Bill Coe

Fro: many thanks for your kindness over the illustrations in THE MAYA.

Mike

PRELIMINARY REPORT ON THE FIRST SEASON'S WORK AT SAN LORENZO TENOCHTITLAN, VERACRUZ

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Preliminary C-14 dates on San Lorenzo culture: — one is too old (probably asphalt-contaminated); five others are in 1200-900 B.C. range.

The first of three seasons of archaeological field work at San Lorenzo Tenochtitlán, Veracruz, was begun in January 1966 by Yale University, with financial support from the National Science Foundation, and under a contract with the Instituto Nacional de Antropologia e Historia in Mexico. The aims of the project are 1) to discover the origin and nature of Olmec civilization in this very important zone 2) to provide a means of dating the Olmec stone monuments for which the zone is famous and 3) to throw light on ancient human ecology and agricultural practices in the humid tropics. Assisting in this project are Richard A. Diehl, Francisco Beverido P., Paula Krotser, and Ray Krotser.

We know of only three sites in the zone. Tenochtitlán is the largest, and is located just to the south of the bank of the Río Chiquito, a branch of the Río Coatzacoalcos; the site has long mounds arranged in linear fashion like La Venta. San Lorenzo is much smaller, with fewer and lower mounds, and is placed on a much dissected plateau about 2.5 kms. south of Tenochtitlán. The third, Potrero Nuevo, is the smallest of all, and lies 3 kms. SSE of San Lorenzo. All three were explored by Matthew W. Stirling and Philip Drucker in 1946; quite extensive excavations were carried out at that time, but the collections from these have never been studied. Most importantly, they brought to light a large number of fine Olmec sculptures, including the largest and most beautiful Colossal Heads known thus far. San Lorenzo alone produced 15 monuments, most of which were found in or on the slopes of the ravines which cut into the plateau.

The major task of the 1966 season was to build a field camp,

complete with laboratory facilities, on the south end of the village of Tenochtitlán. We have also begun mapping with transit and alidade the three archaeological sites. In February the Cia. Mexicana de Aerofoto, S.A., made a photographic reconnaissance flight over the zone at an altitude of 4,000 feet; we now have complete aerial coverage at a scale of 1:8,000 of over 100 km^2, which will provide the basis for a topographical map, and furnish extremely important information on major ecological divisions and land use patterns among the modern inhabitants of the area.

There is no question that San Lorenzo is the most interesting of the three sites, and will be intensively excavated over the next two years. The plateau is curiously covered with river gravels and sands, the result of a tectonic uplift which has taken place in Pleistocene or later times. A most peculiar feature is the presence of nine artificial "lagunas", small reservoirs or pools some of which may have begun as borrow pits during mound construction. From one of these came Monument 14, the largest of the Olmec sculptures found in 1946. Most lagunas have an undefined shape, but one is an almost perfect hexagon; in the ravine just to the northwest is a series of trough-shaped stones with covers of the kind described by Stirling, and suggested by him to form drains. We are now sure that this is so, and think that this particular drain connects with the hexagonal laguna, a hypothesis which we will test next year.

Since the time of Stirling's visit, a number of new monuments have been found at San Lorenzo, some by us this season. Monument 16 is a round altar of schist figured by A. Medellín Zenil in Monumentos-Olmecas Inéditos (1960). We have given the number 17 to the new

Colossal Head first described by Luis Aveleyra and Roman Piña Chan (Boletín del I.N.A.H. 20, 1965). Monument 18 was found not far from Mon. 17 and is a fragmentary table-top altar which was probably much similar to Monument 2 at Potrero Nuevo. Two dwarfs, one of which is much destroyed, held up the missing "top" with one hand, while the other hand grasps a celt against the chest.

Several new monuments were excavated by us, in hopes of establishing the stratigraphic record. Mon. 19 was deeply buried on the edge of a deep ravine on the southeast side of San Lorenzo, and proved to be a much destroyed head; the destruction had been carried out grinding pairs of circular depressions on the surface, a feature that has been found on other Olmec monuments from San Lorenzo and must be related to their final disposition. Mon. 20 is a large "altar", also deeply buried, on the northwest side of the site; it had been finally placed with front side up, so that the subject, a crosslegged figure in a niche holding a child, is much eroded. Nevertheless, both these monuments gave us important information on the dating and circumstances of their final abandonment.

One of the most interesting monuments found this season was Mon. 21, which was discovered with a corner protruding from the surface at the head of a small ravine. On excavation, this proved to be a rectangular block of stone with the back hollowed out; the obverse shows a strange and non-Olmec relief of a running animal, either a jaguar or coyote. It had been placed face down over an offering of seven stone celts and blanks for celts, all of serpentine, along with large fragments of pottery vessels and charcoal.

Thus, the "destruction" of the monuments at San Lorenzo was not

a haphazard affair, but carefully planned, with a good deal of ritual activity. The questions are, when was this carried out, and by whom? We cannot answer the latter question, and we have not yet run any of our abundant radiocarbon samples. But pottery has been plentiful everywhere, even in the ravines, and we have carried out stratigraphic tests at Tenochtitlán to determine the archaeological sequence.

These materials were transferred to the archaeological laboratory of the Museo Nacional de Antropología in Mexico City, and in June and July were studied by Coe and Diehl. Some of the results may be changed by the next two seasons of field work, but as of now we can state that there are only two archaeological phases which we can detect in this zone, separated from each other by a long period of abandonment. The later one falls at the very end of the Late Classic, and is similar in many ways to the coeval occupation of Tres Zapotes, with much fine-orange-paste ware (worn but apparently largely red-slipped) and hollow, moldmade figurines of Mayoid appearance. It is probable from our analysis that much of the construction at Tenochtitlán itself dates to this later phase.

But it is the earlier occupation with which we are most concerned. We have named this the San Lorenzo phase, since that site seems to have been mainly occupied at that time. With the exception of the uppermost meter, the deposits in the riverbank cut below Tenochtitlán were also laid down in the San Lorenzo phase. The bulk of San Lorenzo pottery is extraordinarily close to that of the Cuadros and Jocotal phases on the Pacific coast of Guatemala, where it has been radiocarbon-dated to 1000-800 B.C. Shared here are brushed or striated tecomates, the dominant type at both Salinas La

Blanca and San Lorenzo Tenochtitlán; the use of interior finger-punching or dimpling on the upper wall of these tecomates; tecomates slipped in a 7.5 R 4/4 red color; red-rimmed tecomates; plain rocker-stamping (rare in San Lorenzo); abundant white-rimmed black ware; and deep bowls with exteriorly bolstered rims. These ceramic traits are also shared with the Chiapa I or Cotorra phase.

A more "typically" Olmec pottery is also found in the San Lorenzo phase, a flat-bottomed bowl in black, grey, or white-rimmed ware with excised designs in the form of X's or stylized jaguar paws. This kind of pottery is well known at such Olmec-influenced highland sites as Tlatilco or Las Bocas and has usually been thought to be Middle Formative. However, Gareth Lowe informs me that these excised designs occur with the type Pampas Black-and-white at the site of Altamira on the Pacific coast of Chiapas; this type belongs to the Cuadros phase there and at Salinas La Blanca in Guatemala. I now believe that the entire complex represented by Las Bocas (including the large hollow baby-face figures), and present in the earlier graves at Tlatilco, belongs on an Early Formative horizon.

To return to the San Lorenzo phase, in the same deposits as these ceramics are many fragments of hollow and solid pottery figurines; the heads are in the purest Olmec style. It should be noted, however, that the style of eyes is very different from the usual La Venta or Conchas (Middle Formative) type, no punching being evident.

Thus, the major occupation at San Lorenzo, and the earlier one at Tenochtitlán, belongs to this San Lorenzo phase which can only be Early Formative and which most probably dates to its latter part, ca.

1000-800 B.C. Our study of the materials from the excavations of Monuments 19, 20, and 21 at San Lorenzo makes it certain that their final placement took place during this phase; there is not one sherd, figurine, or offering vessel which is not San Lorenzo from the strata and ancient pits associated with them. Therefore, the Olmec monumental style at San Lorenzo Tenochtitlán cannot be later than 800 B.C. Additional proof that the Olmec style was in existence by this time is provided, of course, by the pottery figurines.

This reverses the usual scheme, and puts San Lorenzo Tenochtitlán at the beginning, not the end, of the Olmec development. This is an interesting twist, for it means that the greatest and most "realistic" monuments are first and not last. A little speculation (to be tempered by further excavation) is thus in order. Right now I think that the most ancient Olmec site is really San Lorenzo Tenochtitlán, although what its origins are I do not know. The lack of antecedents for the Olmec civilization is even more embarrassing than before, but I would be wary about claiming a trans-oceanic diffusion. At some time prior to 800 B.C., the local élite decided to abandon San Lorenzo. The bulk of the monuments were carefully and ceremonially dumped into the ravines or into the lagunas. The remainder I now suggest were taken to other sites, such as Laguna de los Cerros to the west, but particularly to La Venta.

As for La Venta, Heizer and Williams have shown that at least eight of its sculptures were fashioned from the same stone as the majority of those at San Lorenzo; these include Colossal Head No. 2, as well as Altars 1, 3, 4, 5, 6, and 10. The altars are surely in exactly the same style as those from San Lorenzo, while the head has

always been for me the most "archaic" of those at La Venta. Now, it seems to me that the radiocarbon dates and the final assignment of Complex A at that site to the 800-400 B.C. range are just right. I have had the opportunity to go through Drucker's admittedly worn ceramics from the test excavations carried out in the immediate vicinity of Complex A, and they strike me as a much worn version of the Conchas ceramic complex--and that is all there is from these cuts, nothing later at all. Pina Chan's pottery from his 1959 excavations at La Venta seems to me to be just a little later than Drucker's, but still Middle Formative (something closer to Chiapa III, for instance). So, I am convinced that the ceremonial center of La Venta dates to the 800-400 B.C. period, although Squier has evidently reached a deep level on the island which may be Early Formative.

A really speculative sequence of events in the Formative would therefore begin with the establishment of San Lorenzo by about 1000 B.C.; its partial abandonment before 800 B.C., and the transferral of monuments and presumably leaders to La Venta, which became and continued to be the new Olmec supreme center; the simultaneous movement of Olmec groups to the highlands, particularly to Puebla and Morelos, and across to the Pacific coast of southeastern Mesoamerica; the subsequent flourishing of La Venta, with its eventual eclipse and destruction taking place shortly after 400 B.C.; and in the Late Formative the final flicker of a civilization which could now barely be called Olmec, this time at Tres Zapotes (cf. the two very evolved colossal heads and Stela C).

Two further field seasons are planned for San Lorenzo Tenochtitlán. With our hands free from camp-building, we can now concentrate on major excavations. Most of this work will take place at San Lo-

renzo itself, since this is the most significant of the three sites. Testing of the lagunas for monuments (and, hopefully, for materials preserved by waterlogging) will be carried out, and extensive trenching done over most of the site. The stone-drain systems should certainly be followed up. We intend to look for and excavate actual Olmec house sites . . . At Tenochtitlan, possibly one of the major mounds will be opened up by trenching, and when the water level drops sufficiently we intend to go even deeper with our riverbank cuts. Mapping of all sites will be completed, and our paleoecological and modern ethnobotanical investigations completed.

A final thought about our new findings. If the picture which we have outlined stands up, it is indeed a strange one. At one millennium before Christ, what else is there in Mesoamerica? I know of nothing beyond a series of little villages on a cultural level no higher than that of peasant farmers. Among them, there were no platform temples, no sculpture, few figurines, no art to speak of--in fact, nothing to suggest the presence of civilization or anything like it. This makes the position of San Lorenzo Tenochtitlán even more astonishing, and the achievement of these early Olmec even more surprising. They were like a solitary mountain in an otherwise featureless plain, a small band of civilized men in a land of barbarians. At the present time I can think of few archaeological problems more urgent than to discover the background of these remarkable people, and to find out how they managed to rise above the general level in the first place. I have a sneaking suspicion that the study of ecology alone is not going to give a complete answer, and that the ideological factors outlined by Gordon Willey in his AAA Pres-

idential address may have played a role, but that in default of Olmec writing these will forever elude us.

Acknowledgements

We wish to thank the officials of the Instituto Nacional de Antropología e Historia and of the Museo Nacional de Antropología in Mexico City for their generous support of this season's work. We also thank our many friends in Veracruz who have so graciously aided us in many ways, particularly Arqgo. Alfonso Medellín Zenil, Arqgo. José García Payon, Lic. Romulo Campillo Reynaud, Lic. Roberto Bencomo Estrada, Sr. Ramon Figuerola Ruiz, and the Agente Municipal of Tenochtitlán, Sr. Perfecto Domínguez.

STONE MONUMENTS OF SAN LORENZO

No.	Description, Reference, and Present Location
1	Colossal Head ("El Rey"). Stirling 1955, pl. 5, 6. Jalapa.
2	Colossal Head. Stirling 1955, pl. 7. Mexico City.
3	Colossal Head. Stirling 1955, pl. 8. Jalapa.
4	Colossal Head. Stirling 1955, pl. 9, 10, 11a. Jalapa.
5	Colossal Head. Stirling 1955, pl. 12, 13. Jalapa.
6	Human head broken from larger figure. Stirling 1955, pl. 14. Tenoch.
7	Elongated feline, head missing. Stirling 1955, pl. 17a. Tenoch.
8	Flat slab with celt-shaped depressions ("mesa de billares"). Stirling 1955, pl. 15a. San Lorenzo.
9	Hollow duck figure, top missing. Stirling 1955, pl.17b,18. Jalapa.
10	Seated were-jaguar with "cestus". Stirling 1955, pl. 15b. Jalapa.
11	Seated headless figure holding bar ("Scribe"). Stirling 1955, pl. 16a. Jalapa.
12	Seated headless figure holding baby. Stirling 1955,pl.16b. Tenoch.
13	Stone ball. Stirling 1955, pl. 11b. San Lorenzo.
14	Altar with figure in niche holding rope binding captives on sides. Stirling 1955, pl. 21b, 22. Jalapa.
15	Oblong object tied up with ropes, seated figure broken from top. Stirling 1955, pl. 20. South of San Lorenzo.
16	Round altar of schist, low relief. Medellin 1960, pl. 2,3. San Lorenzo.
17	Colossal Head. Aveleyra 1965, foto 18, 19. San Lorenzo.
18	Fragment of altar with two Atlantean dwarfs in profile. Coe et al 1966, foto 24. San Lorenzo.
19	Colossal Head, completely mutilated. Coe et al 1966, foto 25. San Lorenzo.
20	Altar with figure in niche holding child. Coe et al 1966, foto 26. San Lorenzo.

21 Oblong stone with relief of prowling feline or canine. Coe et al 1966, foto 27, 28. San Lorenzo.

22 Large plain stone, possibly blank for Colossal Head ("Monumento del Ojochi"). Stirling 1955, pl. 1. San Lorenzo.

23 Plain upright stela, concave depressions, SL-Mon. 23 excavations. San Lorenzo.

24 Lower legs of seated person, hands grasping bar. Diehl notes 21 Mar '66. Tenoch.

25 Human torso without limbs (broken). Stirling 1955, p. 8; field notes, p. 8. Between Tenoch. and San Lorenzo?

26 Broken human torso grasping cestus-like object. Tenoch.

27 Armadillo (?) figure. Stirling field notes, p. 27. Between Tenoch. and San Lorenzo?

28 Half of stone box, broken longitudinally. Stirling field notes, p. 10. San Lorenzo.

29 Broken half of plain round altar, concave depressions. Coe notes 1 Feb '67. San Lorenzo.

30 Buried stela with were-jaguar-dragon relief, SL-Mon. 30 excavations. Tenoch.

31 Broken stone "seat" ("banco"), Cut 4 of SL-Mon. 30 excavations. San Lorenzo.

32 Plain fragment of altar, in zanja near Mon. 30. Coe 1967 field book, p. 19. San Lorenzo.

33 Plain fragment of altar, in zanja S. of Mon. 8. Coe 1967 field book, pp. 31-33. San Lorenzo.

34 Kneeling headless figure, once with moveable arms, SL-Mon. 23 excavations. Tenoch.

35 Complete stone "seat" ("banco"). Coe 1967 field book, p. 48. Planada del Rincon Largo, south of San Lorenzo.

36 Plain fragment of altar, across ravine N. of SL-Mon. 23 excavation. Coe notes, 18 Apr '67. San Lorenzo.

37 Crouching jaguar with long tusks, headless, SL-Mon. 23 excavations. San Lorenzo.

38 Plain fragment of altar, SL-Mon. 23 excavations. San Lorenzo.

39 Large stone tube or drum. Coe 1967 field book, p. 53; notes 20 Apr '67. Tenoch.

40 Trough-shaped drain stone, SL-Mon. 23 excavations. San Lorenzo.

41 Large four-sided column with relief of were-jaguar, SL-Mon. 23 excavations. San Lorenzo.

42 Broken stone column with relief of arm, SL-PNW excavations. San Lorenzo. Beverido notes, 26 Apr '67.

43 Small fantastic spider ("bug"), SL-Mon. 23 excavations. Jalapa.

44 Complete stone "seat" ("banco"), Cut 5 of SL-Mon. 30 excavations. San Lorenzo.

45 Plain stela, broken, in Cut 5 of SL-Mon. 30 excavations. San Lorenzo.

46 Seat-like stone with relief of triangles and radiating lines within circle, near main drenaje ("Mon. A"). Krotser notes, 16 May '67. San Lorenzo.

47 Seated figure, headless, holding head of snake in hands. ("Mon. B"). Krotser notes, 23 May '67. Tenoch.

48 Half of broken circular "altar" ("Mon. C"), near Mon. 47. Krotser notes, 24 May '67. San Lorenzo.

STONE MONUMENTS OF TENOCHTITLAN ("RIO CHIQUITO")

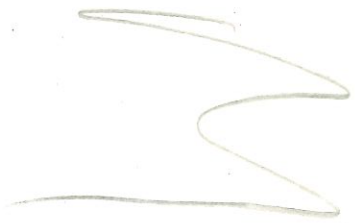
No.	Description, Reference, and Present Location
1	Headless, half-kneeling figure on top of woman. Stirling 1955, pl. 2. Tenoch.
2	Crouching jaguar. Stirling 1955, pl. 3a, 3c. Stolen 1963, now in New York.
3	Crude stone column, near mound WSW of Tenoch. Diehl notes, 10 Mar '66; Coe notes, 10 Jan '67.
4	Stone column, 14' long, in riverbank. Stirling 1955, pl. 4. Lost in bottom of Rio Chiquito.
5	Stone column, 13' long, in riverbank. Stirling 1955, pl. 4. Lost in bottom of Rio Chiquito.
6	Bottom part of crude, half-kneeling figure. Coe notes, 28 Feb. '67 Tenoch., in mound group.

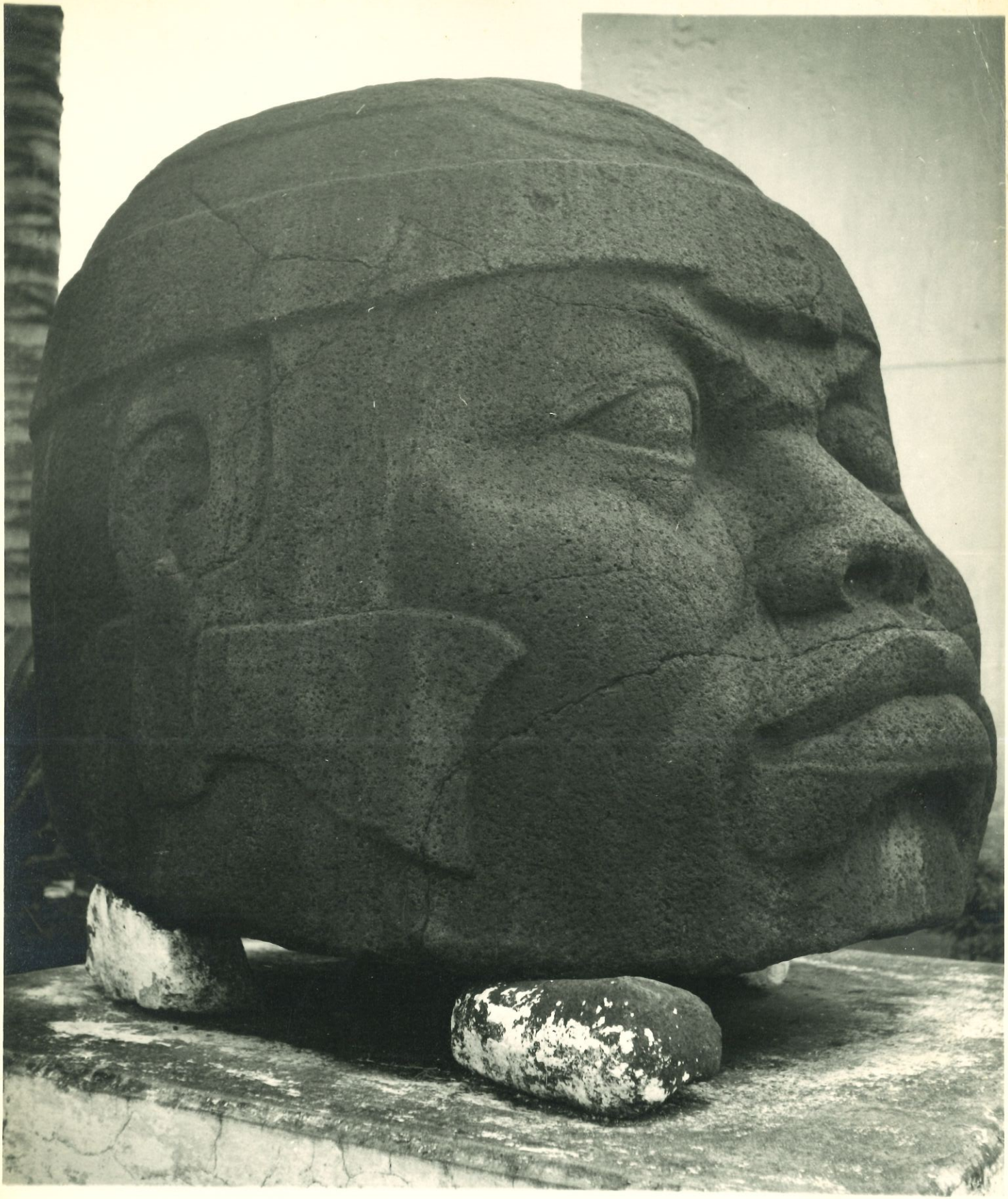
STONE MONUMENTS OF POTRERO NUEVO

1	Man grasping snake, upper torso and head missing. Stirling 1955, pl. 24. Potrero Nuevo.
2	Table-top altar with Atlantean dwarfs. Stirling 1955, pl. 21a, 23. Jalapa.
3	Jaguar (upper part missing) copulating with woman. Stirling 1955, pl. 25, 26a. In area west of Potrero Nuevo village.
4	Stone serpent. Stirling 1955, pl. 26b. Smithsonian Institution.

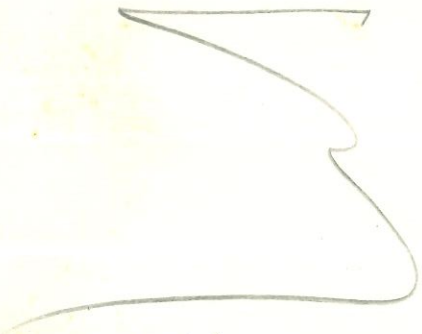
MUSEUM, JALAPA, VERACRUZ

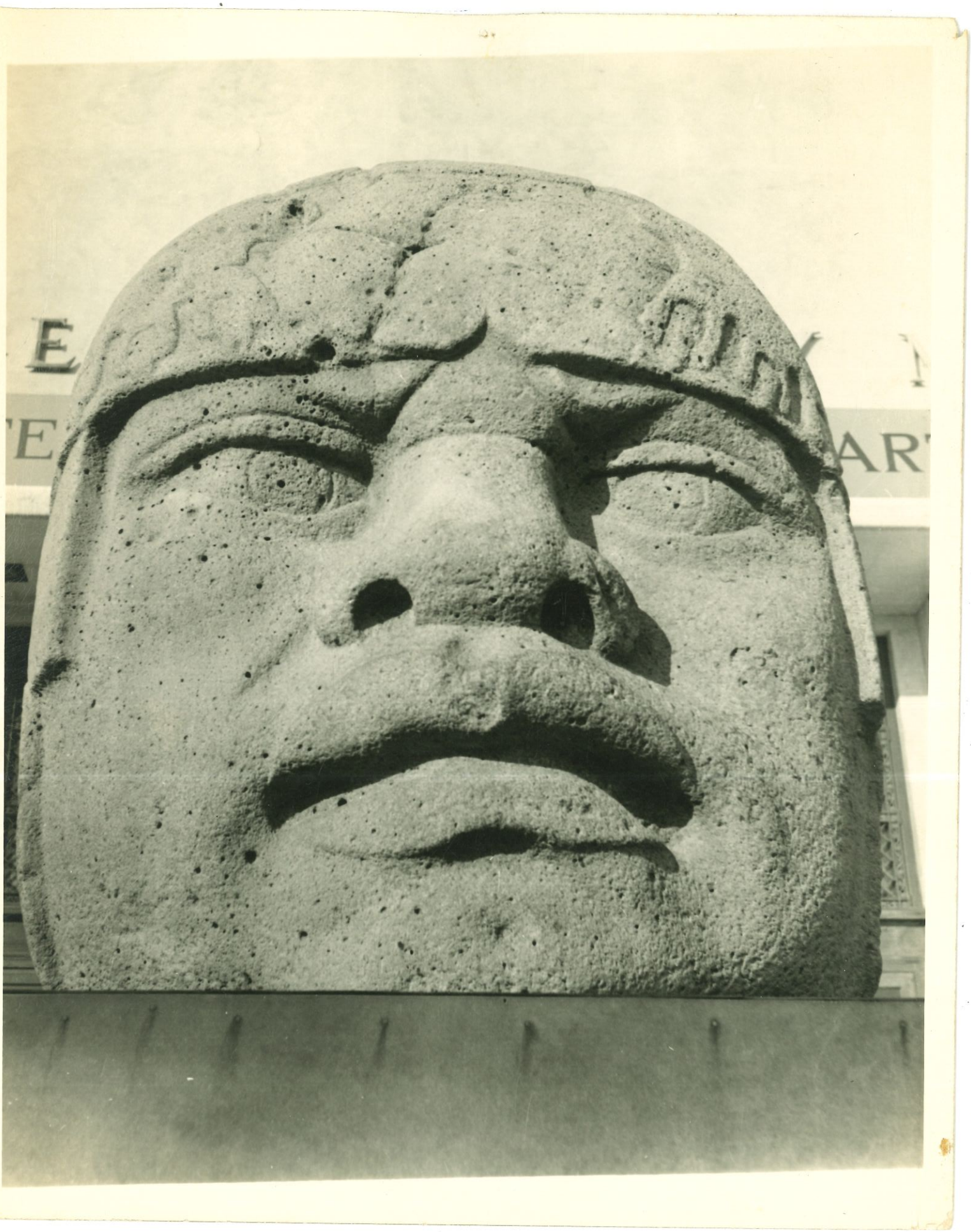
MONUMENT 1, SAN LORENZO - RIGHT 3/4 FRONT





SANTIAGO TUXTLA, VERACRUZ
2ND STONE HEAD OF TRES ZAPOTES
RIGHT 3/4 FRONT VIEW.





MONUMENT 5 SAN LORENZO, VERACRUZ

LOS ANGELES COUNTY MUSEUM OF ART, L.A. CALIF.

FRONT

varian associates magazine / June 1968

varian associates magazine

". . . a man has the right to know the significance of what he is doing . . ."

Russell Varian

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THE COVERS: On this month's front cover, a view of one of the monumental heads at San Lorenzo. On the back cover, a view of Monument 52, discovered by the Varian magnetometer, and being admired by the villagers of Tenochtitlán.

San Lorenzo Tenochtitlán

varian geophysical team joins in exploration of the site of the oldest civilization in Middle America

Over three thousand years ago, in the hotlands to the southeast of the present-day city of Veracruz, a people appeared who became known as the Olmecs. They were probably the first civilization in the Americas, and were surely the first in Middle America. The Olmecs were established in that Gulf Coast area of Mexico for almost one thousand years, and had several periods of florescence. Then they disappeared. They left their mark, however, on many civilizations contemporary with them, and they are the starting place for anthropological study of the multitude of brilliant cultures which followed for centuries until 1521, and the destruction of Mesoamerican civilization by the Spaniards.

This past spring, a geophysical team from Varian assisted an archaeological team at the earliest Olmec site of San Lorenzo. With a new portable magnetometer, extremely significant monuments and other objects were located and excavated within the period of two weeks. Many other areas of interest at San Lorenzo were mapped for future exploration.

The following is a description of this project, and of the people who make it of interest.

Above: Arrow indicates site of San Lorenzo. Below: Village on the banks of the Coatzacoalcos River.

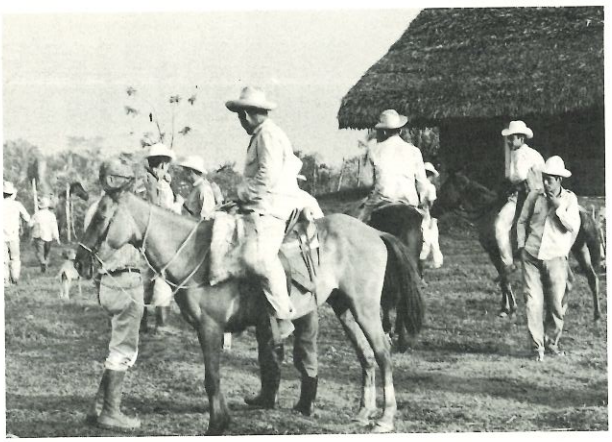
Below: Archaeologists' camp at the edge of the village of Tenochtitlán.

IN THE SANCTUARY OF THE SERPENT

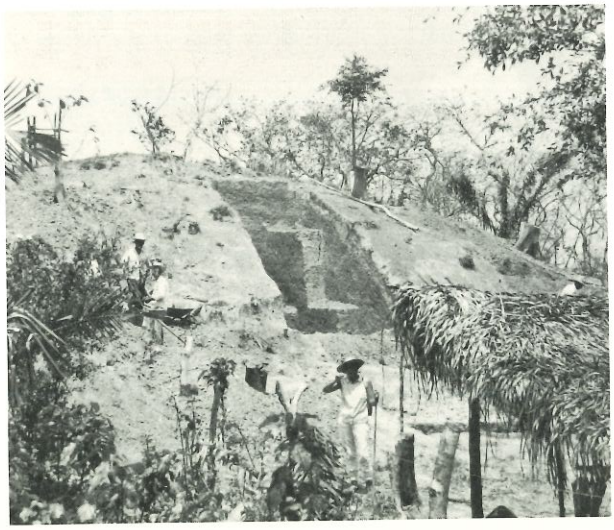
San Lorenzo is located some 35 miles south of the city of Minatitlán. The trip from Minatitlán is made by boat up the Coatzacoalcos River, into the basin known in Mexican folklore as "The Sanctuary of the Serpent," where the great culture-hero Quetzalcoatl, lord of the wind and sky and king of the Toltecs, was said to have had his home. In the heart of this land is the village of Tenochtitlán and the nearby archaeological zone of San Lorenzo.

Tenochtitalán is a settlement of some 1,000 people, most of whom make their living from the adjacent Ejido, or communal farm, which surrounds the village and encompasses the archaeological site. The Ejido system was born in pre-Columbian times, and was the common method of land use until the Conquest; it was revived in the 1920's following the Mexican Revolution of the early part of this century. Most of the workers at the site also have fields *(milpas)* on the Ejido.

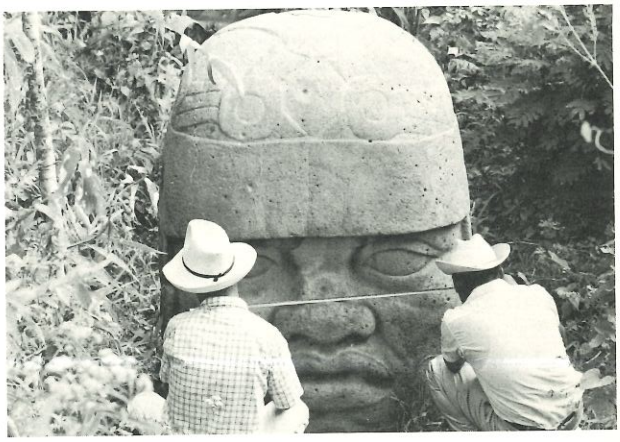
At the edge of the village is the compound of the archaeologists, consisting of several small thatch-roofed houses, including sleeping quarters, a kitchen, and the laboratory. A trail runs past the compound and across the lands of the Ejido, some of which are worked and some of which have reverted (most quickly) to jungle. After about 45 minutes on horseback, most of which is a gentle ascent into higher country, one arrives at San Lorenzo.



Above: Workers about to leave camp for the site at San Lorenzo. Below: Pyramid at San Lorenzo.



San Lorenzo was first discovered about twenty years ago, and two early archaeological expeditions did preliminary work. At the site were found several of the huge stone heads which are the most characteristic symbol of the Olmec culture. Measuring up to seven or eight feet in height, nearly the same length across, and being several feet thick, the heads weigh several tons. One head remains at San Lorenzo, almost perfectly preserved, three millenia old, brooding over its jungle thicket.



Monumental head at San Lorenzo. Ray Krotser (left) and Sergio Lopez (right) making measurements. Mr. Lopez is a physical anthropologist from the National Institute of Anthropology and History of Mexico.

The San Lorenzo site is about 1,200 meters by 800 meters in size, and at the center is a complex consisting of three courts and a pyramid-shaped mound. Excavations have revealed two levels of Olmec culture—the San Lorenzo phase (1200 to 900 B.C.) and a later Palangana phase (700 to 400 B.C.) —then nothing for 1,500 years, and suddenly indications of a settlement at about A.D. 1000 with strong Toltec influence.

To the southwest of the pyramid is another area of interest, contiguous to the line of a hollowed-out stone aqueduct. The aqueduct was originally exposed when part of a hillside washed down into a ravine. By following the line of the exposed aqueduct stones, archaeologists have uncovered other portions, buried at a depth of about four meters.

Other areas which have been worked at San

Lorenzo include several ridges and artificial ponds, all of which have yielded a number of monuments—carved or uncarved stone objects, including statuary, stelae (ceremonial markers), and others. The Olmecs evidently had no buildings of stone, or at least none have been found, and it is assumed that their houses were made of a combination of wood, mud, and thatch, none of which have survived. The basalt used in making the monuments was brought in from the Tuxtla Mountains, which lie some 50 miles to the northwest. The monuments themselves weigh up to 20 tons, and one of the mysteries is how a people who had no knowledge of the wheel managed to move these objects over such great distances. It is probable that they were floated on rafts along the Gulf Coast, then up the Coatzacoalcos River, and then dragged up from the river to the site by ropes. That so much labor could be commanded for such a project is proof of the political power and organization of the Olmec hierarchy.

Fragments of pottery—potsherds or sherds—are found everywhere, and it is through these that dating is done. Radiocarbon dating (or Carbon 14 dating) yields fairly precise data, and so sherds and pieces of charcoal or other charred materials found at the same strata enable archaeologists to place objects in time. Some of the Olmec pottery is quite ornamental, with carved designs and painting. It ranges in size from small bowls up to very large containers for the storage of food. Today, in the villages near San Lorenzo, the women of Veracruz are making pottery exactly as their ancestors made it 3,000 years ago. They use no glaze, have no pottery wheel or molds, and the only firing is done by placing the pots near a fire to dry them.

The first two expeditions to San Lorenzo were short-lived. The present effort is now in its third season, and has been the most ambitious and successful by far. The work is under the auspices of the Mexican government—the National Institute of Anthropology and History—which oversees all such projects, and which has perhaps mounted the most successful series of archaeological explorations of the recent past. The San Lorenzo project is directed by Dr. Michael D. Coe of Yale University. He is assisted by G. R. Krotser, a civil engineer, and his wife Paula, an anthropologist, both of whom are on the faculty of the University of Veracruz at Jalapa, and both of whom spend full time at San Lorenzo during the digging season.

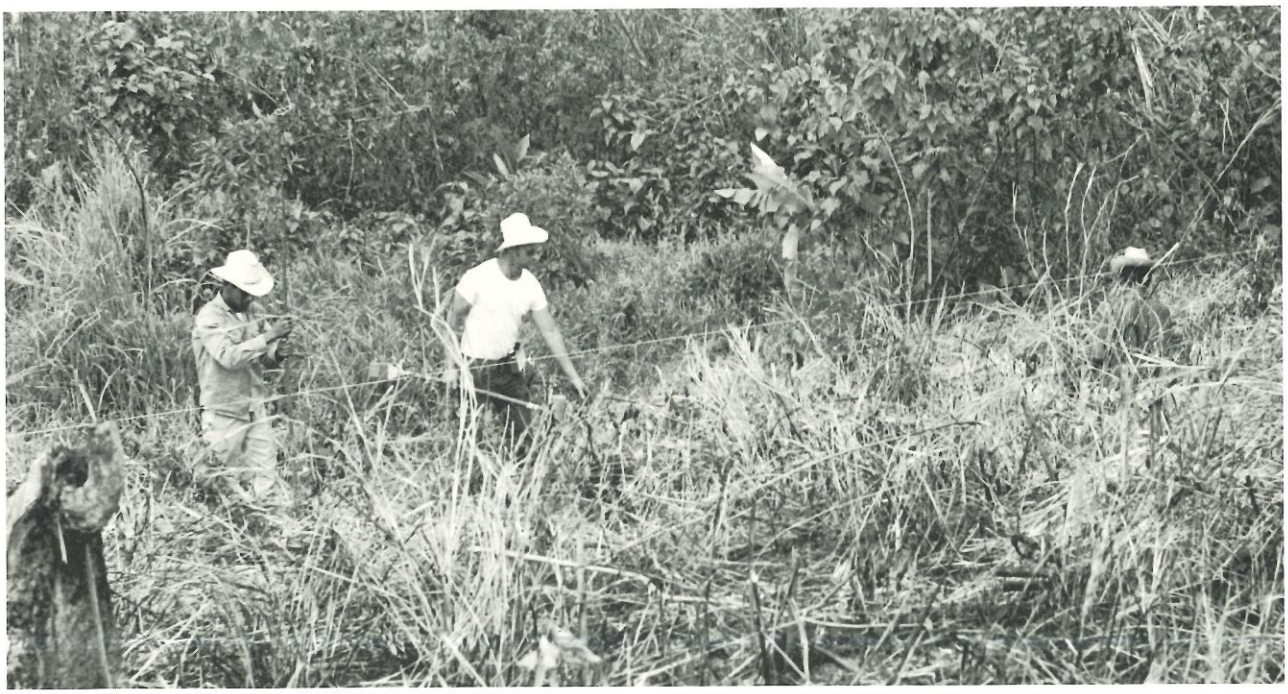
MAGNETIC SEARCH

Archaeological excavation is arduous work. At San Lorenzo it takes 25 man days to dig a stratification pit four meters deep. The location of a dig is a decision arrived at through the archaeologist's training and instincts, which, though generally excellent, are not infallible.

Varian magnetometers had been used previously for archaeological search, notably at Sybaris in southeastern Italy and in Greece. The Sybaris site was on a swampy alluvial plain, so that an excavation of any depth would fill with water, necessitating use of large pumps. The main purpose of that magnetic survey was to map structures, most of which would never be uncovered, and thus to allow a meaningful archaeological interpretation to be made of the site.

The work at Sybaris was carried out by the Applied Science Center for Archaeology, University of Pennsylvania, which has pioneered the application of many geophysical techniques to archaeological exploration. In order to demonstrate the effectiveness of a new instrument at this type of site, the Center was contacted this year by Dr. Coe of Yale for assistance in completing work at San Lorenzo, and the Center in turn contracted Varian's Geophysics Application Laboratory to do the magnetic survey.

The survey, the first of its type in Latin America, was conducted with a new portable cesium magnetometer, never before used for search purposes of this nature. The instrument utilizes precession of atoms to produce a low audio-frequency tone and a digital display, which changes as magnetic anomalies are found—the change in tone and numerical results being in proportion to the size and depth of the anomaly. Thus, the instrument can be used to



map and locate anomalies rapidly, quickly estimate their depth and magnitude, and plot these on a map or mark them on the ground.

MAGNETICS AT SAN LORENZO

The terrain at San Lorenzo is underlain by unusually nonmagnetic soil. The monuments were carved from naturally magnetic volcanic rock, and so the ideal environment for this type of search is provided, with all anomalies being of potential archaeological interest.

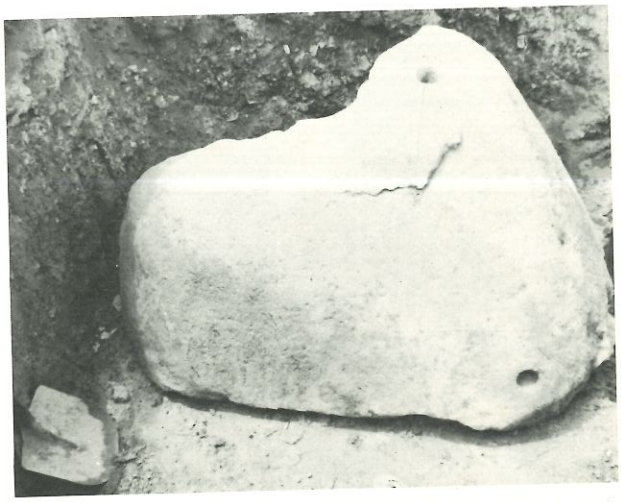
A quick reconnaissance survey was made late in the afternoon on their day of arrival by the Varian team represented by geophysicist Dr. Sheldon Breiner and two assistants. Working for only half an hour, several major anomalies were found at an estimated depth of less than a meter.

The following day, the excavation of one of the anomalies began. Within a few minutes after the start of digging, a large stone was slowly uncovered. Complete excavation took several days, and revealed a stela—a four-foot-long, tapering stone. As reference, this stela was named Monument 49 (i.e., the 49th monument of significant interest found at San Lorenzo and the first found in 1968).

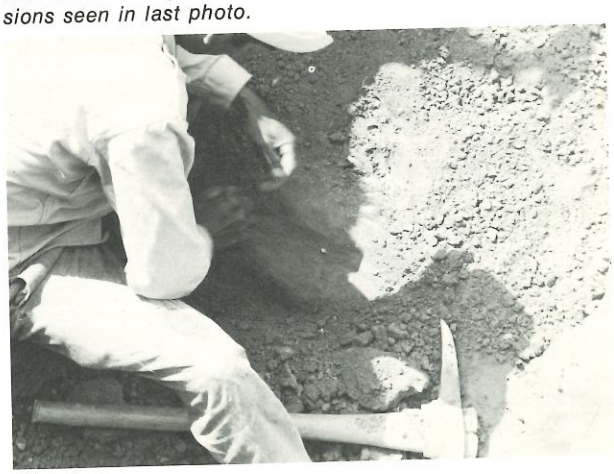
Later that same day, a worker began digging at another anomaly pinpointed by the instrument; this was located in a corner of an earlier excavation which had been dug in hopes of encountering a line of the aqueduct. Again, within a few minutes, a large monument was exposed, and again it took several days to fully reveal this structure, Monument 50. Dr. Coe believes that Monument 50 is a fragment of one of the colossal heads, and may well have been intentionally mutilated.

The principal activity of magnetometer surveying is to map, quantitatively, over a dense network of points, the subtle magnetic field variations. The map is then interpreted for either subsequent excavation or simply the extent and nature of the stone monuments and areas of potsherds and distributed soil. Most of the survey was carried out in sometimes dense jungle where machetes were used to

Sequence of photos on this page show the uncovering of Monument 49. Facing page: Magnetic survey at San Lorenzo.



Sequence showing the discovery of Monument 50—probably a fragment of one of the colossal heads. Fragment was ceremonially defaced by making the cuplike depressions seen in last photo.



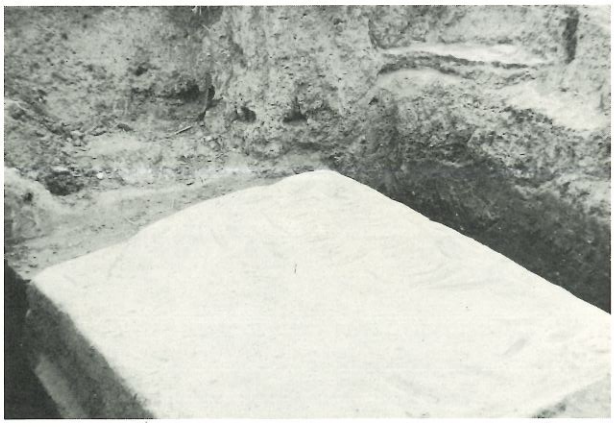
hack out walking paths for the survey.

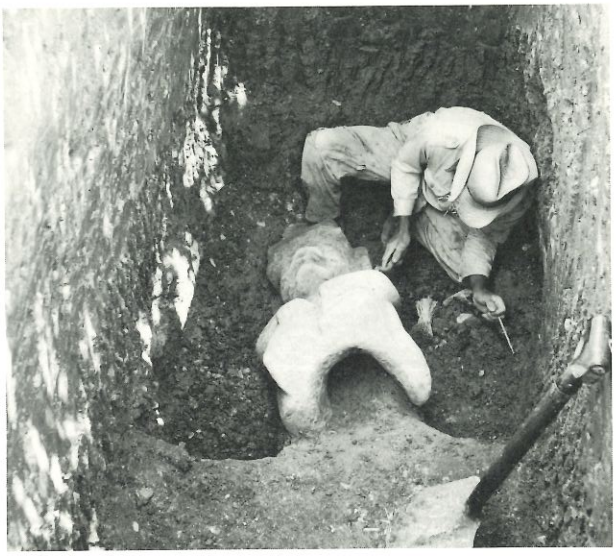
On Saturday of the first week of the survey, the Varian team and a smaller group of workers returned to San Lorenzo to concentrate on a very large anomaly which had been located by the magnetometer.

The Mexican workers who do the digging take a great interest in the projects at San Lorenzo. Archaeological excavation is not just a matter of putting down large holes; it is painstaking work, as each spade of earth has to be checked for sherds, small ceramic objects, obsidian blades, and other artifacts. The men on this day were, however, quite doubtful about this work site. It took until midafternoon to dig a pit a meter deep, and the skepticism was almost palpable. Then there was a sudden silence. All but one old man stopped digging, and the workers came over to watch him. There was a change in sound as the pick hit the earth, and slowly the edge of a huge stone object began to appear. The workers said that nothing like it had been seen before at San Lorenzo. When the object was fully uncovered, it measured seven feet long, six feet

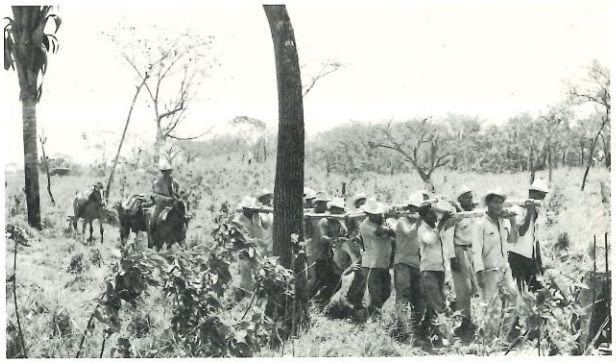
The discovery of Monument 51, an Olmec altar weighing approximately 10 tons.

wide, and was nearly three feet thick. This object (Monument 51) was an altar. It had been deeply scored with axes, probably to remove carved decorations—another example of the intentional mutilation practiced frequently by the Olmecs. The altar is located in the center of a large area of interesting additional anomalies, and may have been a part of an important ceremonial center.





The discovery of Monument 52, the finest object yet found at San Lorenzo, and its removal to the village of Tenochtitlán. Final photo shows monument at the village school.



Monument 52, also located by the magnetometer, has been called one of the best monuments to be found at San Lorenzo, and one of the most important works of art yet discovered in Mexico. Relatively small in size, but richly carved, it is a perfect example of the Olmec "were-jaguar" — part human, part cat, and representing the Rain God. It has been removed from the site for safekeeping.

Thus, four anomalies excavated, four monuments of importance uncovered, with hundreds of new possibilities available to later seasons of digging.

It is known that San Lorenzo was more than an elite center, more than a home for priests and kings. There is little doubt that many Olmecs lived there at one time. Numerous house mounds have been found, some of them grouped about common patios. In addition to the pyramids and large courts, there are wall monuments, artifacts of many kinds, and stone benches.

The range of Olmec activity at San Lorenzo is far from being fully revealed, but each succeeding discovery helps to fill in the mosaic of Olmec existence. The magnetometer hastens the process, makes the search less costly, permits more extensive discovery than would otherwise be possible. It is a valuable assistance to archaeologists in bringing to light the nature of the beginnings of civilization in our hemisphere, the heritage of the New World.

The Olmecs

Across wide areas of Southern Mexico, archaeologists have in this century found traces of Olmec influence. At Tlatilco in the Valley of Mexico, in the state of Guerrero, at Monte Albán I above Oaxaca, and at many other sites, friezes, pottery, figurines, and various burial offerings carry the artistic stamp of the Olmec. Whether the influence spread by trade, by conquest, or by missionaries, the important fact is that it was carried far and wide in the earliest times of the development of Mexican civilization. Tlatilco dates from about 500 to 300 B.C. (Middle Formative Period, as the archaeologists describe it), as does Monte Albán I.

Who were the Olmec? For a number of years, their artifacts and their influence were known, without very much at all being known about their origins. Early attempts to place them in time put them in the Classic Period (A.D. 300-900), but the great Mexican archaeologists Alfonso Caso and Miguel Covarrubias have long postulated that they were much earlier. Time (and Carbon 14 dating) has proved the Mexicans correct. The Olmecs are the oldest civilization in Mesoamerica, and all later civilizations, including the Maya, are their cultural descendants.

The *patria* of the Olmec was the Gulf Coast region of southern Veracruz and of Tabasco, an area of high rainfall, low swamplands, and many rivers. It is as inhospitable a place to man as the high central plateau is generous. Yet both the hotlands and the Mexican highlands gave rise to the development of forceful, artistic peoples.

The greatest Olmec center was La Venta, located on an island in a swamp, about 18 miles inland from the Gulf, and not far from the modern city of Villahermosa. The ceremonial complex at La Venta was dominated by a large clay pyramid, surrounded by courts, and the remnants of a great basalt fence. As with San Lorenzo, the nearest source of stone was far distant—in this case some 80 miles—and it can only be guessed that, again, the stone was floated on rafts from the quarries to the site. It has been estimated that La Venta was supported by a local population of at least 18,000 persons, and that the main pyramid took some 800,000 man days to construct.

The art of La Venta is similar to that of the other great Olmec site, San Lorenzo. The dominant leitmotiv is a were-jaguar, a figure half-feline, half-human. These figures, although endowed with some of the physical attributes of the jaguar, are yet strangely infantile, sexless, and puffy. They are fearsome only in their abnormality. Covarrubias has suggested that they were heavenly rain spirits, as indeed in later times they evolve into various guises of the Rain God of subsequent cultures.

If the were-jaguar is the mystical theme, the colossal heads are the human testament. Apparently portraits of Olmec lords, the heads are heavy-lipped,

sleepy-eyed, adorned with a protective helmet.

La Venta has today been largely desecrated by petrochemical operations, and the best monuments have been moved to a park in Villahermosa. To seek out a more natural environment, one must move on to San Lorenzo where more recent work has established this site to be second in importance only to La Venta.

Radiocarbon dating places San Lorenzo at the beginning of Olmec development, thus probably predating most, if not all, of La Venta. The monuments are similar to those of La Venta, and it is possible that some of them were later transferred there.

It is not known why San Lorenzo or La Venta was abandoned—the former at about 800 B.C., and the latter about 400 B.C. The odd thing is that many of the monuments at both sites were destroyed, but most of them *ceremonially* destroyed.

At San Lorenzo, it now is evident that nearly all the great basalt monuments were mutilated and then laid out in lines on ridges surrounding the site, or cast into man-made lagoons or into ravines. Some were defaced by hollowing out a small, cuplike depression (see photo of Monument 50). Others, in the case of many human likenesses, were decapitated. Still others, weighing many tons, were almost demolished completely.

So it can be speculated that San Lorenzo was at one time the great elite center, and that it reached its height in the period 1200 to 900 B.C. Then forces, either political or religious, brought about the systematic destruction of the monuments, following which San Lorenzo civilization declined in favor of that at La Venta—by design or accident? No one knows.

At any rate, there then followed a movement of Olmec groups to the Mexican highlands, where what had begun in the hotlands continued to flourish, only under new guises and new leaders.

Facing page: Teotihuacán, near Mexico City. Top: Pyramid of the Sun. Center: Likeness of the Plumed Serpent in the Ciudadela. Bottom: Recently revealed fresco at Teotihuacán.

After the Olmecs

Náhuatl—the most common language of the ancient peoples of Central Mexico—is still spoken today, not only in the villages but sometimes in Mexico City itself, the hemisphere's fourth largest metropolis. In perhaps no other country are the past and present so persistently linked as in Mexico, where the language of the Aztecs is still heard, and where an excavation for a skyscraper may very likely yield up a pyramid, or a tomb of some lost prince.

Thus, anthropology and archaeology do not just tell us where we came from—they help to tell us who we are.

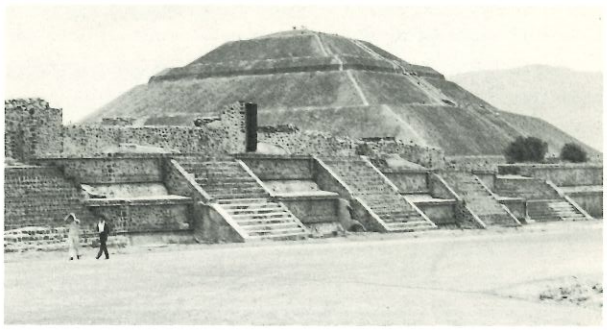
After the Olmec, the cultures of Mesoamerica proliferated in such number that only the greatest can be but briefly described here. Yet, to end without any further discussion might leave the impression that the Olmecs were but an island in time, whereas in fact they represent the antecedents of that most vigorous and imaginative people—the modern Mexican.

Of the great peoples of Mesoamerica who followed the Olmec, the following loom the largest—the Zapotec, the Teotihuacán, the Toltec, the Aztec, and the Maya. (The Maya spanned so many years and so much geography, that they must be treated separately.)

Oaxaca, a lush valley on the edge of the Isthmus of Tehuantepec, was the site of the Zapotec center of Monte Albán, which had four great periods and stretched in time across a thousand years. Monte Albán I is nearly obscured by later construction, but the Temple of the Danzantes has been excavated, revealing a stone-faced platform with bas-relief dancers, some of which have Olmec-like features. Most importantly, Monte Albán I yields evidence of the first true literary texts in Mexico, a calendar and various hieroglyphs.

The transition to the later phases of Monte Albán was evidently peaceful, and gradually there was raised on the mountain top a great complex of temples and platforms grouped about a large plaza. Underground tombs cover the slope about the site,

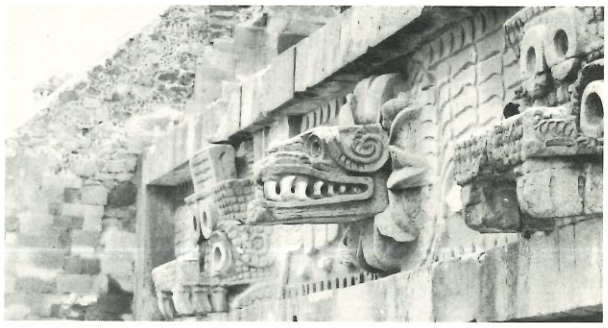
many of them with rich frescoes, and one, at least, yielding a great wealth of gold and jade artifacts. Again, Monte Albán was not an urban center, but it was likely that there was a heavy population nearby, and terraces on the lower slopes of the mountain indicate the likelihood of residences. In the meantime, several hundred other settlements sprung up in the Valley, evidently controlled from the mountaintop. For over a thousand years the Zapotecs ruled from Monte Albán, and then suddenly, about A.D. 900, the site was deserted. It is not known why.



THE VALLEY OF MEXICO

From the earliest times, there were people in the Valley of Mexico — nomads, hunters, eventually tribes, and, commencing with the Classic Period (A.D. 300-900), a series of brilliant civilizations.

Nearly a mile and a half high, blessed with near-perfect climate, easily protected, and furnished with abundant water, the Valley became (and persists in being) the true center of Mexican culture and power.



TEOTIHUACÁN

Lying in a pocket in the northeast portion of the Valley are the ruins of Teotihuacán—one of the only true cities of pre-Columbian America, and surely one of the greatest. A thousand years after its destruction, the Aztec kings would journey by foot from Tenochtitlán to pay homage to its remnants.

As is the case with so many Mesoamerican cultures, it is not known from where the people of Teotihuacán came, but of what they did, there remains ample and ever-increasing evidence, for the site is one of the most thoroughly excavated of any in Mexico.

At its height (A.D. 500 to 600), Teotihuacán had a population of 50,000 to 100,000—larger than Imperial Rome. The city measures ten square miles or more, is laid out on a grid plan, and its principal thoroughfare, The Street of the Dead, stretches for more than two miles. Its two dominant structures are the Pyramids of the Sun and the Moon, the former measuring 700 feet on the side, and rising over 200 feet. The Ciudadela, a rectangular enclosure some 700 yards long, may have been the royal palace. Residential complexes have been found within the city, comprised of groupings of private apartments and patios.

The art style of Teotihuacán was rich and elegant, and found its way into far corners of Mexico, including the Gulf Coast, and the Maya and Oaxaca regions. In the highlands of Guatemala, some 600

miles away, a small city has been found which is nearly a replica of Teotihuacán.

The city of Teotihuacán was destroyed by invaders about A.D. 600. The palaces were left in ruins, and for several centuries the remains were occupied by squatters. During this period civilized life stopped in the Valley of Mexico.

TULA

In the ninth century A.D., the Toltecs transferred their capital to Tula, northwest of the Valley of Mexico. The Toltecs were fierce warriors and gifted craftsmen. From Tula they came to exercise power over most of central Mexico, and there is evidence of a seaborne Toltec invasion of the Maya regions of the Yucatán.

Tula itself was so thoroughly destroyed that it is difficult to estimate its true size or grandeur (indeed, for years, it was thought that the earlier Teotihuacán was the Toltec capital). The embellishments of the buildings and walls at Tula are warlike, attesting to the Toltecs' sanguinary nature, and, as at Teotihuacán, there are many representations of Quetzalcoatl, the Plumed Serpent. (The legend of Quetzalcoatl, which becomes of paramount importance at the time of the Conquest, has a number of versions. The most persistent is that Quetzalcoatl is a Toltec king, fair-skinned, who founded Tula. Dedicated to a peaceful cult, he is opposed to the proponents of Tezcatlipoca, the giver and taker of life—particularly in the form of human sacrifices. Quetzalcoatl leaves Tula in exile, arriving at length at the Gulf. Here there are two versions—one that he immolates himself, and becomes the Morning Star. The other version, disastrous to Moctezuma II, has it that he sets off on the sea to the east, from which he is to return.)

Tula was short-lived. It perished at the hand of the same group of barbarians that demolished Teotihuacán, only at Tula the destruction was even more vicious. Ceremonial halls were burned, walls toppled, and a trench driven into one of the great pyramids. But in the diaspora that followed, the Toltec influence drifted into the far corners of Mexico. At San Lorenzo, the last remnants of civilization are not Olmec, but Toltec-like. The great Maya pyramid at Chichén-Itzá has Toltec influence. Even the late farming cultures of the Indians of the American Southwest have Toltec ancestry, notably the Hohokam near present-day Tucson.

TENOCHTITLÁN

By the thirteenth century A.D., a large cluster of small city-states had sprung up about the Valley of Mexico, most of them sharing the common Náhuatl tongue; some were Toltec refugees from Tula, others Chichimecs from the north, who were probably the destroyers of Tula. They competed for power in the Valley, and, while so engrossed, the Aztecs arrived. In the year 1250, they were the last of the barbaric tribes to come to the Valley, and they were among the most unsavory. Uncultured, savage, but extremely adept at war, they were squatters on the lands of others. They raided their neighbors for women, and had an insatiable appetite for captive warriors, whom they used as human sacrifices.

A century later they founded a village on a swampy island in the midst of a lake, fulfilling the prophecy that they should settle where they found an eagle, sitting on a cactus, holding a snake in its mouth (the same image today adorns the central panel of the Mexican flag). This village, Tenochtitlán, grew as the lake was slowly drained. Soon the Aztecs were serving as mercenaries for another mainland power, and learning the arts of statecraft from their masters as they warred on their behalf. Then they turned on their mainland employers and crushed them.

The rise of the Aztecs in a few short centuries from barbarian nomads to the masters of much of Mexico is one of the wonders of pre-Columbian history, matched perhaps only by the manner of their collapse. By the late 1400's, their empire included most of the central highlands, vast coastal areas along the Gulf and the Pacific, and a large province on the Guatemalan border.

Tenochtitlán grew in size and grandeur to match the kingdom. For the inauguration of the Great Temple, 20,000 captives were sacrificed and a long aqueduct was built to bring fresh water in from Coyoacán on the mainland to the island capital.

The island was connected to the mainland by three

broad causeways, broken at intervals by removable bridges to allow the passage of canoes. The city was about 20 square miles in area, and by 1519 had close to a quarter of a million inhabitants, making it five times the size of the city of London of the same era. The Mexico over which the Aztecs dominated had nearly ten million people.

At the center of the city was the administrative and religious center, a vast area over a kilometer square, with pyramids and great temples, and the Palace of Montezuma II. Nearby were great marketplaces, which, according to the Spaniards, dwarfed those of Rome and Constantinople, and where, in addition to the necessities, one could purchase luxury goods of gold, silver, jade, turquoise, or feathers.

It was a true empire, wealthy, sustained, and increased by war, and still in a state of great change at the time of the Conquest. And all this had been accomplished in but two hundred years—the transition from a tribal existence, squatting on the fringes of the land of others, to domination and sophistication.

The Aztecs further refined the calendar, recorded history in books of deerskin or agave paper, maintained state archives of accounts and other matters. They had music and poetry of a high order.

FINALE

In the two centuries of transition from barbarism to a high degree of civilization, the personality of the rulers had undergone sweeping changes. The fierce warrior kings were gone, and in their place the brooding, introspective Moctezuma II held power. In the last years of his reign, various omens disturbed the king—a great comet, a mysterious fire in the Great Temple, the lake rose and flooded the capital. These phenomena convinced Moctezuma that some doom was impending, and he was correct.

Word came from the coast that "a great mountain had been seen on the waters, moving from one part to the other," and later that men with beards and white faces had landed. Convinced that the intruders were Quetzalcoatl and his companions fulfilling the prophecy of the legend, Moctezuma sent food and other gifts which were accepted. The strangers were, in actuality, the crew of a Spanish ship which made the first landing near Veracruz in 1518. The following year, a large fleet set out from Cuba under the command of Hernán Cortés. The rest is oft-repeated history.

Assisted by many of the peoples held in subjugation to the Aztecs, the Spanish swiftly moved from the coast and into the highlands, gathering strength as they approached Tenochtitlán. Moctezuma himself welcomed them into the capital, and soon allowed himself to be taken hostage. He died during the great battle in which the Spaniards temporarily fled the city, only to return two years later. Then, the great warrior Cuauhtemoc was king, and he knew that the Spaniards were not gods but invaders, but it was too late.

Tenochtitlán was besieged, and finally fell on the 13th day of August, 1521. Its citizens were starving, and what of the city which was not mutilated by the war was soon methodically destroyed by the conquerors. Within a brief time, nothing was left of the temples and towers, the walls, and the palaces. The wealth of the treasury—immense quantities of gold and silver—were shipped at once to Spain, where the priceless, ornately carved objects were melted down into bullion to finance further wars. Gone were the books and the records of music and poetry. Beginning were centuries of crushing colonial domination.

And so what had begun in the hotlands—perhaps at San Lorenzo—came to a thunderous end with the destruction of Tenochtitlán. The light went out on 2,500 years of cultural development.

BIBLIOGRAPHY

Most of the background material for this issue is drawn from Michael D. Coe's *Mexico,* one volume of a series, "Ancient Peoples and Places," published in Great Britain (hardback) and in Mexico (paperback—Ediciones Lara). For the same series, Dr. Coe has also written a book on the Maya. For further study of the Olmecs and of the peoples (past and present) of the Isthmus of Tehuantepec, there is no better starting place than *Mexico South,* by the great Mexican artist and archaeologist, Miguel Covarrubias (Knopf).