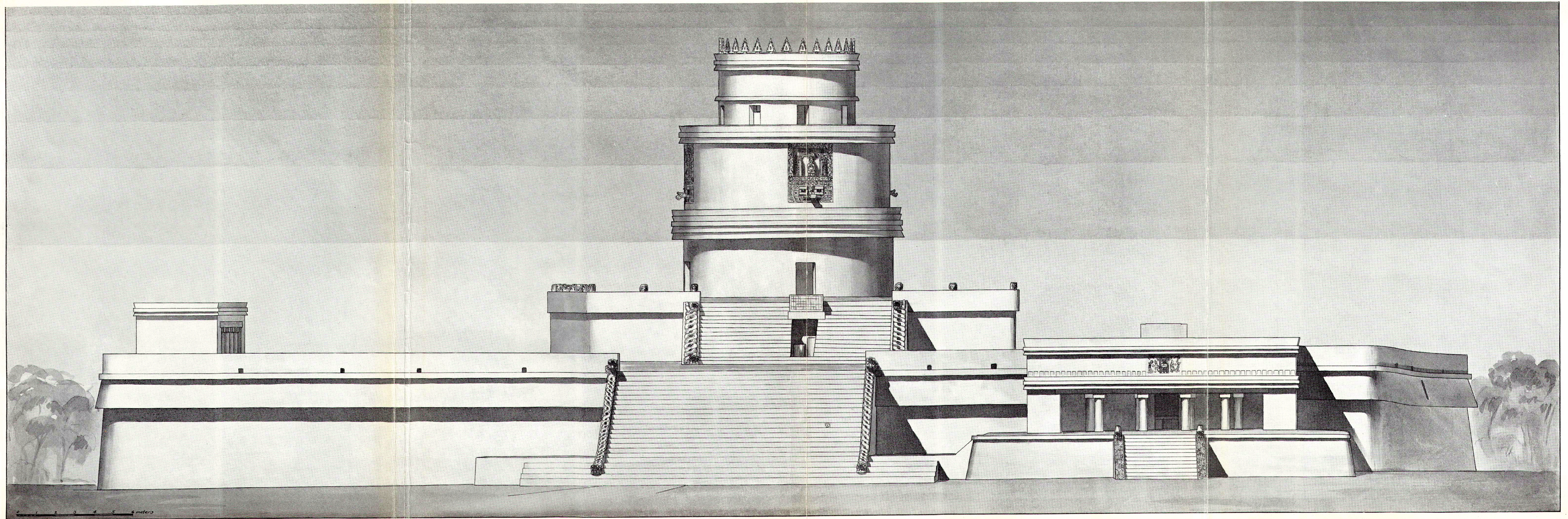


FIG. 339—Restoration of West Elevation of the Caracol by J. S. Bolles

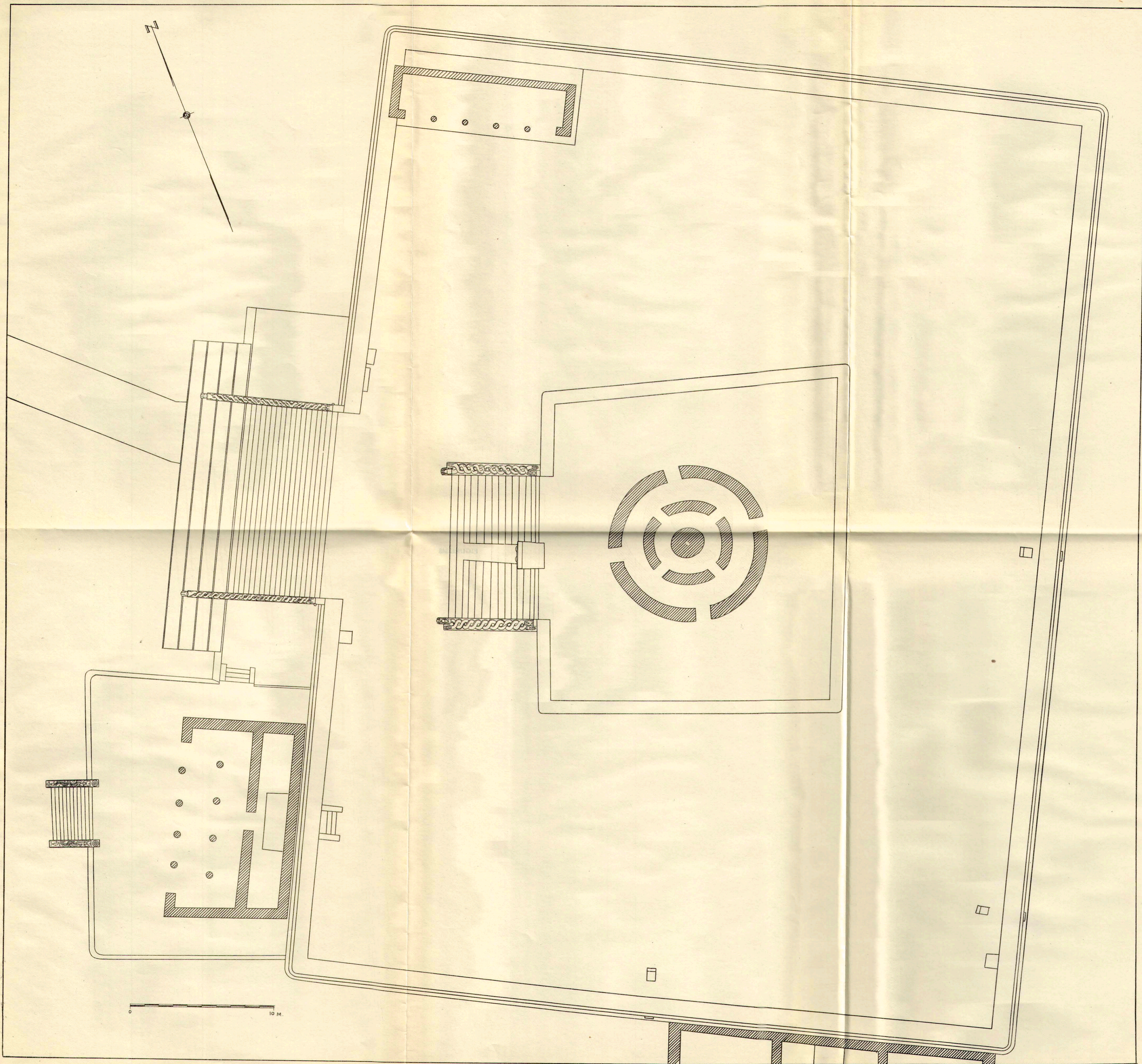


FIG. 348—PLAN OF CARACOL COMPLEX, RESTORED

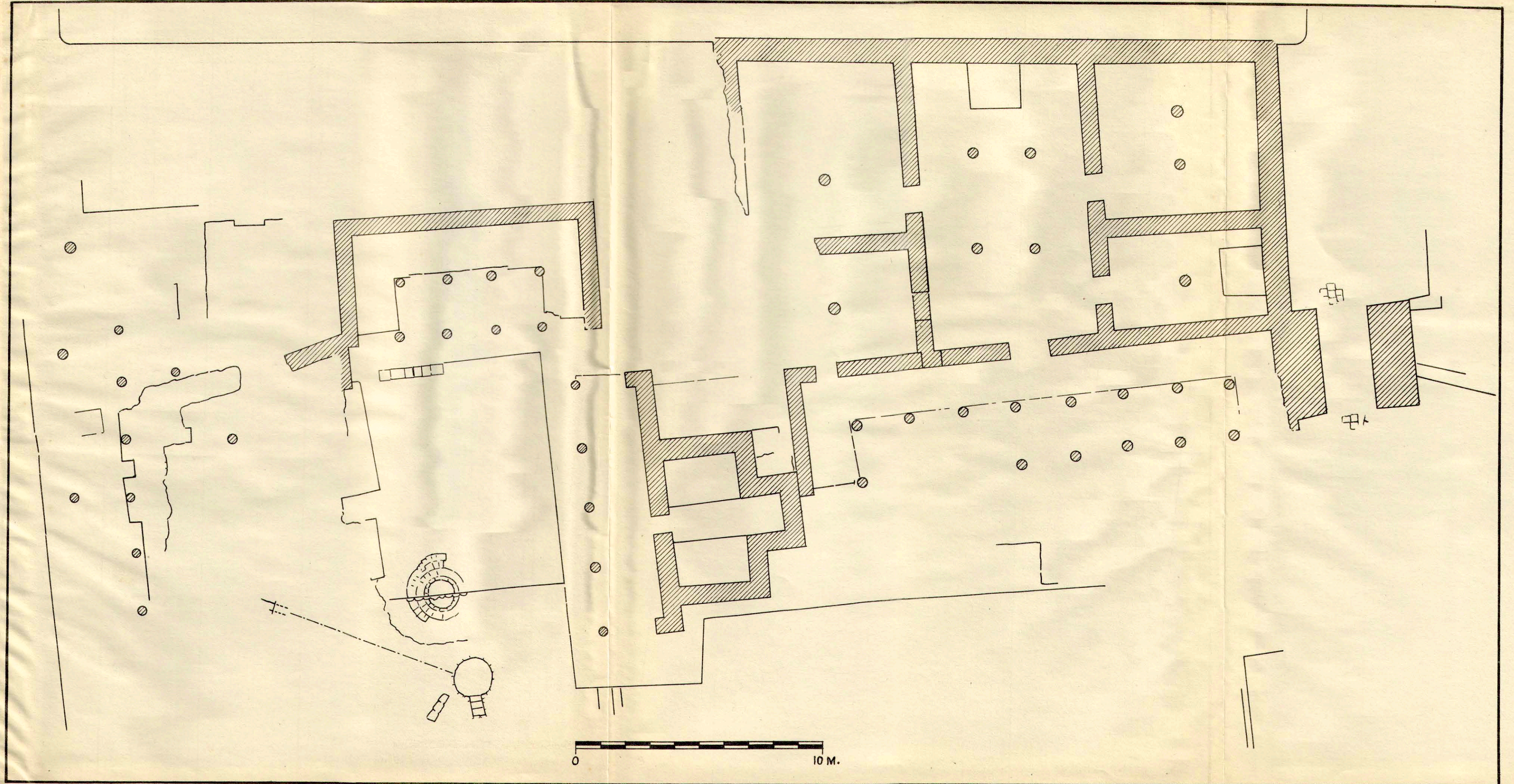
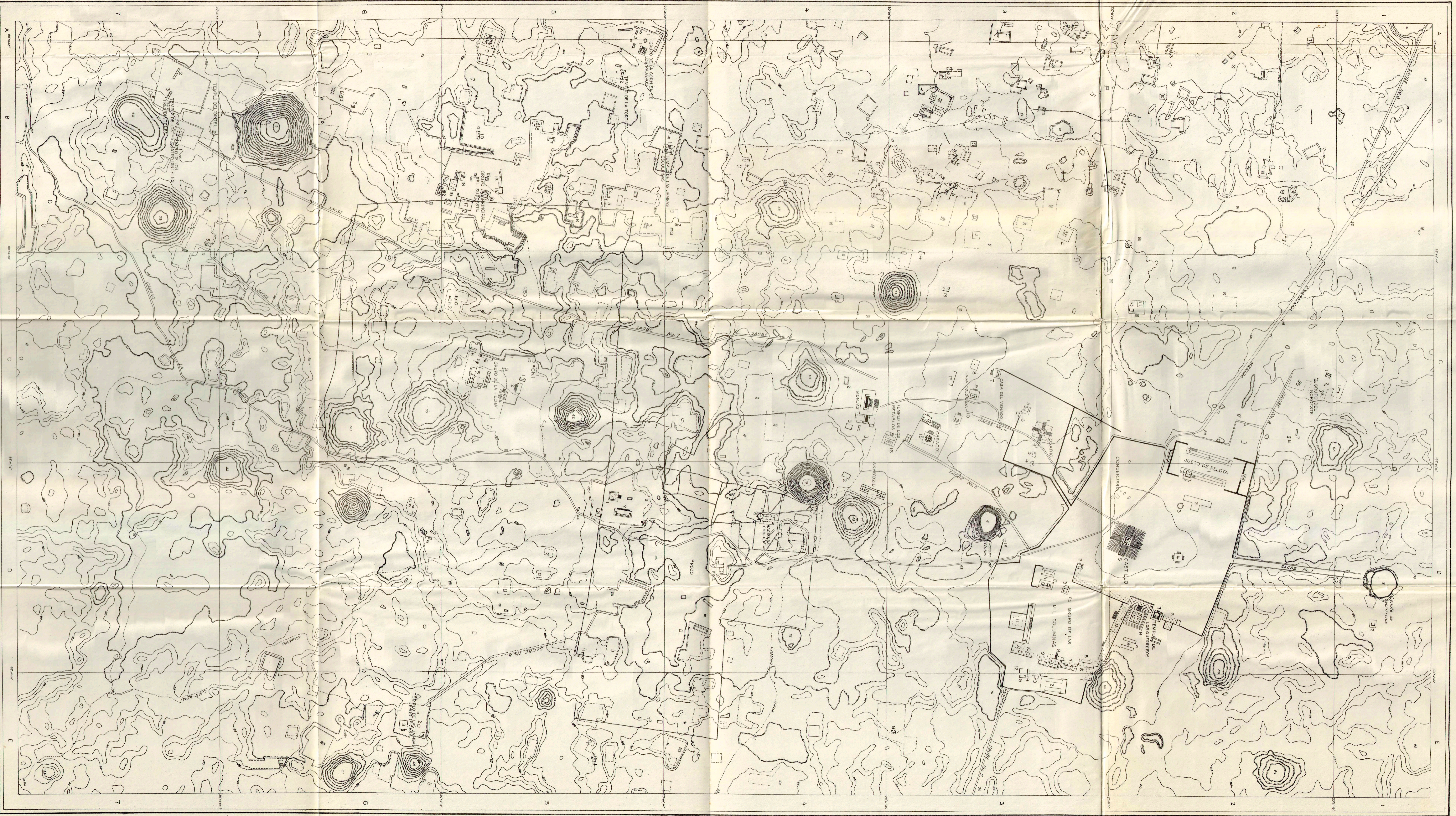


FIG. 349—PLAN OF SOUTH ANNEX



Surveyed by J. O. Slaughter
1:25,000 Scale
1935

Map by
J. O. Slaughter

Scale
0 100 200 300 400 500 Meters
0 100 200 300 400 500 Feet

Contour Interval 5 Feet
Elevation in Feet above Sea Level

NOTES:
1. This map is based on the original survey data.
2. The original survey data is available in the files of the Canadian Institute of Washington.

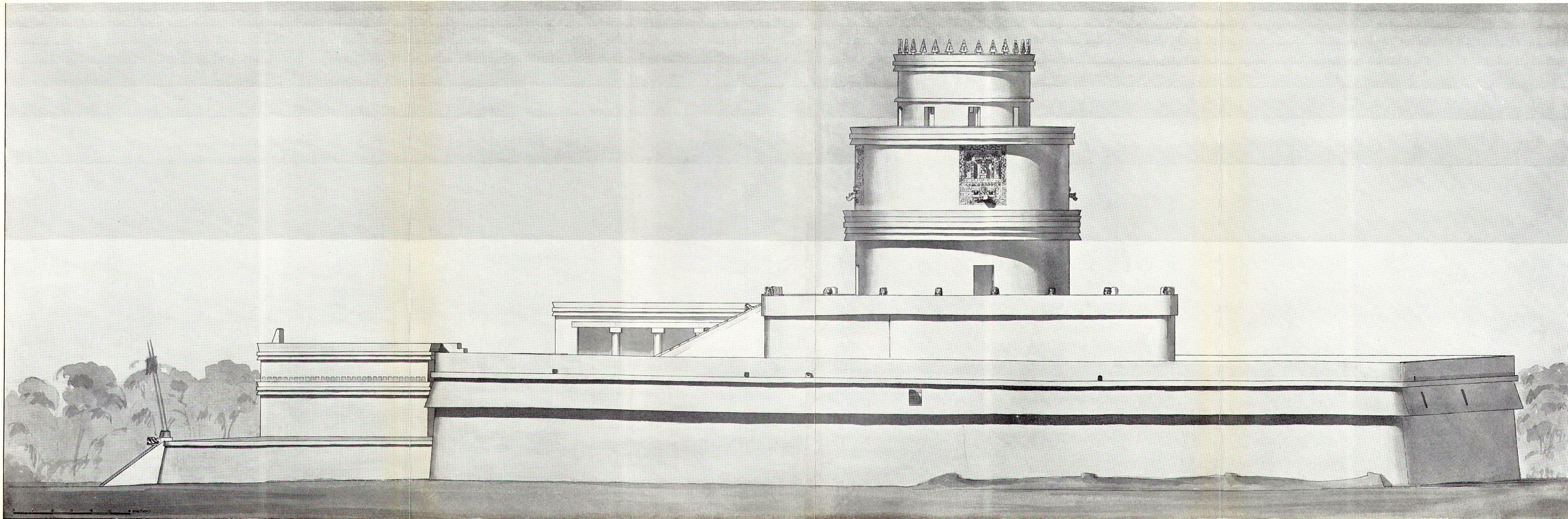


FIG. 340—Restoration of South Elevation of the Caracol by J. S. Bolles

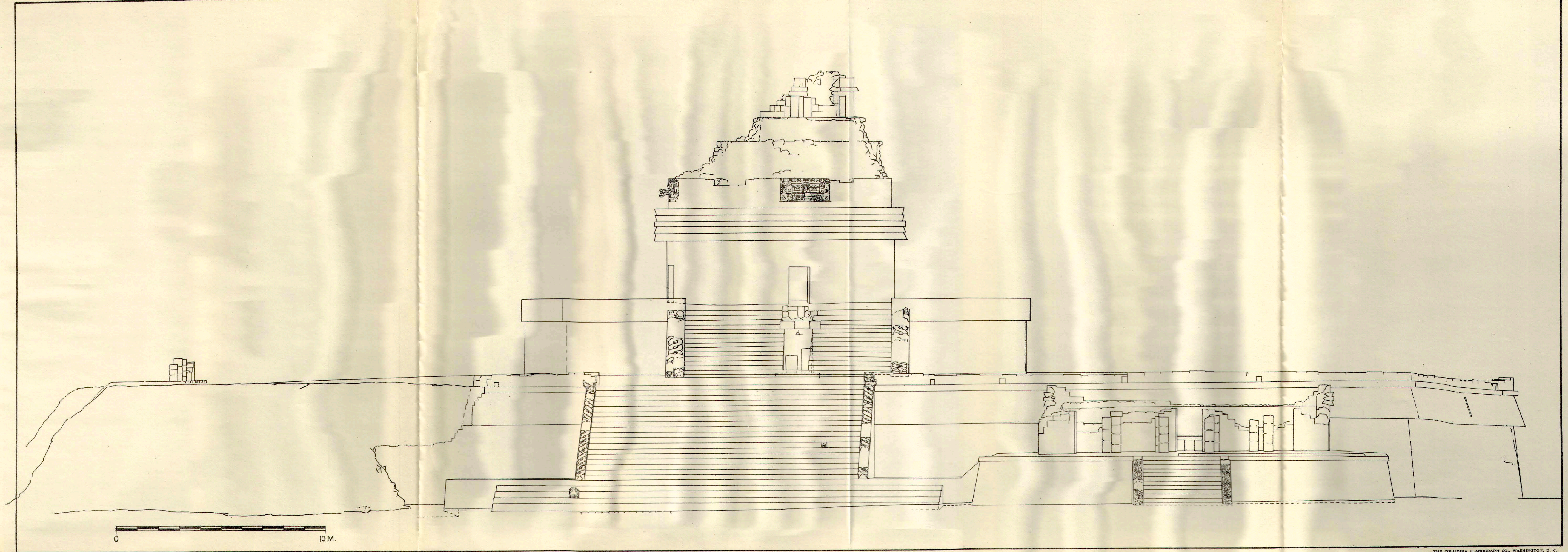


FIG. 341—CARACOL, WEST ELEVATION

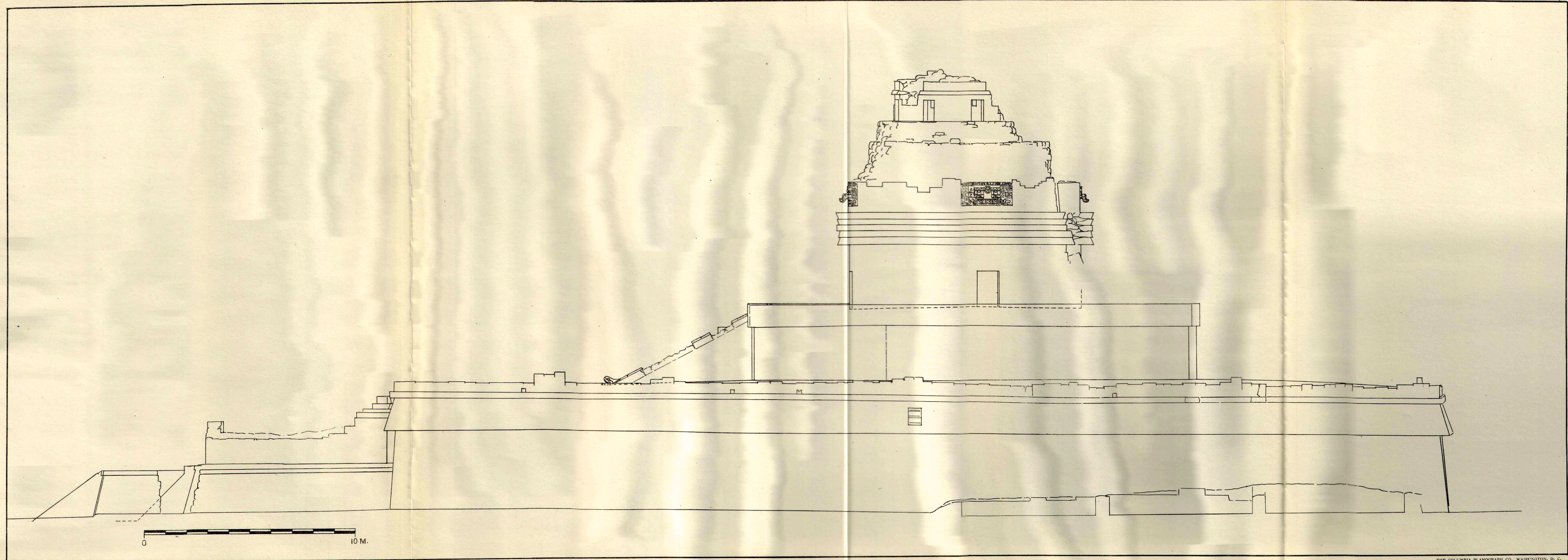


FIG. 342—CARACOL, SOUTH ELEVATION

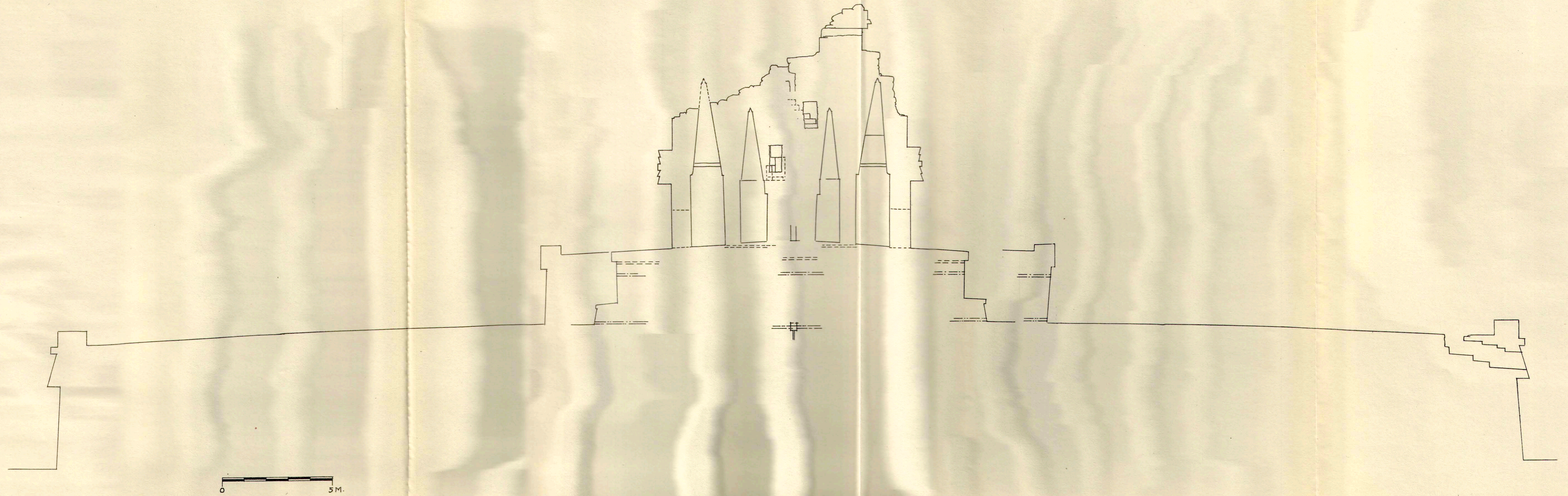


FIG. 343—SECTION THROUGH CARACOL, LOOKING EAST

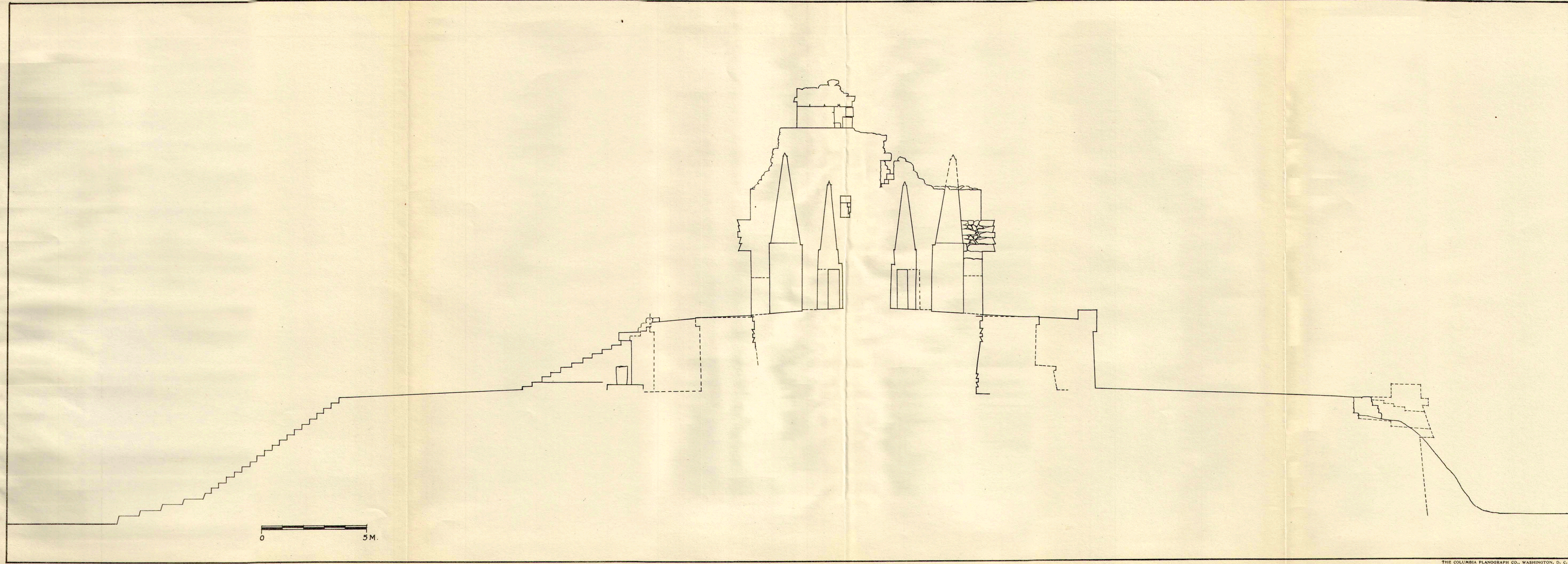


FIG. 344—SECTION THROUGH CARACOL, LOOKING NORTH

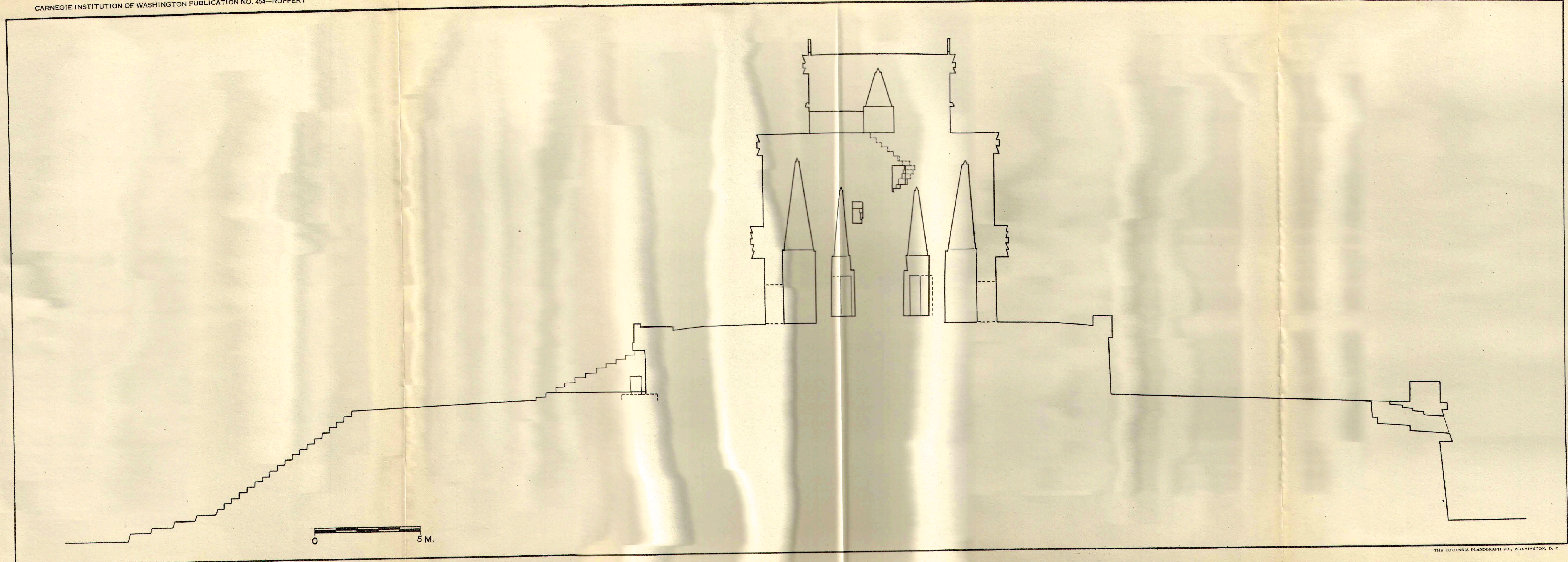


FIG. 346—SECTION THROUGH CARACOL, LOOKING NORTH, RESTORED

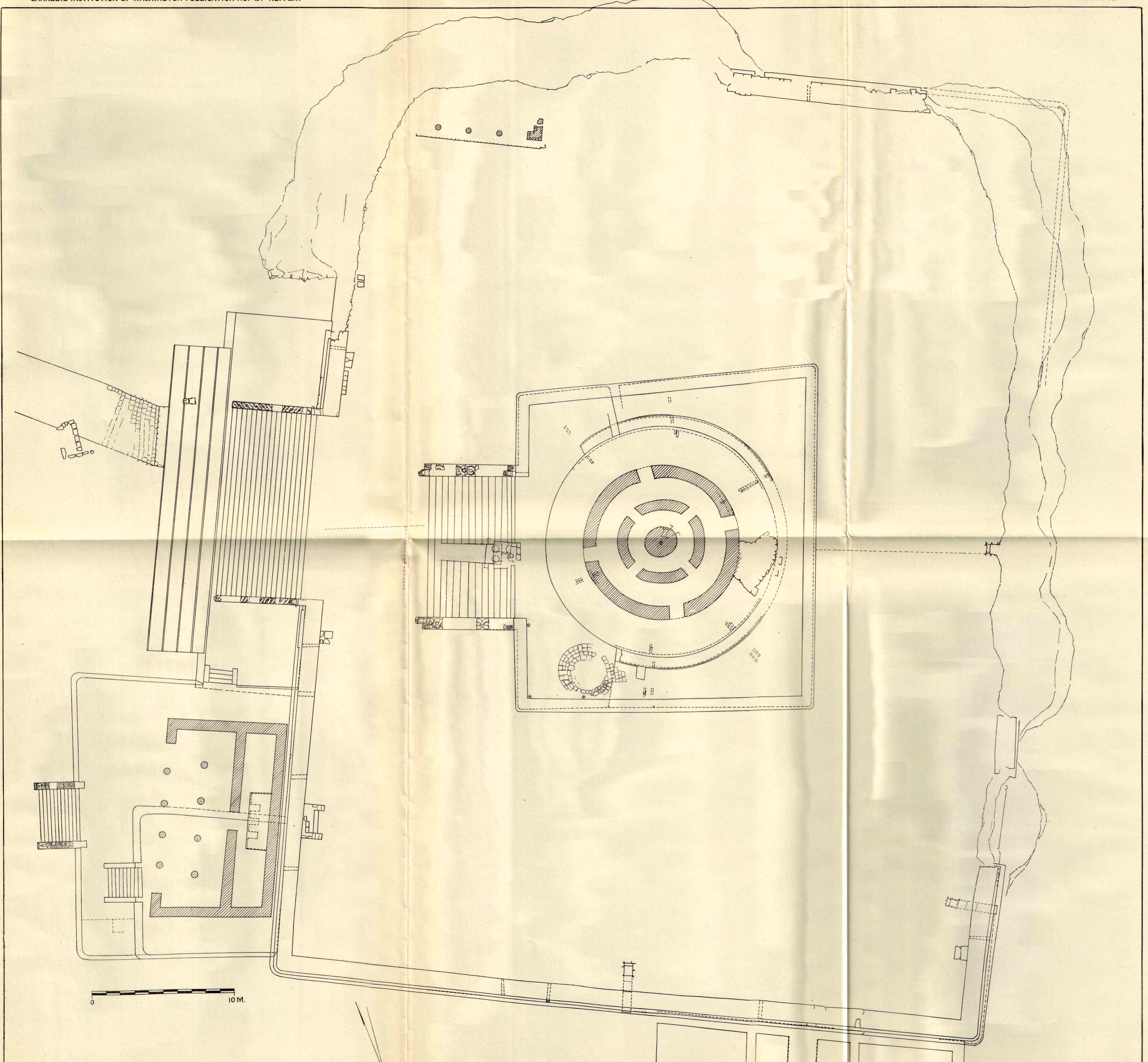


FIG. 347—PLAN OF CARACOL COMPLEX