

A

~~Pyramid~~  
~~STRUCTURE K-5~~

~~numbered XLII on the earlier map by Oliver Ricketson, Jr., is~~  
Pyramid Structure K-5, the only large free-standing pyramid of the

West Group, ~~which is not a part of the Acropolis Complex.~~ For this

reason it was, <sup>at</sup> the inception of excavations in 1931, deemed  
of considerable importance and was one of the first to be investi-

gated. In 1931 the summit edifice, <sup>K-5-1st,</sup> was excavated, and in 1932

the interior and ~~the~~ <sup>(southeastern)</sup> left slope of the pyramid were exa-

mined. This work was done under the supervision of the present

writer, the excavations of 1932 being ~~the~~ the ~~the~~ major pro-

ject~~s~~ carried out by me in that year. For the many shortcomings

and uncertain points in this work I must plead as an excuse the

~~immense~~ <sup>great</sup> amount of executive work entailed by the direction of

the Expedition, which prevented my intensive application to the

excavation projects directly under my supervision.

The results of these investigations are of maximum importance

inasmuch as they revealed the presence of two earlier ~~pyramids~~

~~and~~ structures which had been buried under the superficial pyra-

mid and structure. The middle of these is termed K-5-2d, the

lowest K-5-3d. It was not definitely ascertained if there may

not be <sup>another</sup> other lower buried structure, K-5-4th, ~~and possibly even~~

~~K-5-5th.~~

In 1933 Mr. Satterthwaite made some additional excavations and investigations on the pyramid slopes, the results of which are incorporated herein, and in 1934 he cleared and photographed the front face.

Pyramid K-5 stands ~~at~~ at the northeastern end of the long West Group Plaza and faces approximately down the long axis of this Plaza, though <sup>it lies</sup> somewhat to the northwest of this axis, and face ~~off~~ slightly more southerly than the <sup>latter</sup> ~~axis~~ so that the <sup>two</sup> pyramid axes would meet ~~the Plaza axis~~ at about <sup>the</sup> ~~its~~ southwestern end <sup>of the Plaza.</sup> It faces, therefore, more or less at right angles to the majority of the structures on the Acropolis. It is well centered as regards the northern Ball-Court, K-6, <sup>southwest of it,</sup> the axis of the pyramid running <sup>exactly</sup> <sup>middle of the alley</sup> down the ~~aisle~~ of the Ball-Court. From the summit of the pyramid, therefore, one obtained a clear view of the Plaza over the Ball-Court. This relationship between K-5 and the Ball-Court <sup>is presumably</sup> ~~must be~~ intentional and of significance.

The position of K-5 was probably determined by the natural terrain, that of the Ball-Court ~~determined~~ by that of K-5.

The floor of the Plaza in front of K-5 <sup>at present</sup> is not level but slopes downwards slightly towards the southeast. At the southern corner a corner of a low basal terrace is obvious, <sup>this is not observed</sup> but ~~missing~~ at the western corner. On both southeastern and northwestern flanks the ground ~~rises~~ <sup>rises</sup> slightly towards the rear <sup>and</sup> <sup>although</sup> at the back the soil level is but slightly higher than that in <sup>front</sup>

and likewise sloping down towards the southeast. At a short distance from the present base of the pyramid the steep ascent of the hill behind begins. No excavation was done here, and it is possible that the base of the pyramid at the rear was at the same level as at the front but now covered by wash from the erosion <sup>from the pyramid and from</sup> of the hill behind. It is possible that a small natural mound at this place determined the exact location of this pyramid, but there is no present evidence of this, and excavations in the interior were not continued deep enough to be certain of it.

*fallen*  
Two eroded stelae, 38 and 39, lie on the slope between the present base of the pyramid and the level floor of the West Group Plaza. The exact locations of these were not recorded, but 38 lies near the northwestern limit if not beyond it, 39 in front of the pyramid to the right (northwest) of the center. Both of these were found by Morley in 1924 and were unknown to Maler. Both lie <sup>in apparently (position)</sup> undisturbed with their tops toward the pyramid. No excavation to discover their cists or places of interment were attempted, but presumably both fell backward and their bases indicate the approximate original position. The carved faces of both therefore lay exposed and have practically

*been destroyed. For further details on these see Section on "Associated Monuments".*

*Outline*  
Although at present very much eroded, and therefore of uncertain dimensions and height, there seems to have been a broad terrace at the base of the pyramid at the front, a frequent feature at Piedras Negras, and, also as usual here, this broad basal terrace carried monumental dated carved stelae.

~~been destroyed.~~ Stela 38 broke into many pieces, and the carving of the face is gone beyond even hypothetical reconstruction. The glyphs on the <sup>right</sup> ~~left~~ side edge <sup>(facing north / opposite the monument)</sup> are also eroded except for a few near the top where they begin to curve around the semicircular top.

Those on the left edge are better preserved and show two

columns of glyphs beginning at about \_\_\_\_\_ cm from the base, each column apparently containing \_\_\_\_\_ glyph-blocks, and extending for a short distance around the curved top.

(Plate \_\_\_\_\_, Fig. \_\_\_\_\_) Dr. Morley reads the date as 9.12.10.0.0.

The lower \_\_\_\_\_ cm. of the front face was probably also uncarved and the stela was probably interred for this distance.

The dimensions of Stela 38 are about

Stela 39 resembles 38 very closely, being of about the same size, about 4.15 by 1.44 by .40 m. The shape is

similar with semicircular top, around which the glyphs on the sides are practically straight but converge at the ~~base~~ <sup>slightly convex</sup> base where the ~~width~~ <sup>width</sup> is 1.27 m. The side edges extend for a short distance. The base is uncarved. The rear is perfectly flat and apparently uncarved.

for a space of .95 m, which part was probably interred. The

state of preservation is, however, much better; possibly the

limestone is harder. It is broken in two pieces and the eroded

face still retains traces of a large single figure (32-M-79).

This is somewhat of the type of the eroded faces of Stelae 1

and 3, and of the well-preserved faces of 7, 8, 9, and 35.

32-M-75

This, according to the Goodman - Thompson collection is May 10, A.D. 682; according to Spinden, the date would fall in 422.

A large figure is shown from the front with the feet putturned. The pendent flap of the loin-cloth and the girdle are shown, as well as a large ornamental headdress. In his right hand he holds a lance <sup>or staff</sup> and at the base to either side <sup>is</sup> ~~are~~ apparently a small human figure, probably a captive. The glyphs on the side edges are comparatively well preserved, <sup>each</sup> consisting of ~~two~~ <sup>blocks</sup> a single column of ten glyphs (31-67, 32-M-78).

The date is <sup>read</sup> ~~given~~ by Morley as 9.12.5.0.0., one hotun (five years) earlier than that of Stela 38. This is the oldest ~~stela~~ <sup>stela</sup>

in the West Group, the next earlier being Stela 37, the last

(9.12.0.0.0) <sup>after Stela 38,</sup> stela in the South Group, and the next later, <sup>according to Dr. Morley's readings.</sup> Stela 6 in the West Group proper (9.12.15.0.0.). <sup>^</sup> All these ~~the~~ four are

in close series, erected at five year intervals.

This date would be June 5, A.D. 677, according to the correlation proposed by Goodman and accepted by Thompson; Spindler's school would make the year 417.

Several excavations were made at the front base of the pyramid for stratigraphical studies. One of these was at about three meters from the present base of the pyramid. The upper stratum contained soft black humus mixed with small stones and rubble to a depth of about 60 cm. The stones and rubble had probably washed down from the pyramid. A few sherds of large red vessels were found in this. These are mainly coarse with thicker rims, tempered with gravel or crushed rock, with crystals and small iron-red nodules. A few were of buff ware, and some finer smooth red ware; the leg of a tripod vessel was also found. Between depths of 60 to 100 cm, harder and more grayish earth was found with many small stones and potsherds. This probably included the floor of the court, since below this depth decomposed rock without potsherds was found, the surface irregular. Between 60 and 80 cm, ware of finer and smoother red surface was mainly found, also some of poorly baked unsmoked black. From 80 to 100 cm, very few of the coarse red sherds were found and more of the thin red with thin rims. These are of finer paste. Also thin buff and smooth black ware were found.

In a second excavation sherds were found to a depth of 120 cm or more, at which depth red clay was reached. This excavation was closer to the base of the pyramid and the strata naturally deeper. The same large coarse sherds of thick vessels of coarse paste were found near the surface, also some buff ware of finer paste and some smooth red ware with finer paste. At a depth of about 90 cm. sherds were encountered in greater quantities, this being probably on or near the original surface level. Among these were many fragments of fine painted pottery, the designs of glyph cartouches and circles, in black and red on buff. Some of these appear to be of negative-painted ware. Others are of thin red ware with black inside surface. Still the majority are of large red coarse and plain polished red wares. Great quantities of sherds were

found at the depth of 1 m., both thick coarse red and thin fine painted wares being found. At a depth of 110 cm. the sherds were practically all of fine ware, either thin painted or medium thin polished red. At the lowest depth, about 120 cm., the sherds are more buff than red, some of them thick but smooth. None are very thick, but also none very thin and fine.

In this region, <sup>close to the surface,</sup> ~~at a slight depth~~ was found a human lower jaw.

In a third cut in the upper strata the same distribution was found, a profusion of thick coarse red sherds, mainly with thick rims, near the surface. These were in the great majority, but there were some of smooth red ware of a better paste. Much of the ware is poorly baked and black. A minority are of polished red and black and painted wares, the painting mainly bright red on reddish.

*For further details on the ceramics, see appendix.*

K-5- /6 *ee*

When first observed, Pyramid K-5 was a <sup>high</sup> steep-sided mound with a rounded top, heavily overgrown with forest. <sup>(32-M-95)</sup> No evidence of artificial nature was seen except for the top of a wall on the summit which determined the place for the commencement of excavation and was found to be the center of the rear wall of the upper temple. The maximum height above the plaza floor

was about <sup>16</sup> ~~17~~ m. The base was modified rectangular, about

*46 x 42*  
*53 by 47 m.*      *by* *41 x 37 m.*

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*Rest*

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seemed to have a height of about 1.5 m at the south corner,  
the terrace blending with the plaza level at the west corner.

Plans and sections of pyramid K-5 are shown in Plates  
and <sup>unbroken</sup>, ascertained boundaries in ~~straight~~ lines, assumed  
boundaries in <sup>broken</sup>~~dotted~~ lines, excavated and ascertained features  
in solid black, assumed features in dashed hatching. On the  
plans, the locations of the sections are shown by heavier short  
lines. Separate plans are given for structures K-5, K-5-2d, and  
K-5-3d; a section looking north, and one looking east, depict  
all three structures. It will be seen that the greater part is  
hypothetical and assumed and much of this, it must be admitted,  
is based on equivocal and too little ~~evidence~~ data, the evidence  
for which will be explained in the text. However the general  
ensemble can not be far incorrect, the questionable points  
mainly in details.

*Figure of K-5 follows*

The right or northwestern slope of the pyramid was left entirely untouched, nor was any debris thrown down this slope. It is therefore in original condition and available for future investigation which it is hoped will be done in order to reveal the nature and relationships of the three successive pyramids which probably

exist, and to *verify the uncertain details observed on the ~~front~~ other* ~~explain the apparently equivocal and contradictory~~ *these ~~right~~ slopes.* ~~measurements made on some of the other slopes.~~ The upper half of

the left or southeastern <sup>side</sup> ~~slope~~ of the rear slope was removed and the lower half covered deep with debris as was the rear or north-eastern section of the left or southeastern side of the pyramid.

*latter* *found ~~transferred~~ which were later covered over*  
 On this side, terrace walls ~~were cleared~~ but as it was not clear to *by debris from the excavations above.* which of the superimposed pyramids they belonged, and as the ~~measurements do not agree with those of the front slope they have~~ *merely shown unattached* ~~been omitted~~ in the Plans and ~~sections~~ on Plates 1A and 2A.

On the front slope excavation was done in 1931 and 1932 on the right or northwestern half near the top, revealing some of the terraces of the outer pyramid, and in 1933 Mr. Satterthwaite made some excavations near the base on the left or southeastern

*latter* *two very large* *stucco*  
 side. These revealed ~~a grotesque mask of heroic proportions~~ but, as was the case with the excavations on the left slope, it is

uncertain to which of the three pyramids these belonged. In neither excavation was the edge of the staircase which is presumed to have ascended the front slope found with certainty.

~~The last broad terrace at the front~~

Plans and sections of this pyramid and of the three successive structures K-5-3d, K-5-2d, and K-5-1st are given in Plates 1 and 2. Ascertained boundaries are given in unbroken lines, assumed boundaries in broken lines; excavated and ascertained features in solid black, assumed features in dashed hatching. On the plans, the locations of the sections are shown by heavier short lines.

<sup>Although the</sup> ~~Since no~~ terrace walls <sup>and</sup> ~~or~~ other features found on the lower portions of the pyramid were definitely tied in with any of the three superimposed structures, <sup>not</sup> ~~they are shown free and not connected with the structures.~~ <sup>yet the evidence for their relationship with K-5-2d is sufficiently convincing to warrant their connexion on Plan and Section.</sup> On the Plan of Structure K-5-1st, (Plate 2A), in addition to the central and uppermost features determined as <sup>(Plates 2A)</sup> pertaining to this structure, the general form of the pyramid is shown, the location of the mask-bearing terraces at the front, of the terraces at the left side (right on the plan) near the rear, ~~(although it is likely that the measurements were in error),~~ and of the long buried wall running out towards the southeast. The <sup>of these features</sup> location on this plan does not imply my opinion that <sup>all</sup> ~~they~~ belong with K-5-1st. Since no <sup>certain</sup> limits were found to the floor of K-5-2d the plan for this has been omitted, and the plan for K-5-3d (Plate 2B) shows merely the ascertained features of the crowning structure.

<sup>transpose</sup> On Plate I sections front to rear (A) and side to side (B) are shown. In these are shown all ascertained features, ~~but the lower ones have been left free and not connected with the upper features ascertained as belonging to the respective structures.~~ <sup>which have been connected so as to present a hypothetical restoration.</sup>

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The temple which crowned this pyramid <sup>LK-5-12\*</sup> was almost completely invisible when first seen, the top of the pyramid rounded and covered with forest. This was the condition of practically all the buildings at Piedras Negras. The vaulted roof had collapsed, filling the interior and covering the faces of the remaining lower parts of the walls. Only a few stones of the rear wall at the central rear niche appeared above ground when excavation commenced. Excavation revealed a temple of uncertain original height, consisting of one large room with three entrances at the front and a niche at the back. The ~~thickness~~ <sup>depth</sup> of the ~~walls~~ <sup>debris</sup>, as well as the many slabs in ~~the debris~~ <sup>it, some of them in parallel vertical position,</sup>, indicated that it was covered by a vaulted <sup>masonry</sup> roof which ~~probably~~ <sup>may have</sup> carried a roof-comb. It was almost entirely excavated except for the northern corner in which several great roots of a large tree rendered complete removal inadvisable.

This <sup>room</sup> ~~temple~~ measured 8.70 in length by 2.15 in width, minimum <sup>division</sup> in side. The maximum height of the wall after excavation, at the rear niche, was 1.80 above the original floor level. The rear wall was unbroken except for this central niche, the width of which was 1.05.

Its inner rear wall was set back 85 to 90 cm. from the inner side of the rear wall of the room. In the center of this niche stood a pillar stone, doubtless of an important ceremonial nature, <sup>(Plate</sup> (31-25). This is rather well shaped but not carefully finished, ~~and was probably covered with stucco, although no traces were noted.~~ Roughly cylindrical in shape with lozenge-shaped cross-section, it measures 56 cm. high, 25 wide and 20 thick, being widest at the top. A similar stone, the original position of which is uncertain, was found in the debris <sup>near the right front entrance</sup> of this temple, and one in position in each of the buried structures K-5-2d and K-5-3d, almost exactly beneath this niche. These indicate that the three successive structures served a similar purpose, <sup>(Plate</sup> (32-M-94-b). <sup>Similar stones were also found in</sup>

The original, or at any rate the latest, level of the ~~ground~~ <sup>material</sup> in this niche was very high, very near the top of this upright stone and much higher than the floor of the room. No wall across the front of the niche which supported this level was found, however, and the ashy, though compact nature of the ~~soil~~ <sup>fill</sup>, full of many potsherds and small stones, indicated that this accumulated height was due to the ash from fires made here. Few potsherds were found elsewhere. Larger stones of irregular size were also found ~~here~~ <sup>in the ash</sup> but no fallen roof-slabs. However,

~~near the base~~ <sup>bottom of the niche but above the base of the column-altar</sup> ~~some large stones~~ <sup>of the building</sup> ~~projected into the niche and under the walls to the side,~~ <sup>of the side</sup> indicating that the ~~stone~~ <sup>niche was</sup> ~~was built for the column-altar and the two~~ <sup>built for the column-altar and the two</sup> ~~practically contemporary.~~ <sup>practically contemporary.</sup> At the front at least partially interred when the walls were built. At the front of the niche, on a line with the face of the ledge at the base of the rear wall was a well-made threshold slab with beveled front; the top of this was, however, below the level of the ledge which extended along the rear wall near floor level, and it was probably originally covered by the small horizontal slabs of this ledge. This threshold block, however, ~~covered~~ <sup>was occupied</sup> only the eastern half of the entrance, the western half being a low wall of stones. It is ~~likely~~ <sup>possible</sup> that there was originally, <sup>at</sup>

*the last period of occupation,*

a front wall up to the level of the ash fill near the top of the vertical interred stone. <sup>Of, so, this wall fell into the room and was thrown out with the debris down</sup> The niche walls were straight and vertical only, to the level of the slab ledge, beneath which some of the stones of the wall projected into the niche (~~although~~ <sup>although</sup> the majority <sup>of them</sup> continued even with the face of the wall), indicating that there was an original level of the niche at the same level as the ledge. This ledge level was about 35 cm. below the top of the stone and 20 cm. above its base. At the base of the stone was an irregular level of stones and mortar covering the interior rock-fill of the pyramid. The mortar floor showed clearly against the walls. Although the walls at the side of the niche extended to an observed maximum height of 1.80, the rear wall was only 85 cm. above the level of the ledge. ~~This was probably due to a fall.~~ The rear and side walls were bonded to this <sup>letter</sup> point, but above this the side walls show no bonding. Nothing was interred around the <sup>column - altar</sup> ~~vertical stone~~, but the potsherds were of good quality, mainly thin black ware.

The facts that the side walls of the niche rose to a height about 1 m greater than the rear wall, and that the side walls showed no evidence of bonding above the rear wall, <sup>suggest</sup> ~~indicates~~ that the latter was non-existent above its present height. An opening of some sort in the rear wall is indicated. The nature of this is suggested almost to the point of proof by the discovery by Mr. Satterthwaite in Structure J-29 in 1934 of a similar niche and column-altar with a long ventilating flue piercing the rear wall. This flue, however, was of much less width than the niche, and of slight height. The ~~present~~ <sup>in K-5-1st</sup> one must have been more ~~of~~ the nature of a window, <sup>apparently occupying</sup> the full width of the niche, and the full present height of the side walls, therefore about 1 m square, and probably covered by a lintel. At any rate the purpose must have been the same, to let out the smoke from the fires, probably of copal incense, built around the altar stone.

The stones of the side walls, especially at the front, <sup>of the niche</sup> <sup>face</sup> were <sup>of the room,</sup> ~~apparently~~ better than those of the rest of the interior of the wall, <sup>of the niche</sup> were ~~apparently~~ well selected for relatively quadrangular size, at the surface of while those ~~of~~ <sup>of the niche</sup> the rear wall were very irregular with no attempt at placing in courses. This may be some indication that the niche was ~~later~~ dug out of the wall as a later addition, the corner stones refitted with selected blocks, the rear left unfinished.

During the excavations of 1932, when the greater part of structure K-5<sup>5</sup> was removed in order to investigate those beneath, a number of ceremonial objects were found in a position which indicated that they had formed part of <sup>a</sup> ~~the~~ ceremonial cache buried under this niche <sup>column - altar,</sup> ~~pillar~~ stone. Similar caches were found beneath the two corresponding stones in the lower structures. Probably not all of these objects were found, and those which were recovered were subsequently lost in the fire at the camp. The field catalog notes the following objects, with which were found fragments of an undecorated pottery vessel, doubtless that in which the cache was buried: "eccentric<sup>7</sup> flints, objects of obsidian and of shell". The cache was, then, very similar to many others found elsewhere, both in Piedras Negras and in other sites. <sup>Further notes upon this cache are given in the section on "associated artifacts"</sup> ~~along~~ <sup>at the base to form</sup> the rear wall, and ~~against~~ <sup>^</sup> this wall only, a narrow ledge which has already been referred to, <sup>The top of this ledge</sup> was found at a height of about <sup>thus</sup> 30 cm. above the floor. It was 10 to 15 cm. in width, and ~~below~~ <sup>it</sup>

Plate?

*the low wall at its front reduces*  
~~the inner face of the rear wall was at its inner edge, reducing~~ the width of the room at floor level to about 2 m. The top of the ledge was paved with small and well-shaped thin rectangular slabs of stone.

The excavations of 1932 revealed that the rear wall of the temple was 1.65 in thickness; the lower part, including the inner ledge, was naturally of greater thickness, 1.85. Behind the niche it was of equal thickness, projecting back in a rectangular extension to about the depth of the niche, 80 cm. The walls were not well finished and were probably originally stuccoed. The left or southeastern side of this extension was about 25 cm. beyond the line of the left inner wall of the niche. The right side was not uncovered, but presumably it was symmetrically built, so that the total width probably was 50 cm. greater than the width of the niche or about 1.50 m. The greater part of the rear wall was in bad condition *but the inner side indicated* ~~and fallen. The presumption is~~ that it continued to meet the side walls, ~~which were probably of equal thickness.~~

The southeastern side wall <sup>*of the room*</sup> was plain except for one feature in the approximate center. This may have been unintentional and due to the fall of some of the wall stones, but a small triangular niche was seen there, formed mainly by two slanting blocks, their upper edges touching, the bases widely separated <sup>(Plate</sup> (31-24). This feature was apparently not duplicated in the opposite northwestern side wall which was not entirely excavated, due to the presence of the large roots of a great tree <sup>(Plate</sup> (31-23). All of the walls sloped outwards, being partly fallen. They were made of stone blocks of relatively equal size, either rough hewn or selected for their relatively rectangular shape and flat sides. Most of them were in courses, but these were far from regular. ~~The thickness of the side walls were not accurately ascertained, but were presumably about 1.50 m.~~

The front or ~~south~~ <sup>*southeast*</sup> wall was low, thick, much fallen and contained three large entrances, consisting, therefore, of two walls extending

from the side walls, and two piers. The end wall to the southeast was 85 cm. long, that to the northwest, 70 cm. The southeastern <sup>on the inside,</sup> pier was 1.30 m. wide, that to the west, 1.25 m. (Plate 31-22). The southeastern entrance was 1.35 m. wide, the central one 1.85 m., the western one 1.40 m., totalling 8.70 m. for the inner length of the ~~front~~ <sup>room</sup>. The outer edges of the side walls were not cleared, but they were presumably of the same thickness as the rear and front walls, about 1.50 m., making the maximum length of the front ~~front~~ <sup>structure at the</sup> 11.70 m. <sup>making</sup> the maximum exterior width of the building, exclusive of the central extension of the niche

at the back, 5.20 m. The maximum thickness of the front wall was difficult to determine, due to its fallen condition, but was apparently about 1.40 m. The central entrance was not exactly in front of the niche at the back. Its width of 1.85 m. is about 20 cm. greater than the

*Lintel wings about 1.00 m*

<sup>so-called</sup> length of Lintel 7 which was found below and in front of it on the front slope of the pyramid, and which undoubtedly bridged it, indicating that <sup>This difference suggests that the stone may not be a true lintel; if so it must have been supported by corbelling at the sides. For further discussion see the section on "associated monuments."</sup> the lintel was probably supported by corbelling at the sides.

The interior of the temple room was full of debris in which large slabs, probably from the roof <sup>vault</sup> and the ~~corbelled arches over the entrances~~ were prominent. These were especially frequent near the niche and in the central axis of the room. In this latter place, many were found in parallel vertical position <sup>(Plate</sup> (photographs 31, 113, 114). The largest ones found measured 120 x 55 x 10, 90 x 55 x 7, 88 x 48 x 5, 116 x 68 x 7, all found near the niche, frequently leaning against the walls.

No definite floor to this room was found in any place, the rubble fill of the pyramid being encountered before the floor was noted. In the northwestern part, a hard layer, doubtless the floor, was found below the debris which filled the room, but this was not noted in the southeastern part. This floor was not level, however, and no smooth plaster was found. In the southeastern third no hard layer was found. Everywhere, however, the floor was composed of small stones; at the

northwest these were cemented together in a compact mass, while at the southeast they were free and mixed with dirt. The floor was picked out (31-115) <sup>(Plate)</sup> to ascertain if anything had been buried under it, but the rock-fill of the pyramid was encountered without any evidence of interments or caches. Some fragments of stucco were found, but relatively few. Some of these were cemented together and indicated that they had been broken up and mixed with plaster to make the floor.

Among these were two fragments of a beautiful human face, <sup>much</sup> ~~slightly~~ larger than natural size. The following year, 1932, a large piece of <sup>As noted in the museum it is shown in Plate</sup> the headress of this face was found. Some of the stucco pieces showed traces of color, mainly red and blue. Very few potsherds were found except in the niches, a few fragments of coarse red pottery vessels in the upper stratum and a very few on or near the floor.

In the fallen <sup>right</sup> front entrance another stone similar to that found in the niche was excavated. This measured 58 cm. in length, 20 x 29 in section at one end and 20 x 23 at the other end <sup>(Plate)</sup> (32-M-94-a).

The walls of the upper temple were found to rest on the rubble fill at floor level, or to extend for only a few centimeters below it. The fill was of broken limestone, with large and small pieces without binder; those beneath the rear wall appeared to be of somewhat larger size.

Plate?

✓

✓

The only features of the outer shell of Pyramid K-5, ~~that~~

*∞* belonging to Structure K-5, <sup>1</sup>★ that were ascertained with certainty

were at the front, in front of the northwestern entrance. Here

at the base of the wall is the top of the plinth on which the

building stood, 30 cm in width and about 90 cm in height, its

top on about the level of the room floor. The face is slightly

battered. This plinth wall and floor was not ~~looked for nor~~

~~uncovered~~ <sup>uncovered</sup> discovered at other parts of the building, but on the plan has

been assumed to encircle the building and the niche extension at

the rear. The former assumption is highly probable, the latter one not quite so certain. This plinth height of 90 cm is much greater than the average of about 25 cm found in other structures of the city, ~~and it possibly might better be considered as the uppermost pyramid terrace. It is not impossible that there was a true plinth above this since, at the only place where,~~

At a distance of 3.80 m from the base of this plinth wall

*at the front of the structure*  
was found the top of another wall, presumed to be the wall of

the uppermost pyramid terrace. This is almost vertical and 1.60

m in height. The top of this is at present about 35 cm below

the base of the plinth wall, but it may be assumed that the

terrace wall was originally of this much greater height and the

terrace floor at its top practically level to the base of the

plinth wall. This would have made the width of this terrace

about 3.70 m, probably one of the widest terraces in the city.

observations were made, at the right entrance, the walls and piers had fallen outward so much that their bases could not be determined with certainty.

Below this point the features are very uncertain, and ~~some are shown, even hypothetically, on plan or section~~ ~~are presumed to have belonged alike to K-5-1st and to K-5-2d,~~ ~~but the further east~~  
 The next terrace seemed to have a width of about 1.60 m, ~~and beyond~~ ~~may well have been washed away.~~ ~~Evidence indicates that the width should have been~~  
 about 2.50 m. and this width has been given it on the reconstructed plan. Beyond this appeared very uncertain traces of steps about 30 cm in

height and width which seemed to extend towards the northwestern side of the pyramid. These, however, were not found against the upper terrace wall nor in the center of the slope.

No excavation was done on the right or northwest side of this pyramid. On the opposite or left side a number of terrace walls were uncovered, but ~~as these often showed a covering of rock fill,~~ ~~they~~ <sup>these</sup> were presumed to belong <sup>one of</sup> ~~to the lower structures~~ <sup>primarily to K-5-2d</sup> and are described later. They were not definitely tied in with each other nor with any structure. Only near the top was one wall found which seemed to belong to Structure K-5:1st.

Near the top an exposed section of a much fallen and disrupted battered wall was found which probably represented the uppermost outer terrace retaining wall, retaining a broad terrace like ~~those~~ <sup>though of less width</sup> indicated ~~at~~ <sup>at</sup> the front ~~and to rear~~. It lay at about 4 m. distance from the inner side of the side wall of structure K-5:1st. Unfortunately, this latter wall fell before its thickness was ascertained, but if it is estimated at 1.50 m., a mean between thicknesses of front and rear walls, and if an additional 50 cm. is allowed for the width of the plinth ledge and the batter of the plinth wall, the terrace would have been about 2 m. in width, ~~about equal to that of the rear terrace,~~ <sup>much narrower than</sup>

and, as will be later shown, about equal to that at the rear.  
 that at the front, ~~and somewhat narrower than the average assumed terrace~~  
~~width~~ The height of the top of this wall below the level of the floor  
 of the room of K-5<sup>ist</sup> was not measured, and some of the upper courses may  
 be missing, but is calculated from other measurements as about 90 cm.,  
 equal to the height of the plinth wall at the front. We are, therefore,  
 justified in positing architectural details symmetrical with those at  
 the front: a plinth ledge of about 30 cm. width at floor level retained

by a battered plinth wall of 90 cm. height above an upper terrace  
 of 2 m. width. These presumptive details are therefore shown in  
 dotted lines in Plan and Section.

The height of this wall, as found, seemed to be phly 90  
 to 100 cm, instead of the 1.60 to 2.00 m. corresponding height at  
 the front, but as the disruption was so great that accurate deter-  
 minations were impossible, ~~and~~ as a wall of this height would  
 result in an asymmetrical plan, and as it may be presumed that the  
 upper courses had disappeared and that the base was, as at the front,  
 at the level of the upper broad terrace of K-5-2d, this wall has  
 been restored on the Plan to a height of about 2.10 m.

The rear limit of this wall, and consequently the

rear left corner of this terrace was found at about 6.10 m. from the  
 inner side of the front wall of Structure K-5<sup>ist</sup>, and consequently approxi-  
 mately on a line with the uppermost terrace wall at the rear, to be  
 noted later, with which it probably united at this corner. The base of  
 this corner lay at about 4.30 from the inside of the side wall of the  
 structure, indicating a width of 30 cm. for the batter of the wall.

The wall at the front, in  
 floor of the next lower

The presumption is  
 that the base of the  
 structure, K-5-2

The features at the rear of Structure K-5<sup>int</sup> were even more uncertain and equivocal. No ledge or plinth was observed, but the walls ~~were~~ and debris were removed, unfortunately, hastily without searching for this feature. The former existence of the <sup>where it is shown in dotted lines,</sup> ~~plinth~~ <sup>and it is presumed to have surrounded the protruding niche.</sup> is assumed in the Plan and Section, <sup>^</sup> The top of the

~~the~~ rock fill, however, seemed to be only about 20 to 40 cm below the level of the floor of the room instead of the expected

90 cm, but as accurate <sup>levels</sup> ~~measurements~~ were not taken, <sup>and interesting features not closed,</sup> this height

Section B has, in ~~the plan~~, been ignored in favor of the latter ~~asymmetrical~~ <sup>in order to show a continuous level terrace.</sup> height. This should represent the floor of the uppermost terrace.

21  
 The upper rear terrace was of considerable but uncertain width, although probably slightly less than that at the front. Its outer limit was assumed to be that marked by a few stones, apparently part of a very disrupted wall, at a distance of about 2.50 m. from the outer face of the rear wall, <sup>its width being the</sup> ~~and consequently~~ therefore about 2.00 m. from the <sup>base of the</sup> undiscovered plinth wall. This was visible on the surface of the pyramid before excavation. Its top was, like the level of the rock-fill between it and the temple, not far below the level of the room. The face showed a slight batter. Its base appeared to be at about 1.60 m. below the level of the room floor, and it may be presumed that the wall was originally <sup>about</sup> of this height, equal to that of the upper terrace wall at the front.

At least a year ago  
 This hypothetical ground section is, of course,  
 that shown in the front-to-rear Section B.

The corner where this rear terrace wall and the corresponding wall at the left side meet was found, as noted before, its location indicating that the terraces to side and rear were of approximately the same width, about 2 m. It is uncertain whether there was a rearward extension of this terrace in the medial line of the structure, to match the niche extension, or whether the terrace wall was straight and of less width at the center. No careful excavation was done at this place and no evidences of it <sup>were</sup> found; ~~and consequently the details in question have been left blank in Plan and Section.~~ Such an extension is, however, indicated by other buried features and by the requirements of the architectural plan that they suggest. I am inclined to believe that there was a stairway at the rear and that the upper terrace at its top was widened for about 80 cm, the approximate ~~of~~ depth of the niche, and for the width of the ~~stairway~~, which dimension is unknown.

The most uncertain question is that of the levels, the field notes indicating that the level of the upper rear terrace was about 80 cm higher, with relation to the floor of the room, than the upper front terrace with which it was doubtless continuous. It is possible, but unlikely, that the side terraces sloped, but since the field measurements were very approximate, and as the width of the rear terrace measured the same as that at the side, and its ~~height~~ height about the same as that at the front, in the plotted Section this difference in level has been ignored, and the rear terrace has been plotted at the same level as those at the front and side, and considered as continuous with them.

The reasons for positing a rear stairway leading to the uppermost terrace which was increased in width at ~~this~~ this point follow below.

The rear slope of Pyramid K-5 was only slightly investigated. The debris from the excavation of the upper structure K-5-1st in 1931 was thrown down this slope, as well as most of the rock fill down to

the floor of the buried structure K-5-2d before any investigation of the rear was made, and the latter was so deeply buried with debris that it was possible only to sink a deep trench on the outside of, and to the base of, a wall found, mainly below the level of K-5-2d. On account of this depth, and because it was covered, in parts, with rock fill and not by debris, it was, during the course of excavation, considered as belonging to K-5-2d, but its position on the plotted ~~Plan~~ <sup>Section</sup> indicated that it is more likely a part of the pyramid of the final structure, K-5-1st, the rock fill covering it being not a part of the fill for building a terrace of K-5-1st, but and covering one of K-5-2d, and covering a terrace wall of the same period. for the stairway of the latter. This presumption is increased by the fact that, while the upper part of this wall is so disrupted that its features are uncertain, it seems to be of a height greater than one terrace and probably covered two, a perfectly likely plan if it were covered by a stairway. Of course, to either side of this stairway, there must have been an intervening terrace, but excavations uncovering this wall were made only close to the medial line of the structures.

The base of this wall was uncovered at a depth of 2.80 m. below the floor of K-5-2d, by field measurement, and according to the plotted Section, about 4.20 below the upper terrace of K-5-1st. At this point a terrace floor of uncertain width was found with a plaster floor in poor condition with traces of red paint. The lower part of the wall is vertical and well made for a height of about 1.60 m., <sup>more, extending in.</sup> above this, slightly battered and in poor condition for about 1.50 m. <sup>more, extending in.</sup> about 50 cm. above the floor of K-5-2d. It is in such poor condition near the top as to be almost unidentifiable. It was certainly not a terrace wall of K-5-2d, as it extended above the floor-level of this structure; and it could not have been the rear wall of K-5-2d since it was rudely finished on the inside.

Investigation indicated that this was almost certainly a wall consisting of two faces with the interior filled with rock. The ~~width~~<sup>thickness</sup> is about 90 cm. but varies, as the inner side seems to have sloped with a batter the reverse of the outer side, converging towards the top. Both faces are poor, but apparently of masonry rather than accidental fill, without definite inner faces and of varying thickness.

It will be noted on the Section that if the battered upper portion of this wall were continued to meet the upper terrace of K-5-1st, it would indicate a width of about 2.60 for this terrace in the central portion, measuring from the hypothetical extension of the plinth around the niche. This is only about 50 cm greater than the normal width of the terrace to side and rear, and well within the possible bounds of variation or error. While, therefore, on Plan and Section, this wall has been left free and unconnected, it is very probable that it is a part of the pyramid of K-5-1st and was covered by a rear stairway.

The levels also indicate the same conclusion, though it must be noted that the levels of the floors of the buried structures K-5-2d and K-5-3d correspond approximately with the probable levels of the pyramid terraces of K-5-1st. This feature of making the terraces of the superposed pyramids approximately the same as those of the buried pyramids seems to be a usual practice.

It will be noted that the height of this rear wall is about 4.20 from its base to the level of the upper terrace and that its base is almost exactly on the level of the floor of the buried structure K-5-3d. In 1933 Mr. Satterthwaite found on the front of the pyramid near the base some giant grotesque stucco masks which apparently adorned the faces of the pyramid terraces. These will be described in detail later. Two of these were found which indicated terrace heights of <sup>about</sup> 2.30 m. Positing another one above of equal height,

This presumption is further increased by the fact that the top of this wall projects upwards to the level of the high-bench terrace, and the edge of the terrace of corresponding level at the front of the pyramid are equidistant from the lateral axis of the structure of K-5-1st.

the level of this would be almost exactly also that of the floor of K-5-3d and identical with the terrace at the base of the high wall at the rear. Another front terrace of 2.30 height would bring the level to that of the front terrace at the base of the uppermost discovered terrace wall and, plus the height of this latter wall, about 1.90 m., would equal the height of the rear wall. These correspondences would indicate that both the ~~mask-bearing~~ ~~mask-bearing~~ terraces near the base of the pyramid at the front and the rear wall are parts of the outer pyramid K-5-1st. Both of these features have therefore been shown in Plan and Section but have not been connected with Structure K-5-1st.

These stucco masks were found by Mr. Satterthwaite while searching for the left side of the hypothetical central staircase, which was never found. Like myself, he found the surface of the pyramid so badly destroyed that he was unable to identify with certainty any feature as connected with any given one of the three structures. The masks were covered rather deeply with rubble and he could not be sure whether this had been intentionally placed over them in the building of a later structure, or whether this rubble had fallen over them as a result of the collapse of features above. While the rubble was rather pure, without earth, he inclined to the latter theory, and considered the masks as belonging to the latest period, that of K-5-1st, a deduction which, as we have seen, is borne out by the levels. They were certainly not deeply enough buried to have belonged to K-5-3d.

~~He is inclined to the latter hypothesis.~~

These masks immediately recall Pyramid *Evil sub*

at Uaxactun where a relatively intact pyramid containing somewhat

similar gigantic grotesque stucco masks was covered over by a ~~These Uaxactun masks appear to be stylistically more archaic than those at Piedras Negras and therefore probably older.~~  
later pyramid. In this case the masks were upon several large

pedestals in a vertical line on either side of the <sup>four</sup> staircases, the

steps of which extended beyond the mask pedestals. It may be that

~~~~~~~~~

~~~~~~~~~  
a similar arrangement obtained in the case of K-5, but this was neither indicated nor proved. It appeared rather that they were on the ~~sloping~~ <sup>terrace</sup> walls. If this were the case, the heights

of these masks and the distance between them ~~the~~ give the height

and width of the lower terraces of the pyramid, presumed to be

K-5-1st. Five terraces of the indicated height <sup>of about 2.30 m.</sup>, including the

broader lowest one, would <sup>as has been pointed out,</sup> bring the uppermost terrace level ~~to~~

practically at the ~~base of the high~~ next to the highest terrace

as found the preceding year ~~and mentioned above.~~ <sup>horizontal</sup> The distance

between the masks, however, <sup>only about 1 m,</sup> are slight, <sup>as</sup> indicating narrow terra-

Of all the terraces none of this same 1 m. width  
ce and a steep slope. ~~The floor of the fifth terrace would~~

The top of the uppermost and ~~fourth~~ <sup>fourth</sup> mask would make the terrace  
~~even wider than the unusually wide (3.70 m) uppermost terrace. Moreover~~  
above it about 4.70 wide, instead of the 1.60 noted above. The outer edge  
of this terrace would extend far above and beyond the present level of the surface, and  
the front slope of the pyramid would have been ~~abnormally steep~~, ~~about~~ nearly 70 degrees.  
There may have been a wider terrace above the second observed

mask, counting from the bottom, dividing the four masks into two  
pairs, the upper pair set further back. The masks, however, may  
not stand on the terrace walls and indicate them. On the other  
hand, the top of the uppermost <sup>hypothetical</sup> one is close to the level of the  
floor of Structure K-5-2d, and they may belong to its pyramid.  
These relationships are so uncertain that on the plan and Sec-  
tion the upper ~~and lower~~ observed terraces and the lower observed  
masks have been plotted without connecting them. Too hypothetical  
restorations are always dangerous; even if their theoretical  
nature is explained in captions and text, the reader is almost  
certain to place too much credence in them.

The following <sup>data</sup> notes on these masks and their sur-  
~~taken from the drawings and notes of~~  
roundings are ~~written~~ by Mr. Satterthwaite.

This hypothetical reconstruction of four terraces of 1 m. height  
with very shallowly be rejected.

Beginning at a point about 8 m to the left (southeast) of the front-to-rear axis of the pyramid, a trench was driven in, its base being the surface of the low, broad, stela-bearing terrace at the base of the pyramid, the floor of which was well indicated by building debris overlying small stone and "earth", though no real plaster or mortar finish was found. Instead of a mere terrace wall, the left side of a <sup>gigantic stucco</sup> mask was found. It was completely covered with debris, but this rested on a stratum of very dark humus ~~which~~ began at a distance of about 1.50 m <sup>in front of</sup> from the mask and reached a depth of 60 cm at the base of the mask. This layer of humus indicates that the masks belonged to the last building-period of the pyramid and that, after the abandonment of the site, wind-blown dirt and leaves, together with wash from disintegrating stucco, much mixed with organic matter and growing plants, accumulated at the base of the masks before all were completely covered by the collapse of the masonry above. In the debris covering the mask many stucco fragments, probably from this and higher masks, were found.

The center of the mask is about 6.30 m to the left (southeast) of the central line of the pyramid. *so that, if the hypothetical corresponding mask on the other side was symmetrically placed they were about 12.50 m. apart* While not enough excavation was done to either side to indicate the direction of the terrace, if indeed the mask does stand on the terrace wall, its line does not appear to be parallel with the lines of the structure and upper

terraces of K-5-1st, but differs by about four degrees, the masks facing by about that much towards the front-to-rear axis of the pyramid. The mask is about 2.60 in width or length; the original height is difficult to determine, as top and bottom are broken away, but it was presumably of the full height of the terrace, about 3.25 m. The sides of the mask extend out from the background, which is presumed to be the terrace wall, for about 25 cm, but the face is unevenly convex so that the average maximum extension is about 40 cm.

The interior of the mask is a <sup>slab-</sup> masonry buttress and upon this the stucco details were moulded, although the deep-set eyes and mouth extend back into the masonry hearting, even into that of the wall.

The mask may be briefly described as relatively rectangular, wider than it is high, with large recessed eyes, which are quasi-~~but~~ ~~spherulitic~~ semicircular, the upper limits straight and horizontal, the lower limits curved. Nose and chin were prominent and projecting, the former now broken but originally obviously projecting <sup>a little</sup> beyond the chin. The mouth is large, <sup>elongated</sup> wide and open and was apparently furnished with teeth, at any rate with formidable incisors which filled the ~~space in front from jaw to jaw.~~

space in front from jaw to jaw. Beneath the mouth is a band of vertical striations that may represent the beard, or possibly a necklace, though they may be purely decorative. Nostrils are prominent and at ~~nostrils are prominent~~ as one views the mask, the left side, fragments of a stylized right ear remain, ~~the~~ the left ear being entirely gone. A photograph of the mask may be seen in Plate , Figure , and a drawing of it in Plate

The large eyes, which are not symmetrical in shape though approximately so in position, are about 50 cm in width and 40 cm in height. Even their anterior borders are deep-set, set back 30 to 40 cm from the ~~the~~ vertical line of the chin and the broken nose, and the cavity runs back 35 to 40 cm more, making a total relief depth of 80 cm, plus that of the broken tip of the nose. The purpose of this deep recession, and that of the mouth, was almost certainly to produce black shadowed cavities which, in the bright sunlight, must have contrasted strongly with the glaring stucco and produced a strikingly terrifying appearance. In the medial vertical axis ~~the base~~ of each eye, at top and bottom, ~~the base~~ and nearly half way back in the cavity, is a broken-off stub of stucco, and at the outer edge of the orbit of the left eye is another. There seem to have been traces of a similar one at the

outer edge of the right eye, but no traces of them at the inner edge of the orbit of either eye. Apart from these stubs the plaster finish of the sockets is smooth and finished; the three stubs probably supported some object, possibly a disk representing the iris, that stood in the eye without completely filling it. In the eye sockets were found some stucco fragments, some of them with a curved shape that suggested an eye-ball, parts of a spheroidal surface, cross-hatched with bold incised lines; these may well have represented the iris or pupil. The fact that the stucco stubs were set far back indicates that they might have supported at the back such a iris and, being in the shade, would not have been obvious in the dark ring surrounding it.

Below each eye is an ornamental or symbolical element in low stucco relief consisting of a broken loop with three circles, and above the eyes are relief eyebrows. Above these the stucco ornamentation is gone, but the remains indicate that some projecting object, probably a forehead fillet, came down close to the eyebrows.

The nose is flat and broad, convex or Roman, with a low inset bridge and with deep nostrils wide apart. The tip of the nose is broken, but it probably did not extend much beyond the present limit.

There are remnants of scrolls separated by an element below the root of the nose.

The lips are represented by a raised ridge around the edge of the mouth. A slab running from lower to upper jaw in the approximate center almost certainly bore incisor teeth, and the smooth plaster edge of the rest of the mouth indicates that no other teeth were shown. There were scrolls, possibly representing a thin moustache, at either side of the mouth. That on the right side ~~is~~ shows in the photograph; a symmetrical feature at the left side fell just before photographing. The chin is prominent but narrow, and the striations below probably represent the beard. There is sufficient room on the masonry buttress to either side of the face to support the usual three-element ear-ornament. No traces of coloring were noticed.

The dark recessed eyes and mouth ~~with the prominent~~  
~~lips and incisor teeth~~ caused their characteristics of quasi-rectangular eyes with central iris and prominent incisor teeth to stand out strongly; these are the features that characterize the Sun God, whose face is employed for the numeral "four" and for the "kin" sign in Old Empire inscriptions. It is very probable, then, that this deity is here represented.

The base of a second mask was found above and behind the lower one, presumably on the face of the next higher or third terrace. The base of this was about 1 m. behind the ruined upper edge of the mask below, indicating a terrace of slightly greater width, and about 1.<sup>3</sup>~~35~~ behind the projecting chin of the lower mask. The difference between the most projecting preserved features of the two masks is 1.17, indicating this width for the terrace plus the batter of the lower mask. Only the lower portion of this upper mask is preserved. At the base may be a beard similar to that below, <sup>but</sup> ~~though~~ it has more prominent tassels or other decorative elements superimposed upon it, though the mask below appears to have at least one of these, in the center. Above, there are <sup>two</sup> ~~are~~ elongated lozenge-shaped projections, the lower of which presumably represents the chin, the upper one the lower lip. In this case, however, the upper element projects much beyond the lower one. With so little remaining, it would be hazardous to conjecture whether or not the same deity is represented; if the same, the details differ considerably.

In front of the base of the lower mask, on the surface  
of the first <sup>and lowest</sup> broad terrace, Ms. Satterthwaite found a line of stones  
parallel with the mask, which stones he believes to represent the  
upper course of the wall of an earlier and narrower terrace that  
was later widened to its present width. This wall is at a distance  
of about 1.85 m from the masonry hearting of the mask, indicating a  
former terrace of this width. The outer edge of the widened ter-  
race is naturally so eroded as to make its location uncertain, and  
lack of time did not permit excavations for this, nor to examine  
the wall of the presumed earlier buried terrace, but the extension  
was probably about 3.50 m, more or less, making the width of the  
terrace in its final form about 5.50 m. This widening must have  
been done before Stelae 38 and 39 were placed upon it, and it is  
presumed, therefore, that the masks preceded in point of time the  
erection of these stelae. This terrace has a height of about 1.60  
m at the <sup>south</sup> ~~west~~ corner, but allowing for accumulation of debris, <sup>at its base,</sup> must  
have had an original height of about 2 m. At the west corner the  
present surface of the plaza is about ~~equal to~~ at the level of the  
terrace which, therefore, has disappeared, but it was not ascertained  
whether this was the original plan or the result of later deposition  
on the plaza floor, most probably the latter.

As before noted, Mr. Satterthwaite failed to find the edge of the front staircase for which he was searching when the masks were found, and the discovery of which at the close of the season's work precluded further search for this feature. The destruction was so great that no well-marked transitions from fallen debris to undisturbed fill could be found. Traces of what were at first believed to be a crude fill wall, possibly representing the edge of the <sup>fill for the</sup> staircase, were found at a point about <sup>2.30 m</sup> ~~30 m~~ to the northwest of the edge of the mask. This is indicated by a straight line on the plan. If this were such, the edge of the staircase would have been about 1.50 m further out and about 70 cm from the edge of the mask <sup>as shown in dotted lines on the Plan.</sup> In this case, and if the staircase was symmetrically placed in the center, it would have had a width of 8 to 9 m. ~~It should have been noted that the center of the lower mask was about 6.30 m from the apparent central line of the pyramid so that they stood about 12.50 m apart.~~ Mr. Satterthwaite now believes, however, that the edge of the stairway lies closer to the central line, the staircase being of less width. In other excavations the edge of the staircase has been one of the best-preserved features, and he does not believe that this could have entirely fallen while the neighboring mask was left relatively intact.

*Hint:  
why as great  
as 1.50?*

~~TERRACES AND OTHER FEATURES ON THE LEFT SIDE.~~

In 1932 excavations were made on the slope and at the base of <sup>or southeastern</sup> the left side of the pyramid in order to ascertain the nature of the pyramid terraces. Some of these were uncovered, but time did not permit thorough excavation, and these features were neither tied together nor definitely connected with any one of the three structures. Also field measurements were hastily ~~and inaccurately~~ <sup>without accurate instruments</sup> made and are therefore subject to error. The horizontal measurements did not agree with those made on the front slope. In the Plan and Section they <sup>features</sup> are therefore shown as indicated by the measurements, but without tying them in with other observed features. Since the plan of the complete pyramid is shown only in connection with Structure K-5-1st, they are shown on this Plan, but without implying that all belong to this period, though, in the case of the two terraces, this is believed to be the ~~case~~ relationship.

Two pyramid terraces were found. Their observed levels do not differ greatly from those of the gigantic stucco masks at the front. The lower one is approximately on the level of the base of the lower mask, the upper one approximately on the level of the hypothetical top of the upper mask, so that they may be ~~be~~ the same

terraces as those on which the masks are presumed to rest. ~~As~~  
As we have seen, it is probable that these masks belonged to the  
pyramid of K-5-1st. The same is true of the side terraces. The  
walls were hardly deeply buried enough for the terraces of K-5-3d.  
They were well preserved and, as at the rear and as ~~indicate~~ pos-  
sible at the front, seem to have been covered in places with rock  
fill. This would seem to indicate that they belong to K-5-3d but,  
as at the rear, the fill may have been for some overlying feature  
such as a staircase, or, as at the front, the apparent fill might  
have been actually fallen masonry. Their horizontal distance from  
the central axis indicates that they must have been close to the  
outer shell. The horizontal distance between them is, if the field  
measurements are correct, much greater than the terrace widths of  
the front of the pyramid as indicated by the masks. The levels ~~are~~  
afford no criterion, as they seem to be practically identical for  
~~the~~ K-5-1st and K-5-3d, and probably for K-5-3d as well. It is  
possible that one of the terraces belonged to one period, the  
other to another. Their relationships are therefore highly pro-  
blematical; they might equally well have belonged to either K-5-1st  
or K-5-3d, though less likely to K-5-3d.

The uppermost terrace floor was uncovered at a depth of  
about 4.20 m below the floor of the broad terrace of K-5-3d, <sup>according to the field notes,</sup> though,  
according to Mr. Parris's survey, ~~the~~ as plotted on the Section, the  
depth is about 4.80. Either height is too great for one terrace  
height and another must be postulated between. It should be noted ~~✓~~  
that about 4.60 m would be the height of two terraces at the front  
of the pyramid, and that the medial postulated terrace would fall  
exactly on the plinth and room floor of K-5-3d, as <sup>does</sup> ~~would~~ one of the  
postulated terraces on the front of the pyramid, and the base of  
the high wall at the rear. A retaining wall was uncovered at the  
rear of this terrace floor, its base at a horizontal distance of  
about 4.80 from the base of the high terrace wall of K-5-1st above.

This terrace wall was approximately parallel to the upper terrace  
wall of K-5-<sup>\*</sup>above, and to the terrace wall found below. It was in fair

condition for a height of 1.70 m., uncertain above that, though its original height ~~is considered to have been~~ <sup>was probably</sup> half the height to the next higher observed terrace, or 2.30 m. It is built of irregular blocks with their external faces more or less straight, but not laid in courses. The face is practically vertical and the terrace floor at the base good. The outer limit of this terrace was also not found and the width not ascertained, but must have been approximately half of the horizontal distance to the next lower observed terrace wall, or about ~~7.20 m.~~ 2.30 m. if the measurements were correct and if both terraces belonged to the same period. <sup>allowing for the batter of the walls, the terrace width would be about 2.00 m.</sup> These identical vertical and horizontal measurements indicate a slope of exactly 45 degrees.

The next lower, and the lowest terrace floor that was found, was uncovered at a depth of 4.35 m below what last described, according to the field measurements. Since these were inefficiently made, this distance has been increased on the ~~plan~~ Section to 4.60 m. to agree with the other similar measurements. This height is certainly too great for one terrace and another must be positioned between, making terraces of 2.30 m. height, equal to those at the front. The wall at the rear of this terrace was calculated from rough <sup>field</sup> measurements as being at a horizontal distance of 6.70 m. from the terrace wall above. This distance is almost certainly too great and probably in error; the following year Mr. Parris, on the basis of a <sup>vertical</sup> long pole that I had placed at the base of the wall but which had been <sup>partly</sup> covered and tilted by much debris, calculated the distance as about 4.60 m., identical with the vertical distance to the next observed terrace floor. This distance is more probable and has been ~~used~~ <sup>used</sup> in the Section; it indicates terraces of ~~the same~~ <sup>identical</sup> width and ~~height~~ <sup>height</sup>: 2.30 m., <sup>the actual width, allowing for the batter of the walls, being about 2.00 m.</sup> This wall is .....

also of uncertain height; it was followed in good condition to a height of 1.50 m, but probably originally continued to half the distance to the next observed higher terrace, or <sup>30</sup> 2.3 m. The lower part was vertical, the upper part slightly battered. This seems to be a typical form at this city, the battered terrace walls of <sup>and some of those of J-3</sup> Pyramid 0-13 being of the same nature. It is of rather poor construction with a poor face. Pure rock fill lay behind it. Its base is about 2.50 m. above bedrock in the excavation at the foot of the pyramid.

The slope of masonry is 45°

It might be suggested that there is no need for positing a terrace intermediate between the two discovered levels but that the wall at the back of the lower level might continue to the upper level, covering two terrace heights and itself covered by a staircase, ~~and~~ as in the case of the wall at the rear. This may be the case but is unlikely. The wall at the rear covers the fifth and sixth terraces, <sup>beginning with</sup> ~~including~~ the broad one at the base, and those below it should cover the third and fourth, and first and second terraces, the natural arrangement. The theoretical high wall at the side would cover the second and third terraces, and may therefore be rejected. This does not negative the probability, however, that beneath, or rather behind, these terraces at the side may be found similar constructional high walls covering the terraces 1-2, 3-4. <sup>and</sup>

~~and~~ The fifth and sixth terraces could not have been covered by one wall.

The apparent fill covering the terrace walls at side and rear indicates that there were staircases on all four sides, a rather unusual feature at Piedras Negras as at most Old Empire sites. However K-5 is the only large free-standing pyramid whose side and rear slopes have been examined, and others, such as R-16,

may have the same features. The terrace walls on the side, it will be observed on the Plan, are close to the eastern corner of the pyramid, and a staircase would not ordinarily be expected at this place. However attention must again be called to Pyramid E-VII-Sub at Uaxactun to which K-5/~~Sub~~/~~in~~/~~its~~/~~earlier~~/~~aspects~~ bears considerable resemblances, especially in its earlier aspects. More resemblances will be pointed out later. This Uaxactun pyramid has staircases on all four sides; these are very broad and approach the corners of the pyramid.

With very slight modification in the admittedly inaccurate field measurements, except for the horizontal location of the lowest side terrace wall which was later corrected by surveyed points, and in entire agreement with all surveyed points, the front, side and rear of the pyramid can be made to agree. Regarding the levels there can be no question. Counting the lowest broad terrace there are ~~three~~<sup>four</sup> terrace levels up to Structure K-5-3d, one more to K-5-2d, and another one to the ~~base~~ base of the plinth of K-5-1st. The ~~earliest~~ lowest terrace was, in its earlier aspect as shown at the front, about 2 m wide to the masonry hearting of the mask. At the side, a terrace of this width at the base of the lowest observed wall would bring the edge just about to the outer side of the buried wall discovered below it which may, therefore, be the wall of this lower terrace. The second terrace was, between the masks at the front, about 1 m. wide and this width may well have obtained at the side also. The third terrace would have had to be about 3 m. wide to bring it to the base of the upper terrace wall at the side. Up to this level there are no data on the rear and the accuracy of the reconstruction is presumptive. P The width of the fourth terrace is open to question and <sup>partly</sup> depends on the width assigned to the fifth

terrace. Since, below the broad three-meter third terrace there are two mask-bearing walls separated by a second terrace of 1 m. width, a symmetrical arrangement would call for the same above, making the fourth terrace 1 m. wide, the fifth of greater width. On this basis, on the Plan and Section, this fourth terrace has been assigned a width of 1 m. Contributory evidence that this was the case is afforded by the fact that at the rear, the high terrace wall of K-5-2d covers the rear wall of K-5-3d to a thickness of 1.60 m; if at the side we assign a width of 1 m. to this fourth terrace, <sup>running</sup> in from the projected top of the upper discovered <sup>side</sup> terrace wall, <sup>then</sup> the wall at the rear of this, between the fourth and fifth terraces, no trace of which was found, would cover the side wall of K-5-3d to an exactly equal thickness, 1.60 m. This gives us our first and only clue as to the medial side-to-side axis of the pyramid of K-5-2d and brings it exactly in the center of the front pier of the structure of K-5-3d.

Up to this point, the fourth terrace, therefore, the same terraces may be reconstructed as of similar width and height to front, rear and side in full agreement with all observed data except for one measurement that was obviously incorrect and later corrected by survey.

~~terrace. It has been made on the reconstructed Section 1 m. in order to make a symmetrical plan of second and fourth terraces of 1 m. width separated by a third terrace of 3 m. width. The width of the fourth terrace at the rear at the base of the high wall is not known, nor is the distance of this wall from the axis of the pyramid in its earlier form. The width of this terrace, the fourth, on the level of K-5-3d, may have been greater, in which case that of the next higher terrace, the fifth, on the level of K-5-2d, would have been less. Whatever the width, up to this point, the terraces to front, rear and side may be reconstructed as of similar width and height in agreement with all data.~~

We may now anticipate our final conclusions and state our belief that up to and including the fifth terrace the same foundation served for Structures K-5-2d and K-5-1st, but that a sixth terrace and above that a plinth were built to support Structure K-5-1st. This sixth terrace was built eccentrically so that <sup>the</sup> ~~the~~ width of the floor at its base is unequal to sides and to front. If the width of the floor of the fourth terrace is considered as 1 m., that of the fifth was about 2.60 at the front, 3.60 at the sides, and ~~not~~ <sup>about 1 m.</sup> at the rear, except in the center, behind the niches ~~were~~ <sup>existent at the rear.</sup> It was noted in the field that the width of

this terrace at the front seem<sup>d</sup> to be about 1.60 m., but as the edge was on the surface, it is not unlikely that a considerable portion of the anterior edge had been eroded. The average, and almost uniform, height of the terraces is 2.30 cm., their average width, varying from 1 to 3 m., 2 m. plus a batter of about 30 cm, making a slope of exactly 45 degrees. At the side, bedrock is approximately 2.30, or one terrace height, below the lowest observed floor, and approximately at the level of the plaza floor at the front, although it had been so deeply buried as to give the impression of quite a slope towards the front.

With considerable hesitation, therefore, these observed and hypothetical features have been integrated in <sup>the</sup> ~~Plan and~~ Sections into a theoretical but defensible reconstruction and tied in with both K-5-2d and K-5-1st.

~~It is possible that a staircase descended pyramid K-5 on the left or southeast side; if this was the case it is probable that there were staircases on all four sides. This feature is unusual, if not unique, at Piedras Negras, although known at other sites, <sup>such as the buried mask-bearing pyramid at Chacoctun.</sup> especially in the late Maya region, such as on the Castillo at Chichen Itza.~~ On the slope of the pyramid erosion and fall had eliminated all superficial evidence of the stairway, if it ever existed, and time did not permit of a search for it. The terraces which were found were behind, or to the northeast of, the central line. <sup>At</sup> ~~At~~ the base <sup>of the left or southeastern side of the pyramid</sup> an elongated mound extended out from the central line of the pyramid, indicating that some sort of structure or causeway had existed here, and excavations revealed a wall, probably a retaining wall, to the rear <sup>and near the observed terrace walls,</sup> of the central line, which leads for some distance away from the pyramid base southeastward to a slightly elevated mound of uncertain nature on the edge of the small gully, as shown in the map of Piedras Negras. \* This wall is only approximately at right angles to the lowest terrace wall.

The top of this wall seemed to be at about the level of the lowest pyramid terrace at the base of the lowest terrace wall, and no wall stones were found higher than this lowest terrace, but further to the front or southwest, pure rock fill is found at a higher level, covering the base of the terrace wall and indicating that the wall and the feature which it retained were originally of greater height, ~~and belonged to a later construction than the terrace wall.~~ Since it seems probable that the terrace and terrace wall belonged to <sup>the older</sup> ~~the same~~ structure, K-5-2d, this long wall may have been a <sup>part of the period of</sup> ~~part of the earlier~~ <sup>of the period of</sup> ~~part of the earlier~~ K-5-1d.

The retaining wall runs in a straight line from the base of the terrace wall for a distance of 2.50 m., at which point it attains greater width by an offset of 25 cm. width. From here it continues in the same direction for another 2.50 m. to another similar offset of 20 cm. width. The masonry of the outer offset, at least, is bonded <sup>to the wall</sup> ~~to the wall~~, indicating that

Footnote \* Piedras Negras Preliminary Report

the feature was an original one, not a later face laid partly against an earlier one. It has a well-plastered surface and convex batter face, changing from nearly vertical at the base to a slope of 57 degrees at the top. This batter is almost certainly original and intentional, not due to slip and fall. Behind it, to the southwest, is pure rock fill which reaches almost to the present surface level. The top of the wall is very uneven as parts had probably been torn out by the workmen before its nature was noticed. Its maximum height was 2 m. above the base which was apparently of decomposed bedrock, possibly artificially leveled.

From the second offset the wall runs straight and parallel with the former section for a distance of 12.50 m., making the total length at least 17.50 m. This was deeply buried and of good masonry, almost vertical with a slight batter, about the same as the lower part of the wall closer to the pyramid. For the first few meters the upper part of this outer section was probably destroyed by the workmen on first contact with it, but it was well preserved to a height of 80 to 100 cm. The floor at the base is good. The height of this inner section originally must have been greater as the pure rock fill retained by it reaches to at least 1.60 m. above the floor.

From the outer offset the soil level slopes gradually towards the gully, and the height of the wall lessens with the depth of the soil. The wall is nowhere visible at the surface, and it was probably never any higher than at present. The maximum height seems to be 90 cm., and the average of the inner part 80 cm. above the floor level, but the maximum height of the soil level above it is 1.40 m. The masonry is good, especially at the bottom.

At the end of this wall, the soil is at a height of only 40 cm. above the base of the wall, and the latter reaches approximately to soil level. At about 2.50 m. further the level of the base of the wall meets

the surface, and the wall is uncertain or missing in this terminal stretch. To the left of this wall, <sup>as one</sup> facing the pyramid, the surface is, for

a short distance, at a higher level than to either side of it, indicating that some raised feature is here covered. The surface is then relatively level leading away from the pyramid until it reaches a point near the end of the wall, where it rises, and about opposite the end of the wall is at maximum height, about 2 m. above the base of the wall at its end. Here is a mound, <sup>probably</sup> apparently the ruin of a structure of some type to which a causeway <sup>apparently</sup> led from the base of the pyramid. From this mound the slope is steep to the floor of the little gully, a drop of about 4 m.

The connection between the mound and the pyramid is not certain, however, in spite of the wall, the rise at the base of the pyramid, and the mound at the edge of the gully, for the ground between is at natural surface level. <sup>connected and in slope, its further slope being</sup> ~~The terminal mound is elongated and extends far out, about 27 m. from the lowest terrace wall of the pyramid to the further edge of the mound.~~ A search was made for the opposite or southwest wall of this possible causeway, but although a trench was begun at a great distance and carried close to the long northeast wall, no certain evidences of this opposite wall were ever found.

To the right, facing the pyramid, northeast of the long wall and at the base of the pyramid, excavations revealed ~~many~~ <sup>some</sup> buried features whose interrelationships, and relationships to the pyramid and to the long wall, are puzzling. In these excavations, <sup>potsherds</sup> potsherds were unusually thick. Miss Mary Butler made one of her stratigraphical pits at this point and found potsherds thicker here than at almost any other point excavated by her. <sup>(see opposite)</sup> At the surface, dark earth with much humus was encountered, mixed with fill and other stones; below this is sandy earth with few stones, and these few small. Both plain, coarse and polychrome potsherds were found all through. The bones of an animal were found near the base. The bottom is bedrock, probably limestone, with decomposed surface, possibly artificially flattened. This is at a depth of about

1.70 m. below the present surface level. The lower third or half of this deposit is fine, light earth resembling sand, but ~~probably~~ <sup>possibly</sup> decomposed plaster from the pyramid. It contains potsherds throughout it, and presumably was deposited ~~since the abandonment of the place~~ <sup>during the period of occupancy</sup>. The bedrock floor is at a depth of about 2.50 m. below the foot of the lowest terrace wall of the pyramid.

At the distance of 1.90 m. from the outer offset of the long wall, towards the pyramid, <sup>parallel to the terrace wall above and behind it.</sup> is a rude wall, revealed by the excavation. This location probably applies to the outer face, away from the pyramid. This abuts ~~it~~ upon the long wall leading from the pyramid, but the plaster facing of the latter runs behind this wall, indicating, though not definitely proving, that the long wall belongs to an earlier construction ~~than the other~~. If the new wall, parallel to the terrace walls of the pyramid, is the lower and outer terrace wall for K-5, <sup>as</sup> its position seems to indicate, this would indicate that the long wall leading from the pyramid belongs to <sup>one of</sup> the earlier structures <sup>~ K-5-3d</sup> K-5-2d. It is very unlikely <sup>however,</sup> that it is an outer terrace wall, for it is only 1.60 to 1.80 m. long, running from the edge of the long wall to the side of a hole, probably an artificial one, in the bedrock. It was, however, built at a later time than this excavation in the bedrock, as its base is 35 cm. above the bedrock floor and the base of the long wall, and it was obviously built after the excavation had been partly filled up. The 35 cm. of space under the wall is fine sandy earth without stones but with occasional potsherds. In it was found the neck of a large pottery vessel. The wall is only 50 to 60 cm. in height, reaching to 90 or 100 cm. above the floor and therefore with its top below that of the long wall. The thickness was not recorded. It was not well made and with a rough face that must have originally been plastered.

Another similar buried wall, parallel to the pyramid terraces, was found (its inner face, towards the pyramid?) at a distance of 1.50 m.

than the other. The same conclusion is indicated by the fact that, instead of being built upon the bedrock, as is the long wall, its base is 35 cm. above the bedrock, the material below being fine sandy earth without stones but with occasional potsherds. In it was found the neck of a large pottery vessel. The obvious explanation, and probably the correct one, of this wall would be that it was built as the outer retaining wall for the lowest terrace when the latter was widened, as at the front, for the broad stela-bearing terrace. The fact that the terrace would then <sup>have been</sup> only 3 m. wide as compared with 5 m. at the front is not a very disturbing objection, inasmuch as the front terrace would naturally be wider. More serious is the objection that it is only 50 to 60 cm. high, reaching to 90 or 100 cm above the bedrock and therefore with its top more than 1 m. below the level of the terrace that is supposed to have retained, and below the top of the long wall. Since, however, it was the outer retaining wall, its top may well have washed away before it was deeply buried by debris from the pyramid above. In that case the ~~stones~~ stones of the top courses would have been found below and in front of it, a fact not noted in the none-too-full field notes. The thickness of the wall was not recorded, but if it was a mere retaining wall, the inner side would have been uneven. It was not well made and the outer face was rough and must have been plastered. Another, and more serious, objection is that it is only 1.60 to 1.80 m. long, running from the edge of the long wall to the side of a deep hole, probably an excavation, in the bedrock. The nature of this wall is therefore very uncertain, but it probably was one of the last features added to the pyramid.

Another similar buried wall, parallel to the preceding and to the pyramid terraces, was found, (its inner face, towards the pyramid ?) at a distance of 1.50 m. ....

Since the natural ground level rose towards the rear of the pyramid at the eastern corner it would be quite natural that, as apparently also at the western corner, the lowest terrace coalesced with the ground level, obviating the necessity of any terrace wall beyond the point where this wall ends.

3

inside of the inner offset of the long wall, and (its outer face ?) 90 cm. inside of the wall (inner face ?) just described. This is poorly made, of large rock, its top at about the level of the base of the lowest terrace wall of the pyramid. Like the preceding wall, it was not built upon the bedrock floor, but 30 cm. of fine sandy earth with few stones and some potsherds intervened between its base and the bedrock floor. The latter, hard and relatively level but without evident plaster flooring, extends under both walls and possibly also below the lowest terrace of the pyramid.

The narrow space between these two walls was filled with broken rock which extended from the base of the inner wall to about the level of the lowest pyramid terrace, and beneath which was the usual sandy earth. On the floor, close against the long wall which extended down to the bedrock floor, and partly extending under the rear wall, in the sandy soil, an interment was found which the workman, misunderstanding instructions, removed before it was carefully examined. It was said to have lain in a heap, not in extended position, with the head in the corner. A fragment of a tibia excavated by me was broken with part missing. The cranium was also broken and parts missing, but most of the bones appeared to be present. *This has been numbered Burial 9.*

no P

           This wall was not entirely excavated and the important details of its length , and the nature of its junction with the long wall and of its further end were not ascertained.

buried

Regarding these three features, the inner and the outer walls parallel to the terraces, and the long wall with the feature that it retained at right angles to these, the following deductions can be made. The outer short wall was the latest, the inner short wall earlier, the long wall the earliest. The first was probably built for the extension of the lowest terrace and <sup>if so</sup> must be of the period of K-5-1st and probably contemporary with Stela 38, 9.12.10.0.0. The inner wall probably belonged to the earlier and narrower terrace and was probably built for the pyramid of K-5-2d. Since this, like the other, lies on earth above the level of the base of the long wall, ~~and~~ since the plaster of the latter passes behind the junction with at least the outer wall, and since the <sup>existence</sup> ~~building~~ of these rendered the proximate portion of the long wall useless, it is obvious that the latter is older than either of the transverse walls. While my notes on this are not specific, and lack of time did not permit a thorough investigation, my recollection is that the long wall and the rock fill that it retained passed behind the inner wall which retained the lowest terrace, probably of K-5-2d, and reached at least the position of the observed wall of the second terrace. This long wall may therefore provisionally be ascribed to a period earlier than K-5-2d, i.e., to K-5-3d.

EXCAVATION IN THE INTERIOR OF K-5

One of the most important phases of the work of the expedition in 1932, both as regards results and labor expended, was an examination of the interior construction of pyramid K-5, the summit structure of which, K-5-1st, had been excavated in 1931. Excavation resulted in the discovery of two ~~sub~~<sup>buried</sup> structures which had been successively filled up with rubble and built upon. Excavation was not carried to the bottom, and it is possible that there may be another, ~~or two more~~, buried structures beneath the lowermost floor found which lay at a depth of about 7 m. below the summit of the pyramid when first seen. Naturally, in the pro-  
 section of this work, ~~much~~<sup>most</sup> of the upper part of the pyramid, <sup>of the left side</sup> especially at the rear, was destroyed, including the rear wall, left side wall, floor and part of the front wall of the upper structure K-5<sup>ut</sup>. But as only the lower part of the walls of this temple were standing, the loss was ~~negligible~~<sup>Also the corresponding parts of the next lower structure, K-5-2d, were destroyed.</sup> in view of the results. Unfortunately, time did not permit a careful excavation of the slopes of the pyramid to tie terraces and their supporting walls in with the buried structures. <sup>Such features as were</sup> ~~Presumably each~~ <sup>found have already been described and discussed, and the following sections refer</sup> of these had its series of external terraces which were covered over <sup>solely to the crowning structures.</sup> as the pyramid was enlarged for the superimposed structure, and these ~~have been restored in the plans and sections.~~

~~The uppermost~~<sup>buried K-5-2d</sup> structure, numbered K-5-2d, is one of the most unusual and puzzling architectural features found. Its existence was certain, since a definite floor with a small ceremonial pillar-stone in place ~~was~~<sup>was</sup> found, but no certain limits to this floor and no ~~definite~~ external walls were ever found. At the rear an ~~external wall~~ is ascribed to this structure and a terrace wall with terrace at its base <sup>or</sup> on the rear face of the pyramid. Towards the front, excavations re-  
 vealed <sup>apparent</sup> sudden drops in the floor level which ~~are assumed to~~<sup>may</sup> represent steps. On the <sup>left side</sup> ~~right face~~ of the pyramid the battered terrace walls there found <sup>probably</sup> ~~were assumed to~~ belong to this structure, though not defi-  
<sup>they were</sup>

The masonry may have been entirely removed in order to delay the stairs in the building of K-5-1st, as the walls may have been built entirely of friable materials.

nitely tied in with it. Beyond the bare fact of the existence of the floor of K-5-2d at a definite depth below K-5<sup>1st</sup> and height above K-5-3d, nothing definite can be said about this structure, ~~and the extent of the dotted lines on <sup>the</sup> plan and sections, indicating hypothetical reconstructed features, shows the extent of our ignorance concerning it. <sup>It may even have been</sup> ~~Probably~~ ~~it was an open platform without walls or roof.~~~~

Beneath the rubble fill, at a depth of about 2.50 m. beneath the floor of the upper temple K-5, the floor of **Structure K-5-2d** was encountered. Buried in this, almost exactly under the vertical stone in the niche of the upper temple, was found a stone almost exactly similar, indicating that this second structure was devoted to the same purpose. As will be later described, a third similar stone was found in the next lower structure, K-5-3d. This, together with the other similar stone found in the excavations for the upper temple, the original position of which is uncertain, makes a total of four of these stones so far found in this pyramid. They were later grouped together and photographed, and are shown in plate (32-M-94), the present stone being third from the left. It lay ~~in~~ <sup>exactly under (front to rear)</sup> the ~~central~~ <sup>of the upper structure K-5-1st</sup> axis of the ~~upper~~ niche, its center about 25 cm. in front of the front edge of the niche threshold and of the ledge along the back of the upper structure room. The stone is of lozenge or quadrilateral-circular section, apparently of limestone, measuring 25 x 20 cm. at the top and 21 x 18 cm. at floor level, 32 cm. of its height being exposed. When found it sloped slightly backward and to the left, but was probably originally vertical. It was much blackened by soot and calcined at the front, indicating that fires, doubtless of ceremonial nature, had been built against it at the front. When taken out it was found to be of 50 cm. total length, about 20 cm. of the lower end having been interred in the floor and rubble fill. It was not blackened below the floor level, but the floor was unusually black beneath the plaster around the pillar, possibly the effect of baking.

Excavation revealed a flat slab of stone beneath the pillar, and beneath this a ceremonial cache, mainly, like that below the pillar of the upper temple, of "eccentric" flints and obsidians. This cache was also destroyed in the fire, <sup>at the camp</sup> but the field catalog indicates that it consisted of five well-chipped flints and six obsidians, eight objects of jade, some bones of a small animal, fragments of large drilled bird bones, probably whistles, and sherds of the broken plain pottery vessel in which the cache was buried.

The floor of K-5-2d was of good smooth plaster with rather dark earth below it and then typical rubble fill again. Further from the pillar-stone the fine cemented stone under the plaster facing was not black. The floor was not hard and very irregular and often broken and cracked. Often or generally there were several inches of earth without potsherds above the floor, which may have resulted from the disintegration of other plastered floors immediately above the best-preserved one. A piece of plaster found with a bright green surface indicated that tinted plaster had been employed on walls or floors. The floor consisted of about 20 cm. of plaster, small stones and earth above the rubble. In places the surface ended irregularly against lumps of rubble, and the crushed plaster was again found beneath these stones, suggesting that the floor was soft and was crushed by the weight of the fill that was piled, and probably dropped, upon it.

The limits of <sup>the floor of</sup> ~~room~~ K-5-2d were nowhere found, nor any limiting wall. To <sup>front</sup> ~~left~~ and right side the overlying rubble was not entirely removed, and to left and rear the floor was so disintegrated that it was difficult or impossible to follow. In one or two places the rubble fill above cleaved away leaving a rude wall, <sup>of fill,</sup> probably of the same construction as was found more clearly in later excavations below. These walls of fill, like those of the structure below, ran transversely from front to rear.

It was at first presumed that these represented two sub-periods with a later floor superposed over a lower one, but study of the *Plan* Sections indicates that there was a central dais raised above a surrounding *terrace* platform. I believe that in no place was a superposed floor found.

A number of bits of burnt red clay with impressions of reeds or poles were found near the floor. Unfortunately their exact location was not verified, but the workmen reported that they were found at the top of the pure rock fill below the floor. Obviously they could not have belonged to the roof of the lower (K-5-3d) nor of the upper (K-5-2d) structure, nor is it credible that they were found in the fill. If found in the lowest layer of the floor, they might have been brought *with earth* from outside; if in a later layer of the floor, or on the floor, they may well have been part of the roof of K-5-2d. Since this structure apparently had no masonry roof or masonry walls, it is ~~highly probable~~ *possible* that it had wattle-and-daub walls and roof, of which these burnt clay bits are remnants.

Later excavations ~~indicated~~ *suggested* that there were at least two levels to the floor of K-5-2d, the lower ~~and earlier in places~~ *about* 30 cm. below the upper. The rear wall of K-5-3d reached about to the lower level, ~~it being uncertain whether this floor passed over or stopped against it,~~ but the upper level almost certainly continues over the top of this wall, *as indicated on the sections.*

Although no limiting walls of structure K-5-2d were ever found, the excavation for the lower buried structure K-5-3d afforded more information on the level of the floor of K-5-2d as seen ~~against~~ *in* the sides of the excavation.

In the central ~~line~~ *axis*, above the ceremonial stone of K-5-3d, the floor of K-5-2d was at a height of about 3 m. above that of K-5-3d.

To the left it seemed to be at a slightly lower level, 30 to 40 cm. lower. ~~This may represent the lower one of two layers of floor.~~ *The former probably represents the floor of the dais, the latter the surrounding terrace.* ~~of the excavation cut at the front beyond the upper steps of K-5-3d~~ section showed white, lime-encrusted rock fill below with a mass of packed small stones above this. This probably represented the floor, though no plaster ~~was~~ *was* seen. Above this was about 30 to 50 cm. of rock and ~~hard~~ *dark earth* packed without interstices, then more pure rock fill, not so white as that below, and on the surface of the pyramid slope the

present upper layer of humus and rock, the latter doubtless the result of recent erosion and decay. The upper layer of pure rock fill contains neither building stones nor earth and was almost certainly an intentional fill, not fallen debris. This layer, together with the layer of mixed rock and earth that underlaid it, suggests that there was ~~a~~<sup>a</sup> period between the building of K-5-2d and that of K-5-1st, during which the pyramid was abandoned and allowed to disintegrate and to accumulate humus, and later this was covered with the rock fill for the upper terraces of the pyramid of K-5-1st. If this was actually the case, it is an unusual and significant feature of great importance.

Since no certain boundaries were found to the structure of K-5-2d, and no pyramid terraces other than those tentatively assigned to both K-5-1st and K-5-2d, no ground plan of this phase of pyramid K-5 is given. Such features as were found, however, are indicated on the Sections, with hypothetical restorations. They show a broad <sup>terrace</sup> ~~platform~~ with a slightly raised central dais. These have been placed on the Sections in accord with the following observations and deductions.

On the front to rear axis, excavations indicated two abrupt drops in floor level towards the front, each of about 40 cm height and 65 cm. apart. The first and upper drop was about 40 cm. in front of the front face of the ~~plaster~~<sup>pier</sup> of K-5-3d below. The top of this ~~plaster~~ pier was at a level between the lowest two levels. While vertical risers were not found, and the possibility of the slipping and falling of a level floor cannot be entirely dismissed, the conditions seem to indicate two ~~steps~~, as indicated in Section B.

~~Excavations were not carried deeper towards the front~~ The floors were too much disturbed and disintegrated for more data to be revealed in the excavations, but apparently one or the other of these three levels was carried far <sup>towards</sup> to the front, forming a broad terrace ~~platform~~ ~~from~~ <sup>and below</sup> in front of <sup>the</sup> dais. Excavation was not carried <sup>forward</sup> to the front slope of the pyramid and ended with an almost vertical cut about 4 m. to the front of the steps, but against this cut the floor of the ~~platform~~ terrace was plainly visible. The level was inefficiently taken by rough sights and a rude level and the results are equivocal, one observation indicating that it was on the approximate level of the top of the dais, another placing it near the base of the lower step. The plotted Section brings the middle level at the same

level as the top of the fifth terrace, <sup>a</sup>s shown in the Section.

This leaves the lower level unaccounted for. ~~and~~ This reconstruction

produces ~~a platform or~~ terrace at the front of about 7 m. width,

including the width of the step of the second level. Also, as we

have seen, the width of the next lower terrace may have been greater

than the 1 m. accepted which would make the ~~platform~~ <sup>terrace</sup> of K-5-2d that

much narrower, but the width could hardly have been less than 5.50

m. The features ~~towards~~ <sup>are</sup> at the rear ~~or~~ equally or more problem-

atical. Assuming the pillar stone to have been in the center, the

dais would have had a width of 5.50 m. Since, at the front, only

one step down has been accepted, this featured ~~d~~ is reproduced at

this point at the rear, which would leave a rear terrace ~~platform~~

of <sup>3</sup>7.80 m. width, the ~~entire~~ <sup>total</sup> hypothetical width of the

top of K-5-2d being therefore about 16.<sup>3</sup>0 m. It could hardly have

been less than 15 m. If the pillar-stone was ~~at~~ the rear of the

center, the dais could be made of less width, and the rear and

front ~~platforms~~ <sup>terraces</sup> surrounding it made of identical width.

As is shown in Section A, the upper surface of K-5-2d has been reconstructed with a total length of 24<sup>1</sup>/<sub>2</sub> m., ~~of which the~~ with a central dais of 10.60 m. length flanked by ~~platforms~~ <sup>terraces</sup> of about 6.70 m. width. This reconstruction was made on the basis of the following data, ~~In the case of the side-to-side axis,~~ <sup>It is</sup> almost certain that the pillar stone was placed on the front-to-rear axis. The features found on the excavated left or southeast side are therefore reproduced on the other side. The total length is derived from the hypothetical side terrace wall. This may have been making the platform about 5.70 m. in width, 1 m. further in, <sup>^</sup> if the next terrace below was wider, but could not have been less, since the floor was observed to this point, 11 m. from the pillar-stone, and so much width is required to clear the wall of K-5-3d below. The length of dais plus ~~platform~~ <sup>terrace</sup> could not have been less than 22 m.

These data were observed in the face of the cut excavation about 5 m. in front of the pillar-stone. At the left edge the floor seemed to be on a level about 40 cm. lower than in the medial axis. While the remains were not well enough preserved to show the ~~face~~ riser of the presumed step. ~~this~~ drop of 40 cm. in level seemed to occur at about 5.50 m. from the pillar stone and about the same distance from the outermost observed section of floor. The riser has therefore been placed in the Section at this place.

These data, then, indicate for the top of K-5-2d a central dais of 5.50 by 10.<sup>60</sup> m., 40 cm. above a ~~platform~~ <sup>terrace</sup> 16.50 by 2<sup>+</sup> m.,

The width of this surrounding <sup>terrace</sup> ~~platform~~ is tentatively fixed as 7 m. at the front, 3.80 at the rear, and 6.70 at the sides.

All these dimensions are, however, susceptible to considerable revision. If K-5-2d was as complex in plan as its nearest analogue, E-VII-Sub at Uaxactun, complete excavation of at least one side of the pyramid and a lateral half of the top would have been necessary to determine the exact plan. It may be pointed out, however, that the ~~low~~ platform <sup>---</sup> (in this case it is too high to be termed a dais) <sup>^</sup> --- on the top of the Uaxactun pyramid consists of two parts, a rectangular one, more or less of the proportions of the dais of K-5-2d, and, like the latter, set far back, and an anterior section, slightly wider and lower, of horseshoe shape and bearing masks. Without this latter feature the two pyramids were quite similar, with a very broad terrace at the front.

K-5-3d

A still lower buried structure which we term K-5-3d existed under K-5-2d and had been subsequently filled up in order to build the latter. This was found to be in far superior condition than the latter, both as regards walls and floor. The <sup>masonry</sup> walls rose almost to the height of the floor of K-5-2d, but how much higher they may originally have been can only be estimated. The roof had evidently been removed before the room was filled up, for no debris either of masonry or of perishable material was found on the floor; the pure rock fill lay on the plaster floor. The room is the largest so far found at Piedras Negras and one of the largest in the <sup>Old Empire</sup> Maya area, about 5 m. in width from front to rear wall, and probably about ~~3~~ <sup>18.50</sup> m. in length. It was very unlikely that this great space was spanned by an arched vault; a roof supported by beams is strongly indicated in this case.

The form and details of the structure of K-5-3d are shown in Plan <sup>B</sup> and the Sections. Regarding the pyramid of this structure nothing can be said as excavations were not carried deep enough to reveal any part of it. ~~In Plan and Sections the pyramid terraces and stairway are reconstructed hypothetically best (of) correlate with the terraces of K-5-2d.~~

Since only the left or southeastern half of the pyramid was excavated, the other half still standing in untouched condition to former maximum height at the right end of structure K-5; <sup>only</sup> half of structure K-5-3d was excavated, but this was done completely, including front wall and the inner sides and tops of the rear and left side walls. There is no reason for supposing that the right half did not symmetrically duplicate the left half. A single rectangular room is thus indicated, <sup>18.50</sup> ~~22~~ by <sup>4.90</sup> ~~7~~ meters in interior dimensions. The rear and side walls are unbroken by <sup>at least on the left half,</sup> entrances and a low bench is found at the rear. At the front, short sections of wall at either end join the side walls, and in the middle, two rectangular piers divide the space into central and side entrances.

The room of K-5-3d was approximately centered with that of K-5-1<sup>st</sup> but set a little further back. Thus the piers of the front wall are practically on the same longitudinal line, from side to side, as those of K-5-1<sup>st</sup>; but the rear wall is much further back, making the room of greater width than that of the summit temple. Set in the floor was found a pillar-stone like that found in the floor of K-5-2d and the two found in K-5-1<sup>st</sup>. This would seem to indicate that the three successive temples served a similar purpose. It lay in the same axis, front to back, as the other two, presumably in the medial line of the room, and was, as regards front to back position, intermediate between the stones of K-5-1<sup>st</sup> and K-5-2d. The position of the three, however, differed by ~~less~~ <sup>not more</sup> than ~~a~~ <sup>one</sup> meter. The relatively accurate centering of the structures above with those below, all the features of which must have been covered by several meters of rock fill before the construction above commenced, is noteworthy, and indicates that ~~care~~ <sup>sights</sup> and measurements must have been taken and recorded to insure this accuracy of superposition.

The floor of K-5-3d was found at a depth of about 3.00 m beneath that of K-5-2d and about 5.60 m. beneath that of K-5-1<sup>st</sup>. It was relatively hard and in fair condition, relatively flat, level and smooth. In ~~the~~ ~~especially in~~ the central line, front to rear, and close to the edge of the bench, it was very black with soot, as was the low front wall of the bench on which, when first seen, the plaster finish was unusually thick and well preserved.

There was a noticeable difference in the quality of the fill overlying the floor and ~~the~~ <sup>the above</sup> surface of the bench, ~~that~~ <sup>the rocks</sup> over the former being mixed in places with ~~earth~~ <sup>fine material</sup> below the level of the bench, that over the bench being pure rock without earth. There was, however, no evidence that the room had been filled up to the level of the bench, ~~and the difference is probably of no significance.~~

During the excavation of the rock fill, several times it fell away

This fine plaster finish and the soot on the surface, the latter was probably the result of the fires around the fallen stone, were seen in the low of the deep excavation made when the floor of K-5-3d was first discovered. Prior to the constant fall of debris, they had entirely disappeared when the room was finally excavated.

No significant explanation for the difference occurred to me. The field notes do not indicate that the fine material was found on the floor, in which case it might be considered as derived from the fallen roof. But since the roof must have covered the bench as well, it should the fine material should have been found lying on that also.

leaving high straight walls of rock which differed in no respect from the rest except in being piled in a wall. These rude rock walls ran transversely from front to back. Obviously the filling of the rooms was not done haphazardly and all at once, but in sections which were marked off by these walls. They were not mere facings to the fill but two-sided walls and were presumably erected before the filling of the sections enclosed by them began. One, of which both faces were examined before it fell, had a thickness of 55 cm. The rocks composing these walls were probably specially selected in order to pile well, but are in no case even relatively quadrangular or placed in approximate courses, as is the case with masonry. There is no binder and the removal of one rock <sup>near the base</sup> tumbles the entire wall.

The purpose of thus filling by sections is uncertain. Greater strength may be given to the foundations. It is possible that the plan of the buried structure was by this means carried up to the new surface. On the other hand, it may be that <sup>the filling of</sup> each section was a task assigned to a body of men.

Probably the entire fill was thus divided into sections, for a number of such rude walls were found and more must have been torn down without knowledge. One was in the exact center line of the room, and showed at its base the covered vertical ceremonial pillar-stone which has been mentioned and which will be described in detail later. This wall extended across the entire width of the room and apparently reached to the floor of K-5-2d, having a maximum height of about 3 m. At least three other such walls were noted in the excavated left half of the room, the average distance between them being a little less than 2.50 ~~m~~<sup>m</sup>. One of these is shown in plate (32-S-93). Some of these walls were observed to cross the bench at the rear and the terrace and steps at the front beyond the front walls and piers. They ~~probably~~ require no detailed description.

The rear wall of the room, (32-M-30,29,33,32,34,31) was noted to a

maximum height of 1.85 m. above the bench. It did not reach to the upper floor of structure K-5-2d, but probably to the level of the <sup>almost</sup> ~~lower~~ <sup>terrace</sup> floor. It is well built, of fairly good masonry, of large blocks, relatively quadrangular. In several places where the large blocks did not meet to make a good face, or did not extend to the face of the wall, small quadrangular blocks of slight depth were inserted as ~~a veneer~~ <sup>chinking</sup>; these can be easily removed. The face must have been originally covered with a plaster surfacing. It slopes outward towards the top, being 20 to 25 cm. off perpendicular at the maximum height and most vertical point, but this was decided to be due to falling and not intentional or original. The degree of slope ranges from practically vertical at the center line of the room to about 72 degrees at the corner where it meets the left side wall. At this corner, the top of the rear wall was 30 cm. off perpendicular, the side wall 45 cm. off. In the central transverse line of the structure, field notes state that this wall had no good external face, but was apparently merely an interior facing, the space between it and the rear terrace wall, probably belonging to K-5-2d, being filled with pure rock fill. This is probably erroneous, for near the rear left corner the exterior face of the wall was found in good condition. In another sector where the interior face had fallen, a rubble interior was found, indicating that the wall was built of two facings, filled with rubble. It was well made and was certainly the exterior wall of this structure, later covered on the outside with pure rock fill to enlarge the width for the pyramid of K-5-2d. The sloping condition of both faces prevented an accurate measurement of the ~~width~~ <sup>thickness</sup>, but it was about 1.45 m. The maximum height was 1.80 above the bench and therefore about 2.30 above the room floor. The exterior is ~~very~~ <sup>comparatively</sup> well made, better than the interior face, especially at the corner where the blocks were either very carefully selected or else worked. The blocks show a tendency toward being in courses without being strictly so, and the bonding of the corner is not



obvious.

The bench at the base of the rear wall (32-M-33,32,31,34,30,29) probably extended for the entire length of the room, but only the left half was uncovered. The width is about 1.15 to 1.30 m., the wall at the front 50 cm. high. Both had a thick and well-preserved plaster facing when first seen.

The left side wall (32-M-30,31,29) needs few comments. It was apparently not well bound to the rear wall, but met it at a perfect right angle. Like the rear wall it is comparatively well made of large blocks of comparatively uniform size with at least one relatively flat face which was placed on the exterior, but not in courses. It was likewise sloping outwards towards the top, evidently falling and not ~~identical~~ <sup>intentional</sup>. Naturally, since both walls had fallen outwards, the corner where they join is much disrupted. The angle of slope at this point is about 60 degrees. The slope of both side and rear walls is very regular so that they have all the appearance of intentional batter walls. The maximum height of this side wall is 1.70 m. above the floor.

A breach was made in this wall near its junction with the rear wall to facilitate excavation, and it was found that the outer side sloped parallel with the inner side, indicating that the slope was due to the falling of the wall. At its forward end, where it meets the front wall and where it is more vertical, the thickness was calculated as 1.45 m. At the latter point, pure rock fill covered it on the outside, evidently fill for the erection of a terrace of pyramid K-5-2d, but in the breach near the rear end the exterior was more of the character of debris, rock filled with earth and without interstices.

The front supports of the structure of K-5-3d apparently consisted of a short section of wall at either side meeting the side walls at a right angle, and two piers separating three entrances. Of these, only the section of wall and the pier to the left were uncovered, the others assumed by symmetry.

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The external dimensions of this structure were probably about 21.50 by 7.50 m. To sides and to rear the walls were probably unbroken, unless there are entrances on the right half. The front, granted that it is symmetrical to right and left, consists of two sections of wall of 4.10 m. <sup>external</sup> length, two piers of 1.20 m. width, and three entrances of 3.70 m. width.

The left section of the front wall (32-M-31,32,34,33) meets the left side wall in a straight right-angled corner. Its length is 4.10 m. on the exterior and 2.60 m. on the interior side, the width of the side wall therefore being 1.50 at this point. The thickness is 1.15 m. and the present maximum height 1.80 m. The top is relatively flat and the workmen were positive that none of it had been removed before discovery. It ~~may be assumed~~ <sup>is possible</sup> that it was originally higher, and reduced to this height when the room was filled up to make the floor of structure K-5-2d.

The masonry is fair, composed of large and small blocks, poorly selected and not laid in courses, and with large interstices. Owing to the sloping and fallen condition of the side wall, their relations were difficult to determine, but apparently they were bound together, though not well bonded so that the side wall fell away without greatly affecting the front wall. The masonry is rather inferior to that of the front left pier, although it is very straight and vertical. There are no courses, no rectangular stones, and no relatively flat faces. The masonry resembles that of the rear and side walls, while that of the pier is considerably superior. The corners of the right end are almost certainly intentionally bonded, but the stones are not well selected.

The left entrance, between the end of this wall and the left pier, is <sup>or more than 12 feet</sup> 3.70 m. <sup>^</sup> in width. This width is, of course, too great to have been spanned by a stone lintel and this was probably of timbers, as the roof is presumed to have been.

The left pier of the front wall of K-5-3d (32-M-34,33,32,31) measured

crossed the room at this point, was the interred vertical ceremonial <sup>pillar-</sup>stone similar to the two found in position in the superimposed structures K-5-2d and K-5. <sup>lost</sup> The center of this stone was at about 2.90 m. from the rear wall, and 9.25 from the left side wall. It was about 1 m. to the rear of the stone of K-5-2d, and about directly under that of K-5. <sup>lost</sup> The rock fill was carefully piled around the stone, not touching it except at the top, and no stones were placed at the edge of the <sup>rock-fill</sup> wall to obscure it, although its side was 30 cm. in from the edge of <sup>this</sup> ~~the~~ wall. It stood about 40 cm. above the floor and was leaning slightly backward. Unfortunately, the photograph taken to show its position failed to result well. It is of oval cross-section, though with four slightly flattened faces. The longer axis was placed on the longer axis of the room. Like the others, the base is slightly smaller than the top, the dimensions at the bottom being 20 x 22 cm., those at the top 22 x 28 cm. The top is relatively flat. It is the largest of the four similar stones found on this pyramid, all four of which are shown in plate (32-M-94), the present stone shown at the right, partly cut off. It is 60 cm. in height, and was interred to a depth of 20 cm. Like the stone above, it was very black with soot, ~~was~~ this time on all sides, but below floor-level was seen to be of a white stone, probably limestone, with traces of red paint. Undoubtedly fires, probably of copal incense, had been burnt around it. The floor around it was very black and broken and loose, though this latter may have been the result of the pressure of the rock fill above it.

The rock-fill wall was <sup>removed</sup> ~~fallen~~ in order to disinter the stone and to examine the cache beneath it. The latter had probably been crushed by the weight of the fill; if not, it was crushed by the fall of the wall which crumbled in spite of boarding and bracing. The cache had apparently been interred in an excavated hole in the lower rock fill which had been floored and lined with earth. In this was placed a pottery vessel, probably with cover. The sherds indicate a wide-mouthed bowl or saucer of plain

brick-red ware, similar to the vessels of the caches found beneath the floors on temple O-13. It had been lined with a layer of clay on the inside.

The contents of the cache include a profile head of a deity, carved in ~~bone~~ <sup>shell, with incised detail</sup> (plate <sup>probably God D,</sup> ), and a replica of the spine of the sting-ray, ~~also~~ carved of bone, both unusual objects. More usual objects are: a fragment of a celt of black basalt, three lumps of jade, two of which bear incised ornamentation, a natural univalve shell, two large "eccentric" obsidians and ten chips, and two "eccentric" flints and four chips. The chips of flint and obsidian are probably fragments of broken ornaments. Miscellaneous potsherds are also recorded, but these may all belong to the vessel in which the objects were interred.

Structure K-5-3d, like K-5-<sup>at</sup>3d, rested on a plinth. At the base of the walls is <sup>the plinth</sup> a ledge, 30 cm. in width. This was observed along the front from near the left pier to the end of the left wall, the southern corner, where it was observed to turn the corner, and at the left end of the rear wall, the eastern corner. At the front it was at floor level and served as a step in front of the left entrance, and presumably it was at floor level throughout and the upper step in front of the other two entrances also.

At the southern or left front corner the <sup>at which the plinth ledges on front and side meet</sup> angle ~~of the ledge~~ is rounded; <sup>and rear</sup> the width is 25 cm. on the front walls and 20 cm. on the side wall. ~~At the rear the width is 25 cm., and here it was noted that the wall continued down behind the plinth ledge, but it is uncertain whether this was plastered. If this was indeed the case, and the field observations not in error, the ledge was built against the wall, not, as seems to be typical of the city, the floor and ledge made and the walls then built upon them.~~

The plinth ledge was supported by a wall 40 to 50 cm. high and well plastered. The floor extending forward from the base of this, in front of the left entrance, was also well plastered and 1.30 m. in width. This was probably the uppermost terrace of the pyramid of K-5-3d. Another wall

It has therefore been reproduced symmetrically and with similar dimensions to sides and rear on the Plan and Sections.

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retained this at the front, 30 cm., in height, and at its base another floor 50 cm. in width. The left edge of this "floor" was found at about the right end of the left front wall, indicating that this was a step of a staircase, not a terrace. Its width was not determined, but it probably extended for at least the full width of the entrance, and probably of all three entrances. Further investigations <sup>towards the front</sup> were impossible as the fill above had not been cleared off and towered menacingly above the workmen.

In one place there were almost certain evidences that the floor of the room had been continued forward to an uncertain distance over the upper pyramid terrace at the level of the <sup>plinth</sup> ledge at the front, but this was not definitely verified.

The supporting wall of the <sup>plinth</sup> ledge seemed to disintegrate at about 1.50 m. to the left of the left wall of the left pier, and from this point to the right this wall and the terrace at its base could not be definitely followed. These features at the front are shown in Plate (32-M-33).

Excavations were not carried deep enough to uncover any of the <sup>other lower</sup> terrace floors or walls of the pyramid of K-5-3d, ~~and those shown in Plan C and the sections are purely hypothetical.~~

#### EXCAVATIONS IN THE FLOOR OF K-5-3d

A deep excavation was made in the floor of K-5-3d, <sup>at</sup> the lowest <sup>known</sup> buried structure in Pyramid K-5. Pure rock fill was found to a depth of 3.50 m. without encountering any other floor under this. Time did not permit of a widening of this excavation sufficient to enable the excavation to be carried deeper, and it is possible that another buried structure, which would be numbered K-5-4th, may exist under K-5-3d. ~~However, this is considered unlikely, inasmuch as the excavation was carried to a depth greater than those separating the floors of K-5-<sup>1st</sup> and K-5-2d, and K-5-2d and K-5-3d, and also since the height of the base of this ex-~~

*Agard*

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~~cavation above the surface level, about <sup>5</sup> 4 to 6 m., is hardly sufficient to permit a pyramid of much height. A structure may, however, have been built, like structure P-7, ~~located at structure P-7~~ on a low terrace, and the later pyramid K-5-3d erected over this.~~

Immediately under the disintegrated plaster floor is a layer of large and small stones much mixed with earth, and beneath this a fill of large rock unmixed with earth. Evidences were found that this fill was also laid up in sections, as there seemed to be a rock wall running from front to back which was about in the center line of the left entrance of K-5-3d, at a distance of 4.30 m., from the base of the left side wall. This seemed to end at a depth of about 2 m. where there seemed to be a ledge of about 30 cm. width with another rock wall below this with its edge at the edge of the ledge, but all these points were rather indefinite and uncertain.

At a depth of about 3.40 m. the workmen claimed to have found three large, thick, flat, horizontal stones, and beneath them fragments of a broken pottery vessel of red ware, like the typical vessels in which ceremonial caches were placed. The excavation was carried no deeper than about 3.50 m.

Although this excavation was carried to a depth greater than those separating K-5-3d from K-5-2d and the latter from K-5-1st, its base is still about 5.50 m. above the level of the bedrock at the side and the plaza level at the front of the pyramid. This height is sufficient to cover a structure built on a low terrace or a small pyramid. Deeper excavation would be a great desideratum as any structure found would obviously be of very early period in the existence of Piedras Negras and consequently would doubtless afford information of great value.

## LINTEL 7

In the center of the front slope of the pyramid and therefore on the supposed staircase, about 3 m below the floor of the room and consequently about on the level of the <sup>of K-5-1st</sup> ~~second~~ <sup>first</sup> highest terrace, <sup>and on the level of K-5-2d,</sup> a relatively flat ledge appeared which was at first

presumed to have been produced by the fall of a large tree there. Excavation on this ledge revealed <sup>sculptured ~~basal~~ stone, presumably a</sup> a large broken <sup>^</sup> lintel, which <sup>apparently fell</sup> ~~had fallen~~ <sup>must have</sup> fallen from the central doorway of the <sup>uppermost</sup>

temple, although the span of the latter is about 20 cm greater than the maximum length of the lintel. This lay face down, at slight depth, broken in six large and several small pieces, all in position. It now lies at the foot of this pyramid. <sup>It</sup>

has been designated Lintel 7.

The lintel, if such it is, is very large and massive.

*The sides and bottom are slightly rounded.*

Six large fragments were found close together, all of which almost certainly are parts of this stone. They were roughly placed toge-

ther as shown in Plate , Figure . The lower, central, and

(facing with, or from, the stone)  
lower left fragments are certainly in proper position, and give the

length of the stone as 1.43 m. These pieces are moderately ~~well~~ well

to very well preserved. The upper right fragment, bearing the

Initial Series glyphs, is very well preserved and in proper posi-

tion but does not fit closely, and more space may have intervened

between. ~~them~~. The upper central and upper left pieces are entire-

ly eroded or with the surface flaked off. The latter fits the lower

left fragment exactly but does not show the upper border, while the

upper central piece does not fit at all well and some intervening

bits may be gone. The width, therefore, may be a little greater

the "lintel" being therefore relatively square.  
than the indicated 1.20 m., <sup>^</sup>The thickness is about 26 cm.

The Initial Series on the upper right fragment shows the

and  
Introducing Glyph, <sup>^</sup>three well-preserved glyphs and the upper part

of the fourth in one vertical column. Obviously only one column

of glyphs was placed here, as the Introducing Glyph covers only the

Photo  
31-60

33-151

single column. All to the left of this column is entirely eroded. The Introducing Glyph shows the head of an animal, probably a jaguar. The three glyphs show the head signs for the cycle, Katun and tun with the bar-and-dot numerical coefficients 9, 9 and 8. The part of the fourth glyph seems to show a zero coefficient which would denote 0 uinals. If this is the case, the missing kin glyph was probably also zero, making the complete Initial Series date 9.9.8.0.0. This date in the modern calendar would be, according to the Goodman correlation adopted by Thompson, March 31, A.D. 621; Spinden's school would make the year 361. The Initial Series, however, seldom gives the contemporary date which is generally indicated by dates and calculations following; these subsequent glyphs are missing here, but they generally give a date within a few years of that given by the Initial Series. Below the five large glyphs of the Initial Series, which glyphs <sup>are</sup> ~~were~~ of double size, as usual, each about <sup>10.5</sup> ~~12~~ x <sup>12.0</sup> ~~12.4~~ cm., there seem to have been two columns of <sup>seven</sup> ~~six~~ glyphs each, each about half the <sup>width</sup> ~~size~~ and height of the glyphs of the Initial Series. Of these only two remain, the <sup>third</sup> ~~second~~ and <sup>fourth</sup> ~~third~~ of the <sup>left</sup> ~~right~~ column, counting from the top.

The central fragment is badly eroded, but shows a figure in low relief, seated cross-legged and leaning slightly to its right. The right arm is crossed over the breast, the left hand resting on the thigh. The head is gone, but apparently was in profile, facing towards <sup>to</sup> ~~the~~ right. Breech-cloth and bracelets are shown. The largest fragment, <sup>below and</sup> to the right, is much damaged in places, but well preserved in others. ~~To the~~ right are two small glyphs, apparently continuing the initial series, although of smaller size. In the center at the base are four more glyphs, apparently non-calendrical. Above these glyphs and near the base, but below the central seated figure and to either side of it, are two more seated figures in profile and low relief facing each other. That to the right is badly eroded and presents few definite features except for a great feathered headdress. The lower part of the left hand figure is well preserved, but the back of it is on the broken lower left fragment of the lintel. The left side is shown. The sole of the right foot <sup>Card number they is the sole of what is probably a sandal.</sup> is shown under the left thigh, on which the left hand rests. The right hand, clenched, with the fingers very well carved, rests on the left arm. The head is much damaged but apparently is shown in profile, facing the central figure. The details of the textile clothing and the bracelet on the left arm are well shown. Between these two lower figures is a feathered object of some <sup>material</sup> nature. This is considered as lintel 7. A thin piece of limestone with very eroded glyphs in checker-board pattern was also found, which may have chipped from the face of the upper left fragment of this lintel.

see drawing  
of glyphs

over from  
p. 53

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The lower left fragment (right in the photograph) shows two vertical columns of seven glyphs each, fourteen in all, which are well preserved except for the fourth one in the right column, which seems to be entirely chipped away. The removal is so complete and the surrounding glyphs so undamaged that the inevitable conclusion is that it was intentionally erased. Although evidence from the fragment above indicates that the surface of the stone <sup>was</sup> ~~chipped~~ <sup>chipped easily</sup> off, in this case the glyphs <sup>chipped and</sup> seem to have been <sup>chipped</sup> ~~chipped~~ off to a greater depth and width than the relief glyph originally occupied. It is a plausible <sup>than</sup> ~~assumption~~ <sup>sketch</sup> that the sculptor carved an incorrect glyph which was removed and reproduced in perishable stucco.

The upper <sup>left</sup> right fragment is perfectly plain, apparently bearing no trace of carving. Although its thickness was not measured, the absence of carving and the very rough and pitted surface suggest that the carved face had <sup>scraped</sup> ~~broken~~ <sup>missing</sup> off. This surface is probably represented by one or both of two carved stones with glyphs, each about 4 cm. in thickness, that were found in the excavations.

One was found by Mr. Satterthwaite in 1933 on the surface of the

pyramid

front slope of the pyramid,  
~~FRONT/SLOPE/OF/THE/PYRAMID~~ about 3.10 m. above the lowest terrace  
at the base of the lower stucco mask and consequently a little  
above the second narrow terrace between the two masks. It was  
about 3 m. to the left or southeast of the axis of the pyramid and  
consequently about in front of the left entrance of the temple of  
K-5-1st. It had unquestionably fallen from further up on the pyra-  
mid. While it was not possible to fit this stone to any fragment  
of Lintel 7, <sup>yet</sup> the position in which it was found does not ~~justify~~<sup>mullify</sup>  
this possibility, and ~~it is~~ its size and appearance render this a  
probability. It is a fragment of the ~~right~~ left side of a  
*measuring about 28 by 22 cm. maximum,*  
sculptured stone, showing a border of 8.5 cm. width and two  
columns of glyphs each about 5.5 cm. square. These features are  
the same as those of the inscription on the lower left fragment of  
Lintel 7, and the dimensions are approximately the same, calculating  
from the photograph, since, <sup>these</sup> unfortunately, <sup>^</sup>measurements were not  
taken upon the sculpture. It is likely, therefore, that this stone  
is a flake <sup>sculpted</sup> from the surface of the upper left fragment. It bears  
two vertical columns of four <sup>each</sup> ~~Wéll/ptéssé~~ nearly complete glyphs with  
fragments of the same above and below, and is probably the upper  
part of the inscription on the lower left fragment.

The same is also probably, though less certainly, true of another fragment of sculpture with glyphs. This is also of only 4 cm. thickness and had probably also sealed off from Lintel 7, though in this case it is more difficult to assign the original position. Unfortunately no photograph of this was taken, nor was the place of discovery noted. It was encountered during the excavations of K-5-1st in 1931 and probably was at first considered a plain slab, the under side only being observed. Later the remains of glyphs on the upper surface were noted. The slab is of irregular <sup>about 27 by 37 cm. maximum</sup> shape, the glyphs so eroded as to be entirely unidentifiable, but the glyph blocks easily distinguishable. It cannot be a part of any inscription preserved on the lintel as it is completely covered with small glyphs without any border. These glyphs are the same size as the other small ones on Lintel 7. There are traces of six rows of these glyphs in five columns, a total of at least thirty, but of these, six are not shown at all, due to the irregularity of the shape of the stone, and only about half are entire.

At the outer edge of the ledge, beyond the lintel, a cache of ceremonial objects, such as were buried at the base of stelae, was excavated. Possibly not all of these were found, but those which were consist of the fragments of the pottery vessel in which the cache was interred, fifteen small objects of chipped obsidian, seven larger objects of chipped flint, and two small bits of shell. (W-5-5 and 5-6, L-16-918 to 923; photograph 209.) <sup>These</sup> ~~12~~ <sup>15</sup> obsidian objects catalogued but ~~15~~ <sup>12</sup> are shown in <sup>the</sup> photograph, 7 flints catalogued, and shown in photograph; 2 small shell objects show in photograph). The vessel was apparently a flat-bottomed bowl, covered inside and outside with polished orange paint. One of the obsidian objects is a core from which flakes had been struck, the others are flakes with the edges notched. The flint objects are also rather poor and made of thin flakes; three are rudely crescent-shaped, two somewhat dumbbell-shaped, and two asymmetrical.

More flint 7 was found.

Keneth Miller - others and under floor.

## SUMMARY AND CONCLUSIONS

The excavation of Pyramid K-5 at Piedras Negras resulted in information of great importance for the study of Mayan architectural development. Three structures, ~~one~~ <sup>the upper</sup> built upon and covering <sup>the lower</sup> another, were found, and future excavations may reveal another one, or even two, beneath the lowest of these, <sup>which letter we have termed K-5-3d</sup> The superposition of one structure upon another is incontrovertible evidence of relative age.

These three structures were obviously used for similar religious or ceremonial purposes. In each was found a short column altar on the medial front-to-rear axis, each of these sooted and demonstrating that fires had been built around or before them, and under each was found a ceremonial cache, <sup>with relatively similar contents.</sup> The three structures, and their substructure pyramids, were ~~centered~~ <sup>X</sup> similarly, the front-to-rear axes agreeing perfectly, the side-to-side axes differing slightly.

Stating the architectural phases as <sup>briefly</sup> as possible, <sup>indeed</sup> a temple composed of one very large room, possibly the ~~largest~~ <sup>cell</sup> known in the Maya area, with walls and piers of masonry (K-5-3d) discovered ~~was found~~ on the earliest horizon so far found in this structure,

underlying a pyramid with a platform on its broad top which apparently never bore any masonry structure. Both in this fact, and in that the pyramid terraces ~~of K-5-2d/K-5-2d/K-5-2d/K-5-2d~~ *of K-5-2d/K-5-2d/K-5-2d/K-5-2d*

probably bore gigantic stucco masks, this middle structure, K-5-2d, resembles pyramid E-VII-Sub at Uaxactun. The latter, on account

of its unusual nature and its relations with some of the oldest

dated monuments in the Maya region, has been generally assumed to

be the oldest ~~known~~ <sup>*not known*</sup> Maya structure <sup>*free-standing*</sup> and, owing to its lack of <sup>*walls*</sup> stone

masonry, possibly erected before the development, invention, or

introduction of ~~the masonry~~ <sup>*this is architectural feature*</sup> in the Maya region. These deduc-

tions are now rendered less probable by the sequence of K-5-2d and

K-5-3d. While it would be too great an assumption to conclude

that K-5-2d and Uaxactun E-VII-Sub <sup>*were*</sup> ~~are~~ of contemporary period,

and there are reasons for considering the Uaxactun pyramid the

older, yet the temporal difference <sup>*was not very*</sup> ~~could not have been~~ great,

and at Piedras Negras, at least, the art of ~~masonry~~ <sup>*building free-standing masonry walls*</sup> was known

before this pyramid and structure of the type of Uaxactun E-VII-

Sub was built. It is likely that both of these platform-crowned

pyramids bore upon them structures with walls and roof of perishable

materials, probably wooden posts and beams, and palm-leaf thatch.

The latest and highest structure on this pyramid, K-5-1st, was a typical small Maya ~~temples~~ one-roomed temple with massive masonry walls carrying a masonry vault and possibly a roof-comb. In this structure the column altar, ~~instead~~ instead of being in the center of the room, is set ~~at~~ at the back in a niche and supplied with a ventilating flue through the rear wall of the niche.

While the modern Functionalist school of anthropology has little interest in archeology, yet the ~~main tenets~~ <sup>functional viewpoint</sup> should always be in the mind of the archeologist, who is too much inclined to consider and compare tangible discoveries without sufficient thought as to their practical purposes, and the deductions to be drawn therefrom.

The earliest Maya temple, we may confidently assume, was a larger and more ornate replica of the ordinary Maya <sup>dwelling</sup> house. This is ~~what~~ today composed of a pitched <sup>ridge, covered - rafters</sup> ~~roof~~ roof of poles and thatch supported on posts and with walls of wood, wattle or stone. Reports of the time of the Conquest <sup>state</sup> ~~that~~ that the same type was in use at that time, the frescoes at Chichen-Itza indicate <sup>similar houses</sup> that ~~they~~ were built at the time of the <sup>New</sup> ~~late~~ Maya Empire (so called), and it is presumable that the ~~typical~~ <sup>typical</sup> Maya house was

always of this type. The fire for cooking was placed on the floor, generally in the center of the house. No chimney or flue was needed as the smoke found its way out through the permeable thatch.

Apparently one of the ceremonial rites of the religion of the Old Empire Maya, ~~Yahp'Yahp'~~ at Piedras Negras at least,

involved burning material ~~around~~ <sup>around that it</sup> a small column altar. We may

assume that this material was copal ~~which~~ was burnt in pottery

vessels. The Lacandon Indians today burn copal to their deities in specially-made pottery bowls, which are often deposited in the ancient Maya ruins in their neighborhood. Some of these were

found at Piedras Negras (See Piedras Negras Preliminary Paper No 3)

*and they have been found in quantities at Yacchilon and Sanchon.*  
Many sherds, presumably from such bowls, were found <sup>in the ash</sup> around the

column altar in the niche of K-5-1st.

In the earliest temples, we may assume, the column altar was placed in the same position as the household fire in the private house, in the center. The smoke from the copal, which is black, dense and pungent, escaped through the thatched roof.

Since the column altars of K-5-3d and K-5-2d were placed in the center of the room the conclusion is <sup>almost</sup> inescapable that the roofs

must have been permeable, and probably of thatch. The walls of K-5-3d, the older structure, were of masonry; those of K-5-2d, of later date, probably of posts, indicating a return to a more primitive type, possibly owing to religious conservatism.

When solid masonry roofs with vaulted interior construction came into use, it is possible that, in the first building of this type, the column altar was placed in the center of the room as in the thatched-roof buildings. The smoke, unable to find an exit, would at once have demonstrated the impracticability of this old arrangement under new conditions. More likely, however, the Maya, intelligent people as they were, thought of this objection and needed no demonstration of it. By study and experiment they evolved the best solution for their problem and placed the column altar at the back of the room in a niche and provided a flue for draft ventilation, as is found in K-5-1st and also in Structure J-29, *another pyramid temple.*

I must regretfully admit that in the Maya region structures are found that seem to controvert this hypothesis, unventilated small confined vaults in which fires seem to have been built. Such a structure is the central sanctuary of structure P-7 at Piedras Negras, ~~in which~~ around the altar of which quantities of ash and broken pottery vessels were found. Data seem to indicate that this was one of the latest buildings at Piedras Negras.

The need for ventilation, however, may not have been the sole cause for the setting back of the column altar. ~~Mr. Satterthwaite suggests that~~ Another reason may have been the desire for ample space for the ceremonies that were doubtless performed around, and <sup>probably</sup> especially in front of, these stones. In the earlier and wider non-vaulted buildings <sup>K5-3d and 2d</sup> there was ample space around the stones for such ceremonial observances; with the narrowing of the room necessitated by the vault it was impossible to preserve the desired space around the stone, so it was naturally moved back in order to utilize the full width of the room in front of it.

It is most unfortunate that the rear walls of K-5-1st were so greatly fallen, that the rear wall was not completely cleared and carefully investigated, and that it was largely destroyed in order to investigate the underlying structures.

It is not impossible, *though unlikely,* .....

This suggestion, unfortunately for the hypothesis, is applicable only to K-5 since other non-vaulted buildings at Piedras Negras with column altars are of less width than K-5-3d and probably average no wider than vaulted buildings. In some also the column altar seems to have been placed at the back of the room, although no ventilating flue was required.

that in this very temple the change was made. While it is more likely that the column altar, if originally placed in the center of the room, would have been moved to the niche afterwards, yet it must be remembered that a fourth column altar turned up somewhere, apparently lying loose near the front of the temple. If it had been in place in the ~~XXXX~~ center of the floor its presence could hardly have escaped notice. It may not have been mentioned before that it is our belief that the city was vandalized, possibly after capture, at the close of its occupation. This theory, at first reached on account of the almost complete destruction of all the buildings, the fall of all the stelae and the breaking of most of them, and the mutilation of all the sculptured human faces, was practically proved by the discovery of Throne 1, most of the fragments of which had been thrown out of the vault<sup>ed room</sup> that it occupied and scattered widely. It is not impossible, therefore, that the fourth and unlocated column altar stood in the center of the room of K-5-1st even after another had been placed in the niche in the rear, and ~~that~~ <sup>or rebels.</sup> the former was torn out and thrown out of the temple by conquerors, <sup>of K-5-1st</sup> ~~Whether the niche in the rear wall was made when the temple was erected, or later built in, will now never be known~~

I must confess that ~~if I had been as meticulous an excavator as Mr. Satterthwaite~~ I did not investigate the question whether the niche was an integral feature of the rear wall of K-5-1st as originally constructed, or whether it was a later alteration. ~~Had I been as meticulous an excavator as Mr. Satterthwaite no such detail would have escaped my attention.~~

I am inclined to think that it was an original feature, both on theoretical grounds and because the evidences of alteration would probably have been noticed ~~upon~~ by me. Neither did I examine carefully to determine whether <sup>the concomitant</sup> ~~it/that~~ the extension at the rear was a later addition or not. <sup>Moreover</sup> ~~This~~ alteration would have been

even more obvious than the excavation of the niche so that I am inclined to think that my lack of observation on this point indicates that it was also an original feature. On theoretical grounds the rearward extension is even more likely to have been a later addition than the niche, for the niche with its flue could have functioned without this extension. The latter was almost certainly <sup>intended</sup> ~~built~~ in order to lengthen the flue, and it is possible that at one stage the flue was no longer than the thickness of the rear wall behind the niche. Experience and experiment must very quickly have taught the Maya that the longer the flue the greater the draft, and have induced the building of this addition.

The date of the introduction of the flue in the Maya region may eventually afford some clue or verification to the period of introduction of the same element in the Pueblo region of the American Southwest. It is more likely, however, that the two were independent inventions, inasmuch as they are considerably different in type and nature.

Regarding the roofs of K-5-2d and K-5-3d we may carry our deductions a little further. I consider the presence of the sooted column altars in the center of the rooms <sup>strongly indicating</sup> ~~as proving~~ that the roofs <sup>we</sup> ~~must have been~~ permeable to smoke and very probably built of palm-leaf thatch, like houses in this region today. Such a roof must almost certainly have been peaked or ridged, <sup>probably</sup> with a long ridge-pole and coupled rafters, ~~like~~ like the modern houses. I cannot conceive of any material out of which a flat roof could be built permeable to smoke and yet impermeable to rain; to be of any value flat roofs must be solid.

Flat roofs with flat ceilings are, on the whole, untypical of America and are not well suited to a tropical rainy environment like that of the Old Maya region. They are found in the Pueblo region of the American Southwest, and in the Nahua region of Mexico, reaching as far south as Mitla in the Zapotec region, with some influence in the later sites in Yucatan. But the region of their development <sup>relatively</sup> ~~is an arid one,~~ and I believe their horizon to be relatively late, at least in the Maya region where I believe them to be a late influence from the Highlands. I know of no flat ceilings <sup>in</sup> the Old Maya region (disregarding the small flat vault-capstones) unless <sup>they</sup> ~~be on~~ <sup>at R-3</sup> ~~Structure P-7~~ at Piedras Negras. Mr. Satterthwaite believes that <sup>P-7</sup> ~~this~~ had a solid flat ceiling above a quasi-masonry vault, but I have not yet examined his data.

The earlier temples without masonry vaults probably had roofs built on the same plan and ~~with~~ of the same materials as the native houses today, and I suggest that the masonry vault was an attempt to reproduce the same form in stone; the interior effect is the same. Weight had to be added as a cantilever, and, for esthetic reasons, the exterior walls were eventually made vertical, the roofs flat on the exterior. That the universal tendency held

is a relatively arid one, and I believe that, wherever found in the  
Maya region, ~~it~~ <sup>flat ceilings</sup> represents an influence from the highlands. As  
Mexican influence was <sup>apparently</sup> not strong in the Maya region until the  
later period in northern Yucatan, the ~~pre~~sumption is that flat  
ceilings in Maya buildings indicate a late horizon. However they  
must have been the type even on the earliest horizon in highland  
Mexico and it is not impossible that even the earliest Maya masons  
knew of them and were capable of copying them when desirable.

There are indubitable examples of flat ceilings in the later cities  
where Mexican influence is known to have been strong,  
of Tulum and Chichen Itza, but I know of no unquestioned instance  
(disregarding the small vault-capstones) <sup>of their existence should</sup>  
among the Early Maya, and feel that the evidence ~~is~~ <sup>is</sup> not be well-nigh  
incontrovertible before being acceptable, and that where found they  
indicate highland influence and presume a late date. While it must  
be admitted that relatively few structures in the Early Maya region  
have been carefully excavated, I have been able to find only four  
structures ~~to~~ <sup>may have had</sup> which flat ceilings. ~~Two~~ Two of these were at  
Lubantun and Cahal Pichik, reported on by J. Eric Thompson. In  
both cases the deduction was made mainly on the grounds of finding  
stucco ornaments with the impressions <sup>of</sup> poles on their backs;  
Thompson believes that these ornaments came from the ceilings and  
not from the walls, but agrees that the evidence is not sufficient



to make objects in a new medium in the same form as former ones of other materials, even if this form is not required by the new medium, or even inefficient or uneconomical in it, is demonstrated by the fact that here at Piedras Negras, and, I believe, generally in the Old Maya region, the <sup>interior</sup> ends of the vaults were made sloping like the sides, very probably still following the interior form of the thatched-roof hut. I understand this feature to be rare or missing in ~~the~~ Yucatan; the <sup>later</sup> ~~Old~~ Maya had learned that it was not essential, and they were farther removed from the old tradition.

P Another characteristic of Old Maya architecture, <sup>especially in the Usumacinta Valley,</sup> is the frequent slanting or sloping of the upper zone of the exterior wall, between the eaves and the lintels, or the line of the spring of the vault, more or less parallel with the line of the interior vault, <sup>producing a mansard roof.</sup>

This is very characteristic of Palenque but, I believe, rare in New Empire cities. In this respect also the resemblance is with the ridged native hut and possibly in imitation of it. This

latter analogy I advance with diffidence and without any real conviction that it has any historical connection with the original native peaked, thatch-roofed house; there is no present evidence

that these were earlier than the houses with vertical exterior <sup>and the engineering difficulties of building a roof of the mansard type were much greater than those encountered in building a roof with vertical exterior walls,</sup> as would be required by the hypothesis, <sup>^</sup>

-----That the slope was not essential was known to the Early Maya also, for examples of straight interior walls are found, both at Piedras Negras and elsewhere. However the ends of vaults were generally made sloping, even on secondary and non-structural partitions; these slopes are generally steeper than the sides of the vault. It may, however, have been done purely for esthetic reasons, to match the slopes on the sides.

K-5-2d must have had large house-posts; in view of the fact that it was devoted to the same ~~the~~ ceremonial purpose as the respectively earlier and later walled structures below and above it I cannot conceive of its having been an open unroofed platform.

In fact I am sceptical of the existence of <sup>highly elevated</sup> open platforms in the Maya area. Some ~~have~~ been reported, but I am not aware if in any such case these have been excavated to determine certainly that they did not support structures of perishable materials. And in a region where such apparent platforms are very rare I believe that the ~~theory~~ <sup>of perishable structures</sup> theory should be the presumption until definite excavation proves the contrary.

The floor of K-5-2d was so disintegrated that it was not carefully cleared and examined, or the holes for these posts should have been found. On its analogue, Uaxactun E-VII-Sub,

~~Uaxactun E-VII-Sub~~, four cysts were found on the platform, two near the back of the higher <sup>possibly and older</sup> platform, and two near the front of the lower ~~and later~~ platform. <sup>They had been filled up and plastered over at the latest period.</sup> These were 14 inches in diameter and 52 inches

in depth and contained brown mold and charcoal at the bottom. The

suggestion made by Dr. Ricketson that they may have held the posts

for a superstructure ~~is~~ <sup>seems to me</sup> almost certain. The anterior addition to

<sup>of it was an addition,</sup> the platform, <sup>probably</sup> ~~was almost certain~~ made in order to enlarge the

post-and-thatch temple that ~~was to stand~~ <sup>stood</sup> on it.

The roof of K-5-3d <sup>was probably</sup> ~~may or may not have been~~ supported <sup>by</sup> ~~on~~

<sup>the walls above.</sup>  
~~massive posts.~~ One half of the floor was well cleared and no evidence

<sup>post-hole</sup>  
ence of a ~~post~~ was found. The roof could have been supported without posts, which of course are undesirable in a temple, by resting

the rafters on the masonry walls, or better by imbedding their <sup>while resting upon and being supported by the wall,</sup> ends in the masonry of the top of the wall. Even if the rafters,

<sup>was</sup> ~~projected beyond the wall~~ <sup>to</sup> form eaves, as is the custom with

native houses at present, <sup>3</sup> sufficient strength could have been

given by cross beams keeping the two sides of the roof from

<sup>Such cross-beams are universally used in native Maya houses.</sup>  
spreading. <sup>^</sup> It will be observed in the photographs that the tops

of the walls of this structure are flat, even, and <sup>relatively</sup> ~~on~~ <sup>^</sup> the same

level, indicating that this was their original full height.

K-5-2d Compared with Uaxactun E-VII-Sub.

*Structure*

In the discussion of the phase of K-5-2d frequent references and comparisons were made to Pyramid ~~UA~~ E-VII-Sub at Uaxactun. Since the two have many features in common it would be well here to summarize these.

The Uaxactun pyramid was, when first observed, of about 50 ft. (15 m.) height as compared with 17 m. for K-5. The outer shell was of very poor construction and revealed very little with certainty except that there was <sup>masonry</sup> no structure on the top — in which

it differed from K-5-1st — and <sup>apparently</sup> ~~apparently~~ had stairways on all <sup>four</sup> sides. ~~The stairway at the front or east side was continued to the top of the crowning platform, while those on the other three sides ended at the level~~ If K-5-1st had any terraces overlying those of K-5-2d <sup>of the broad third terrace.</sup>

they were also of a very poor quality of construction, since no <sup>traces</sup> ~~evidences~~ of them were found, and evidence points towards the existence of stairways on all sides.

The buried pyramid E-VII-Sub at Uaxactun is <sup>much</sup> ~~considerably~~ smaller than K-5-2d. Its linear basal dimensions, from corner to corner, disregarding the extending staircases, are about 69 by 66 feet (about 20.7 by 19.8 m.), its height to the broad terrace at the base of the upper platforms 21 ft (about 6.3 m.). K-5-2d measures about 39.50 by 32 m., considering the extension of the lower terrace to have been a later addition of the period of K-5-1st, and is about 12 M. high. The Uaxactun pyramid is therefore much smaller and more square, but of practically the same proportions, about three times as long as high. The greater size of K-5-2d

~~proportionately lower and more square. The greater size of K-5-2d~~  
*which presumably Uaxactun E-VII-Sub does not.*  
is easily understood as it had to cover an earlier structure. The  
plan of E-VII-Sub is rather complex, ~~and the terraces not well~~

~~distinguished.~~ *distinct* There were broad stairways of all four sides which  
*and covered much of the terraces.*  
extended close to the corners. The apparent fill over the terrace  
walls close to the rear left corner of K-5-2d suggests the same.

At Uaxactun there were four large masks, about 8 feet (2.40 m)  
square, on each side of the pyramid. These were at two levels, on  
blocks projecting from the staircase which extended both between  
each member of a pair <sup>of masks</sup> on the same level and to either side beyond  
them. They were not <sup>obviously</sup> correlated with the terraces. The masks of  
K-5-2d are ~~smaller~~, about the same size, but a little more oblong,  
about 2.60 by 2.25 m. Owing to the greater size of the pyramid,  
however, they were <sup>probably</sup> less impressive. Only two were found, and so  
their arrangement is doubtful, but it is likely that there were  
<sup>eight</sup>  
~~four~~ on each side of the pyramid, four on either side of the axis,  
and that these were arranged in vertical pairs, the pairs separated  
by a broad terrace, the members of each pair by a narrower terrace.  
It is presumed that the masks were placed on the faces of the terraces.

The masks of both pyramids were built of stucco on a foundation of masonry.

The masks of the Uaxactun pyramid portray three different types but in more or less the same style. As only one mask was completely uncovered at Piedras Negras it is impossible to draw any conclusions regarding the others. The art of the Uaxactun masks is described <sup>by Morley</sup> as "primitive rather than sophisticated", "pre-Maya, but not necessarily un-Maya", <sup>and</sup> having "a flavor of the Archaic without being of the Archaic". To my mind they are far from primitive, <sup>in art concept,</sup> being highly stylized and conventionalized. The masks of the upper two tiers are human or anthropomorphic, while those of the lower tier resemble somewhat a very conventionalized serpent head. Certain <sup>by</sup> a long period of historical art development preceded the moulding of these masks. They are in moderately low relief, however, and the human faces are not identified with any known Maya deity of concept. The masks of K-5 are in much higher relief <sup>with deep embasures,</sup> in a more typically Mayan style, though less conventionalized, and are identified with the Sun God. They are therefore presumably of less age than the masks of Uaxactun.

The uppermost terrace of the Uaxactun pyramid is of very irregular shape, the tops of the masks projecting, the tops of the staircases indented. Furthermore the symmetrical and analogical dimensions vary by several feet. Without considering either the masks or the staircases, the mean of the measurements, from corner to corner, makes the terrace about  $33 \frac{1}{2}$  by  $38 \frac{1}{2}$  feet (10.3 by 11.75 m.). The upper terrace of K-5-2d is of uncertain size, but according to the restoration here adopted is about 24 by 16.30 m. It is therefore considerably larger

than the terrace of Uaxactun E-VII-Sub. The length could not have been much less on account of having to cover and clear the walls of the buried K-5-3d, the width might have been much less, but the terrace would then have been very oblong. As it is, it is less equilateral <sup>or</sup> ~~and~~ more oblong than at Uaxactun, as <sup>is</sup> ~~in~~ the case <sup>with</sup> of the pyramid itself. This larger <sup>area of</sup> ~~terrace~~ <sup>the</sup> is not due so much to the larger base of the pyramid, since ~~K~~-5-2d is considerably higher, but to the grater steepness of the side slopes of the pyramid.

Neither Uaxactun E-VII-Sub nor Piedras Negras K-5-2d seem to have had any crowning edifice of masonry. The former bore a high platform made in two sections, and on the top of this were found four small cysts which probably originally held the posts for a wooden structure. These had been later filled up and plastered over, and in its latest aspect the platform may have supported no structure. At Piedras Negras there was a low platform hardly to be differentiated from a plinth or terrace. Excavation of this was not complete enough to indicate whether or not this ever bore a structure supported on posts; on theoretical grounds I am inclined to believe that it did.

Though Dr. Kidder informs me that there is no evidence that the two sections of the platform on Uaxactun E-VII-Sub were not built at the same time, and he believes that they were, the appearance strongly indicates that the front or east section was a later addition to the rear section. The <sup>anterior</sup> ~~former~~ (probably later) section is a little wider and lower, the paneling on the sides ~~is~~ <sup>is</sup> with that ~~of~~ <sup>of</sup> the rear section ~~front wall~~ and the ~~side~~ <sup>front wall</sup> of the rear section where it rises above the front section ~~is~~ <sup>is</sup> slightly battered, like the corresponding face at the rear, as would be expected were the ~~the~~ battered face almost entirely covered up.

The rear and possibly older section, which projects but little forward of the medial axis of the pyramid, seems to measure about 12.5 ~~m~~ by ~~25~~ 25 ft. on the top, just about twice as long as wide. The details are very asymmetrical, since corresponding measurements on opposite sides sometimes differ by several feet. The ~~width~~ length at the rear base is 28.2 ft. (8.6 m.); the width of the base to the hypothetical former anterior base, now covered, should have been about 15.1 ft. (4.55 m.).

It is ~~about~~ 5.5 feet. (1.65 M.) high. The anterior section is ~~at~~ 4.3 feet. (1.39 m.) high, 29 feet. ~~high~~ (8.7 m.) long, and projects about 7.5 feet. (2.4 m.) beyond the face of the posterior section, disregarding the protruding masks and the recessed staircase.

The low dais on the top of K-5-3d may be compared with the posterior, and possibly older, platform of Uaxactun E-VII-Sub, except in the point of height. Like the latter it sets far back on the terrace, its front but little anterior to the medial axis. The size is uncertain, but according to the adopted reconstruction is 5.50 by 10.60 m. This is but slightly smaller, and almost of exactly the same proportions as the posterior platform of the Uaxactun pyramid, which, ~~is about~~ in its hypothetical former condition, was 4.55 by 8.6 m.

There are therefore some close analogies between these platform-crowned, mask-bearing pyramids at Uaxactun and at Piedras Negras. The larger size, steeper slope, and more typically Maya masks of the latter indicate that it is of a later period, but the probability of historical connection and influence indicates that the temporal difference could not have been very great. This has, of course, a great bearing on the question of the age of the still older structure K-5-3d at Piedras Negras.

## HYPOTHETICAL EVOLUTION OF K-5.

The site chosen for the situation of K-5 was an imposing one. It stands at the base of a hill and faces down the long level

West Group Plaza. The temporal relations between <sup>K-5</sup> ~~this~~ and the neighboring structures have not been worked out, but we must pre-

sume that at the time of the construction of the first structure

on this site <sup>the features</sup> were very different from at present. Probably in

the earliest days all the structures were made of wood and their

vestiges can be found only by the most thorough excavation. There

were <sup>probably</sup> ~~probably~~ structures of this type on the Acropolis, <sup>such as an unnumbered buried structure under J-6, J-7 and J-9, but without implying that this structure pertained to a non-masonry period.</sup> ~~Probably~~

the Plaza had not then been leveled to its present condition, but

there must always have been there a relatively large and flat

expanse.

Further excavations below the level of K-5-3d will pro-

bably reveal a lower and earlier structure. Such <sup>excavation</sup> ~~investigation~~

is recognized as one ~~of~~ the most important projects awaiting

investigation, and ~~it~~ has a leading position on the program for

the next season of extensive work at Piedras Negras. We predict

that this will reveal a low pyramid or platform with a low angle

area on the top of this was probably quite large and the of slope. The ~~structure~~ erected upon ~~this~~ probably built of vege-

table materials, probably with a pitched, ridged roof thatched with palm leaves and supported on massive house-posts. The nature of the wall is problematical, but probably <sup>it was</sup> also of vegetable materials, ~~with~~ covered with stucco and tinted. The knowledge of ~~lime plaster~~ <sup>and that of lime plaster was doubtless of considerable age in this region</sup> pigments must long have preceded the invention of masonry,

*stet!  
retain + copy!  
stet!*

~~Possibly the walls, to give them the desired strength and solidity, were built of two parallel rows of poled<sup>s</sup>, the interior filled with~~  
~~stones~~ rubble. Such, theoretically, may have been the beginning of mas-

ony in this region. It was presumably a one-room house, and probably of considerable size, at least as large as the room of K-5-3d.

In other words, it was a native Maya dwelling-house, much of the type of those built at present by the natives of this region. but

superior as regards size, quality, and decoration. Presumably it contained a column altar in the center, around which copal was burnt in native ceremonies, <sup>and beneath the altar was buried a ~~buried~~ cache.</sup>

After an unknown lapse of time this hypothetical platform

or low pyramid was covered over with rock fill and the pyramid and structure of K-5-3d built upon<sup>7</sup> it. The pyramid of this structure <sup>excavations were not carried deep enough to reveal it.</sup> is also purely hypothetical, as ~~no traces of it were found.~~ Its

axes and center were probably approximately the same as <sup>those</sup> ~~that~~ of the lower structure.

*examined depth of plot, shallow, just on edge.*

Since, as shown in the Section, the longitudinal axis of the room of K-5-3d ~~was~~ lies considerably to the rear of the axis of the pyramid in its final form, and even to the rear of the axis of the platform <sup>or plinth</sup> of K-5-2d, it may be assumed that there was a broad <sup>terrace</sup> platform at the front of Structure K-5-3d. There is no room at the rear for such a broad platform or terrace, and if we assume that Structure K-5-3d was placed on the axis of its pyramid, it would mean that, in ~~forming~~ constructing the pyramid of K-5-~~2d~~ 2d, the anterior terraces of K-5-3d were covered over to a ~~depth~~ thickness of seven meters or more. This is not impossible but rather unlikely, and much more probable that a broad terrace, ~~the~~ existed at the front below the plinth. Since such is the plan of K-5-2d it is likely that the same plan was employed in the earlier structure.

Like its hypothetical wooden prototype, K-5-3d was a large, one-roomed structure. Its size is unusual for a masonry building, but it might easily have been much larger since ~~the~~ the width was not restricted by the technical difficulties of a ~~carried no vault or weight, possibly not even the weight of the~~ masonry vault but merely by the length of the poles used for rafters. The <sup>ridged</sup> pitched, thatched roof was employed, practically the

sole difference from <sup>certain</sup> ~~the~~ modern native houses <sup>Maya in Yucatan</sup> being in the ~~masonry~~  
~~walls~~. The ceremonial column altar was placed in the center of  
the room, the smoke from the copal incense escaping through the  
roof. <sup>Before the altar was set in place the usual cache of ceremonial</sup>  
<sup>objects was buried beneath it in a pottery vessel.</sup>

The ratio ~~of~~ of the thickness ~~of~~ of the walls as compared  
with the ~~width~~ <sup>width</sup> of the room is very low, and should be compared  
with the ratio of Structure K-5-1st. From a functional point of  
view the walls ~~did not~~ <sup>little</sup> require ~~any~~ thickness -- they bore <sup>little if any</sup> ~~no~~  
weight. But from a technical viewpoint they had to be thick  
enough to stand without collapse. A modern mason, with good  
materials and centuries of experience behind him, would build a  
much thinner wall, but K-5-3d must have been built in the early  
experimental days of Maya masonry, and the thickness of from 1  
to 1.40 m. was probably the least that <sup>was</sup> ~~they~~ considered safe. ~~It~~  
Possibly it was the least that was <sup>was</sup> ~~safe~~, with their materials,  
in the case of the piers at the front, and for esthetic reasons  
they would have wished to make the walls of the same thickness as  
the ~~front~~ piers. This would not explain, however, why the rear  
wall, certainly less subject to collapse than the piers, was made  
of greater thickness than the latter.

In the case of both <sup>the</sup> rear wall and the front pier it was noted that the masonry seemed to consist of two faces -- or <sup>good</sup> of smaller and less well selected stones, not so well laid in courses and in the latter case of four -- with <sup>the</sup> an interior <sup>with a layer of mortar.</sup> rubble fill. This may lend some corroboration to my cautiously advanced theory that the beginnings of masonry in this region consisted of walls of ~~the~~ parallel rows of poles with the interior filled with <sup>stones</sup> rubble, the exterior stuccoed.

The long low wall which ran away from the base of the pyramid near its eastern corner apparently belonged to the period of K-5-3d. The purpose of this <sup>small</sup> ~~feature~~ is uncertain, but it probably retained some feature, possibly a short elevated causeway ~~that~~ of a width almost as great as the base of the pyramid at that time.

Probably after no great lapse of time it was desired to enlarge the temple, which was done by the usual process of covering it with broken limestone rock. Sections were laid off and rude walls of piled broken rock built. The sections thus delimited were probably assigned to certain groups of men to be filled up, but the rubble walls also served to carry the plan of K-5-3d up to the new surface. The walls were left standing to full height and the column altar left in place. The timber and thatch roof would naturally have been removed since the builders must have realized that, if the debris from this were left in the room, the eventual decay and consolidation would have caused a dangerous settling of the rock piled above it.

Not much more than the minimum necessary of fill, without tearing down the walls, was done. That is to say, the depth of the fill extended hardly above the tops of the buried walls, about 2.50 m. above the floor of K-5-3d. The lateral extension of the pyramid was also not very great and the terraces were kept approximately on the same level. Thus the walls of K-5-3d, being set back upon a plinth, were covered <sup>horizontal</sup> to a thickness of about 1.60 m., while the terraces were apparently covered to a <sup>horizontal</sup> thickness of

1 m. and a depth of about 40 cm. These measurements are by no means certain. The new terraces were probably made as shown on the Plan and Section, and decorated with stucco masks.

The space on the top of this new pyramid was large, apparently about 24 by 16.30 m., probably a little larger than the area on the top of K-5-3d. The usual plinth of the <sup>about maximum</sup> ~~usual~~ height, <sup>for this feature</sup> about 40 cm., was built upon this, to the rear of the center, leaving a broad terrace at the front, probably the same the hypothetical one as ~~that~~ of K-5-3d. This ~~plinth~~ plinth, or in this case platform, was, however, much smaller than that of the lower structure. There is no structural or technical <sup>have been</sup> reason why it should ~~be~~ smaller, as of the temple and therefore of the plinth which is invariably but slightly larger there were no masonry vaults to limit the width, and the <sup>surface</sup> area was probably larger than that of K-5-3d. It is ~~even~~ unlikely that the structure covered most of the upper area with the platform as a dais in the center of the room; this would be unprecedented in Maya <sup>structure</sup> archeology, and the analogous structure at Uaxactun has cists, probably for house-posts, on the platform. A structure measuring about 5 x 10 m., supported on posts, with a pole-and-thatch roof and walls probably of poles daubed with clay and covered with stucco, is indicated by the data at hand.

Structure K-5-2d seems to be in two ways a retrogression in evolution. The return to the use of walls of perishable materials after stone masonry had been developed is difficult of explanation, as is the unnecessary diminution in the size of the structure.

After the lapse of an unknown but probably considerable period of time, K-5 was again enlarged. The evolutionary gap *It is quite possible that the pyramid was abandoned for a long time and allowed to disintegrate, as indicated by data already mentioned.* between K-5-2d and K-5-1st is very great. Upon this structure of perishable materials was built a typical comparatively late Maya temple with one small room, <sup>carrying a masonry vault,</sup> thick walls, and probably a roof comb. Apparently the same pyramid terraces of K-5-2d were used for this later structure, the enlargement consisting of the covering over of the greater part of the summit area of the lower structure with broken rock to a depth of about 2.40 m. This accretion was composed of one terrace of approximately the same height as the lower terraces with a plinth of less height, but still of greater height than the average.

The height of the pyramid being thus raised without increasing its base, the area at the top was naturally smaller than in the case of the lower structure. Nevertheless the

masonry structure built on the top was apparently slightly larger in external dimensions, ~~and probably~~ than, and the room probably of about the same size as, the perishable structure below.

Regarding the development of Maya architecture Mr. Satterthwaite suggests <sup>the possibility</sup> that in the earlier periods impressiveness was ~~affected~~ <sup>gained</sup> by size of building, in the later periods by height. Granted that the introduction of the masonry vault required ~~of~~ rooms of less width than with pole-and-thatch roofs, there was no such limitation on the length of the building, and structures of equal exterior width and impressiveness could have been, and often were, made by the use of double or triple ranges. A change from the use of wooden roofs to those of masonry can therefore hardly explain the diminution in the size of the temple. The added labor in increasing the width of a pyramid in order to retain the same <sup>ap</sup>ical area was, however, very ~~great~~ much more than ~~that~~ required by merely raising the height by the addition of new higher terraces while decreasing the apical area. The impressiveness gained by height would atone for that lost by size with much less labor. Possibly the same feeling explains the small size of K-5-2d as compared with K-5-3d.

: There is a possibility, already mentioned, that K-5-2d had been abandoned and unused for some time before K-5-1st was erected upon it. If this was the case the stucco would have deteriorated greatly. In the case of the lower pyramid terraces, which we believe were reused, it would have been necessary to restucco the walls and floors, and especially to replace the stucco masks which would naturally have suffered most. If our deduction is correct, therefore, these masks may belong ~~to~~ to the period of K-5-1st, not to K-5-2d, and this may explain their apparently later art as compared with the stucco masks of Uaxactun E-VII-Sub. The very poor condition of the floor of the upper terrace and plinth <sup>platform</sup> of K-5-2d, ~~as compared~~ which was followed with difficulty and nowhere showed any ~~stucco~~ smooth stucco surface, as compared with the good surface of K-5-3d, is also explicable on this theory of abandonment. On the top of the pyramid it was not necessary to clear ~~off~~ the accumulation of dirt and debris, but such clearing would <sup>have</sup> lent greater solidity to the broken rock foundation piled ~~up~~ upon this, and we may assume that the <sup>platform</sup> ~~plinth~~ at least, with the debris from the roof, was cleared. The sacred column altar was left in place.

It is possible, but unlikely, that the column altar of K-5-1<sup>st</sup> was originally placed in the center of this room, as in the two lower structures, <sup>that this location</sup> but <sup>^</sup> was found to be impossible on account of the dense smoke ~~made~~, which found no ~~access~~ exit through the roof as it did in the earlier structures, and that a niche was later made in the rear with a flue through the rear wall, the thickness of which was increased by an outer extension to give more draft. If this were the case, the ceremonial cache buried under <sup>the stone</sup> ~~it~~ in the center of the room should have been found. Can it be that this <sup>cache</sup> was thrown out with the spare column altar that was found <sup>at</sup> ~~to~~ the front of the temple and composed the cache that was found on the front slope of the pyramid? I am inclined to associate this extra column altar and this cache. In all the structures excavated so far, where column altars are found, the only sub-surface ~~cahes~~ found were under these altars, while conversely, as in the case of O-13<sup>3</sup>, where numerous sub-surface ~~cahes~~ are found column altars are missing. This probably implies ~~different~~ different uses to which these two types of structures were put; the difference could hardly be explained ~~as~~ as due to temporal periods, as the fact holds for all three phases of K-5, which must have occupied a long ~~temporal~~ period <sup>of time</sup>.

*South*

*ok  
Just?*

The need for ventilation, however, may not have been the sole cause for the setting back of the column altar. ~~Mr. Satterthwaite suggests that~~ Another reason may have been the desire for ample space for the ceremonies that were doubtless performed around, and <sup>probably</sup> especially in front of, these stones. In the earlier and wider non-vaulted buildings <sup>K5-3d and 2d</sup> there was ample space around the stones for such ceremonial observances; with the narrowing of the room necessitated by the vault it was impossible to preserve the desired space around the stone, so it was naturally moved back in order to utilize the full width of the room in front of it.

It is most unfortunate that the rear walls of K-5-1st were so greatly fallen, that the rear wall was not completely cleared and carefully investigated, and that it was largely destroyed in order to investigate the underlying structures.

It is not impossible, *though unlikely*, .....

This suggestion, unfortunately for the hypothesis, is applicable only to K-5 since other non-vaulted buildings at Piedras Negras with column altars are of less width than K-5-3d and probably average no wider than vaulted buildings. In some also the column altar seems to have been placed at the back of the room, although no ventilating flue was required.

that in this very temple the change was made. While it is more likely that the column altar, if originally placed in the center of the room, would have been moved to the niche afterwards, yet it must be remembered that a fourth column altar turned up somewhere, apparently lying loose near the front of the temple. If it had been in place in the ~~floor~~ center of the floor its presence could hardly have escaped notice. It may not have been mentioned before that it is our belief that the city was vandalized, possibly after capture, at the close of its occupation. This theory, at first reached on account of the almost complete destruction of all the buildings, the fall of all the stelae and the breaking of most of them, and the mutilation of all the sculptured human faces, was practically proved by the discovery of Throne 1, most of the fragments of which had been thrown out of the vault<sup>ed room</sup> that it occupied and scattered widely. It is not impossible, therefore, that the fourth and unlocated column altar stood in the center of the room of K-5-1st even after another had been placed in the niche in the rear, and ~~that~~<sup>or rebels.</sup> the former was torn out and thrown out of the temple by conquerors, ~~of K-5-1st~~ whether the niche in the rear wall<sup>^</sup> was made when the temple was erected, or later built in, will now never be known

Whether or not the rear niche was a part of the ~~original~~ structure as originally built or an afterthought, it was in use in the ~~last~~ period of the occupation of K-5. The indications are that the builders preferred to keep the uppermost terrace at maximum and uniform width and ~~therefore~~ not to narrow it by the extension <sup>at</sup> the rear of the niche. They therefore ~~made~~ <sup>length</sup> an extension of this terrace at the rear, of uncertain ~~width~~, making this terrace of about the same width along the entire back. This central rearward extension eliminated the terrace below, that on the level of K-5-2d, and blocked the terrace circuit at this point. This was achieved by carrying up the uppermost terrace wall of K-5-2d to the top of the terrace of K-5-1st and making this vertical or slightly battered wall cover two terraces.

probably  
K-5-1st was <sup>^</sup>put into its final condition by the widening of the lowest terrace and the erection of Stelae 38 and 39 at the front, though, if our conclusions are correct that this terrace in its earlier aspect belonged to K-5-2d, there is no reason why the erection of these stelae might not have preceded the building of K-5-1st.

## CHRONOLOGICAL ASPECTS OF K-5

The only direct data bearing on the age of the various phases of Pyramid K-5 are the dates shown on the monuments most closely associated with the pyramid, so-called Lintel 7 and Stelae 38 and 39. The former, Mr. Satterthwaite has concluded from his study of these so-called "lintels", as explained in the section on "Associated Monuments", is a wall-panel and not a lintel. Whether one or the other, however, it was presumably incorporated in the building at the time of its erection. Instances are known, or suspected, where lintels or panels from ~~an~~ earlier buildings, and bearing earlier dates, have been incorporated in later edifices. Also often the contemporary date ~~of~~ the erection of a building is presumed to have been <sup>graved</sup> on a now-missing monument, the ~~same~~ preserved monuments showing a date earlier or later. However, unless the date be for other reasons entirely unacceptable, the presumption is that the date shown on a monument incorporated in a building gives the ~~date~~<sup>time</sup> of erection of the latter. Unfortunately, much of the date of Lintel 7 is missing, but,

as already explained, the glyphs that remain admit of Dr. S. G. Morley's deduction that the date is the same as that of Stela 38, 9.12.10.0.0., or *May 10, 692* in the Goodman-Thompson correlation. It is probable that this is the date of erection of Structure K-5-1st.

Stelae erected in front of edifices are less certain evidence, for there is a possibility that they may have been erected before the building of the last phase of this edifice, and a strong probability that they were erected later, with a possibility that they may date from considerably later. However, if the date of Lintel 7 is the same as that of Stela 38, since Stelae 38 and 39 follow each-other at an interval of five *years or* <sup>*stelae*</sup> the date of Stela 39 being 9.12.5.0.0, that of <sup>*Stela*</sup> 38 9.12.10.0.0, years, and since they were apparently erected on an extension of the lowest terrace of Pyramid K-5-2d, the strong presumption is that they were erected <sup>shortly</sup> ~~a/very/late/years~~ after Structure K-5-1st was finished in its final phase. Dr. *S.G.* Morley is strongly of the opinion that the association of these monuments indicates plainly that the temple of K-5-1st was dedicated in 9.12.10.0.0, and I admit that this is the obvious presumption.

Contributory evidence might be afforded by a comparison between the architecture and masonry of the several phases of K-5 and that of other structures at Piedras Negras associated with dated monuments, and by a similar comparison of ceramic types and of objects found in caches. Another, but less dependable criterion, is the age assigned to Pyramid E-VII-Sub at Uaxactun, which may have some bearing on that of its apparent analogue, K-5-2d.

Mr. Satterthwaite is completing a most interesting and important study of architectural development at Piedras Negras and the other cities of the Usumacinta Valley, based on a comparison of wall-thickness and vault span from which he determines a wall-span ratio or index. The results are not published -- or the study yet finished -- but seem to be very cogent so far.

Structure K-5-1st seems to fall in a class with Structures J-29

and O-12 as regard <sup>plan</sup> indices and ~~nature~~; all are temples ~~of~~ with <sup>three</sup> three doorways in the front and none in the rear, and two certainly all had a low sill or bench along the rear of the chamber, had and the other may have had column altar <sup>a</sup> in a central niche at the rear. No associated monument was found with Structure J-29, <sup>though an illegible carved panel was broken up and used in it.</sup> ~~the/did~~ Stela 22 is the

monument most closely associated with Structure O-12, being on one of the lower terraces of the pyramid, but the date assigned to it

by Dr. Morley is rather late, 9.16.5.0.0, eighty ~~years~~ tuns or years later than the date of Stela 39. Structure O-12, as regards position, belongs in the East Group which certainly contains the latest monuments and, in their ~~last~~ last aspects, the latest structures. It requires no intensive study, however, to realize that O-~~23~~-12 is of an architectural type considerably older than O-13 and P-7, the other structures in the East Group, in their last phases. However, earlier phases of these ~~last~~ as well as of the East Group Plaza itself, exist beneath these last phases.

Stela 22 lies to one end of a large group of East Group monuments and certainly belongs with them, lying closest to Stela 23 to which Dr. Morley assigns the date of ~~9.16.5.0.0~~ 9.14.15.0.0, thirty years earlier. These two are the earliest monuments in the East Group. The monuments erected immediately before and immediately after Stela 22 are Altar 3 in the West Group, and Stela 17 in the East Group, according to Dr. Morley. It is not unlikely that Stela 22 was erected at a considerable period after the building of ~~the~~ Structure O-12. The dates of some of these monuments are decidedly uncertain, and the net result of the above discussion is that Stela 22 cannot be accepted as a criterion for the age of Structure O-12 and therefore ~~cannot be used~~ not for the analogous structure K-5-1st. The <sup>earlier date</sup> ~~later dating~~ as suggested by Stela 38 is the more acceptable.

It may be remarked that Mr. Satterthwaite's researches point to the conclusion that no structures with stone vaults were built <sup>about</sup> before the middle of the ninth <sup>cycle</sup> ~~century~~, about fifty years before the date of Stela 38 and Lintel 7, and the presumptive erection of Structure K-5-1st.

For non-vaulted structures such as K-5-2d and K-5-3d<sup>3</sup> no criteria of architectural development have been worked out, and their approximate dates<sup>3</sup> must be estimated from other data such as types of ceramics and of objects found in caches. ~~These~~ ~~studies~~ These studies have either not been inaugurated or have given no conclusive results. No data exist, therefore, for a cogent opinion as to the period of years separating K-5-1st and K-5-2d, except that ~~the~~ at least fifty years are indicated by the architectural development, and the possible period of abandonment suggested by the debris may indicate a longer <sup>time.</sup> ~~period.~~

The ~~4/7th~~ date assigned to Pyramid E-VII-Sub at Uaxactun on the basis of the associated monument Stela ~~n~~, 8.

~~years~~ years earlier than Stela 38 at Piedras Negras, is probably too early to be accepted as a criterion for the age of K-5-2d.

6  
P It is questionable whether the date of Pyramid E-VII-Sub at Uaxactun, even if this were accurately known, could be accepted as any criterion for the age of its apparent analogue, K-5-2d. The date of the associated monument, Stela 20, is 9.3.0.0.0, January 30, 495, in the Goodman-Thompson correlation that we are using, and therefore almost two hundred years earlier than the date of Stela 38 and Lintel 7. As this monument was probably associated with the almost completely destroyed ~~edifice~~ structure E-VII that overlaid E-VII-Sub, the date of the latter would be even earlier, and it is well-nigh incredible that over two centuries elapsed between the building of K-5-2d and K-5-1st. It is not impossible however, for the date on Piedras Negras Lintel 13, 9.4.0.0.0, only twenty years or years later than the date of Stela 20 at Uaxactun, indicates that building operations were in progress at Piedras Negras at the time of the erection of E-VII at Uaxactun. ~~to~~

Unless future studies on comparisons of the architecture of non-vaulted structures, of ceramics and of ceremonial objects found in caches, or the future discovery of some dated monument below the surface of K-5-3d should <sup>present</sup> ~~yield~~ some data of chronological value, I know of no way of estimating the ~~approximate~~ approximate age of K-5-3d or of the hypothetical structure K-5-4th that may underly all. Their ~~time~~ period should be very early in Maya history.

## Appendix

### ~~Notes~~ Ceramics. <sup>1</sup>

In the 1932 season, four tests pits, each one meter square, were run from the surface to bedrock near ~~Structure~~ <sup>Pyramid</sup> K-5. Of these, that near the base of the northwest side of the pyramid yielded no potsherds, while that ~~at~~ <sup>at the</sup> front ~~of the substructure~~, beside one of those dug the preceding season, provided very few. The ~~first mentioned~~ <sup>latter</sup> will be referred to as Pit 1, the two remaining, which were dug one beside the other at the foot of the southeastern side of the pyramid, will be referred to as Pits 2 and 3.

Pit 2 was sunk in the angle formed by the low wall projecting at <sup>approximately a</sup> right angle from the southeastern face of ~~the final substructure of~~ <sup>Pyramid</sup> K-5. This corner had apparently been used as a dump for broken pottery, the extent of which could not be determined in this season. Following an apparent banding in the face of the cut, Pit 2 was dug in three levels, of 60 cms., 50 cms., and 40 cms. thickness, respectively, from highest to lowest. There was, however, almost no variation in the light brown soil, mixed with small stones, from the surface to the thick cement floor, laid directly over bedrock at a depth of 150 cms. The sherds recovered from this pit were unfortunately destroyed by fire before there was a chance to study them in detail for shape and polychrome sub-types. It was determined, however, that polychrome ware increased in steady ratio from the top to the bottom, rising from 7% to 20%; that black ware occurred only in the top stratum, forming 4% of the sherds from this layer, and mottled slate ware only in the middle one, where it amounts to 6%. The heavy, unslipped ware, presumably from large storage vessels, forms about 38% of the sherds in the upper two strata, 63% in the lowest. The remaining relatively small number of identifiable sherds were of orange ware, 6% in the upper and lower strata, 14% in the middle one.

and  
1) Definitions of the pottery <sup>^</sup>figurine types mentioned will be found in the Piedras Negras Preliminary Paper on Ceramics, to be issued later.

Pit 3 was dug immediately to the southeast of Pit 2. The floor was encountered at the depth of 135 cms., soon after beginning a fourth stratum, <sup>in strata of blocks of 10 cm thickness</sup> ^

The result for polychrome was approximately the same as in Pit 2, increasing from 11% in the top stratum to 23% in the third; the coarse sherds, however, averaged respectively 53%, 27%, and 47% from top to bottom. Black ware occurs only in the second and third strata, mottled ~~sherds~~ <sup>ware</sup> only in the third stratum.

In the top layer two figurine heads of possible chronological significance were found, one a hooded ~~head in style X, \*~~ <sup>head in style X, \*</sup> Form A <sup>^</sup> in full round with receding chin and high flattened head, often referred to as "typical Maya style", the other <sup>being</sup> <sup>^</sup> one of the three examples of a very distinctive style, presumably local, that has been found only in the West Group near the surface.

~~(See Section~~ ~~Piedras Negras Preliminary Report)~~

A consideration of polychrome styles shows that 50% of the polychrome sherds in strata two and three belong to the orange-background group (Group D); the remaining 50% of those of the second stratum, and 20% of the third belong to the red-background group in which negative painting is supplemented by black outline work (Group B). Ring bases occur in the second and third levels, bevels in the third and fourth.

The few polychrome sherds from the 1931 test pits bear out this predominance of orange polychrome. It forms 43% of the polychrome sherds of the middle stratum, and 75% in the lowest. Two-thirds of the latter belong to a sub-group in which the design is painted in maroon-red on an orange background (Group E). This maroon is most unusual in Piedras Negras pottery, where the colors are otherwise confined to various shades of yellow-orange, morocco-red, brown, black, white, and, very occasionally, blue. It is a color characteristic of Copan pottery, and occurs at Piedras Negras only in color combinations

Footnote \* see Piedras Negras Preliminary Report, p. 10

duplicated at Copan. There are not many such specimens, and most of them are decorated in maroon on a yellow-orange background, occasionally outlined in black. Two vessels have design elements identical with those of Copan I, associated with deposits under Copan Stela I, which bears the date 9.12.5.0.0.<sup>1</sup>

The remaining 25% of the lowest level polychrome of the 1931 pits belongs to that part of the red-background group which has direct painting as its basic technique, with negative painting, usually ~~in~~ used for emphasis of detail (Group C). 43% of the polychrome from the middle stratum belongs to this same sub-group, two-thirds of it to a special style found elsewhere only in the Southeast Group. Here, too, it occurs in the second level of a stratigraphic cut. In the same middle stratum of the 1931 pits occurred a sherd of a type found only in the West Group. The only decorative technique is negative painting, by means of which white circles and orange disks are described on a black background. There are very few of these, though negative-painted yellow and white circles on red are common enough. A similar sherd comes from Hochob, ~~of the Transitional Period far to the north.~~ *a sherd belonging architecturally to*

Between the floors of K-5-3d and K-5-2d, orange polychrome decorated in black occurs, and red polychrome with exclusively negative painting (Group A), as well as with the addition of black outlining (Group B). Only the entirely negative-painted red polychrome is present among the few sherds in the fill under the third floor, with the exception of one Group B sherd with a white background on which a row of Ahaus is outlined in brown on a black band. The others are in the pure negative-painted technique.

Presumably contemporary with these is an orange (Mars Orange) ware plate, buried under a flat stone 3.40 m. below the third floor. This was probably a dedicatory deposit for the original building. The plate is

shallow, 22.5 cms. in diameter, slipped on the inside only. What polish there

<sup>1</sup> Vaillant, P.C. *The Significance* Chronological Significance of Maya Ceramics. MS, 1927, p. 230

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<sup>1</sup> Vaillant, P.C. ~~The Significance~~ Chronological Significance of Maya Ceramics. MS, 1927, p. 230

may have been has disappeared.

In the series of superimposed buildings, there were only four votive caches found, in contrast to the numerous ones found in Structure 0-13. But, also in contrast to 0-13, three of these had a definite association with the structures, as each was found under the blackened pillar-<sup>stone</sup> ~~alter~~ of its respective level. The objects of, and <sup>the</sup> notes on, the caches of the two upper levels were destroyed by fire. The vessel of the cache of K-5-3d was a red-orange-ware bowl (English Red), slipped on the outside, and for a distance of 6 cms from the rim, on the inside; the cover, slipped on the outside, had the shape of an inverted shallow plate, with rounded bottom. This is one of the most frequent forms of cache vessel used in association with the upper building of Structure 0-13, not far from K-5, though technically in another section of the city, the East Group. One type of orange ware, in which a fairly well-polished, sometimes stick-polished, slip is found on a well-fired basal paste, seems to have been used to a large extent for making these votive vessels. The shapes are variations of the vessel and lid described, and bowls with flaring straight sides, one, inverted, acting as lid for the other. The latter shape is found at Quen Santo in the Highlands, at Uaxactun and Holmul in the Peten, and at Mountain Cow in British Honduras. The Peten specimens have also a red-orange slip, but the ware is noticeably different from that at Piedras Negras. These vessels persist from level one at Holmul; they are associated with Holmul V burials at Mountain Cow. The shape, then, is apparently reserved for religious services of one sort or another.

On the sides of the bowl from K-5 are imprints, made by lime deposit,

2, 3, 4, 5, see page 4a

2. Seler, E. Die Alten Ansiedelungen von Chacula. . . Berlin, 1901, pp. 99, 107, 108.  
Ricketson, O. G., jr. Report on the Uaxactun Project.
3. Year Book of the Carnegie Institution of Washington, Number 27, Washington, 1928, pp.308-9; Number 28, Washington, 1929, p.322  
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4. Merwin, R. E. & Vaillant, G. C. The Ruins of Holmul, Guatemala. Memoirs of the Peabody Museum of Anthropology, Archaeology, and Etymology, III, 2. Cambridge, 1932. Pl. 19,f; 27,h.
5. Thompson, J. Eric. Archaeological Investigations in the South Cayo District, British Honduras. Anthropological Series, Field Museum of Natural History, XVII, 3, Chicago, 1931. pp. 255-6, 320.

of a loosely woven, plain-cloth textile. This was apparently tied over bowl and lid to hold the two together. A like deposit occurs on several other similar vessels from Piedras Negras.

Votive orange ware at Piedras Negras is <sup>so</sup> far confined to the <sup>East and</sup> West ~~Groups~~, almost all <sup>the</sup> specimens coming from the temples mentioned, K-5 and O-13. A possible exception is a votive cache from the South Group, in a bowl that suggests an attempt to imitate the regulation vessel, shape and slip being approximately the same, while the paste is different. This may bear out other ceramic indications that the South Group was inhabited later than the West and East Groups.

Votive orange ware is associated with only two buildings so far excavated at Piedras Negras. In one of these, O-13, it is very frequent under floors and pillars of the upper building. On K-5, it occurs under the pillar-stone of the lowest of three superimposed buildings, K-5<sup>c</sup>-3d. The implication is that the earliest building of K-5 was contemporaneous with the later superstructure on O-13. This would, however, conflict with the dates of lintels in the two buildings. If we suppose the buildings to have been approximately contemporary with the latest dates found on incorporated monuments, we have 9.16.0.0.0 (Lintel 3) as the date for O-13; 9.9.8.0.0 (Lintel 7) as that for K-5. We know, however, the long life and static character of ceremonial and religious objects. Votive orange ware may have been used for a long time, although the lower temple at O-13 was apparently built before it came into fashion, and its absence in the apparently late pottery of the South Group implies that it had gone out of fashion. It seems probable, then, that K-5 -3d was built long enough after O-13 -2d to make use of the new type of votive

vessel, but long enough before O-13 -1st to permit the second rebuilding of K-5 to be finished before the building of O-13 -1st.

The use of the same votive ware in K-5 and the upper building of O-13, its apparent limitation to these two buildings, and its restricted use in K-5 contrasted with its prevalence in O-13 -1st may eventually throw some light on the differences in rites or the gods to whom these temples were dedicated.

The hooded figurine found in the top level of the stratigraphic pit ties in this type of head as belonging to the latest period of occupation of the West Group.

The stratigraphic cuts show polychrome in greatest quantity in the earliest period, a conclusion borne out by work done in the rest of the city. They show that negative-painted red polychrome and orange polychrome were equally important throughout its use. In the earliest level we find sherds showing a strong affiliation with the pottery of Copan I. If there is the connection here that seems apparent, it ~~should~~<sup>might</sup> push back the date of the latter ware.