

PIEDRAS NEGRAS, GUATEMALA - The Eldridge R. Johnson Expedition of the University Museum, Philadelphia, continued its excavations for the second year at the site of the Maya "Old Empire" city of Piedras Negras in Guatemala. The personnel consisted of J. Alden Mason as field director, Linton Satterthwaite, Jr. as assistant director, Fred P. Parris as architect, Mary Butler, and David W. Amram, Jr. Dr. Mason and Mr. Satterthwaite superintended excavating gangs, Mr. Parris surveyed the site and drew up a map, and Miss Butler studied ceramics, stratigraphy, and art development.

One phase of the work concerned the exportation of the massive monuments. Stelae 13, 14, and 40, lintel 12, and one leg of altar 4, consigned according to the contract with the Guatemalan Government, to Philadelphia, and stelae 6, 15, 33, and 36, lintel 4, and three legs of altar 4, consigned to Guatemala, were transported to the end of the road where they await proper conditions to be brought down the Usumacinta River. Stela 12, taken over the road in 1931, is now erected in the University Museum, as are lintel 3, brought to Philadelphia in 1931, and throne 1, brought to the Museum this year.

Excavations were conducted in the three principal groups of the city: the West, East, and South Groups. In the West Group the great modified hill known as the Acropolis was carefully investigated, though not completely excavated, and afforded important information on Maya architecture and architectural development. In this region a burial vault was found in which were remains of several persons, one of them obviously of high rank. This was surrounded by ornaments of jade, shell, and bone, some of them with incised glyphs, a large hematite mosaic mirror and other objects of adornment.

In a prominent situation on the Acropolis, at the head of a monumental stairway and overlooking ~~the~~ a court, were found the fragments of a throne which consists of a table supported by two

legs and a rear screen which stood at the back of the table. The front edge of the table and the legs bear glyphs containing the date of erection. The screen seems to be a conventionalized serpent face with the eyes cut through. In each eye is a free-standing human bust. This is the first throne recognized as such in the Maya area and is of the more importance inasmuch as it indicates that the scene shown on lintel 3, in which a similar throne is portrayed in use, represents an actual ceremony at Piedras Negras. The throne, however, bears a date twenty-five years later than the lintel.

Pyramids K-5 and O-13, formerly termed structures 42 and 27 respectively, the summit temples of which were cleared in 1931, were deeply excavated, revealing in both cases earlier structures which had been buried by later accretions. In the former instance, two buried structures were found at successively lower levels, and another may underlie these. The lowest of these structure is of especial interest inasmuch as it consists of one of the widest rooms known in the Early Maya region, five meters in width, and could have been covered only by a roof of timber.

In the South Group the ball-court was completely excavated, giving for the first time a detailed plan of ^{one of} these interesting structures, which until recently were supposed to be missing in the Early Maya region. ^{One} ~~The~~ large pyramid in the South Group and one smaller mound in this group and one in the East Group were superficially cleared and studied.

Another important discovery was that of lintel 12, which bears the earliest date so far discovered at this city: 9.4.0.0.0, A.D. 514, according to the Goodman-Thompson correlation. This lintel had been broken up and re-used in the masonry of temple O-13, the relief decoration completely covered by a coating of stucco.

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PRELIMINARY REPORT
upon the
Scientific Results of the
First and Second Eldridge R. Johnson Middle American Expeditions
of the
UNIVERSITY MUSEUM
at the Mayan Old Empire site of
PIEDRAS NEGRAS, GUATEMALA.

INTRODUCTION

The ruins at Piedras Negras, in the far northwestern corner of the Department of Peten, Guatemala, just over the Mexican border and on the Usumacinta River which separates at this point Mexico from Guatemala, were not discovered until about 1894 when a lumberman of Tenosique, Mexico, still alive and visited by the writer this year, built a lumber camp at the site, gave the name to the place, and discovered the fallen monuments. The reason for the recent date of its discovery was that practically all the buildings were completely ruined and all the monuments fallen and covered with vegetation and the pyramids converted to large mounds, so that an ordinary visitor might traverse the site without his attention being attracted to anything unusual. In contradistinction, the other known large cities of the Usumacinta Valley are much better preserved, with edifices largely intact. Palenque, further down-stream and closer to cultivated fields, had long been known and considered as one of the major sites of Mexico, and Yaxchilan, although further up-stream and deeper in the forest, had been reported and described several decades earlier, notably by Charnay, in his Ancient Cities of the New World.

The year after the discovery of Piedras Negras by the lumberman, Emiliano Palma, the latter brought the site to the attention of the late great archaeological explorer, Teobert Maler, who was at that time exploring the region and making notes and photographs upon archaeological sites, old and new. Maler spent several months there during the summer of 1895 and returned again for several months more in the summer of 1899 under the auspices of the Peabody Museum of Harvard University. Time and funds being short, Maler attempted no excavations, devoting his attentions almost exclusively to disinterring and photographing the stelae and other monuments. In this work he was interested mainly in the artistic phase, paying slight attention to the hieroglyphic inscriptions. Considering the difficulties of his work, living in a jungle in the rainy season, much of the time in a cave, with wet-plate photography, he did a magnificent job. His report on the site, published in 1901 as Volume II, No. 1 of the Memoirs of the Peabody Museum of American Archaeology and Ethnology are entitled Researches in the Central Portion of the Usumacinta Valley, containing some notes on other sites but consisting principally of his report on Piedras Negras, at once created great interest, as his plates of the monuments demonstrated that at this site Maya sculpture had reached its apogee and many of them have been reproduced frequently as examples of the finest Maya sculpture. Thus one of the very few Mayan monuments

figured by Dr. H. J. Spinden in his American Museum handbook Ancient Civilizations of Mexico is Stela 13, which he states in the caption to be "one of the finest examples of Mayan Sculpture", and one of the five illustrations of Mayan sculpture chosen by T. A. Joyce for his work *Mission Archaeology in Stela 14*

As regards glyphic inscriptions the monuments at Piedras Negras are of great importance; two of the stelae, 1 and 3, are reproduced in Dr. S. G. Morley's handbook, An Introduction to the Study of Maya Hieroglyphs, [Bulletin 57, Bureau of American Ethnology, Washington, D. C., 1915]. Regarding Stela 3, Morley says [p. 235], "All things considered, the inscription on Stela 3 at Piedras Negras is one of the most satisfactory texts that has been found in the whole Maya territory."

Apart from his admirable plates of the artistic phases of the monuments and his descriptions thereof, Maler's notes are of slight value except as pioneer work, and many of his statements and conclusions have been proved incorrect by the work of the University Museum Expedition.

Since Maler's day, few archaeologists have visited Piedras Negras, and virtually all that has been published about it has been based upon his work. Dr. Morley visited it several times for the purpose of recording the glyphic inscriptions, a phase of the work neglected by Maler. This Morley did, with his usual thoroughness, for the purpose of recording the data in his still-unpublished work, The Inscriptions of Peten, for which the University Museum Expedition has been asked to prepare a description of Piedras Negras. Dr. Morley made many photographs, drawings and notes of the glyphs. Dr. Morley's assistant, Dr. Ricketson, made a plan of the site which was initially of much use to the Expedition, but it is now superseded by the map and plan drawn by Mr. Fred Parris, engineer and architect of the University Museum Expedition, upon which this first Piedras Negras Preliminary Paper is based. Dr. Morley will also utilize Mr. Parris' map in his publication. Dr. Morley's party discovered several new stelae, some of them plain and eroded, but among them were two admirable ones, including Stela 40.

CHOICE OF PIEDRAS NEGRAS FOR THE JOHNSON EXPEDITION

When the University Museum planned to conduct archaeological work in the Maya region, Piedras Negras was selected since it was felt that a site in the so-called Old Maya Empire was particularly desirable because of its greater age and the probability that excavations would throw more light upon the question of the origins of Maya culture. Moreover very little work had been done in this region, and all authorities were agreed that further researches there

were greatly to be desired. With the exceptions of the work done by the Peabody Museum of Harvard University at Copan, Honduras, about 1900 and the present work of the Carnegie Institution at Uaxactun in Guatemala, practically no excavations of any importance had been pursued, although, realizing the importance of the region, The Archaeological Institute of America made some researches at Quirigua in Guatemala, and the British Museum and the Field Museum of Chicago have excavated at some sites in British Honduras.

B.M. /

Piedras Negras was particularly chosen from among the possible sites of the Old Maya Empire, largely on the advice of Dr. Morley who probably knows all the Maya cities better than any other person. Its preference was due to the following causes: Piedras Negras stands preeminent among Maya cities in artistic sculpture; its series of carved and dated stelae, one of which was apparently erected every five years, is the most complete and unbroken in the Maya region; it is more accessible than most of the ancient cities and therefore the problem of exporting characteristic examples of its monumental statuary was easier of solution; further, the situation of the site on a large river with ample water-supply promised unusual facilities for the camp; and finally, foreign institutions are more welcome in Guatemala than in Mexico and less difficulties are experienced with governmental authorities.

terms /

Having decided upon Piedras Negras as the site to be worked, Dr. Mason made a trip to Guatemala City in 1930 for the purpose of making the necessary arrangements with the Guatemalan Government and succeeded in arranging a very satisfactory contract with them, in pursuance of the terms of which the Eldridge R. Johnson Expedition of the University Museum has just completed its second year of research and excavation at Piedras Negras.

terms of contract

S.D.M.

*Signature of
contract*

FORWARD

Scientific archaeology endeavours to supply evidence for the study of man's development from the time he first began to use his hands until, in some regions, the immediate past. Where historical records are preserved, archaeology supplements them and checks their accuracy; where historical records are non-existent, archaeology alone must be relied upon to yield the materials for this study.

To take stock of the preliminary results of the Museum's Expedition after its two seasons in the field, it will be well to summarize briefly the reasons why the Maya Area is believed to be the most important archaeological region in the western hemisphere and why Piedras Negras, the site of the Museum's Expedition was fixed upon as the one site in the Maya Area most likely to yield the maximum amount of scientific information. The report itself will indicate how fully these expectations were realized and how productive would be a continuance and an extension of their investigations.

The Maya Area is archaeologically unique, in that its remains give evidence of the existence, in a relatively compact geographical unit, of a complete cultural cycle, developing, unaffected by any outside influences, from a primitive agricultural stage to the most advanced civilization evolved in aboriginal America. Further, practically all known sites in the Area have certain fundamental features in common, though with a large variety of regional differences, and therefore from these a well-rounded picture of the growth of the Maya civilization can be delineated. Finally, the descendants of the Mayas, in relatively pure strains, still remain in the Areas for ethnological, linguistic, and physical studies.

These conditions are ideal. Here is presented an unusual opportunity to lay bare a cross-section, complete and uninterrupted, of a great cultural development from the simplest of beginnings to a peak that comprised extensive knowledge of engineering, architecture, sculpture, ceramics, textiles, not to mention astronomy, mathematics, hieroglyphic writing and, most important of all religion, and thence from this peak down again to simple peasantry.

Within the Maya Area the site of Piedras Negras is, with perhaps one exception, the oldest city of the so-called "Old Empire" period of the Mayas which comprises the first (and in many respects the greatest) of the two cultural cycles that seem to have succeeded one another; and moreover, from knowledge based on existing dated monuments at the site, Piedras Negras was continuously occupied from the beginning of the Old Empire cycle to its culmination, during and, even after, its degeneration.

It has the lonest and most complete series of dated monuments known in the Area; these were erected at regular intervals of twenty years during the earlier period and later every five years, and hence give a priceless time-check for working out the course of the cultural cycle.

The sculpture at Piedras Negras surpasses in artistic qualities that found at any other site, and the architectural ability of its builders can be compared favourably to that of other Maya cities.

PRELIMINARY REPORT

To The Board of Managers

of the work of

The First and Second Expeditions of

THE UNIVERSITY MUSEUM

to

PIEDRAS NEGRAS, GUATEMALA.

The ruins at Piedras Negras, in the far northwestern corner of the Department of Peten, Guatemala, just over the Mexican border and on the Usumacinta River which separates at this point Mexico from Guatemala, were discovered about 1894 when a lumberman of Tenosique, Mexico, still alive and visited by the writer this year, built a lumber camp at the site, gave the name to the place, and discovered the fallen monuments. The reason for the recent date of its discovery was that practically all the buildings (except those of the Acropolis, high above the trail) were completely ruined and all the monuments fallen and covered with vegetation and the pyramids converted to large mounds, so that an ordinary visitor might traverse the site without his attention being attracted to anything unusual.

The year after the discovery, by the lumberman, Emiliano Palma, the latter brought the site to the attention of the late great archaeological explorer, Teobert Maler, who was at that time exploring the region and making notes and photographs upon archaeological sites, old and new. Maler spent several months there during the summer of 1895 and returned again for several months more in the summer of 1899 under the auspices of the Peabody Museum of Harvard University. Time and funds being short, Maler attempted no excavations, devoting his attentions almost exclusively to disinterring and photographing the great carved stone stelae and other monuments. In this work he was interested mainly in the artistic phase, paying slight attention to the hieroglyphic inscriptions. Considering the difficulties of his work, living in a jungle in the rainy season, much of the time in a cave, with wet-plate photography, he did a magnificent job. His report on the site, published in 1901 at once created great interest, as his plates of the monuments demonstrated that at this site Maya sculpture had reached its apogee and many of them have been reproduced frequently as examples of the finest Maya sculpture. As regards glyphic inscriptions too, the monuments at Piedras Negras are of great importance; and furnish a wealth of material for the study of the written language of the Mayas in its early form.

Apart from his admirable plates of the artistic phases of the monuments and his descriptions thereof, Maler's notes are of slight value except as pioneer work, and many of his statements and conclusions have been proved incorrect by the work of the University Museum's Expeditions.

Since Maler's day, few archaeologists have visited Piedras Negras, and practically everything published about its has been based upon his work. Dr. Morley of the Carnegie Institution visited it several times for the purpose of recording the glyphic inscriptions, a phase of the work neglected by Maler.

Choice of Piedras Negras for the Expedition

When the University Museum planned to conduct archaeological work in the Maya region, Piedras Negras was, therefore, selected since it was felt that a site in the so-called Old Maya Empire was particularly desirable because of its greater age and the probability that excavations would throw more light upon the question of the origins of Maya culture. Moreover very

little work has been done in this region, and all authorities were agreed that further researches there were a great desideratum. Piedras Negras was particularly chosen from among the possible sites of the Old Maya Empire, largely on the advice of Dr. Morley whose knowledge of the Maya area is of unequalled extent, because the site stands preeminent in its wealth of artistic sculpture and in its series of carved and dated stelae, one of which was erected every five years -- the most complete and unbroken in the Maya region. Further, the situation of the site on a large river with adequate water-supply promised less hardship and difficulty in establishing a camp, and finally, foreign institutions are more welcome in Guatemala than in Mexico and less difficulties are experienced with governmental authorities.

Having decided upon Piedras Negras as the site to be worked, Dr. Mason made a trip to Guatemala City in 1930 for the purpose of obtaining the necessary permissions from the Guatemalan Government, and succeeded in arranging a very satisfactory contract with them, in pursuance of the terms of which the Expedition of the University Museum has just completed its second year of research and excavation of Piedras Negras.

The Origins of the Maya Civilization

The origin of the Maya peoples and their culture is a mooted and unsettled question, the solution of which is gradually being achieved through the careful and critical study of students and specialists, and the thorough investigations of field workers. However, probably all professional archaeologists specializing in the Mexican region are agreed that the Mayas are pure American Indians and achieved their high culture without any significant influence, if any whatsoever, from the Old World. Popular beliefs connecting them directly with Egypt, China or the Lost Ten Tribes of Israel are in no instance credited by specialists. One school of British anthropologists, indeed, traces all high culture throughout the world from an Egyptian origin, across or around Asia and across the Pacific, but this view is of course untenable and is not accepted by anyone familiar with American archaeology. Such resemblances as do exist are entirely superficial, while the physical types and languages are distinct and the basic elements of culture entirely different. It is, of course, quite plausible, almost certain, that from time to time occasional boats sailed, or were blown, from the Polynesian Islands to the coast of America, or even across the Atlantic, and these may have introduced certain innovations into American cultures, but these could only have been of the slightest importance, and no such instance has ever been proved to the satisfaction of critical archaeologists. The history of the Maya in pre-Columbian days concerns America alone.

In earliest times the Maya were doubtless a hunting people, but with the invention and development of agriculture, especially the perfection of maize or Indian corn, which was probably developed in the Mexican highlands, a sedentary life, and the security and leisure this afforded, encouraged the concentration of the population in large cities and fostered the evolution of wealthy and priestly classes who had the time to devote to the development of the high Maya culture.

Our knowledge of the history of the Maya is derived mainly from the chroniclers of the time of the Conquest. Some of these, such as Bishop Landa, wrote in Spanish from the European viewpoint, others, generally unknown authors, wrote down in Spanish characters but in the Mayan tongue the legends and traditions of their people. Thus we know rather well the history of the Mayas for a few centuries preceding the Conquest, and the traditional legends throw some light on earlier times. But in the main for the history of the Old Maya Empire we must rely upon archaeological researches. Possibly eventually the decipherment of the non-calendrical hieroglyphs may throw a flood of light on this subject, but this is a task for the future.

Dates of Maya Civilization

The dates, however, we know with some degree of accuracy. Almost every monument or sculpture is dated, and the date, which may also include astronomical data such as the phases of the moon, of Venus, and eclipse observations, often occupies the major part of the inscription. The dating is done by a "long count" from a definite starting point, by noting the number of cycles of four hundred years, the number of periods of twenty years, the number of years, months and days elapsed since this beginning. The earliest known recorded dates are at the close of the eighth cycle, or about the fifth century A. D., and it is not believed by anyone that the keeping of the count began with the initial day of their calendar, which was, according to one correlation, 3113 B.C. More probably, somewhat before the beginning of the Christian era, the Maya calendrists decided that it was then so many years since the creation, or since some important event, and began to date events according to that scheme; at any rate, monuments are dated exactly to the very day. The difficulty concerns the correlation of the Maya calendar with the Christian one, and on this point of correlation center most of the controversies of Maya students today. At present there are two principal schools, figuring correlations to the exact day, but differing by 260 years. The staff at the University Museum prefers to err on the conservative side by accepting the later dates. It is probable that the arts of masonry construction and of stone sculpture did not greatly, if at all, antedate the beginning of the Christian era. Probably a high culture had existed before that period, but their buildings were of wood and their carvings on perishable materials. The earliest carvings are by no means rude or primitive, and must have been preceded by a certain period of development.

So we have, apparently, a very high culture, the highest in America, springing into being from almost unknown origins. It is to archaeological researches in the area of the Old Maya Empire, such as those at Piedras Negras, that we must look for the solution of the problem of Maya origins. The solution of this problem, moreover, does not concern the Maya alone. While in temporal period they long preceded the Aztecs and the Incas, they were probably contemporary with the Toltecs of the Valley of Mexico and with the high cultures of the Coast of Peru, and possibly with the Basket-Makers of our Southwestern States, the earliest of the sedentary populations of the Pueblo region. By tracing interrelations and influences between these peoples, with the help of the Maya dates, we shall eventually be able to date sequentially, if not chronologically accurately, most of the cultures of ancient America.

Dates of Piedras Negras

Piedras Negras was one of the earliest of the Early or Old Empire cities, and also one of the longest occupied. The series of Monuments there, one of which, in accord with Maya custom, was erected every five years, is practically complete for a period of two hundred and twenty-two years, from 608 to 830 A.D., according to the more conservative chronological correlation. The date of the earliest stela is 534 A. D., the oldest date found at the city until lintel 12 was found in 1932 by the Museum's Expedition. This lintel bears a date twenty years earlier, the earliest date so far found at Piedras Negras. This lintel is also enroute to Philadelphia. The date of this lintel is the same as that of the earliest known monument at the city of Yaxchilan, discovered by Dr. Morley in 1931. Quite probably older dates may be found at any or all of the three major sites in the Usumacinta Valley for it is almost certain that these cities were occupied before this time. The

Extent of the City

The full extent of the city is uncertain; possibly it had no definite limits, the density of population gradually decreasing from the center. But the extent of the ceremonial center, in which are found pyramids, temples, plazas and courts, and carved monuments, may be estimated at about three-quarters of a square mile. The terrain is naturally hilly, with steep slopes, now thickly overgrown with forest, and the many pyramids which at first sight appear to be natural hills, make it seem even more rugged. The greater part of this area was entirely modified by the inhabitants; large areas were levelled by cutting and filling to make flat plazas or courts connected by staircases and terraces, and hills were made into terraces or modified into pyramids. The evidence of the dated monuments indicates that the South Group is the oldest, the West Group next, and the East Group, the youngest. Excavations have been made in all three groups, as well as in certain outlying and intermediate sections.

Sculptures and Monuments

As already remarked, the sculptured monuments of Piedras Negras display probably the highest art of any Maya site, which means the highest in pre-Columbian America. This art is embodied in stelae, door-lintels, altars and thrones. The stelae are carved monolithic monuments, bearing dates in carved hieroglyphs which demonstrate that it was the custom to erect one of these every five years, and generally also with one or both faces sculptured to represent scenes or figures. Every one has fallen and almost all are broken. Those that fell face up have been eroded to the extent of being artistically valueless if not absolutely unidentifiable; those that fell face down range from almost perfectly preserved to much eroded, but almost all of these were left with their carved faces up when they were turned by Maler for photographing more than thirty years ago, and have suffered somewhat in this period. Probably none weighs less than one ton, and the most massive must have weighed about eight tons. The largest of the well-preserved ones, stela 40, is over sixteen feet in height with a base about four feet wide by fifteen inches thick and weighs over six tons. This is now enroute to the Museum where it will be erected in a group with Stela 12, already on exhibition, and stela 14 also enroute. All stelae

were painted with bright colors, but only traces of these are left. The erection of these massive monuments with the help of only primitive engineering equipment and knowledge, and without metal tools was an extraordinary feat. Many of them were erected in cists with subterranean stone walls and beneath some were placed caches of ceremonial objects.

Maler enumerated thirty-seven stelae and few new ones have been discovered since his day. Dr. Morley found five more, one of them magnificent, the other plain or hopelessly eroded. Two more plain or eroded ones were added to this number by the Expedition. About half of these are of sufficient artistic value and in sufficiently good condition to merit preservation and despite the difficulties of transportation, can be yet saved. Eight of the best have already been boxed and transported over the road to the head of canoe and raft navigation.

The sculptured stelae are, of course, carved on a large scale, but perhaps the most admirable Maya stone carving is found on the lintels which capped the doorways, the very delicate and refined carving being on the upper side, visible by looking upward. Such lintels are especially characteristic of Piedras Negras and Yaxchilan. No lintel has been found in place at Piedras Negras, but ^{at} Yaxchilan there are many still over the doors, and two of the finest of these are in the collections of the British Museum. By analogy, carved stones of approximately equal size found at Piedras Negras are considered as lintels, although the staff of the Expedition consider that there is good evidence that some of these were not used as such, but may have been tablets placed in the walls. Maler found five and enumerated six lintels at Piedras Negras, having surmised the existence of lintel 3. The Museum Expedition, in addition to finding lintel 3, discovered six more stones or fragments which are tentatively considered as lintels.

Lintel 3 was found almost complete and in an excellent state of preservation. It is unquestionably among the finest specimens of pre-Columbian American sculpture. The central scene represents an aboriginal ceremony, the central figure being seated upon a throne which is supported by two legs, and behind him is a carved stone screen. The discovery of Lintel three carries known Maya art definitely to the point foreshadowed by the fragment of Lintel 2 from the same building, found by Maler, and shows a mastery of composition, drawing, and technical skill unknown at any other site in the new world. The discovery of Lintel 12, the earliest readable date yet found, carried us back three centuries to an archaic type of glyph delimitation, but even here a somewhat sophisticated sense of design, involving four (possibly five) human figures arranged in two panels. The grouping of several figures in one scene has heretofore been thought a considerably later innovation.

Of the other six lintels found, number 12 is of the greatest importance as it contains, as has been mentioned, the earliest date known at the city and is complete and well preserved, with many hieroglyphs and a ceremonial sense. It has been shipped to the Museum.

Altars, consisting of massive stone-table-tops supported on three or on four legs and standing in the courts are characteristic features; they

contain dates which seem to indicate that they were erected at certain twenty-year intervals. Five were discovered and described by Maler and none has been found since. Possibly ceremonies were performed on them, possibly sacrifices. Two were elaborately carved and two are entirely eroded. A fine circular one, altar no. 1, has its circumference covered with hieroglyphs. Altar 2 has four legs with well preserved glyphs. Altar 4 has legs in the form of grotesque human faces, doubtless representing a god.

The most interesting find of the past season was something unique and of great importance. It is an almost complete stone throne with flat top supported at the front on two legs, and with a carved screen that stood above and at the back of the top or seat. Nothing of the kind had ever before been known in the Maya region, until the scene portrayed on lintel 3 was discovered, but it is obvious that the throne and screen found this year are very similar to those shown in the scene on the lintel. While they are not identical, all the design elements are similar. This proves conclusively that the scene shown on the lintel portrays an actual ceremony which was performed at Piedras Negras and not, as has been suggested by some Maya students, a mythological scene in which the figures represent the Sun and other deities. This throne adds a new type of carved object, and, so far as we are now aware, a new technique. The two great eyes of a conventionalized serpent head are completely cut through the stone, except for human busts set within them in profile. The faces, neck, and shoulders of each stand free of the stone, in silhouette, yet the faces (to a less degree the shoulders) are carved in a bas relief technique, and not in full round. If the sculptors were striving to escape from relief to full round carving, the significance of this piece as a half-way point is evident.

Including the above, the expeditions have recovered 11 hieroglyphic texts on stone, one on jade, one on a series of shell plates and ornaments; and one or more on several spines of the sting ray. Some of these are fragmentary or eroded. Five are perfectly legible and the dates of three of them are already deciphered. Most of the undeciphered texts on stone may probably be approximately dated on stylistic ground, and some may be completed by later finds.

It is important to note that six of the texts on stone are from monuments broken up and reused in later Maya buildings, where they are protected from the weather. Remembering that the earliest carving known is relatively advanced, we may expect to find texts (and examples of sculpture) of a still earlier date and probably of more primitive type. These must be a by-product, as there can be no clue to their exact whereabouts.

Burial Customs.

Eight burials have thus far been excavated. For such a small series they show an astonishing variety of types. Two were in stone vaults, the one small and bottle-shaped, the other very large, with a stone bench at the foot end and two niches in the side walls. Three others were in simple slab-covered cists; two were placed within (not under) the concrete floor

along the exterior wall of buildings. Another was in a cave high up the hillside.

So many features about a burial may be significant, that they cannot be adequately discussed here. They represent one of surest aids to archaeology, and to date one of the greatest blanks in Mayan research.

We have found no evidence as yet of cremation, found among the Aztec, nor anything like the ossuaries of the Zapotec, but we must and should dig a great deal more to establish a negative conclusion of this sort.

The graves were found under a house floor, under a great platform adjoining a pyramid on the Acropolis, in the center of a ball-court, in the floor against two substructures, and in the cave. Grave furniture was very rich in one, sparing in two, and entirely absent in the rest. The rich burial was in the largest and most elaborate vault, was most thoroughly protected, and may have been honored by the sacrifice of two children, whose remains, much more fragmentary than his, and incomplete, were found with him. This gentleman must have been of very great wealth, rank, or religious importance, very likely all three. Compared with him, the others were not.

The burials along the walls of ceremonial buildings suggest the possibility of human sacrifice in dedicating the buildings, and exterior walls of buildings, especially substructures, should be followed through the pavement to test the frequency of this phenomenon.

Between these extremes the less elaborate but careful burials probably are those of lesser nobility or priesthood.

Physical Anthropology

This is a highly specialized field, and the archaeologists' part in it is to carefully remove the skeleton, properly preserve it, and turn it over to the specialist for study. We have five skulls which, when restored, should be more or less complete, one belonging to a more or less complete skeleton. The state of preservation varies from extreme decay to almost complete preservation. There is no reason to suppose that we cannot, in spite of the adverse climate, gradually build up a fair series of skeletons on which valid ethnic conclusions can be drawn. From field observations we can say that stature was short; incisor teeth were shovel-shaped; extreme artificial deformation (flattening) of the forehead was practised; and in one instance there is evidence of a bone disease.

Minor Objects

These consist principally of articles of personal adornment - beads, pendants, ear disks, lip plugs, head bands, etc. of jade, shell, and clay, of which we have recovered a fair number. In addition the expeditions have discovered many caches of small ceremonial objects of jade, shell, and especially flint and volcanic glass. Small glass knives, large flint knives,

perhaps sacrificial, corn-grinding stones, and clay, jade and shell figurines have appeared in small quantity. The full value of objects of this sort, like ceramics, will not fully appear until comparative studies of corresponding finds at other cities are undertaken. Collections of this sort are extremely valuable, especially when a careful record is made of their associations, one with another, and where they were found. Further excavation under stelae, altars, the floors of temples, and in graves is certain to greatly augment our collections of this sort.

Stratigraphic Researches at Piedras Negras.

Among the most important, although the least spectacular, work of every scientific archaeological expedition is the making of stratigraphical excavations. Stratigraphy affords the key to prehistorical sequence. In the Maya region no stratigraphical work has been done until very recently and excavators retained only the few entire vessels found and ignored the fragments. Of late some careful work in this field has been done with the result that we now know something of pottery sequence in Yucatan, British Honduras, the Uloa Valley and the Western highlands of Guatemala, but no researches had heretofore been made in the Usumacinta Valley, one of the fountain heads of Maya culture.

The stratigraphical excavations at Piedras Negras have indicated that there was no earlier, possibly non-Maya, population there since the sherds from bottom to top belong to characteristic Maya wares. The finest polychrome pottery is found in the lower strata, another proof that the city was built by people of already highly developed artistic taste, and polychrome pottery seems to decrease in relative proportion from bedrock up. It is expected that further investigations and the hoped-for discovery of a refuse pit will afford further and more important data on Maya origin.

Architecture

Buildings in the great ceremonial centers are grouped about quadrangular courts, or less regular plazas, as in all Old Empire cities, but they are not here orientated to the four cardinal points of the compass, as in the Peten region. However, many of the buildings, and two whole courts could easily have been so orientated. The Piedras Negras plan thus throws some doubt on the accepted proposition that Usumacinta buildings were not orientated merely because the mountainous terrain made it impossible.

With the completion of our map showing the part of the survey completed this year, it becomes increasingly evident that disregard for the points of the compass affected in no way the typical Maya habit of carefully planning his city as whole, with an eye on the final maximum architectural effect. Free-standing pyramids are consistently placed on the edges of ravines, their terraced sides and rear being carried far below the court level in front; others are built against steep hillsides. Both devices result in effects of greater height for the labor invested. The balancing of great masses is especially evident in the Acropolis, of the middle of the three largest groups in point of time. The latest group was presumably unfinished, as the dated monuments there erected at regular intervals, suddenly

cease. Groups at different levels are connected by broad stairways and terraces, so that the whole city is made as much a unit as the broken terrain will permit.

Stone Vaulted Buildings

Buildings roofed with massive stone and mortar vaults usually having the form of an inverted "V" -- the "maya Arch" have received most of the attention until very recent years. They fall into two general groups -- small, though massive, temples set on lofty pyramidal bases -- and long multi-chambered buildings set on equally long stone platforms. These are called "palaces" though their use for residence has yet to be definitely proved.

We have completely or partially excavated four pyramidal temples of the vaulted type, and they fall into three classes, one of which seems to be unique. It must suffice here to say that it appears to have grown by a process of horizontal accretion, in which an open corridor or porch surely evolved in this sub-area has been added to a heavy narrow temple which is a modification of another type common in the central (Peten) sub-area.

Another unique structure is not so easy of interpretation. It is not on a pyramid, and consists of four very wide rooms entirely surrounding a low stone-vaulted room containing an altar, obviously a shrine. The lower parts of roof-vaults for the large rooms are in place, but there was insufficient debris on the floors to account for complete vaults of the necessary size. A combination of vault and beam roof has been reported in Yucatan and it may be that here also long beams bridged the gap between the two sides of the vault, which were not carried high enough to be bridged with the usual "cap" stone.

The "palace" type (like the temple) has as yet been inadequately excavated, but we are in a better position to study it because there is a considerable number of them still standing to the height of the cornice, and we could measure and make ground plans, without excavations.

The ground plans show an arrangement in general typical of this sub-area, but with the transverse end-room which is typical of the central area, here present in a modified form. The original plan is ill-suited for residence, but later partition walls cut the long corridors and open porches into smaller sections, possibly for this purpose. A small building, perched at the very top of the acropolis and by its position a temple, was completely excavated. So far as its ground-plan is concerned, it is a pocket-size "palace", typical of the larger buildings in every respect.

Buildings with stone masonry walls but roofed with perishable materials

Buildings with stone vaulted roofs are extremely important, and their excavation should be continued. They are the end-product of Old Empire design and structural engineering. Their evolution from thick walls and narrow rooms to the reverse may be assumed, and we have both extremes and the mean at Piedras Negras. If we can date the buildings we may illustrate the

process. But other types were used with them, and must have antedated them, and should not be neglected.

Two temples, and one palace - typical of the vaulted palaces in all respects - were partially excavated and found to consist of massive stone walls which had been covered entirely with timber-supported roofs. One of the temples was later buried beneath a later stone-vaulted building. The other was on the surface, and had two sculptured stone lintels. This is in the south Group, which contains the earliest dated monuments, both stelae and lintels. We should in the very near future investigate the remaining temples and a fair number of other structures of the south Group, testing for the former presence or absence of stone vaults. If there are none, or very few, we may correlate this fact with the associated early dates and conclude that the vault came into use here long after the founding of the city.

Buildings of this type have been reported sparingly elsewhere, and undoubtedly have a wide distribution, but too little attention has been paid to them. We believe this is the first time sculptured inscriptions have been definitely associated with them.

Buildings with low stone foundation walls.

Two buildings of this third constructional type have been identified, and one partly excavated. The latter we have some reason to believe was residential in purpose. Low stone walls probably supported an upper wall and roof of perishable material. There is a great wealth of low mounds of this type in the peripheral areas of the city, where the Spanish priests report the nobility of the New Empire lived. House sites have received almost no attention. They offer the best chance to learn something of the domestic life of an Old Empire Mayan, about which we know nothing except by inference. They offer the best chance for finding burials. Three were recovered under the floor of the house in question. They were made there in accordance with a custom known to have obtained in post-Spanish times.

Buried under this were the ruins of an earlier partially excavated structure of peculiar ground-plan and with walls but little more than a foot thick. So far as the writer knows all reported Mayan walls are very much thicker than this. Occurring in the oldest part of a very early city, this structure should be completely excavated, others searched for.

Ball Courts

Until 1928 the ball-game was supposed to have been first introduced to the Mayas by the Mexicans, and that in very late times. With the identification of numerous ball courts in the Old Empire came the discovery at several courts of a new feature - a row of three drum-shaped sculptured stones, set flush with the pavement in the center of the alley between the twin structures which characterize all known ball courts. Only complete excavation of most of the surrounding playing field, as well as the structures themselves, could determine the minimum number and the positions, of the stones, and this must be known before we attempt to determine their function. We undertook this excavation in 1932.

The South Group court has the stones in the alley but not the stones on the platform; there were no permanent markers in the southern playing field, nor in the large part of the northern field which was cleared. Partial clearing of the West Group court indicates that there were no marking stones in the alley. We have thus furnished further evidence of the wide distribution of the three alley stones, but they seem not to have been essential to the game.

The design of the structures, in those features which are obviously functional, is identical with all others reported from the Old Empire, except that the side platform at the West Group has a vertical instead of a sloping face. This, so far as we know, is unique and important, for it will have to be considered in any future attempt to determine just how the game was played. Because of this feature the partial excavation of this court, probably later than the other, is extremely desirable.

MISCELLANEOUS OBSERVATIONS

It has generally been assumed that the Old Empire Cities were peace-loving, and that they quietly abandoned their cities, more or less at the same time, for some such reason as exhaustion of the soil, pestilence, change of climate and the like. Only very recently has attention been paid to Piedras Negras stelae depicting captives, soldiers, and in two instances actual human sacrifice, which in later times in Mexico was the natural function of war.

Three of our excavations have a direct bearing on the problem of human sacrifice and war (though the two may here have been un-related). Large flint knives suitable for sacrificial purposes were found scattered along the center of the stela-bearing terrace of Pyramid 43, in such positions that they must have fallen from above, where the sacrifice took place in Mexico; and others of a slightly different type were found near the large round Altar 5 before the pyramidal temple 27.

The many fragments of the Throne (except the first two encountered and the very tiny pieces) were carefully cleared and drawn and photographed in position. When these positions are compared with those they must have originally occupied (found by fitting the pieces together) the conclusion is irresistible that the throne was forcibly torn down, broken, and the parts scattered about on the floor while the roof was still standing. There is less certain evidence that the building itself was partially destroyed by human agency, presumably at the same time. Certain it is that the building was not thereafter used for religious or royal functions, or the wreck of the throne would not have been left on the floor where we found it.

We believe this is the first definite archaeological evidence, so far reported, apart from the more or less abrupt cessation of dated monuments, which can be used in formulating hypotheses to account for a sudden "abandonment" of the Old Empire cities. It fits well into the theory which has been timorously advanced that they were not suddenly abandoned at all. The enormous and wretched class of slaves which must have existed to make possible the erection of the stupendous architectural piles which we find in such

numbers may have suddenly turned on their rulers and put an end to dated stone monuments and the tyranny they must have represented. Then, deprived of the expert guidance and organization to which they had been accustomed for centuries, their numbers would have naturally dwindled, and the learning and culture of their former masters would have rapidly faded, perhaps to be finally extinguished by the Spaniard, as it was in Yucatan; perhaps to die even before that with the death or expulsion of the last representatives of the ruling class.

Position in Maya Culture-history.

We have made but a beginning in the comparative study of the cultural units thus far encountered at Piedras Negras. They are in perfect agreement with the deduction made long ago on the basis of monuments and surface indications, that fundamentally all the Old Empire cities were a cultural unit, with Copan and Quirigua in the east, the Peten cities in the center, and the Usumacinta cities in the west forming distinct subdivisions.

Our work greatly strengthens the proposition that these sub-areas can be further split up on the basis of characteristic details. However, this side of the picture may be greatly distorted by our lack of detailed information for other Usumacinta cities. Many features now apparently unique may be actually quite common.

This situation well illustrates the crying need for the intensive excavation of one type-city in each sub-area, to give a complete picture. We will then know what to look for, and where, in the other cities. Not until then will we be on solid ground in tracing the origins, rise and fall of the Maya cities, and their inter-relations in the process.