

STRUCTURE 5D-73, BURIAL 196,
TIKAL, PETEN, GUATEMALA

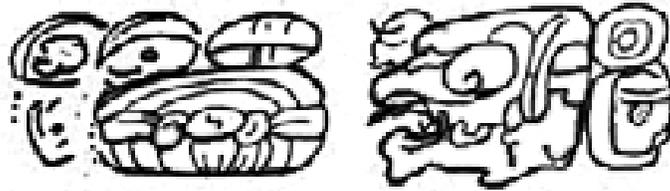
A PRELIMINARY REPORT

by

Nicholas Matthew Hellmuth

Submitted to the Department of Anthropology
in partial fulfillment of the requirements
for the degree of Bachelor of Arts with Honors

Harvard College
March 31, 1967



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Fig. 1 Map of the Maya area showing the location of Tikal

PREFACE

The writer worked at Tikal from Feb. 1965 to Feb. 1966, during a year's leave of absence from Harvard College. The structure which is the subject of this thesis, Str.5D-73, was excavated from August 1965 until Jan. 1966.

Tikal, which lies in the Peten rain forest of northern Guatemala (Fig. 1), was the largest of the Mayan ceremonial centers. During Late Classic times (A.D. 550-900) the built-up area covered many square miles and had at least 10,000 inhabitants (Haviland). Tikal seems to have been first inhabited in 600 B.C. and was abandoned by the priest-rulers suddenly around A.D. 900. Some peasants stayed at the site for another hundred years or so, after which the site was abandoned to the jungles not to be re-discovered until 1858.

In 1946, the University Museum of the University of Pennsylvania began excavations at Tikal, digging from 4 to 12 months a year every year until 1966. During the year that the author was in Tikal, the Project Director was Dr. William R. Coe and the Field Director, Mr. George Guillemin. Except for the last week that the author was working on Str.5D-73, Dr. Coe was not in Tikal. The tomb, Bu.196, within Str.5D-73, was excavated during the two-month Christmas vacation and during the off season. George Guillemin was present in camp approximately one of these months.

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ABSTRACT

Str.5D-73 is a 45 m. high, five terraced, Late Classic pyramid (Fig. 2); similar to the pyramid which supports Temple I (Photo 2), but smaller. The interesting feature of Str.5D-73 is that it is the only pyramid of its type at Tikal which does not sustain a masonry temple building. Buried below the approximate center of the structure was a large tomb chamber, Bu.196. On a bench within the tomb was the supine body of a male, surrounded by a great wealth of jade jewelry. To one side of the bench were placed over 40 pottery vessels containing food. Within the burial chamber was evidence that the body was placed in the tomb before any of the tomb's vault had been constructed. After the burial was completed the chamber was sealed and the pyramid constructed over it. It appears that the tomb construction was not begun until after the ruler was dead and that the pyramid was a monument to the deceased.

NOTE

For the reader's convenience the drawing of the center line section has been enclosed separately at the end of the volume. Much of what is said in the report will be understood better if this drawing is unfolded and kept open and nearby for easy reference.

ABBREVIATIONS

MT = Miscellaneous Text (glyphs)

Str. = Structure

73 = Str.5D-73

T.R. 15 = Tikal Report # 15 (in preparation)

117A/21 = Operation 117, Sub-operation A, Lot 21

254 m. = 250 meters above sea level

GD = Greatest dimension

T = thickness

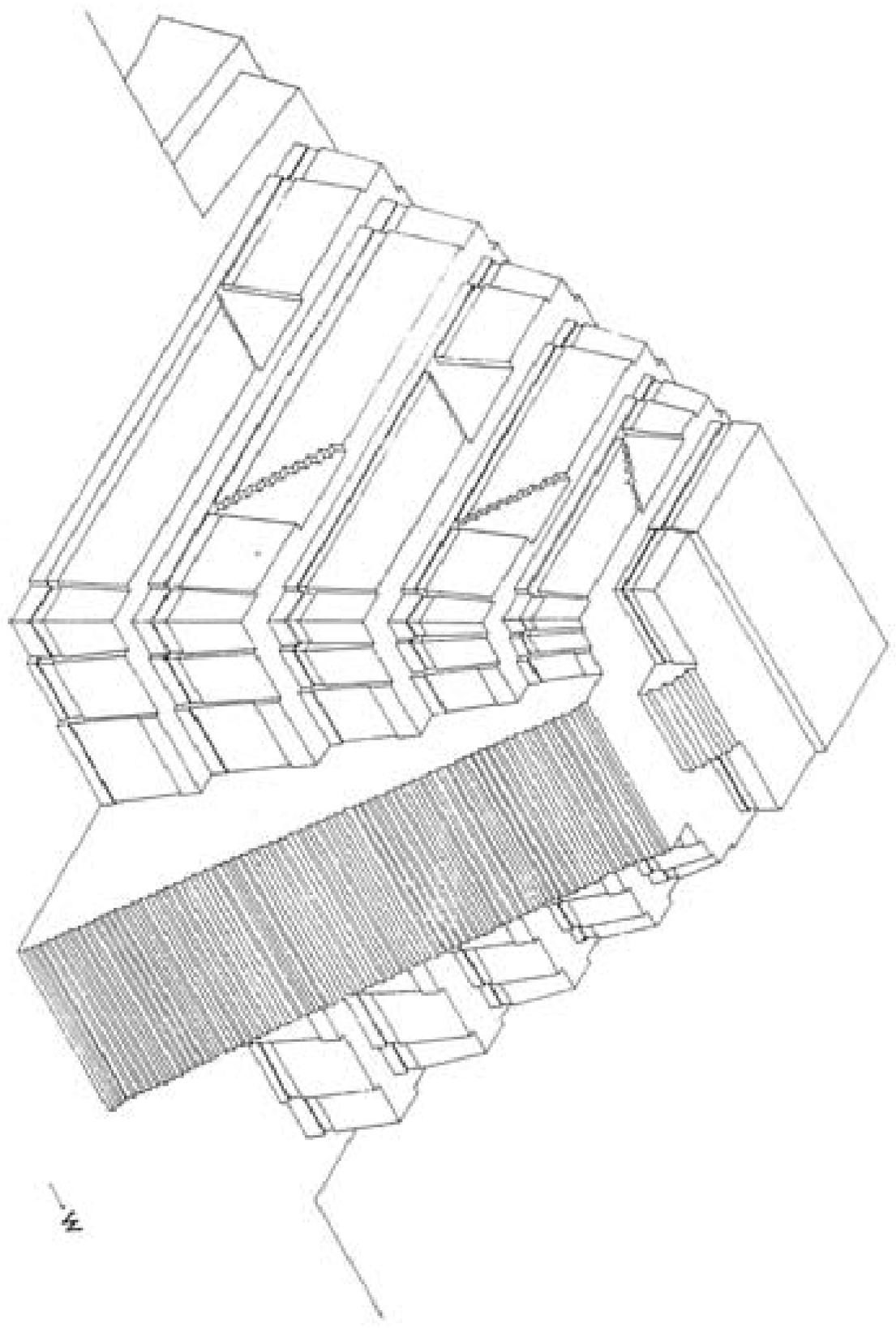
W = width

H = height

D = diameter

VOLUME 1 STRUCTURE 5D-73

FIG. 2 ISOMETRIC RECONSTRUCTION, STR. 5D-73



INTRODUCTION

Justification of the Excavation

Str.5D-73 was selected for excavation because it was a large Late Classic pyramid which did not have the customary temple building or even the remains of a low masonry building wall on its top (Fig. 2). Some Late Classic Tikal pyramids were never intended to support masonry temples or any buildings at all (Coe, 1965, p. 147), but these are of a specialized variety (Twin Pyramid Complex pyramids, Photo 1). Other varieties of pyramid or mound, i.e., Str.5D-37 (Figs. 4, colored green) (T.R. 14), perhaps did support a wooden, thatch roofed ceremonial building; but, again, this is a different variety of "pyramid". In its proportions Str.5D-73 is similar to Temples I (Photo 2), and III, and Str. SC-49 (Loten, personal comm.); it is a definite variety of pyramid which, at Tikal, always sustains a temple of masonry walls and vault.

For the above reason, Dr. Linton Satterthwaite was interested in having the top of the pyramid excavated. He had worked with this problem at Piedras Negras and wished to see if the Late Classic Tikal Maya also had major pyramids surmounted with temples constructed wholly or partially of wood.

This same interest, in addition to the fact that on the

walls of Temple II and elsewhere there are what appear to be representations of pyramids surmounted by wooden and/or thatched roofed temples (Fig. 3), made the excavation of Str.5D-73 seem worthwhile to Dr. William Coe. He thought, since Str.5D-73 is just about 25 m. away from Temple II, that some of the Temple II graffiti might depict Str.5D-73 with a wooden temple.

The tomb was excavated in an attempt to provide a date for the structure. There was a possibility that Str.5D-73 lacked a temple because the pyramid was a "terminal Tikal" construction, i.e., it was built just before Classic Tikal collapsed.

Location

Str.5D-73 is approximately 25 m. south of the south side of Temple II (Fig. 4). Str.5D-73 faces north looking onto the south side of Temple II and is the westernmost structure touching the Central Acropolis palace complex. Str.5D-73 is the only temple-pyramid on the south side of the Great Plaza.

Previous Mention and Excavation

Sometime after the completion of the structure, unknown persons cut a tunnel 10 m. back into the core of the pyramid, presumably in search of caches or burials (see p. 107).

Modesto Mendez "discovered" the ruins of Tikal in 1848

and spent about a week there. Despite his admission of having hacked his way through at least one temple there is no reason to believe him to have been responsible for the intrusion into Str.5D-73.

Tikal was visited by Dr. Bernoulli in 1877. He died on his way home; and, unfortunately, his notes have not been preserved (Maudslay, 1889, p. 44).

In the second half of the 19th century, a group of fugitives from Yucatan settled in Tikal. According to Maler, "they raged for years quite undisturbed among the treasures of the grand old ruined city" (1911, p. 33). This looting is mentioned because such a group is another possible, though not very probable, suspect for the damage to Str.5D-73.

In both 1881 and 1882, Maudslay spent one week at Tikal making a map of the larger buildings and taking notes. His rough plan (Fig. 5) clearly shows Str.5D-73 in its proper position, i.e., across from Temple II (Maudslay, 1889, Vol. III, plate 67). This map is accurate enough to include the steep drop-off on the west side of the basal platform. Maudslay gives Str.6D-73 a small case letter, "Temple f", whereas the five major temples receive capital letters. No ground plan of 73's "temple" is given, but the pyramid is shown as having ruins on top (see p. 7) in the same manner as the ruined buildings of the Central and North Acropolises. Four pyramid terraces are indicated in a conventionalized manner in broken line.

Maudslay did extensive clearing all the way from Temple I past Temple III. Str.5D-73 was just on the south edge of this clearing and in all Maudslay's photographs is still covered by Jungle growth and not clearly discernable (Maudslay, 1889, Vol. III, plate 68a).

Maudslay only mentions his Temple f on one occasion and gives no description of it. It is difficult to determine exactly what status Maudslay gives to 73; because, although it only rates a small "f" and no description, he clearly equates it approximately with the five major temples (Maudslay, 1889, p, 38).

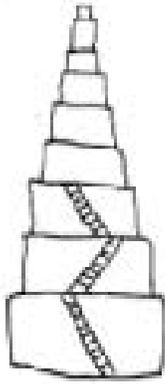
In 1904, Maler visited Tikal and became the second explorer to mention Str.5D-73. Maler in fact seems to have climbed to the top of 73, for he mentions the fine side view of Temple II which may only be seen from the top of 73.

Closely adjacent to the south side of the Great Temple II rises the not inconsiderable pyramid of a neighboring temple. This pyramid has a stairway on its north face, for the facade of its temple faces north, that is, it faces the right wing of Great Temple II. Like almost all the great temples of Tikal the temple proper occupying the platform had the typical division into three apartments. Unfortunately it is now almost total ruin. From the platform of this pyramid an excellent, strictly profile view of Great Temple II can be had, which I recommend to a future visitor. (Maler, 1911, p. 32)

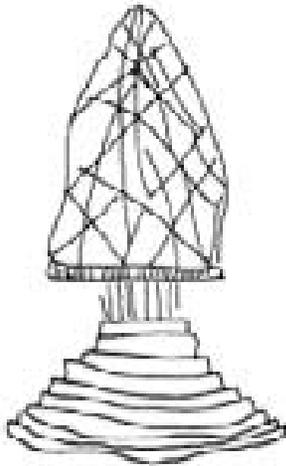
That the pyramid he is talking about is in fact 73 is shown by his description of its position relative to Temple II and its north-facing orientation. But, by the way in which this description is phrased, it appears that Maler could not or



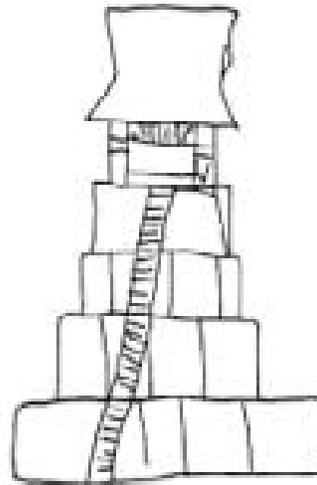
Photo 1 Str.4E-36, one of the "Twin Pyramids".



a

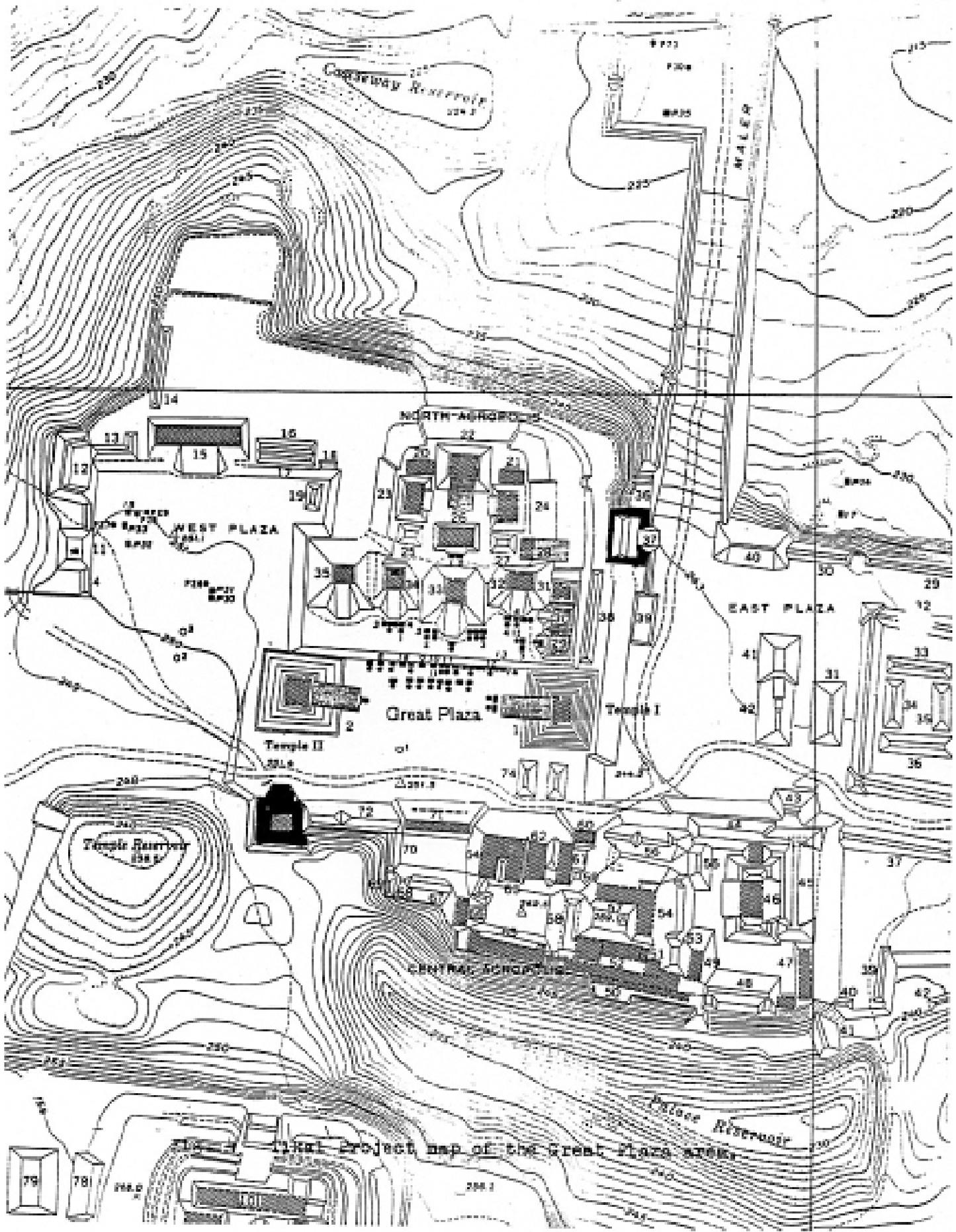


b



c

Fig. 3 Graffiti at Tikal, a, possibly depicts 'step-insets'; b, wooden thatch roofed 'temple'; c, terraced masonry pyramid with wooden (?), thatched temple, may represent a Str.5D-73 type



Final Project map of the Great Plaza area.



Photo 2 Str. 5D-1, Temple I

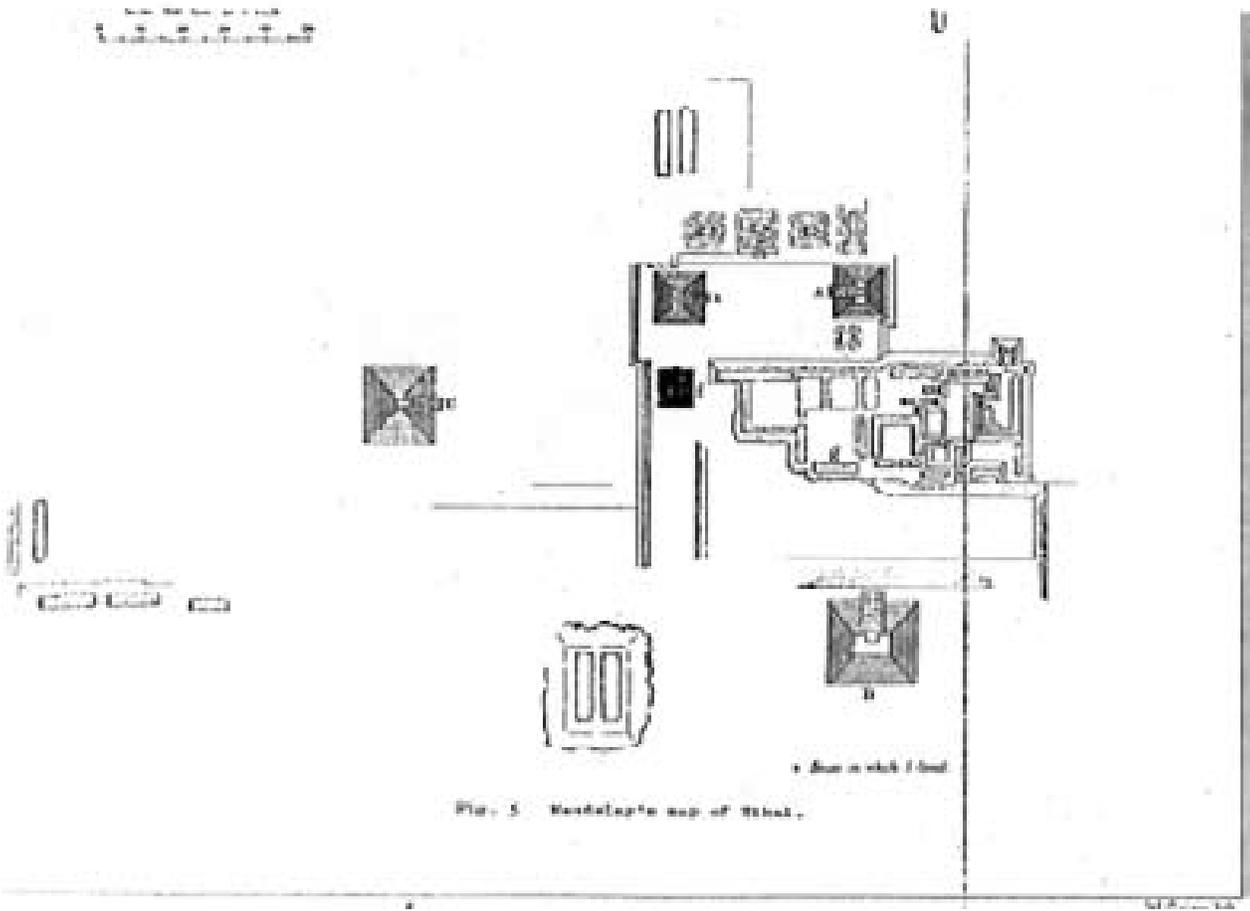


Fig. 5. ... map of ...

did not observe the actual stairway. He states that the stairway is on the "north side, for the facade of its temple faces north". When this writer first saw 73, stair stones were clearly visible, as was the general shape and position of the stair. It may, however, be presumed that to Maler a stone of certain dimensions and position which to us today says "Tikal, Late Classic stair stone" was probably mute. An inconsistency immediately arises--how could Maler tell that the temple faced north if the temple was almost in total ruin and if he could not pick out its stairway? It seems that "total ruin" to Maler was not as total as we might suppose, because he states that the temple (evidently) was in a good enough state of preservation to discern three "apartments" or rooms. Was Maler reading this interpretation into an unintelligible mass of rubble because all the other temples in the vicinity, pyramids of similar proportions which clearly had large temples on their tops, had three rooms? Another question is, did Maler himself climb 73 and observe the view of Temple II or did one of his workmen? Many of these questions the writer cannot answer. I believe the answer perhaps might be found by comparing Maler's descriptions of other Tikal structures with what is actually present in an attempt to determine approximately how accurate his descriptions are.

To further complicate matters, Maler then goes on to mention that there is another temple just to the west of

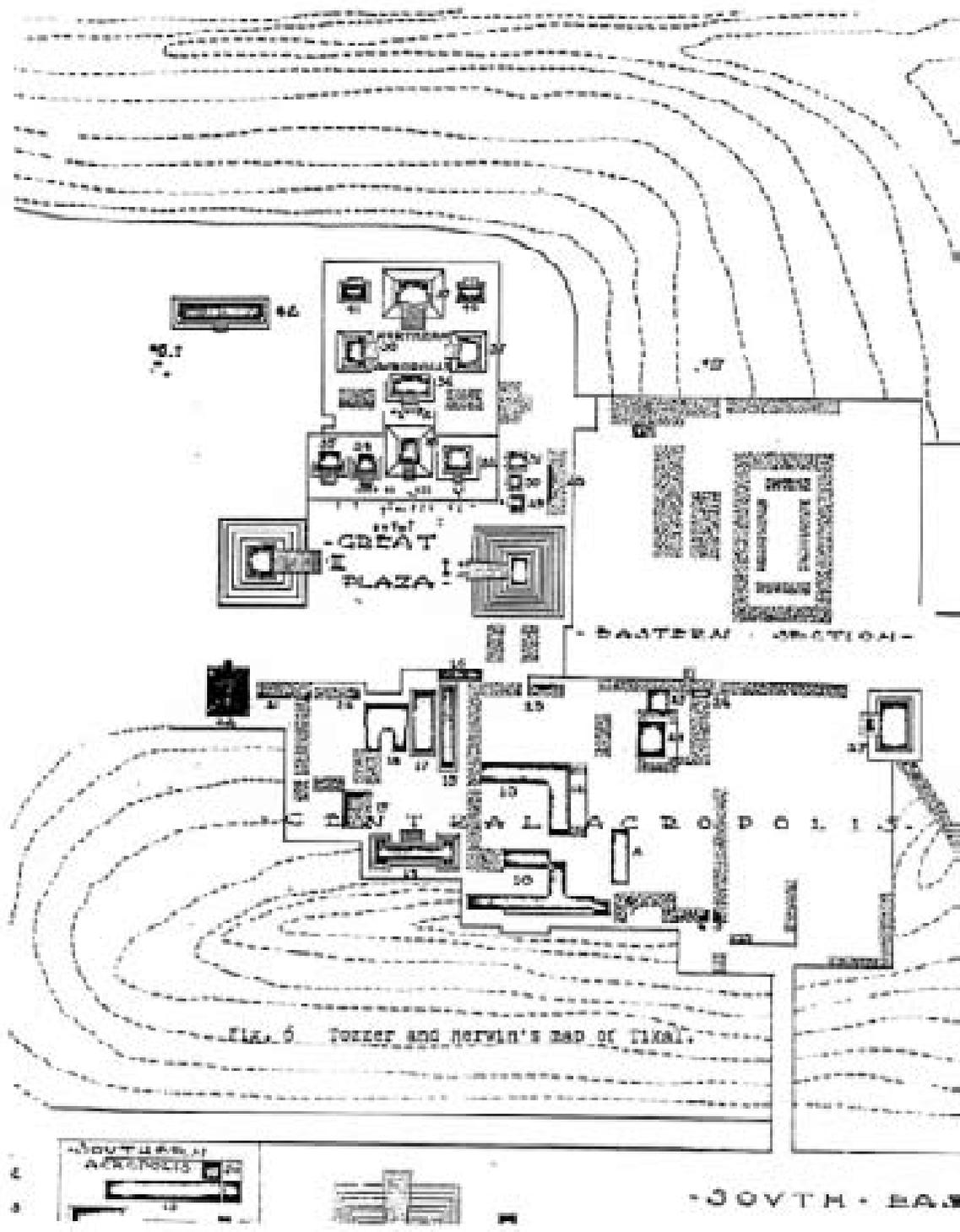


Fig. 6. Temple and Heron's Bay of Ithaca.

Str.5D-73 (Maler, 1911, p. 32). This is obviously a result of his having mixed up his notes, because there is no such second temple. It is unfortunate that Maler did not send his plan of Tikal to the Peabody Museum, Harvard.

Another explorer to visit and study Tikal was Tozzer. He helps clear up the question of the Maler's "west pyramid" by stating that he could not find the second temple to the west. Tozzer clearly equates Maler's description of the first temple-pyramid with what is now labeled as Str.5D-73.

Structure 22, just west of the western projection described above, is of the temple type. It is almost exactly south of Temple II. Maler ... mentions a second temple to the west. This could not be found. (Tozzer, 1911, 116)

In the sketch map made by Tozzer and Merwin (Fig. 6), Structure 22 (Str.5D-73) has a stylized, solid-black representation of a multi-roomed temple (Tozzer, 1911, Plate 29). There is no indication from the text that Tozzer or Merwin climbed to the top of "their" Structure 22. Tozzer is usually very careful about mentioning preserved masonry; thus, Tozzer probably crowned the drawing of the pyramid with a temple because of Maler's description and because he presumed it should have had a temple building.

Previous Investigation by the Tikal Project

Between 1957 and 1959 the Great Plaza quadrant was mapped by J. E. Hazard, N. Levine, and R. F. Carr. On their map (Fig. 4) (Carr, 1961, Great Plaza) the map symbol for

exposed walls, i.e., the remains of a temple, is shown on the top of Str.5D-73. The question is: did the map-maker actually climb to the top and see exposed walls or the remains of a collapsed building; or, seeing the type of pyramid it was, did the map-maker simply assume that there was a temple on top? Since climbing 73 is a tollsome task even on a cool, dry, day the map-maker was either familiar with the two earlier maps showing 73 with a temple or else just presumed that there should be a temple building on top.

In the summer of 1965, Andrew Nagy of the Tikal Project was assigned to make what architectural drawings he could of Str.5D-73 as it stood, without excavation. He was also supposed to look for remains of a temple on top of the structure. The only excavation he undertook was of the two front corners of the first terrace of the pyramid. He and his workmen chopped down a few trees, especially around the west side and at the back of the basal platform. A few trees were taken off the top of the pyramid and on the stairway; but, when the author began clearing, most of the top was still covered with trees. The author cannot remember more than two small stumps on top, and was unable to ascertain exactly how much debris had been removed. Nagy states that no excavation was done on the building platform and that the building platform step-up was visible by scraping away a few leaves. Nagy also states that absolutely no masonry debris was present and that he did not remove any large stones from



Photo 3 SCF.5D-73. front (northwest) corner before bushing.

the top of the building platform. He did draw a north-south and east-west section of the whole pyramid; however, none of these drawings were utilized by the writer because they were not based on excavation.

No other work was done on or around 73 by the Tikal Project. All those (such as Dr. Satterthwaite) who climbed to the top of 73, stated that they were never able to see any remains of a masonry structure. The excavations undertaken by the author were to look for the minute remains of wall stubs or remains of floor turn-ups to a ripped out wall that would indicate the previous presence of a building.

Appearance of the Mound Before Excavation

Almost all the architectural features of the pyramid were buried beneath entangled tree roots and a luxuriant layer of leafy geranium-like plants (Photo 3). The width and extent of the front stairway was visible even before clearing, although at first it looked as though the Park road had removed the bottom steps. One tremendous tree grew about one-third of the way up the stairway, causing an unnatural bulge there; numerous sections of the stairway had been uprooted but leaving the step stones in approximately their correct relative positions. A bit of the stair side-wall masonry was visible on the east side before bushing and on the west side after bushing.

Before bushing, some pyramid facing masonry was visible

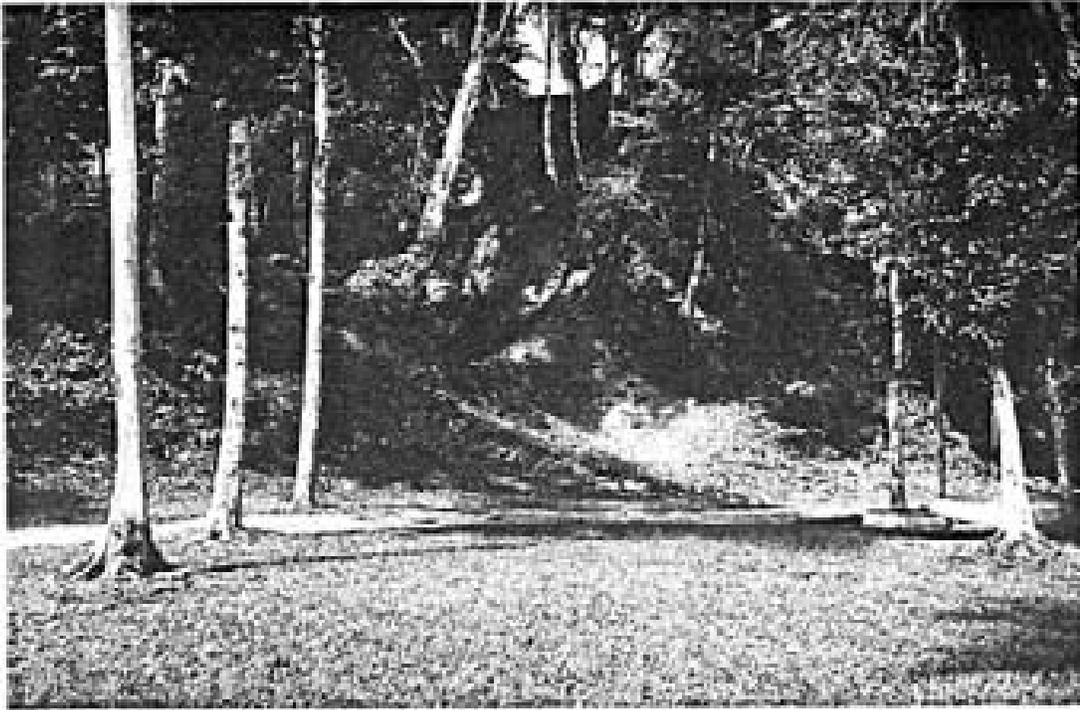


Photo 4 Str.5D-73 as seen from the Great Plaza, before excavation.



Photo 5 Rear of Str.5D-73 after bushing but before excavation.

on the upper four terraces next to the east stair side-wall. After bushing, facing masonry was visible on the top terrace on the south and west sides, approximately on the centerline. Except for the facing masonry of the first terrace, which was buried by fallen debris and thus protected, the facing masonry of almost all the rest of the pyramid had been peeled away by tree roots. (Photos 4, 5, 9).

Considering its exposed position, a considerable amount of finish masonry remained on all four sides of the building platform and building platform stairway. Even before bushing and excavation much of this masonry was visible. Also, clearly visible on the top of the building platform, was a definite step-up, dividing the building platform into at least two levels. This may, however, have been somewhat the results of Nagy's previous investigations.

Extent of Clearing

The first problem faced by an excavator is how much of the Jungle growth to remove. If too many trees are chopped down, the fragile masonry will be directly exposed to torrential downpours. Tree roots often hold together a great part of the building. In excavating in the East Plaza, however, the author found that the more trees that are removed the better. This facilitates taking before-and-after photographs of the structure.

To start with, almost every tree within 20 m. of the



Photo 6 Guatemalan workman excavating tunnel between Strs. 50-72 and -73.



Photo 7 Tunnel between Strs. 50-72 and -73, lower level.

base of the pyramid was cut. Their removal would not endanger the structure and would greatly facilitate the work to come. Several trees which obscured the view from Temple II were removed. The top of Temple II's pyramid was the only place from which one could get a full frontal photograph of 73 (Photos 9, 10), especially of its building platform (Photos 33,34). A tremendous tree growing on the stairway was removed because the centerline tomb tunnel might cause it to collapse. All the trees on the edge of the top of the building platform were left to preserve the pyramid. During the period of excavation, about three trees toppled over after heavy rain storms.

Extent of Excavation

Looking for the tomb only necessitated the digging of one centerline tunnel. On the front of the structure, the sequence of insets and outsets had to be known. Presuming bilateral symmetry, only one half of the front was cleared completely. After the northeast corner of the base of the pyramid was found, and since the point of juncture between the stair side-wall and after the pyramid face was uncovered by excavation, the author moved in with a tractor equipped with a front-end loader and a back-hoe (trench digger) (Photo 6). During after-hours and on weekends he was able to completely excavate the portion visible. The writer had used one of these machines before and no damage



Photo 10 The front of Str.(D-?) before excavation but after bushing, as seen from the top of Temple II.

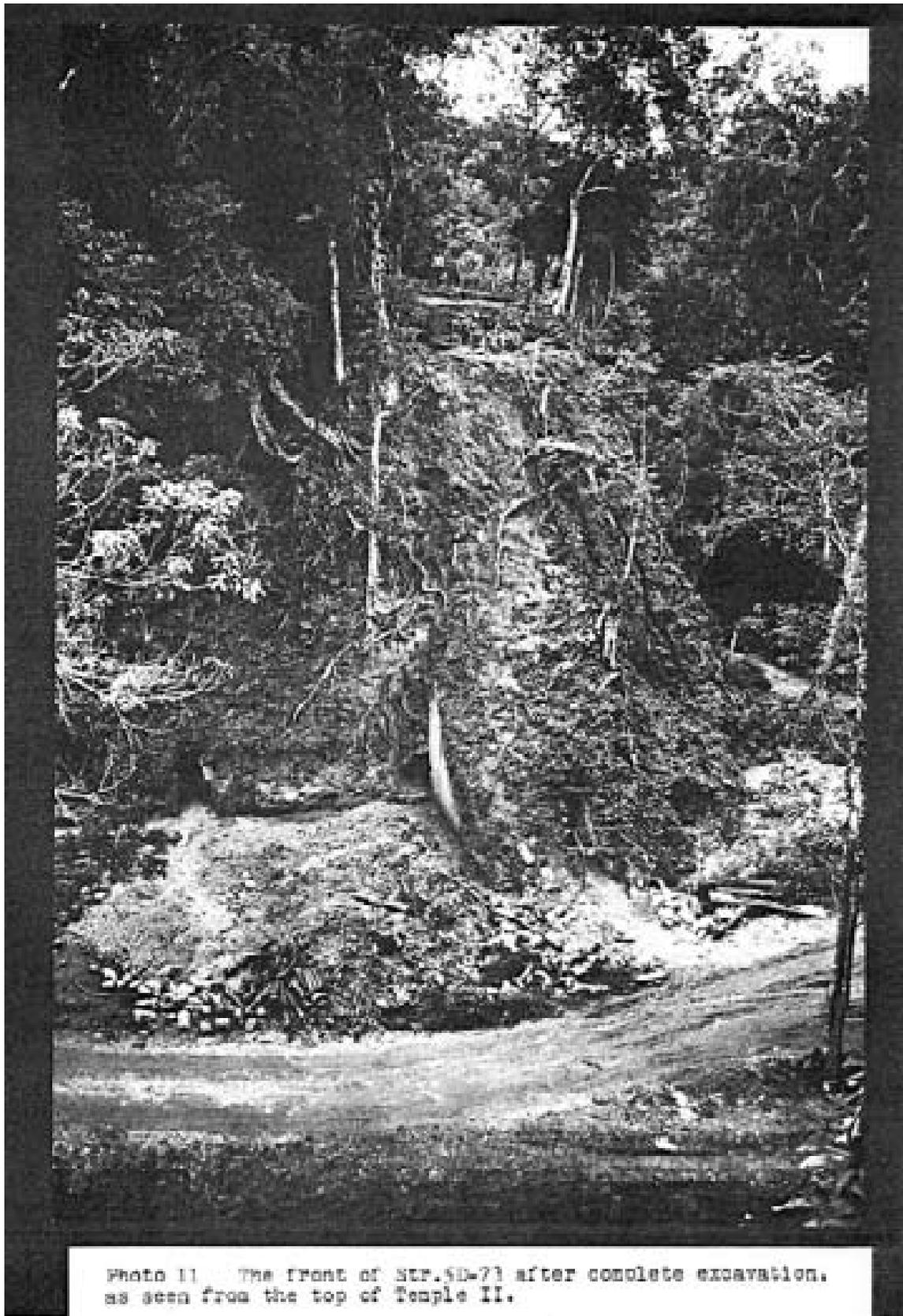


Photo 11 The front of STR. 5D-73 after complete excavation, as seen from the top of Temple II.

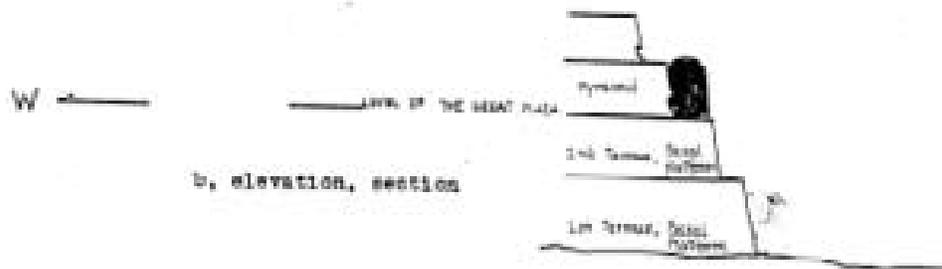
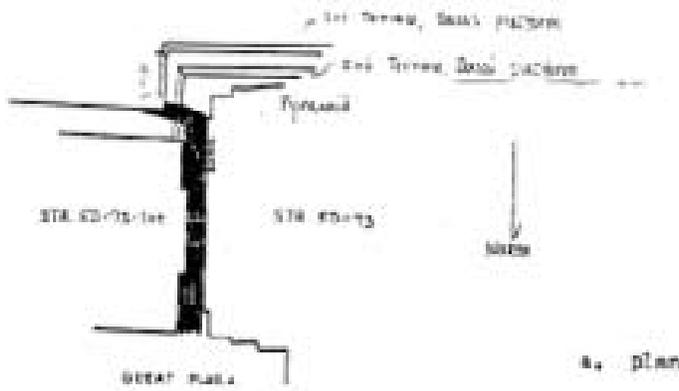


Fig. 7 Plan, section, and elevation of tunnel system between STR. 5D-74 and STR. 5D-73.

was done to the structure; the last few inches were always left for the workmen to remove by hand. This machine was also used to make numerous excavations on the sides and back in order to determine the outline of the basal platform. It was extremely useful and saved hundreds of native man-hours of excavation time; for backfilling it was even more indispensable.

After the writer found that there was only a meter or so between the east side of Str.5D-73 and the west side of Str.5D-72, he decided to tunnel between the two, north to south (Photo 7). This would completely uncover the entire east side (22 m.) of 73, as well as the whole west side of this level of 72. There were several reasons why this expenditure of time was very important. First, this was the only part of any terrace of the 73 pyramid which was protected enough by fallen debris to be in a good state of preservation. Secondly, a tunnel at this point would facilitate recording to a great extent. The third and most important reason was to try and see if Str.5D-73 had a unique type of "step inset" (Fig. 18), found so far in all Mayan architecture only on Temple I (see p. 82). This would be the only part of 73 where this feature might be preserved. Finally, it was important to determine whether 73 had been built at the same time or before or after 72.

The tunnel system is rather complicated and may best be visualized by looking at the diagram (Fig. 7). Its prin-

cipal feature is a tunnel going 17 m. north-south from the northeast corner of 73, parallel to the east side of 73. The "floor" of the tunnel is the "Great Plaza" level on which 73 is built; one side of the tunnel is the east side of 73; the other side of the tunnel is the west side of 72, a palace which is only 1 m. away from 73. This tunnel cuts through the debris that has fallen from the sides of 73 and 72. As these two structures are close together at this point the dirt piles up to a maximum of 4 m. Midway on this tunnel a shaft goes up through the 4 m. of overburden; this is on the line of the east-west centerline section.

The front of 73 is built on the Great Plaza; the back of 73 is over 5 m. off the ground, resting on a basal platform. Consequently, the north-south tunnel comes out at its south end 5 m. above ground level on the top of the 2nd terrace of the basal platform. To investigate the relationship between Str.5D-73 and the adjacent Str.5D-72, another tunnel system was dug through collapsed debris and made to connect with the first tunnel. The new tunnel was begun on ground level on the east side of the basal platform going north 7 m. until the east-west-running south face of the Str.5D-72-1st basal platform was reached. From here a shaft was dug 4 m. up and to the west, following both the south face of 72 and the east face of 73, i.e., the shaft was traced to the interior corner of the two platforms. This shaft of course ran into the north-south tunnel at the Great Plaza level.

The writer was fortunate in that, even with torrential downpours, there was never any part of the tunnel that collapsed.

All four corners of the pyramid and basal platform were dug out. None of the upper corners above the first terrace was dug, because none was preserved (except all the way up, on the building platform). There was extensive excavation at the pyramid's base for the east-west and north-south centerline trenches.

On top of the pyramid, the entire front of the building platform was cleared. Then, very carefully, all the humus but not a single stone fragment was removed from the top of the building platform (Photo 33). After the two building platform step-ups had been recorded and no wall stubs or floor turn-ups were found, (at the suggestion of Dr. Coe), the whole top of the building platform was quickly dug through, to look for a cache. A centerline trench revealed several interesting constructional features, but no cache was found. Unfortunately there was neither time nor labor available to remove the building platform (carefully) layer by layer all the way to the pyramid top. The centerline sections show somewhat the extent of excavation (Figs. 19a , 19b).

After the author left in January, 1966, Rudy Larios did the plan and elevation. He also attempted to follow the floor on which Str.5D-73 was built over to the south side of Temple II,--an effort which was unsuccessful due to weather-

ing and the fact that the Park road was constructed between the two structures. He did some additional excavation on the back of 73 to determine the positions of the rear outsets and to solve complications uncovered by this writer in the rear basal platform.

The writer worked on 73 from mid August, 1965 until mid January, 1966.

Standards of Recording

The plan was done using a transit and will eventually be related to the Martinez Grid System of the North Acropolis. All elevations were established by the use of a level from bench marks in the Great Plaza. Most of the drawings were double-checked and should be extremely accurate; all drawings were done by the writer except for the plan, elevation, and two detail-drawings done by R. Larios.

Acknowledgements

For his work at Tikal, the author wishes to thank Christopher Jones for all the assistance he rendered him. He was present up to the day the first objects came from the tomb. Rudy Larios was also of great assistance in making the plan and elevation when the writer had to return to school in February. The National Science Foundation through Harvard College provided enough money to enable the author to stay and excavate this structure. Miss Penelope Orr proofread

the manuscript and made it infinitely more readable. Dr. William R. Bullard contributed numerous helpful suggestions.

All the architectural drawings were done by the author except for Figs.16-18, 20-23 which were done by R. Larios. All the drawings of pottery and technical description thereof were done by Virginia Greene.

Photographs were taken with the following equipment:

Photographs #	were taken by Dr. William R. Coe.
Photographs #	were taken by the author with a Rolliflex.
Photographs #	were taken by the author with a Rolliflex and high speed Ektachrome
Photographs #	were taken with Kodacolor X.
Photographs #	were taken with Kodachrome II.
Photographs #	were taken with a 35 mm. lens on a Lerca M-3 (35 mm.)
Photographs #	were taken with a 135 mm. lens on a Lerca M-3 (35 mm.).
Photographs #	were taken with a 65 mm. or 135 lens-heads on a Lerca M-3 equipped with a reflex housing and focusing bellows.

Operation numbers

The tomb and centerline tomb tunnel were dug under Op. 117A. Op. 117B was concerned with the building platform; and

117C covered general exterior excavations to determine the positions of corners, outsets, etc. What little work was done on Str.5D-72 was under Op. 117D.

Limitations

The Tikal Project's ceramicist has not yet completed his study of the pottery from Bu.196 nor has a complete evaluation of the sherds found in the pyramid fill been made. The skeletal materials in the tomb, likewise, have not yet been studied by the appropriate specialist. Many of the offerings found in the tomb have not yet been catalogued or drawn by the Lab staff; however, considering the volume of material uncovered, this is not surprising.

EXCAVATIONS

PRE-STR.5D-73 TIME-SPANS

The Great Plaza, the North Acropolis (T.R. 12), and the Central Acropolis (T.R. 15) all had their beginnings long before the erection of Str.5D-73. The North Acropolis was more or less in its final form, as was probably (to a lesser extent), the Central Acropolis. It is not known for certain whether Temples I and II were built yet (see p.).

PRE-STR.5D-73: FLOOR A

The earliest feature uncovered during excavation was a smooth, hard-surfaced floor found below Burial 196. When first uncovered the writer thought it was merely the floor laid by the tomb builders to cover over the rough cut they had made. The floor was traced below all four walls for a few centimeters. On the east side it was followed 1.90 m. eastward under and beyond the east wall of the tomb (Fig. 9) After the first 1.20 m., the fill of the tomb wall ended and the fill of what was presumed to be that of the Great Plaza was entered. The floor continued under the Great Plaza (7) fill. This means that the floor antedates the tomb cut as well as the previously existent construction on which the 73 pyramid was built.

There was not enough time to get sherd samples from

within or below the floor. There is no way to date the floor.

APPEARANCE OF THE STR.5D-73 LOCATION
PRIOR TO THE CONSTRUCTION OF STR.5D-73

Evidence For or Against an Earlier Structure

There was only one poorly-understood hint that there had been an earlier structure below the mound which is visible today. This was the presence of a mason's stairway deep within the fill of the pyramid which rests on a lower mortar layer than the two front mason's stairs. The front two mason's stairways are clearly part of the final phase of 73. The mason's stairway under consideration is well within the pyramid and not covered by fill of the projecting finish masonry stairway as are the two northern mason's stairways (see p. 68).

Also, the rough "floor" on which the front three construction stairways rest abuts the southernmost mason's stair. In addition, part of the southern mason's stair has been ripped out (see p. 71).

Evidence to negate this being the finish-masonry stair of an earlier pyramid was that no smooth, hard-surfaced, floor turned up to its base. What abuted its base was a rough layer of mortar. This mortar layer may have been intentionally laid or it may just be mortar dropped by the masons and trampled underfoot as the final pyramid was built.

There is no finish plaster on the south mason's stair, even though the stones are relatively well cut and placed. (Dr. William Coe does not believe there is evidence of an earlier structure). It is possible that this is indeed a mason's stair after all but a mason's stair for an earlier pyramid. This would explain why there was no floor turning up to it. The pyramid and finish floor which would have covered it would have been completely ripped out (see p. 71) just prior to the erection of Str.5D-73-1st.

If there were an earlier structure there may have been an earlier tomb; or, if there were an earlier structure, then Bu.116 may belong to it and not to the Str.5D-73 which is currently visible. In the latter case there is the possibility that a tomb also existed for the visible final stage Str.5D-73. If there were such a tomb, it either was removed by the robbery tunnel or is still awaiting discovery below where the robbery cut ceased.

THE BASAL PLATFORM

Most of 73's base appears to have been built on the Great Plaza, especially the northeast quarter. On the entire back side of 73, on about 1/3 of the east side, and on almost all the west side there was a two terrace basal platform (Piss. 21, 22). Temple I was situated in a similar position with the front built on the Great Plaza and the back built on a basal platform which rose from the East Plaza.

The question is, was the building platform built specially for Str.5D-73; and, if so, what was the boundary of the Great Plaza just prior to the construction of the basal platform?

The following discussion is based on the presumption that Str.5D-73 was constructed as a unit and was not rebuilt.

The west basal platform of Str.5D-72-3rd (?) (Fig. - -) (the earliest of three stages of this palace uncovered) probably created the west limit of the Central Acropolis.

It appears that the exterior 10 m. or so of what forms the basal platform of 73 was built specifically for 73, because the basal platform fits perfectly the plan of the pyramid and obviously appears to have been designed with 73 in mind. The plaza floor on which 73 was built was at an elevation of 250.31 m. at the foot of the front steps of 73, and 250.12 m. where cut through for the tomb. The centerline elevation of the south base of the pyramid is 250.60 m. which makes it difficult to claim that the plaza floor runs all the way south to cap off the finish masonry of the basal platform. As a pure guess, the author postulates that to the south and west Pre-Str.5D-73: Floor B would have turned over to a terrace facing for the respective edge of the Great Plaza (Fig. 26), probably about 5 or 10 m. short of where the basal platform limit is now. Thus, the basal platform seen today would be just a slight extension and rearrangement of the Great Plaza boundary built to receive Str.5D-73.

Furthermore, the tomb was cut through the plaza floor. It seems strange that the Mayans would first build up this area for the basal platform and then immediately cut down to build the tomb. The fact that there was a tomb cut suggests that at least this area had already been built up as part of the Great Plaza before it was decided to build the tomb and pyramid. One easy, but time-consuming method to solve this problem would have been to have continued the centerline tunnel southward until Pre-Str.5D-73: Floor B came to an end and/or to have started a centerline tunnel going north at the level of the base surface sustaining the basal platform. Hopefully, this tunnel would soon have run into the facing for the pre-73 Great Plaza south face.

The final phase of Str.5D-72 was built after Str.5D-73 (Fig. 25). An earlier phase of 72 was built on the same floor as 73. A still earlier phase of 72 was built before 73.

It is not known whether either Temple I or II was built before or after Str.5D-73. Because Temple I is similar in many respects to 73, it should eventually be possible to hazard a guess as to which is earlier on the basis of stylistic analysis. Evidently Temple II was built at about the same time as Temple I (Wm. Coe, 1965, p. 41). If the relative date of Temple I - Str.5D-73 were known then an approximate relative date for Temple II - Str.5D-73 might be known.

In 1966, an attempt was made by R. Larios to connect the floor sequence of 73 with that of Temple II by digging a

trench between the two structures. Unfortunately, the floors were not very well preserved, and the Park road runs between the two structures. However, by knowing how many and what kinds of floors turn up to the two structures, in the future some sort of relative date might be guessed.

STR.5D-73 TIME-SPANS

Below is a list of the Str.5D-73 Time-Spans and construction stages which were uncovered by the limited excavations undertaken. It is based on the assumption that Str.5D-73 was a one period construction.

STR.5D-73: TIME-SPAN 9	DESIGN PHASE
STR.5D-73: TIME-SPAN 8	A MAYAN NOBLE DIES
STR.5D-73: TIME-SPAN 7	CONSTRUCTION OF THE TOMB
Construction stage 10	Digging the tomb pit
Construction stage 9	Bench fill
Construction stage 8	Tomb walls erected
Construction stage 7	Wall plastered (plastered to edge of tomb cut)
Construction stage 6	Front put on bench
Construction stage 5	Tomb floor and bench plastered
Construction stage 4	Body and offerings placed in tomb
Construction stage 3	Cloth stretched across burial at wall top level
Construction stage* 2	Vault
Construction stage* 1	Wooden pole roof

STR.5D-73: TIME-SPAN 6	CONSTRUCTION OF THE PYRAMID
Construction stage 12	Flint and obsidian bearing fill
Construction stage 11	Non-flint fill to floor cut
Construction stage 10	Mason's stairway #4
Construction stage 9	Rip-out of part of mason's stair #4
Construction stage 8	Rough layer of mortar turning up to rip-out
Construction stage 7	Mason's stair #3
Construction stage 6	Mason's stair #2
Construction stage 5	Mason's stair #1 and Problematical deposit 171
Construction stage ⁺ 4	Pyramid finish masonry
Construction stage ⁺⁺ 3	Building platform
Construction stage 2	Final stairway
Construction stage 1	Building platform stairway
STR.5D-73: TIME-SPAN 5	FLOOR IN PASSAGEWAY BETWEEN STR.5D-73 and 72
STR.5D-73: TIME-SPAN 4	PLAZA FLOOR WHICH TURNS UP TO EAST & NORTH SIDE OF 73
STR.5D-72: TIME-SPAN 3	FINAL PHASE OF WEST BUILDING PLATFORM, PLAZA LEVEL
STR.5D-73: TIME-SPAN 2	RENOVATION OF SOUTH BASAL PLATFORM
STR.5D-73: TIME-SPAN 1	TOMB ROBBERY ATTEMPT

Notes on the Sequence of Activity

The above sequence is only a list of the constructional activity discovered by limited excavation and not a list of everything which is thought or known to have gone on. For

instance, it is known from extensive excavations in Str. 5D-33-1st, Str.5D-37, Temple I and elsewhere, that Late Classic pyramids at Tikal were built up terrace-level by terrace-level. After each level was erected, it was covered with a rough to even layer of light colored lime mortar. Str.5D-73 was almost certainly built in this manner; but it is not known where the construction stairways fit into this sequence. Thus, the terrace levels are not mentioned in the list.

There is no time-span allotted for the use of 73, because there is no evidence that the pyramid was ever finished. This is presuming that it was meant to have a masonry temple on its summit.

STR.5D-73: TIME-SPAN 9 - DESIGN PHASE

The writer always likes to set aside one time-span for the "design stage". Large structures such as 73 were not just suddenly put up. There has to have been a reason for expending all the energy it must have taken to raise 73; some sort of plan was probably previously drawn up by an actual architect so that a building was designed and not erected arbitrarily. Numerous examples of what could be architectural sketches are known, most of them graffiti. There are several graffiti which look like preliminary drawings for stelae and (Bullard, 1965, Fig. 4). It even appears that the Mayans had some notion of city planning or at least

plaza planning (*ibid.*, p. 47). For Str.5D-73 there are, of course, no preliminary drawings remaining.

As for why 73 was built, theory and evidence will be presented on page . As for the actual method of erecting 73, a great deal is known from intensive excavation of Temple I and Str.5D-33-1st. The writer did some work on Str.5D-33-1st and investigated the problem concerning the sequence of construction in Str.5D-37. In this report only general constructional trends will be noted, because there was neither time nor any special need to look for the detailed constructional sequence in the 73 pyramid. In 73, the emphasis was on the burial and on the top of the building platform.

There is no way of knowing whether the design phase occurred before the ruler died or not (see p.).

STR.5D-73: TIME-SPAN 8 - DEATH OF A MAYAN NOBLE

Although it is a known fact that the Mayans sometimes planned and built their burial temples before death (Temple of the Inscriptions, Palenque), it appears that the usual practice was to erect the pyramid just after the body had been interred. In the case of the Palenque mausoleum, there was a well built passageway allowing convenient access to the burial chamber after the pyramid was finished. In 73 there did not appear to have been any way for the body to have been interred after the pyramid was built; however, excavation was not extensive enough to find such a tunnel en-



Fig. 3. Exterior section through the roof.

SEE FIG. 1A, FOR THE EXTERIOR ILLUSTRATION
 THE SUBJECT OF CONSTRUCTION OF THE TOMB.

trance even if it had existed.

One possibility is that the tomb pit was dug and that the tomb walls were erected; then the tomb remained in this open condition until the ruler died. (From evidence within the tomb it is known that the burial took place before the vault was erected). The author doubts that the tomb pit remained open in this manner because no provision for drainage was found.

Another possibility is that the tomb-to-temple sequence was continuous with someone being sacrificed and put into the tomb. There is no positive evidence for this and a great deal of negative evidence (see p.).

The author's belief is that no building activity began until some Mayan in authority died, after which the tomb was built with the pyramid covering it immediately after the burial ceremonies.

STR.5D-73: TIME-SPAN 7 - CONSTRUCTION OF THE TOMB

Construction Stage 10: Digging the Tomb Pit

Before the tomb pit was dug, a decision had to be made as to where to locate the burial temple. Very little, if any, investigation has gone into this question. Was a central location, a sacred location, a practical location or some combination of these or other considerations a guiding factor in the choice?

Constructionally, the first activity was that of digging a large rectangular pit for the tomb (For all the description which follows it would be helpful to look at Fig. 14 on page). It would have been interesting to have intensively investigated the sequence and extent of this operation but there was not enough time. Only two limits of the tomb cut are known; the first limit is the northernmost one. The edge of this cut was found in the centerline tunnel approximately 17 m. south of the front stairway. Here the floor had been cut through, with the cut leading down 4 m. until an old floor was reached. It is presumed that this cut travelled more or less straight down, although the side of this cut was not followed down more than about 10 cm. Instead, as a work-saving method, the tunnel went down diagonally.

The east edge of the cut was followed down from the level of the plaza floor (Pre-Str.5D-73: Floor B) all the way to the bottom of the tomb, just over 4 m. There was an obvious difference between the plaza fill which the Mayan workmen cut through and the fill behind the tomb walls. The edge of the tomb cut was roughly horizontal with a slight slope.

Neither of the other sides of the tomb cut were reached in excavation. It is presumed that the tomb cut was approximately rectangular. It is possible that rough steps were cut into one of the unexcavated sides of the cut. Such steps have been found leading down into other tombs at Tikal (Bu.195 in Str.5D-32). The total area of the tomb cut is presumed to be

4.40 m. north-south, 7 m. east-west and 4 m. down. What happened to all this fill is unknown; it could have been stock-piled nearby for eventual use in the 73 pyramid.

Construction Stage 9: Fill for the Bench

Surprisingly, before the walls were begun, the bench was begun. All the bench fill, with no plastered surface and no facing masonry was put into place. Only then were the walls begun. One aspect of construction that makes this seem strange is the fact that there was no apparent layer of mortar covering the fill to indicate a pause - yet it is known that the bench top was not plastered nor was the bench fronted with finish masonry until all four walls had been erected to their full height and plastered. Unfortunately, this perplexing aspect of the tomb's construction sequence could not be investigated any further because it was discovered just before the author had to leave Tikal and when his workmen were reassigned to newly arrived staff members.

Artifacts

Artifacts from the bench fill were cataloged under Op. 117A, Lot 41. 1 lb. 13 oz. of sherds were found but they have not yet been studied.

Nature of the Plaza Fill Which was cut Through

It appears that it was the Great Plaza, near its south-

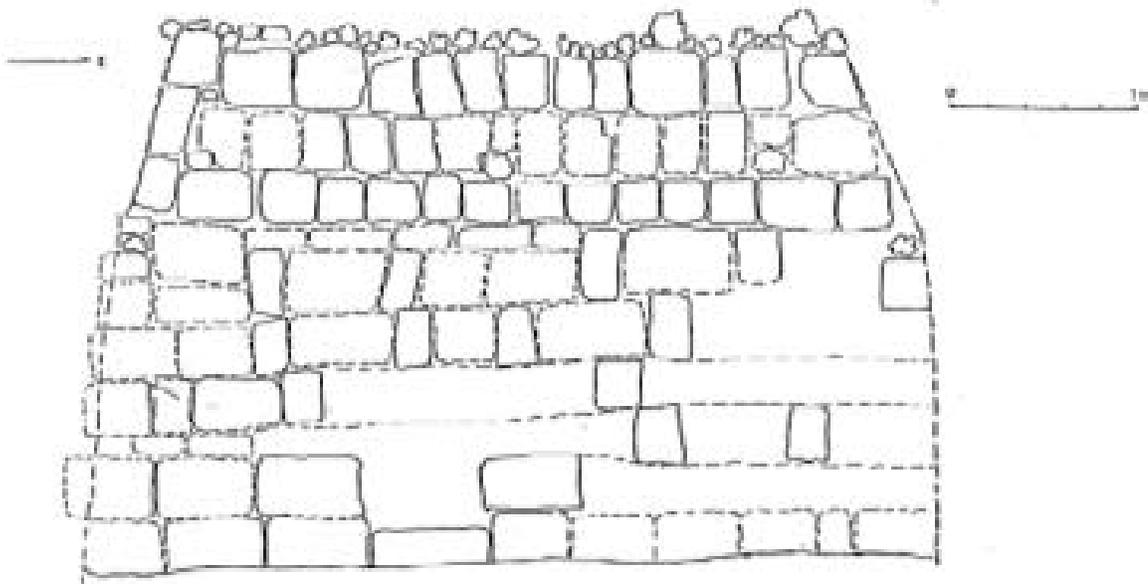


Fig. 10. No. 104, north side masonry detail elevation.

west corner which was cut through to build the tomb. A 4 m. deep section of the plaza fill was exposed when the east side of the tomb out was exposed. The fill was not composed of large stones, but looked like trash and other non-construction debris; the fill was all in lenses of varying thickness (average lens was 5 to 20 cm. thick, memory). These lenses were generally horizontal but on an angle sloping down to the north. Many of the lenses contained numerous small fragments of charcoal.

CONSTRUCTION STAGE 8: ERECTION OF THE TOMB WALLS

One thing which should be kept in mind when the tomb is discussed is its rather unusual "vault". Rather than having a vault slope until there is only a 30 cm. or so gap between the sides and then having a wooden capstone, in Bu.196 the vault only goes up three courses and then is roofed by wooden poles. It is easiest to visualize this by looking at the two cross-sections of the tomb chamber, Figs. 8 and 9.

NORTH WALL

The north wall of the tomb was built directly on Pre-Str.5D-73: Floor A (Fig. 8). The dimensions of this and the other walls are given below:

NORTH Base length = 4.50 m.	Top length = 4.22 m.
	West height = 1.84 m.
	East height = 1.72 m.

SOUTH Base length = 4.52 m.	Top length = 4.26 m.
	West height = 1.60 m. (+ bench)
	East height = 1.50 m. (+ bench)
WEST Base width = 2.26 m	Top width = 1.94 m.
	South height = 1.44 m. (+ bench)
	North height = 1.76 m.
EAST Base Width = 2.28 m.	Top width = 2.08 m.
	South height = 1.46 m. (+ bench)
	North height = 1.72 m.

Except for a few bits and pieces of masonry near the corners, the top three courses had peeled away from the fill and had fallen. In the case of the header stones, only the fronts were sheared off with the butts remaining in place (Fig. 10,). The masonry detail elevations of all the tomb walls were often based on the fact that although the stretcher stones may have collapsed, the butts of the header stones and the easily-discernable mortar course-layers made possible a fairly detailed reconstruction (in broken line), which is an accurate representation of the original facing. Where the wall was too collapsed for a reconstruction, the area is left blank in the drawing.

Where the wall facing had peeled away, it was possible to see that there were no offerings of flint and obsidian in the fill. This is an important fact, because such offerings were profuse in the fill over the tomb's ceiling but were not behind the vault stones (see p. 57). A faint trace of red (cinnabar) could be seen on one of the stones. This coloration apparently occurred when red powder was being sprinkled

on the offerings. There was no attempt to cover the walls with red; and the red that is present is there unintentionally.

The wall was pierced by two beams of logwood (Figs. 9, 10) (see p. 35). One beam penetrated the upper course near each upper corner.

SOUTH WALL

Strangely enough, the south wall did not rest directly on the tomb's base surface but rested on the fill of the bench. At the top of the bench fill, under the final plaster coat (Construction Stage 5), there was no discernable level or layer of mortar marking off the top of the bench fill. The tomb floor-bench-top plaster turned up to the plaster of the south wall just as it did to the other walls. This problem was only investigated in one place, but here the wall merely rested on the fill of the bench.

The stones of the south wall pass by those of the east wall. The southwest corner was too poorly-preserved to determine the sequence here. Traces of red pigment were visible in places where it splashed or was accidentally thrown. Coming from the vault above was a long drip-line showing quite dramatically how wet the vault plaster was when it was applied.

It was over the south wall that conclusive evidence was found that a textile had been stretched over the tomb at wall top level, just prior to the erection of the vault (see p. 45).

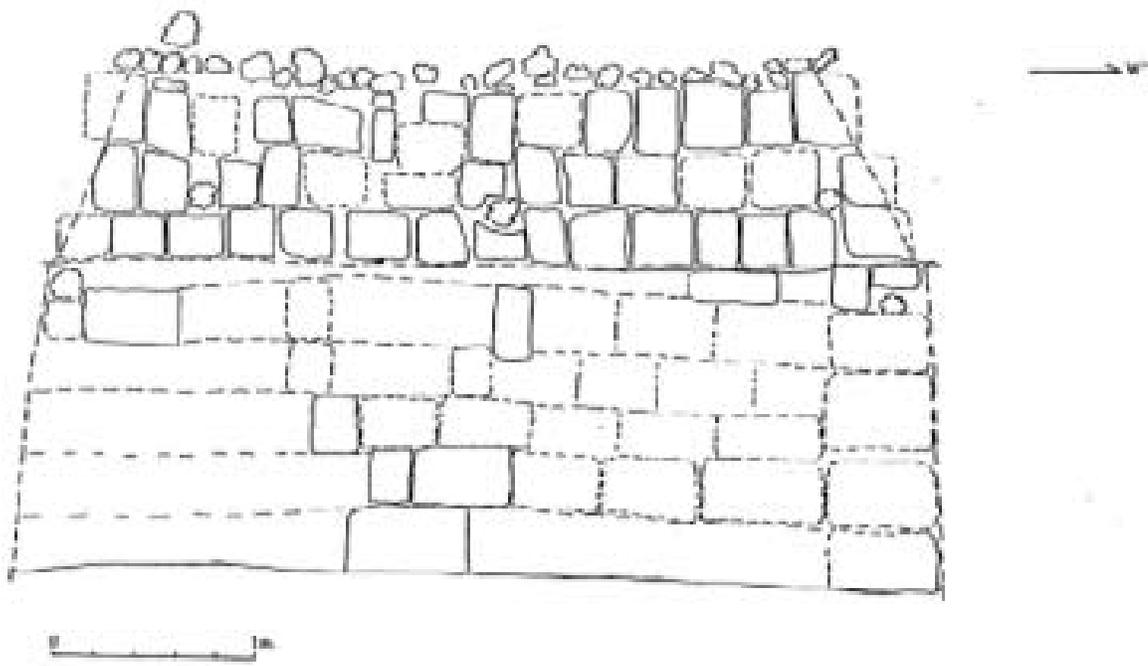


Fig. 11 South side, masonry detail elevation, No. 170



Photo 13 Bu. 196, east side showing excavator's method of entrance, before excavation.

0 1 m.

N

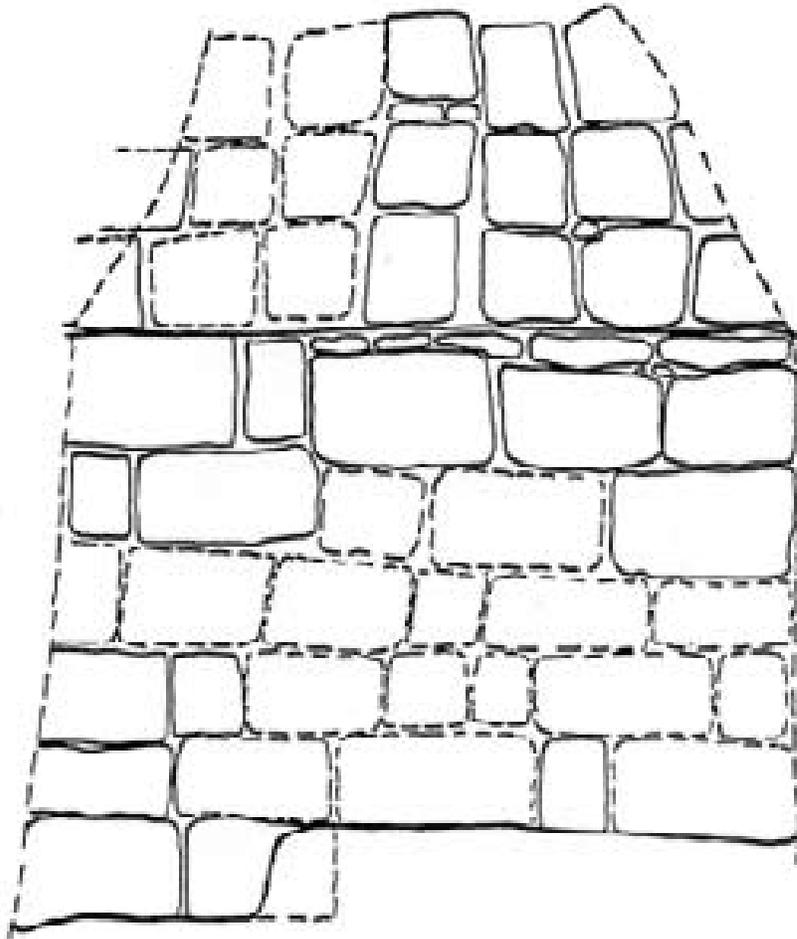


FIGURE 12 EAST SIDE, DETAIL ELEVATION OF MASONRY SCALE 1:20



Photo 14 West side of Bu. 196 before excavation.

0 1m.

→ N

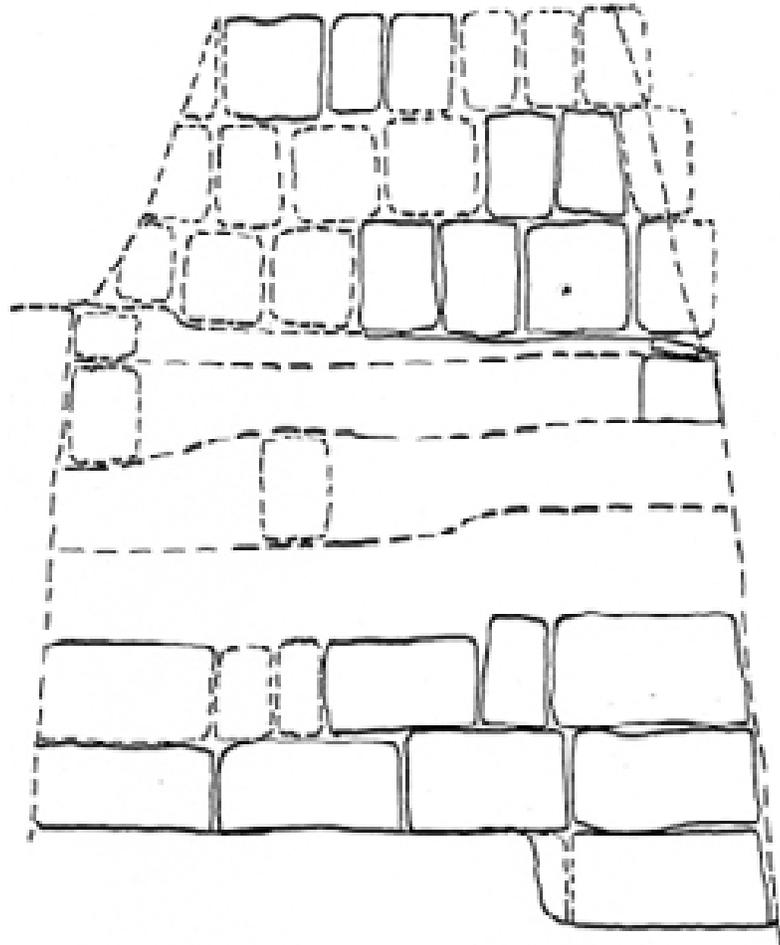


Fig. 13 Bu. 196, west side masonry detail elevation.

There were two holes for wooden cross beams as in the north wall (see p. 35).

EAST WALL

The east wall was the best preserved of all (Fig. 12, Photo 12). The top course was still intact although slightly cracked. Most of the 5th and 6th courses had slumped out of place but were still standing. Here, on the east wall, is the mark made when the wall buckled and was forced against the sub-vault tie beam (Photos 12, 18), and a piece of charcoal. The 1 1/2 by 1/4 cm. got plastered into the wall's surface.

The author remembers that this wall was built after the bench fill, but before the front facing of the bench and the tomb floor plaster. Thus, in the masonry detail elevation there are no whole stones hidden by the bench.

WEST WALL

For dimensions of this wall see p. 30. The uppermost four courses of the wall had fallen. (Fig. 13, Photo 13).

Masonry

The masonry of these walls was similar to that of a typical Tikal Late Classic palace interior (i.e., Str.5D-38-1st). The stones used were rectangular blocks whose sides were roughly finished. The fronts of the stones were covered with plaster and were not observed. For the top course, the

top front edge may have been slightly rounded off; or, the roundness could be mainly a result of the curvature of the plaster. The top of the upper courses was not an even plane, but had numerous bumps and dips. This was noticeable because it was easy to remove the vault stones leaving the top of the wall plaster intact--complete with its wall-top textile impressions (see p. 45), (Photo 19). The unevenness of the wall top was most clearly visible on the west wall; it may, however, be somewhat due to pressure from the vault above.

The wall stones were laid in courses with approximately six main courses and one "leveling off" top course. The coursing was far from exact, with numerous irregularities. This type of "leveling off" course seems to have been a common Late Classic architectural trait at Tikal. The top course of Str.5D-38-1st's walls had an identical course whose especially small size can possibly be explained by two factors. One possibility is that this was the easiest way to get an exactly or approximately level top for the wall's facing masonry; it is easier to cut and fit small stones than to try to get an even top surface out of regular larger-sized stones. It appears that, although the wall stones were generally the same size, there was enough differentiation to create the disruption of courses which is so obvious. There was no noticeable pattern of headers and stretchers. There were always more stretchers than headers.

The alternate reason is that there may have been a pre-

FIG. 14 SEQUENCE OF CONSTRUCTION STAGES, BU.196

A THE GREAT PLAZA AS IT IS PRESUMED TO HAVE BEEN PRIOR TO THE CONSTRUCTION OF THE TOMB. (Plaza surface floor at extreme upper plane, fill reconstructed)

B CONSTRUCTION STAGE 10: RECTANGULAR CUT MADE INTO PLAZA FILL FOR TOMB (sides of tomb cut reconstructed from available evidence).

C CONSTRUCTION STAGE 9: PLACING IN OF THE BENCH FILL (fill may have gone all the way to the south edge of tomb cut)

D CONSTRUCTION STAGE 8: ERECTION OF THE TOMB WALLS (fill behind walls is reconstructed)

E CONSTRUCTION STAGE 7: TOMB WALLS AND WALL-TOP PLASTERED

F CONSTRUCTION STAGE 6: FRONT FINISH MASONRY PUT ON BENCH

 CONSTRUCTION STAGE 5: TOMB FLOOR AND BENCH PLASTERED

G CONSTRUCTION STAGE 4: BODY (IN BUNDLE) AND OFFERINGS PLACED IN TOMB

H CONSTRUCTION STAGE 3: CLOTH(S) HUNG OVER BURIAL AT WALL TOP LEVEL

I CONSTRUCTION STAGE 2: VAULT ERECTED (fill reconstructed)

J WOODEN POLE ROOF AND FLINT & OBSIDIAN BEARING FILL

Drawings are at a scale of 1:20, north to the left and were reconstructed from all available evidence.

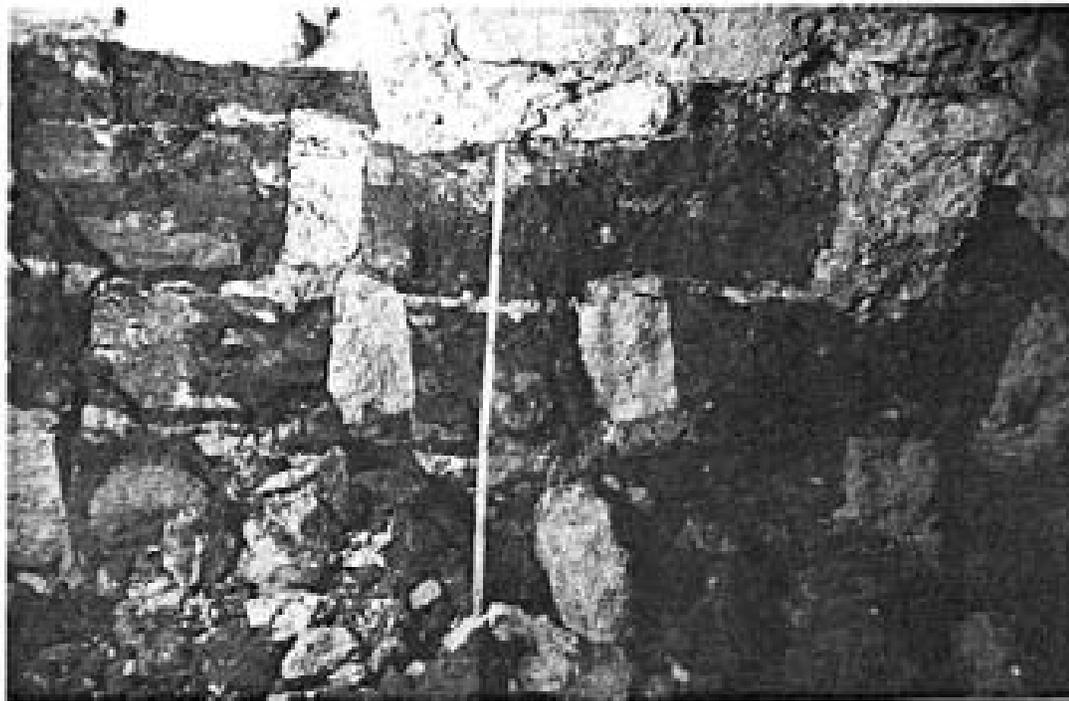


Photo 15 Du. 196, upper courses of north wall with stretcher stones collapsed but butts of headers visible.

determined wall-height governed by a system of proportion. The approximately 30 cm. high wall course may not have come out even under this system.

The mortar used between the headers and stretchers was grey lime mortar; but the ends of the headers were held in place by mud mortar which came right up to the back of the stretchers. Each course was laid as an entity, an entire course being laid before the next one was started. It was, however, not determined whether one course was continuous around all four walls as was the practice in Str.5D-38-1st.

Each course was topped by a layer of light grey lime mortar (Photo 15). This mortar went back at least to the end of the headers, i.e., it covered the mud mortar which was behind the stretchers and around the butts of the headers. It would have been interesting to see how far back the course top mortar layer went. It clearly went back the length of a header. The detailed sequence of construction may have been: after the headers and stretchers of a course were put in place, one workman would put good quality lime mortar around the stretchers and around the front half of the headers. This may clearly be seen in photographs (Photo 15), where there are strata of lime mortar visible over the mud mortar. Whether or not the layer went back all the way to the edge of the tomb cut is not known. The only area where the tomb wall was cut through the plaster layer did not extend far enough back to be recorded; however, in the cramped tunnel such a

fine layer might have been overlooked.

A few sample dimensions for the stones are listed below.

STONE DIMENSIONS: STRETCHERS	<u>LENGTH</u>	<u>HEIGHT</u>	<u>DEPTH IN WALL</u>
	53	32	?
	55	30	21
	55	30	19
	56	30	?
	54	34	?

There was no way to find out how deeply the headers penetrated into the fill, because the walls were ready to collapse completely, and it would have been unsafe to dig out the butt ends of any of the wall stones.

All of the walls had a considerable negative batter which was not entirely a result of partial collapse.

The author is not qualified to speculate as to what forces or faults caused the collapse of the walls but not the vaults, and especially the shearing-off of the fronts of the vault stones without their complete collapse. There must have been great pressures on the walls from fill behind them.

Wall Cross-beams

In both the upper corners of the north and south walls, there were wooden poles spanning the width of the tomb. These poles were inserted during construction, and their presence has immeasurable importance for several reasons. First, the beams show that the north and south walls were built at the same time. Since the south wall was built on

bench fill and not on the floor on which rested the north wall, this demonstrates that the bench fill was the first constructional operation of the tomb.

Secondly, the position of the tie beams fortunately provides proof that the tomb walls, and possibly the vault, collapsed very soon after the burial was sealed.

BEAM MEASUREMENTS

	DIAMETER**	NORTH/SOUTH		TOTAL	
		WALL PENETRATION	SPAN	LENGTH	
WEST, WALL	9 cm.	45/45 cm.	1.98 m.	2.88 m.	
EAST, WALL	11	45/70	2.09	3.23	
EAST, VAULT	11	57/57	ca. 1.70*	ca. 2.84	
MIDDLE, VAULT	14	57/55	1.50	2.62	
WEST, VAULT	10	87/67	1.69	3.23	

** Logwood has an irregular outline and diameters are averages.

* Vault face has been sheared off and the vault has buckled making exact measurement difficult.

These measurements are included here to emphasize how substantial these beams are; they are clearly logwood, an extremely hard, long-lasting wood characterized by an irregular outline in cross-section. The tree still grows in "bajos" or seasonal swamps around Tikal.

When the tomb was found, none of the tie beams or roof beams were still in place. They had all rotted and fallen; but many had fallen and then rotted, the sequence being very important. In the socket holes the fluffy, shriveled wood remains were often present, still maintaining their charac-



Photo 16 East (?) end of tomb before excavation showing fallen wooden wall beams.



Photo 17 Looking west at the southeast corner of the tomb walls, showing fallen wall beams.

teristic outline. In other cases, the socket holes in the walls and vaults were just partially filled with the rotted wood powder. A number of large samples were taken for C₁₄ tests; but no tests were run by the University Museum. A large majority of the beams, both roof, wall, and vault, lay on top of the uppermost debris of the collapsed walls. Of these, most seem to have fallen when not altogether rotten. They lay in recognizable strips and sections (Photos 16, 17). Other wood remains were only slightly buried by collapsed masonry and fill.

The remains of the west wall cross beam lay on top of fallen wall debris. Since the extreme east and west ends of the tomb floor area are protected from falling roof beams by 40 cm. of vault overhang, it is doubtful that a roof beam would end up in this position. In addition, a roof beam would tend to be at least slightly covered by flints, obsidians and other debris from the roof. The fact that this beam, no matter where it came from, lay on top of all the collapsed debris indicates that by the time it was rotten enough to either fall of its own weight or break through pressure, the tomb had already collapsed almost to its maximum extent. Many of the lower courses of the west vault had collapsed as had most of the upper wall courses. The falling wall would hit the wall beam (as indeed there is positive evidence elsewhere, see p. 38) as they fell. If this occurred many years or centuries after the tomb's erection then the beams would be somewhat

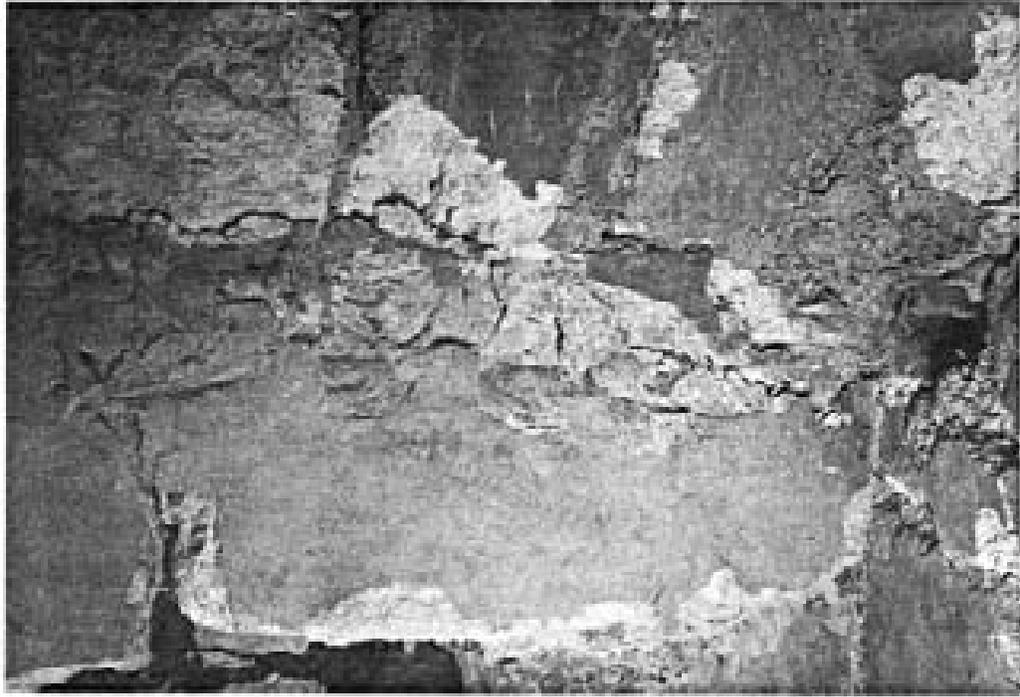


Photo 18 East wall of Bu. 196 showing dent in buckled wall caused by east wall beam.

weakened and would probably break and be mixed in with the fallen debris; but, the wall beam was strong enough not to be disturbed; and, after the large number of years rotting, it finally collapsed of its own weight and fell to cover the already fallen wall debris.

On the east side, there is even more graphic and convincing evidence that the tomb fell in while the wood was still strong. The entire east wall, similar to many other parts of the tomb facing, buckled as a result of the pressure of the tons of fill over and behind it. This pushed, the wall right into the eastern wall cross beam with enough pressure to leave a considerable beam impression in the upper courses. (Photo 18, Fig. 12). Fortunately, the beam was strong enough to resist this thrust; and the wall, slightly pushed out, still stands today.

Other indications that the tomb wall collapsed within at least a few years after its construction were found among the offerings. When a large fallen stretcher stone was lifted up, on its undersurface (it lay horizontally) was the perfect impression of the rim of a stuccoed wooden bowl. Beneath the stone were the remains of the bowl, now completely rotted. Although a wood beam might remain strong for some time, this wooden bowl would probably be weak enough to be crushed after a few decades (???) . For further discussion of this bowl see p. .

A third important result of the presence of the beams

is the fact that the wall-top textile which covered the tomb draped itself over the east beam. When the vault plaster was slopped on, (see p. 46) some of this plaster was caught in the east corners. The cloth eventually rotted; but its impression is recorded on the underside of the overhanging plaster.

Rather than secondarily carve a wall stone to accommodate the beam, the course was disrupted and smaller stones were put around the pole. In the vaults the regular stones were adapted probably because the facing stones had to be a certain size and shape to fit into the preconceived pattern, whereas in the walls there were not so many structural considerations.

At one point the author wondered why there were only two wall beams while there are three vault beams. A middle wall level beam would have made it difficult if not impossible to lower in the body of the deceased, whereas the middle vault beam would have come in handy to support scaffolding or planking on which Mayan workmen could sprawl to build up the vault. Between the vault beams the maximum space is 1.30 m. If the body was not placed in until after the vault was erected the priests would have a hard time getting the body in. The body would have to have been tilted, which would have caused all his jade to bounce around; however, as found, all his ornaments were in perfect natural position. That the body was "dressed" inside the tomb is possible but doubtful.

Artifacts From Fill Behind the Walls

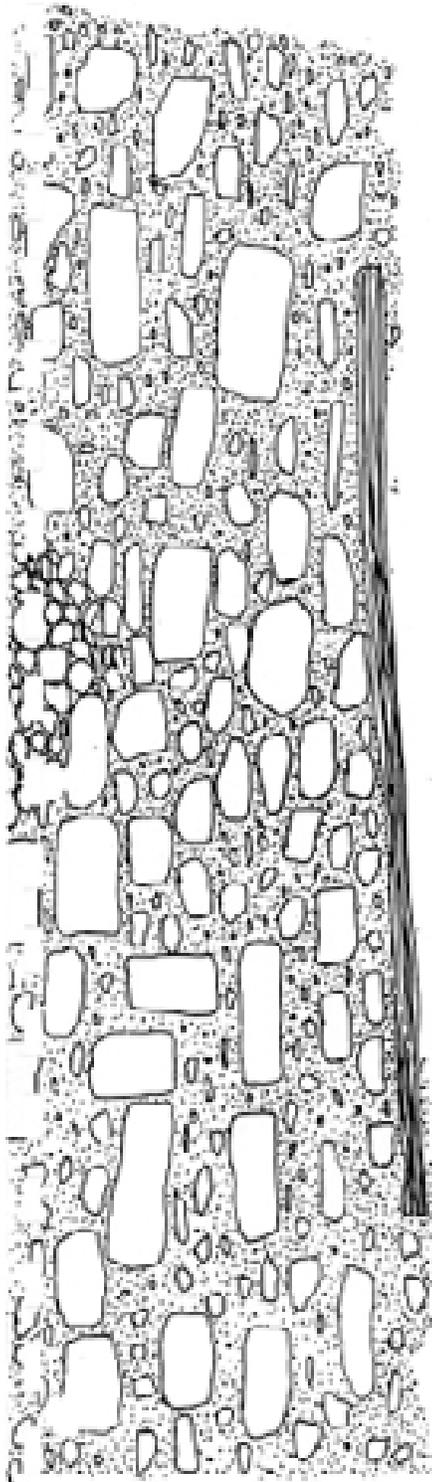
All the cultural material which was incorporated within the fill behind the walls was mixed with that of the collapsed roof material in the tomb chamber and could not be separated. So, most of the sherds, etc. which occurred in the debris over the tomb offerings were from the wall, except for the flints and obsidians. There were no offerings of flint and obsidian chips behind the walls or vaults as there were over the roof.

CONSTRUCTION STAGE 7: PLASTERING OF THE TOMB WALLS

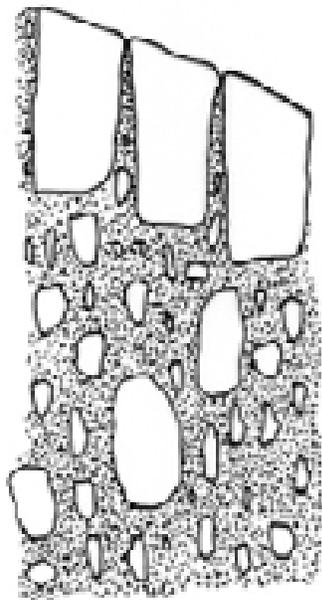
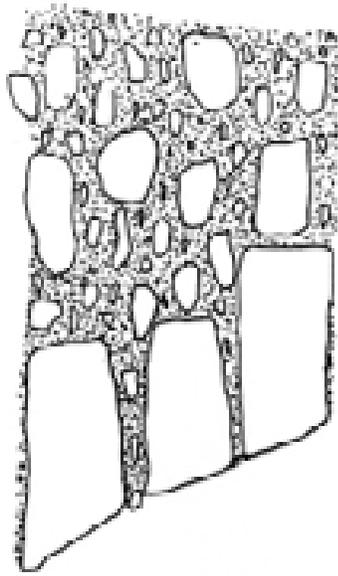
The next constructional activity was that of completely plastering the wall faces and "wall-top burial-pit ledge" with a coat of lime plaster of maximum thickness, 1 cm. The plaster was generally smooth and light grey. It had not, however, been smoothed as much as some wall plasters. It appeared that the plaster was either smoothed or somehow finished with a brush. It is possible that the visible brush (?) strokes are only on a final coat which lies over a rough main layer; but this is only a guess, as laminations of the plaster were not observed or looked for. The plaster was applied in 30 cm. semicircular strokes. Whatever tool was used had an effective dimension of 8 cm. According to field notes, the plaster application was neat but not flawlessly smooth (see Photo 18). No hands were used directly to apply the wall plaster; of importance because the vault "plaster"

was carelessly slopped on by hand and hand and finger marks are evident everywhere (see p. 52).

The wall plaster did not stop at the upper edge of the wall but made a right-angled turn and covered the horizontal plane of the top of the top course and the fill behind the wall all the way to the edge of the tomb cut. Upon entering it was evident that the wall plaster made a neatly rounded 90° turn to cover the top of the uppermost wall course. However, in removing the vault stones to enlarge the working entrance to the tomb (for overweight visitors), it was discovered that the wall top plaster continued horizontally and that on the upper surface of the plaster was the well-preserved impression of a textile. A trench was immediately carefully dug eastward, following the level of the top of the wall 1.60 m., until the plaster layer gave out against the vertical edge of the east side of the tomb cut (Fig. 9). In delicate excavations such as this, the Guatemalan workmen showed what careful, patient, and skilled excavators they could be. All the vault mass was removed and the cloth impression in the fragile plaster layer was left perfectly intact and clearly visible. Later this trench was dug down to the level of the base floor (Fig. 9) to follow the tomb cut down to its bottom limit. Later, the textile impression was found to occur over the wall top on all sides of the tomb. In many places the top wall courses had fallen, but the bottom courses of the vault remained in place. In



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Transparency # 2

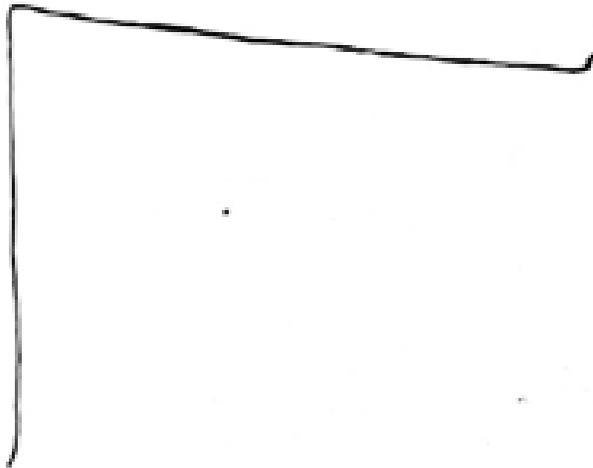
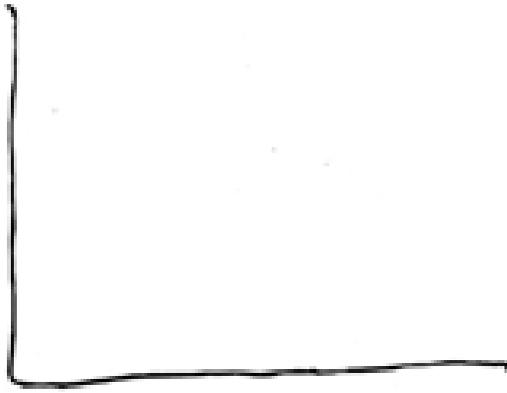


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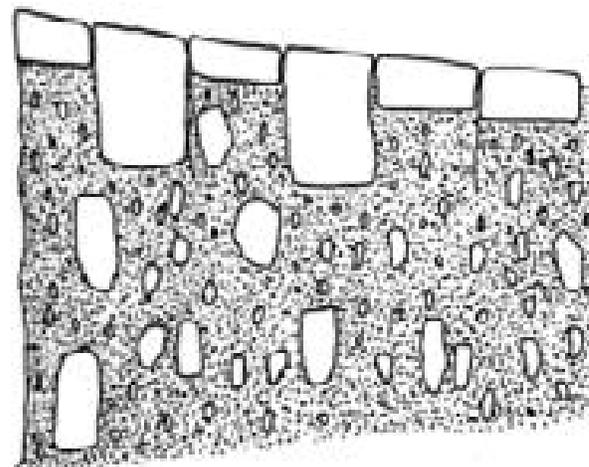
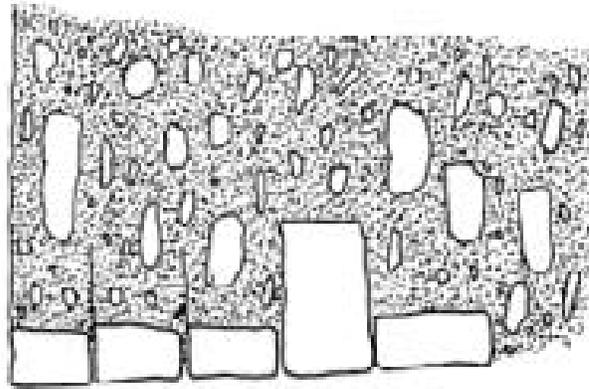




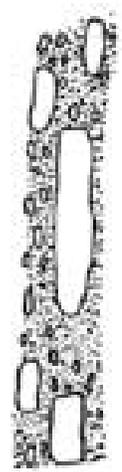
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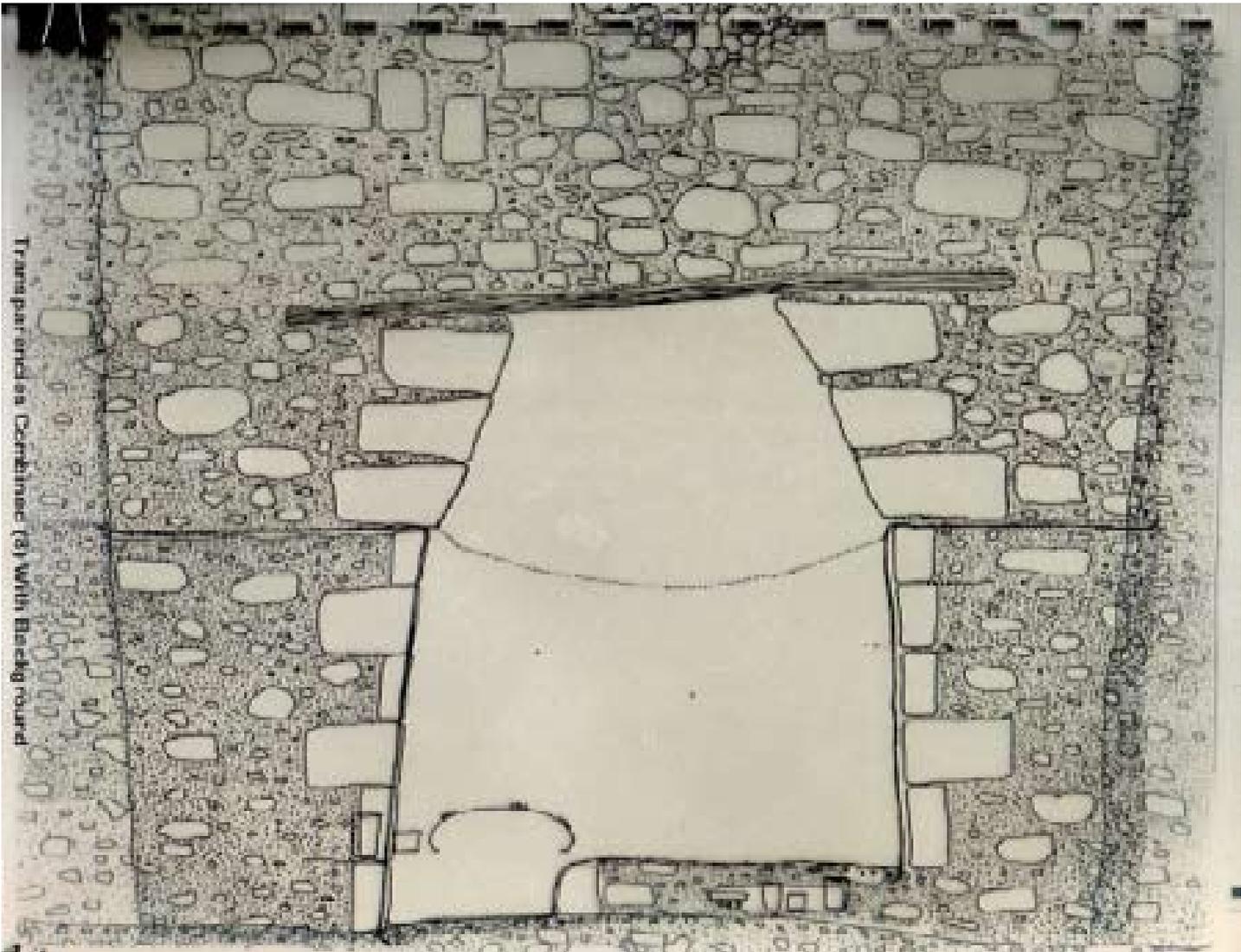
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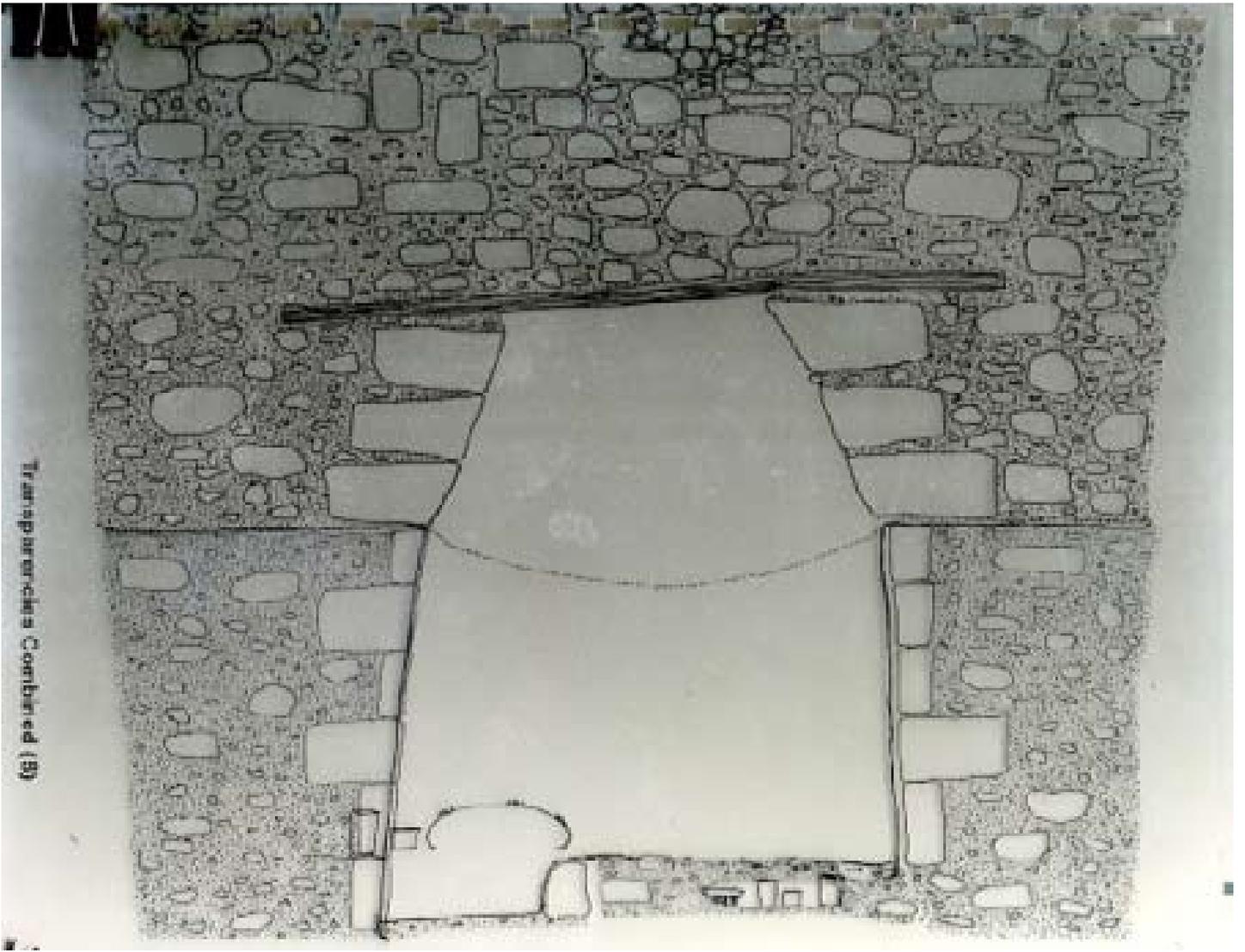
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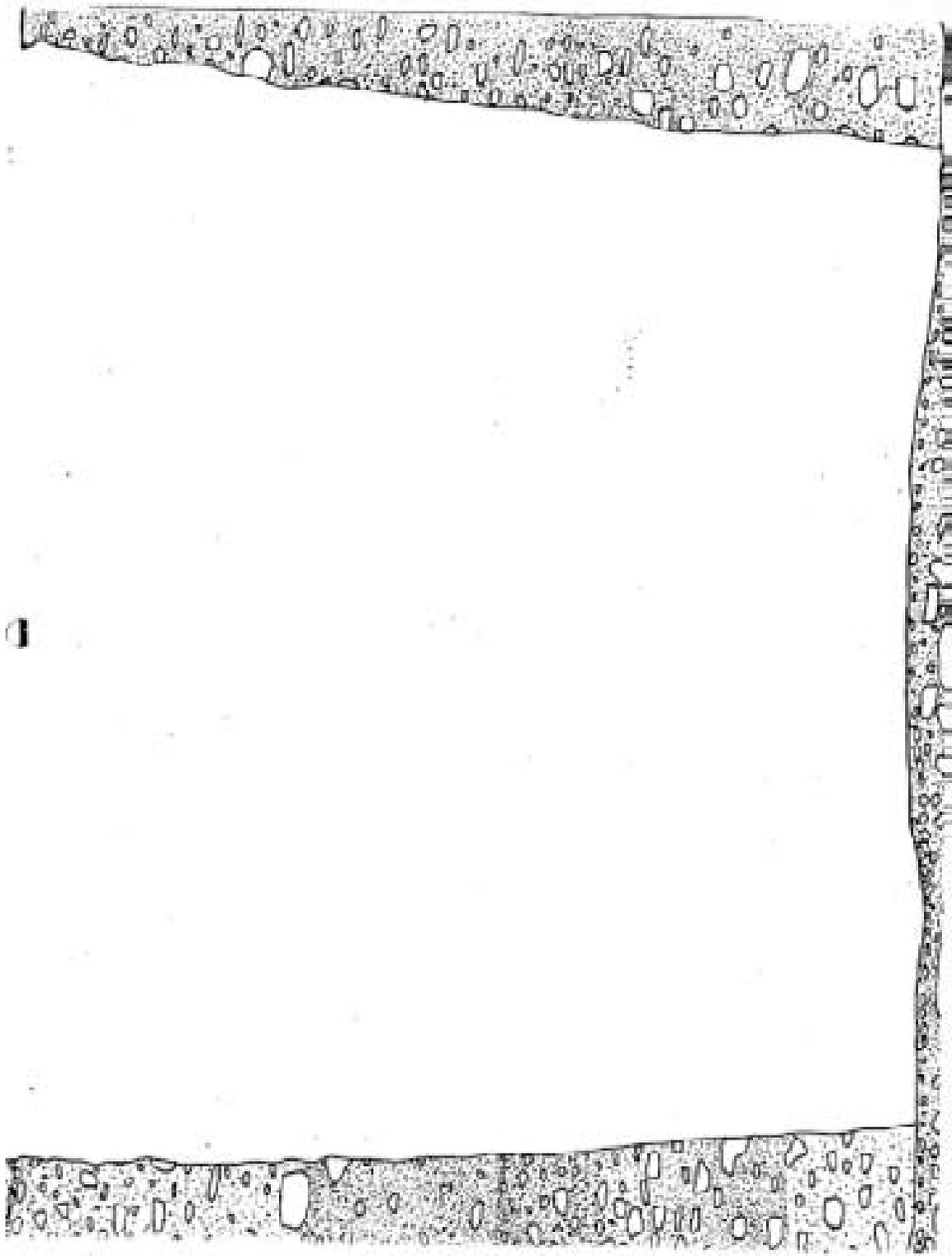
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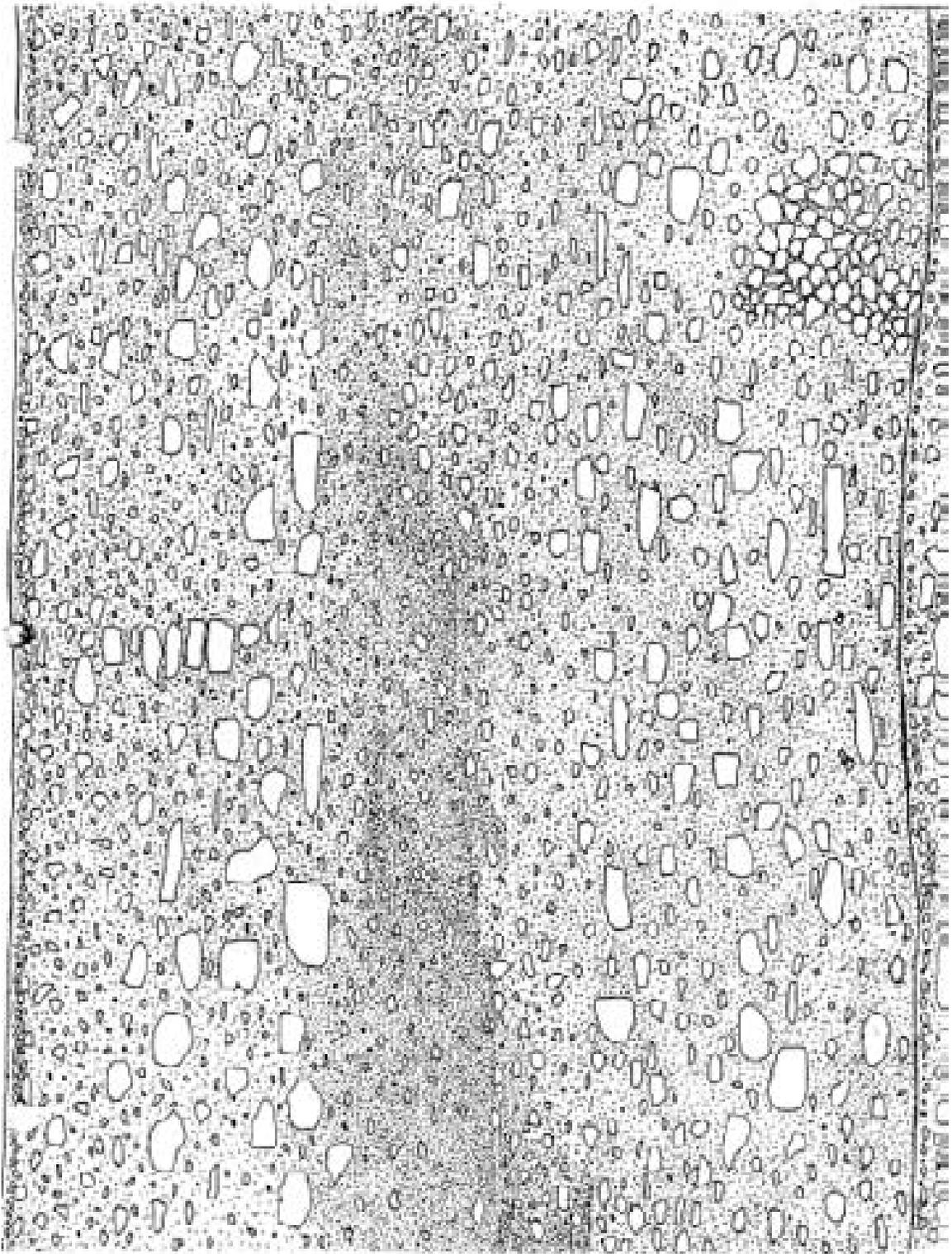


Transparent endosperm Combined (8) With Beady ground



Transipureschis Combined (B)





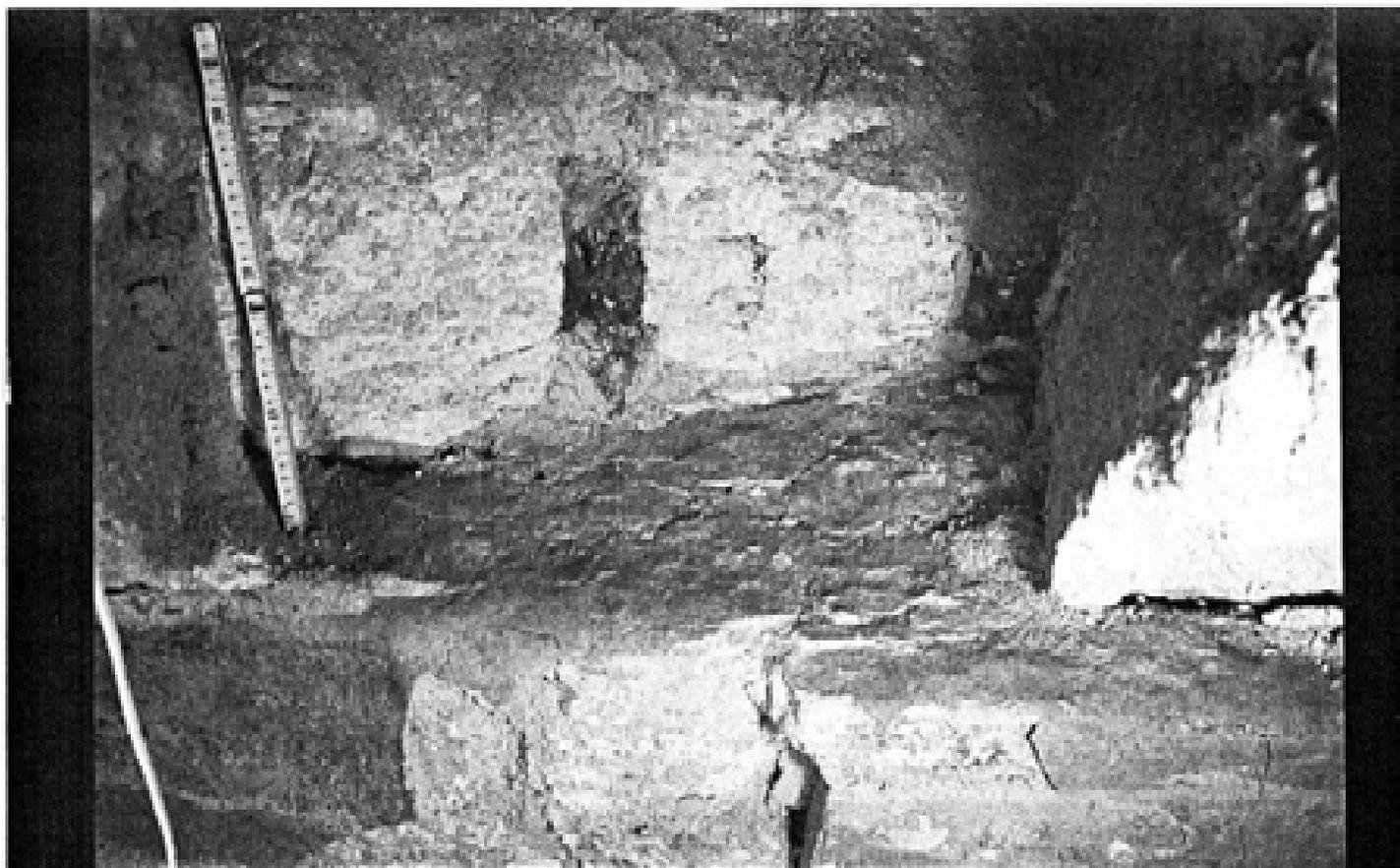


Photo 19 East wall of Du. 196, wall top plaster turn-over with the vault stones removed.

such places the textile impression was visible in the mortar under the vault courses (see p. 45).

CONSTRUCTION STAGE 6: FACING PUT ON BENCH FRONT

Next, a row of facing masonry was placed on the north side of the bench fill. The stones were the same type as those used on the walls. It was not observed whether headers, as well as stretchers, were used. The stones were all laid on edge and were an average of 30 cm. high.

CONSTRUCTION STAGE 5: PLASTERING OF TOMB FLOOR AND BENCH TOP

The following step was to cover the floor and bench top with a layer of plaster. It is difficult to determine the original smoothness of this application, because the great weight of the collapsed walls and vault caused dents to be made in its surface. There was no imprint of a woven mat on the bench top such as was so clear on the Bu.116 (Temple I) bench. The floor was not as smooth as the floor in an average building room. It dipped down as it went under some of the walls; part of this effect may have been caused by the weight of the walls.

No shards were uncovered from underneath the floor.

CONSTRUCTION STAGE 4: INTERMENT

At this point the deceased Maya was placed in the tomb

along with all the offerings. Reviewing the evidence in the tomb, both Chris Jones and Dr. Wm. Coe thought that this sequence: tomb pit - tomb walls - burial - cloth - tomb vault, was possible; but George Guillemin disagreed. To the excavator this was not a preconceived idea; bit by bit, as he excavated and took notes, it appeared that this is what occurred because of the evidence uncovered. Such a sequence of events depends somewhat on the great difference in construction technique between the building of the vault (hastily and sloppily built and unplastered) and the wall (carefully built and plastered). The evidence that led the excavator to establish the hypothesis that the burial was made before the vault was raised is discussed in greater detail on p. 45.

All information relating to the actual burial, sequence of placing in the offerings, the description of the offerings, etc. is on p. .

That the Mayans went to all the effort required to create an area surrounding the tomb (the area covered by the wall- top turn-over plaster) indicates that there was something which made this action desirable. After the erection of the walls and their plastering there was a 1.40 m. wide flat ledge around the whole tomb chamber 2.20 m. down from the level of the plaza (Fig. 14). It would have been a simple matter to lower the body, probably by means of a rough stairway, to the ledge and then into the tomb. The textile was then stretched over the burial to keep mortar from falling on the body while

the vault was being built. The usual reconstruction of the burial ceremonies has priests and workmen sweating as they lower or haul the litter and offerings down a narrow passageway or through a restricted hole in the vault or through the area where the capstones were later placed. However, in some cases it would have been physically impossible to get the body in through the vault.

In Temple I's Bu.116 a considerable extent of the aisle was completely free of offerings; thus, its excavator postulates that the area was used as "foot room . . . from this area . . . they made their exit through an opening in the vault by means of a ladder . . ." (Trik, 1963, p. 10). The author, unfortunately, was not able to get into Bu.116 because it had been backfilled. From photographs it appears that it would have been extremely difficult to enter the tomb through the top of the vault because of its narrowness; indeed, its excavator himself had to enlarge this space to allow for his own entrance: "After removal of the capstone the opening was enlarged to allow entrance to the chamber" (Ibid., p. 8). From the only photographs the author had available, the vault masonry of Bu.116 looks just like that of Bu.196 in that no overall plaster coat was applied. The walls of Bu.116 had almost completely collapsed, but the stubs looked identical to the Bu.196 walls in that they were covered by a layer of plaster. Might there have been an undetected cloth at wall top level?

CONSTRUCTION STAGE 3: CLOTH STRETCHED ACROSS BURIAL AT WALL
TOP LEVEL

After the burial was installed and definitely before the vault was raised, a textile or textiles were laid starting from the edges of the tomb cut and then stretching across the tomb (the author's opinion) or going to the top of the vault (George Guillemin's opinion).

That there was a cloth on all four sides of the tomb at wall top level is undisputed. The imprints of the cloth were visible on top of all four walls. That the cloth went all the way to the edge of the tomb cut was clear from excavations on the east side of the tomb. Here, the vault mass was removed and the clear imprints of the textile went back to the east edge of the tomb cut. It is presumed that the same thing happened on the other three sides.

That the cloth extended out from the walls and was meant to cover something is also uncontested. In three places it was clear that the cloth came out (horizontally) more than five centimeters. It either went up or it went down, or was stretched across the tomb.

It definitely did not just hang down and cover the walls, because there are plaster impressions showing that it draped itself over the east sub-vault tie-beam.

The evidence for the stretching of the cloth(s) over the burial was found in three well-preserved locations. First, in both the east corners the east sub-vault tie-beam



Photo 20 Sta. 104, northeast corner showing joints of vault mortar caught by cloth draped over east wall from east look.



Photo 21 Sta. 106, southeast corner showing joints of vault mortar caught by cloth draped over east wall from east look.

was within a centimeter of the wall, parallel to the east wall (Photos 20, 21). The cloth overlapped the beam. Then, when the vault was being hastily constructed great gobs of mortar dripped down the vault facing and caught in the cloth; in both corners, handfuls of mortar were pressed into the corner to cover the interstice between the top of the wall and the bottom of the bottom course of the vault. Thus, there is a chunk of mortar projecting about 4 cm. from the wall. On its underside is the impression of the textile. In this spot there is, however, no proof that the cloth went any further than over the east tie-beam.

On the west half of the south wall, there was one place where the uppermost course of the wall masonry was preserved. Here, also, gobs of plaster had been caught by the cloth in such a way as to indicate that the cloth had been extended outward and been held at its other end (Photo 22). At the time when the tomb was excavated, the author had no close-up equipment with which to photograph this section. The few days his personal camera was in the tomb was enough for mold to grow between the lens elements. No 1:1 detail section was drawn as should have been. The chunk of extending plaster was so fragile that the mere touch of a tape measure would have been enough to cause its collapse and destruction.

To George Guillemin it seemed that the cloth went up and not across. There are several problems with this interpretation. First, up to what? When the cloth was put in, there

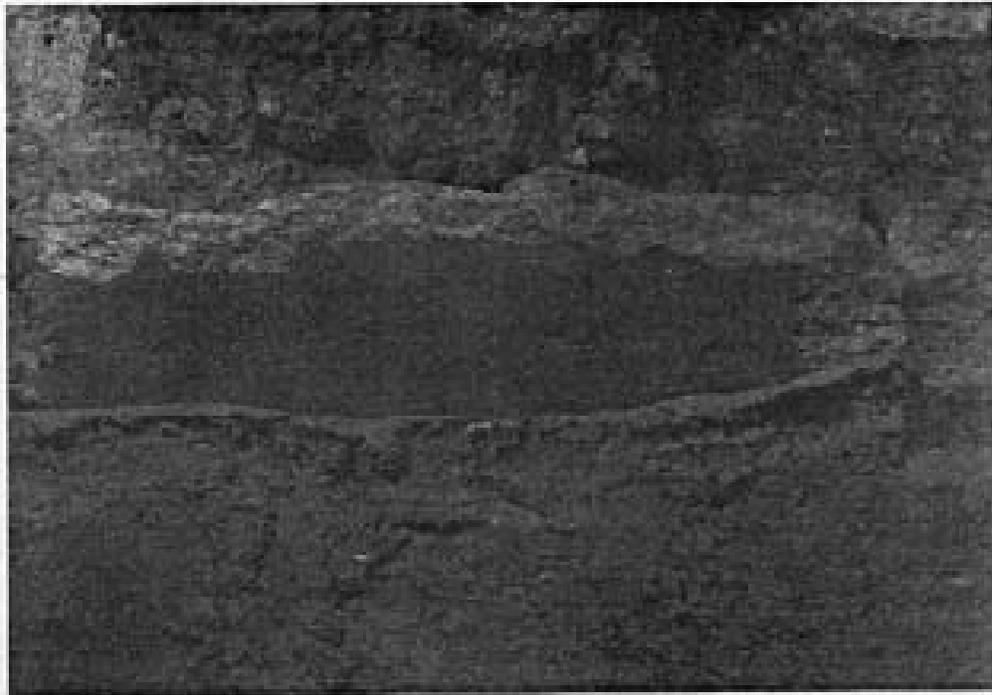


Photo 22 Bu. 196, south wall top showing where vault mortar was caught by the wall-top cover-cloth.

was nothing above it but the blue sky. Secondly, why would the cloth go up? It would have made it awkward to build the vault with a cloth in the way. The author is convinced mainly from existing evidence and also from supposition that there was a purpose in having the cloth stretched across the tomb. The purpose would have been to protect the contents of the burial from dripping mortar as the vault was hastily erected.

According to Ed Shook, in one of the Str.5D-33 burials the body and offerings were obviously placed in before the vault was built. In this burial there was evidence for the vault being hastily built with mortar slapped on by hand. Also, a mat had been spread over the entire tomb and had caught the dripping mortar.

CONSTRUCTION STAGE 2: ERECTION OF THE VAULTS

EAST VAULT

The burial chamber was discovered on Nov. 5th, 1965 when, after over a month of tunneling, the workman's pick went through the second course of the east vault into an extensive void (For more information on the method of finding and excavating the tomb see page). From this hole it was possible to look in and see the tomb. To effect entry a few more vault stones were removed (Photo 19). Later, an east-west trench was cut through the entire east side of the tomb

all the way to the east edge of the tomb cut (Fig. 9). This was the only vault which was cut through. In general, the vaults were much better preserved than the wall faces. All the vault stones of the east vault were still in place. The fronts of three of the stones had somehow been sheared off. The dimensions of this and the other vault faces are given below.

	VAULT OVERHANG	VAULT SOFFIT	VAULT RISE	WIDTH AT TOP	WIDTH AT BASE	NUMBER OF COURSES	ANGLE *
NORTH	36 cm.	2 to 6	90*	3.50 m.	4.20	three	75 - 63°
SOUTH		4 cm.	80-90	3.40 m.	4.18	three	64°
EAST	30 cm.	4 cm.	91*	1.22 m.	2.00 m.	three	69 - 65°
WEST	28 cm.	4 cm.	100 cm.	1.18	1.93	three	72 - 62°

*Difficulty to measure accurately

The base of the vault is approximately even, as it rests directly on top of the cloth over the wall top plaster. It is considerably more level than the base of the west vault and slightly more level than the north and south vault vase surfaces. Half of the top of the vault had to be removed in order to enlarge the entrance to the tomb; but it was uneven and sloped down to the north. There was no vault top pause level or layer of plaster (see p. 58). In section, the profile (Figs. 8; 9) is uneven but approximates a straight line. None of the vault faces produced a regular plane but some of the distortion was produced by pressure and the collapse of the walls below. In other cases the unevenness is

original and is a result of hurried installation. In one place between the first and second courses, there is what at first looked like a round plug, 5 cm. in diameter. This may just be a spall stone thrust out, although there were few, if any, spall stones used in the vault facing. The masonry will be discussed on page 51.

WEST VAULT

All the stones of this vault face are still in place (Photo 13, Fig. 13). Most of the stones on the bottom course have lost their front faces but their butt ends are still in place. Such slight decay was probably a result of the collapse of the top two courses of the wall below. The top of this vault is the most level of all and comes closest to having a vault top pause line. It did not appear, however, that any attempt had been made to put a special course-top-layer (see glossary) of mortar prior to putting the roof poles in place. The numerous cracks in the vault's face testify to the intensity of the pressures it has withstood. For this reason and because the wall below has fallen in, it is difficult to establish precisely how irregular the top of the wall below was. From the course top plaster layer it appears that the wall was not even at its top but was higher on the south side. As with the other vault faces, its profile is not perfectly straight but is a close approximation.

NORTH VAULT

The north side vault facing is well-preserved; only a few of the stones have chipped faces. Almost all the upper courses of the wall below had collapsed. (Photo 25). The top of the vault is messy and uneven. The same mortar which was slopped in between the stones was dribbled over the top, no attempt having been made to provide a smooth flat surface for the roof beams. It was difficult trying to estimate how much of a time interval, if any, there was between the laying of the roof beams and the finishing of the vault.

SOUTH VAULT

About two thirds of the stones in this vault have lost their front faces, especially in the east part of the vault. Of the stones with missing front faces, all have their butt ends still in place. It was impossible to get far enough away from this vault face to take a meaningful photograph; but the preserved parts of the vault are somewhat visible in Photo 22, and the vault butts are visible in Photos 23 and 24. A detailed description of the vault masonry follows on page 51.

The top of the vault is probably the most uneven surface of all, varying in height from 80 cm. to 90 cm., although it rises from an approximately level base surface. There was no attempt to make a level base for the roof poles (see p. 58).

The south vault face was pierced by a row of three beams

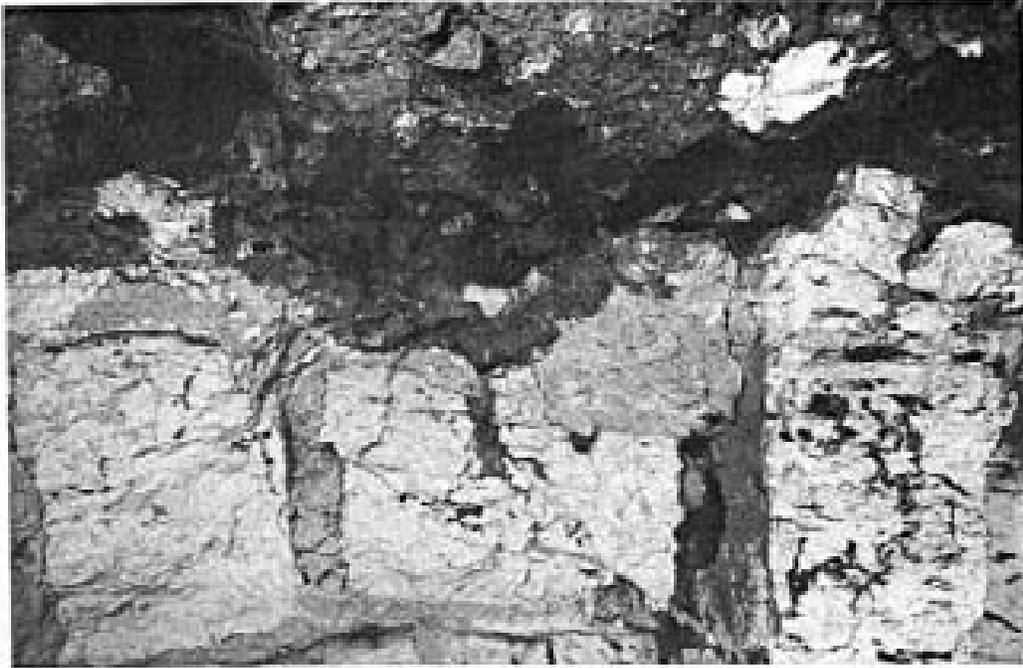


Photo 23 St. 196, upper vault courses and ceiling beam holes.

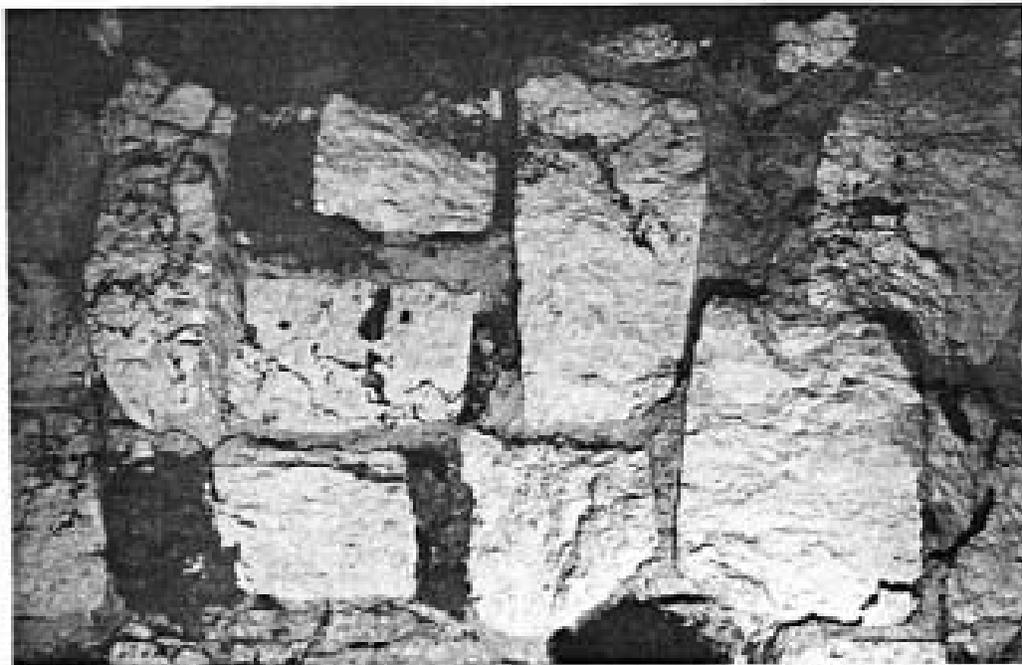


Photo 24 St. 196, upper vault courses, south side (9).

(see p. 57). These poles rested over the top of the first course, the middle one lying about 10 cm. lower than the others. For the end beams there was merely a gap in the vault stones. It is possible that, in the actual vault face, some of the empty space thus created was filled in with a special small stone as on the north vault face. For the center tie-beams, all the stones around it were specially modified (partially visible in the lower center of Photo 24).

Masonry

The stones used are standard Tikal Late Classic vault stones. Because all the vault stones were still wholly or partially in place, there was no way to study a single stone to see its exact shape. If any whole stone had been pried out of the wall to be measured, the whole vault might have given way. The fronts of the vault stones were beveled. From the one place that the vault was cut through (Fig. 9), it could be seen that the stones were tapered and that the butts were not cut to perfect squareness. The front surface was finely finished, but the edges and corners were not squared off.

The vault stones were clearly and undeniably pre-plastered (i.e., plastered before installation) with a thin wash coat. This plaster coat was not a result of the stones having been ripped out from some other vault. Many times stones are re-used and retain a plaster coat as a result of

their having been previously located in a plastered wall or vault. If the stones had been ripped out of an earlier plastered vault, then the plaster would have jagged edges on each individual stone as a result of the stones' having been forced away from one another. Also, especially near edges or wherever the front face of the vault stone is rough or nicked, the wash coat makes no attempt to even out the surface. In addition, the plaster would probably be slightly thicker if the stones had been plastered while part of a regular building's vault. The plaster wash may have been applied with a very fine brush; on one stone faint marks, possible brush marks, could be made out.

No plaster was applied over the vault faces as was applied over the wall faces. The same mortar which was used between the stones was smeared very messily by hand in the interstices and over parts of the front of the stone (Photos 25, 26, 17). This mortar was so wet when it was applied that it dripped all over everything, and no attempt was made to clean things up. Although there were drip marks all over the vault face, there were very few drip lines running down the wall, because the cloth caught most of the falling mortar (Photo 22). The mortar seems to have been applied exclusively by hand. Finger marks are visible all over the vault face (Photo 25). Most of the strokes go up and down with a few diagonal but no horizontal imprints. It was difficult to determine whether the marks were made by someone standing in



Photo 25 Bu. 196, finger marks in vault mortar (north vault).

the tomb or someone perched perhaps on scaffolding supported by the vault tie beams. There is a difference between the "trails" left by a hand full of wet mortar moving up and that of a hand moving down. If the vault was being built after the body and offerings were in the tomb, then the workmen would be standing on the wall top ledge leaning over the vault. This would certainly explain why the vault face was nowhere near a perfect plane, whereas the wall did make a good plane. According to the hand "trails," it is plausible to suppose that the hand movement was from above.

Two slightly different kinds of mortar were used: a very runny grey and a slightly brownish-red off-white. Where there was overlap, the grey mortar always overlapped the other. The reddish substance seems to have been the mortar used to hold the stones together, with the grey used to dab into the interstices. There was no paint applied to the vault and no cinnabar; the fact that there was some cinnabar on the walls and a lot on the tomb floor might indicate further that the body was placed in before the vault was built.

Another fascinating feature of the vault construction was that the faces of the vault stones had been intentionally chipped or accidentally battered after pre-plastering and before installation. The proof that this damage happened before installation was the presence of plaster drip lines dribbling down over the chipped portions of the stone (Photos 26, 27). The chipping could have been a quick attempt just before or



Photo 26 Su. 196, drip lines of vault mortar.



Photo 27 Su. 196, drip lines of vault mortar (north side ↑).

during installation to even up the face of the stone. The tool or implement used to inflict the marks had an effective surface about 5 cm. wide. On the south side one stone had its entire coat of pre-plaster chipped off.

Mortar Caught in the Wall Top Cover Cloth

As has been demonstrated previously, there was a cloth or cloths stretching, at wall top height, over the entire tomb. This was in place presumably after the burial had been completed and definitely before the vault was begun. The author presumes that this cloth was put in place just before the vault was built in order to keep the wet vault mortar from dripping all over the body and offerings. That this cloth served its purpose is clear from three major places where plaster in large amounts fell down and/or was stuffed in corners with the cloth keeping it in place. Details of this have been provided previously (see p. 46).

Coursing

Basically, all vault faces were built in three courses. In one place on the south face, two stones were used in one course. In the east and west end vaults the courses were kept level within 4 cm. or so; but this is to be expected, as the courses are not very long; each course is from 28 to 31 cm. high.

In the north and south vault faces, the size and shape

of the vault stones varies considerably within a generalized standard size, causing much disruption in course top levels.

Mortar Layers at Course Top Level

The front of the vault stones were held in with a light-colored lime mortar. The fill behind the vault stones and the rear half of the vault stones was held together by a mud mortar. It appears that lime mortar was precious and was used only where necessary (or visible?); this same system of mortaring was used behind the wall stones. With the vaults it was not possible to see whether every course was topped by a lime mortar layer, because only on the south side was the face of the vault sufficiently collapsed to see the butt ends of the stones. This system is plainly visible in the photograph (24). The fronts of these stones had been somewhat sheared off; and there was dark brown mortar between the majority of the stones in the vertical spaces. In several instances mud mortar was used between the stones to within 5 cm. of the front. The fronts of the stones were cemented with light grey lime mortar. Running over the top surface of the first and second courses could be seen a thin layer, 1 to 2 cm., of white lime mortar going back to where it covered the mud mortar binding the back ends of the stones. The extent to which these mortar layers went back was never adequately checked. Capping a course with a layer of mortar was evidently a standard Late Classic trait at Tikal, at

least with this variety of masonry; because in Str.5D-38-1st, excavated by the writer, the same type of layer was observed on the wall. The difference is that, here, the course tops are not as level. It was not checked whether or not courses are maintained from wall to adjoining wall.

Joints and Sequence of Vault Construction

Many of the joints were broken although many others were not. There seems to have been no consistent attempt to break them. At the southwest corner the west vault abutted the south vault, indicating that the south vault was built before the west vault. The stones of the east vault face go behind those of the north vault. On the south, the east vault may have been bounded in the third course, but, without removing the gobs of plaster, this was difficult to determine. Poking around could easily have brought down the whole tomb. The north vault could have been the last vault built, if they were built one at a time--something just mentioned as a possibility as the Mayans built by units, one after another. (There is no bonding of the stones of the north vault with either the east or west vaults, although it may be just coincidental). Again, there was no way to check on something like this without possibly causing the tomb to collapse completely.

Most of the stones were laid on edge; but a few, including two large ones on the north side, were laid on their largest surface. Interstices were present without spells.

The bottommost vault stones were not laid directly on the wall top plaster but on a bed of mortar.

No flint or obsidian offerings were present in the fill behind the vault stones (see p. 30).

Masonry Size

The stones of the end vault faces were more uniform in size than those of the north and south vaults, especially the south vault. In the south vault there was a notable difference in size. The only measurements of the depth of the stones were possible in the cut made through the west vault. Here the stones were 56 cm. long on an average and a typical stone was 30 cm. high and 20 cm. wide.

VAULT STONE DIMENSIONS:	HEIGHT	WIDTH	DEPTH (unknown)
	32	24	
	29	26	
	35	24	
	20	22	
	32	30	
	29	38	
	24	16	
	22	24	

Vault Cross Beams

There is a row of three logwood cross beams spanning the width of the tomb. For measurements see p. 36. The wood was of the same variety as that used for the ceiling. The tops of all three beams were not at the same elevation; however, there was only a few centimeters' difference, which

would make it possible for them to have been used to support boards on which the masons would have worked. The modification of the vault stones occasioned by the beams may be seen in the masonry detail elevation. (Figs. 10, 11).

CONSTRUCTION STAGE 1: WOODEN BEAM CEILING

In the only place that was cut through, the east vault, no vault-top pause line was found. It is possible, although unlikely, that one was overlooked. This is because the north side of the cut was used as the main entrance to the tomb and had a wooden stairway and lots of equipment over it. The south side of the trench at this point was not a perfect vertical cut but was hollowed out as a cupboard to hold flashlights, etc. Nowhere was there any evidence to indicate that there had been a break between the vault construction and the laying of the roof timbers, except for the matter of flints and obsidians (see next section).

The excavator was not at all certain of the amount of time separating the construction of the vault from that of the roof. All indications are that the roof was laid while the vault mortar was still wet. Mud mortar, very wet when applied, was used exclusively for the fill behind the walls and vault and directly over the roof beams. In several places over the easternmost roof beam, there was lime mortar--visible in the photograph (Photo 24). It appears that the beam was put there

while the mason still had some lime mortar left over from building the vault; but there is not enough evidence to prove this conclusively.

The ceiling span measurement varied, with a maximum of 1.25 m. The original span was difficult to ascertain because the vaults had buckled. It was too wide for Tikal masons to attempt to span with stone; so, wooden poles were used instead. This type of half-vault and wooden ceiling is rare at Tikal, though it occurs in one of the Temple V roof comb chambers; and, the original temple of Str.5D-42, the "Teotihuacan Structure", may have had a half-vault and wooden ceiling (Chris Jones, pers. comm). Here, there was a large distance to be spanned.

The type of wood used in Bu.196, both for the ceiling and the lower cross beams, is easy to identify by the perfect impressions of the poles left in the once-wet mud mortar. These impressions show that the wood had a characteristically irregular outline. No attempt had been made to smooth the wood to any regular shape. The mud used over the roof poles was so wet that it was easily pushed down between the irregularities of poles. As most of the fill above the ceiling did not collapse, the impressions are still visible today. There are also complete impressions at each end of the pole where the poles sat on the vault tops. In these holes the soft, fragile remains of the wood were still present. Many samples were taken for C_{14} tests, but no tests are planned by the Project.

The total length of a pole was a maximum of 3.45 m. Each end stuck into the fill between .95 and 1.15 m. Most penetrated the fill between 1.05 and 1.10 m. The diameter of the poles varied from 5 to 14 cm., with an average of from 6 to 8 cm. Some of the poles may have been split in half before installation, but this is not absolutely certain from the remains. Between 29 and 32 poles were used. They are so grotesquely shaped and, in many cases, so close together, that it is difficult to tell whether some of the impressions were caused by one or two beams.

Most of the rotted beams which were lying uppermost on the fallen debris appeared to be the vault and wall beams because of their position below the sockets and because they were not covered by roof debris and roof flints and obsidians (see p. 64 about flints). Although there was a little collapsing of the ceiling after the cross beams fell, most of the walls and roof fell in while the cross beams were still strong enough to stay in place and not break under the blows of falling debris. Some of the wall collapsed before the ceiling, although in some areas it appears that the ceiling went first. This is surmised because, in some locations, the wall stones are uppermost in the debris. In other places, the wall stones lay directly on top of offerings.

Because of the extreme irregularity of the poles, it is difficult to tell exactly how close together they were all the way across. Considering the wetness of the mud mortar



Photo 28 Bu. 196, Cellars with the wooden poles fallen, showing flint and obsidian offerings.

and the estimated spaces between parts of the poles it is probable that some mud mortar sloped through--hence the cloth stretched over the tomb (see p. 45).

Towards the middle of the tomb there were burnt spots and charcoal clinging to one of the large stones which had fallen from the ceiling. The writer could detect no copal smell.

STR.5D-73: TIME-SPAN 6 - CONSTRUCTION OF THE PYRAMID

CONSTRUCTION STAGE 12: OFFERINGS OF FLINT AND OBSIDIAN CHIPS

Thousands of flint and obsidian chips were found above the wooden ceiling. This is a special kind of offering which occurs over Early and Late Classic tombs at Uaxactun (Smith, 1950, p. 96) and at Tikal, (Burials 116, 10). The flints and obsidians seem to occur only over and not around or under the burial chamber. All fill has small bits and pieces of flint and obsidian which here are in an obviously ceremonial context.

Above the roof poles the flints were laid right against the wood. What is important to note here is that these offerings occur only above the level of the tomb ceiling but in no case behind the walls and seemingly not behind the vaults. This seems to indicate that to the Mayans there was something special about putting offerings on the roof; and, for this reason, they placed the special chips. This is interesting because constructionally there is no break (no pause layer of mortar over the top of the vault) between the vault and



Photo 29 Centerline tunnel with the author in front of tomb
cut in the floor, with the fill retaining wall in the background.

the roof beams.

The fact that no flints occur behind the vault may be used as one argument that the burial was not put in until after the vault was in place. One could ask that if the body, etc. was in place while the vault was being built, why were not the flints and obsidians also put in then? This depends on the exact significance of these offerings--something we can only guess at. Because they touch the roof beams of Bu.196 and because they were directly over the vault stones in Bu.116, their meaning has been interpreted as one of "sealing".

LATER CONSTRUCTION STAGES

After the building of the roof the exact sequence of construction stages becomes difficult to determine. Everything uncovered in Str.5D-73's centerline tunnel indicated that after the tomb roof was finished there was a more or less continuous sequence of building operations (probably up to and including the building platform). One break about which almost nothing is known is the point at which flint and obsidian offerings cease. The first indication that there was a tomb was a fill retaining wall running east-west. This wall turned out to be just south of the tomb cut in Pre-Str.5D-73: Floor B. In general, there were more flints and obsidians the lower and further south the excavations proceeded.

As the writer remembers, the fill retaining wall was found first. Then, the cut in the floor was found (the workmen dug from the top of the tunnel down). The fill retaining wall began about 27 cm. south of the floor cut and appeared to sit on a rough construction layer which is 44 cm. above the level of the cut floor. The fill-retaining wall did not appear to go any lower. Above the floor and, according to memory, thus on the north side of the wall, were found five small flint chips. These were in a trodden-down mortar layer over the floor. It is probable that they were dropped by whoever was putting them in with the fill which was lower and to the south.

It is possible that the construction level on which sits the previously mentioned fill-retaining wall and another fill retaining wall 1.80 m. to the south may mark the end of the flints. However, there is no definite proof that this is so.

Features of the Flint Bearing Fill

Looking up at the fill which covered the roof beams, the base of fill retaining wall was visible running east-west on approximately the centerline of the tomb. This rough wall appeared to stop below a rough construction layer (Fig. 26). However, above this level there was another fill-retaining wall right over it. It does not appear from the section drawing that there was any connection between the two walls.

No specific notes were taken on the fill in which the

flints were placed. During excavation, the flints and obsidians occasionally appeared to be occurring in approximate layers - with a "layer" approximating the height of an average-sized fill stone on its largest surface, under which the flints and obsidians were found nestled in little "caches" (see p. _ _); but, on the sides of the trench after excavation, such layers were not noticeable.

As with the fill in the rest of the 73 Pyramid, all the stones were carefully laid horizontally on their largest surface. The mortar was dark brown and was probably composed predominantly of mud.

Artifacts

The flints and obsidians themselves will be discussed on page . 117A/35 was gathered outside from the wheelbarrow from fill the workmen removed in the fill over the tomb roof and under the level of the floor out through (Fig. 26). Inside the tunnel the lighting was less than perfect; and, although the workmen picked out most of the sherds in the tunnel and put them in marked bags, many artifacts wound up in the wheelbarrow. Outside, both from the wheelbarrow and as it was dumped, all the missed cultural material was gathered and put in a special wheelbarrow lot. There is a chance that sherds from other parts of the building would be accidentally included. Out of the non-flint and obsidian offerings collected, the following objects were interesting

enough to be catalogued:

OP 117A LOT	QUAN- TITY	SUBSTANCE	OBJECT	DIMENSIONS
35	1	Pottery	Reworked sherd (Disk, diam. 2.3 to 2.5 cm.)	
35	1	Pottery	Whistle mouthpiece (L:2.4, W:1.6 cm.)	
35	1	Pottery	Misc. modeled object (Cylinder, 1.9 cm. (Diam. ?))	
22	1	Pottery	Misc. modeled object (Buff, peaked, L:3.8 x Ht:2.1 cm.)	
18	-	Bone	Small fragments, all less than 2 cm. long.	
19	1	Bone	Worked, (Shaft with groove, L:8.2 cm.)	
21	1	Bone	Fragment	
25	1	Bone	Needle (eye, L:2.9 cm.)	
25	1	Bone	Worked. (Small polished cylinder L:3.2 cm.)	
26	2	Bone	Animal, unworked. (Part of jaw- deer?)	
18	1	Shell	Small fragment of burned shell. (1 x 1 cm.)	

BASAL PLATFORM

It seems probable that the basal platform was erected after or at the same time as the tomb was installed, for the reasons given on page 19. The limits of the old Great Plaza, of which the basal platform is an extension, are not known. The Great Plaza seems to have extended at least as

far south and west as where the tomb cut was sunk.

The basal platform is two terraces high and of simple design. Each terrace top is from 70 to 80 cm. wide, and the upper terrace is approximately 1.05 m. high. The height of the lower terrace varies according to the elevation of the base surface; its height is a maximum of 3.20 m. (at the southeast corner) and a minimum of 1.85 m. (at the northeast corner). There are no moldings or side outsets on the basal platform. There is a rear outset, but it appears to have been a secondary addition. The outset was buried under tons of fallen masonry and was high on the priority list of excavations.

The basal platform facing has a northern termination, on the west, approximately in line with the northwest corner of the pyramid. Here, the platform forms an interior corner, as there is an east-west facing which continues about 15 m. westward and then turns north to run behind Temple II (Carr, 1961, Great Plaza). Between Str.5D-73 and Temple II the great Tozzer Causeway begins. Thus, there is no "basal platform" on the front of 73.

The northern termination of the east side of the basal platform occurs about one-third of the way north from the southeast corner. Here, it ends where abutted by the east-west running basal platform of Str.5D-72-1st.

Although it could not be extensively checked, from what little excavation was done on the west side, it appeared that

the basal platform of 73 was built at the same time as the plaza extension (which supports Temple II ?). The stones of the 73 platform all went behind those of the other terrace. To see how far the basal platform of 73 continued to the north(west), a trench was dug through the abutting Great Plaza retaining wall. The facing of 73 did not go more than one stone's length past the Great Plaza facing. It appears that the two walls are thus contemporary, to a certain extent.

On the east side of 73's basal platform, it seems that the facings of Str.5D-73's and 72's-1st's basal platforms were bonded. However, this corner was deep within the tunnel system and was not thoroughly investigated.

Masonry

The masonry is typical Tikal Late Classic large "ve-neer" with an approximate alternation between headers and stretchers (memory).

Complications

In the south centerline trench evidence was uncovered suggesting that there had been additions to the building platform perhaps creating a rear center outset. After the author left Tikal in early 1966, R. Larios spent some time on this problem; but, because it was not a crucial point, extensive excavation was not undertaken. This addition was 80 cm. wide. Neither its exact height nor its extent are known.

CONSTRUCTION STAGE 10: 4th MASON'S STAIRWAY

For practical reasons, the discussion of what was uncovered in the centerline tunnel is divided up by four construction stairways. A construction or mason's stairway is a common, typically Late Classic, feature of the large Late Classic temples. It is characterized by its rough, unplastered appearance. Often the treads are covered with down-trodden mortar spilled by masons as they carried their loads up to the pyramid top. The purpose of these rough stairways was twofold. Firstly, they saved the final stairway which was carefully plastered and sometimes painted, from a considerable amount of wear and tear. Secondly, the final stair was too far out in front of the core of the pyramid to service the construction levels (see p. _ _).

Whatever notes originally existed on the 4th construction stairway have been lost, but the writer can remember several things about them. This stair was not actually cut through by the Op.117A centerline tunnel because, here, the tomb robbery tunnel had gotten there first, cutting through the bottom four steps (Fig. 24). At first, the writer thought that these were steps belonging to an earlier pyramid, because they were relatively well-made and the location was too far back within the core of the pyramid to expect a construction stairway.

The stairway was built 6 cm. above the level of the floor

(Pre-Str.5D-73: Floor A) on which was built 73. An interesting fact here is that the construction level (Str.5D-73: Unit C) turns up to the stair. The rough layer of trampled-down (?) mortar forming this level is about 10 cm. thick, resting directly on the base surface floor. Str.5D-73: Unit C itself is the base surface for the northernmost three construction stairway and the final stairway (Fig. 26). The fact that this level turns up to the 4th construction stair hints that this stair may already have been in existence prior to Str.5D-73(-1st). In the centerline section (Fig. 26) the turn-up to the bottom of the stair is shown in broken line, because the actual turn-up is only visible off-section a few centimeters. At this point in the centerline tunnel the tomb robbery tunnel had removed part of the stair.

Twelve steps, a total of 3.70 in height, were excavated. This height is greater than that of the centerline tunnel. The excavator thought that, since this stair was so far back inside the core of the pyramid, it might only go up one terrace level. From the outside of the pyramid, it was known that the top of the first terrace was at an elevation of approximately 254 m. In the tunnel a horizontal layer of mortar was found at an elevation of at 253.50 with another layer at 253.60. The bottom of these two was probably the 1st terrace top mortar pause-layer. (From excavations on Str.5D-33 and elsewhere, it is known that Late Classic temple pyramids at Tikal were built up in horizontal layers, each layer

corresponding to one terrace approximately 2 to 3 m. in height. As each layer was finished, it was covered with a layer of white lime mortar.

Masonry

The majority of the riser stones were rectangular stretchers. A few headers were observed. A typical step was 30 cm. high, 20 cm. deep. At first, the excavator thought the stair was a finish stair for an early building. There was, however, absolutely no trace of plaster on the risers or treads. What was covering the treads and had occasionally dribbled down the front of the risers was the trodden down mortar that is often found on masons' stairs. This deposit is thickest on the nose of the treads. Many of the stones appeared to have been installed in a typically tilted position (in order to achieve the desired batter for the riser).

Fill South of Str.5D-73: 4th Masons' Stair

There did not appear to be much difference between the fill behind the stair and the fill in front, except that just in front of the tomb cut in the floor there were some very large stones. These and all the fill stones were laid horizontally on their largest surface. One of the largest fill stones was 75 x 20 cm. in cross-section.

Artifacts

Most of the fill in this vicinity had been removed by the robbery cut. 117A/13 was from near the floor (in trampled down mortar ?) just north of the cut for the tomb. Here was found the first sure proof that there was a tomb--the floor cut and flint chips. The flint chips appear to have been dropped, as their proper provenience is on the south side of the fill retaining wall over the edge of the tomb cut. There were 5 unmodified flint flakes, each ca. 3 x 2 cm. For the artifacts found in the silt of the robbery tunnel, see p. 109.

CONSTRUCTION STAGE 92 PARTIAL RIP-OUT

One thing which could not be understood was that the 4th stair was only visible on one side of the centerline tunnel; this was further complicated by the fact that at this point the robbery cut (see p. 107) had removed much of the stair. The lowest steps were clearly visible on the west side of the cut as far up as the limit of excavation. On the east side of the robbery cut, however, the stairs were not there. That there had been something going on here is known from the mortar layer (Str.5D-73: Unit C) which on the west side of the tunnel turns up to the base of the stair. On the east side of the robbery cut, where there is no stair, this level keeps going about 1 m. until it finally just stops. At this

point, perplexingly, there is no out-line or discontinuity in the fill which would conclusively indicate a rip-out.

This is one of the several instances in the Str.5D-73 investigations where the extremely limited amount of time and the number of workmen made it impossible to attempt to solve all the problems which arose. It would have been interesting to have dug up about 50 cm. above the top level of the robbery cut and centerline tunnel to uncover a complete step running the width of the centerline tunnel. Then, without cutting away the step, the step itself could have been followed west to where it either came to its normal termination, perhaps to a rough stair side-wall or to where it had been partially scooped out.

The only explanation that the author can give is that, if there had been a rip-out, the step stones, being roughly rectangular, were removed to be used elsewhere. If it were a mason's stair, the rip-out would have occurred just after the stair had outlived its usefulness and just before it was to be covered by fill.

CONSTRUCTION STAGE 8:

LAYING OF A ROUGH "FLOOR" TURNING UP TO RIP-OUT

After a portion of the stairway was removed a 12 cm. deep layer of lime mortar was laid, abutting the rip-out and the stairway where it was preserved.



Photo 30 str. 10-73: 3rd masons' stair.

CONSTRUCTION STAGE 7: 3rd MASONS' STAIR

The front of this stair is 10.04 m. back from the final front stair, which puts it over 4 m. inside the fill of the actual pyramid and further back than a construction stairway would be expected. The stair was the most crudely constructed of the four, each step being of a slightly different size and without any discernable regular pattern. This is partially a result of the fact that no specialized stones were used. That it was a stairway was obvious (Photo 30), especially from its bottom steps. The bottom five or six steps have low, 23 cm. risers and manageable treads, 25 cm. The next four steps have very narrow treads (15 cm.). An 11th step was not found, but two more are postulated to enable the stairway to arrive at the 1st terrace top construction pause-layer. The tomb robbery tunnel cut through the bottom four steps on the east side of the centerline tunnel.

Masonry

The basic shape of the steps is only approximately rectangular; and the stones, only roughly finished, are mostly stretchers set on their largest surface to form a single-block riser construction utilizing many vertical and horizontal spalls. There is no finish plaster and the risers are slightly battered. All the treads slope due to the layer of mortar, which may have been dropped and trodden down by masons as they climbed the stair. Riser-tread overlap occurs

only in the upper steps, where the treads are not very deep. There is never any contact between the riser and tread stones themselves; mortar intervenes.

Fill

There were no horizontal layers of fill visible below the 1st terrace top construction layer. This layer, 3 cm. thick, occurred 3.20 m. up from the base surface; it continues south and turns up to the 4th construction stairway. The 3rd construction stair appears to rest on top of the layer of mortar 12 cm. thick which lies over the base floor. The stair was thus built on the same level as the other two northern masons' stairs (Fig. 26).

The fill consists of stones of all sizes, with small ones (12 x 5 cm. cross section) predominant. All the stones rest on their largest surfaces; mortar is of the mud variety.

Above the 1st terrace top pause level was discovered the hollow cast of a logwood beam, 10 cm. in diameter and approximately 85 cm. long. Its south end may have touched the 4th masons' stair. On the sides of the tomb robbery cut there were several other impressions of logwood poles, usually running north - south (memory). Some of the poles may have been on the south side of the 4th construction stairway as well, but the author cannot remember. Wood poles frequently are found in the fill of Late Classic structures at Tikal; but, as yet, no definite significance has been attached to



Photo 31 Str. 5D-73, 2nd masons' stair in the background with the 1st masons' stair with pole hole in foreground.

their occurrence. The fact that most of the poles seem to have been in front of stairways may have some meaning. Perhaps they were used in a pulley system or as scaffolding.

Artifacts

The artifacts uncovered from the fill behind the 3rd stair were bagged as 117A/4. Very few sherds were uncovered and there was nothing interesting enough to have been cataloged.

CONSTRUCTION STAGE 6: 2nd MASONS' STAIR

There are 6.20 m. separating the 2nd from the 3rd construction stairways. The 2nd stair is clearly part of the 'final stage' 73, as it is buried by (final) stairway fill, not pyramid fill.

The mortar layer that supports the 3rd masons' stair appears to give out to the north and does not sustain the 2nd stair. Instead, the 2nd stair sits on a lower mortar layer, 7 cm. off the base floor; 1.10 m. north of the base of the stair is a roughly circular burnt area, 10 cm. in diameter, with several other adjacent burnt areas.

Masonry

The stones used were roughly-finished rectangular blocks. No finish plaster was evident, but the treads had the usual hard-packed layer of grey lime mortar, which occasionally

spills over down the risers. Stair stones were very soft, and of single-block riser construction, the risers appearing slightly battered. There was no slope to the stones themselves, as there was to the mortar layer on them. According to memory, all the stones were stretchers.

DIMENSIONS	Length	Height	Depth
(in cm.)	62	27	20
	50	32	22

Fill

There were several horizontal divisions of the fill. One such division occurs at the level of the top of the fourth step. This level appears to run all the way to the next masons' stair to the south. Large stones (max. 84 x 20 cm. cross section) were more abundant than small; and almost all the stones lay on their largest surface. In front of the stair lay Problematical Deposit 171 (Op. 117A/38) (see P. 79). Several horizontal logwood beams lay just in front of the stair (see p.78).

Artifacts

From the 1 lb. 10 oz. of artifacts in the fill, the only object of interest was a 2 cm. long fragment of a long bone, probably animal.

CONSTRUCTION STAGE 5: 1st MASONS' STAIR

The bottom step rests on 16 cm. of fill which, in turn, rests on a 4 cm. thick layer of mortar over the base floor. The author has no explanation as to why the step begins this high up. Only five steps were unearthed. It was a rough mason's stair, 2.08 m. behind the final stairway.

Masonry

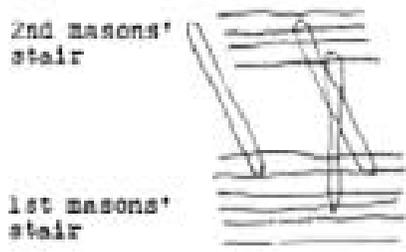
The step stones were rectangular blocks, only roughly finished. The top edges of the stretchers were not noticeably rounded or squared-off, while the headers were slightly beveled in front. The stairway was unplastered, although it had the usual layer of mortar on the treads; all the stones were set on edge. In the small section of stair which was exposed, headers alternated with stretchers. The width of the headers varied; among them were some very thin ones. The construction was single-block riser. Where logwood poles protruded, there were often small stones in the face of the riser (Fig. 15).

Fill

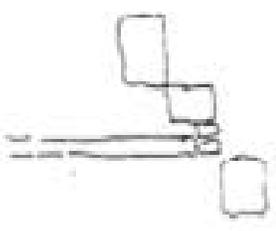
The fill was similar to that behind the other stairs except that it contained fewer large, thin, stones.

Wooden Poles in Fill

At the bottom of the third step, there was a nearly



a Sketch plan of wooden poles.



b Sketch section of wooden pole.

Fig. 15 Sketch plan and section of wooden poles in fill.

tubular hole. This was the now-empty space where originally there had been a wooden pole laid horizontally. Traces of wood powder remained on the bottom of the cast. Because of the irregular cross section of the sides of the cast, the wood that was once present was easily identifiable as logwood. The pole had a minimum length of 1.80 m. with a diameter of 7 cm. and lay in a position parallel to the centerline tunnel. Whether it went past the front of the 1st masons' stair is not known, because the workmen removed the fill here before the author noticed the pole hole in the third step.

Behind the fourth and fifth step, two other well-preserved wood holes were found: one on the east side of the tunnel, the other on the west (Fig. 15). By the time the east hole had been noticed, its north end had been chopped away. What remained of the hole extended 1.45 m. into the fill at an angle off to the east. It was not parallel to the other two poles. The hole was approximately horizontal and had a diameter of 11 cm.

The western hole had soft powder in it: evidence of decayed wood; its diameter was 6 cm. The space runs approximately level and abuts the front of the fifth step of the 2nd construction stair. Its length is 1.70 m. The pole may originally have been longer, going through the 1st masons' stair to the north.

Wooden poles in fill are also known from Uaxactun (Smith, 1950, Fig. 73) and from other structures at Tikal (Shook, pers comm.).

Artifacts

117A/2 contained two used flint flakes and one small, used obsidian-flake blade. There were also a few sherds which have not yet been studied.

PROBLEMATICAL DEPOSIT 171

In a small area from 1 to 55 cm. north of the base of the 2nd masons' stair, were numerous fragments of a deliberately (?) -smashed censor. As this is on the centerline, it is possible that there is some ritual significance to this destruction. The fragments lay directly on the base floor with a few tiny bits of charcoal. The highest fragment of censor was 3 cm. off the floor. All the fragments were encased in the mud mortar which formed one of the many layers of mortar on which the masons' stair were built.

At this particular point three layers of mud mortar could be distinguished; two abutted the bottom step of the stair, one passed underneath. Although it does not say so specifically in the notes, it would appear that the fragments were in the bottom layer and thus may be unconnected with the stair. The author does not yet have available any description of the fragments nor any information on whether this was a common practice.

CONSTRUCTION STAGE 4: PYRAMID FACING MASONRY

Ground Plan

The ground plan of Str.5D-73 is very similar but not identical to that of other Late Classic temple-pyramids at Tikal. Outsets and insets are always relative to a point of view. The rear of 73 was the most destroyed; and the reconstruction of the rear outset is hypothetical, based on the fragments of evidence available. A study of all the patterns of rear outsets on Late Classic Tikal structures by H. S. Lorton may help to provide a better reconstruction. That there is a rear outset at all is known from the little remaining evidence. B. Larios does not place a rear outset on the building platform, but Dr. Coe believes that there should be one. Hopefully, the author will be able to return to Tikal in the coming summer and solve problems such as this. At the moment, the plan is left as drawn in the field.

The inset stairways are an unusual feature; but their authenticity is assured by conclusive evidence (see p. 82) and their presence on the better-preserved Temple I.

The side outset was perfectly preserved on the east side and on the northwest corner of the west side. The reconstruction of the front of the upper terraces is based on the plan of the lower terraces, which were perfectly preserved and thoroughly excavated on the east side of the central stairway. After 10 years of work at Tikal, enough is known about the architecture of temple-pyramids to reconstruct

original appearance on much less evidence than is available for Str.5D-73.

There is a slight difference between Temple I and Str.5D-73 in the proportion and placement of the front outsets. On Temple I, the outset next to the central stair protrudes considerably more than the other outset and considerably more than the outsets of 73 (Fig. --). In addition, the center outset of the second (front) terrace projects past the plane of the outsets of the lower terrace, an arrangement which does not occur on 73.

Facing Masonry

The facing masonry of all the front terraces, and presumably all the rest of 73, was laid before the final stair's side-wall was built. At this time, the final masons' stair was probably the method of ascent. It is not known whether all or part of the building platform was built before the pyramid was finished, but, for organizational reasons, all information on the building platform is put together starting on page 95.

That the pyramid facing masonry went on before the final stair side-wall is known from other pyramids (Str.5D-33-1st, Temple I). Along the entire east side of the stair side-wall, a north-south trench cleared all five terraces of Str.5D-73. Here, it could be seen that the pyramid masonry went behind the masonry of the stair side wall to a considerable extent



Photo 32 South side of Temple I with 'step-insets' barely visible.

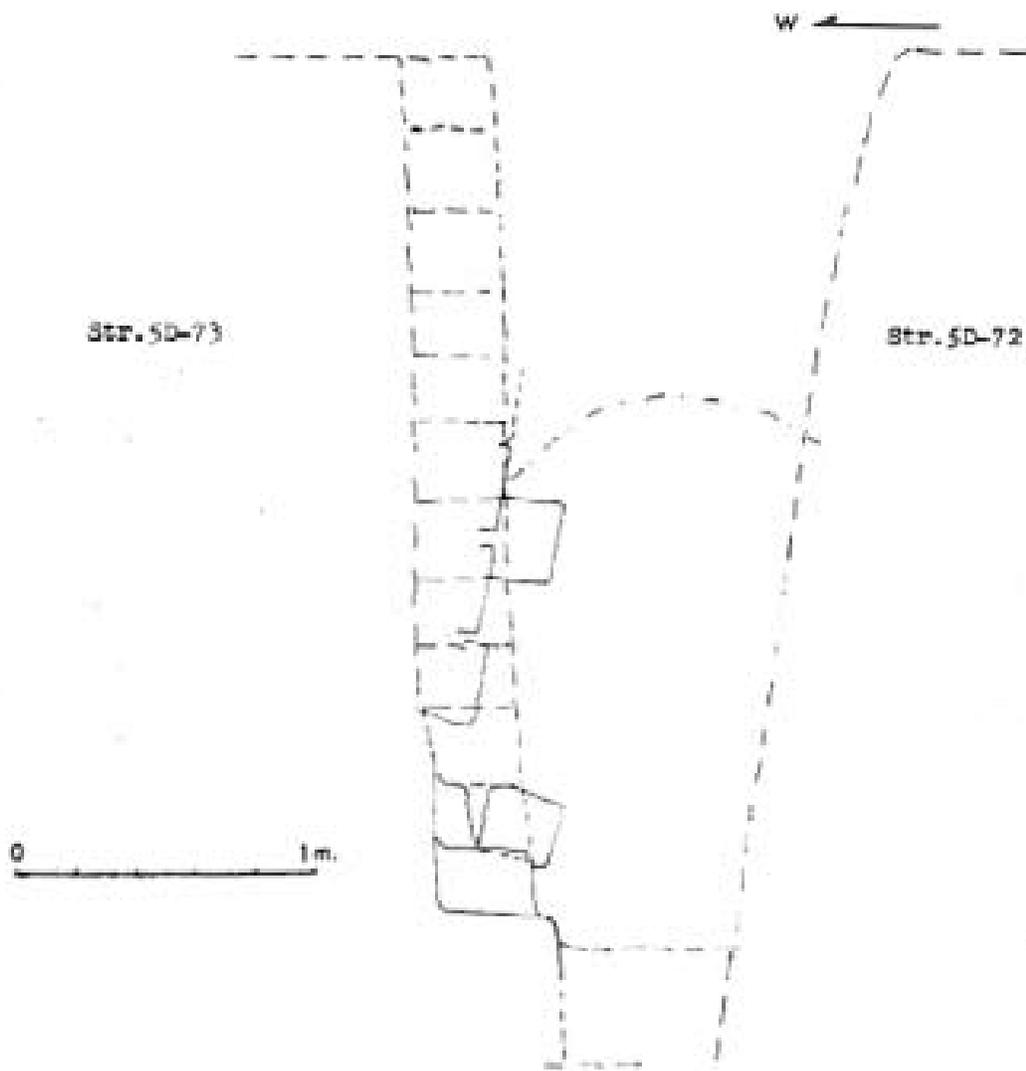


Fig. 16 Str.5D-73, east side, lowest terrace, looking north at a south elevation of the step-terrace with the steps also shown in section (east-west); Str.5D-72 is shown in profile. Scale 1:20

Fig. 17. Shp. 50-71, east side (see sketch).
Lower spread terrace, east elevation and
west profile. Scale 1:100

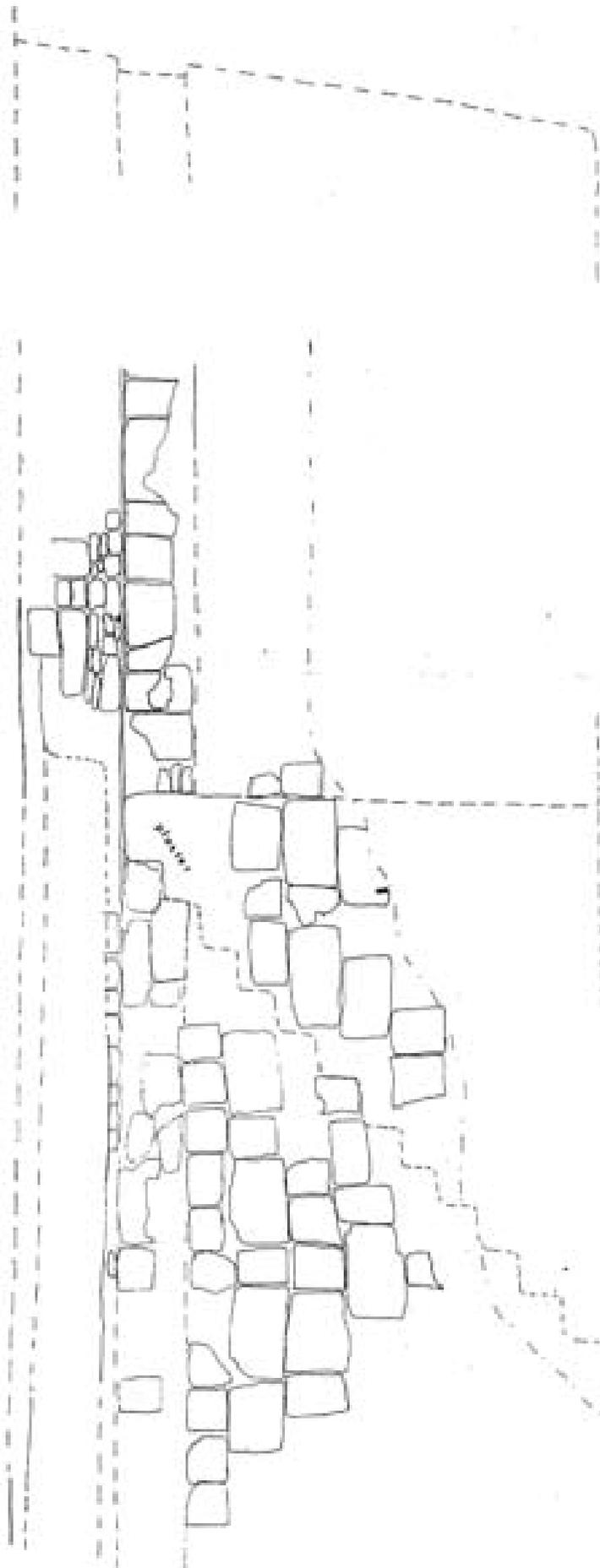


Fig. 18. Shp. 50-71, east side, lower spread
terrace, east masonry detail elevation.

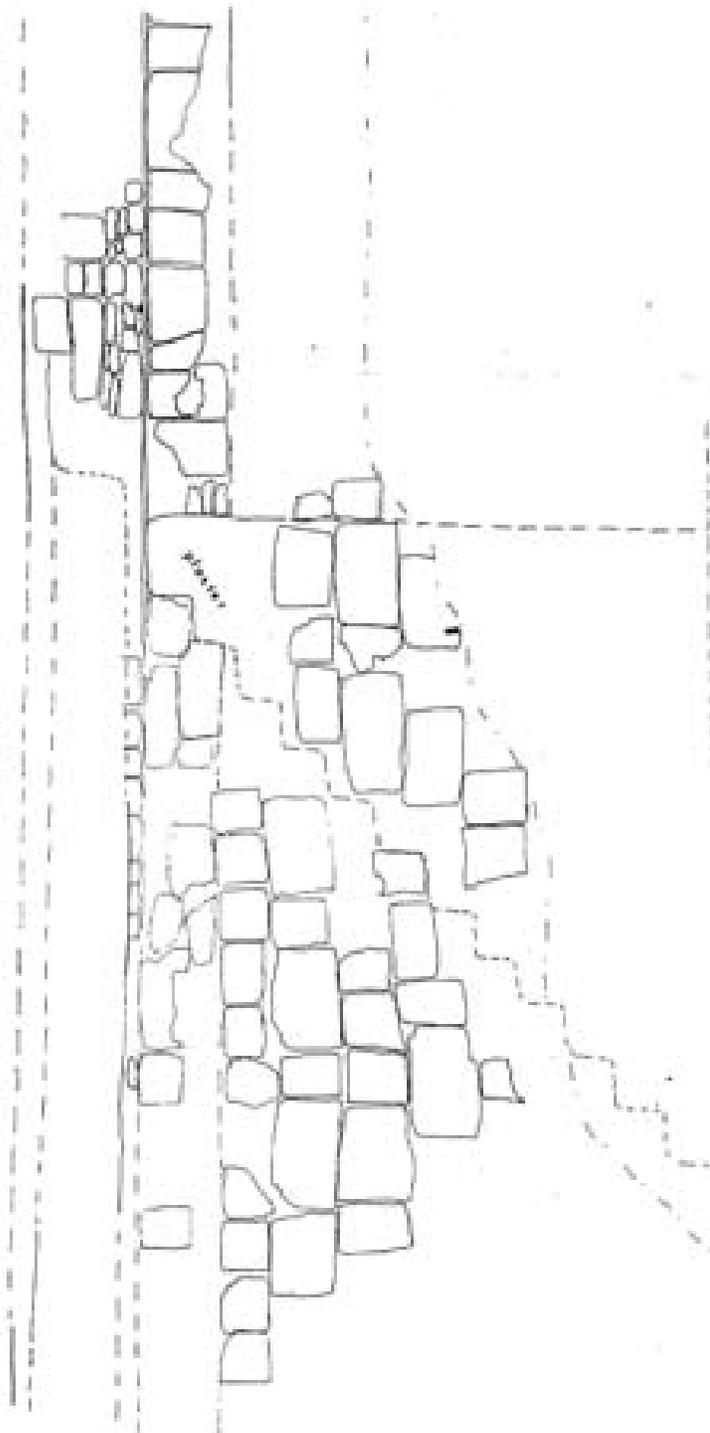
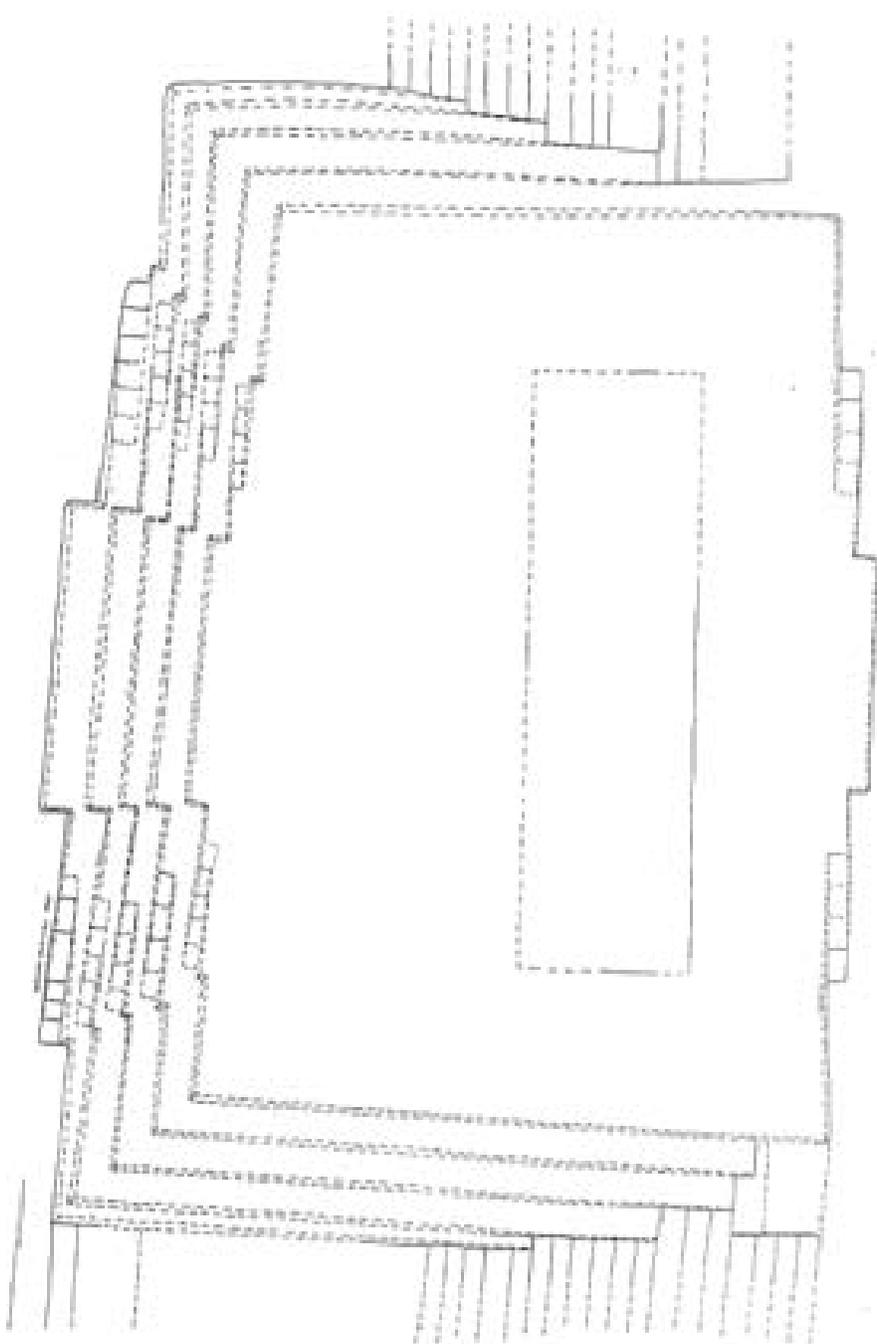


FIG. 18 B STR.5D-37-B, PLAN

FIG. 18 C STR.5D-37-B, EAST ELEVATION



N

FIG. 18 B STR. 5D-37-B . PLAN

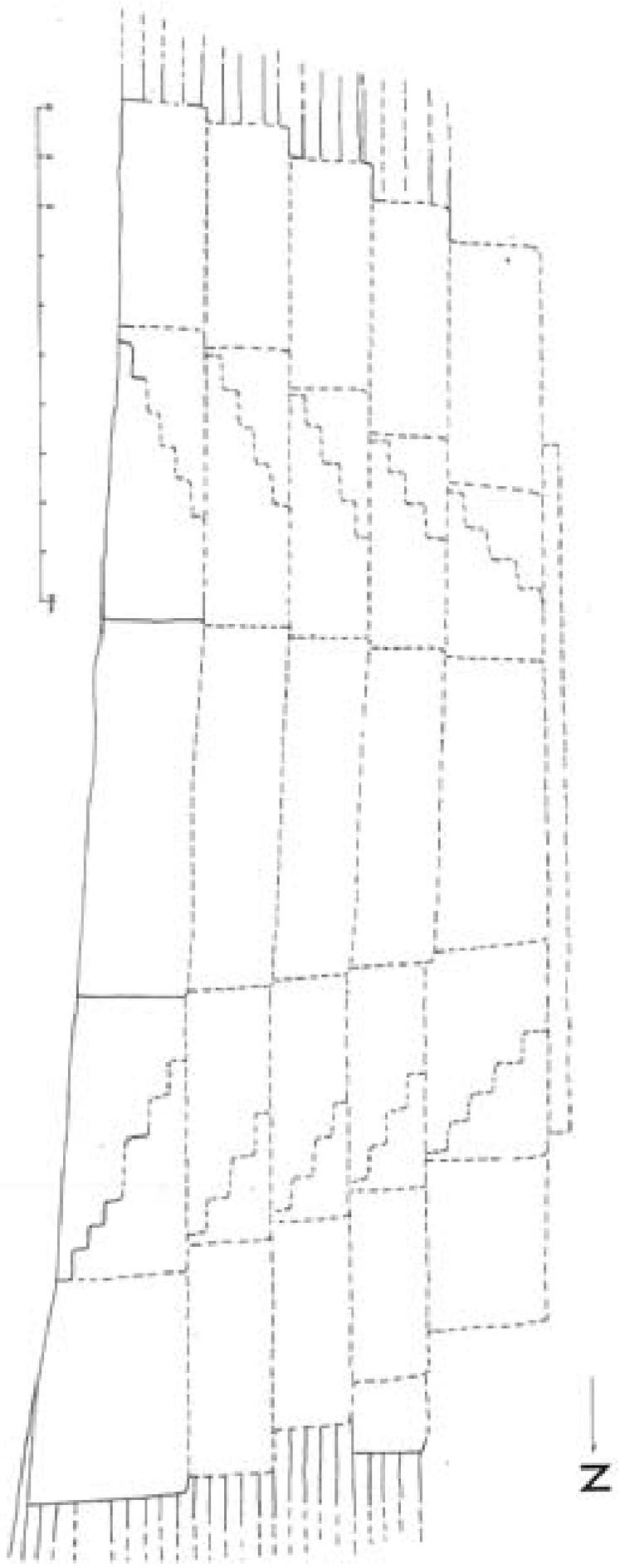


FIG. 18C

STR. 5D-37-B, EAST ELEVATION

REPRODUCED FROM ARCHITECTURAL RECORDS SCALE 1/8"

(Fig. 20). Even the moldings of the pyramid facing continued behind the stair side-wall, (probably until they abutted the stair side wall of masons; stair #1).

The place where most of the facing masonry was exposed was in the dark, and potentially-collapsible, tunnel between 73 and 72. The two masonry detail elevations drawn by R. Larrios (Figs. 18, 20) may be taken as representative of the general type of stone used. In addition, some idea may be gathered from the sections.

In the terminology of L. Smith at Uaxactun, the masonry may be considered "veneer" masonry.

STEP-INSET

When the author was excavating the south end of Str. 5D-38, he uncovered parts of the bottom terrace of Temple I's pyramid near its northeast corner. A strange inset was found on Temple I which the author had never before seen on a Mayan structure. Simply, it consisted of a set of diminutive steps set into the pyramid facing. The tiny steps ran up parallel to the side of the pyramid, going away from the nearest corner. Upon closer observation of the rest of the pyramid, these unique step-insets could be seen on almost every terrace, one to a terrace. They alternated east-west positions by terraces, i.e., on the bottom terrace the step-inset is near the east corner; on the second terrace the step-inset is near the west corner, etc. It is possible that

on Temple I there were none of these step-insets on the upper (two ?) terraces (Coe, 1966, pers. comm.) and Fig. --. The step-insets only occur on the sides of the pyramid, not on the front or back.

Step-insets do not occur on Temple II. They were specifically looked for on Temple IV but do not occur there either (Pearson, 1966, pers. comm.). Such a slightly different type of step-terrace occurs on Str.5D-37, excavated by the author (see p. 35, Fig.18b). Insets have not been noticed on any other Mayan temple, although it would be extremely easy to miss them, mainly because they are not expected - at first they look like stones fallen out of position unless the plaster is preserved on the steps. Step-insets will be missed if only the corners of a structure are excavated.

When it became apparent to the author that Str.5D-73 was architecturally similar to Temple I, he decided to look for step-insets on 73. This was one of the reasons for digging the extensive tunnel between Str.5D-73 and Str.5D-72 (see P. 11).

A step-inset was uncovered by the author precisely where it was expected; north of the southeast corner of the east side. This was the only one on the whole pyramid which was looked for, because, due to its situation buried by protective debris, it was the only one which would be relatively intact. The actual recording of this feature was done by R.

Larios, because the author had to return to school.

The steps were inset 6 cm. from the top edge of the basal molding. They were 32 cm. wide with a 20 cm. riser and a 22 cm. tread. Twelve steps extending all the way to the top of the terrace are postulated by Larios on the basis of remaining evidence. According to memory, the Temple I step-inset did not appear to go up this far per terrace; nor did they begin below the basal molding but sprang from the top of the basal molding.

On the Str.5D-73 steps, the bottom two steps were well-preserved and had enough plaster remaining to prove that this was not a case of pushed-out or broken-off stones. Also, what would have formed a sixth step was still partially in place. The terrace facing in the vicinity of the inset stair was slightly fallen out (Fig. 18a), but the stones were in position relative to one another.

Before the author uncovered the step-insets on Strs. 5D-1 and -73, he had uncovered steps (possibly) of a similar nature on Str.5D-37, in the East Plaza, not far from Temple I or Str.5D-73. The full description of Str.5D-37 has been written by the author and will be published by the University Museum, University of Pennsylvania in TIKAL REPORT 16: EXCAVATIONS IN THE EAST PLAZA OF TIKAL. As this will not appear for several years, below is the section on the "step terrace outset".

STEP-TERRACE OUTSETS, EAST SIDE, STR.5D-37

As the writer is unaware of another system of stairways exactly like that of Str.5D-37, a name was devised for them: "step-terrace outset". Each term is important. There are steps, from 45 to 56 cm. wide, approximately 70 cm. deep, which go up parallel to the front of the structure (east side) They occur in terraced; rather than going all the way directly from the bottom to top of the whole pyramid the steps go up in "flights", one flight for each of the five terraces. Finally, they are outset stairways, partially projecting sideways, as opposed to being completely inset as those of Str.5D-73 and Temple I. Each "flight" thus has one stair side-wall and one stair-inset wall. On the west side the structure is only one terrace high and the exact form of the step-terrace is clear. On the front, there are five terrace levels; the exact arrangement of step-terraces on the upper terraces is not at all clear.

Discovery of the Step-Terrace Outsets

The first of these unusual stairways was uncovered while looking for the northwest corner of Str.5D-134. The northwest corner of Str.5D-134 was very close to 37. A trench was started parallel to 37 next to the place where the front of 37 was expected to be. A wall was soon found, followed by a single, projecting stone next to the floor. Fortunately, preservation was excellent. There was plaster preserved on

top of this stone turning up to 37 and turning up to another projecting stone higher up. The floor also turned up both to the wall of 37 and to the bottom projecting stone. Such plaster turn-ups showed that these were definitely not just fallen stones. Because the author was completely at a loss as to how to explain this, the whole area was cleared from this point to the already-cleared center stair stair-side wall. This same trench also uncovered the northwest corner of Str.5D-134, the original object of the search.

Even when fully uncovered, this construction was perplexing. Tracing the wall to the south, another outset was found. This new outset was so small that at first the writer could not perceive what purpose it served. One hypothesis, later to be disproved, was that some of these outsides may have been the result of different building periods.

The next move was to excavate the entire front (base) of the pyramid from the north stair-side wall to the northwest corner to uncover all the outsides. More important, this would allow floors to be traced from under the center stairway all the way to under the Maler Causeway parapets. On the south side of the stairway Str.5D-123 was already related to Str. 5D-37 floors. Thus, 123 could be related to the causeway.

East Side South Step:Terrace Outset

The 1st terrace's step-terrace outset south of the south stair-side wall of the front central stairway will simply be

called the south step-terrace. This stairway is 5.60 m. long and consists of six equal sized steps (Fig. 18c). Of this length, 2 m. are taken up by a landing at the top of the terrace. The bottom step is a maximum of 35 cm. high, varies from 52 to 55 cm. in width and has a 72 cm. deep tread (Photo #5). Plaza 5D-3: Floor B turns up to the front and side of this step, as well as to the rest of Str. 5D-37. Plaza 5D-3: Floor C sustains both the step and all the rest of Str. 37, except for the front center stairway. Plaster still remains in one corner on this step. This plaster turns up to the stair inset wall and to the riser of step #2. The second step is 25 cm. high, from 53 to 57 cm. wide, and extends 66 cm. There is no plaster left on the tread. The third step is about 27 cm. high, 57 cm. wide, and 74 cm. deep. Nothing is left of the other steps.

Step Masonry

The risers are single block stretchers. The bottom riser abuts the stair-inset wall, but the wall does not go much further behind at this level. The riser of the second step goes into the stair-inset wall, which passes slightly beyond the riser of the third step. The riser of the fourth step goes into the stair-inset wall. These facts suggest that the stair-inset wall was built at the same time as the step-terrace outset. This is important because the stair-inset wall is merely the east face of the diminutive stair-

inset-wall outset.

Side-Wall Masonry

The stones used in both the stair-inset wall and the stair-side wall were typical Tikal Late Classic veneer stones. The following description is primarily of the stair side wall, because only about six stones of the stair-inset wall are left. Coursing was present but not perfectly horizontal. Masonry size was uniform except on the top course. Here, the stones were smaller and were used to level the top of the wall. (The same phenomenon occurs on Str. 5D-38-1st) Narrow interstices were common both vertically and horizontally, with very neat little spall stones. Not all joints were broken. The corner with the center outset seemed to be partially bonded. There was one interesting masonry note about the stairway: the end of the bottom step riser was part of the stair side-wall. The riser of the second step, however, which ran into the stair-inset wall, did not go as far as the stair side-wall, and so on. There seems to have been an alternation of stones producing a bonding effect. The stair side-wall was battered increasingly as the wall went up. The batter of the stair-inset wall is not known.

EAST SIDE NORTH STEP-TERRACE OUTSET

The lowest step-terrace north of the centerline on the east side was better preserved than the south step-terrace.

None of the step-terraces on the upper four terraces was preserved. This 1st terrace stairway consisted of seven steps, as opposed to the six steps of the south step-terrace. The additional step was necessary because 37 was built on a sloping base surface. The base of the north side of the structure was about two meters lower than the base of the south side (Fig. 18c). Another difference in this step-terrace was that it was slightly modified at a late date. This modification consisted in extending the stairway 50 cm. northward--an extension reflected in step #4 which is about 50 cm. longer than it should be. This modification caused the stairway to cover up the diminutive outset of the corner of the stair-inset wall. Otherwise, this stairway was basically the same as the south step-terrace.

Of this step-terrace, six steps remain. In no instance is there any plaster surface remaining. The stair-side wall has buckled and the steps have been pushed down by roots; but the shape and character of the stairway were quite obvious. The depth of the tread was not greatly affected by the wall's buckling and could be measured directly; at the bottom. The width of the stairway was 54 cm. Nowhere else was it directly measurable, due to the buckling of both the stair-side wall and stair-inset wall.

The front of the bottom step was flush with the front of the stair-inset-wall outset, as a result of the secondary repair to the stair. The riser was 79 cm. wide, consisting

of a stretcher and header, although the actual width of the step measured 5# cm. with the inseting (or outseting depending on one's viewpoint) of the stair-inset wall being 25 cm. The arrangement of stones to form the riser was rather unusual. The riser was two courses high, the bottom course consisting of large, spall stones. The top course was a typical Tikal Late Classic veneer stone used as a stretcher. In side elevation this step was sheathed by a stretcher (a header to the step stretcher to the wall). The step stretcher bonds with the stair-inset wall. This bottom step was 61 cm. deep.

Step #2 was 55 cm. deep. Its riser was similar to step 1, (one course only) was being formed partially by a stone of the stair side wall (stretcher to the stair side wall, header to the step). The second riser stone was a stretcher bonding with the stair-inset wall.

Step #3 was 52 cm. deep. The riser was one stone whose end shows in the stair-side wall (header to stair-side wall, stretcher to the stairway), thus abutting the stair-inset wall.

Step #4 is about 1.3 cm. deep. This was originally of more regular size but was lengthened when the stairway was modified in later times.

Step #5 seems to have been over 60 cm. deep, but the steps are pushed too far out for accurate measurements. The

riser may have been bonded 91 with the stair-inset wall.

Step #6 was the last step still in place. The riser stone was extremely long and must have bonded with the stair-inset wall. At this point the stair-inset wall had collapsed.

Step #7 probably rose the final 30 cm. to a landing at the top of the 1st terrace. This landing was about 1.80 m. long by 80 cm. wide. When the center stairway was added this was shortened at the south end by 20 cm.

The exact dimensions of these steps could not be measured. The elevations of the top of the steps were determined by the top of the stair-side wall which could never be higher than the adjacent step. Although the stair-side wall was slightly fallen outward, its original height could easily be reconstructed from measurements of the stones.

EAST SIDE UPPER LEVEL STEP-TERRACE OUTSETS

On the front of 37, very little of the upper level pyramid facing was preserved. Only parts of the central outset survived, due to its having been buried below the secondary stairway. A few stones of the 2nd terrace of the step-terrace remained in the protected corners next to the central outset. The question remained: did these step-terraces go terrace by terrace all the way to the top; and, if so, how were they arranged?

Neither of the two flanking stairways provided direct access to the top of 37. The west side step-terraces, having

only one terrace to surmount, did provide direct access to the top. Because of an interesting design feature (see next section) and because of the probable function of the structure as a focus of movement, activity, the writer believes that the front step-terraces extended all the way to the top. Besides, why not? It was just a novel approach and shows that the Mayan architects were not completely static in their design.

Stair Inset-wall Outsets

The interesting design feature is the 25 cm. wide outset, which was a continuation of the stair-inset wall. On the west of 37 this extra outset was not present because it was not needed. On the west side of 37 the top of the "first" terrace was the top of the pyramid. On the front, once one has climbed up the first terrace, there are four more to go. In designing a system of step-terraces, there are two alternatives: The stairways can alternate positions (Fig. 22c), or they can be the same for every terrace. Alternating positions would mean that at the top of the second flight one would have to remember not to walk straight ahead. Also, the first step of such a flight would be difficult to step onto from the front. Enough of the 2nd terrace was uncovered to show that this did not happen. At both the corners of the 2nd "step-terrace outset" with the center outset, the wall was three courses high.

The other alternative requires that one be able to walk along each terrace top to where the next flight of stairs started. This is why the front terraces are equipped with the 25 cm. outset. Going to the top of the first flight one turned 180° and walked along this narrow ledge. The next flight would be so situated that one could get in front of it before starting up. One would not have to climb over the side of the bottom step.

South Stair Inset-Wall Outset

As previously mentioned the stair-inset wall did not stop at the bottom (front) of the stairway but kept going about 46 cm. then inseting 25 cm. to the regular plane of the wall. This outset had been partially covered up on the north step-terrace when the step-terrace was secondarily extended. On the south outset about four courses of this outset were preserved. Exactly what this outset looked like can best be seen in the isometric reconstruction. This outset does not occur on the west side of 37 because it was not needed.

WEST SIDE STEP-TERRACE OUTSETS

Its original extent was clear from the floor that originally turned up to it and to the original bottom step. The two west side step-terraces outlets (one on either side

of the central outset) were the last parts of 37 to be excavated. There was nothing in the profile of the debris to suggest either a stairway or another outset. It was in drawing the plan that the writer noticed that there was something missing. In order to make really sure of the number of outsets and to check further on the possibility of more unique stairways, nearly all the base of the west side of 37 was excavated. The step-terraces' outsets were soon found, but there was no outsetting of the stair-inset wall, nor did it look as if there ever had been.

The preservation of these step-terraces was poor; but it was clear what their original form had been. Parts of the two bottom steps remained on each stairway. Bits of flooring remained on both the bottom steps' treads. Enough of the stair-inset wall was preserved to show that this was identical (except that it did not form an additional outset) to that of the east side step-terraces. The finish masonry of the stair-inset wall never extended very far below the level of the steps. Each step originally would have been from 45 to 55 cm. high, about 80 cm. deep. The stairs varied from 45 to 56 cm. wide. Each stairway would have had four or five steps.

Purpose of the Step-Insets

The exact function of stairways on terraces is not known. They could have been used in place of scaffolding to enable

Mayan workers to keep the pyramids in repair. However, especially in the case of Str.5D-37, the stairways are a major feature of the architecture. By means of the stairways, it would have been possible for people to get onto the terraces to sit and watch parades and the like. Although there might not be much to see from the sides of 73, once onto a terrace, one could walk around to the front and have a good view of whatever was going on in the Great Plaza. Something similar to step-insets may be shown on graffiti (Fig. 3).

Str.5D-72

Immediately to the south of the 1st terrace step-inset on Str.5D-73, is a step-up in the floor level between Str. 5D-72 and -73. This step does not relate to the step-inset of 73 but to renovations of the basal platform of 72.

CONSTRUCTION STAGE 3: BUILDING PLATFORM

The 15.50 m.-high pyramid was topped off by a hard-surfaced mortar floor. It is not known whether the building platform was completely built before the final front stair of the pyramid or not.

Excavation was not extensive enough to determine whether the building platform was the result of one or more distinct building operations. For this paper, however, it will be presumed that it was the result of one operation. It was discovered by excavation that the first pause in building

activity was the laying of a mortar pause layer about 1.20 m. above the pyramid-top floor. This distance puts the layer exactly at the level of the top of the fourth front step and the fourth course of building platform facing masonry--an occurrence of importance. The layer was originally a hard-surfaced, relatively smooth floor. Parts of it were root-pitted, but many areas were still hard. The limits of the floor are not known because of poor preservation and a lack of time to excavate all the floor surface. To the south, the level was followed to within 1.20 m. of the back of the platform; here, excavation stopped. To the north, the floor extended just under the main "step-up"; it may have extended all the way north to the top of a fill-retaining wall (Str. 5D-73: Unit). To the west, the layer may have stopped 1.50 m. short of the west edge of the building platform. The fill at this point was penetrated extensively by roots.

The next pause in building activity was after the 36 cm. (one course) phase. Here, approximately 1.50 m. above the pyramid top, was another layer of light-colored lime mortar. It was far too poorly-preserved to determine if it had ever had a smooth hard surface. The extent of this layer is not known. On this level sat the main step-up of the building platform (Str.5D-73: Unit).

One complication not noticed while recording but observed on looking at the centerline section, was that of an east-west fill-retaining wall, 60 cm. high. The rough mortar layer



Photo 33 Building platform of Str. 5D-73 after partial excavation, viewed from Temple II.



Photo 34 Building platform of Str. 5D-73 with excavation completed, viewed from Temple II.

did not appear to go under the wall (as the wall appeared to be continuous for its 60 cm. height); but the mortar layer ran along both sides of the wall, although on the north side of the wall traces of a mortar layer were noted as being very faint. The front of the fill retaining wall was to the north and was followed west to within 30 cm. of the back of the west side finish masonry (Fig. --).

Upper Level of the Building Platform

Even before excavation, there were clearly visible two levels to the building platform, with the front facing of the higher level still standing. As far as it was preserved, the front facing was excavated (Photo 33). To the west, the facing went close to the west edge of the building platform, showing that the upper level had occupied all the space available to it. The facing was one course high of the same kind of Late Classic masonry used as on the rest of the pyramid. All the stones were laid on edge; stretchers alternated with headers. A typical header was 57 cm. deep and 17 cm. wide; a typical stretcher was 54 x 20 and 32 cm. high. No floor was found intact on top of the level; but fragments of what could have been floor remains were found in spots when the humus was removed. There were no floor turn-ups to any walls, nor was there the slightest evidence of wall stubs or wall debris. On the south, the level was faced by the same wall as the bottom five course high unit. There was no evidence for a

rear outset.

Possible Additional Level Higher Up

There was absolutely no indication that there had ever been another level to the building platform or that there had once been a temple which collapsed and fell over the side. Although the building platform was not completely intact, enough of it was still preserved to determine approximately its original extent.

Possible Additional Level Before Main "Step-up"

A line of partially-disintegrated stones was found running east-west 1.86 in front of the main "step-up" mentioned above. The row was 1.30 m. back from the fourth step of the front building platform stair (Fig.19a). The stones were all stretchers, but none were clearly remains of well-cut facing masonry. (Photo 34). Both ends of this wall had been uprooted by falling trees long ago.

As interior levels usually correspond to course levels (about 30 - 35 cm. per course) it is important to establish how many courses (steps) there were to the building platform stairway. If it were known that the stairway was only four steps high, then the wall in question would have had to be a facing masonry wall and would have provided the step-up before the main step-up. If the stairway and the front of the building platform (Str.5D-73: Unit) were five courses high, then

it would have been merely a fill-retaining wall, because there would be no need for another step at its level (see P.105).

Front Fill Retaining Wall

In line with the north front of the building platform and hidden by the stair, was a fill retaining wall joining the facing masonry of the two halves of the front of the building platform (Fig. 19a). This indicates something of the sequence of construction--the front of the lower building platform having been built before the stair was added. Rough stones, requiring less effort to quarry, were used where they were to be covered by the stairway.

Side Inset

2.80 m. from the front of the building platform, the facing wall insets 10 cm. On the west side of the structure this change is still intact.

Facing Masonry

Before excavation, upper courses of facing masonry were visible along the whole north side of the building platform. Later, the roots and accumulated humus were removed making the entire north face visible. The west cornerstone had been uprooted; but the east cornerstone was only slightly pushed out. The wall was in various stages of disintegration up to

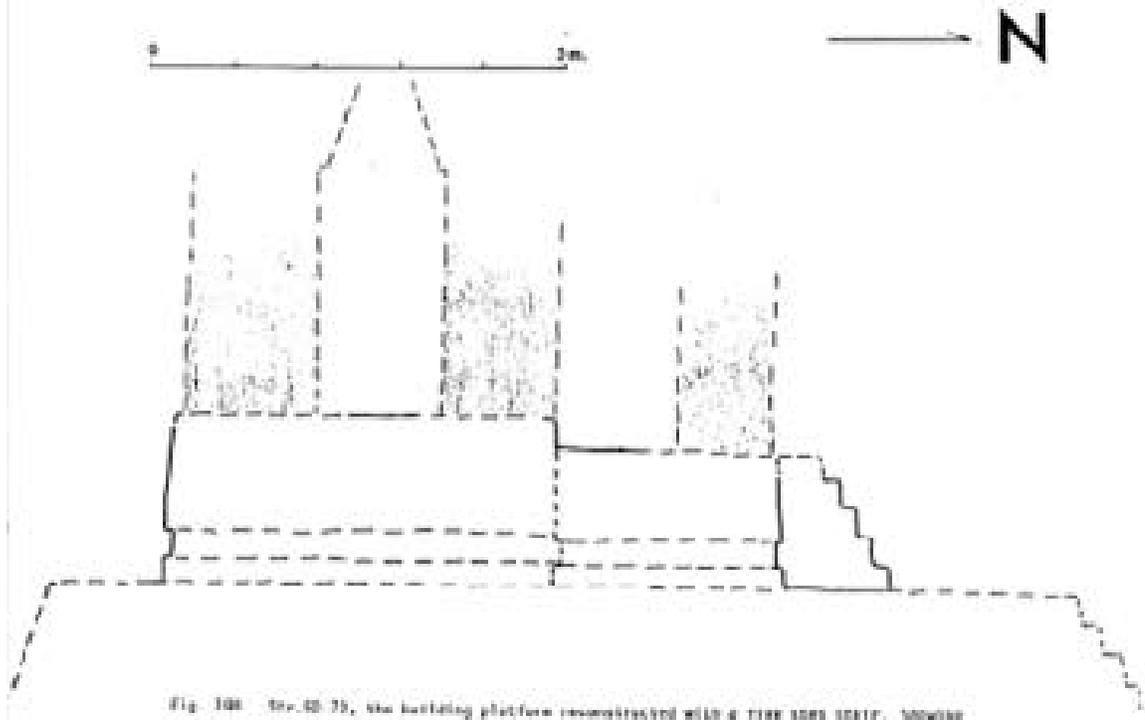


Fig. 140. Str. 50-75, the building platform reconstructed with a 1:100 scale (1:1000). Showing where masonry walls could have been placed if they were intended.

0 2 m

→ N

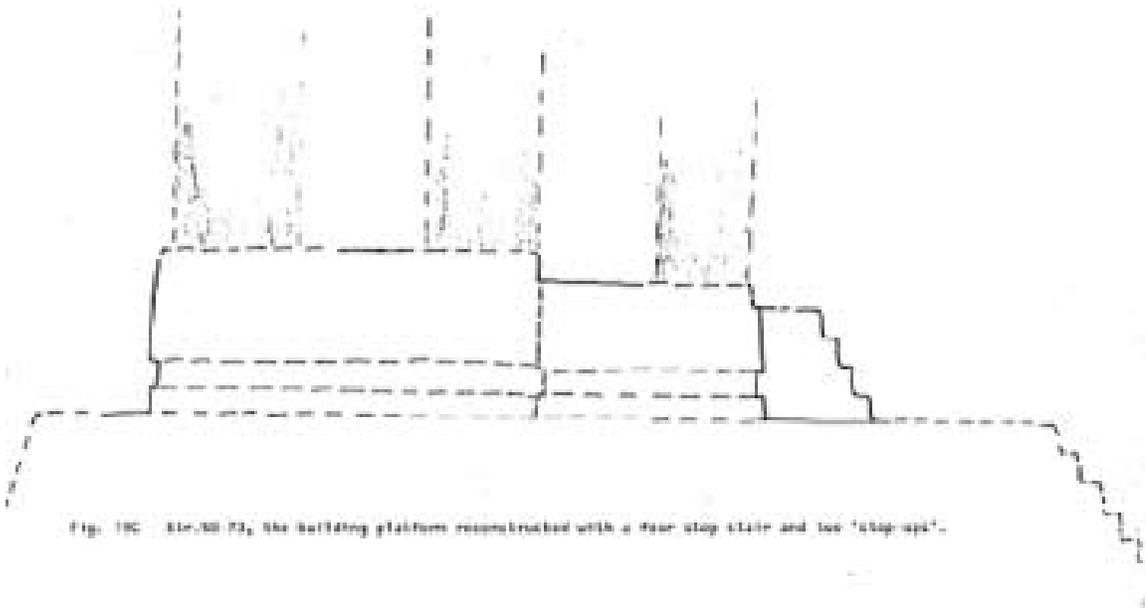


Fig. 10C - 30x30-73, the building platform reconstructed with a rear step-stair and low "step-up".

the top of the fourth course. There was absolutely no evidence for the existence of a fifth course or for a corresponding fifth step for the stairway. Possibly, there once existed a fifth course which was uprooted. It is, however, surprising that there would not be even the slightest trace of the course or the fill behind it when in general preservation is relatively good. If there was not a fifth course then the now rough row of stones may have originally been a 'step-up', just as the better preserved one to its south (Fig. 19c).

Artifacts

Not terribly many artifacts were uncovered in digging through the building platform, and no cache material was found (although one incised obsidian, possibly from some cache, was found in fallen construction debris in the tunnel between Strs.5D-72 and -73).

EVIDENCE FOR AND AGAINST THERE EVER HAVING BEEN A TEMPLE BUILDING

There was no floor on top of the building platform that was preserved well enough to hope to find the remains of post holes. Nevertheless, post holes were looked for, and none were found. There was no evidence of a collapsed beam and mortar roof of any large amounts of decayed wood, although

such evidence could easily have been missed. Absolutely no debris was found on top of the building platform, especially no stones which could be attributed to a fallen wall--indeed, no stones at all were lying on the top of the building platform. Nor were any wall stubs found; and the top of the building platform was well enough preserved so that they probably would be visible if they had ever existed.

Thus there are the following possibilities:

1. There was a wooden pole, thatch-roofed temple which completely decayed.

2. There was once a masonry temple, with or without a masonry roof, which was completely removed down to the last stone, perhaps to make room for a new and bigger one which was never started.

3. There never was supposed to be a temple of any kind on top.

4. The pyramid was built right before Tikal was abandoned by its priest-rulers, and there was not time to build the temple.

5. There was once a masonry temple, but all its masonry was removed by Post-Classic people or even later.

6. There was once a masonry structure, but it completely collapsed over the steep sides of the pyramid.

#1 is perfectly possible but seemingly unlikely. In support of it, are the numerous graffiti which appear to represent major pyramids with thatch-roofed wooden temples.

Until the author is able to look at copies of all temple graffiti, he had best leave this question open. Against #1 is the fact that none of the other temples at Tikal of the same variety have wooden temples. Against this last argument and in support of #1, is the fact that masonry temples were not present on 100% of Mayan pyramids; and even when masonry temples were present, they were often thatch-roofed. With a thatched roof, there is no need for the walls to be very thick; but the author believes that the absence of even a fragment of wall debris suggests that there never were walls of even weak, thin, masonry.

#2 is possible but not probable. When new temples were built over old ones, usually at least the stubs of the old temple walls were left.

#3 is extremely doubtful because of the presence of a "building" platform on top of the pyramid and the fact that, architecturally, the pyramid is of the temple variety and was certainly meant to support eventually a temple of some sort.

There is much proof that the pyramid of Str.5D-73 was built while Tikal was still flourishing. There are several floors, including one major Great Plaza floor that abuts the pyramid's facing masonry. Floor-laying did not assume such proportions in Post Classic times. Also, at least one major addition was made to the basal platform of Str.5D-72 after the pyramid for 73 was finished. Thus #4 seems improbable.

#5 is not very possible, because there were more available-



Photo 35 STP.50-73, main stairway, northwest corner of west side-wall.

ble sources for building-stone than the top of 73. Besides, stone robbers would probably not take fill from the wall cores as well and would probably not strip the walls down precisely to floor level.

There was not an abnormal amount of debris on the sides of Str.5D-37, that would suggest remnants of a collapsed temple. It is possible for a whole temple to collapse; but some of the building platform would go with it, and some of the walls toward the center of the building would tend to survive.

Thus, the most plausible answer seems to be that there was, in fact, a wooden building; or, for some unknown reason, they never got around to building a masonry one before the site was abandoned.

CONSTRUCTION STAGE 22 FINAL FRONT STAIRWAY

Much of the final, front, facing masonry stairway and some of the east stair side-wall was visible before excavation; following preliminary clearing of vegetation, even more was visible. The front corners, the entire east stair side-wall down to floor level, and the bottom seven steps on the centerline were excavated. A balustrade was carefully looked for with negative results. Both front corners were partially preserved (Photo 35).

In the centerline trench, the bottom step was still in place, complete with plaster turn-ups to the second step.

Most of the stones of the next two steps were in place (Photo , Fig. 26). Above this, the stones were still in line but were in various stages of disintegration caused by tree roots. Towards the top of the stairway, none of the steps was in perfect place, but many were ripped out in large segments.

Step Masonry

The treads were a narrow 20 cm; the risers measured around 30 cm., and the stairway was 3.37 m. wide at the base, probably tapering slightly as it went up. The stairway stones were similar to those used on the main stairway of 73 and on the main stairs of Temples I, II, and IV--those stair stones being slightly tapered, limestone blocks, finely finished in front and noticeably square-nosed. All the stairways encountered by the author in his East Plaza investigations had definitely-rounded noses. On the 73 stair stones, the non-frontal sides were well-shaped planes, close to being finely finished. The slight taper allows for a stronger mortar bond. The fronts of the stones were beveled to provide the proper batter.

The joints were not broken regularly; each stone was laid horizontally. An average stone was 64 cm. deep, 30 cm. high, and 25 cm. wide (memory). The whole stairway was covered with seemingly non-painted white plaster.

On the east the stair side-wall extended 1.25 m.; on the

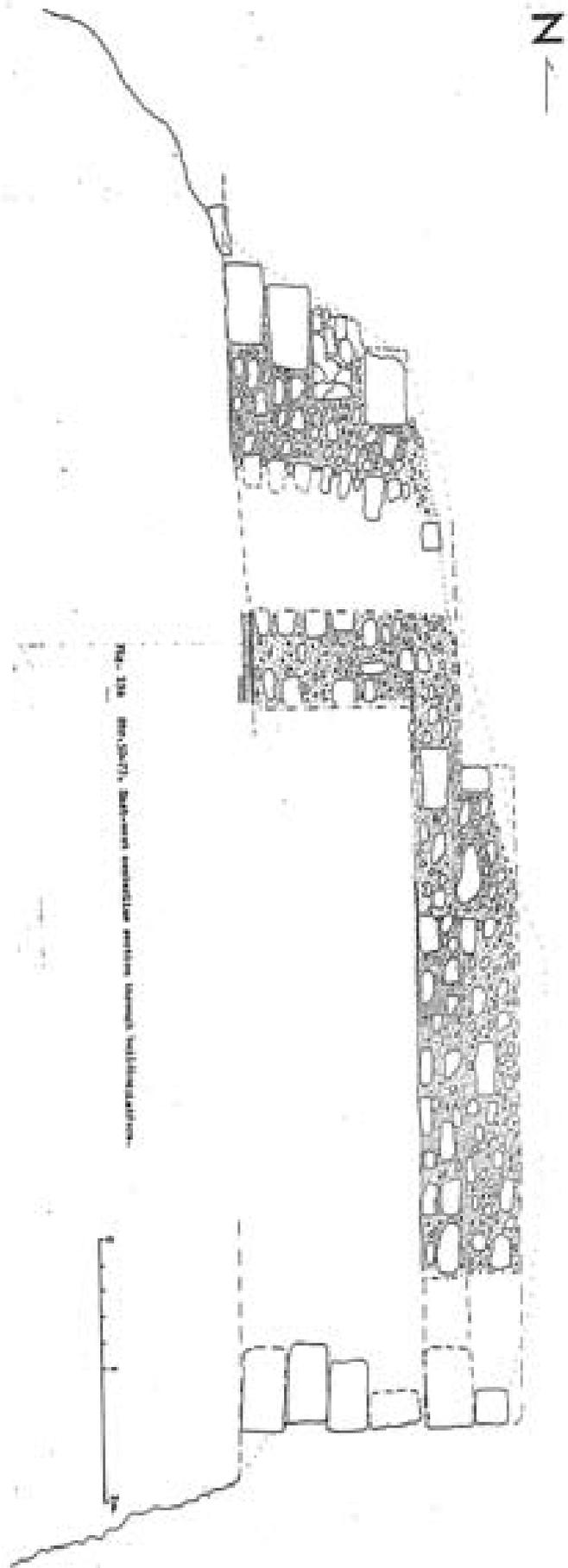


Fig. 126. 000-00771. Sub-surface geological section through hillside.

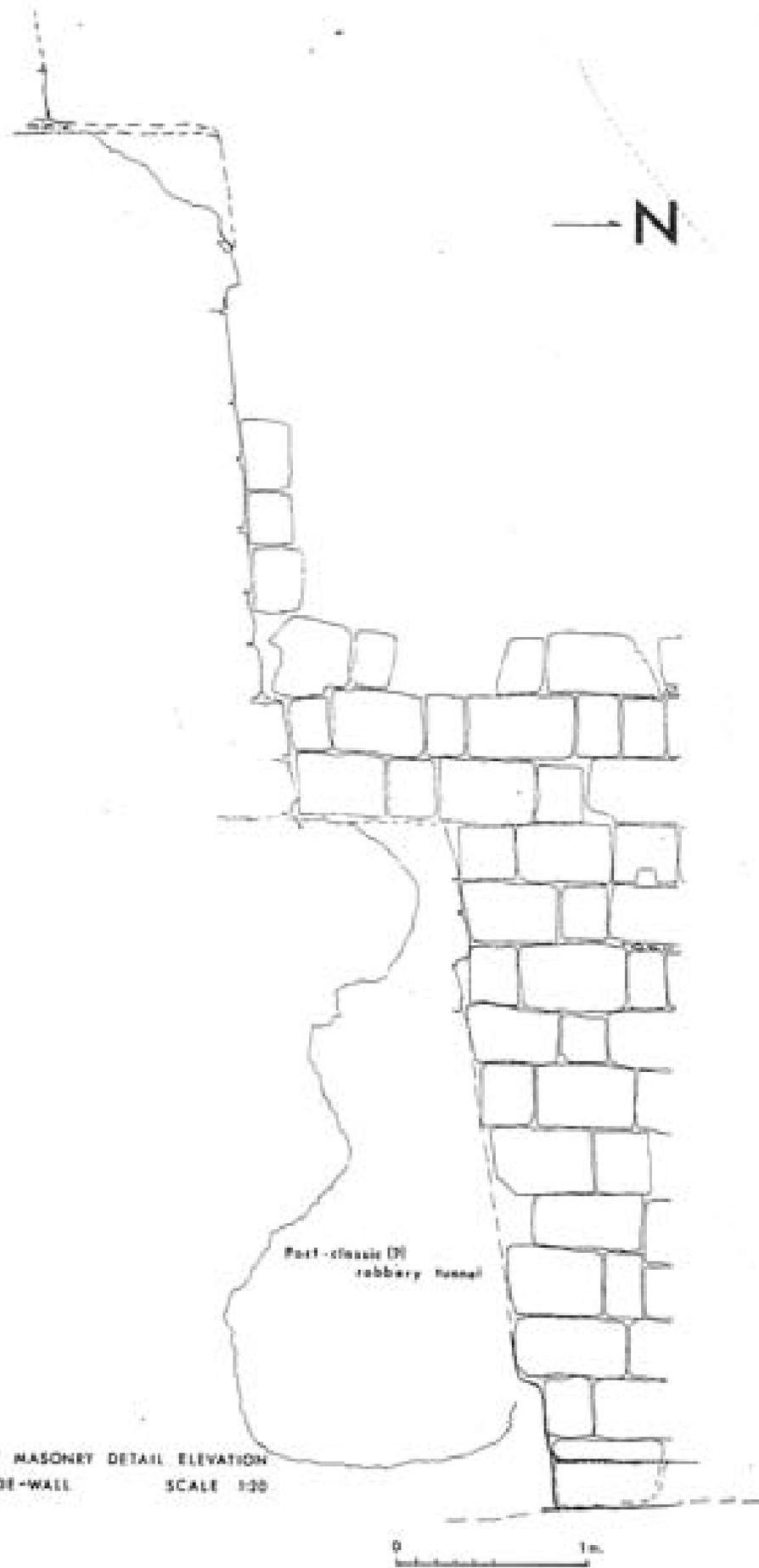


FIG. 20 STR. 20-73, EAST MASONRY DETAIL ELEVATION
(EAST) STAIR SIDE-WALL SCALE 1:20

west side it extended 1.10 m.

Stair Side-wall Masonry

The east stair side-wall was completely uncovered for all its extent intact. A part of it was recorded by R. Larios in a masonry detail elevation (Fig. 20). The disturbance caused by the robbery tunnel is visible.

Artifacts

Artifacts between the back of the final stair were cataloged under the number 117A/ 1. Very few sherds were uncovered, and nothing interesting enough to be cataloged by the lab staff was unearthed.

BUILDING PLATFORM STAIRWAY

The position of the construction of this stair in the sequence of construction of the whole pyramid is not known and is given no sequence number. The stair was greatly disturbed by gigantic tree roots, but its width was reconstructed as being 3.45 ± 0.05 m.; it projects 1.25 on the east side, 1.10 on the west side. Each step appears to have been approximately the same height as a course of facing masonry (32 cm.). Only four steps were found. At some point, an additional step or a "step-up" (Str.5D-73: Unit), the uppermost level of the building platform. There was no floor intact at the top of the stairway on any level.

FIG. 21 STR.5D-73, PLAN

FIG. 22A STR.5D-73, FRONT ELEVATION

FIG. 22B STR.5D-73, REAR ELEVATION

FIG. 22C STR.5D-73, EAST ELEVATION

FIG.23 SKETCH PLAN OF BASAL PLATFORM AND LOWEST PYRAMID
TERRACE SHOWING TOMB AND TUNNELS, STR.5D-73

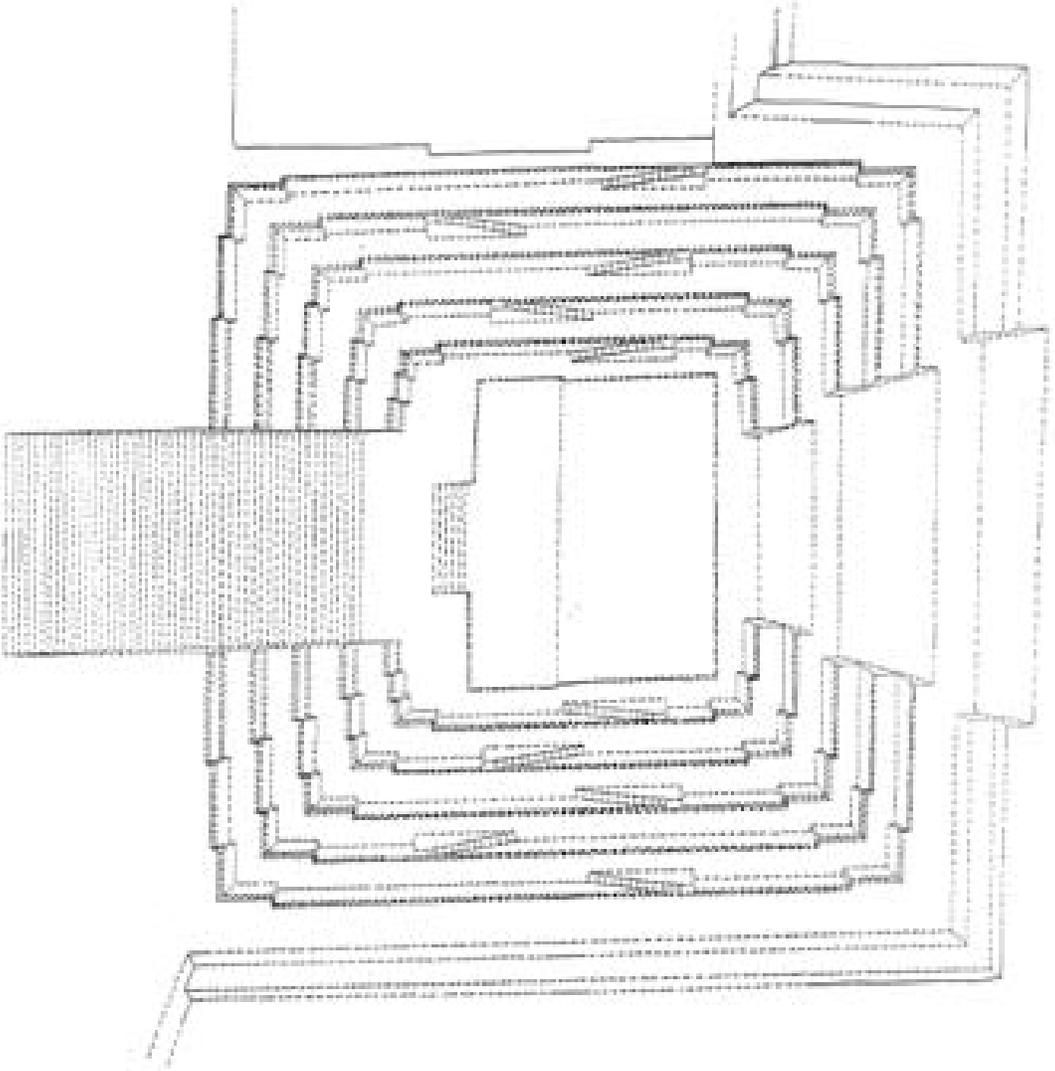


FIG. 21 STR. 5D-73, PLAN



2

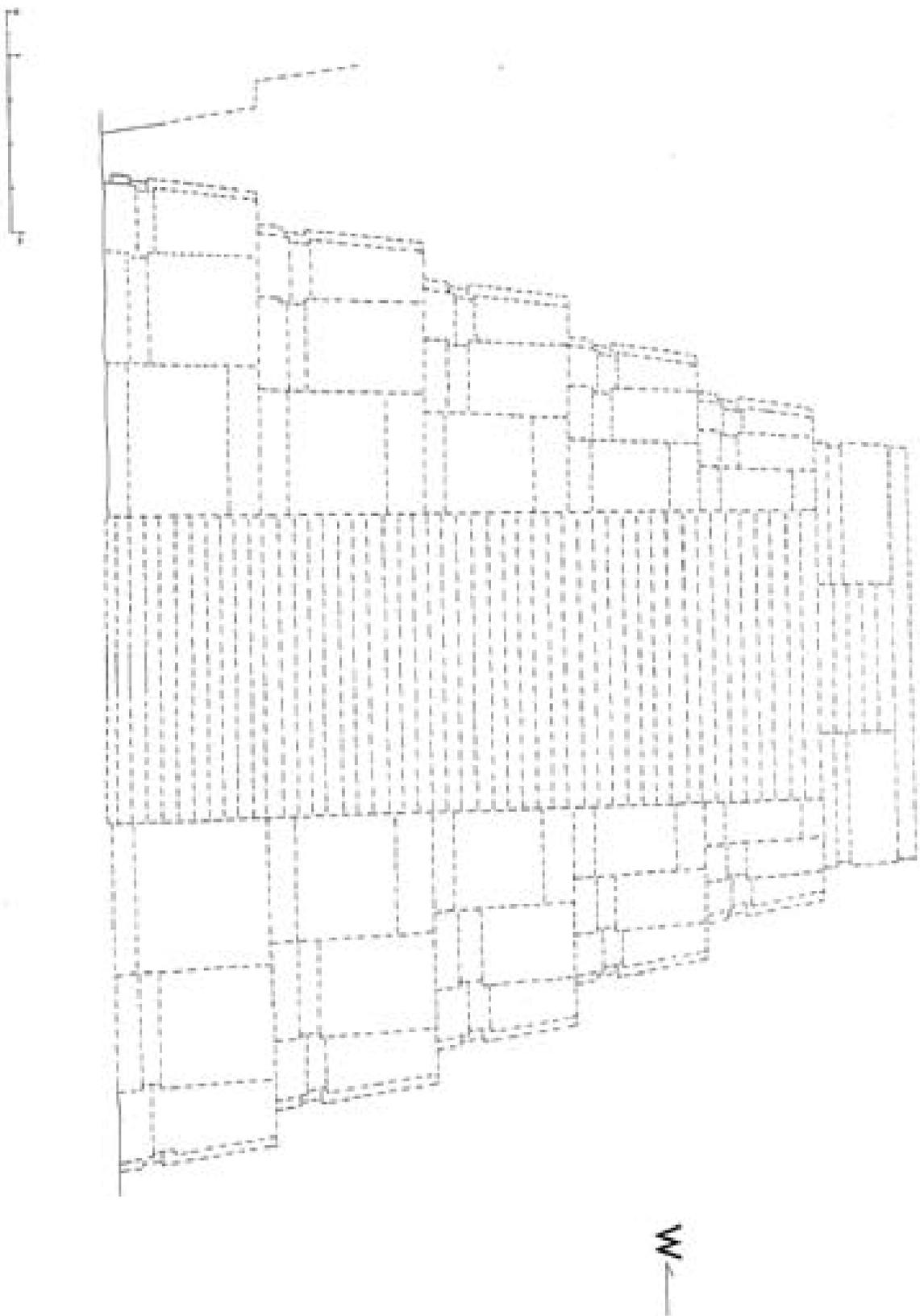


FIG. 22A STR. 5D-73, FRONT ELEVATION

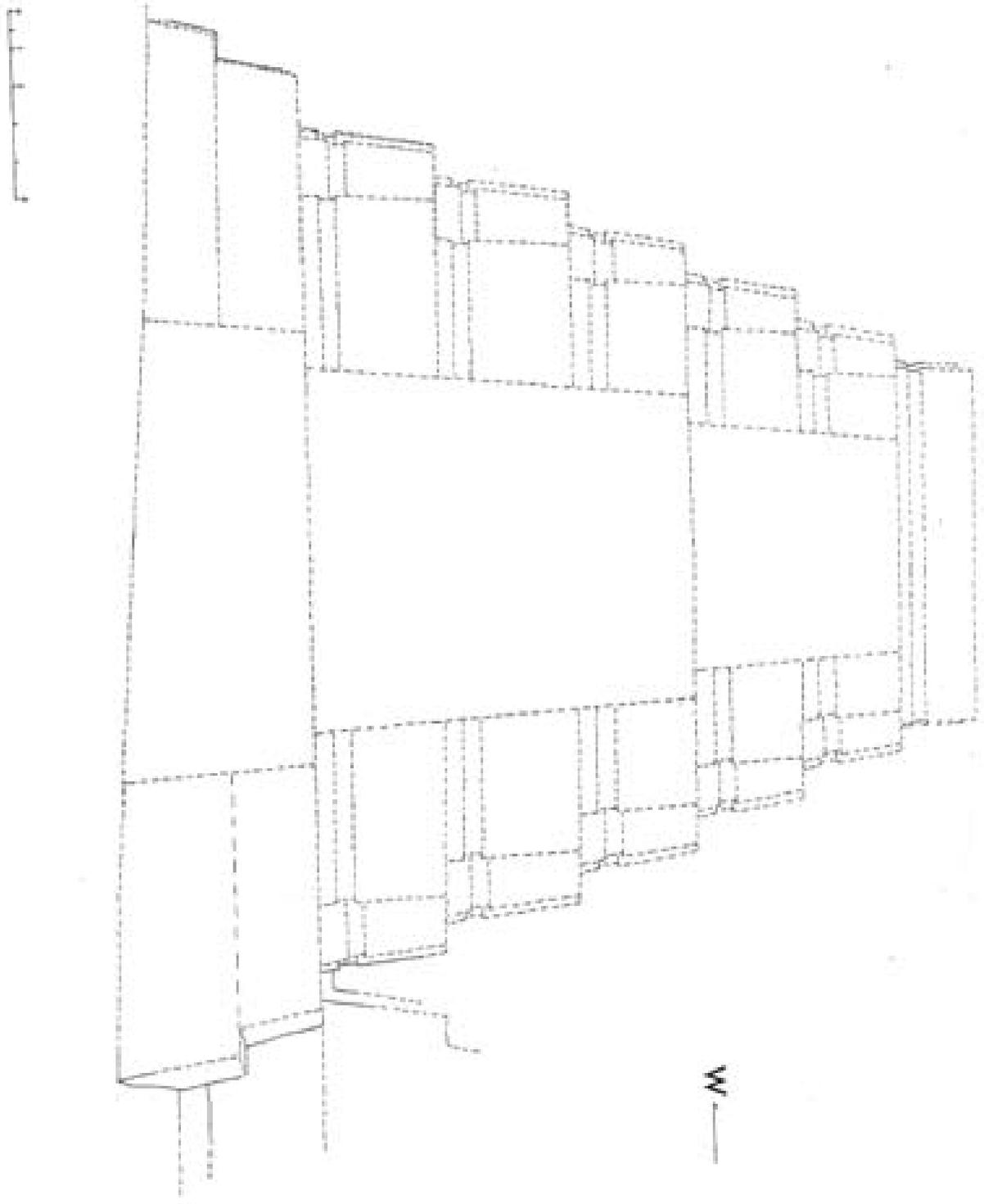


FIG. 22B STR. 5D-73. REAR ELEVATION

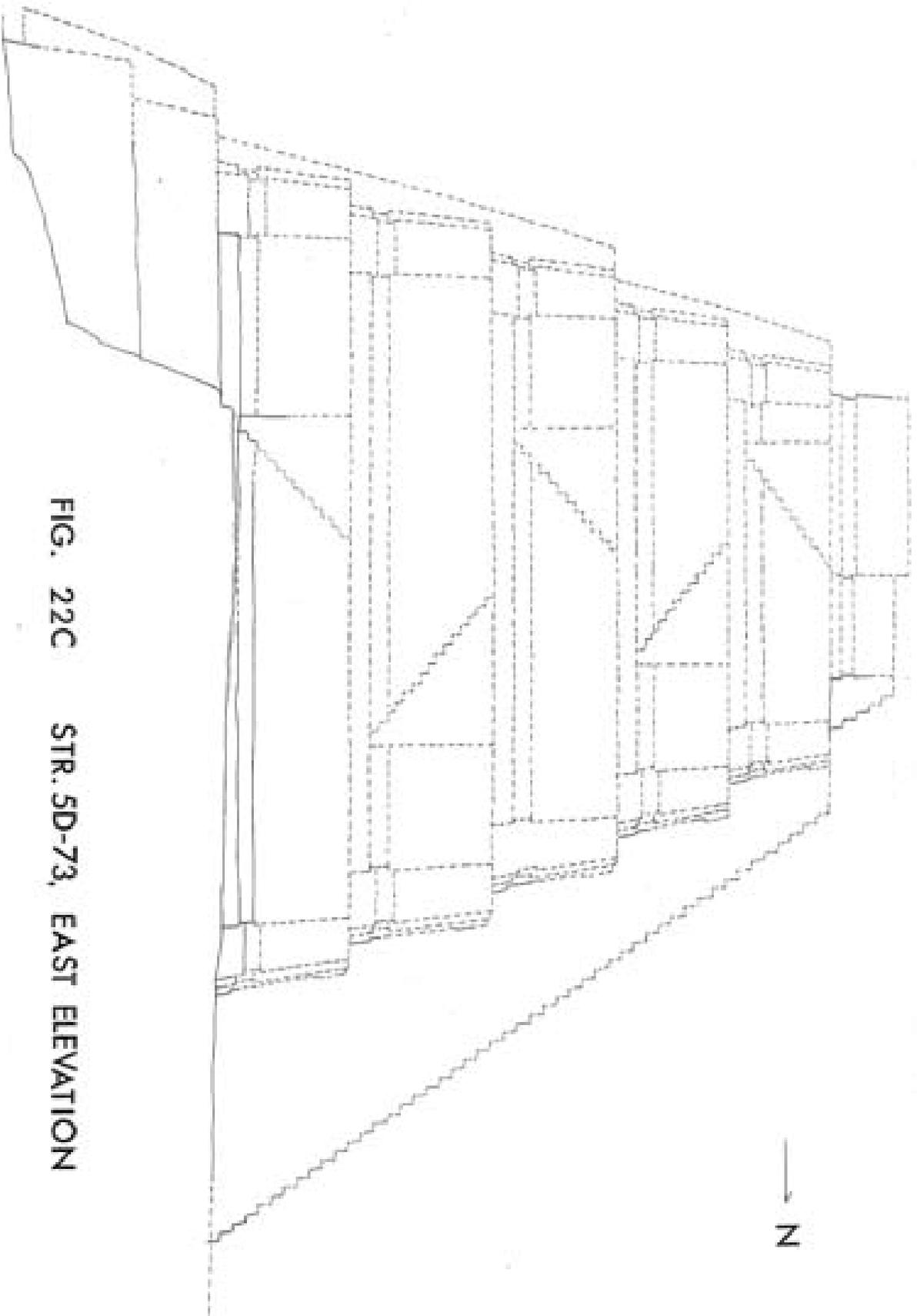


FIG. 22C STR. 5D-73, EAST ELEVATION

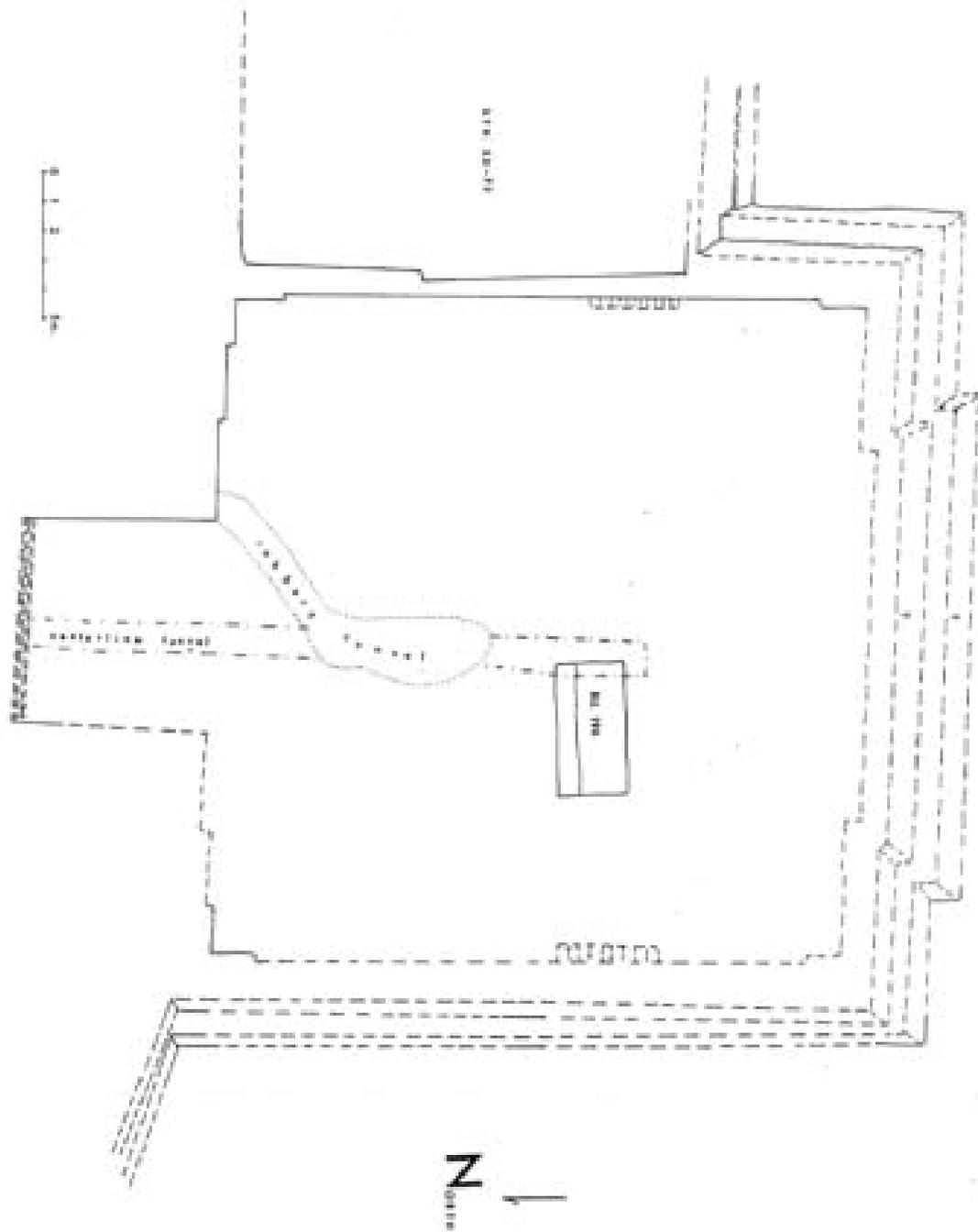




Fig. 20. Longitudinal section of an area shown in Fig. 19.

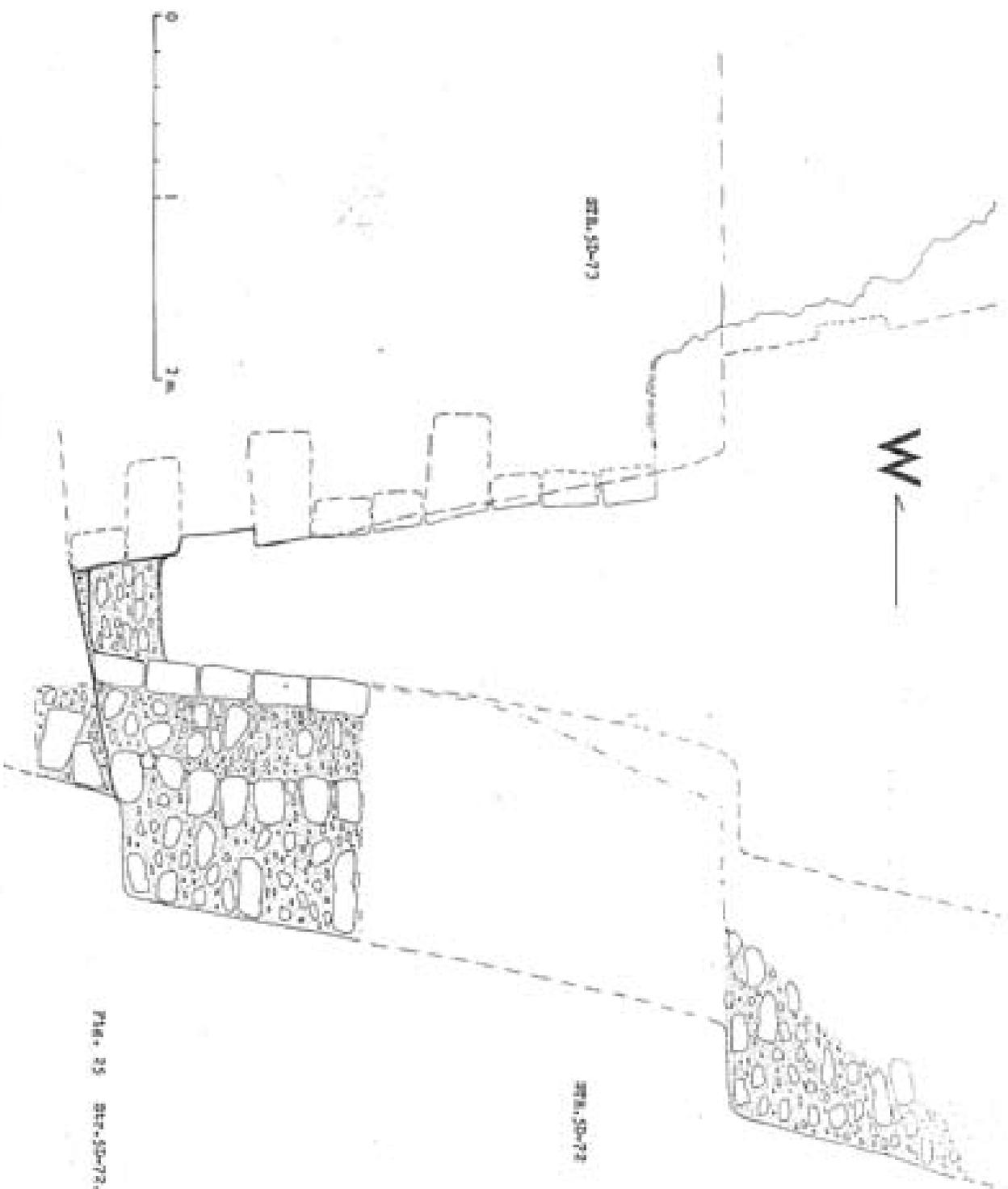


FIG. 25 STB. 50-73, STB. 50-72, south-west section.





The stair was not built until after the front facing for the building platform, as the facing masonry of the building platform ran 30 cm. or so behind the stair and was continued as a fill-retaining wall (Fig. 19a).

Stair Masonry

The step stones were similar to those used on the pyramid stairway, i.e., comprised of slightly tapering blocks laid as headers on their largest surface. All the stones overlap one another without any actual contact. The risers were single blocks.

DIMENSIONS	DEPTH (LENGTH)	HEIGHT	WIDTH
	?	26	26
	?	30	27
	60	27	?

A few stones of the stair side-wall were present, but they were uprooted and partially disintegrated.

CONSTRUCTIONAL ACTIVITY AFTER THE PYRAMID WAS FINISHED

After Str.5D-73's pyramid was finished constructional activity continued in the vicinity. This helps to narrow the dates possible for 73 because no major floors were laid in the Great Plaza area in Post-Classic times; consequently Str.5D-73 is not immediately Post-Classic. Not only in the Great Plaza, but also in the low area behind 73, floors continued to be laid, here abutting the basal platform of 73.

Plaza Floors

After the pyramid of Str.5D-73 was completed a floor was laid abutting it. Also, there seems to have been an additional floor in the narrow space between Str.5D-73 and Str.5D-72.

On the back and sides of the Str.5D-73 several floors were laid which abutted the 73 basal platform.

STR.5D-73: TIME-SPAN 1 - THE ROBBERY TUNNEL

Approximately 11 m. into the pyramid, in the centerline tunnel (Fig. 26) a large cavity was discovered (Photo 36). It extended back into the pyramid 5 m. from where first seen, and to the west it looked as though it may have gone northeast. At first, the author thought he had found a tomb, and one big enough for a whole dynasty. The centerline tunnel was widened to permit entrance into the chamber, and the content of the chamber fill could be seen--it was silt covered by up to 40 cm. of bat droppings. The chamber was carefully cleaned by layer, and artifacts were collected accordingly. The chamber appeared to have been approximately 1.60 m. tall and a maximum of 3.25 m. wide and was right on the centerline. The ancient robbers had cut below the floor about 40 cm. and had apparently stopped. The "floor" of their cut had a trampled-down mud appearance. It is not entirely certain that this level was as far down as they went. A trench was sunk through the level, and no large fill stones were encountered, although it appears that the fill of the Great



Photo 36 Str. 5D-73, centerline tunnel with robbery cut as first seen.





Photo 37 Robbery chamber before excavation.

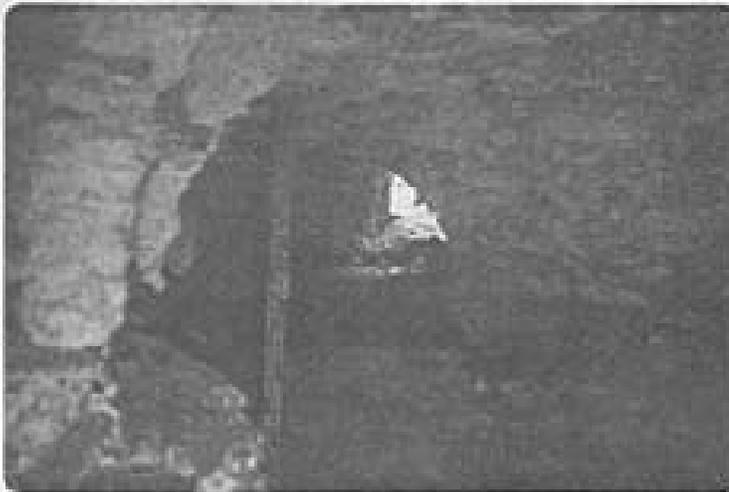


Photo 38 Str. 50-93, robbery tunnel looking from the centerline to the outside, after removal of accumulated debris.

Plaza at this point had no large fill stones (Seen on the side of the tomb cut further south, see p. 28).

When the chamber was cleared out, it was apparent that there had been a tunnel to the outside (Photo 38). This tunnel was completely choked with silt which made it at first invisible on the outside. When the tunnel was cleared, the method of entrance was visible. Rather than starting on the centerline, as did the excavator, the robbers knew that the easiest and shortest way to reach the centerline was by beginning at the intersection of wall, at the 1st terrace level (Fig. 23). For some reason, they did not start exactly at floor level, but about 40 cm. above it, suggesting that the pyramid had partially collapsed or that there was debris of some sort in the interior corner. They dug a tunnel about 1 m. in, 1.20 m. high to a point at which they began to dig down, 60 cm. in a short space; then the tunnel leveled out at just about floor level. Interestingly, at this point they did not seem to have actually reached the floor. 5.60 m. in the floor was uncovered and 40 cm. on was cut through to a depth of about 60 cm. The floor was not cut through until the tunnel reached the centerline of the pyramid.

The fill above the tunnel and chamber had hardly collapsed at all but was eroded (by air, water, ?). The only thing possibly associated with the robbery cut was a patch of burnt floor on the plaza floor just in front of the en-

trance to the cut. This may merely be coincidental. There were no tools or other artifacts obviously belonging to Post-Classic peoples.

Artifacts

Many of the sherds in the silt and bat droppings were either fallen from the roof or washed in from the collapsed fl11 at the entrance 117A/5, part of 4, 8, 10, and 11 were all taken from the lower levels of silt in the "chamber". These were the levels which would contain artifacts possibly left by the robbers. The following artifacts were cataloged:

OP 117A	QUAN-	SUBSTANCE	OBJECT	DIMENSIONS
LOT	TITY			
10	1	Bone	Animal, unmodified rodent tooth fragment.	
11	1	Shell	Local land snail (Dxystyla princeps) unmodified.	
11	1	Stone	Unmodified, small fragment of stalagtite. L. 3 cm.	
11	1	Flint	Flake-blade, L. 4.1 cm.	
11	1	Flint	Flake-blade, used ? Dark grey, flat, no visible bulb, possibly used on one edge, 5.4 x 3.4 cm.	
11	1	Flint	Core fragment, used 3 x 2.6 x 1.4 cm. grey.	
11	3	Flint	Two unmod. flakes and one unmod. core frag. Flakes: grey, no bulb, 3 x 4.5 cm. brown, no bulb, some cortex, 2 x 3. Core frag.: pink, 3.5 x 4 x 2 cm., some cortex.	
11	1	Obsidian	Flake-blade, retouched, L (3.5) cm	

None of the sherds or artifacts from any of the other levels of silt were cataloged.

Who Dug the Tunnel

From the artifacts there is no hint as to who dug the tunnel. From the method of excavation, however, there is a hint. Whoever dug the tunnel seems to have known that offerings would be on the centerline and that the quickest way to the centerline was not through the front stairway, here, there might be caches but no burials.

There are several other well-recorded robbery attempts, especially in North Acropolis temples, but the author does not have detailed information on these for comparison. Jade seems to have been what the robbers were after, but they usually left some artifactual remains and usually sealed their passages. The tunnel into Str.5D-73 was not sealed or filled-in.

There is a possibility that Mendez may have been the one to have dug here; but, by the time he arrived at Tikal, the pyramid had probably decayed to its present extent, and a tunnel would have to start off higher up than it did.

FIG. 26 STR.5D-73, NORTH-SOUTH CENTERLINE SECTION

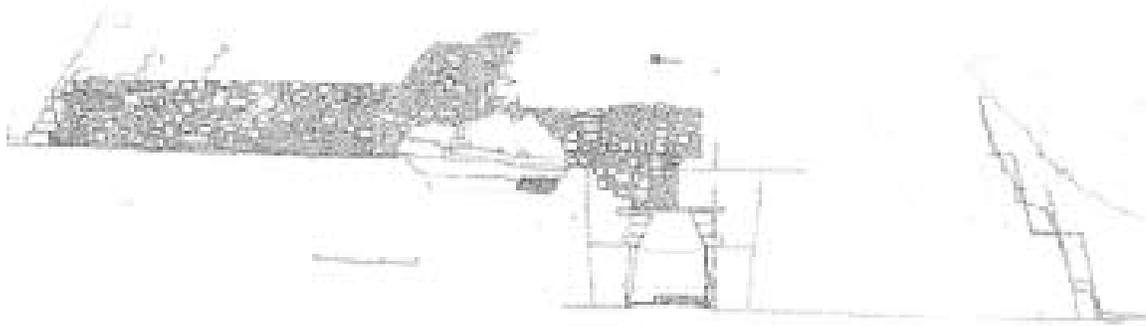


FIG. 10. SECTION THROUGH THE GATEWAY

