

DUMBARTON OAKS
CONFERENCE ON THE OLMEC

October 28th and 29th, 1967

ELIZABETH P. BENSON, Editor

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FOREWORD

This volume presents in permanent form the proceedings of a Conference on the Olmec held at Dumbarton Oaks in the fall of 1967. It was a scholarly event whose achievements and significance, as here recorded, more than met our high expectations. It was also the kind of event which would surely have pleased Robert Woods Bliss, who formed the collection of Pre-Columbian art now exhibited at Dumbarton Oaks; for he and Mrs. Bliss founded Dumbarton Oaks in the hope that the building with its various facilities, its public rooms, its special collections and libraries, and its unique garden setting, could act as a kind of nucleus around which related scholarly and cultural activities could form themselves. As the subject of the conference was the Olmec, it is of interest to note that Mr. Bliss collected their art extensively; in fact, the first object he acquired was Olmec—the statuette of a standing man in dark green jade, purchased in Paris in 1912.

I would like to take the opportunity to thank all those who participated in the conference, whether as speakers or as guests, and in particular Dr. Ignacio Bernal, Director General of the Instituto Nacional de Antropología e Historia in Mexico, who kindly consented to act as Chairman. Particular thanks are also due Dr. Michael Coe, Advisor to Dumbarton Oaks for Pre-Columbian Art, and Miss Elizabeth Benson, Curator for the Robert Woods Bliss Collection, under whose able direction the conference was organized and presented.

JOHN S. THACHER

Director

Dumbarton Oaks

PREFACE

The Conference on the Olmec held at Dumbarton Oaks on October 28th and 29th, 1967—the first on the Olmec since the Mesa Redonda in Tuxtla Gutiérrez in 1942—came at a time when there was a good deal of fresh material from recent excavations, both in the Olmec “heartland” and in sites in other areas where there is evidence of Olmec influence. In planning the conference, we felt that it should be small and intensive, and therefore scheduled it to run a full day, with six speakers. We requested that the papers be fairly short to allow considerable time after each presentation for discussion; these discussions were recorded and the apposite parts are included here. In addition to the speakers, a small number of scholars intimately involved with Olmec archaeology and the early cultures of Mesoamerica was invited. Several of them volunteered to present material pertinent to the subject of the conference if time could be arranged, and so it was decided to have an additional session. Peter T. Furst’s paper was presented at this session. However, not all of the material thus informally offered has been included in this publication because of its form of presentation, particularly that of Lee A. Parsons and John Paddock. Some of Dr. Parsons’ material has been published in *Estudios de Cultura Maya*, Vol. VI, and we hope to publish other material from him on stone sculpture from southern Guatemala in *Studies in Pre-Columbian Art and Archaeology*.

While this volume is intended as a record of the proceedings of the conference, we have included, in spite of the inconsistency, one paper not actually delivered there: David C. Grove’s “The Preclassic Olmec in Central Mexico: Site Distribution and Inferences,” which was read at the 66th Annual Meeting of the American Anthropological Association in December, 1967. After consideration, it was decided that it would be a scholarly service to publish it here because the material is so exceptionally relevant to the subject and scope of the conference. In addition, brief appendices have been added to the papers of Drs. Heizer and Coe.

We would like to express our appreciation for the cooperation of the Dumbarton Oaks staff, especially that of Mrs. Barbara Weissman, whose assistance in the preparation of both the conference and this publication has been invaluable.

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EARLY HISTORY OF THE OLMEC PROBLEM

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Before launching into my paper, I would like to give a sort of prologue which might be titled "The Impact of Olmec Art." I have been struck by the number of individuals who after becoming involved with a single fine specimen of Olmec art, spent the rest of their careers as Olmec enthusiasts. One example was Marshall Saville, who became intrigued by the Kunz axe and spent years looking for related specimens. George Vaillant told me that he first went overboard on the Olmec when the Necaxa jade tigre arrived at the American Museum of Natural History in 1932. He put it in a drawer in his desk and for several weeks used to take it out daily to admire it and to feel it-for there is a tactile as well as a visual appeal to Olmec jades. I cannot say what particular specimen first caught the eye of Miguel Covarrubias, but he early segregated the Olmec style from other aspects of Pre-Columbian art, and made it a love affair for life. Many of you here know that Mr. Bliss began his interest in Pre-Columbian art when he acquired in Paris an Olmec jade figure of a standing man. The ultimate result of that one acquisition is the magnificent collection in the adjacent room of this building. I speak with personal feeling on this subject because the bait that hooked me into a career of Olmec research was a small blue jade mask in the Berlin Museum. How many others may have had a similar experience I do not know, but all of these episodes took place before a concept of the Olmec had been clearly formulated, and the appeal was in the art style alone. I think all of us felt that it must have taken a remarkable culture to produce art objects with such a powerful effect and that something should be done to find out more about it.

During the nineteenth and early twentieth centuries practically nothing was known of the archaeological sequences in Mexico. At this time, many isolated examples of what we now call the Olmec art style appeared in various collections, generally without provenience, except that most seemed to have come from southern Mexico. A few of these were published singly from time to time but without much significant comment until Marshall Saville appeared on the scene.

In 1862, José Melgar discovered the Colossal Head of Hueyapan (Tres Zapotes) and noted that it seemed to represent a unique physical type. In 1869 and 1871, he published articles attributing this to the former occupation of the region by a Negro race. In 1886, Alfredo Chavero published the picture of a large were-jaguar axe, a specimen now in the American Museum of Natural History, and compared its style with that of the colossal head. He followed Melgar in assuming that a Negro racial type accounted for the resemblance of the two objects. In 1890, in his *Gems and Precious Stones of North America*, George Kunz described the now famous jade axe which bears his name, but did not illustrate it. In his description he compared it with the axe pictured by Chavero and the similar green quartz axe in the Christy Collection in the British Museum.

Saville published the first picture of the Kunz axe in the year 1900. He recognized that the piece was most unusual, correctly noted that the carving represented a jaguar mask, and compared it with other related specimens, intimating that these objects represented a distinct art style of unique quality.

The next event of significance in this sequence was the publication in 1926 of *Tribes and Temples* by Frans Blom and Oliver La Farge. Two important discoveries by this expedition were the idol on top of San Martín Pajápan volcano, and a colossal head at La Venta, both of which were illustrated in the report. Although the authors were unaware of the significance of these finds, they nevertheless triggered some important developments. In 1927, Hermann Beyer reviewed *Tribes and Temples* and referred to the San Martín Pajápan monument as an "Olmec" idol, comparing it to a greenstone "Olmec" figure formerly in his possession. Thus was the term "Olmec" first applied to this art style, and it will no doubt remain as the name of the culture to which we now know this art style belonged.

In 1929, Saville published two articles on "Votive Axes from Ancient Mexico," in which he followed Beyer in calling the art style "Olmec." The Olmec referred to were, of course, the historic "rubber people" who occupied the Gulf Coast at the time of the Conquest. The 1929 articles by Saville were the most revealing to have appeared up to that time. The descriptions they contained were, in effect, a greatly expanded version of his 1900 article. He not only examined a number of new "tiger-face" or were-jaguar axes, describing the salient Olmec features, but included as well the San Martín Pajápan monument and several jade plaques and figurines, all of which he recognized as belonging to the same style. He concluded that the votive axes represented a

jaguar god who was in fact the forerunner of the important Aztec god Tezcatlipoca, conceived of in one phase as a jaguar. "Thunderbolts" or stone axes, "rained from heaven," were attributed to his activities. Saville speculated that the cleft in the forehead characteristic of these jaguar axes was caused by the blow on the head received during his struggle with Quetzalcóatl, at which time he was transformed into a jaguar. One thing Saville did not mention is that the fetish or distinguishing mark of Tezcatlipoca is the flint knife, a feature shown on many of the were-jaguar votive axes. Since we are reasonably sure now that a number of the important Mesoamerican gods apparently had their origin with the Olmec, Saville's theory does not seem farfetched. That the axe was of great religious significance to the Olmec is demonstrated by the hundreds of jade and serpentine axes deposited as offerings at La Venta. For example, the carefully buried jaguar-mask mosaic pavements had cruciform deposits of jade axes placed above them. We know also that the roots of the highland cultures were in the tropical lowlands, as witness the lowland tropical animals and birds extensively represented in early Teotihuacán art, and in the Aztec calendar glyphs.

From 1928 to 1932, George Vaillant conducted a series of excavations in the Valley of Mexico, the importance of which cannot be overestimated. He established for the first time a real sequence for the archaeology of this region, and in his early horizons found artifacts of jade and ceramics in the Olmec style. He suggested a southern origin for the jade objects and speculated that their makers represented a culture more advanced than those of the Valley of Mexico. He became interested in this intriguing art style and, following Saville, called it Olmec in several short papers, thus doing much to solidify the use of the term.

Meanwhile in Mexico, Covarrubias had become fascinated with Olmec art and began studying and collecting examples of the style, laying the foundation of his later important works on the subject. He was the first to point out the associations of Olmec pieces at the now famous Tlatilco site, and to call attention to the existence of many specimens from Guerrero.

Years before the excavations of Vaillant, ceramic and other finds beneath the Pedregal lava flow near Mexico City gave firm evidence that there were fairly advanced cultures of considerable antiquity. Nuttall, Holmes, Boas, Seler, Spinden, and especially Gamio, all contributed to the establishment of the so-called Archaic Culture. The association of occasional "baby-face" figurines with this period later gave the first clear evidence of the antiquity of the Olmec.

My own interest in the Olmec began about 1918, when I was at the University of California. I was much intrigued by the picture of a "crying-baby" jade maskette published by Thomas Wilson of the Smithsonian Institution in 1898. This specimen later found its way to the Berlin Museum and, in 1920, while visiting Germany, I took time to go to see it. It proved to be of blue jade and much more impressive than the picture. At this time I did not know

of Saville's 1900 publication on the Kunz axe, but began looking for more specimens in the same style, finding some from the Maximilian collection in Vienna, and others later in Madrid.

In 1921, I joined the staff of the Smithsonian Institution and located several more pieces in the U.S. National Museum. I was struck by the number of examples made of blue jade, a material apparently not otherwise found among the many jade specimens from Mexico, although present in Costa Rica. When Saville's reports appeared in 1929, my interest was further intensified, and I had several interesting talks with him on the subject. I examined with interest the Blom and La Farge publication when it appeared and later Weyerstall's account in 1932 of the Colossal Head of Hueyapan (Tres Zapotes). It seemed to me that this head and that of La Venta belonged to the same art style as the jade axes and figures. I also felt that the Tuxtla statuette with its 8th Cycle date belonged to this group, and suspected that the culture represented was much earlier than that of the historic Olmec. The presence of large monuments such as the colossal heads suggested the existence of important sites where the mysterious art style could be found in its cultural context.

At this time, because of the spectacular nature of Maya civilization, archaeological work had been concentrated in that area. Because of the Maya calendar it was the only region with a firmly established time sequence, and it was generally believed that the Maya were the originators of all high culture in Middle America. I had strong doubts about this, so as Director of the Bureau of American Ethnology I launched a program in 1932 aimed at attacking the archaeological problems of the eastern and western margins of the Maya area with the idea of getting stratigraphic evidence. Work on the eastern margin was begun by Duncan Strong for the Bureau in 1932 and terminated by him in 1936. In the course of this work he examined the Playa de los Muertos culture, and concluded that it was at least as early as the Mamon period of the Maya and that the still earlier Yojoa monochrome might be pre-Maya.

Early in 1938, I began the survey of the western margin. I visited the colossal head at Tres Zapotes, and cleared and photographed it as well as several of the other monuments at the site. What interested me most was that the head was *in situ* in a court surrounded by four mounds and that there was in the vicinity an extensive mound group which covered about two miles along the Arroyo Hueyapan. I showed the photographs to officials of the National Geographic Society who were immediately interested and agreed to finance an expedition to the site. Work began in 1938-39 with the cooperation of the Mexican Instituto Nacional de Antropología e Historia, especially that of Alfonso Caso and Ignacio Marquina, and was resumed in 1939-40. During the first season I was assisted by Clarence Weiant. Early in the work we found Stela C with its Cycle 7 date—a date which at the time was the subject of much controversy. In the second season I was joined by Philip Drucker. It became evident that Tres Zapotes had been occupied for a long time and that

the "Olmec" phase constituted but a portion of the site's history. This was the beginning of a sixteen-year archaeological program under National Geographic Society-Smithsonian Institution auspices. R. H. Stewart, photographer of the National Geographic, accompanied me on all these expeditions, as did my wife Marion (except in 1943). Drucker worked with me at Tres Zapotes, Cerro de las Mesas, La Venta, and, later, at San Lorenzo. His publications form much of the basic material secured from these early excavations.

While the Tres Zapotes work was in progress, I visited La Venta, excavating and photographing a considerable number of monuments there. Unlike Tres Zapotes, La Venta appeared to be a site with a single, though prolonged, period of occupation. Following the first season of work at Tres Zapotes, I also visited Cerro de las Mesas. The style of the monuments appeared to be early and I surmised that the occupation there may have begun about the termination of the "Olmec" period at Tres Zapotes.

The season of 1940-41 was spent excavating at Cerro de las Mesas, which proved to be Early Classic in its early phases but also showed suggestive "Olmec" connections, including a number of apparent "heirloom" pieces found in the great jade cache. The Early Classic dates on the Cerro de las Mesas monuments were arranged exactly in the style of those on the earlier Stela C of Tres Zapotes and the Tuxtla Statuette, indicating that they were derived directly from the Olmec and not from the Maya. Twenty years later, in 1960, I returned to Cerro de las Mesas with Froelich Rainey to test electronic equipment for the University Museum at Philadelphia, and conducted further excavations. These confirmed the presence of a late Olmec occupation, including the ceremonial deposit of greenstone and jade axes, ten of which were carved in a somewhat degenerate but unmistakable Olmec style.

In 1941, I went to Izapa, excavating and photographing a number of monuments there. The art style seemed to me suggestive of early Maya and appeared to be related to that of Monument C, the carved stone box of Tres Zapotes. I was further convinced that the Izapa style was early, because of the closely related El Baul stela with its Cycle 7 date, which was also arranged in Olmec rather than Maya style.

Meanwhile the work continued at La Venta with Drucker and, later, Waldo Wedel.

The Mexican archaeologists, especially Caso, Covarrubias, and Jiménez Moreno, became very interested in the new discoveries, and in April and May of 1942 a round-table conference was arranged at Tuxtla Gutiérrez, Chiapas. Most of the Mexican and North American archaeologists interested in the subject were in attendance. At this time, the La Venta work was still in progress and I was able to bring to the meeting many of the finds just made there. One of the objectives of the conference was to assemble the characteristic traits then known as a result of the recent excavations. The concept of the Olmec "art style" was being changed to that of a culture.

There was considerable discussion concerning the name to be given the new

culture. Since it was now apparent that the historic Olmec were not its creators, the conference proposed the name be changed to the "La Venta" culture. However, by this time the term Olmec had become so fixed in the literature that this proposal has since been largely ignored.

During the conference, Covarrubias presented a careful analysis of the Olmec art style, demonstrating that from it a chronologic sequence evolved that continued to the beginning of the historic period. Caso at the conclusion of his remarks made the unqualified statement: "This great culture... is without doubt the mother of the other [Mesoamerican] cultures such as the Maya, Teotihuacán, the Zapotec, Tajín and others."

Until this time and for a number of years afterward, there was considerable speculation and difference of opinion concerning the date when the Olmec flourished. During the period of my field work in Mexico, the radiocarbon method of dating had not yet been developed. It was not until the 1955 expedition of Drucker, Heizer, and Squier to La Venta that charcoal dates were obtained, demonstrating that the occupation of La Venta began about 1200 B.C.

In 1944, a reconnaissance was conducted in Tabasco and Campeche with the object of determining the eastern boundary of Olmec territory. On this trip we found the Olmec site of San Miguel near the headwaters of the Blasillo River. This is a site which remains to be excavated. In 1944, we also went to Corral Nuevo and photographed some monuments, but never returned to work.

In 1945, I found the site of San Lorenzo, returning in 1946 for a full season of excavating with Drucker. The stone monuments were published, but except for noting that there were two periods of occupation at the site, little was published concerning the ceramics. This will be remedied in detail when the results of Michael Coe's recent San Lorenzo excavations appear in print.

As a result of the prevailing belief that the Maya, because of their great achievements in art, architecture, and the calendar, originated all high-culture elements in Middle America, the majority of North American archaeologists were long reluctant to believe that the Olmec civilization had preceded them. The 7th Cycle date on Stela C from Tres Zapotes was viewed with much skepticism. It is ironic that, instead of being too early, the date on Stela C is now too late to belong to the great period of Olmec culture, and must be assigned to its very end. In general, the Mexican archaeologists, notably Caso and Covarrubias, were in strong agreement with the early placement. One of the few North Americans to accept this idea from the beginning was Vaillant, who like Saville had long been interested in the Olmec art style.

In more recent years outstanding work by archaeologists such as Bernal, Coe, Heizer, Medellín, and Piña Chan has done much to round out the picture of the Olmec and justify Caso's statement that these remarkable people represent the "mother culture" of Mesoamerica and possibly of the New World.

It is no longer necessary to refer to the Olmec as "little understood" or "mysterious." However, one basic mystery does remain to be solved. Who were the Olmec and what were their antecedents?

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NEW OBSERVATIONS ON LA VENTA

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In the dry season, from late January to late May, 1955, the La Venta site on the Tonalá River, which forms the boundary between the Mexican states of Veracruz and Tabasco, was excavated by Philip Drucker and me with funds provided by the National Geographic Society. The discovery of the several major Olmec sites, the finding of most of the stone monuments at these places, and the initial excavations to examine mound structures and secure ceramic collections were due to the earlier efforts of one man, Matthew W. Stirling, and were carried out with the financial support of one organization, the National Geographic Society.

Stirling (1940) had made a brief reconnaissance of the La Venta site in 1940 and located a number of stone monuments. Drucker established the basic system of designation for the La Venta site features by calling the big pyramid Complex C, and the patterned layout of mounds and the court or plaza just to the north, Complex A. In 1942 Drucker spent the season digging ceramic test pits and trenching the A-2 mound at the north end of Complex A, and it was during this period that the basalt column "tomb" and the sandstone tub-like monument which has been labeled a "sarcophagus" were found. In the 1943 season Stirling and Waldo Wedel continued the investigation of Complex A by excavating a long trench along the centerline and uncovering the mosaic "mask" in the Southeast Platform. A number of offerings, mostly jade objects, were found during each season. In addition to several articles by Stirling (1940, 1942, 1943a, 1943b), reporting the more important finds, Drucker published a two-part monograph in 1952. The first section deals with the ceramics found in 1942; the second part is a detailed analysis of the Olmec art style which is, in my opinion, still the best treatment of the subject that has been done. Wedel's important stratigraphic excavations of 1943 in Complex A are also reported in this volume.

In 1955, therefore, we knew a lot about the site, its monuments, and some of the kinds of things that one could expect to find in excavations. Still, in the course of our work there were a number of new and unanticipated discoveries. The extraordinary size of the rectangular pits on the southern margin of the Ceremonial Court (referred to as the Southwest Platform and Southeast Platform in Drucker, Heizer, and Squier 1959: 78-108), where the two mosaic masks and their stone and clay fills each amount to about 22,800 cubic feet, represents one of these surprises. The pit for Massive Offering No. 2 (Drucker, Heizer, and Squier 1959: 128-9) was 49.5 by 20 feet and the depth 16.25 feet. Its capacity can be calculated to be about 15,000 cubic feet, and its content to comprise about 675 tons of sandy clay fills. An even larger square pit, that for Massive Offering No. 3, measured 77 by 77 feet at the top and 63 by 66 feet on the bottom, some 13 feet below. On the floor of this pit were deposited six layers of carefully finished green serpentine blocks (Fig. 1) whose aggregate weight is 50 tons (Drucker, Heizer, and Squier 1959: 130-133). The pit itself has a capacity of 77,000 cubic feet, which is equivalent to about 4,000 tons of sandy clay fills. Not only is the size of these pits unusual, but so also is their characteristic of being either wholly, or mostly, an underground feature. Only the two small, low platforms of unfired adobes, which capped the filled pits on the southern edge of the Court, provided any surface indication of the subterranean features. The pits and their contents were, in short, not intended as monuments to be seen and admired, but as great offerings which were meant to be hidden from view. In clinical psychoanalytic terms, these offerings suggest retention and an "anal character" for La Venta Olmec culture.¹ The deep pits with their fills of earth and stone are mentioned because both their size and unusual nature exemplify two characteristics of the La Venta site features, which may be termed monumentality and uniqueness. Of the several major Olmec sites in southeastern Mexico, La Venta seems to exhibit these traits in most pronounced form, but this may be a result of the more intensive excavation of this one site than any of the others. We concluded from the 1955 investigations that the La Venta site had a four-phase constructional event history which began about 800 B.C. and terminated about 400 B.C.

The 1955 excavations were published in 1959 in *Bureau of American Ethnology, Bulletin 170* (Drucker, Heizer, and Squier 1959). This monograph presented the detailed data on stratigraphy, artifacts recovered, the first detailed map based on instrument surveys of surface features of the site, and conclusions on the age of the La Venta site as indicated by radiocarbon dates of charcoal secured from excavations. Now, eight years later, we know much more about some of these matters and realize that the radiocarbon dates

¹ I do not mean to suggest this seriously as my interpretation of La Venta culture, but this ancient society is so unusual that it is interesting to examine it from any standpoint. In this case it is from that proposed by E. H. Erikson (1943, 1954).



*Fig. 1 a. Six layers of serpentinite blocks in Massive Offering No. 3, La Venta.
b. Undisturbed upper layer of serpentinite blocks in Massive Offering No. 3,
exposed in centerline trench, La Venta, 1955.*



which showed the site as having been built about 800 B.C. and abandoned about 400 B.C. are incorrect in being too young by about two centuries. In addition, since 1955, combined archaeological and geological field studies have indicated the source locations of the stones of most of the multiton sculptures in the form of colossal heads, stelae, and altars. There have been found since 1955—unfortunately almost wholly through nonscientific digging—a number of stone sculptures which have been collected and preserved in the Parque La Venta at Villahermosa. In 1967, with new information and new interpretations of older information, we are in possession of sufficient additional data to warrant bringing La Venta up to date—and that is the purpose of this paper.

La Venta ranks high in the list of important sites in Mexico, and it will no doubt be re-excavated in the future. For that reason a record of what has happened to the site will be important. I estimate that about fifty per cent of Complex A has been either adequately or inadequately examined by archaeologists, or destroyed by monument removing or earth-fill procurement activities. There are still opportunities for archaeological investigations in Complex A (the area to the north of the pyramid) which will yield more precise data on the internal stratigraphic sequence of events, and as a by-product should produce new monuments and jade offerings. Complex C, the pyramid, and the massive basal platform on which it was built have not been examined internally. It is not at all improbable that the pyramid contains tombs and offerings, and that in terms of recovery of additional Olmec treasures its excavation would pay off. To the south of Complex C and to the north of Complex A there are other monument-associated constructions about which we know nothing at all at the present time. These areas will also doubtless repay exploration.

The Mexican government has not succeeded in protecting either the La Venta archaeological zone or the secondary archaeological areas in its penumbra. There are understandable reasons for this failure, and these include: (1) inadequate personnel and finances to safeguard all of the most important sites; (2) the assumption by the Instituto Nacional de Antropología e Historia that the site has been adequately explored and that once the monuments have been removed nothing remains to warrant protection; and (3) the presence of *Petróleos Mexicanos* at La Venta with numerous workers involved with drilling, pumping oil wells, operation of a refinery, and maintenance work. There are a number of dwellings and business establishments within the archaeological zone, new roads are being built, and the urban (if it can be so-called) encroachment on the site has already reached serious proportions. What seems unfortunate is that many sites in Mexico which are no more significant and are better explored receive proper protection. By the end of another decade, if the encroachment by squatters progresses at the same rate as it has in the last ten years, it will be quite impossible for further archaeology to be carried out at the site. Today any excavation at La Venta would have to

be classed as salvage work, and even this last expedient will not be available indefinitely.

All of the above is by way of introduction. Since our excavation in 1955 there has been some additional scientific investigation at La Venta. Román Piña Chan and Roberto Gallegos in 1958 carried out what were obviously extensive explorations within the Court area of Complex A, and, probably, in the basal platform just south of the pyramid. No report beyond some brief and general remarks published in 1964 in *El Pueblo del Jaguar* (Piña Chan and Covarrubias 1964: 16-24) has appeared on this work.

It is believed that immediately after our 1955 excavations were concluded a treasure hunt of considerable magnitude occurred at La Venta, and it seems probable that many Olmec jades which have appeared on the collectors' market were found in the second half of that year. No records, of course, exist concerning this activity since the combination of the considerable dollar value of these materials and their automatic contraband status effectively suppress information. In 1958 nearly all of the La Venta monuments were removed to the open-air Parque La Venta in Villahermosa under the supervision of the staff of the Museo del Estado and with the use of PEMEX equipment. A majority of the basalt columns forming the perimeter of the Court, as well as the most deeply buried mosaic mask discovered by Wedel in 1943 in the Southeast Platform, were removed at the same time. Excavation with bulldozers as an aid in securing the sculptures, columns, and masks resulted in extensive destruction of the upper members of the layered construction deposits in Complex A. No record stakes were left to mark original locations of monuments removed, and it was with great difficulty that we succeeded, in July, 1967, in relocating our Datum 1 of 1955. When the monument removal was completed in 1958 the Mexican oil company apparently felt that the site was no longer of value, and in 1959, when the airstrip to the north of Complex A—which had originally been built in 1954 and 1955—was widened twenty meters, the necessary fill was secured in the handiest location, namely the northern half of the A-2 mound and the northwest corner of the Court.

We lack an exact inventory of what was removed from La Venta to Villahermosa after 1955, what monuments still remain at La Venta, and how many sculptures now conserved at Villahermosa have been turned up since 1955 as a result of the earth-moving activities summarized here. A monument survey should be conducted as soon as possible to determine approximate provenience, date of recovery, and date of removal of these pieces.*

Drucker and I excavated a series of short trenches in the construction layers of Complex A, as well as two stratipits in refuse deposits just west of the pyramid, between July 13 and July 22, 1967. This work was financed by the National Geographic Society. The primary purpose of these excavations

* (Note added in proof.) Such a survey has now been published by C. W. Clewlow and C. R. Corson in *Contrib. Univ. Calif. Arch. Res. Facility*, no. 5 (1968), pp. 171-82.

was the collection of charcoal for dating, and we succeeded in securing thirty-two lots of charcoal, most of which are adequately identified as belonging to one of the four construction sequence "phases" noted by us in 1955. A detailed report of this work (Heizer, Drucker, and Graham n.d.) has been written and it is hoped that this will be published in the near future. We were stimulated to carry out this brief collecting mission in order to secure charcoal for further checking our recent conclusion, already published (Berger, Graham, and Heizer 1967), that the La Venta ceremonial center was built about 1000 B.C. and abandoned about 600 B.C.² This adjusted dating moves backward in time the *floruit* of the site two centuries and makes it apparently contemporaneous with the later phase of the great site of San Lorenzo (Coe, Diehl, and Stuiver 1967; Coe 1967) about fifty miles to the southwest, which is now being re-excavated by Michael Coe.

In addition to collecting charcoal in July at La Venta, we were fortunate enough to make some archaeological observations which increase our knowledge of certain details of the site's architecture, if the earth constructions can be so termed. First is our observation concerning the north wall of the interior of the large pit which is 20 feet wide, 51 feet long, and 19 feet deep, and in the bottom of which still lies the serpentine slab pavement referred to as Massive Offering No. 2. This interior pit wall had been smoothly plastered with a layer of fine-grained yellow clay averaging about one-half inch in thickness. The smooth surface was then painted in horizontal bands, varying in height from 15 to 18 inches, of black or purplish-red mineral pigment, except for one uncolored band which may originally have been painted, perhaps with an organic material. We noted four of these bands below the top of the pit. We do not know whether all four sides of the pit interior are similarly colored. In one deep shaft dug by us to a depth of 22 feet below the present surface, we exposed a small section of the Massive Offering No. 2 pavement slabs. Two of these large, beautifully dressed serpentine blocks were lifted and we found a scatter of small, globular jade beads lying immediately underneath them. This association of jade beads with the so-called Massive Offerings was not noted by us in 1955, and this occurrence raises the possibility that beneath this and the other scarcely disturbed similar feature (Massive Offering No. 3) there may be additional ritual offerings awaiting the next excavator. I merely note these facts as an interesting supplement to what we observed about this pit in 1955.

In one of the narrow trench cuts driven east toward the centerline of the site from the cut bank on the south edge of the airstrip we encountered remnants of north-south running treads and risers. These indicate with some certainty that the A-2 mound just beyond the north edge of the basalt column-enclosed Court was a rectangular terraced platform mound. This observation

² A few radiocarbon dates from charcoal collected in July, 1967, from within the Court area of Complex A have been determined. These support the 1967 re-datings of the 1957 Michigan samples (Berger, Graham, and Heizer 1967).

is important in settling the problem of the external form of the A-2 mound, a matter not satisfactorily resolved in 1955.

Our biggest surprise in July, 1967, was connected with the La Venta pyramid, referred to as Complex C. The pyramid has only recently been cleared of its heavy forest cover so that its actual surface can be clearly seen (Fig. 2). Observing two depressions which ran from the base to the crown of the pyramid and which looked too symmetrical to be accidental erosion gullies and too large and well established to be places where excavations had been attempted, we inspected with care the outer face of the pyramid and found that the plan and exterior surface which we had published in 1959 of that great pile of clay were quite incorrect. The pyramid is represented in our 1959 monograph like any other reasonably normal Mesoamerican pyramid, as rectangular with four flat sloping sides rising evenly to the truncated top. If the La Venta pyramid was structurally unusual, it was, according to this survey, mainly by reason of the proportions of its east-west breadth, which was 240 feet, to its north-south length, which was reported to be 420 feet. The



Fig. 2 *The La Venta pyramid, July, 1967. View looking south from center of Court (Complex A).*

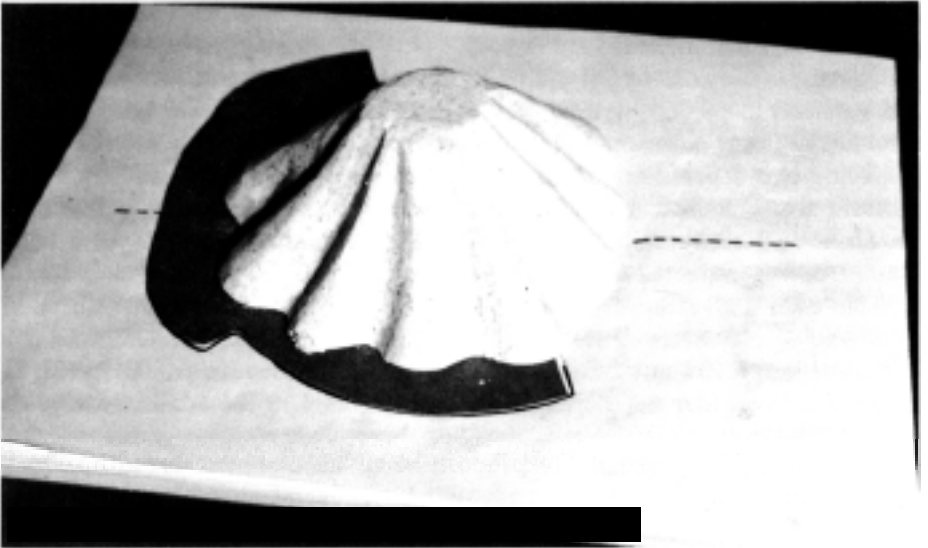
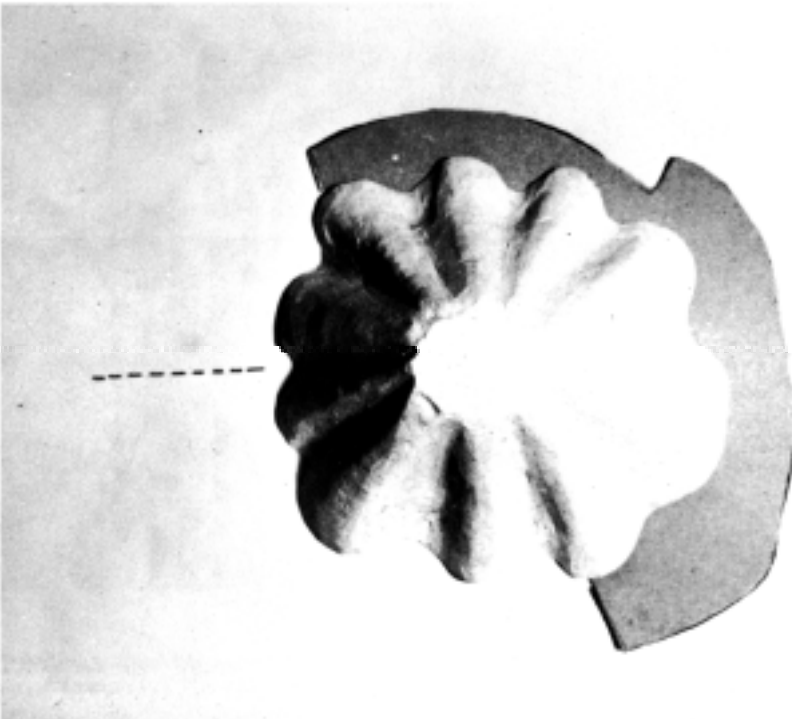


Fig. 3 Plaster model of La Venta pyramid. Dark area beneath pyramid shows general line of the leveling platform underlying southern half of structure. Dotted line shows centerline of site (8 degrees west of north).



pyramid was elegantly slender, but there seemed nothing unusual in the fact that it ran to somewhat greater length along its north-south axis because of the high importance to its builders of the north-south oriented centerline of the site. However, on our recent visit, after a single climb up to the top from the north and down to the south, and a circuit of the base, it was quite obvious to us that the La Venta pyramid was neither rectangular nor flat-sided, but that what we had assumed to be its north, south, east, and west flat sides were in fact curved outward so that its ground plan could better be called round, and that the sloping face bore a regular series of ten alternating valleys and ten ridges. The La Venta pyramid is, in short, a fluted cone. A calculation of its mass yields the figure of 3,500,000 cubic feet or 99,100 cubic meters. This is by any standard an impressive mound of piled-up earth, but it is miniscule when compared to the Pyramid of the Sun at Teotihuacán, whose mass is 840,000 cubic meters, and less than half the size of the Pyramid of the Moon, with 210,000 cubic meters. The Akapana at Tiahuanaco in Bolivia has a mass of about 390,000 cubic meters. The apparent circular ground plan of the La Venta pyramid is not accurately descriptive, and to call it a rectangle with rounded corners and convex sides or an octagon is also imprecise. If, as we incline to think, the base of the pyramid is closer to a circle than any other geometric form, a circle measuring 420 feet in diameter seems to best fit its plan. The photographs of a rough model of the pyramid provide a better impression of its form than do words (Fig. 3). The base plan of the La Venta pyramid (Fig. 4) can be made to fit with approximately the same degree of congruence a circle and a rectangle, and it is really only a matter of preference to elect one or the other as descriptive of its outline.

The neat right-angled basal platform which is shown in our 1959 publication (Drucker, Heizer, and Squier 1959, Fig. 5) as taking the form of a narrow flanking terrace on the south with a 30-foot-wide raised extension or tongue running off to the south for a distance of 80 feet, and with an 80-foot-wide terrace running along the whole of the east "side" is so incorrect as to appear now as though it were drawn by someone who had never been to La Venta but might have had five minutes browsing in Marquina's encyclopedic *Arquitectura prehispánica*. As authors of the report, we must share in the onus of having tried to perpetrate this chimera, but at the same time we must place the responsibility on our surveyor. In his defense we must remember that the pyramid in 1955 was covered with a dense growth of trees and scrub which would have been time-consuming and costly to clear. Our surveyor, with several assistants from the labor crew, did run a series of rough measurements to plot the size of what was assumed to be a rectangular truncated pyramid. Drucker and I have recently tried to defend our 1955 report (Heizer 1964; Drucker and Heizer 1965) as largely accurate against a spirited critique by William Coe and Robert Stuckenrath (1964), and we are for this reason all the more sorry to have to admit the egregious errors made with

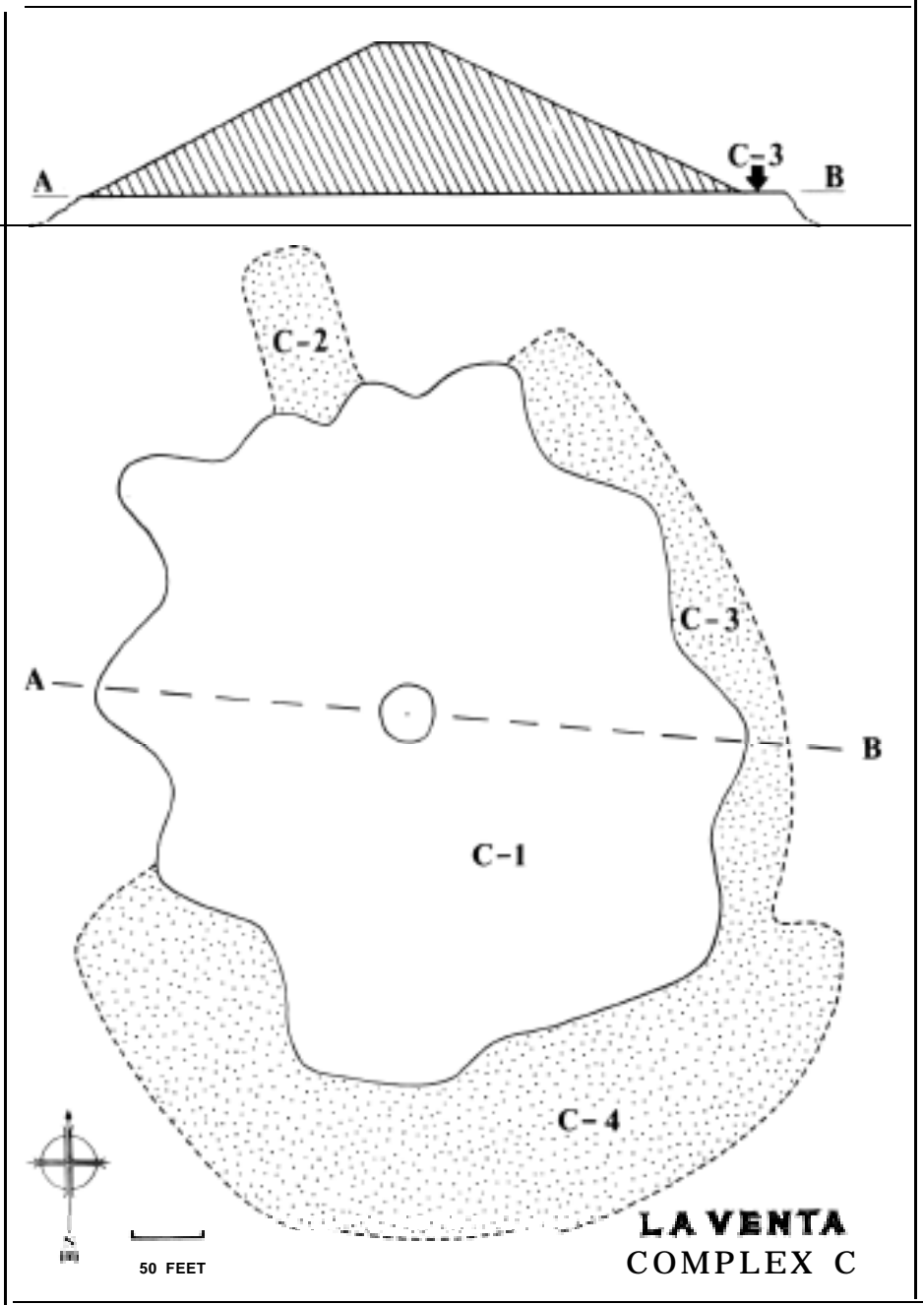


Fig. 4 Plan of base of La Venta pyramid. Based on Brunton compass survey by Drucker and Heizer in July, 1967.

regard to the pyramid's form and dimensions as well as those of the basal platform. At the same time we are happy that we have had the good fortune to recognize and correct our own mistake. A detailed record of the pyramid has been written for publication (Heizer and Drucker 1968).

The La Venta pyramid must have been erected during the time of construction of the site of which it is a part. That is, it can be assumed to date from somewhere in the period 1000 to 600 B.C. There is one radiocarbon date (sample M-536) of 2530 ± 300 B.P. (574 ± 300 B.C.) determined in 1957 (Drucker, Heizer, and Squier 1959: 265-7). It is an uncorrected date and may be too young by from 200 to 300 years (Berger, Graham, and Heizer 1967: 3). This date is derived from charcoal occurring in clean sand in what we now think may be the top of the leveling platform on which the pyramid was erected. Purely as speculation, it can be suggested that the pyramid was built between 800 and 700 B.C., which would have been about the mid-point of the site's use. It will require a substantial effort to excavate the basal platform and examine the interior of the pyramid, and until this is done we cannot hope to understand very much about the antiquity or constructional history of what is the most impressive example of La Venta architecture.

Nothing like the La Venta pyramid has, to my knowledge, been reported from Mesoamerica. The only other round pyramid (i.e., cone) of large size in Mesoamerica is the Cuicuilco pyramid whose age is unknown, but which surely dates from Late Pre-Classic (and possibly Middle Pre-Classic) times. The Cuicuilco pyramid is the oldest known such structure in the Mexican highland, and the stimulus to erect it could have come from the Olmec area. It is rather different, however, in having approach ramps and in being terraced. Harry Pollock's (1936) thorough survey of round structures of aboriginal Middle America contains no hints of similar forms. It is possible, even probable, that the La Venta pyramid is the largest construction in all of Mesoamerica dating from early in the first millennium B.C. If this is true, one may reasonably ask whether the La Venta pyramid is a copy of some pre-existing structure, or, alternatively, whether it may be an innovation conceived by the Olmec.

In the light of present information, or lack of it, we incline to the hypothesis that the La Venta pyramid is a form locally devised. If this is the case, the shape could be one arising either from the imagination or an imitation of some natural form. Some support for the second possibility can be produced. In the Tuxtla Mountains which lie about 70 kilometers west of La Venta swarms of parasitic cinder cones cluster around the base of the several Pleistocene volcanoes. One such zone of cones is in the Lake Catemaco district which is not more than ten miles distant from the slopes of the Cerro Cintepec, an eroded and long extinct Pliocene volcano, and which is the locality where most of the great basalt blocks, weighing up to thirty-six tons, used for sculpturing the colossal heads, stelae, and altars at the San Lorenzo and La Venta sites were secured (Fig. 5). The cones, therefore, would have

been familiar to the La Venta and San Lorenzo people, and many of these cones are of such recent origin (Friedlaender and Sonder 1923; Williams and Heizer 1965: 6) that it can be assumed the Olmec must have witnessed on occasion the dramatic process of their formation. It may or may not be by accident that the general proportions of basal diameter and height, as well as the slope of the sides, of these cinder cones is duplicated by the same features of the La Venta pyramid. Further, erosional gullies on some of the cinder cones are strongly suggestive of the depressions of the La Venta pyramid.³ Purely as hypothesis, it is suggested that the La Venta pyramid which rises boldly out of the surrounding terrain on the low crest of La Venta island in the coastal plain of the Tonalá River is an artifact made in imitation of the familiar cinder cone to which was attached ritual significance—it may be, in short, a surrogate volcano.

There is, I think, some basis for suggesting that there may be a connection between the volcano-like pyramid at La Venta and the two great subterranean pits beneath the Southwest and Southeast Platforms which held the mosaic masks representing the jaguar's face. The widespread identification in Meso-

³ We do not have photographs of deeply gullied cinder cones from the Tuxtla Mountains, but a search for these may produce examples. Photographs of deeply and regularly gullied cinder cones in Michoacán, which look very much like large editions of the La Venta pyramid, are shown by R. C. West (1964: Fig. 6) and H. Williams (1950: 212).



Fig. 5 Volcanic cinder cone just west of Lake Catemaco in Tuxtla Mountains. Compare profile with Fig. 2.

america of the jaguar as an underworld deity (often named "heart of the mountain"), at times associated with earthquakes (Covarrubias 1946: 78; Thompson 1950: 73-5), may account for the practice of the La Ventans of making deeply buried offerings to a deity who lived inside the earth and caused earthquakes and volcanic eruptions. Such reasoning is admittedly tenuous since it attempts to combine recent beliefs with ancient archaeological features of unknown purpose, but there is just enough correspondence between the two to indicate an encouraging lead toward the specific explanation of what have been thus far passed off simply as being enormous work projects of a ritual nature. If one reads the eyewitness account by José Mariano Moziño (1913: 103-17) of the three violent eruptions accompanied by earthquakes and ash showers that darkened the sky of San Martín volcano in 1787, it is easy to see how native beliefs in such an underworld god may have developed. Religious beliefs and observances about Tuxtla volcanoes practiced by the local Popoloca are attested by Foster (1942), Blom and La Farge (1926), and Friedlaender and Sonder (1923). One wonders if these might be taken as surviving pagan beliefs of considerable antiquity.

The corpus of Olmec art from La Venta, in the form of colossal heads, cross-legged seated human figures, box-like rectangular altars, and stelae, which are types represented by two or more examples, and of individual sculptures of substantial size, is very large. A rough count of all such pieces is fifty-five. No doubt there are numbers of such pieces still buried and awaiting discovery. Add to this the hundreds of jade pieces such as celts, figurines, earspool flares, tubes, beads, and individualized specimens of small size of the sort that can be called portable art of gem quality, the three large patterned layouts called "mosaic masks," the concave mirrors, and miscellaneous specimens, and there is enough material to stock a museum. Combine the La Venta total with the impressive amount of large sculpture from the Tres Zapotes and San Lorenzo sites and Laguna de los Cerros, and there is seen to exist a formidable array of study materials of this culture. Although each of the studies purporting to be analyses of the Olmec art style contributes importantly in one way or another to our understanding of this early and distinctive genre (Mayas y Olmecas 1942; Drucker 1952; Piña Chan and Covarrubias 1964; Stirling 1965; Coe 1965a, 1965b; Bernal n.d.; Heizer 1967; cf. also Jones 1963; Heizer and Smith 1965), we still lack the kind of detailed specimen-by-specimen study and comparison which alone can provide all of the information required to enable us to say that we know what elements the style contains and how the several kinds of productions combine to comprise a definable style.

A recent study of the Olmec colossal heads (Clewlow, Cowan, O'Connell and Benemann 1967) has produced some positive conclusions on their stylistic unity. George Kubler (1962: 65-9) and Michael Coe (1965a, 1965b) have proposed that the colossal heads can be stylistically and chronologically seriated into a sequence. A main conclusion of the recent study is that such

sequencing is not possible, but rather that the twelve sculptures form a single lot with so many correspondences that they can best be interpreted as having been made at approximately the same time at four different localities by separate groups of sculptors, who were aware of what their fellows were doing elsewhere and who were engaged in a free exchange of conventions of representation. Some may not agree with the conclusion that the Olmec colossal heads were made over a brief span of time, say a century, and since there is probably no direct way to check such a conclusion, the probability of its accuracy or inaccuracy may have to await similar studies of other classes of sculpture. Analysis of what are interpreted as rather similar ritual scenes on Stela 2 and Stela 3 from La Venta (Heizer 1967) indicates that these two large stones, weighing respectively twenty-six and ten tons, were probably sculptured by the same master. Perhaps other classes of large sculpture, such as the so-called table-top altars—in front of which a figure is seated in a niche—and the colossal heads, are specialized productions of separate local schools or workshops of sculptors. This idea is nothing more than a guess, but it finds support in the relatively uniform stylistic expression within each class. The alternative is that since the heads, altars, and stelae are markedly distinct in form and expression, they may be examples of serially produced forms. Unfortunately we have no information on whether the La Venta sculptures were fashioned early or late, or throughout the period of the site's use. Whether, as has been suggested, some of the large monuments were moved from one Olmec site to another as the locus of centers of religious or secular power shifted, we cannot say. The variable degrees of weathering and purposeful defacement of La Venta monuments may, but do not necessarily, indicate that they cover a long range of time since differential exposure and variability in the lithology of the stones could account for these differences.

We cannot now say what the implications of cultural community are in the finding that the people who imported and carved the multiton stone monuments at San Lorenzo and La Venta secured most of the raw materials at the same source, namely the slopes of the Pliocene volcano called the Cerro Cintepec in the eastern part of the Tuxtla Mountains. But this fact (Williams and Heizer 1965) is not inconsistent with the apparent contemporaneity of the two sites as evidenced by two series of recently determined radiocarbon ages of site charcoals (Coe, Diehl, and Stuiver 1967; Berger, Graham, and Heizer 1967), or with what are seen as practical duplications in many aspects of the larger stone sculptures.

The largest unanswered questions concern the source and fate of the Olmec culture, and it does not seem that we are very close to being able to answer either one of these questions. We do not know at what time, or in what place, or through what motivations Olmec culture became organized as a distinctive entity. Earlier, simpler, and smaller-scale versions of sites such as San Lorenzo and La Venta may exist which have not been searched out and identified. San Lorenzo and La Venta may be major ceremonial centers which are distin-

gushed mainly by their obtrusiveness and monumentality, and in these terms can be viewed as maximal manifestations. Were it not for the large pyramid at La Venta and the abundance of stone sculptures at La Venta and San Lorenzo, neither of these sites would seem to be very remarkable if they were encountered by an archaeologist conducting a site survey. Many of the unusual aspects of these sites have been learned only after a good deal of excavation. Equally large Olmec mound groups which lack very large stone sculptures may come to light, and these could provide us with definite leads on the reasons for the occurrence of monumental sculpture at some sites. What I am suggesting, and it is only a suggestion, is that La Venta may be nothing more than an enlarged Olmec ritual site built about the time colossal stone sculpture was making its appearance in the region, and that what is distinctive about La Venta is its size, which is a reflex of a newly achieved efficiency in organization. La Venta and San Lorenzo could thus be explained as centers of a new or revitalized cult which was unusually persuasive, materially oriented in original ways, and spontaneously rather than traditionally motivated.

It is possible, though purely hypothetical, that not long before the beginning of the first millennium B.C. there came into being an organization of ritualists—probably calendrical and weather experts—who devised and put into practice a plan to organize a large population of Pre-Classic village farmers of the southern Veracruz-Tabasco tropical lowland. There would have been advantages to both parties, the lay peasants receiving the benefits of the religious observances which included advice on farming schedules, such as the appointed day to burn the milpas, plant the new crop, harvest the fields, etc., and the religious elite having access to the labor of the peasantry during the dry season to build the platform mounds, cult houses, pyramids, etc., as well as to contribute food and goods necessary for the continuous operation of the ceremonial center. A corps of specialists who were stone carvers, wood carvers, jade workers, construction and transport engineers, etc., may have developed, who resided and labored at the ceremonial center. At a sufficiently early time in this region, which is peculiarly insulated by mountains to the south and vast swampy tracts to the east and west, there could have arisen in some such manner—directed by a “dynastic” group limited in numbers but rich in the genius of innovation and energy—the Olmec culture which we know from such sites as Tres Zapotes, La Venta, and San Lorenzo, partaking of the basic Pre-Classic type of culture which was in part modified, adapted, or elaborated, and in part consisted of wholly innovative practices and concepts.⁴

In some such fashion we can explain the unusual pyramid at La Venta as a pure invention which had no antecedent of similar size or form. The same can

⁴ The stimulus for this new direction may have been an internal one, or it could have come from outside the Olmec area. Either incentive could, with our present lack of knowledge, be argued.

be argued for the huge rectangular pits at La Venta which are floored with serpentine blocks, the three mosaic masks, the colossal head sculptures, the massive flat-topped altars, and the stelae with bas-relief scenes. The large number of individually unique sculptures known for each of the three sites mentioned can also be argued as fitting this pattern if they are interpreted as single attempts to create an expression of an idea in a society that conformed to no long-established tradition and which indulged itself according to the fresh ideas that occurred to its elite members. This hypothesis of an unusually creative society not bound by the traditional past does not, of course, have very much to support it except the uniqueness of the culture itself. It is a hypothesis, however, which seems to me to be consistent with what little we really know. La Venta, in its ecological setting, can scarcely have been the spot where the colossal sculptures were first conceived and executed, and it is to the volcanic Tuxtla Mountains, which occupy a fairly central position vis-à-vis the Tres Zapotes, San Lorenzo, and La Venta triangle, that I would look for immediately earlier phases of this culture, though this does not rule out the possibility that the development may have first taken concrete form at some other site, such as San Lorenzo. Drucker and I (1965) have, in an earlier reassessment of the La Venta data, shown that La Venta was Olmec from the beginning, and this is additional support for the idea of developmental phases having occurred elsewhere.

Such speculations are of little value, however, and what is more important in the present connection is for us to realize that La Venta is the palpable manifestation of an already developed culture. Take this truly distinctive complex, with most of its features directly referable to religion, place it in the period of time which is generally referred to as Pre-Classic or Formative, and you have a manifestation of culture whose nature allows it to be classed as civilization. This culture existed in at least four separate main localities whose domain, measured by the space within lines drawn between the sites, is not less than 2500 square miles. In this area which can be taken as the minimal Olmec domain, there existed a culture which was distinctive in its art, architecture, and ritual activities, which lived out its main life span in the first millennium B.C., and which apparently arrived at a state of cultural exhaustion prior to the appearance in clearly recognizable form of what were to become in the Oaxaca, Guatemala, northern Veracruz, and Valley of Mexico areas quite different but equally distinctive culture types. If this early flowering did in fact take place, as now seems to be the case, then that is a point of considerable interest to culture historians. But suggesting this is quite different from seeing Olmec as *a* or *the* Mesoamerican mother-culture. However, even though Olmec may not be a mother-culture, it still has a father-figure in the person of Matthew W. Stirling.

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APPENDIX

POST-CONFERENCE INVESTIGATIONS AT LA VENTA

At the time of the Dumbarton Oaks conference and the writing of the paper to which this note is appended, we had no prospects or firm plans to follow up the work of July, 1967, with further investigations. However, the prompt and favorable reaction of the Committee on Research and Exploration of the National Geographic Society to the request of John A. Graham and the present author for funds to spend six weeks at La Venta to clear the pyramid, make a detailed topographic map of that great mound, complete the site map by plotting positions of monuments and mounds in Complex B (south of the pyramid), and to scout the area for deep occupation refuse, made it possible for us (with the help of six Berkeley graduate students; E. Contreras, Jr., as representative of the INAH; and Sr. Carlos Sebastián Hernández, Conservator of the Museo Regional in Villahermosa) to realize all of this, and more, in the period from January 13 to February 17, 1968. We here report our essential findings:

1. The La Venta pyramid proved to be, as stated in the preceding article, a fluted cone with ten ridges and ten valleys (Figs. 6-9). The ten valleys or depressions are not each exactly the same, some having been shallower than others originally, and some (especially those on the west face) being deeper as a result of erosion. The valleys are definitely not natural erosion channels, but are clearly original features of the construction. No excavation in the pyramid structure itself was carried out, so we are still in the dark at this moment as regards its structural characteristics.
2. The basal platform of the pyramid was cleared of its heavy bush growth (the clearing of the pyramid and platform required the labor of sixteen *chapeadores* working fourteen days). Although the platform now appears to take the form of an elevated flat-surfaced rectangular apron (Fig. 7), we learned from our workers, and saw the evidence, that in 1958 Román Piña Chan had moved a very large amount of the upper levels of the platform on the south side of the pyramid, and had moved this fill off on the southwest corner and southern margin of the platform in such a way as to make it appear rather more formally rectangular than it was originally. It is hoped that Piña Chan made a detailed



Fig. 6 View of the pyramid before clearing; photo taken January, 1968.

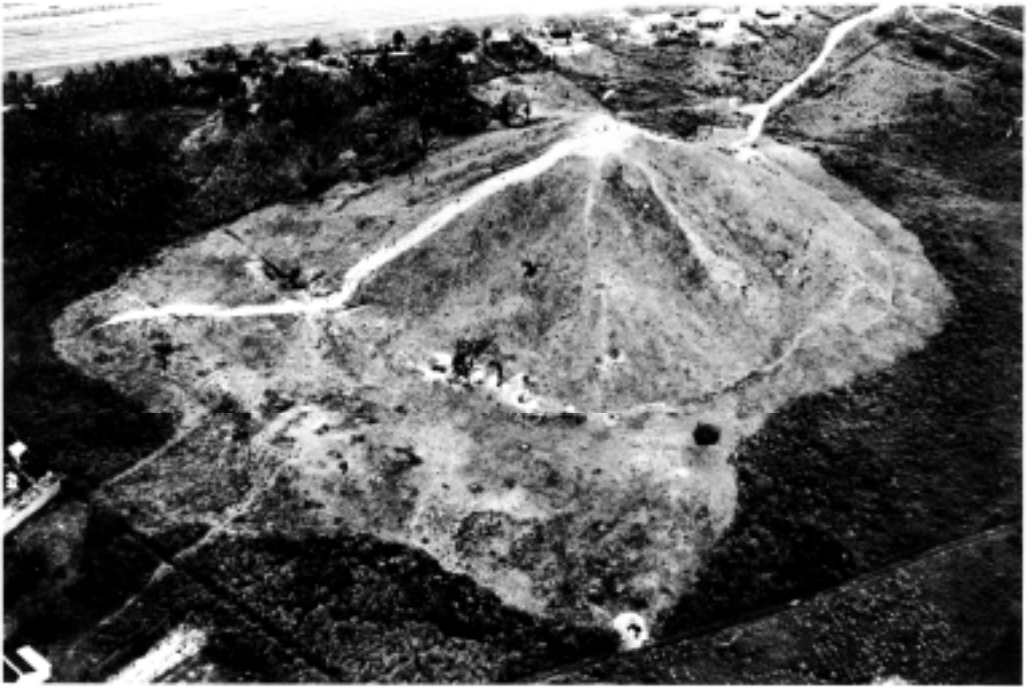


Fig. 7 The La Venta pyramid from the southeast. The present outlines of the basal platform can be seen, although the lighter-colored area which marks the extent of clearing tends to accentuate its rectangular shape.

contour map of the cleared platform before the work was begun. If he did this, and makes his map available in print, we will be able to determine the changes which were made. In default of this, only excavation will provide the information, since recent dumping fill can probably be distinguished from the pre-1958 *in situ* deposits.

3. A map was made of Complex B of the La Venta site. Houses and roads have encroached seriously on this part of the archaeological zone, and this activity continues at an accelerating pace. Heavy earth-moving equipment is readily available to local Pemex-employed persons, and mounds are continually being smoothed down to provide fill for low areas and as building sites. New sculptures turn up regularly in this work, but only some of these finds are being rescued. We interrogated everyone we could find to determine the original position of sculptures which had been encountered in this earth-moving activity, and have plotted on our map the location of nearly all such finds made since 1955. We have also assigned a monument number to all surviving but pre-

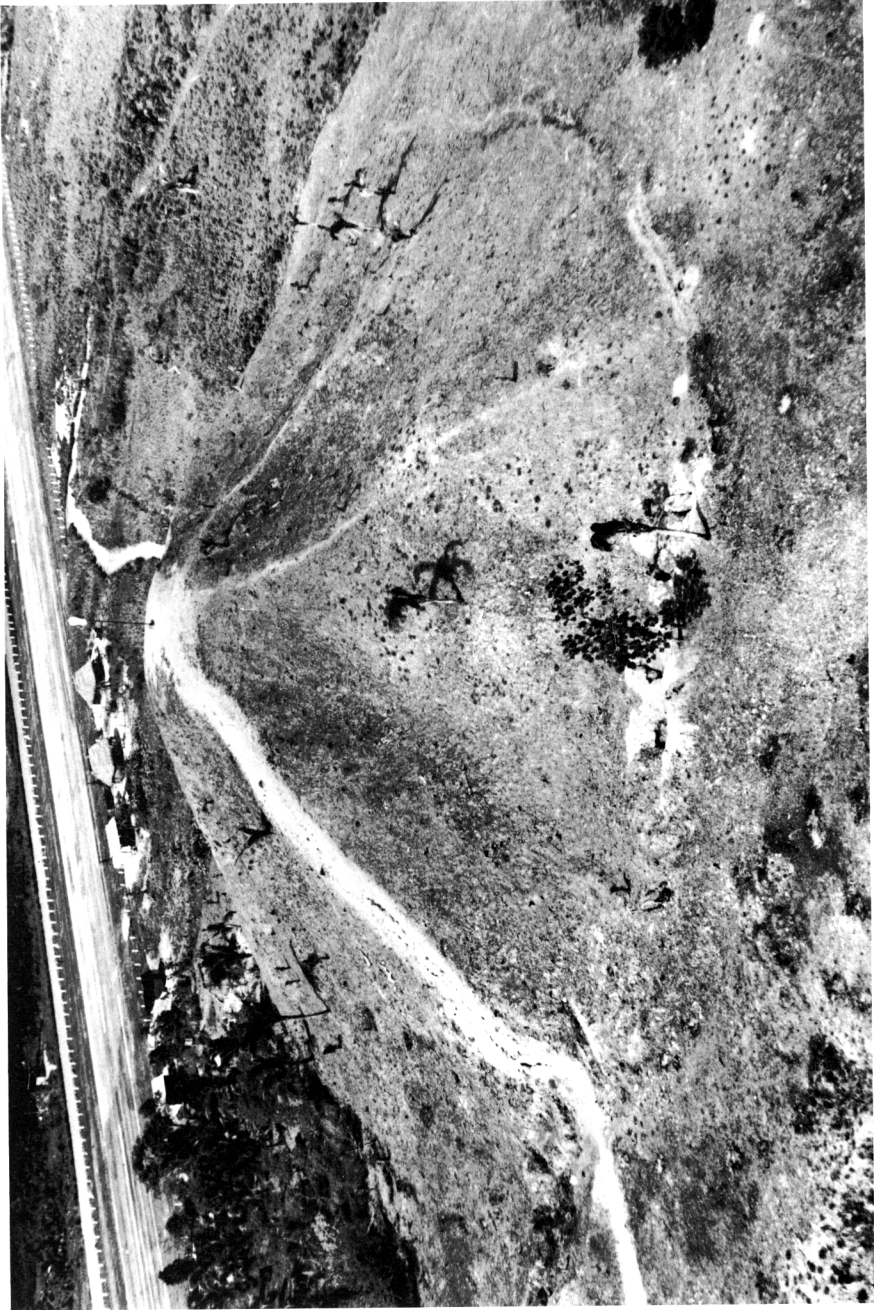


Fig. 8 Air photo of the La Venta pyramid; view from the southeast.



Fig. 9 Air photo of the La Venta pyramid from the southeast; the helicopter is directly over the "Acropolis" of the Stirling Group.

viously unnumbered stone sculptures which are now at La Venta or in the Museo Regional or Parque Museo de la Venta in Villahermosa, Tabasco. The total number of extant monuments from La Venta and the Stirling Group is eighty-five.

4. The most interesting and perhaps most important part of our recent work was the recognition and initial testing of an entirely new and very large site which lies about a quarter of a mile southeast of the pyramid of the La Venta site. We have named this the Stirling Group, in honor of its original discoverer, M. W. Stirling, who referred (1943b: 60) to two basalt columns exposed in a steep gully. Several other upright basalt columns whose tops protruded above the drift sand surface were exposed by Stirling in 1940, but he carried out no exploratory digging in that season, and the area was not examined in 1943 by Wedel nor by Drucker and me in 1955.

Very briefly, the Stirling Group appears to be wholly separate from, and physically unconnected with, the La Venta site. As of this moment we do not know very much about it, since our work there was limited to about ten days of digging, and this short period was not a very tranquil one because the work was done under continual threat of arrest by the Delegado Municipal of La Venta, who stated that the signatures



Fig. 10 Large stone bowl and lid in situ; Monument 45, Stirling Group.



Fig. 11 One of the five drains discovered in the Stirling Group; length 13 m. The junctures of the U-shaped pieces are sealed with asphaltum.

attached to INAH Concesión No. 10/67 were falsifications and that our allegation of official permission to excavate was an illegal presumption.

The Stirling Group appears to be a complex of earth and clay fill construction, with basalt columns set up in rows, although we do not know whether these form a rectangle as in the La Venta site. There is no pyramid associated with the Stirling Group. The essential features observed by us (there may be additional ones apparent when the area is properly cleared) are: (1) a large, probably rectangular, platform at the north end. This elevation we have referred to as the "Acropolis." It has a length (N-S) of at least 600 feet and an estimated width of 400 feet; this latter figure is a guess since we have no direct information



Fig. 12 *Monument 30, discovered in the Stirling Group at La Venta in 1968. Height 40 cm., width 45 cm. Note rectangular ornament on chest with St. Andrew's cross, skirt covering lower back attached to abdomen wrap. Position of legs is almost identical to the Luchador figure found near Minatitlán.*



Fig. 13 Monument 44 from the Stirling Group. This is an almost exact duplicate of the head and headdress of the sculpture from the summit of volcano San Martín Pajápan.

about the western margin. (2) South of and at a lower elevation than the Acropolis is a large flat area which we have termed the "Plaza." This appears to be about 400 feet wide (E-W) and 500 feet long (N-S). (3) Centered at the southern border of the Plaza are two parallel mounds which look very much like a ball court. Altar 4 (discovered by Stirling), the largest of all of the La Venta island sculptures, lies well within the Stirling Group Plaza.

Limited excavation in the Acropolis yielded twenty-three new sculptures, among which are two very large, round stone bowls (one with a round lid; Fig. 10), three seated human figures (Fig. 12), two pieces which in a Maya site would be called drum altars, two small fragments of a "stela" with sculpture strongly reminiscent of La Venta "Stelae" 2 and 3. The most interesting sculpture is a head with elaborate gear which is almost the exact duplicate of that reported by Blom and La Farge on the summit of San Martín Pajápan volcano in the Tuxtla Mountains (Fig. 13). Five stone drains, four with "headgates," were located and exposed (Fig. 11). These are apparently overflow drains for large open reservoirs or tanks, and appear to have served to carry excess water off to the sloping sides of the Acropolis.

No jade offerings were found, but we have good reason to believe that these do occur in the Stirling Group. Our deepest sounding penetrated to a depth of 20 feet, and at this point we were still in clay construction fills. It is obvious that the Stirling Group is large, and rich in sculpture and unusual features. Its relationship to the nearby La Venta site cannot be stated at this moment, but it seems probable, because of San Lorenzo Phase ceramics present there, that it is, in part at least, contemporaneous with the La Venta site construction phases.

- 5 (Added in proof.) A report on the 1968 investigations has been published in *Contributions of the University of California Archaeological Research Facility*, no. 5 (1968), pp. 127-203. Appended to this report is a detailed contour map of the La Venta pyramid and a plan of the La Venta archaeological zone showing location of known architectural features and monuments in Complex B of the La Venta site which lies south of the pyramid (Complex C).

DISCUSSION

DR. PETER FURST: When I saw this volcano-like structure I was reminded of some ethnographic research that I have been doing for the last couple of years with the Huichols. I am not trying to draw any lines between the Huichols of West Mexico and the Olmec, but the principal Huichol god is a fire god. This fire god was not born in a volcano, as one might expect, but, rather, he was brought out of wood by friction. The sun, however, was born in a volcano, and in Huichol mythology there is a whole complex of myths associated with the birth of the sun in a mountain called Unaxu, located in north central Mexico, which I have visited. This mountain has precisely this same form, with the gullies running down its sides. The sun apparently was a boy sacrificed either in fire or water who traveled under the earth and then erupted out of Mount Unaxu in an enormous explosion. This mountain is now a sacred mountain of the Huichol culture. Naturally, we are on very slippery ground when we try to apply this kind of data to the Olmec.

DR. HEIZER: It may seem forced to try to make this La Venta construction a volcano, but it is the only idea that we have been able to come up with, to explain something which is otherwise very peculiar. This idea is not being pressed or argued too strongly; it is simply the best guess at the moment. But your comment is very interesting.

DR. COE: I think that your analogy with the volcano is really very good. The idea of making a huge pile of earth that has ridges and gullies extending out from it is already present at San Lorenzo, so that you might take the form of the La Venta pyramid as a combination of two influences: (1) the ridge-and-gully idea from San Lorenzo—and I will show you that these are completely artificial—and (2) the concept of the volcano. The Olmec never focused, it seems, on one concept at a time; they always had more than one. You can see this in their sculpture, which is often combinatory. I think that you also find this in your great pyramid. We haven't got anything exactly like your pyramid at San Lorenzo, but the ridging is very definitely present in San Lorenzo as one of the major features of San Lorenzo and pre-San Lorenzo culture.

DR. HEIZER: It sounds as though you might have something at San Lorenzo which is like the lower part of the La Venta pyramid.

DR. COE: We might well. You have a fluted or truncated cupcake. We have nothing of this sort. The main pyramid at San Lorenzo is a miserable pyramid. It appears to be an ordinary, flat-topped, more or less four-sided mound. But the entire site itself, the plateau, is an artifact. The ridging is then to be considered analogous to the ridging of the great pyramid at La Venta.

DR. HEIZER: One of the problems is that it can't really be called a pyramid any longer, so there are terminological problems.

DR. STIRLING: It is not stone?

DR. HEIZER: It is only earth as far as one can see.

DR. BERNAL: But how do you think it was finished? Because the outside shape of an earth mound with all those slopes and gullies couldn't possibly last in that climate except for a very brief period.

DR. HEIZER: I think it could if it were covered with forests and remained covered. When it was in use it could have been repaired and maintained. There was obviously no shortage of labor at La Venta.

DR. GEORGE KUBLER: Concerning the contemporaneity of the colossal heads, you have suggested that, instead of being seriated, they are the work of several crews of sculptors working contemporaneously. It seems to me, however, that this does not dispel the problem of their seriation. No matter how closely they are made in time, there is still, as you suggested, a competitive relationship among the different crews of sculptors, so seriation is still a problem.

DR. HEIZER: I agree that they can be seriated. What I said doesn't deny that there have been earlier seriations, and that there can be additional ones. The suggestion is that the seriation probably can't be read as a chronology. Someone can, of course, if he wants to. But the correspondence of the duplications of one feature or the other in this head and that head, and the complications of the fact that they occur at four different sites, are such that if you begin to devise something you think is a sequence, then you run into a block. In other words, they look to be more or less contemporaneous, and, we might say, offhand, a century might cover the time.

DR. KUBLER: They may become less useful for large-scale demarcations, but more interesting as documents of the interaction of different artistic traditions.

MR. MICHAEL KAN: On your reconstruction of the so-called "pyramid," there seemed to be no indication of a ramp, nor any means of access up the side.

DR. HEIZER: There isn't any readily apparent stair or inclined flat-surface ramp.

MR. KAN: That in itself would be a very clear difference from other known forms, wouldn't it?

DR. HEIZER: It could have been eroded. I think most pyramids have access ramps or stairs, don't they?

DR. BERNAL: I think every single one except this monster you have brought!

DR. HEIZER: It is possible that this pyramid was not intended to be climbed.

DR. GORDON EKHOLM: It is possible that there are a number of stairways here, and that the arrangement we have is the remnant of them. Cuiculco, which you mentioned, has two ramps, not just one. It is also possible that more complicated upper surfaces on the La Venta pyramid—for the purpose of maintaining it in a heavy rainfall area—might have been in existence, and that these channels are something related to that need.

DR. HEIZER: That is possible, and it is one of the suggestions in the paper now in press. It is simply a fact that all we know at present is the base plan of the pyramid and its rough dimensions, and that the exterior consists of an alternating series of ten ridges and ten valleys.

MR. JOHN PADDOCK: You have a 400-year span, and your diagram is very clear about some of the relationships of the pre-dating of several of the older settlements, but I am not clear about whether this span is determined by the averaging of the 1955 dates and then moved back as a block 200 years or whether you have arrived at an independent 400-year span. I am particularly interested in what happened to the later dates and why they were rejected. You have, I believe, about a 900-year span in the 1955 radiocarbon samples. Why were the later dates discarded or given less weight than the earlier dates? I am concerned about the way the thing ends. In both groups of dates we are left without anything Olmec even to be considered sound later than, at first, 400 B.C., and now 600 B.C.

DR. HEIZER: The revised dating is simply based upon re-measurement of the samples collected in 1955, and the new dates are, by and large, 200 years older.

MR. PADDOCK: If we want to suppose then that you actually have a 900-year span, we should move that back also as a block 200 years?

DR. HEIZER: Yes.

DR. FLANNERY: Are the old dates and the new dates both on the same half-life system?

DR. HEIZER: Yes. The new half-life ages are given in our publication for possible future use, but reference here to old dates run in 1957 and new dates determined in 1967 refer to the old half-life of 5568 years.

DR. FURST: I have one comment to make about the stairway. Do you remember Holland's paper¹ on the sacred mountain of the Maya area as a functional counter-

¹William R. Holland, Contemporary Tzotzil Cosmological Concepts as a Basis for Interpreting Prehistoric Maya Civilization, *American Antiquity*, vol. 29, no. 3 (1964), pp. 301-306.

part to the Maya pyramid? There is a sacred mountain, about an hour south of Guadalajara, which is now being used. There is an archaeological site on top, probably Post-Classic, dating to, say, about 900 or 1000 A.D. There is no stairway, no sign of any stairway on this mountain. People have worn a path, and they go up it. You can see at different levels pottery deposits, candles, and so forth. Apparently there never was a stairway, and yet it is used as a sacred mountain. People simply climb up this mountain, sometimes straight up.

DR. HEIZER: The slope of the sides of the big mound at La Venta is about thirty degrees, so it isn't all that easy.

MR. RICHARD DIEHL: Perhaps it was a burial mound that wasn't meant to be climbed. Perhaps its sole function was as a burial mound.

DR. GORDON WILLEY: It is interesting that the earliest pyramid in the eastern United States is Poverty Point in Louisiana. It is enormous and its radiocarbon dates are just about the same as those from La Venta.

DR. HEIZER: We will probably examine the nature of the construction—of the ridges and valleys—of the La Venta pyramid and that is about all that can be done, unless one got into a big digging operation. The pyramid could be tunneled, but it is so big that it would perhaps take a year to excavate and explore it.

SAN LORENZO AND THE OLMEC CIVILIZATION

MICHAEL D. COE

Yale University

This year Olmec studies are one century old, for it was in 1867 that José Melgar submitted his pioneer report on the Colossal Head of Tres Zapotes (Melgar 1869). But such studies are quite new in the sense that it was only forty years ago that the unique characteristics of this great civilization were first recognized, and only a bare twenty-five years back that excavations began at La Venta, the first truly Olmec site to be dug. It is thus no surprise that the dust has hardly settled on a great controversy: whether the Olmec was or was not the first civilization of Mesoamerica, or, more specifically, whether the distinction of being the first civilized Mesoamericans belonged to the Olmec or the Maya. Today, the weight of opinion and fact is overwhelmingly on the side of the Olmec. This pointless dispute having been largely resolved, we can now ask deeper questions, questions which relate to the nature of Olmec society and culture, to its background, to its rise and fall, and to its heritage. In addressing ourselves to the problems, evidence from recent excavations by Yale University at San Lorenzo ought to be considered.¹

THE SAN LORENZO SITE

San Lorenzo is located in southern Veracruz, in the basin of the Coatzacoalcos River which drains the northern half of the Isthmus of Tehuantepec. It is one of three ancient settlements which cluster in the region (Fig. 1). The other two are Tenochtitlán, 2.5 kilometers to the north-northeast and situated near the banks of the Río Chiquito, an arm of the Coatzacoalcos; and Potrero Nuevo, 2.7 kilometers east-southeast of San Lorenzo. In 1946,

¹ Archaeological research was supported by a grant (GS-715) from the National Science Foundation.

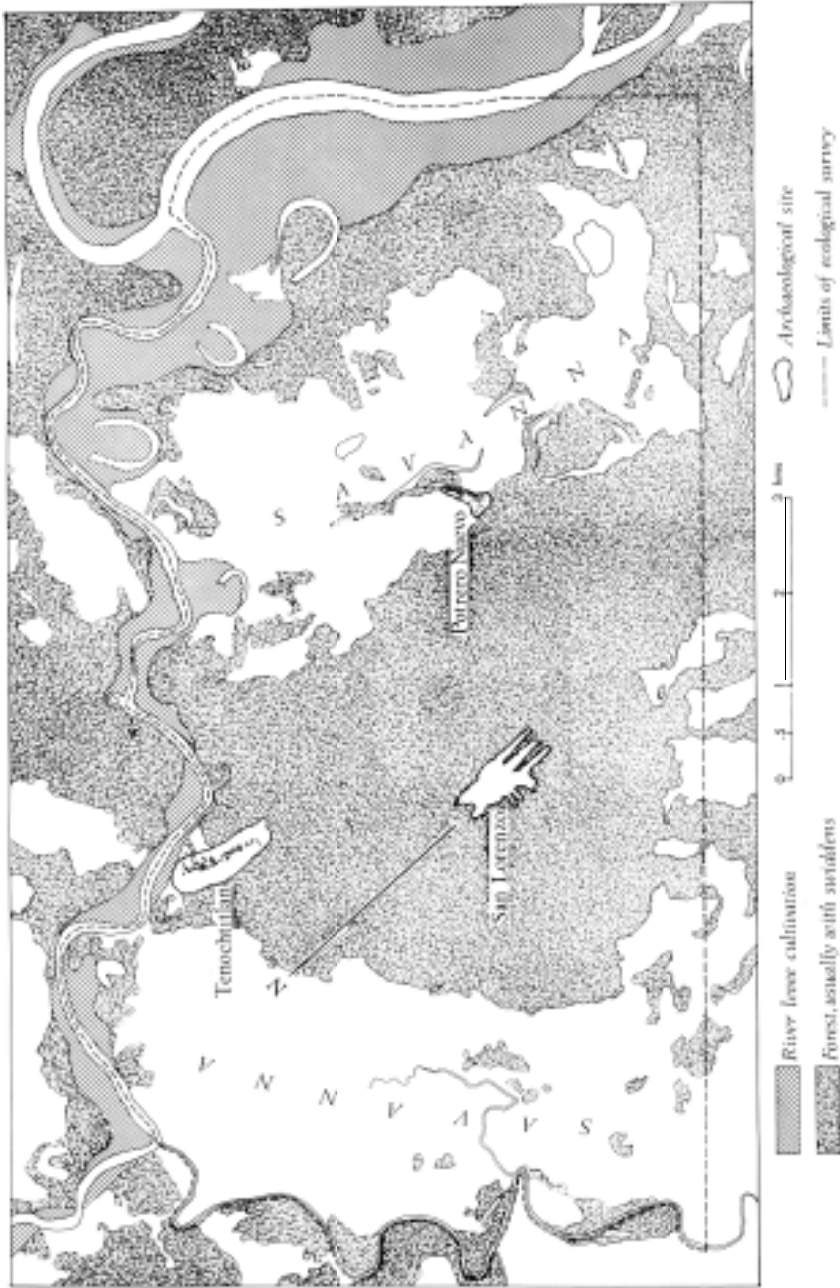
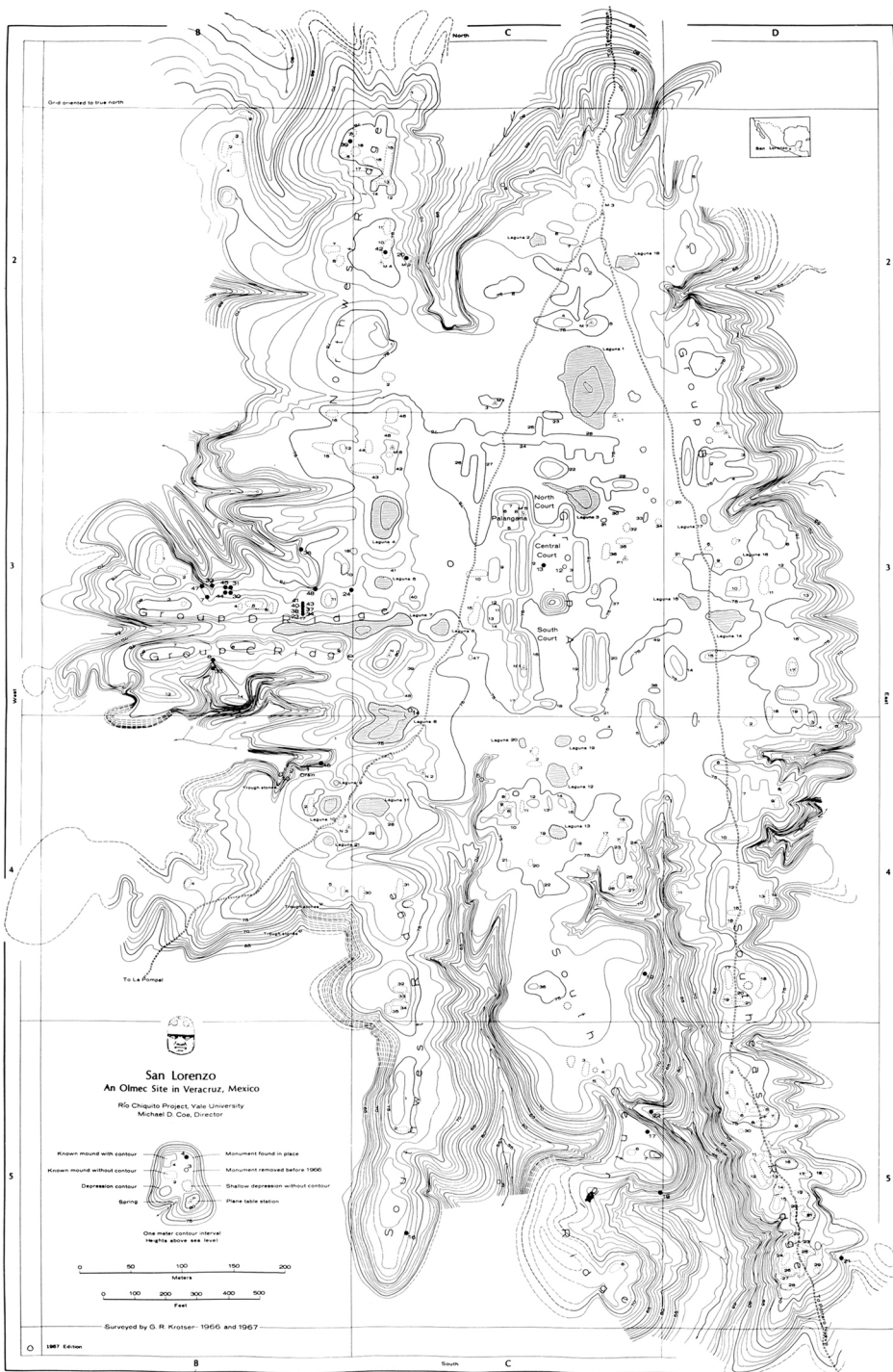


Fig. 1 Map of the San Lorenzo Tenochtitlán area of southern Veracruz. The river on the right of the map is the Coatzacoalcos; the Rio Chiquito is near the top; and the Rio Tatagapa on the left. The limits of the 75 kilometer² area surveyed by Yale University are indicated.

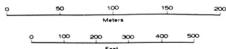


Grid oriented to true north



San Lorenzo
 An Olmec Site in Veracruz, Mexico
 Río Chiquito Project, Yale University
 Michael D. Coe, Director

- Known mound with contour
 - Known mound without contour
 - Depression contour
 - Spring
 - Monument found in place
 - Monument removed before 1956
 - Shallow depression without contour
 - Plain table station
- One meter contour interval
 heights above sea level*



Surveyed by G. R. Kistler: 1956 and 1967

Matthew Stirling and Philip Drucker carried out a surface survey and test excavations at all three sites, resulting in the spectacular discovery of fifteen Olmec stone monuments of great beauty and impressive size (Stirling 1955). Their collections of pottery were, however, never studied, a circumstance which may have led to several very erroneous guesses which have been made about the dating of the San Lorenzo monuments and their relation to the total corpus of Olmec sculpture. Stirling found most of these stones either in the ravines which surround San Lorenzo, or on their edge, and he surmised that a non-Olmec people had come and thrown them there. If this was really the case, there would be little hope of ever placing these carvings in any kind of chronological or cultural context.

The main reasons why I began a program of excavation and ecological research at San Lorenzo in 1966 were that the site occupies, from the geographical point of view, a somewhat central position within the so-called Olmec "heartland"; that it held out the possibility of discovering a datable archaeological sequence within which the Olmec monuments there might be placed (with luck); and that there was a likelihood of finding data on Olmec ecology and Olmec settlement pattern since, unlike La Venta in its swamp-surrounded island, it lies in the midst of a rich agricultural area. Two seasons have now been completed, with a third to follow (Coe *et al.* 1966; Coe 1967). The results have been more than promising, since they have thrown an entirely new light on the Olmec.

San Lorenzo, which we have mapped completely at a scale of 1:1,000, is in appearance a very remarkable site, perhaps unique in Mesoamerica (Fig. 2). In effect, it is a kind of plateau raised about 50 meters above the surrounding savannas, which are subject to annual inundations during the rainy season. On its eastern side, San Lorenzo presents a more-or-less even escarpment. But on the northwest, west, and south sides the case is different. There we see a number of very precipitous ravines which cut deeply into the plateau; most of these have permanent streams fed by small springs. At first, like Stirling and Drucker, we believed the ravines to be a natural product of erosion of the sand-and-gravel-covered plateau. We now know them to be artificial, created by the construction of enormous mound-like ridges which jut out from the site on those sides. I will later refer to the extraordinary significance of these findings. It was only after they had been mapped that we saw something else: that the Group C and Group D Ridges on the west are exact mirror images of each other, and that the same holds true for the very long Southwest and Southeast Ridges. San Lorenzo is not very big as sites go—it is only 1.2 kilometers long in a north-south direction—but it must be realized that as we now see it the entire plateau with all its ridges and ravines is an artifact on a gigantic scale.

In comparison with La Venta the surface mounds at San Lorenzo are very small, but there are many of them. The central cluster, Group A, has a north-south linear plan like that of Complex A at La Venta, with a series of rec-

tangular courts flanked by long mounds. C3-1, the principal structure, is a modestly sized, earth-and-clay pyramid roughly comparable in position to the Great Pyramid at La Venta. Other more amorphously shaped mounds of probable ceremonial use occur elsewhere at the site. By sending teams of men with machetes to clear the overlying forest, we were able to map even the smallest structures. On the San Lorenzo plateau there are slightly under two hundred house mounds, which are often laid out in groups of three around a small square court. There are two major concentrations of these, one in a line running south along the Northwest Ridge, the other along the whole of the Southeast Ridge.

One further feature of San Lorenzo should be pointed out, the so-called *lagunas*, which are depressions of various sizes and shapes scattered over the surface of the site, at least some of which contain water for all or most of the year. I will comment on these later.

THE ARCHAEOLOGICAL SEQUENCE

The archaeological sequence at San Lorenzo, and at its neighbor Tenochtitlán, is longer and more complex than we had previously thought. In the season of 1966, we concentrated upon the well-stratified village deposits at the river bank in Tenochtitlán, on the basis of which we defined the San Lorenzo Phase, subsequently radiocarbon-dated to 1200-900 B.C. (Coe, Diehl, and Stuiver 1967). The 1967 excavations were focused upon the site of San Lorenzo itself, with very extensive trenches and other cuts made in Group A (the central group), the Northwest Ridge, and the Group D Ridge.

There are two, possibly three, pre-San Lorenzo components at San Lorenzo. Although the ceramics from these early levels have not yet been analyzed, it seems that some pottery might be related to that of Richard MacNeish's (1962) Ajálpan Phase of the Tehuacán Valley. Plain bottles are in high frequency, as are *tecomates*, but decorated surfaces are rare. The earliest pre-San Lorenzo occupation has an extremely close resemblance to the Ocos Phase of south coastal Guatemala and Chiapas (Coe 1961), but certain unusual Ocos techniques such as iridescent painting and cord-marking are absent. Pottery figurines are present in pre-San Lorenzo times, and some of them have an Olmec cast. What is really remarkable, however, about these ancient horizons is the extraordinary amount of construction which must go back well beyond 1200 B.C. On the basis of our very deep cuts (such as the one in the Group D Ridge which went to a depth of 7 meters below ground level before reaching sterile sand), it would seem that the entire San Lorenzo plateau including most or all of its finger-like ridges, reached approximately its present form *before* the San Lorenzo Phase. The amount of work which must have been involved staggers the mind, for there are many thousands of tons of pre-San Lorenzo fill (consisting of earth, sand, clay, and bentonitic rock) which was brought in in basketloads to form the Group D Ridge alone.

Furthermore, in Group D we came upon a deeply buried, and possibly temporary, stepped platform of sand and clay which is also pre-San Lorenzo.

The San Lorenzo Phase proper marks the great Olmec occupation of the region. Ceramically, there is no question where it belongs: in the Early Formative or Pre-Classic, generally accepted as a period lasting from about 1500 to 800 B.C. The domestic pottery bears the closest resemblance to that of the Cuadros Phase in Guatemala and Chiapas (dated to 1000-850 B.C., Coe and Flannery 1967), to Chiapa I or Cotorra of Chiapas (Dixon 1959), and to the newly defined San José Mogote of Oaxaca (Kent V. Flannery, personal communication). Particularly distinctive is the high frequency of brushed *tecomates*, many with interior finger-punching. White-rim black ware is also common, but this has a very long life in coastal Veracruz and in Chiapas. More specific are flat-bottomed bowls with bolstered rims (which are very often white-fired) in a gray, brown, or black ware; these are virtually identical to those of the Cuadros Phase at Altamira in Chiapas,² and to what I have called "Dark Channeled Ware" at Las Bocas and Tlatilco in highland Mexico (Coe 1965: 21-2). Their exterior walls are usually excised with deep grooves expressing the typically Olmec hand-paw-wing and/or "dragon" motifs.³

San Lorenzo Phase figurines are also highly Olmec. The majority are solid and handmade, but large, hollow examples are not uncommon. Both in our excavations and in Stirling's at San Lorenzo, fragments of hollow and solid white-ware figures of the purest Las Bocas type came to light. Eyes are always indicated by shallow troughs, and the punching so frequent in La Venta or Conchas Phase figurines is totally unknown. In subject matter, the entire range from human beings to jaguars is covered; figurines depicting the so-called "one-eyed god" are also found, as well as ball players. The great Olmec sculpture of the site is securely associated with these San Lorenzo Phase materials.

There seems to have been a hiatus of several centuries duration following the demise of the San Lorenzo culture. Then, possibly from about 600 to 400 B.C. there was an important recolonization of the San Lorenzo plateau, in a phase which we have called Palangana. Our excavations in Group A have made it reasonably certain that while there are brightly colored San Lorenzo

² This statement is based upon information and photographs supplied by Gareth W. Lowe. Two sherds from the same kind of pottery showed up in Cuadros levels at Salinas La Blanca (Coe and Flannery 1967: Fig. 39a, b).

³ I now believe that I was mistaken in assigning this ware to the ~~Middle~~ Formative in my 1965 book. Probably all of the Tlatilco graves containing this pottery, and the bulk of the graves at Las Bocas (Puebla), belong to the 1200-900 B.C. range of the Early Formative. The same is probably true of Calixtlahuaca Ware and other Olmec ceramics at Tlapacoya (Valley of Mexico).

Phase floors underlying the central group, this cluster of ceremonial mounds as we see it is a Palangana construction. Probably the high mound, C3-1, the two long mounds, C3-2 and C3-3, just north of it, and the four-sided court attached to C3-2 were built then. Palangana ceramics are closely allied with those from Drucker's 1942 cuts at La Venta (Drucker 1952: 80-132), while Palangana figurines with their large-punched eyes recall both La Venta examples and types from the Conchas Phase of Guatemala.⁴ Thus, I believe that the principal mound group of San Lorenzo is a small-scale copy of the one at La Venta, quite possibly erected by a population coming from that site. Palangana refuse also appears near the surface in the Northwest Ridge, but the house mounds which we have excavated there are definitely San Lorenzo Phase and not later.

Again, there is a long period of abandonment of the San Lorenzo group. A final reoccupation takes place in the Villa Alta Phase, with Fine Orange and Plumbate pottery which clearly belongs to the first part of the Early Post-Classic period. Major construction was undertaken at Tenochtitlán by the Villa Alta people, enlarging and building over San Lorenzo Phase (and probably Palangana) mounds and maintaining by this the old north-south linear pattern of Olmec derivation. In 1967 we uncovered an extensive habitation area of the Villa Alta people on the south end of Tenochtitlán. San Lorenzo, while having a light sprinkling of Fine Orange sherds in the top 15 or 20 centimeters of the site, was considerably less important in this late phase. Finally, perhaps around 1100-1200 A.D., the San Lorenzo group reverted to tropical forest.

THE SAN LORENZO PHASE

The stratigraphic and cultural sequence at the San Lorenzo site is thus well established. The more important problem with which we have been concerned over the last two seasons is the fixing of the monumental Olmec sculpture at the site within this sequence. At first sight it might seem a hopelessly Sisyphean task, for clearly all the stones found by Stirling and some encountered by us were not only mutilated but obviously not in their original position, thus precluding a stratigraphic placement.

In 1966, limited excavations at San Lorenzo began to make us more optimistic. Monument 20 (Fig. 3), an enormous mutilated altar showing a figure seated in a niche, was found face up and deeply buried on the edge of the Northwest Ridge, and Monument 21 (Fig. 4), which proved to have a figure of a running dog or coyote on one surface, was face down in a similar situation near the tip of the Southwest Ridge. The latter stone upon excavation turned

⁴ In October 1967 I was able to examine all the La Venta materials in the U. S. National Museum. There are absolutely no San Lorenzo Phase sherds or figurines among these, but the resemblances of the 1942 collections to Palangana ceramics were overwhelming.

out to have been placed directly over an offering of serpentine axes and blanks for axes. All of the associated potsherds were San Lorenzo Phase, although Villa Alta debris was found nearby. Such associations were also found for Monument 20, where the very clear stratigraphy showed that the stone had been placed *before* the digging of a large pit filled with pure San Lorenzo refuse. The implication was that these carvings had been set in their final position within the San Lorenzo Phase, and that the supposed destruction was carried out with some degree of ceremonialism.

The clinching evidence came in the 1967 season, and has opened up a wholly new line of inquiry. Monument 23, previously seen by Stirling, is a plain stone slab set upright on the southern edge of the Group D Ridge. While excavating this stela, a test pit made just to its north uncovered Monu-



Fig. 3 Monument 20, San Lorenzo, after excavation, Height 1.40 m.



Fig. 4 Monument 21, San Lorenzo, after excavation. Length 1.30 m.

ment 34 (Fig. 5), a magnificent, half-kneeling figure from which the head had been knocked off before its burial. Perforated disks placed at the shoulders show that it was once fitted with movable arms, like a gigantic version of the jointed figurines known in later Mesoamerican contexts. A concave disk-shaped ornament decorated with a six-pointed flower or star hangs from the neck. It is in the purest Olmec sculptural style. The alignment of these two stones suggested to me that others might be found even further north in a line crossing the Group D Ridge, and this proved to be the case. Next came Monument 38, a plain fragment broken from an altar; Monument 37, a headless figure of a crouching jaguar, apparently with long tusks, very similar to a monument from Los Soldados near Las Choapas, Veracruz (Museum of Fine Arts, Houston, 1963: Pl. 1); and Monument 40, a trough-shaped stone of

the sort first suggested by Stirling (1955: 16-17) as having formed part of a drain system.

The line continued. Monuments 41 and 43 were next. Monument 41 (Fig. 6) is an enormous four-sided column now measuring 2.38 meters long,



Fig. 5 Monument 34, San Lorenzo. Height 79 cm.



Fig. 6 Monument 41, San Lorenzo. Height 2.38 m.

but broken on its lower end. It lay face down, pointing west. One surface is carved with a barbaric and very primitive Olmec relief of a were-jaguar, with smiling mouth and semicircular dimples on the cheeks. Its enormous left hand partly covers a withered right arm. Near the base of this stone was the tiny Monument 43 (Fig. 7), an eight-legged creature perhaps representing a fantastic spider with jade-quincunx symbols for eyes.

In every case the monument rested directly on a red gravel floor of San Lorenzo date, and was completely covered by, and encased in, a tough San Lorenzo fill containing sherds, chunks of bentonite, gravel, and other rocks. Concentrations of large San Lorenzo sherds which might be interpreted as offerings were between the knees of Monument 34 and elsewhere in the line of



Fig. 7 Monument 43, San Lorenzo. Length 35 cm.

stones. Over this fill, which we have labeled Zone C, is a shallow layer of late San Lorenzo refuse (Zone B), topped by a thin stratum of Villa Alta date (Zone A). Thus, every one of these monuments had been mutilated to a certain extent late in San Lorenzo times, ceremonially buried in a line, and covered up (Fig. 8). There can therefore be no question about the placement of these monuments within the San Lorenzo Phase.

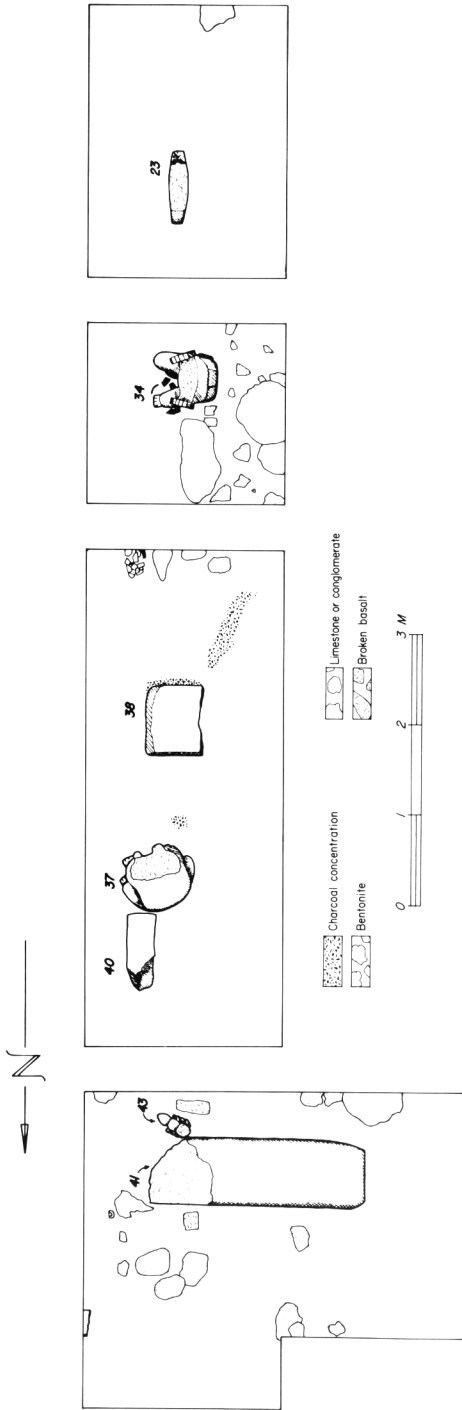


Fig. 8 Plan of the San Lorenzo-Monument 23 excavations in the Group D Ridge.

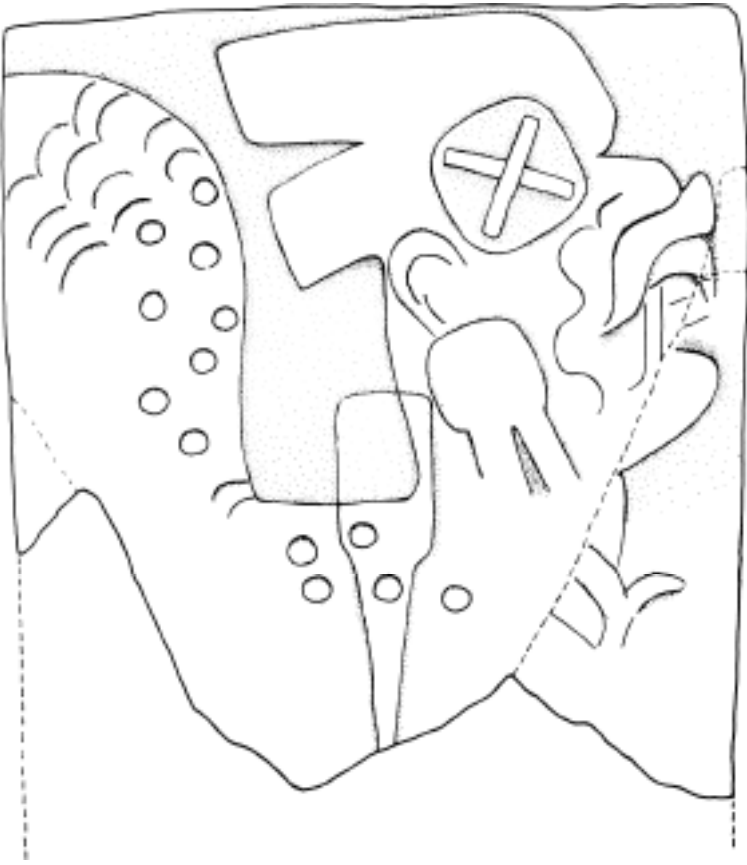


Fig. 9 Drawing of Monument 30, San Lorenzo. Width 98 cm.

These finds immediately suggested that such alignments of totally buried Olmec monuments might be found elsewhere on this ridge. Our excavations further west found this to be so. A line of mutilated stones was discovered running in an east-west direction, the most important of which is Monument 30, a fragmentary stela for which we have excellent stratigraphic associations, for it was set up in colored San Lorenzo floors (under which was a long pre-San Lorenzo sequence) and packed in the same Zone C fill. On one side of the stela (Fig. 9) is a low relief of a profile were-jaguar with the body of a snake or perhaps a dragon. Carrying this particular line to the west one crosses a narrow ravine cutting from the north into the Group D Ridge. Just beyond it was uncovered Monument 47 (Fig. 10), a fine but headless, cross-legged, and caped figure holding the head of a great fer-de-lance in his hands.

By now, the implications are obvious: the Olmec monuments of San Lorenzo were not pushed into the ravines, but are falling into them as they erode out of the Zone C fill of the artificial ridges. The chances are therefore good that there are many hundreds, possibly over a thousand, more monuments yet to be uncovered in similar alignments within all the ridges, which may be considered as cemeteries, or even as museums, of all the stones on which the iconoclasts, whoever they were, could lay their hands. According to our present data, this happened some decades before the end of the San Lorenzo Phase.

A great many other Olmec monuments have been uncovered both in excavations and on the surface of San Lorenzo. The total figure for all now known



Fig. 10 Monument 47, San Lorenzo. Height 70.5 cm.

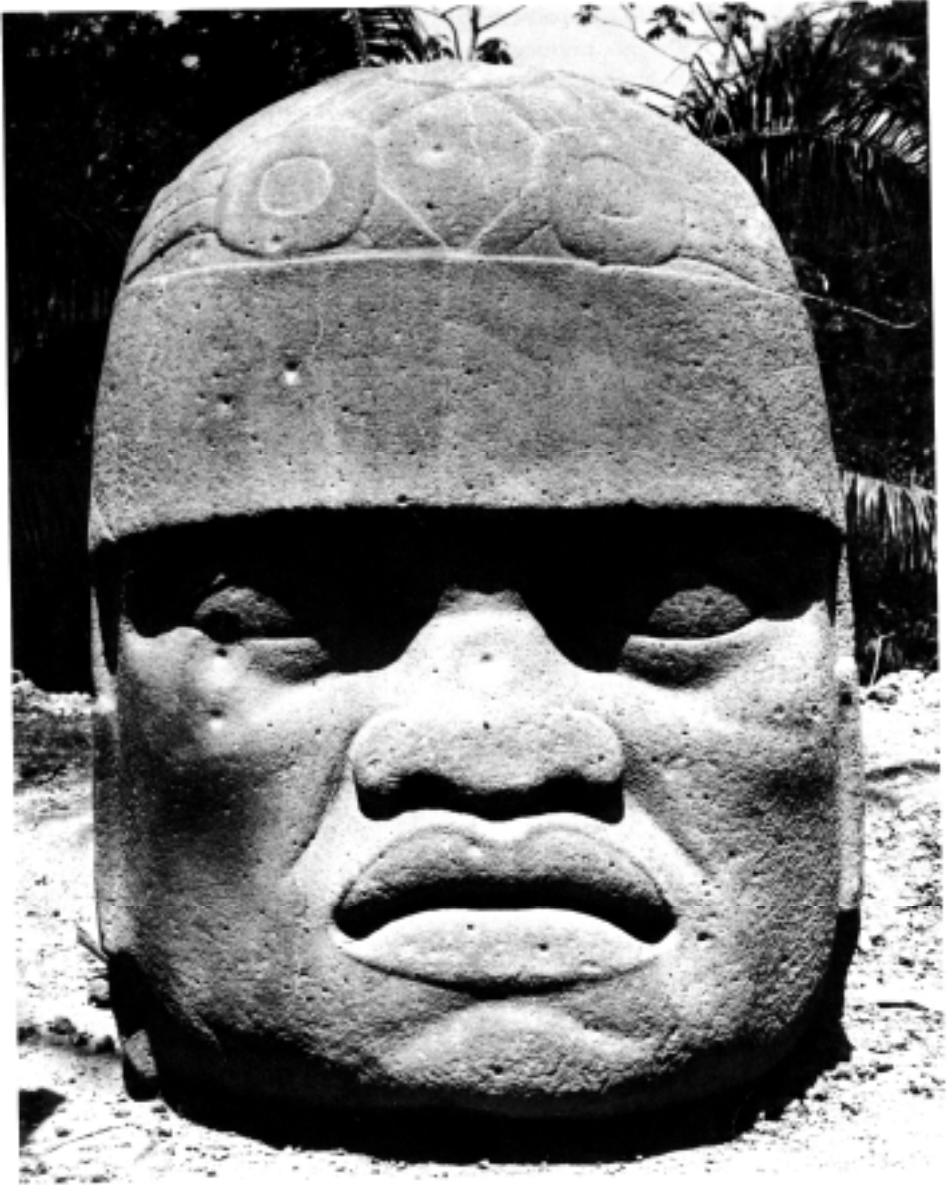


Fig. 11 Monument 17, San Lorenzo. Height 2 m.

is forty-eight, some of which are featureless basalt fragments. The most striking of the new monuments is Monument 17 (Fig. 11) on the edge of the South-Central Ridge, a fine colossal head first described by Luis Aveyrya

(1965). This had been partly disturbed by previous digging, but, after we had cleared a cut to raise it, it was obvious that it had rested in the same Zone C fill that we had seen elsewhere. Caches of multi-perforate, magnetite beads (we have also found fragments of these in San Lorenzo domestic rubbish) were recovered near the head, and it seems likely that these are the objects, connected by cords, which are depicted on the helmet of this head.

WATER CONTROL IN SAN LORENZO TIMES

Mention has been made of the small artificial ponds or lagunas which dot the present surface of the San Lorenzo site. They are now choked with weeds and sediment, and are frequented by cattle, but if they were cleaned most of them would probably hold water throughout the year. That they were used as reservoirs—or even as baths—in San Lorenzo times was shown by a trench made in Laguna 10, a hexagonal depression just north of the Southwest Ridge. This proved to have been lined with bentonite, a material used by the modern villagers as a lining for wells to ensure clean water. Laguna 10 is one of a cluster of four lagunas which definitely seem to have been laid out on a plan. Significantly, in ravines lying just northwest and southwest of this cluster have been found many of the trough-shaped stones previously hypothesized by Stirling to have been joined as drains.

Our recent excavations have shown this to be the case. A buried drain, covered by over three meters of San Lorenzo clays and fills, was located on the slope of the ravine on the northwest. Thus far only 25 meters of it have been excavated, but this is enough to show how remarkable a system it is, consisting of trough-shaped sections of basalt laid end-to-end and fitted with basalt covers (Fig. 12). With a gentle downgrade to the west of 1 in 100, even today it discharges water when the nearby lagunas are full. Joining it at a steep grade from the south is a second drain, forming what must be a huge plumbing system (Fig. 13). I have no idea what the real purpose of this system was, or what its true extent is (we will test this next season), but two things are already clear: (1) the drain system, and probably the lagunas with which it may connect, form an elaborate system of water control and represent a highly advanced knowledge of hydraulic engineering, and (2) its construction, pecked from stones not native to the region, represents an incredible expenditure of labor.

SUBSISTENCE, SOCIETY, AND HUMAN ECOLOGY IN THE SAN LORENZO PHASE

Our house-mound evidence indicates a population of about a thousand persons at San Lorenzo towards the end of the San Lorenzo Phase, following the destruction and burial of the monuments; another thousand may have lived at Tenochtitlán, and perhaps a quarter that figure at Potrero Nuevo. If this density was maintained during the height of Olmec culture within the San Lorenzo Phase, then the total population in the zone may never have



Fig. 12 *Excavated stone drain, San Lorenzo, looking west.*

Fig. 13 *Connecting section of stone drain, joining main drain. View looking south.*



exceeded 2,500 souls (that is, much less than 1,000 able-bodied men.) This is not very much, and completely inadequate to account for the enormous expenditure of time and brute force which must have been involved in the construction of San Lorenzo and the stone monuments, as well as in their destruction and burial. For instance, it would have required, according to our own experience in moving large monuments, more than 1,000 men to have dragged Monument 20 to its present resting place (and we can prove that this was done without the benefit of sledges or rollers)⁵; to have set the forty-ton Monument 14 into motion would have required twice that number. The conclusion is inescapable: these centers were drawing upon a vastly larger support area with an untold number of inhabitants, a conclusion also reached by Heizer and Drucker in their study of La Venta.

We can also set a limit to the local population density following another line of reasoning, namely, that of human ecology. We are presently making a study of a 75-square-kilometer sample area, centering on San Lorenzo, on the basis of fine-scale photogrammetric mapping.⁶ This research includes detailed soil mapping; plotting of fields, crops, and vegetation changes; and accurate analysis of nonagricultural subsistence practices, such as fishing and hunting. If our assumption that the environment in San Lorenzo times was almost identical to that prevailing today is correct—and it appears to be, from identifications of tropical forest tree species represented in San Lorenzo hearths⁷—then this study should establish the ultimate human carrying capacity of this highly varied land sample. Although the analysis is only in its first stages, I have the feeling that the pressure of short-fallow swidden farming on the land is now about as high as it can be without resulting in agricultural collapse, and that the present-day population figure—also about 2,500—represents an upper limit for the zone under aboriginal conditions.

Of course the Ohmec of the San Lorenzo Phase were corn farmers, as abundant metates and manos testify. We also have good data on their hunting and collecting practices through lucky accidents of bone preservation, which is generally poor. In spite of a handful of projectile points which have come to light, they were not interested in hunting to any extent. Dogs, especially juveniles, were apparently eaten more than deer. Most abundant of all in

⁵ There are well-marked striations resulting from dragging (presumably with multiple ropes) on the base of Monument 20. Wear on the forward edge of these striations shows that the stone was moved *after* it had been mutilated. This does not preclude the use of friction-reducing sleepers. See discussion in Heizer 1966.

⁶ Supported by National Science Foundation grant GS-1593, with the cooperation of the Cia. Mexicana de Aerofoto, S. A.

⁷ Identifications made by Dr. B. Francis Kukachka, United States Department of Agriculture, Madison, Wisconsin.

the faunal remains are fish and turtle, testifying to a super-sedentary way of life to which Flannery and I have drawn attention as the *sine qua non* of permanently settled villages (Coe and Flannery 1967: 102-5). It also seems to have been the *sine qua non* of civilized life.

What conclusions may we then draw from this? Most importantly, that the Olmec of San Lorenzo were very much the center of a coercive state of grandiose proportions. This was not merely another chiefdom on the order of Easter Island, where tribal leaders commanded the erection of statues which were admittedly huge, but were quarried from nearby slopes. In the case of San Lorenzo, as Williams and Heizer (1965) have demonstrated, the source of stone was the Cerro de Cintepec, 70 kilometers northwest of San Lorenzo and a great deal further by the circuitous water route by which the monuments must have reached their final destination. We are dealing with a people who could pile up hundreds of thousands of tons of earth and rock fill to the orders of their rulers. We are dealing with a people who could drag multi-ton stones incredible distances. And we are dealing with a highly sophisticated population which included artists working in a sculptural style that can only be called "great."

Was this a state, or was it not? Remember that archaeologists dealing with exclusively material remains are hard-pressed to extract social or institutional evidence from their data. Julian Steward, who has been particularly concerned with the history and prehistory of institutions, has said that "a state level of integration is marked by the appearance of new patterns that bring several multifamily aggregates, or folk societies, into functional dependence upon one another within a still larger system" (1955: 55). This new level frequently requires such societies to participate in large-scale public works; to specialize in certain manufactures and products for exchange within the system; to organize for joint warfare; to bow to a national law; and frequently to accept a state religion. The administering of such an institution is accomplished by the mechanisms of social stratification and national bureaucracy. I cannot conceive of the San Lorenzo Olmec as having been organized on any system but this, a viewpoint reinforced by a consideration of Olmec civilization in general.

THE SAN LORENZO PHASE AND EARLY MESOAMERICAN CIVILIZATION

In a recent article (Coe, Diehl, and Stuiver 1967), six radiocarbon dates were presented which showed that the San Lorenzo Phase could be placed within the 1200-900 B.C. span. We now have an additional seven radiocarbon determinations which completely confirm these conclusions (Fig. 14). All of these new dates, with the exception of the aberrant Y-1907 (from scattered charcoal under and near Monument 21 and probably a mixture of San Lorenzo and Villa Alta material), were run on charcoal from hearths at the San Lorenzo

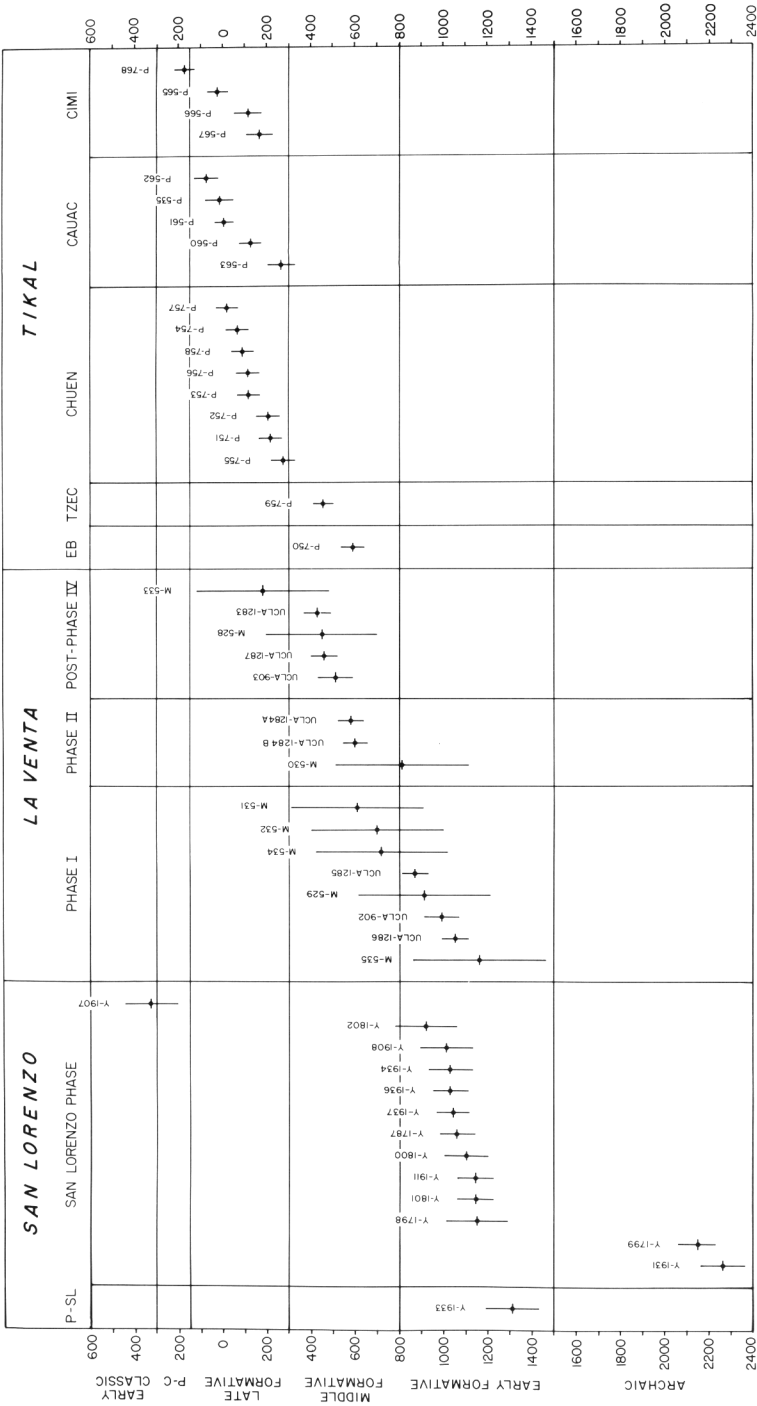


Fig. 14 Chart of radiocarbon dates for San Lorenzo Tenochtitlán, compared with those from Formative occupations at La Venta and Tikal. The radiocarbon dates have been calculated on a half-life of $5,570 \pm 30$ years, with the years B.P. subtracted from A.D. 1950.

site.⁸ Charcoal sample Y-1934 dates the beginning of construction on B2-1, a small temple mound on the northwestern side of the San Lorenzo site. Stratigraphically speaking, the earliest sample we have run thus far, Y-1933, dates a pre-San Lorenzo occupation deeply buried in the Group D Ridge, suggesting that this goes back beyond 1300 B.C.

On this basis, let us now consider the relationship between San Lorenzo and La Venta, the greatest Olmec site, lying only 85 kilometers to the northeast. Taking all past and present La Venta radiocarbon dates into consideration (Drucker, Heizer, and Squier 1959: 260-7; Berger, Graham, and Heizer 1967), the San Lorenzo Phase must be about contemporary with Phase I at that site. Phase II, with which at least one of the serpentine mosaic pavements is associated, seems to be later, perhaps 800-600 B.C. and thus early in the Middle Formative. Phases III and IV in which the richest offerings and tombs can be fixed, must follow in very short order, for the post-Phase IV dates begin no later than 500 B.C.

I now suggest, reversing an earlier position (Coe n.d.), that the majority of the thirty monuments known for La Venta is exactly contemporary with the San Lorenzo Phase and that therefore these stones, regardless of their later stratigraphic position, were carved in Phase I. With the exception of La Venta Stclae 2 and 3, and of the relief-carved schist slabs (Monuments 22 and 25-27), we clearly have in both sites an identical corpus of monuments. Also to be added to this corpus of "classical" Olmec sculptures are all of the known monuments from Laguna de los Cerros and Estero Rabón (to the northwest and southwest of San Lorenzo, respectively); Monuments I and M at Tres Zapotes; and individual pieces from such places as Piedra Labrada, San Martín Pajápan, Los Soldados, Arroyo Sonso, Antonio Plaza, and Misantla.⁹ Every one of these sites is in southern Veracruz and western Tabasco, in a highly restricted zone only 160 kilometers long and 60 kilometers wide.

There is not space here to define what I mean by the "classical" Olmec sculpture style. Within the total development of early Mesoamerican sculpture, however, this style heavily emphasizes three-dimensional representation; in the San Lorenzo group, for instance, full-round monuments outnumber

⁸ Since this was written, an additional San Lorenzo Phase sample from the San Lorenzo site has been run. This is Y-1939, measuring 1140 B.C. \pm 120. Incidentally, persons comparing the radiocarbon dates for the San Lorenzo Phase with chronologies based upon other methods (i.e., the chronology for ancient Egypt) would have to apply corrections for the newer half-life and for fluctuations in radiocarbon production; these would make the San Lorenzo dates substantially older than they are presented here.

⁹ These monuments are illustrated and described as follows: (a) *Laguna de los Cerros and Estero Rabón*: Medellín Zenil 1960; (b) *Tres Zapotes*: Stirling 1943; (c) *Piedra Labrada*: Blom and La Farge 1926-27, Fig. 40; (d) *San Martín Pajápan*: Blom and La Farge 1926-27, pp. 45-7, Figs. 41-3; (e) *Los Soldados*: Museum of Fine Arts 1963, Pl. 1; (f) *Arroyo Sonso*: Nomland 1932; (g) *Antonio Plaza*: Corona 1962; (h) *Misantla*: Medellín Zenil 1963.

pure reliefs by five to one. The exactly opposite ratio prevails later on, in the Izapan style and in the first monuments of the lowland Maya area. Colossal heads, figure-in-a-niche altars, animals and were-animals, and figures seated tailor-fashion are all hallmarks of this early Olmec style, as is the peculiarity of adding jaguar claws to the appendages of human beings and other non-feline animals. Shared details are so specific that I think we have here not only a single culture and single belief system but also a single state. Laguna de los Cerros has a good representation of San Lorenzo Phase pottery and figurines,¹⁰ but these are totally absent in the 1943 collections from La Venta, which I have examined with care. The reason probably is that between 1200-900 B.C. the island-bound La Venta was an "empty" center, with little if any local population. The Drucker 1943 collections are, however, closely linked with the Palangana Phase of San Lorenzo, and it is likely that by Phases III and IV there was a substantial peasant occupation near the great center.

Certainly the same cataclysm that resulted in the mutilation and burial of the San Lorenzo sculptures also took place at La Venta, for an identical pattern of defacement can be seen on the monuments from both sites: axe-grinding marks, outright smashing off of great chunks and flakes, and on the sides of the niche-type altars, the cutting out of oblong slots (dimpled pits, however, seem absent at La Venta). The San Lorenzo data imply that this happened as the result of internal strife, for ceramically, anyway, the phase continues for a time. Taking La Venta into account, this would suggest to me that an entire Olmec state fell into disarray about 900 B.C. San Lorenzo is subsequently abandoned, but La Venta goes on to even greater brilliance, and so does Tres Zapotes. The subsequent story of Olmec evolution and the eventual unfolding of Izapan and early Maya civilization is beyond the scope of this paper, but suffice it to say that the evidence from published radio-carbon dates shows a genuine "sloping horizon" from the early Olmec achievement to the great culture of the Maya lowlands (Fig. 14). It is no longer a competitive question of priority, but of discovering the mechanisms of how the pattern set by the Olmec was transferred from them to later peoples.

CONCLUSIONS

We have seen that the heights of Olmec civilization were reached as far back as the Early Formative, in the 1200-900 B.C. span. We have seen evidence that there was already a coercive state by this time, with control over vast populations and probably over a very far-flung area (I personally believe them to have controlled Puebla, Morelos, and perhaps Guerrero), with a state religion centering on the jaguar-like rain god, and with talented and

¹⁰ Information supplied by Terrence Grieder, who examined the ceramic material from Trench 14 at Laguna de los Cerros. This site also has a deposit of trough-shaped drain stones; further excavations here might reveal a system like that we found at San Lorenzo.

ambitious sculptors. These early Olmec were the first and, ironically in spite of all that has been wishfully written on the subject, one of the very few Mesoamerican "hydraulic civilizations"—hydraulics, of course, devoted to functions which were definitely non-agricultural, but which were water control just the same.¹¹ They were above all obsessed with getting people to work, to work so hard and so long that they did things one would *a priori* think impossible. If there was a hard way to do anything, they did it. There was a Veblenian waste of labor and material on a hyper-conspicuous scale. Along with this prodigality went an experimentalism expressed mainly in sculpture and in site planning, for who else prior to them had ever done anything similar?

I have yet no idea whence all this came. The pre-San Lorenzo peoples transmitted many ceramic traits; there is a suggestion of "Olmecness" in some of their clay figurines; and they began to move prodigious amounts of fill to make the strange San Lorenzo plateau into something of its present semblance. It might be that some of the cruder, less "classical" Olmec reliefs from San Lorenzo (Monuments 21, 41, and 42) were carved before 1200 B.C., but these have all been found in San Lorenzo Phase deposits. Surely the use and transport of great stones, the Olmec iconography, the drainage system, and a host of other traits come from some other place as yet undiscovered. Berger, Graham, and Heizer (1967: 8) have recently suggested an *ur*-Olmec locale on or near the slopes of the Tuxtla Mountains, where the great basalt boulders are, and this is a likely possibility. But right now we do not know the answer to the great question of Olmec origins.

The sudden appearance of Olmec civilization in full flower right after 1200 B.C. raises the problem of evolutionary rates and trends not only in Mesoamerica but in other nuclear areas where what Morton Fried has called "pristine" civilizations have been identified. The model of cultural evolution espoused by V. Gordon Childe, Leslie White, and their followers is essentially a materialistic one: excepting destruction and cataclysms, there has been a steady and cumulative control of man's environment through increasingly efficient technology, a smooth progress which is matched by an increasing complexity of culture. But what do we do with the Olmec in this scheme, or for that matter with the Chavín of Peru and Shang of China, which also sprang upon the scene abruptly? While all of these pristine civilizations have as their prior condition a settled, agriculture-based way of life, there is nothing inherent in this way of life which necessarily implies that the jump to civilization *will* be made; the example of the non-civilized, non-state chiefdoms of

¹¹ The San Lorenzo system probably was not very different in its functions from the stone aqueducts of the Baths of Netzahualcōyotl at Texcotzingo, on the eastern side of the Valley of Mexico. These aqueducts are a key piece of data for devotees of the "hydraulic civilization" theory (see discussion in Wolf and Palerm 1955).

the prosperous Intermediate Area of the New World is a case in hand, as Gordon Willey (1962: 9) has pointed out.

Economically speaking, the San Lorenzo environment is rich, beyond any doubt. The natural river levees (Fig. 1) which are annually inundated now afford a dependable and tremendously productive corn agriculture, a situation almost paralleling that of the Nile Valley and one which must have prevailed in Olmec times as well.¹² But high production does not explain why this particular social system, this religion, this state, and this artistic style arose when they did and where they did. Human ecology has its moments of enlightenment for prehistory, especially for the study of peoples on a relatively simple and environment-bound level of organization. With the pristine, or any other, civilizations we have moved to what Steward terms a higher level of integration, and additional kinds of causality must be sought. The precipitous ascent from an Early Formative village life to the Olmec civilization is an example of a quantum evolution for which the valid explanation might well lie more in the realm of ideas and institutions rather than in modes of production. In this regard, Willey (1962) has already suggested an ideological causality for the Olmec phenomenon, and Robert Adams (1960) has argued for the priority of state institutions over irrigation, for instance, in early Mesopotamia.

So, a sudden commitment on the part of pre-San Lorenzo tribal leaders to vast public works in honor of the rain god might well have opened Pandora's box, just as yesterday's decision by some new nation to have motor cars would also bring a host of concomitants (asphalt roads, gas stations, street lights, traffic police, and so forth) in its wake. To make such a grandiose project work, even though suggested by purely ideological considerations, it would have been necessary to impose a super-tribal order—a state, in other words—under the direction of a super-tribally recognized power which quite likely was a now-royal lineage. Despotic authorities demand a public recognition of themselves and their ancestors in the form of great images as the symbols of their power. States demand armies, and armies look for conquest. An increasing prosperity leads an upper class to look for more costly tribute and more refined luxuries, and may have taken the Olmec on a search for jade, serpentine, and magnetite. In short, the entire transition from tribe to state may have been very brief. But once that step was taken, there was no going back. A pristine state bent on conquest, tribute, and proselytizing acts as a catalyst in the eventual evolution of a great culture area like Mesoamerica from a simple food-producing stage to civilization. The pattern that it has set in social, political, religious, and artistic behavior becomes the pattern—often quite altered through time and space—of the others.

¹² The implications of river levee cultivation for the early rise and dominance of Olmec civilization were first pointed out by Alfonso Caso (1965). In the argument that follows, I have been strongly influenced by Caso's ideas.

I think that these events happened a very, very long time ago in the Early Formative of the Mexican Gulf Coast, and that the Olmec pattern was eventually to become through many transmutations a Mesoamerican way of life.¹³

¹³It is in this sense that I personally believe Olmec to have been the *cultura madre* of Mesoamerica, although I fully realize that in individual civilizations of later times many other factors and influences were at work. Its historical role for Mesoamerica would have been comparable to that of Classical Greece for Europe.

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APPENDIX I

RADIOCARBON DATES FROM SAN LORENZO TENOCHTITLÁN

The chart presented in Fig. 14 is based in part upon the radiocarbon dates listed below. The analysis of the charcoal samples was carried out by the Radiocarbon Laboratory of Yale University, under the direction of Dr. Minze Stuiver. It should be remembered that these dates represent the "radiocarbon age" of each sample: they have been calculated on the basis of a C^{14} half-life of 5,568 years, while the conversion to calendar years was done by subtraction from 1950 A.D.

| | | |
|--------|--|--------------------|
| Y-1797 | REMOLINO (riverbank excavations below Tenochtitlán), charcoal from three hearths in Level 10 of Cut 1. San Lorenzo Phase. | 1060 B. C. ±80 |
| Y-1798 | REMOLINO, charcoal from hearth in Level 12, Cut 1. San Lorenzo Phase. | 1150 B. C. ±140 |
| Y-1799 | REMOLINO, charcoal from four hearths in Level 14, Cut 1. San Lorenzo Phase. <i>Comment: too old, probably mixed with asphalt ("chapopote") fragments.</i> | 2150 B. C. ±80 |
| Y-1800 | REMOLINO, charcoal from four hearths in Level 18, Cut 1. San Lorenzo Phase. | 1100 B. C. ±100 |
| Y-1801 | REMOLINO, charcoal from hearth in Level H, Cut 4. San Lorenzo Phase. | 1140 B. C. ±80 |
| Y-1802 | REMOLINO, charcoal from hearth series associated with deposit of whole and fragmentary pottery vessels, Cut 4 ¹ . San Lorenzo Phase. | 920 B. C. ±140 |
| Y-1907 | SAN LORENZO, charcoal from offering area underneath Monument 21. San Lorenzo Phase. <i>Comment: too young, probably mixed with charcoal from the Villa Alta Phase; the stratigraphy here was very complex as the monument had been placed at the juncture of three gullies.</i> | 330 A. D. ±120 |

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| | | |
|--------|---|-------------------|
| Y-1908 | SAN LORENZO, charcoal from hearth in Level D, Cut 1, Central Court excavations. San Lorenzo Phase. | 1010 B.C. ±120 |
| Y-1911 | SAN LORENZO, charcoal from hearth at top of Floor 7, Zone D, Cut 1, Monument 30 excavations. This zone predates the final setting of the monument, a carved stela. | 1140 B.C. ±80 |
| Y-1931 | SAN LORENZO, charcoal from wood identified as palm, from various concentrations in Zone I, Cut 2, Monument 23 excavations. Unnamed Pre-San Lorenzo Phase. <i>Comment: too old, perhaps some asphalt lumps present.</i> | 2260 B.C. ±100 |
| Y-1933 | SAN LORENZO, charcoal from concentrations in dark sand layer (Zone Q) of Cut 1, Monument 30 excavations. Unnamed, pre-San Lorenzo Phase. | 1310 B.C. ±120 |
| Y-1934 | SAN LORENZO, charcoal from concentration just above bright red clay fill of Zone D in Mound B2-1 excavations. Should date beginning of construction on this temple substructure. San Lorenzo Phase. | 1030 B.C. ±100 |
| Y-1936 | SAN LORENZO, charcoal from wood identified as Mexican White Pine (<i>Pinus ayacahuite</i>), from hearth in Zone A, 2.75-2.90 m. level of Stratigraphic Pit II. San Lorenzo Phase. | 1030 B.C. ±80 |
| Y-1937 | SAN LORENZO, charcoal from hearth in Zone A, 2.90-3.05 m. level of Stratigraphic Pit II. San Lorenzo Phase. | 1040 B.C. ±70 |
| Y-1939 | SAN LORENZO, charcoal from hearth in Zone A, 3.20-3.35 m. level of Stratigraphic Pit II. San Lorenzo Phase. | 1140 B.C. ±120 |

APPENDIX II

STONE MONUMENTS OF SAN LORENZO

| No. | <i>Description, Reference, and Present Location</i> |
|-----|--|
| 1 | Colossal head (<i>"El Rey"</i>). Stirling 1955, Pls. 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, Pls. 9, 10, 11a. Jalapa. |
| 5 | Colossal head. Stirling 1955, Pls. 12, 13. Jalapa. |
| 6 | Human head broken from larger figure. Stirling 1955, Pl. 14. Tenochtitlán. |
| 7 | Elongated feline, head missing. Stirling 1955, Pl. 17a. Tenochtitlán. |
| 8 | Flat slab with celt-shaped depressions (<i>"mesa de billares"</i>). Stirling 1955, Pl. 15a. San Lorenzo. |
| 9 | Hollow duck figure, top missing. Stirling 1955, Pls. 17b, 18. Jalapa. |
| 10 | Seated were-jaguar with "cestus." Stirling 1955, Pl. 15b. Jalapa. |
| 11 | Seated headless figure holding bar (<i>"scribe"</i>). Stirling 1955, Pl. 16a. Jalapa. |

- | No. | <i>Description, Reference, and Present Location</i> |
|-----|---|
| 12 | Seated headless figure holding baby. Stirling 1955, Pl. 16b. Tenochtitlán |
| 13 | Stone ball. Stirling 1955, Pl. 11b. San Lorenzo. |
| 14 | Altar with figure in niche holding rope binding captives on sides. Stirling 1955, Pls. 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. Medellín 1960, Pls. 2, 3. San Lorenzo. |
| 17 | Colossal head. Aveleyra 1965, Fotos 18, 19. Coe 1967, Foto 7. San Lorenzo. |
| 18 | Fragment of altar with two Atlantean dwarfs in profile. Coe <i>et al.</i> 1966, Foto 24, San Lorenzo. |
| 19 | Colossal head, completely mutilated. Coe <i>et al.</i> 1966, Foto 25. San Lorenzo. |
| 20 | Altar with figure in niche holding child. Coe <i>et al.</i> 1966, Foto 26. San Lorenzo. |
| 21 | Oblong stone with relief of prowling feline or canine. Coe <i>et al.</i> 1966, Fotos 27, 28. San Lorenzo. |
| 22 | Large plain stone, possibly blank for colossal head (" <i>Monumento del Ojochi</i> "). 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. Tenochtitlan. |
| 25 | Human torso without limbs (broken). Stirling 1955, p. 8; field notes, p. 8 Between Tenochtitlan and San Lorenzo? |
| 26 | Broken human torso grasping cestus-like object. Tenochtitlán. |
| 27 | Armadillo (?) figure. Stirling field notes, p. 27. Between Tenochtitlan 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. Coe 1967, Fig. 2. Tenochtitlan. |
| 31 | Broken stone "seat" (" <i>banco</i> "), Cut 4 of SL-Mon. 30 excavations. San Lorenzo. |
| 32 | Plain fragment of altar, in <i>zanja</i> near Mon. 30. Coe 1967 field book, p. 19. San Lorenzo. |
| 33 | Plain fragment of altar, in <i>zanja</i> south of Mon. 8. Coe 1967 field book, pp. 31-33. San Lorenzo. |
| 34 | Kneeling headless figure, once with movable arms, SL-Mon. 23 excavations. Coe 1967, Foto 3. Tenochtitlan. |
| 35 | Complete stone "seat" (" <i>banco</i> "). Coe 1967 field book, p. 48. Planada del Rincón Largo, south of San Lorenzo. |
| 36 | Plain fragment of altar, across ravine north of SL-Mon. 23 excavations. Coe notes, 18 Apr. '67. San Lorenzo. |
| 37 | Crouching jaguar with long tusks, headless, SL-Mon. 23 excavations. Coe 1967, Foto 4. 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. Tenochtitlán. |
| 40 | Trough-shaped drain stone, SL-Mon. 23 excavations. San Lorenzo. |

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- | <i>No.</i> | <i>Description, Reference, and Present Location</i> |
|------------|--|
| 41 | Large four-sided column with relief of were-jaguar, SL-Mon. 23 excavations. Coe 1967, Foto 5. San Lorenzo. |
| 42 | Broken stone column with relief of arm, SL-PNW excavations. Beverido notes, 26 Apr. '67. Coe 1967, Foto 1. San Lorenzo. |
| 43 | Small fantastic spider, SL-Mon. 23 excavations. Coe 1967, Foto 6. Jalapa. |
| 44 | Complete stone "seat" (" <i>banco</i> "), 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 <i>drenaje</i> ("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. Tenochtitlán. |
| 48 | Half of broken circular "altar" ("Mon. C"), near Mon. 47. Krotser notes, 24 May '67. San Lorenzo. |

STONE MONUMENTS OF TENOCHTITLÁN

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

STONE MONUMENTS OF POTRERO NUEVO

- | <i>No.</i> | <i>Description, Reference, and Present Location</i> |
|------------|---|
| 1 | Man grasping snake, upper torso and head missing. Stirling 1955, Pl. 24. Potrero Nuevo. |
| 2 | Table-top altar with Atlantean dwarfs. Stirling 1955, Pls. 21a, 23. Jalapa. |
| 3 | Jaguar (upper part missing) copulating with woman. Stirling 1955, Pls. 25, 26a. In area southwest of Potrero Nuevo village. |
| 4 | Stone serpent. Stirling 1955, Pl. 26b. Smithsonian Institution. |

DISCUSSION

MR. JOHN PADDOCK: I would like to mention something that we have taken for granted. We are conjuring up ghostly armies. I think that a monument will probably be built to President Kennedy. Any archaeologist proceeding as we proceed would immediately conjure up an army equipped with long black whips to line up the slaves and put up the monument. We already have the Washington monument as a demonstration of the despotic means used in this state. Is this really sound? Is force the only motivation for putting up a monument? I don't think that we should necessarily project the long black whip into every situation.

DR. COE: There is no answer to that in lieu of inscriptions. We do have, by the way, a couple of inscriptions from the Olmec area, but none that we can read. The Olmec—if you look at a lot of Olmec monuments—don't look very benevolent. But it is impossible to answer a question of this sort without historical data. Obviously the people must have wanted it to be this way. It clearly wasn't entirely "black whip." What impresses me is what they did when they got tired of these symbols of authority. I don't think I quite emphasized the emotional factor in the destruction and mutilation of these monuments. You have to see how much rock they smashed off each one of these monuments, and how they went after some of these colossal heads and altars, to realize that something very catastrophic to the society was taking place. I don't know how they did it. They must have hauled some monuments up on great tripods and dropped them on others. It is the only way that some of those flakes could have been knocked off. There is no sign that they used fire or water, for instance, in this destruction. But the amount of emotional fury let loose at that point—let us say, at 950 B.C.—was stupendous. This implies to me that in the previous regime there was an element of coercion which was broken.

DR. BERNAL: There is a similar example in the destruction of the Temple of the Butterfly at Teotihuacán. I studied only the destruction of that monument, but I think it is part of the destruction of the whole area around the Pyramid of the Moon.

DR. COE: You might also mention Pyramid B at Tula.

DR. BERNAL: But at Tula, it is possible that they wanted to take the monuments away and reuse them somewhere else. At Teotihuacán, they went to the effort of making a huge pit in which they threw the broken stones, obviously not only to destroy them but to bury them forever from the eyes of other people. The whole balustrade of the enormous staircase of the annex to the Pyramid of the Moon was removed, stone by stone—and some of the stones were as large as this con-

ference table—and thrown a few hundred yards away. That shows a huge effort of purposeful destruction, and at a moment when the rest of Teotihuacán had not been abandoned. It was probably a sort of revolution against a group within the city, not against the whole of the city. It is perhaps a similar case.

DR. ROBERT SQUIER: There is possibly another explanation here for such a situation. Why could it not have been the rebirth of the world or something of this sort? In other words, people could be made to work like dogs to make the monuments, and they could be made to work like dogs to destroy the monuments when that phase was over. At San Lorenzo, the destruction wasn't at the close of the Olmec continuum, as it seems to be at La Venta. (When we described the destruction there, it impressed us, too.) Here you are not closing a story; you are starting a new phase of the same story, perhaps. I wonder whether this peasant revolt—or whatever it is that you are conjuring up—is necessarily the end here.

DR. COE: I am not conjuring up a peasant revolt but what I think is the best model to explain a dynastic overthrow.

DR. SQUIER: A palace revolt!

DR. COE: The peasants were obviously involved in this because there was an amazing amount of work that went into the destruction of these monuments. There is every indication that Olmec as an art style continues, but the great three-dimensional sculpture style is finished, and a new phase is begun.

DR. GORDON WILLEY: You date the large construction of the platform and the step pyramid within it as pre-1200 B.C. Do you carry that back to an earlier mound in cross-dating?

DR. COE: I would have to look at this pottery in considerably more detail.

DR. WILLEY: This is the best evidence of the earliest big building in Mesoamerica. How far back would you put it?

DR. COE: This building isn't really big. What we have uncovered would be about two or three meters of it, perhaps. I imagine that it goes back to 1300 or possibly 1400 B.C. We have a San Lorenzo pyramid—a small one, but definitely San Lorenzo Phase—on the northwestern side of the site. The point is that the entire site is a mound; it is one big construction. Most of its construction, I think, from admittedly limited data, took place in pre-San Lorenzo times. In other words, corvee labor—the pattern of getting people together to work, of state organization, or what have you—was available in some sort of way even before the San Lorenzo Phase began. I don't believe that there is a "Village Formative" versus a "Temple Formative."

DR. PETER FURST: If we say that the Olmec had a megalithic culture, in the sense of erecting enormous monuments, I think this relates to what was just said about

not needing to look for the black whip. If you look at megalithic cultures—in the South Pacific, for instance—there are enormous monuments which were erected as monuments to dead ancestors, without any use of black whips; it was simply done because it was a service to the ancestor.

DR. COE: As far as I am concerned, all the colossal heads and much of the other sculpture constitute portraits of living people. I take as a model what has been done on the Classic Maya reliefs by Miss Proskouriakoff, and assume them to be monuments to living people, or perhaps to people very recently dead, or, at least, monuments to lineage power. Someone had to order that it be done.

DR. FLANNERY: It is typical of many high cultures in Mesoamerica that status derived from descent was based on genealogy. In many cases this is reinforced by the representation of actual ancestors who were in the line of descent. Monuments could be erected as a part of this system of hereditary aristocracy.

DR. COE: I doubt that the Olmec—and, in fact, the Classic peoples who followed them—had theocracies. This is a simplification of a much more complicated but typically Mesoamerican pattern, in which there were lineages with political and religious power, organized into knightly orders. To talk of a theocracy, or of a political state, or of a warrior state—all of these things are the same thing, just different sides of the same coin.

DR. HEIZER: They aren't really. It is not quite the same thing if you are wearing the bishop's miter or carrying a rifle.

DR. COE: But the Emperor Moctezuma himself put on priestly robes from time to time.

DR. BERNAL: Of course, we cannot settle the point in regard to Olmec times. But if we accept, to a certain extent, the unity of Mesoamerican civilization—that these are different aspects of the same thing—it is not that different civilizations arose one after the other, but that they were essentially one, one which starts, let us say, with the Olmec, and ends, of course, with the Aztec. To a certain extent—and with great care—I think it is valid to infer certain ideas from later situations, and we can trace certain things back from better-known times. I am referring, of course, to the Aztec, about whom we have an enormous body of literature, not simply archaeological digging, which is always incomplete. Perhaps it is possible to project the same situation back—perhaps to Olmec times would be too far, but certainly to Teotihuacán times.

DR. HEIZER: Actually, we have the best possible kind of documentary evidence bearing on this, namely, the sculpture, if we can read it right.

DR. GORDON EKHOLM: I wonder if the ceremonial destruction of monuments at San Lorenzo couldn't be interpreted not so much as a fury directed toward these things, but as a means of sacrificing sculptures which had attained "mana" enough to make

sacred the whole area which was being built, the big artifact of the site itself. You have to look at it, not in terms of destruction as we would do it, but in terms of a quite different attitude toward these monuments as being themselves worthy of sacrifice and burial.

MISS PROSKOURIAKOFF: But would that account for the mutilation and the fact that the heads were missing?

DR. EKHOLM: It might.

DR. HEIZER: You will know the answer to that when you find the heads.

DR. FLANNERY: Maybe they were mutilating other people's monuments.

DR. FURST: There is a parallel to this business of removing heads from figurines in the smiling-head figures in Remojadas, Veracruz, where whole caches of bodies were found, and then whole caches of heads were found in a completely different place. We look at the killing of pottery as releasing the spirit—you knock a hole in it and thereby release its spirit, or you kill it because it is a symbol of the dead. But an enormous number of societies have the idea that what is destroyed on this earth is put back together again and made whole in the other life. Perhaps by smashing a monument that is imbued with life, you are, in fact, imbuing it with life in the other world.

MISS PROSKOURIAKOFF: I have often thought that was a rationalization for breaking treasures put into tombs to prevent their looting and later removal—in other words, to make them unusable on this earth, but still valid. I think there is quite a practical purpose in this. At least in Middle America, I think we have a great deal of evidence for grave robbing.

DR. BERNAL: I think that we must consider that the whole argument about the breaking of these things is based on the idea that we are dealing with one branch of one religion. As a parallel, let us say that it would be curious to find Catholics destroying a Catholic church, but it would not be curious—we have thousands of examples—to find Protestants destroying a Catholic church. We are assuming that the whole Mesoamerican religion is one. How do we know it did not have branches similar to, let us say, Catholicism, Protestantism, or other Christian religions? In that case, it wouldn't be at all extraordinary that monuments with religious connotations were destroyed.

MISS PROSKOURIAKOFF: But doesn't this enmity really arise with the formation of the universal religions, and with claims of universal validity, which earlier religions didn't have? The earlier people took it for granted that every small human group had its own religion, and it was seldom, I think, really a great source of conflict.

DR. BERNAL: I am sure you are right, in the main. But we do have concrete examples of religion imposed—or, at least, a god imposed—on certain people, let us say, in the case of the Aztec.

MISS PROSKOURIAKOFF: But were they not also allowed to keep their own gods?

DR. BERNAL: Yes, of course.

MISS PROSKOURIAKOFF: I am rather inclined to support Coe's idea of dynastic coercion.

DR. PHILIP DRUCKER: Wasn't your real point that, after destruction, many of the destroyed monuments were ceremonially disposed of—like the piece of the altar or the figure that was turned face up—and that these battered monuments were lined up in a row with what appear to be offerings? That is, they were not just smashed to bits and thrown around as though there were no longer any religious attitude toward them, but, after having been broken, they were really given a very special treatment which involved a lot of labor.

DR. COE: In fact, the only way we were able to date the final placement was the fact that they were placed in rows.

DR. SQUIER: What is the final date?

DR. COE: My interpretation is that this took place about 950 B.C., in accordance with the radiocarbon dates.

MISS PROSKOURIAKOFF: Is that the end of the San Lorenzo Phase?

DR. COE: It is toward the end, but not at the end.

DR. SQUIER: But this is the end of the sculpture?

DR. COE: The sculpture ends around that time, but you have to look at the radiocarbon dates and extract the date for it. I would say that the occupation went on for another fifty years—perhaps a hundred—after the destruction of the sculpture. The placement was definitely done with ceremony. I think it is rather like putting the heads of traitors in England on railings and exhibiting them. This was done with some care. They were put on London Bridge or some nice place like that, rather than thrown into the Thames. The Olmec liked to feel, I think, that all of the destroyed heads were under these mounds. Perhaps this gave them more power. They put temples on top of these mounds. In other words, it gave them a feeling of accomplishment to have them in there—and, of course, they wouldn't have to look at their predecessors all the time!

DR. JUNIUS BIRD: What was your basis for assuming that these monuments were destroyed in place?

DR. COE: None, actually. In fact, we found none of them destroyed in place. That is, there are no chips lying around, no hunks of these things. They could have been brought from another site even—something not inconceivable for the Olmec to have done. There are all sorts of possibilities.

MISS PROSKOURIAKOFF: Maybe they were actually buried as people are buried because they were dead or had been killed by someone else.

DR. BERNAL: I think Dr. Stirling has suggested that some of these monuments had been moved from somewhere else.

DR. STIRLING: I didn't necessarily suggest that they had been moved from somewhere else. At the time we worked at San Lorenzo, we conceived of the site as a big, naturally formed plateau, with eroded ravines, and we thought that, when the iconoclasts came along, regardless of their purpose or intention, they rolled the monuments down the ravines. Of course, Dr. Coe's excavations, which I have seen, have proved that all these big ridges and what we thought were natural young mountains are actually artificial deposits, and that these sculptures had apparently rolled down, perhaps as a result of erosion. One thing we know is that these monuments were destroyed and with considerable effort. Whether it was done with religious fervor by people who hoped to improve the potency of their gods by doing this, or whether it was done by people who wanted to destroy the gods, is anyone's guess. But I would like to point out that not all of these monuments were destroyed. The colossal heads, in particular, were left pretty much intact. In fact, there doesn't seem to have been any special effort to mutilate or destroy them. The altars, on the other hand, were all pretty badly beaten up. Also, practically all of the seated figures, of which there are quite a few, had the heads knocked off. Now there might be something of a sacrificial idea in that: here was a beautiful work of art that they were willing to destroy to show their willingness to suffer, to perform an act of sacrifice. I think it is interesting to point out that many of the San Lorenzo monuments were not destroyed, they were simply displaced.

DR. COE: To set the record straight, I would like to say that one of the heads, Monument 3, has cup-shaped depressions all over the top. Another, Monument 17, another head, has three cup-shaped depressions. And Monument 19 is a miserable thing that looks like a Swiss cheese. It's a colossal head completely eaten away with these cup-shaped depressions. The entire face is gone and most of the headdress. Just a bit remains to suggest that it was a colossal head. So they took out after colossal heads, too, from time to time. But it is true that the best preserved sculptures are the colossal heads.

DR. STIRLING: One might ask why they didn't smash the colossal heads into fragments as they did the big altars.

DR. COE: They are harder to break into pieces because they are rounder.

DR. STIRLING: Yes, but you could knock the nose off the face. Also, they didn't destroy the heads at La Venta.

DR. COE: One of the heads at La Venta—the biggest one—is mutilated.

MISS PROSKOURIAKOFF: Do you associate the colossal heads with ball playing?

DR. COE: I associate most Olmec sculpture with ball playing.

MISS PROSKOURIAKOFF: The reason I remarked this is that there may have been ball-court heroes who had no political implications.

DR. COE: I think that the ball-court heroes were all politicians.

THE OLMEC AND THE VALLEY OF OAXACA:
A MODEL FOR INTER-REGIONAL INTERACTION
IN FORMATIVE TIMES

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INTRODUCTION

In recent years it has become increasingly apparent that the zenith of Olmec art and mound-building took place earlier in the Formative period than anyone had previously suspected, and that the advanced and sophisticated Olmec had an unmistakable impact on their less advanced and less sophisticated highland neighbors. Michael Coe (1963: 33) has suggested that "it would be as meaningless to ignore this as it would be to attempt an understanding of the European Neolithic without taking into account the coeval civilizations of Bronze Age Mesopotamia." With the new rush of attention to the Olmec area, however, there is a real danger that the pendulum may swing too far the other way: that anything and everything elaborate in the Formative will be called "Olmecoid," and that all or much of the progress of the highland Formative will be hurriedly attributed to "Olmec influence." In this paper I will attempt to define what "Olmec influence" means in the case of the Valley of Oaxaca. I suspect that if I had more data at my disposal, I would find that the same definition would apply to the Rio Balsas headwaters, the Valleys of Morelos and Izúcar de Matamoros, and several other highland areas where "Olmec influence" has been detected.

In an age in which we are accustomed to read of Formative voyages across the whole of the Pacific from Japan to Ecuador, and of migration or "diffusion" from Ecuador to the Caribbean coast, from there to Mesoamerica, and then up the Gulf to Florida and the eastern woodlands, my paper will perhaps come as a disappointment: I cannot even propose a migration from the Olmec area to the Valley of Oaxaca, a distance of only a hundred miles or so. Nor will I be able to offer (as a consolation) even so much as a small invasion, or a proselytizing expedition by Olmec "missionaries." Having examined Formative

sites now for two seasons in only one small part of the Valley of Oaxaca, I have gradually come to the conclusion that an Olmec raiding party, armed with "knuckle dusters" (see, for example, Coe 1965b: 764), would probably have encountered quite a sizable resistance force in that area. It also occurs to me, looking around at the size of the Valleys of Mexico, Puebla, Toluca, Morelos, and the upper Balsas, that there probably were not quite enough Olmec to colonize the whole of the Mesoamerican highlands. I will therefore be forced to propose a model for inter-regional interaction which does not necessitate invasions, missionaries, or colonization by an "Olmec elite."

"Olmec influence" in the Valley of Oaxaca has been a topic of discussion for about thirty years. In the past, such discussion centered mainly on the Monte Albán I period, which has produced incense burners with clear representations of the "were-jaguar," a deity with a human face and a feline mouth (Paddock 1966: Fig. 3), and a number of reputedly "Olmecoid" carved stones, the *danzantes* of Monte Albán. Basic to these discussions was the assumption that Monte Albán I was contemporary with La Venta.

Today, the tendency to see direct Olmec characteristics in the *danzantes* has dwindled; as Ignacio Bernal expressed it in a recent publication, "though the *Danzantes* and the Olmec sites of the coast of Veracruz and Tabasco have some fundamental similarities, it is just as evident that they have fundamental differences" (1967: 3): And, perhaps most importantly, recent stratigraphic work and new radiocarbon dates from the Olmec area (Coe, Diehl, and Stuiver 1967) have indicated that San Lorenzo Tenochtitlán and Complex A La Venta are not contemporary with Monte Albán I, but earlier—overlapping in time only slightly, if at all, with the latter phase. This throws the relationship of the Gulf Coast and the Valley of Oaxaca still further open to question.

The task of this paper will be to cover three related aspects of the problem.¹ First, I will briefly describe two recently-discovered Formative phases in the Valley of Oaxaca, which preceded Monte Albán I and which were certainly contemporary with San Lorenzo and La Venta. Second, I will assess the similarities and differences between the Formative of the Valley of Oaxaca

¹ In the course of preparing this paper I have profited from discussions with Jane C. Wheeler, Susan H. Lees, and Richard I. Ford, all of the University of Michigan. Miss Wheeler's study of the magnetite sources of the Valley of Oaxaca will provide a far more detailed picture of this aspect of the Formative than can be given here. Miss Lees' studies of ritual exchange in the New Guinea highlands, summarized in a paper given at the Michigan Academy of Sciences in 1967, contributed useful data on the extent to which pre-industrial peoples may convert their surplus into exotic raw materials rather than storing it. Ford's work among the Tewa pueblos has yielded important data, still largely unpublished, on the movement of raw materials and the ways in which they may be taken out of circulation. Obviously, however, none of the aforementioned should be blamed for any of my errors of interpretation, nor will they necessarily agree with my conclusions.

The 1966 field season of the Oaxaca Project was supported by the Smithsonian Institution. The 1967 field season was supported by National Science Foundation Grant GS-1616 to the University of Maryland.

and the Gulf Coast. Finally, I will present a model, based on ethnographic data, which I feel constitutes at least one reasonable explanation for the interaction between the two regions.

THE EARLY AND MIDDLE FORMATIVE OF THE VALLEY OF OAXACA

The sub-area of the Valley of Oaxaca which we have so far been able to survey and test most extensively for Formative sites is the region drained by the uppermost twenty miles of the Atoyac River, northwest of Oaxaca City. This sub-area, known as the Valley of ETLA, has three main physiographic provinces: a zone of steep mountains, a region of gentle piedmont slopes, and a flat, narrow alluvial plain left by the Atoyac and its tributaries. Our attention was first directed to the ETLA region by the dense pattern of Monte Albán I sites discovered there by Bernal.

Two principal types of situations seem to have attracted Formative farmers in the ETLA Valley. The first is a strip of land to either side of the Atoyac where water is always available at a depth of no more than 3 meters below the surface of the alluvium. Two crops a year can be obtained in this zone either by irrigating from shallow wells, or by diverting water from the river itself, which flows almost at the surface of the plain. The second situation is in the upper piedmont, at the point where permanent (or nearly permanent) tributary streams emerge from the mountains. Two crops a year can be obtained in this zone by diverting stream water and bringing it to the fields by gravity flow in small canals. Early Formative sites so far located occur exclusively in the high-water-table zone along the main Atoyac River. Middle Formative sites occur either in that same zone, or in the upper piedmont on reasonably permanent streams. Late Formative sites occur primarily in these same situations, but a few occur elsewhere.

The Valley of ETLA is temperate; frosts occasionally occur, and may inhibit a crop planted too early or harvested too late. Farther down the Atoyac, south of Oaxaca City, lie areas which are virtually frost-free, where today sugar cane can be grown. We have not yet surveyed these areas extensively enough to be sure of the settlement pattern, but it appears that there—as in the Valley of ETLA—Formative sites are located principally with regard to surface and subsurface water resources, rather than soil type or precipitation gradient. This suggests that irrigation played an important role in Formative agriculture in the Valley of Oaxaca, a suggestion which is strengthened by the fact that we have already located at least one Middle Formative well and several fossil Late Formative irrigation canals (Flannery, A. Kirkby, M. Kirkby, and Williams 1967).

We have investigated three Formative periods which are relevant to the Olmec problem. The first of these is the San Jose Phase, which falls near the end of the Early Formative; the second is the Guadalupe Phase, which

marks the beginning of the Middle Formative; the third is sub-Phase A of Monte Albán I, which brings the Middle Formative to a close.

THE SAN JOSÉ PHASE

The San José Phase dates, on the basis of ceramic cross-ties, to between 1200 and 900 B.C. Two samples of radiocarbon from the terminal part of the phase have so far been analyzed, yielding dates of 930 and 975 B.C.

Pottery of the San José Phase shows strong resemblances to material from the looted cemetery at Las Bocas (Coe 1965c), near Izúcar de Matamoros in the Balsas headwater region of southern Puebla. Ties are also strong with the Grijalva Depression (Chiapa I Phase), Guatemalan coast (Cuadros Phase), southern Veracruz (San Lorenzo Phase), and Tlatilco. What the San José Phase shares with Early Formative cultures of the highlands is a high proportion of bowls and necked jars, with *tecomates* or "neckless jars" (Fig. 1) less abundant than at contemporary sites in the lowlands. The difference is simply one of proportion, and probably has something to do with differences of food preparation, serving, and meal scheduling between the highlands and the coast.

Unshipped pottery in the San José Phase most commonly is brownish or brick red, and occurs frequently in the form of necked jars (*ollas*) for cooking or storage. Slipped pottery may be monochrome white, bichrome red-on-white, polished black, white-rim black, polished cloudy gray, or polished specular hematite red. Flat-based bowls with out-slanted sides, and flat-based cylinders are common shapes. Some bowls have super-thick rims, as in Chiapa I (Dixon 1959: Fig. 3); others, with simple direct rims, may be slipped white with a red band at the rim, as in the Cuadros Phase (Coe and Flannery 1967: Pl. 13). Bowl interiors or cylinder exteriors in white, black, or gray may be decorated with excised (*raspada*) designs, which are often filled with red pigment. Some of the designs cut into these vessels are the St. Andrew's cross, the U-motif, and the "paw-wing" motif, all of which Coe (1965b) has described as common "Olmec" themes (Figs. 2 and 3).

Tecomates often are rocker-stamped, usually in zones. One type of *tecomate* is white with a red band at the rim, and with further red bands separating the body of the vessel into large triangular or diamond-shaped zones; these zones will have horizontal, vertical, or diagonal strings of plain rocker stamping. Interesting local variations include a kind of "interrupted" rocker stamping (which looks as if the rocker instrument had a purposeful notch cut out of it).

Figurines are abundant in the San Jose Phase (Fig. 4), and include both the small solid kind and the large hollow type found by Richard MacNeish (1964) at Ajálpán in the Tehuacán Valley. The small solid figurines typically have eyes made by two plowing strokes, with no pupil indicated. Some show similarity to Types C and D from the Valley of Mexico, especially those from Tlatilco;



Fig. 1 Examples of zoned rocker-stamped tecomate sherds from San José Mogote (San José Phase). Scale in cm.

Fig. 2 Bowl, carbon-smudged white ware, from San José Mogote (San José Phase), showing excised designs including the St. Andrew's cross.





Fig. 3 Bowl, streaky gray ware, from San José Mogote (San José Phase), showing "Olmecoid" excised design.

Fig. 4 White-slipped, solid figurine heads from San José Mogote (San José Phase). Scale in cm.



others are vaguely "Olmecoid," with helmets or with mouths that turn down at both corners.

Type locality for the San José Phase is the site of San José Mogote, which covers the tip of a piedmont spur that projects out, like a low peninsula, into the high-water-table zone of the Atoyac in the central Valley of Etlá. Like Chiapa de Corzo, San José Mogote is a very large site (covering more than 100 hectares) with a long sequence spanning the period from Early Formative to Late Classic. The alluvium which flanks it on three sides is today irrigated by means of canals, pumps, and shallow wells.

Materials of the San José Phase can be picked up over an area roughly 450 meters on a side, giving us a village of an estimated 20 hectares (45 acres) in extent. Within this area, surface materials reflect at least three different kinds of residential patterns: (1) an area of wattle-and-daub houses with relatively fancy pottery and a low percentage of chipping debris and utilitarian ground stone; (2) an area of wattle-and-daub houses with less fancy pottery and higher frequencies of chipping debris and utilitarian ground stone; and (3) an area of some 5 acres or more, near the eastern limits of the Early Formative settlement, with abundant fancy pottery and a disproportionately high surface yield of worked and unworked magnetite, ilmenite, hematite, white and black mica, green quartz of various qualities, Gulf Coast mussel shell, and fragments of marine mollusk shells including *Spondylus*, pearl oyster, marsh snails (*Cerithidium*), and *Anomalocardia subrugosa*. On one corn field in this area, which we surface-collected still more intensively once we had realized the pattern, more than five hundred fragments of magnetite and related iron ores were present. At the present writing, this is the only area of San José Mogote which we have been able to test-excavate adequately.

Stratigraphic tests in this part of the site in 1966 revealed a whole series of wattle-and-daub houses which had evidently been occupied by artisans. Posthole patterns (and occasional burned house corners) indicate that these structures were rectangular, with square rather than rounded corners; because of the limited area excavated, no complete house plans were recovered, but floor areas were larger than 3 by 5 meters. Walls were of finger-sized poles, plastered with mud, then whitewashed with the same kind of white-to-buff clay used on the pottery of that period. On the floors there were no projectile points and almost nothing in the way of *metates* and *manos*; the most common stone tool recovered was a small type of chert drill used for drilling shell. Other common tools were burins for cutting shell, polishers of quartz and iron ore for working magnetite, and so on. Accompanying these tools were abundant fragments of unworked and partially worked magnetite; cut fragments of mica; discarded parts of marine shell; unused, unmodified shells; fragments of shell ornaments which had broken in the process of manufacture; and small, flat mirrors of magnetite and ilmenite, about the size of a thumbnail. Finished products were rare; what we found mainly appeared to be workshop debris from the manufacture of ornaments.

In 1967 we opened up a much larger area in this part of the site, hoping to get an idea of whole house plans and the placement of houses relative to one another. Immediately to the south of the area we had tested in 1966, we came across the buried foundations of a rectangular, stepped platform faced with stone (Figs. 5 and 6). The platform, which rose in two stages to a height of about 2 meters, was contoured to the slope of the piedmont spur, but oriented roughly north-south like the structures at Complex A La Venta. The construction technique, however, was quite different from the La Venta mounds and platforms: the natural piedmont slope was terraced with a facing of volcanic tuff and *tepetate*, arranged in alternating stages of cobbles and flat slabs. This facing was not vertical, but lay at an inclined angle like a *talud*, and it in turn had been set in (and covered with) a layer of hard, puddled adobe clay. Associated pottery dated this platform to the late San José Phase; and among the associated figurines were fragments of several large, hollow, white-slipped “dolls” of the Gualupita-Las Bocas type, and two small, solid, white-slipped figurine heads representing the “were-jaguar.” On at least two sides, the platform supported the plastered and white-washed houses of craft specialists, and surface indications are that such houses, in fact, surrounded it.



Fig. 5 Platform 1 at San José Mogote (San José Phase), seen from the southeast.



Fig. 6 Workmen at San José Mogote expose east face of Platform 2, attached to Platform 1 (San José Phase). Note stone stairway at right.

Sixteen kilometers upstream, in the village of San Pablo Huitzo, we investigated another, smaller site of the San José Phase. The prehistoric deposits underlie the modern Barrio del Rosario, from which the site derives its name; early settlement seems to have taken place at the point of transition from the piedmont to the valley floor, and the western portion of the site is partially covered by recent alluvium. Because modern houses cover much of the deposit it was not possible to determine the extent of the village in San José times, but it evidently covered several hectares.

Founded almost on virgin soil at Barrio del Rosario was a structure 2 meters high and more than 15 meters wide, built of earth and faced with stone much in the same manner as the platform at San José Mogote. The structure at Huitzo also rose in tiers, with a sloping outer wall, and was oriented 8° west of true north. Although the outside presents a boulder or cobble facing set in hard clay, the interior is of earthen fill containing San José Phase sherds. Retaining the earthen fill are walls made of plano-convex or “bun-shaped” adobes, about 25-30 centimeters in diameter, with some walls rising to a height of 2 meters. Included in the structure were

two carbonized posts 30 centimeters in diameter, which evidently supported a substantial building. Judging by the burned remains we found, the building was of wattle-and-daub, with a very thick coating of clay but no slip or whitewash. The entire construction was designated Platform 4, and it appears to have been built at the end of the San José Phase and enlarged early in the subsequent Guadalupe Phase. Unfortunately, because it underlay modern houses, Platform 4 could not be fully investigated, and we do not know its precise shape or dimensions.

Not a single fragment of magnetite was found at Barrio del Rosario; shell

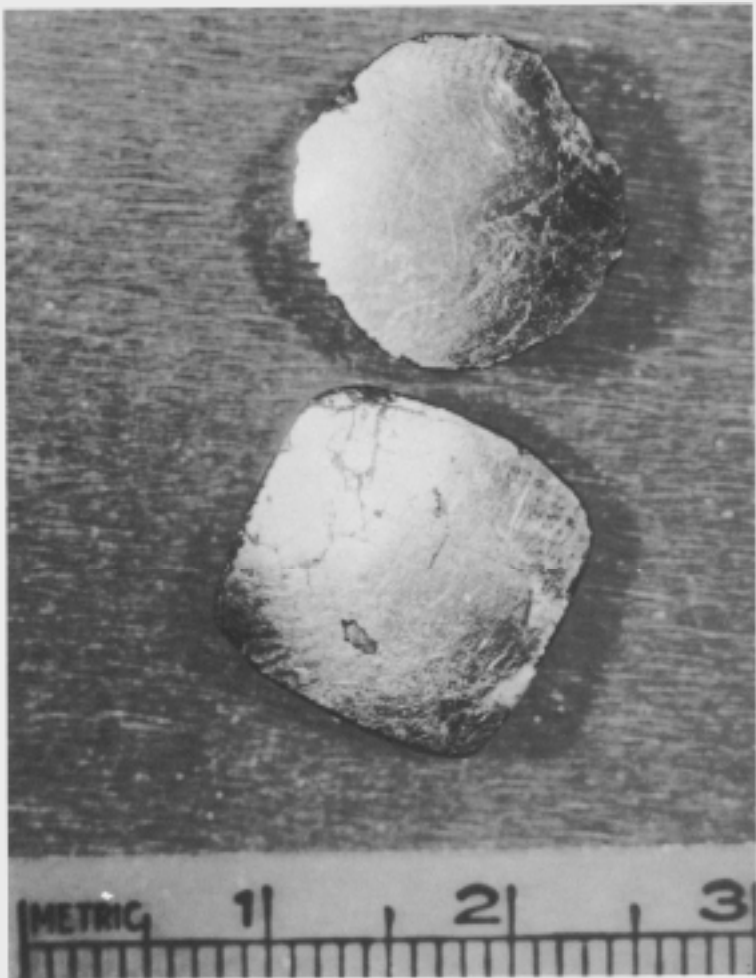


Fig. 7 *Small mirrors of polished magnetite from San José Mogote, Oaxaca. Scale in cm.*

and mica were much rarer than at San José Mogote. Availability is not the question here, for Jane Wheeler of the Oaxaca Project, who is surveying the valley for mineral resources, reports magnetite sources even closer to Huitzo (personal communication); in fact, there are numerous sources within ten miles of both sites. The implication is that access to magnetite was not universal; ninety per cent of the fragments we found occurred in one small area of households in one very large village. Almost the same was true of *Spondylus* and pearl oyster. Clearly, social rather than geographic factors determined who got magnetite and how much.

There is one other interesting consideration: magnetite mirrors identical to those being turned out by the artisans at San José Mogote (Fig. 7) occur in contemporary deposits at San Lorenzo Tenochtitlán, more than one hundred kilometers from the nearest possible source (Coe, personal communication; Curtis 1959: Fig. 80). Garniss Curtis (1959: 287) in his identification of the magnetite from La Venta, places its probable point of origin in "the metamorphic and granitic province to the south"; his map indicates that the Oaxaca highlands and Pacific coast are the heartland of that province. Although there are scattered finds of small magnetite mirrors throughout Formative Mesoamerica, I know of no site outside the Valley of Oaxaca that has shown evidence of the extensive magnetite *accumulation and working* that is seen at San José Mogote. Oaxaca must therefore be considered a tentative source for the Olmec magnetite, pending technical analyses. It is this possibility that will be explored further in this paper.

THE GUADALUPE PHASE

So far we have identified three villages of the San José Phase (one of which is very large) from the ETLA arm of the valley alone, and more are beginning to show up as our survey moves downstream. By the succeeding Guadalupe Phase there were five or six villages in the ETLA Valley (or one about every three miles along the river), ranging in size from 5 to 90 acres. Middens of the Guadalupe Phase, whose carbonized plant remains and animal bones are just now undergoing study, have given us a good look at subsistence along the Atoyac at this time period. Domesticates included corn, beans, squash, avocados, chile peppers, and dogs, and wild foods utilized included deer, cottontails, prickly pear fruits, pitahayas, and other local plants. The site of Mitla was first founded during this phase, and it was in the Guadalupe deposits at Mitla in 1966 that we recovered a 4-meter deep well (Flannery, A. Kirkby, M. Kirkby, and Williams 1967).

We have no radiocarbon dates yet for the Guadalupe Phase, but on the basis of ceramic cross-ties it must date between 900 and 600 B.C. Its relationships are with Chiapa de Corzo II, Conchas I on the Guatemalan coast, Complex A at La Venta, and the Early Santa María Phase in the Tehuacán Valley. The early Guadalupe Phase is easy to define; the late Guadalupe Phase

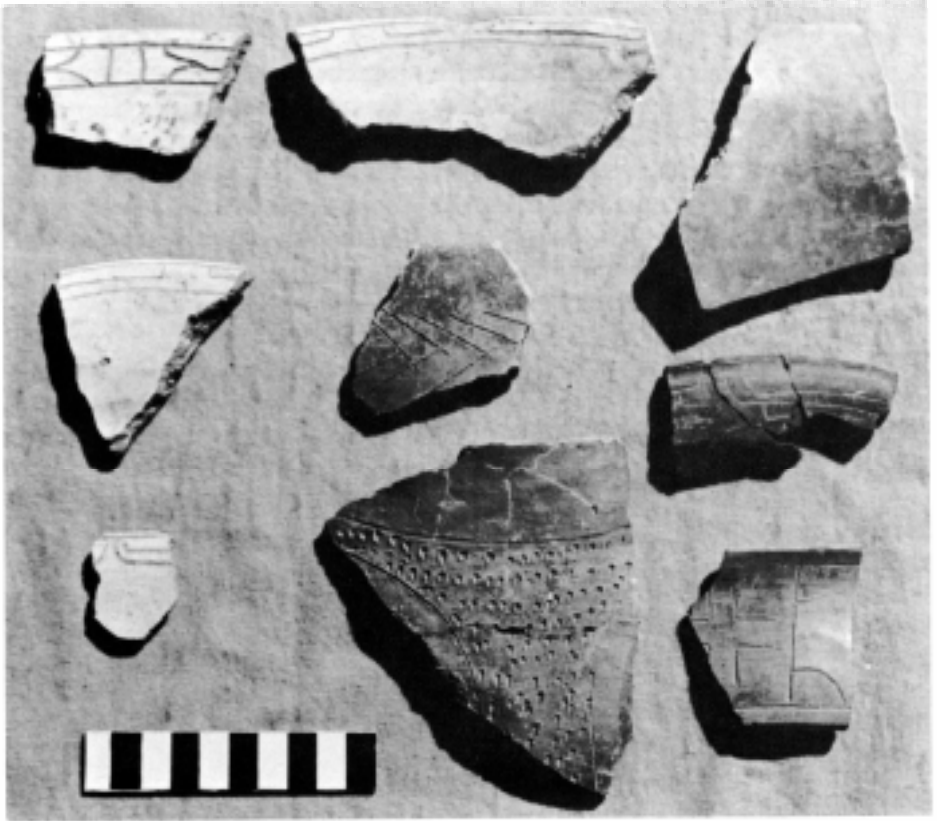


Fig. 8 *Sherds typical of the Guadalupe Phase, mostly from Barrio del Rosario Huitzo. Left and top center, white-to-buff bowls with incised rims. Center, tecomate with red band at rim and herringbone incision on body. Bottom center, jar with coarse red wash and zoned punctation on body. Right, gray ware which is apparently ancestral to that of Monte Albán I.*

gradually turns into the sub-phase which Bernal has called “Monte Albán I-A,” and the boundary between the two is still very hard to draw.

Most typical of the Guadalupe Phase is a yellowish, or white-to-buff slipped pottery, in which the dominant vessel is a flat-based bowl with outslanting sides (Fig. 8). The rims of these bowls are often decorated with parallel incised lines, with one line turning up at intervals to meet the other—the so-called “double-line-break” motif. This type of pottery is the Oaxaca homologue of Canoas White in the Tehuacán Valley, Conchas White-to-buff on the Guatemala coast, La Venta Coarse Paste Buff Ware, Burrero Cream in the Grijalva Depression, and some of the incised white wares of El Trapiche and early Zacatenco.

Another common pottery type of the Guadalupe Phase is a sandy brown or brick-red ware with a coarse red wash, which appears in the form of *tecomates* and necked jars (Fig. 8). This is the Oaxaca Valley equivalent of Tehuacán's Río Salado Coarse and the Guatemalan coast's **Conchas** Red Unburnished. One characteristic which seems to be peculiar to Oaxaca, however, is decoration by means of zoned areas of punctation or herringbone-spaced slashes or stepped jabs, separated by bands of red wash; this is most typical on early Guadalupe Phase necked jars.

Coarse pot stands, some of them impressed with a *petate* or woven mat while still wet, are also typical of the Guadalupe Phase, and carry through into Monte Albán I. None appear to be *incensarios*; and I would like to add that, unless the Guadalupe Phase villagers were shaped quite differently from



Fig. 9 Head fragments from large, hollow, white-slipped "dolls" of Gualupita-Las Bocas type (Guadalupe Phase). Scale in cm.



Fig. 10 Reconstructed north face of Platform 3, Barrio del Rosario Huixtla, showing staircase. Guadalupe Phase.



Fig. 11 Detail of stairway on north face of Platform 3, Barrio del Rosario Huitzo, showing white plaster. Guadalupe Phase.

most human beings, these objects were true pot rests and not pottery stools, as has sometimes been suggested in the literature (cf. Coe 1965a: 690).

Late in the Guadalupe Phase appear bowls with composite silhouettes, mostly in gray monochrome ware (Fig. 8) which clearly foreshadows later Monte Albán I pottery. The trend during the phase is for bowl walls to change from outslanted to outcurved, and for rims to become increasingly flaring, eventually truly everted. Polished, waxy gray monochrome gradually replaces white-to-buff pottery, and "double-line-breaks" give way to wavy lines, sine curves, and cross-hatching in panels or in triangular areas on the rim. Scalloped rims or rims with eccentric tabs or nodes appear during the late Guadalupe Phase, and apparently are ancestral to the "fish plates" and scalloped rim vessels of Monte Albán I. Still rare or absent in the Guadalupe Phase are vessel supports, lugs, or handles of any kind.

Small solid figurines in the Guadalupe Phase (Fig. 9) are mainly of the type called "A" in the Valley of Mexico, "realistic projecting eyeball" by MacNeish (1954), and "double-triangle-and-punch eye" by Coe (1961). Eyes have a clearly-defined pupil which is perforated as in Mamom, Conchas I, and the Santa María Phase. Turbans are particularly large and ornate on Guadalupe Phase females, who also wear ear spools, necklaces, pectorals, and sandals, and have red pigment in their navels. Males are often as bald as Yul Brynner and sit cross-legged, like paunchy executives pondering some crucial decision. We also found fragments of a few large, hollow, cream or white-slipped "dolls" of the Gualupita-Las Bocas type.

During the Guadalupe Phase, San José Mogote grew to cover more than 40 hectares (90 acres), but we have not yet been able to determine the extent of monumental construction from that phase. The platform previously mentioned was covered over and surrounded by literally tons of rubble and black clay during early Guadalupe times, either to enlarge it or to level the area for future constructions.

At Barrio del Rosario Huitzo, a number of structures were built stratigraphically above Platform 4. One of these, called Platform 3 (Figs. 10-13), dated to the Guadalupe Phase. This was a platform nearly 1.5 meters high and roughly 12 meters wide, which faced onto a patio of equal width. Traces of other structures nearby suggested to us that possibly we were dealing with a rectangular patio oriented 8° west of true north, with four large house platforms arranged around it, but we were only able to expose the corners of what we believe to have been two other platforms. Platform 3, which would have been on the south side of the patio if our suppositions are correct, had a stairway 8 meters wide which led down to patio level, and where its upper surface was preserved we found a line of postholes from the house it had supported.

Not only was this platform oriented like the platforms at La Venta Complex A; its construction technique was also suggestive of the latter site, and its associated pottery reasonably similar. There were, however, some regional differences. Like La Venta, the platform had adobe retaining walls, but they



Fig. 12 Upper surface of Platform 3, Barrio delRosario Huitzo, showing two postholes. Guadalupe Phase.

were constructed of plano-convex, "bun-shaped" adobes rather than rectangular ones. Between these retaining walls were layers of black clay and gritty yellow loam. The steps of the stairway were built of rows of adobes, capped with hard clay. However, over the whole front face of the platform and stairway was a layer of white plaster, a trait common in Valley of Oaxaca sites but not at La Venta. The patio also appears to have had a layer of white plaster, but it is much more poorly preserved. The collapsed remains of the house above the platform indicate that it was a very large structure of wattle-and-daub, rectangular, with a thick coating of adobe clay, and that it had also been surfaced with white plaster. The midden layers in the patio and around the edges of the platform contained only household debris, ash, carbonized seeds, and animal bones, suggesting that Platform 3 had supported an



Fig. 13 East corner of Platform 3, Barrio del Rosario Huitzo, showing white-plastered "bench" making a right angle with the platform and running north, possibly toward another platform on the same patio. Guadalupe Phase.

elite residence rather than a "ceremonial" structure. In fact, no objects of "ceremonial" nature were found anywhere in the area.

This same stratigraphic zone yielded remnants of six or eight wattle-and-daub houses of a much humbler type. None had platforms, plaster, or even whitewash. All were roughly 4 by 6 meters in size and rectangular, with walls of finger-sized poles packed with mud. Floors had a coating of fine sand over them, usually ashy, and postholes were only about 7 centimeters in diameter. These houses were not located away from the patio, with its much larger and fancier house platforms, but lay immediately adjacent to it. Between them were small midden areas with what appeared to be household trash, little different from that found around the large platforms. I conclude that either (1) elite residences were not spatially separated from those of the common farmers at Huitzo, or else (2) elite residences were accompanied by the houses of retainers, servants, extra wives, poor relations, or the like.

THE MONTE ALBÁN I-A SUB-PHASE

It is clear from our excavations at Huitzo, as well as from previous work by Bernal, that Monte Albán I is a long period which it may someday be possible to subdivide. Its initial stage still belongs, I feel, to the Middle Formative period, although it admittedly falls near the end of that period. Ceramic cross-ties are with the Conchas II sub-Phase on the Guatemalan coast, Chiapa de Corzo III and IV, post-Complex A La Venta, early Tres Zapotes, and the middle part of the Santa María Phase in the Tehuacán Valley. Pending the analysis of our radiocarbon samples, my guess is that Monte Albán I-A must fall somewhere in the neighborhood of 500 B.C.

Monte Albán I-A is characterized by gray ware which has a polished, waxy slip. Common shapes are flat-based bowls with flaring walls which may be incised on the interior of the rim. "Double-line breaks" still occur among these designs, but are less frequent than panels of hatching, sinuous lines like clouds or waves, and strings of short diagonal strokes. Composite silhouettes become increasingly frequent; there is an obvious trend toward experimentation with wide "rim tabs" and wide-everted rims which are incised on top. However, this sub-Phase A of Monte Albán I still lacks a number of characteristics of the Late Formative. Rim flanges, basal flanges, swollen mammi-form supports, bridge spouts, and wide-everted grooved rims are rare or absent. On the other hand, small solid feet and low annular bases begin in period I-A.

Two platforms of this sub-phase were found at Huitzo, stratigraphically above Platform 3. Platform 2 was of earth, with rough stone and adobe retaining walls, oriented 8° west of north; under one retaining wall was an extended burial which seemed to have been included in the construction either as a dedication or a sacrifice. Platform 1 was a structure in true Monte Albán style, of roughly-cut stones set in adobe mortar, complete with stone-

lined drain and associated plaster floors. Like some of the earlier structures at Barrio del Rosario, it appears to have been residential in nature. By this period, rectangular adobes had joined the earlier "bun-shaped" type, and seem to have been used in wall foundations. Houses of adobe and wattle-and-daub occur also in Monte Albán I-A levels at San José Mogote, where they lie stratigraphically above the rubble covering the pyramid we investigated.

Even when Monte Albán I was the oldest Formative culture known in the Valley of Oaxaca, it was, as pointed out repeatedly by **Bernal**, a culture already advanced, already far from primitive. The period features calendrics, hieroglyphic writing, a distinct regional art style involving both bas-relief stone carving and pottery sculpture, massive stone masonry architecture, and the concept of the rectangular patio with four buildings around it, oriented to the cardinal points by presumably astronomical means. Monte Albán itself was founded during sub-Phase I-A, but it is not yet known how many of the characteristics mentioned above were present at the very start of the phase. Nor is it yet known how many of the other Monte Albán I mound groups date to sub-Phase I-A; by the end of Monte Albán I, there were at least fifteen in the ETLA region and forty in the Valley of Oaxaca as a whole. Not a few of these exceed 100 acres; some reach 200 acres, and include some of the most immense Middle and Late Formative sites the writer has ever seen. The settlement pattern includes hilltop elite centers, densely occupied valley floor sites which could almost be classified as "semiurban," and piedmont villages and towns on key tributary streams. At one site in the mountains, called Hierve el Agua, James Neely of the Oaxaca Project investigated a number of agricultural terraces with irrigation canals fossilized in travertine, which date back to Monte Albán I times (Neely 1967; Flannery, A. Kirkby, M. Kirkby, and Williams 1967).

OAXACA AND THE OLMEC

What, then, are some of the similarities and differences between the Valley of Oaxaca Formative cultures and those of the Olmec?

First of all, both areas seem to have been very successful agriculturally at an early time period; yet their agricultural technologies were probably very different. Our excavations in 1966 in caves in the Valley of Oaxaca produced dried remains of beans and squash (Flannery, A. Kirkby, M. Kirkby, and Williams 1967) and pollen grains of maize and *Tripsacum* (James Schoenwetter, personal communication) which suggested local use of those plants already between 7000 and 6000 B.C. By 900 B.C., the Valley of Oaxaca contained some of the largest Early Formative sites known in the highlands. Settlement patterns, fossil canals, and a well from later stages of the Formative indicate that this development was based on water-control systems which were worked out as an adaptation to local conditions. Such systems are not yet known from the Olmec area, where the higher annual precipitation makes

dry-farming more reliable than in the Valley of Oaxaca. The continual population explosion, massive construction, and technology of the Valley of Oaxaca Formative cannot be explained as the result of "influence" from the Gulf Coast; they are understandable only as the products of successful irrigation systems specifically designed to exploit the peculiar natural resources of the Valley of Oaxaca.

Secondly, both the Formative Valley of Oaxaca and the Olmec area show a pattern of large, nucleated villages (or towns) rather than scattered small hamlets. Ronald Spores (1965) and Oscar Schmieder (1930) point out that this was still true of the Valley Zapotec at the time of the Conquest, and that it set them apart from their neighbors in the Mixe sierra. While the Mixe occupied small scattered farmsteads near their fields, the Zapotec lived in nucleated communities even if they owned land in several different zones, such as the alluvium, piedmont, and mountains. According to Schmieder, this was because the Zapotec cooperated in clearing large tracts of land, then divided it between the participants. This resulted in dispersal of a family's land holdings over a wide area, which made it no advantage to live on any one parcel. I suggest that, in fact, this system may have been a good adaptation, since it spread land-holdings over several environmental zones; in the Valley of Oaxaca, this is good insurance against the erratic yearly rainfall, which may be unpredictably weaker than average in one zone or another in any given year. Whatever the case, as Schmieder argues (1930: 77), "field dispersion resulted in the growth of larger, more compact settlements, in which a differentiation of activities became possible. Crafts, art, and science developed and were maintained by the mass of the population which nevertheless remained agricultural." Much the same contrast may be seen between the Formative peoples of the Guatemalan coastal estuary system, who lived in numerous but small villages, evidently near their fields (Coe and Flannery 1967), and the Olmec of the San Lorenzo Tenochtitlán area, who left behind fewer sites, but much larger and more nucleated ones (Coe, personal communication). I think Schmieder's observation applies to both the Valley of Oaxaca and the Olmec: large, nucleated settlements, for whatever reason they may arise, provide a better matrix for the development of science and craft specialization among primitive agriculturalists than do small scattered hamlets. It is probably for this reason, rather than because of "Olmec influence," that communities such as San Jose Mogote, Tlatilco, and Las Bocas achieved higher standards of craftsmanship than many of their neighbors.

A third similarity between Oaxaca and the Olmec area is that both regions, quite early in their development, already give evidence of considerable disparities in wealth and status between communities and between members of the same community. Some people lived in small, rude, wattle-and-daub houses; others lived in large, plastered houses on platforms with stairways and patios. Some people had considerable access to luxury items like pearl oyster, jade, and magnetite; other people did not. Some communities had only

products that could have come from within a radius of twenty kilometers; other communities had products that had to have been imported over two hundred kilometers. I suggest that this movement of exotic raw materials was functionally related to the developing social stratification of the southern Mesoamerican Formative, and that ornaments and implements of these exotic materials functioned as the insignia of status.

The kind of status to which I am referring is not the kind that can be acquired by an individual during the course of his lifetime, through his own accomplishment—the difference, let us say, between a good farmer and a bad one, between a good artisan and a bad one, or between the head of a Pueblo community and the other members of the community, who are his equals at birth. I am referring to a kind of status that is ascribed at birth, such as characterized the chiefs of the Natchez, or the Indians of the Pacific Northwest Coast. Among the Mixtec and Zapotec at the time of Conquest, for example, a man was born a *cacique*, a *principal* or noble, a *macehual* or commoner, or a slave; men came into the world already unequal, with a rank determined by their genealogies (Spores 1965: 969). Only the hereditary Zapotec nobility could wear decorated cotton mantles, lip-plugs, earrings, gold and stone beads, and so on. That is what is meant by “insignia of status.”

Such status distinctions begin to appear in Mesoamerica toward the end of the Early Formative. At Zacatenco, for example, most adult burials had no offerings or ornaments at all, while at nearby El Arbolillo there were infants buried in slab-lined graves, or with jade earspools (Vaillant 1930, 1935). At La Venta, one basalt column tomb in Mound A-2 contained two juvenile burials accompanied by “figurines, beads, a pendant in the form of a clam shell, and a sting-ray spine, all of jade” (Coe 1965a: 690). It is doubtful that these infants and juveniles could have *acquired* sufficient status (through accomplishment during their lifetimes) to warrant such elaborate burials, at a time when most contemporary adults were simply wrapped in a *petate* and thrown in a hole; a more likely explanation is that their status was inherited. It also seems likely that such status was often expressed, as among many ethnographically-documented pre-industrial societies, by restricting access to certain luxury materials to the elite. This is fortunate for the archaeologist, since many of these luxury materials are nearly indestructible and can be traced to definite source areas.

To return to the comparison between the two cultures, a fourth point is that the elite and “ceremonial” architecture of the Formative Valley of Oaxaca shows some similarity of tradition with the Gulf Coast. The use of adobe walls and colored clay in the construction of platforms, and the orienting of those platforms 8° west of north, are all shared characteristics. Yet even our earliest structures from the Valley of Oaxaca have architectural features, such as the use of white plaster and building stone, which set them apart from the Olmec and suggest that they are not just highland imitations of the San Lorenzo or La Venta platforms. They are, as Bernal put it, fundamentally

related, but already fundamentally different; and the aspects in which they differ are aspects shared by later structures in the Valley of Oaxaca.

Finally, it is in symbolism and iconography that Oaxaca seems most closely related to the Gulf Coast, and the relationship appears stronger the farther back one goes in time. The representation of the "were-jaguar," the use of the St. Andrew's cross, U-motif, "paw-wing" design, and the other symbols of the "Olmec art style" as defined by Coe (1965b) are clearest in the San José Phase. At that point, as Coe indicates, they are already so stereotyped as to suggest that they may be actual glyphs, although their meaning is not yet clear. Such symbolism is already beginning to fade in the Guadalupe Phase, and by Monte Albán I it is virtually gone; it has been replaced by a different system, one which is distinctly Oaxacan, and which characterizes not only the Valley of Oaxaca but also an area in excess of 25,000 square kilometers, from the Tehuacán Valley in the north to the Pacific Coast of Oaxaca (Flannery, A. Kirkby, M. Kirkby, and Williams 1967). By that time, La Venta had ceased to be important as a nucleus of political power, and Monte Albán was on its way to becoming the major nuclear center of the southern highlands.

Let us sum up the similarities and differences in this way. Both Oaxaca and the Gulf Coast had, by Early Formative times, achieved a measure of agricultural success which supported large nucleated communities with a hereditary elite and craft specialization. There is reason to believe that the two areas achieved this success through independently-derived agricultural technologies. It is the Gulf Coast, however, which had the largest communities and the most sophisticated level of art and craftsmanship, judged by our standards. Also, if degree of status may be fairly measured by quantity and quality of mortuary offerings, the Olmec had achieved a level of social stratification barely approached by the highlands.

The Olmec and the Valley of Oaxaca interacted most strongly on a level of shared concepts about religion, symbolism, and status paraphernalia. Olmec motifs are commonly and skillfully executed in Oaxacan ceramics, and the principal Olmec deity is represented by Oaxacan figurines and sculptured pottery. Important Oaxacan buildings are oriented in the same way as the structures at Complex A La Venta. The Olmec imported foreign magnetite and ilmenite, which appear at San Lorenzo Tenochtitlán in the form of beads and small flat mirrors; the Oaxacan craftsmen accumulated local magnetite and ilmenite, which they also worked into small flat mirrors, many of which were probably exported. One might tentatively suggest, therefore, that one of the main mechanisms of communication between the two regions was through the exchange of exotic raw materials. I find this interesting, in view of the fact that Coe (1965c) has already pointed out that the upper Balsas River region, where so many so-called "highland Olmec" objects have been found, is also a possible source for some of the Olmec serpentine and jadeite.

There exist, in the ethnographic literature, many examples of developing

societies which used imported and exotic raw materials to reinforce their status systems. I will draw on two examples in this paper, on the basis of which I feel one might present a hypothesis about the relation between the Olmec and the Valley of Oaxaca—or, for that matter, the Río Balsas area, Las Bocas, the Valley of Morelos, and so on. This hypothesis requires only two propositions: first, that it was important for the Olmec status system (and the reinforcement of certain of their religious commitments) to establish and maintain a flow of jade, magnetite, ilmenite, and other luxury goods into their nuclear centers; second, that the highland peoples who supplied the Olmec with these luxury goods were as interested as the Olmec in maintaining the exchange network.

THE TLINGIT AND THE FUR TRADE

The first example I would like to cite is drawn from Catherine McClellan's work (1953) on the Indians of the Pacific Northwest, with special reference to the Tlingit-speakers of the southeastern Alaskan coast. The Tlingit, as every student of ethnography knows, had a stratified society with nobility, commoners, and slaves; their economy, keyed to the salmon runs and the pursuit of other marine and terrestrial game, operated at a surplus, much of which went into reinforcing status. Their nobility consumed, gave away, and destroyed wooden canoes, slaves, copper, furs, blankets, and hundreds of other objects in the process of demonstrating its wealth and prestige.

Inland from the Tlingit lived the Athabaskan-speaking groups of interior British Columbia and the southern Yukon. The Athabaskan groups lived a somewhat humbler and more nomadic existence, based on the hunting of caribou, moose, small game, and fresh-water fish. Their territory centered around a series of small lakes in the dry plateau area fifty to one hundred miles from the Pacific Coast. The principal exportable resource of this area, at least so far as the Tlingit were concerned, was fur.

Furs were important in the prestige systems of the coastal Tlingit, and with the beginning of trade with the white man they took on even greater value. Consequently the Tlingit blockaded the interior, allowing no inland natives to come to the coast, and effectively monopolizing fur trade with the whites. Destruction of sea otter populations late in the eighteenth century removed one great fur source and increased the demand for land-animal furs of the kind the inland Athabascans could supply (McClellan 1953: 49).

McClellan describes the way in which Tlingit-speaking groups like the Chilkat formed fur-procurement alliances with inland groups like the Tagish and Teslin. Chilkat "trade partners" came into the territory of the Tagish, some taking wives from the interior group, others sending their daughters to marry Tagish men. She says:

Actual social alliance had a distinct commercial advantage for the coastal Tlingit. It was no trick for them to manipulate Tlingit recipro-

cal kin obligations and trading partner patterns to their advantage. Even daughters might well be married to the interior. The furs which a good son-in-law gave to his wife's family had a value that only the strategically located Chilkat could fully exploit. (49)

Everyone profited from the arrangement. White traders got the furs they wanted; the Tlingit nobility, who were already rich and prestigious, got richer and more prestigious, gave bigger potlatches, burned more canoes, and sacrificed more slaves than before. What happened to the Tagish and their Athabascan neighbors?

McClellan suggests that they were gradually "Tlingitized." During the course of the nineteenth century, while some retained their Athabascan dialect, most Tagish and Teslin began to speak a kind of "inland Tlingit." Having married into Tlingit families, the Teslin began to speak of themselves in Tlingit kin terms. All Teslin came to belong either to a Wolf or Crow moiety, which were "matrilineal exogamous divisions which correspond to the Wolf and Raven moieties of the Alaskan Tlingit and are called by the identical names. Everybody belongs also to a matrilineal clan of which other segments are localized on the coast" (47). The Tlingitized Athabascans became more conscious of social rank; the concept of nobility was well-ingrained, and slaves were kept. They practiced funeral potlatching, and adopted many songs and myths which featured coastal animals never even glimpsed by the Tagish or Teslin. In spite of this, patterns of subsistence and everyday material culture remained "overwhelmingly *more* typical of . . . northern Athabascan groups . . ." (48). The inland Athabascans took seriously their marriage ties to Tlingit clans, emulated the esoteric and prestigious aspects of Tlingit culture to the best of their ability, but continued to earn a living in the manner of Athabascans. And the Tlingit, for their part, continued to regard the inlanders simply as "foreigners" from whom they obtained furs.

HIGHLAND BURMA AND THE JADE TRADE

The second example comes from farther afield. It is abstracted from Edmund R. Leach's (1954) classic description of highland Burma, with special reference to the valley-dwelling Shan and the Kachin hill tribes who supply them with jade.

The Shan are sedentary wet-rice cultivators with a stratified society consisting of nobility, farmers, and lower-class persons or slaves. Buddhism is their official religion, and (with a few exceptions) they speak mainly Tai. Their culture resembles that of the Burmese.

The Kachins are slash-and-burn cultivators who occupy the hill lands above the Shan. They speak a variety of dialects, some of which are mutually unintelligible. Their sociopolitical organization ranges from an egalitarian system called *gumlao*, in which all lineages are considered of equal rank, to a system called *gumsa*, in which lineages are ranked: there is a chiefly lineage,

several lineages of aristocrats, and other lineages of commoners, or of slaves.

The history of the area, as reconstructed by Leach, has involved constant sparring and competition between Kachin groups, and between Kachin and Shan. During the course of the centuries, while the organization of the sophisticated feudal states of the Shan has remained relatively stable, Kachin tribes have oscillated from egalitarian to stratified, and back again. This oscillation is understandable only in the light of the relationship between the hill peoples and the Shan states.

While Shan states are reasonably self-sufficient, Kachin villages may not be—they may, in fact, be dependent on the Shan for much of their rice (Leach 235). On the other hand, the Kachin mountaineers have access to, and control of, a number of sources of exotic raw materials which the Shan desire and can make better use of: among these are jade, amber, tortoise shell, gold, and silver (Leach 238). The value of these commodities fluctuates through time, and is directly determined by the economic and political environment (Leach 25). The Kachin need food; the Shan need exotica so that they can either use them in their own prestige systems or trade them on to the Chinese.

The way in which the Shan and Kachin form alliances is not unlike that of the Tlingit and the Athabascans: they intermarry at the upper echelon. Most commonly, a Shan prince will send a daughter to marry a Kachin chief—perhaps including a dowry of rice land—and gain access to some desired mountain resources. For example:

The Kansi chiefs who are Kachin overlords of the jade-producing area west of Kamaing have for several generations married Shan as well as Kachin wives. The Shan women are members of the family of the former *saohpa* [prince] of Mōng Hkawm. . . . (220)

What is the effect of alliances between the Shan and their less sophisticated mountain neighbors? The effect is that, when Kachin communities are in the process of going from egalitarian (*gumlao*) to stratified (*gumsa*) society, the form taken by the stratification is an imitation of Shan stratification, “Kachin chiefs, when they have the opportunity, model their behaviour on that of Shan princes” (Leach 213); thereby “their chiefly status as Kachins is enhanced” (222). The Kachin chief may learn to speak Tai, he may adopt the Buddhist religion, he may dress like a Shan, and use Shan ritual and symbolism to support his position. Leach gives examples of whole Kachin communities whose aristocracies have become “Hill Shan”—he suggests, in fact, that all Kachin villages were once egalitarian, and that the stratified version is an unstable and artificial emulation of the Shan way of life. It is part of a process in which “. . . individuals faced with a choice of action will commonly use such choice as to gain power . . . or, to use a different language, they will seek to gain access to office or the esteem of their fellows which may lead them to office” (10).

Kachins and Shans are mutually contemptuous of each other. They compete for food and resources in a rugged and ecologically-varied region. In

spite of their mutual contempt, the Shan and Kachin establish exchange relations through intermarriage, with the Kachins receiving subsistence products and the Shan exotic raw materials. Let me emphasize that this exchange, or "trade" if you will, does not cause the Kachin to become stratified, nor does it maintain stratification when the unstable *gumsa* begins to break down and revert to egalitarian organization. The point is this: when the Kachin do achieve stratification, the form it takes is an imitation of the language, religion, behavior, and symbolism of the more sophisticated Shan who consume their jade and amber. In much the same way, the Tagish who become stratified adopt the language, behavior, and symbolism of the Tlingit who consume their furs.

I suggest that such exchange systems are not without adaptive value. In ecological terms, they make possible the more nearly total exploitation of a very diversified environment, many of whose sub-areas could not otherwise sustain a self-sufficient population. In isolation, the Shan would survive with a surplus, but many areas of the Kachin hills would not be suitable for permanent communities. Intermarriage and the jade trade, bringing the Shan rice surplus up into the hill country, leads to one big economic system rather than several small ones, and makes more "niches" potentially usable. And the *gumsa* system, with all its strutting provincial imitation of Shan society, would probably be of great value in reinforcing the symbiotic network if only it could be stabilized.

A MODEL FOR OAXACA AND THE OLMEC

I am confident that many more examples of this kind could be found in the ethnographic literature. To sum up: data from several parts of the world suggest that a special relationship exists between consumers of exotic raw materials and their suppliers, especially when the suppliers belong to a society which is only slightly less stratified than that of the consumers. First, it seems that the upper echelon of each society often provides the entrepreneurs who facilitate the exchange. Second, the exchange is not "trade" in the sense that we use the term, but rather is set up through mechanisms of ritual visits, exchange of wives, "adoption" of members of one group by the other, and so on. Third, there may be an attempt on the part of the elite of the less sophisticated society to adopt the behavior, status trappings, religion, symbolism, or even language of the more sophisticated group—in short, to absorb some of their charisma. Fourth, although the exchange system does not alter the basic subsistence pattern of either group, it may not be totally unrelated to subsistence. It may, for example, be a way of establishing reciprocal obligations between a group with an insecure food supply and one with a perennial surplus.

Here, then, is one possible model for what happened in our case.

By the start of the first millennium B.C., the Valley of Oaxaca had reached

the point where an emerging Formative elite sought to express its differential status through ornaments of magnetite, pearl oyster, and mica. Marine shells were imported from the Pacific Coast, and local sources of iron and mica had been found and were being exploited. At least one barrio of the largest-known San José Phase site in the Etna valley was occupied by craftsmen who accumulated and worked the above-mentioned materials.

The Oaxaca peoples were aware of, and in contact with, a more sophisticated and more highly stratified group of people occupying the southern Gulf Coast, from whom they obtained pearly fresh-water mussel shell. Judging by Curtis' mineralogical map, the Olmec probably first became aware of the possibilities of polishing iron ores when they came in contact with highland Oaxacan peoples who had access to the sources. The flow of magnetite and ilmenite may have begun on a small scale, involving tiny flat mirrors of the type seen at San Lorenzo Tenochtitlán, and expanded later to include nodules large enough for the parabolic mirrors recovered at La Venta. If our ethnographic data is in any way analogous, the mechanism which facilitated this inter-regional flow of goods should have been one which linked the highest-ranking lineages of the Oaxaca peoples to one or more of the higher-ranking Olmec lineages. One would also predict that the highland Oaxaca elite would begin to emulate the religion, symbolism, dress, and behavior of the Olmec elite, insofar as it would enhance their own status among their own people. We might predict, for example, that while their patterns of settlement and subsistence remained unchanged, they might adopt the St. Andrew's cross, the U-motif, the "paw-wing" motif, and the deity who was part man and part jaguar. Certainly there is some evidence in the ceramics of the San José Phase that the latter steps were taken in the Valley of Oaxaca.

Our model suggests one further point: the areas most likely to form exchange systems with, and truly emulate the behavior and symbolism of, the Olmec were not the least developed regions of the highlands, but the most developed—areas of high agricultural and demographic potential like the Valleys of Oaxaca, Mexico, Morelos, and Puebla, for example. Many of these regions already are known to have large nucleated communities in the Early Formative, and some already had patterns of monumental architecture which were too regionally distinct to be considered Olmec-derived. On the basis of the ethnographic data presented above, I suggest that it was precisely because these areas were on the verge of stratified society themselves that they were so fascinated by the Olmec and so predisposed to adopt their status paraphernalia. All the valleys of highland Mexico contain some exotic raw material which could be used for the manufacture of status items, but many such materials were rarely or never used in the Early Formative: native copper, amethyst, plate chalcedony, and galena are only a few of the overlooked possibilities. I suspect that, for the most part, the materials used were those occurring in areas where relatively large, stratified highland communities were already present. I make this point because I feel that, as more and

more "Olmec-influenced" communities are discovered in the *tierra templada*, it may become tempting to view the highlands of Mesoamerica as a vast underdeveloped backwater into which Olmec messiahs spread. I would argue the reverse: Olmec influence will appear most strong in those areas which were already most developed and already had status systems into which Olmec concepts could be most profitably fitted.

In other words, I suspect that the peoples who have been called "Highland Olmec" were not really Olmec, any more than the "Inland Tlingit" were really Tlingit or the "Hill Shan" were really Shan. They were indigenous mountain peoples, successfully pursuing multi-crop agriculture, competing for good land and water, and using their surplus to support a hierarchy, craft specialists, and community-sponsored construction projects. Had they not been, they would probably not have gained as much from contact with the Olmec as they did.

SOME SPECULATIONS ON FUNCTION

Finally, we come to the last question: why did it happen at all? Here the available archaeological data are so inadequate that they make a conclusive answer impossible; I can only offer suggestions for future research.

Let us assume, for the moment, that the systems of inter-regional interaction did not spring up by accident during the Formative: there was a reason for them. Let us assume that systems of exchange profited both the Olmec and the peoples of the highlands, and that that is why the exchange was so striking and extensive. As in the case of any system, the behavior of the participants should (perhaps in some nearly-concealed way) have served to maintain the exchange pattern. In studying such a system, therefore, we must be careful to distinguish between the *purpose* of the participants' behavior, which may be quite easy to figure out, and the *function* of that behavior in an adaptive sense, about which we can only hypothesize.

For example, we have suggested that the *purpose* of the accumulation of magnetite or jade by highland peoples, its working by craft specialists, and its export to the Olmec, was to enhance and reinforce previously-existing systems of status, in which access to certain exotic raw materials was restricted to an elite. Its *function*, however, may have been to convert some of their agricultural surplus into a kind of imperishable "wealth" which could be used to set up reciprocal obligations with neighboring people whose food supply was even more secure. (This seems, for example, to have been the case among the Kachin tribesmen who depend on the Shan for part of their rice.)

Similarly, as Drucker, Heizer, and Squier (1959: Footnote 33) have already suggested, the *purpose* of the massive offerings of serpentine, jade, and magnetite made at La Venta may have been to restate and reinforce commitment to the Olmec social and religious systems. The buried pavements, they point out, were not made to be admired; the act of creating and burying such

offerings, made valuable by the difficulty of their acquisition, was the important point. But the underlying *function* of burying such offerings may have been to take the materials themselves out of circulation. It was a way of consuming, or destroying in a sense, a whole series of otherwise imperishable materials, thereby necessitating the acquisition of more of the same. As Leach points out, the value of jade depends directly on the current economic situation; had such exotic materials continued to pile up at La Venta they would soon have lost whatever value derived from their rarity and foreignness, and the flow would have slowed down.

Two aspects of the system, therefore, may have been this: the highland people converting their occasional surplus into exotic items for export to the Olmec; the Olmec maintaining the flow by taking it out of circulation as soon as it arrived. And the overall function of the whole system may have been to create one big economic sphere where previously many small ones had existed—to set the stage, in a way, for the great inter-regional symbiotic networks which Sanders (1956) describes for later periods of Mesoamerican prehistory. In the process, the elite of a number of key highland regions came to emulate the behavior of the Olmec elite, to borrow their symbolism, and adopt those aspects of Olmec religion which lent further prestige to their own position. Perhaps one superficial effect of this process was the spread of the Olmec art style throughout the highlands. I say “superficial” because I am confident that the spread of that style was not a primary *cause* of Formative Mesoamerica’s unity, but one reflection of the fact that it was already united, in an economic sense.

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DISCUSSION

DR. HEIZER: Do you know the source of the obsidian?

DR. FLANNERY: Samples of obsidian from San José and Guadalupe Phase deposits have been analyzed by the neutron activation technique by Gary Wright at the University of Michigan. None can be traced to a definite source from which we have reference material. San José Phase obsidian matches some samples found at Tula, Xochicalco, Malinalco, and Monte Albán, from an unknown source Wright believes may be located in the state of Hidalgo. Guadalupe Phase obsidian matches some found at Monte Albán and Cholula, from a different source which is also unknown. None of our obsidian is from areas to the south (e.g., El Chayal), and none seems to be from Holmes' site in Hidalgo, Sierra de las Navajas. However, obsidian from Sierra de las Navajas does seem to show up in later periods at Monte Albán. Right now we are trying to obtain reference samples from a source said to be located near Achiutla in the Mixteca of northern Oaxaca—which, if it really exists, may be the nearest available source to our site.¹

DR. PETER FURST: How do you explain Chalcatzingo?

DR. FLANNERY: I wouldn't explain Chalcatzingo unless I had a chance to work there.

DR. FURST: Every indication is that Chalcatzingo is a very large and important Olmec center.

DR. FLANNERY: One might also say that San José Mogote is a very large and important Olmec center. What is Olmec? Does it have San Lorenzo pottery, or does it have pottery like Las Bocas?

DR. FURST: Very little is known about the pottery at Chalcatzingo, but the relief carvings are certainly classic Olmec.

DR. FLANNERY: I would like to find out, first, why that area could have supported a very large site, and then I would like to find out what it had that the Olmec might have wanted. In other words, why there rather than somewhere else? All these sites have always been described as little colonies of Olmec who came charging

¹This answer was changed by Dr. Flannery after the conference to accord with new information.

up the mountains and sat there, but if you look at their pottery, it does not look like Olmec pottery; it looks like the kind of pottery made in the highlands.

DR. COE: May I say a word about Chalcatzingo? This site has to be seen to be believed. It really is impressive. It is the only great Olmec site outside the Olmec heartland with a real corpus of carvings. It is in the center of an area that I would like to move into, if I were an Olmec used to the Coatzacoalcos Valley. With Morelos, which is unknown to us, and with the neighboring regions of Puebla, around Izúcar de Matamoros, we are talking about areas entirely different from the Valley of Oaxaca. If the Olmec did move around—and I see no reason to question that they could and did—I should think this particular area would be the one they would most want to go to. You have clinching evidence on symbiosis between Oaxaca and the Olmec area, but I have the feeling that there are some areas which might have been important which are curiously left out, as far as the presence of the Olmec is concerned. For instance, almost the entire Maya area is devoid of Olmec relief carvings or monumental carvings. I don't know how to explain this. There is, of course, one relief carving on the Río Jataté that was described and pictured by Wolfgang Cordan.²

I have the feeling that symbiosis alone is not going to explain why the Olmec, for instance, were present in Morelos and Puebla and perhaps also in the completely unknown state of Guerrero. I don't think that, on the analogy of the later peoples, such as the Teotihuacán people, or the Toltec, or the Aztec, that we can discount what you have called the biblical hypothesis of migration. When you look at the Mesoamerican pattern of migration, it is not really something out of the Bible, it is more reminiscent of contemporary American Coca-Cola salesmanship—small groups of commercial people with plenty of fire-power, moving into a region and taking it over commercially. This pattern, I feel sure, is already present at Teotihuacán. And I would not be at all surprised if it were present among the Olmec. In other words, Olmec imperialism cannot be completely discounted. On the other hand, it is not the only explanation, and I feel that symbiosis and *pochteca*-like commercialism, i.e., migrations of small groups, are both perfectly valid explanations; both could have co-existed, as we know they did in Aztec times.

Chalcatzingo is a very important site, and one archaeologically unknown except for some minor testing by Román Piña Chan. Chalcatzingo is going to hold many of the answers to the questions of Olmec influence in the highlands, not in the Valley of Oaxaca, but in the Valley of Mexico, in the Valleys of Puebla and Morelos, and at the headwaters of the Río Balsas. Chalcatzingo is going to be the key site. I would really give my right arm to dig Chalcatzingo. It is one of the sites that needs digging.

DR. FLANNERY: It is going to have to be understood in terms of the potential of the Valley of Morelos to support it. I think that the concept of Olmec imperialism, in a sense, underestimates the population densities in some parts of the highlands. Many highland areas are archaeologically unknown, except that Olmec art objects have come from there.

² Geheimnis im Urwald (Düsseldorf-Köln, 1959), Fig. 20.

DR. COE: You have to differentiate always between portable and nonportable objects. The portable objects can have been moved from anywhere at any time.

MISS PROSKOURIAKOFF: Are there any free-standing monuments at Chalcatzingo?

DR. COE: Yes, there is one that is pictured by Eulalia Guzman.³ It looks like an imitation of Monument 20 at La Venta. It is the only free-standing Olmec monument that I know of in Central Mexico. It is a seated sculpture, headless, and a poor piece, but definitely this early kind of three-dimensional art that I was talking about. This brings one to the carvings on the Pacific Coast, such as those at San Isidro Piedra Parada in Guatemala, and the boulder sculpture of Las Victorias, near Chalchuapa, El Salvador; Los Naranjos, Honduras, also has some free-standing Olmec sculpture. These sites bespeak something different from the hill-Kachin-type sites or areas, such as you have in Oaxaca. We have to distinguish between degrees of Olmecness and between degrees of evidence. A monument in Olmec style is quite a different thing from a pot or a figurine in Olmec style.

DR. FLANNERY: I am not implying that all of the pottery in Oaxaca is brought from the Olmec area. I don't think portability is even a consideration. The point is, why in Area A and not in B? I think that it has to do with the potential and the development of Area B that it shows up with Olmec-type pottery.

DR. COE: That is probably the real explanation, but there aren't any Olmec there.

DR. FLANNERY: I am not arguing that the Olmec never moved or that there was an invisible plastic shield around the Olmec areas. What I am saying is that where the Olmec did move in the highlands is precisely where things had already gotten off to a fast and big start. The Olmec were not moving in a vacuum. They were allying themselves with people who had already begun to develop.

DR. COE: The Aztecs didn't bother to go up and really conquer the Chichimeca—why should they? There was nothing there for them, and no people at the right level.

DR. BERNAL: I think that was the whole system in Mesoamerica. The leaders would have the soldiers move into only the areas that were worth moving into.

DR. FLANNERY: Tlatilco presumably would be another area that already had a relatively high population density.

DR. COE: Tlatilco is the least known site in Mesoamerica, and probably one of the most important. There obviously are many components at Tlatilco, and one of them is identical to Las Bocas—the one that has all of the Olmec material in it.

³Los Relieves de las Rocas del Cerro de la Cantera, Jonacatepec, Mor., *Anales del Museo Nacional de Arqueología, Historia y Etnografía*, época 5, vol. 1 (Mexico, 1934), Figs. 11–13.

All of Tlatilco is supposed to be later than El Arbolillo, which is said to be at the very bottom; but I know that I and a lot of people who have been digging elsewhere in Early Formative Mesoamerican sites are of exactly the opposite opinion. I feel certain that if the graves could ever be properly seriated, this would come out. There are now four radiocarbon dates on samples from El Arbolillo submitted by Paul Tolstoy to the Yale Radiocarbon Laboratory. They range from 720 B.C. to 590 B.C.

DR. FLANNERY: One Tlatilco date is 982 B.C., which would be perfect with our Tlatilco-like material, for which we have a 975 B.C. date,

DR. COE: This means that one part of Tlatilco, that early Las Bocas-like component, is earlier than whatever El Arbolillo is, so the site of Tlatilco is obviously a very important site, probably equally as important as Las Bocas. It happens to be complicated because it has so many components.

DR. FURST: I don't want to speak for David Grove, because he is working on his dissertation now at UCLA, but this is exactly what he has found in Morelos. The Olmec component there is followed by something later, but the really high period of development has this Olmec influence very much like Las Bocas and Tlatilco. He sees this early occupation at roughly 950 B.C. and a later one at 600 B.C.

DR. COE: Therefore, Las Bocas and Tlatilco would be a very good example of what you are talking about.

DR. FLANNERY: Yes.

DR. GORDON EKHOLM: I don't know if Paul Tolstoy would want me to express something he said in a letter just the other day, but it fits in here very nicely. He is working now in the Valley of Mexico, and he said that he is almost convinced that the earliest horizon he has in the Valley of Mexico is at Tlapacoya, and that this is an Olmec component. There is nothing earlier than that.

DR. GORDON WILLEY: Let me ask you this: in economics, in disposing of great wealth, you can at one stage either have a potlatch or bury it, while at another stage, you capitalize it back into the system. In Mesoamerica, when was the changeover? When would you begin to use a thing like jade as a medium of exchange?

DR. FLANNERY: There are two points that could be made: first, as you say, whenever you get some surplus, you have an option of investing it back in yourself or investing in something to tie you into other peoples and other regions. Second, it seems to be characteristic of Mesoamerica that they always opted to set up reciprocal exchanges with other regions.

DR. WILLEY: But the Olmec were presumably burying it at one point in time.

DR. STIRLING: Maybe they were putting it in the bank!

DR. PHILIP DRUCKER: They were doing two things with this jade. Some of it was used ceremonially. Some was used in a more or less ceremonialized exchange, which also had certain highly special attitudes, and was not just ordinary trade and commerce in our sense.

DR. FLANNERY: It probably would have done the Guerrero elite a lot of good to have Olmec-produced jade. Scotty MacNeish and I were discussing this the other day, and he was convinced that this business of moving things out of your own area certainly goes back to the Pre-Ceramic.

DR. RICHARD MACNEISH: I think that the very slim evidence for a Pre-Ceramic level on the Gulf Coast shows the beginnings of this exchange. In James Ford's excavations at Palma Sola in Veracruz, roughly on the 4000-3000 B.C. level, he found that there were large populations down in this area, whereas you get nothing but little camps in the highlands. One difference between these two areas (although there are similarities) would be that in all of the Gulf Coast sites there isn't a single piece of ground stone—no mortars, no pestles, nor any of the kinds of artifacts that were associated with incipient agriculture in the highlands.

I would think, therefore, that even on this level we have two different, almost symbiotic kinds of situations: on the coast, people living off shellfish and living in fairly permanent settlements, who were exchanging things with highland people who were practicing agriculture. When agriculture went down from the highlands to these people on the coast with a staple food supply of shellfish somewhere between 3000 B.C. and Olmec times, the coastal dwellers suddenly gained a new surplus because of this exchange situation. I think that this is why, on the Olmec level, one gets this kind of symbiotic relationship between the two zones on the basis of interchange and interstimulation.

DR. FLANNERY: It may be that, in a sense, we have been looking for the wrong things in this gap between the egalitarian hunters and gatherers, and the stratified farmer people. In most syntheses it has always been assumed that it would look something like Pueblo society, let us say, with its big groups of egalitarian villagers, and so on. Actually, I suspect that what we probably ought to be looking for is something more like the "Big Man" systems in New Guinea and Melanesia and parts of Oceania, where the big entrepreneur arises in egalitarian communities. This "Big Man" facilitates a large-scale inter-regional exchange system, and accumulates goods and sends them out to other areas. It may be that this flow of products that starts so early is a kind of communication and that this stage lies between the egalitarian communities and the rank communities, and that it is nothing like the Pueblo system.

DR. FURST: You suggested that the unifying factor was economics. I think that religion is a far more powerful unifying factor here than economics. If there is an underlying religious unity in Mesoamerica—and I think there is—then Olmec iconography would have been far more acceptable to foreign communities than would similar economic interests.

DR. FLANNERY: My predisposition would be toward economics. I suspect that Olmec

religion involved a number of steps. I am thinking of the situation in which, let us say, a Kachin becomes an imitation Shan; one of the first things he does is to become a Buddhist because this gives him status. Thus, this unifying force carries implications of status with it.

DR. WILLEY: Maybe economics and religion are just two faces of the same thing.

DR. STIRLING: You can't push this economic interpretation too far, or you will make a site like San Lorenzo nothing but a market or a warehouse.

DR. COE: One of the strange things about San Lorenzo is that no one has found much jade—neither Matthew Stirling nor Philip Drucker nor ourselves. There is practically none there. I don't know what they did with it, or where it is now.

MISS PROSKOURIAKOFF: They took it with them.

DR. COE: Perhaps so, but they must have buried some, if they were like the La Venta Olmec. There is much more magnetite than jade.

DR. FLANNERY: Our magnetite trade drops off in the late La Venta period. Our real magnetite processing is all in the early period.

DR. COE: I have the feeling that the rare and valued material in the Early Formative was magnetite, whereas in the Middle Formative it was jade.

DR. FLANNERY: It may be that what gets traded depends on whom you want to have relations with.

DR. ROBERT SQUIER: If you think about it, the most Olmecoid, most elaborate, jade objects are not found in the nuclear area. I have wondered many times whether these were things made in the Olmec area and traded out, or whether there was some sort of influence which was so pervasive as to cause people in the other areas to duplicate these objects and in even more elaborate forms than in the Olmec nuclear area itself. They are not buried in the Olmec area, except at La Venta. What is the significance of the simpler objects being in the Olmec area, and the more elaborate objects outside it?

DR. COE: It may be a sampling problem: Guerrero is easier to loot than Veracruz because the mounds in Guerrero are so much more accessible.

DR. SQUIER: We should have found some extremely elaborate jade objects, like the Kunz axe, in the Olmec area. But there is nothing.

DR. BERNAL: It is the same problem with ceramics. If you see what has been found in all the Olmec sites, ceramics are extremely poor in comparison to those you find in the Valley of Mexico, in the Valley of Puebla, and in Oaxaca. I don't know how

to explain it, but it seems that more of these small objects were made outside the central area than inside. In the case of jades we can think of exportation, we can think that these outside people would send raw materials to the central area, materials which would be worked there and sent back as trade pieces. But in the case of ceramics, that would obviously be false. All the excavations done at La Venta, Tres Zapotes, and San Lorenzo have shown that the ceramics of the area are very poor in comparison to the pottery that one finds in other, similar sites.

DR. COE: They were terribly eroded at San Lorenzo and at La Venta. At San Lorenzo we have pure Las Bocas-type pottery; you could fill a room with it. It is exactly the same, except that there are no surfaces left.

DR. FLANNERY: Do you have those big white-slipped dolls?

DR. COE: We have a number of fragments, and there are some fragments in the Drucker-Stirling collections from 1946. We have never found any burials at San Lorenzo, but the bone is not preserved there except under one or two lucky circumstances. If we ever did find well-preserved burials with pottery offerings, I am sure we would have a complex identical to that of Las Bocas.

OLMEC AND MAYA ART:

PROBLEMS OF THEIR STYLISTIC RELATION

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When an archaeologist is working with his own excavated material, he is always careful to see that his conclusions do not go beyond the observed facts. On the other hand, when he tries to reconstruct history from facts that have been gathered here and there, he is apt to introduce certain broad assumptions, which often rest only on popular belief. There are two assumptions that have tripped us again and again. One is that absence of evidence is equivalent to negative evidence; the other, that civilization first arises in a single locality and spreads outward. When we first learned that the earliest Maya stelae were located in northern Petén, this region came to be regarded as "The Cradle of Native American Civilization." The Pre-Classic pyramids of Guatemala were at first viewed with disbelief, and, when it was no longer possible to deny their antiquity, "The Origin of Civilization" was shifted to the highlands. The Petén became a late colony, doomed to eventual failure because of its unsuitable environment (Meggers 1954: 817-20). Now that still earlier structures and monuments are turning up in Veracruz and Tabasco, we are about to revive Covarrubias's notion of Olmec culture as "The Mother of Civilization." Such metaphors can be pernicious as well as inept. No civilization has arisen from a single focus. If we must have a popular metaphor, we would do better to compare the progress of civilization to the propagation of waves on a rising tide. Its genesis is the interaction of cultures, and no isolated and homogeneous culture has ever risen much beyond its original level.

Let us not imagine, therefore, that early Olmec sites were the only ceremonial centers of their time. On the basis of historical probability alone, we must postulate that there were other societies capable, if not of producing works of art of comparable excellence, at least of building temples and erecting monuments, and of competing with the Olmec in trade and in war. What

actually isolates the early Olmec culture is our almost complete ignorance of what was going on elsewhere. The exposure of San Lorenzo was due largely to its peculiar location, its early abandonment, and its fortuitous erosion. We can't expect to find such coincident circumstances in many places.

The period corresponding to the settlement of San Lorenzo is totally unknown in the Petén, in Campeche, and in Yucatán. It is conceivable that, at that time, the heavily forested regions of the peninsula had not yet been brought under intensive cultivation; it may even be that the delta region of the Grijalva and the mangrove swamps on the Campeche coast were inhospitable to permanent settlement; but we need not assume that the entire northern lowland was still a wilderness. We have yet to dig into the Pre-Classic pyramid at Yaxuna to see what is under its surface, and to locate a habitation

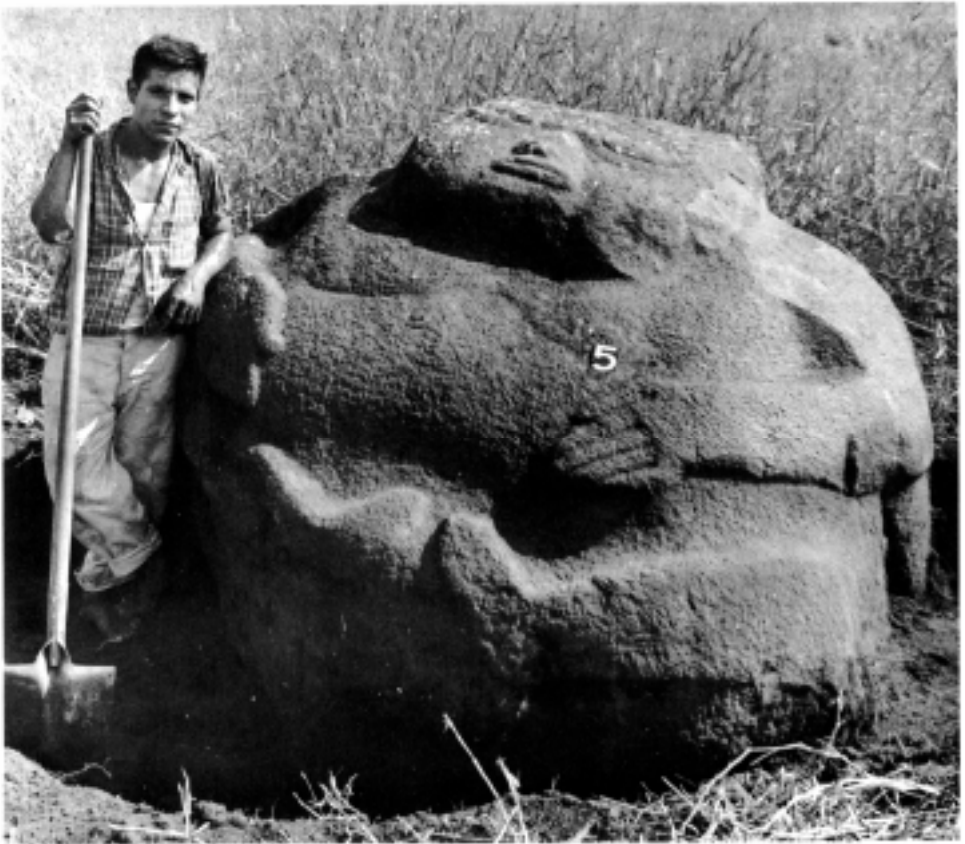


Fig. 1 Potbellied stone figure from Monte Alto, Guatemalan coast.
Courtesy the Milwaukee Public Museum.

site of the people who first used the Mani cenote. However, since there is no known body of sculpture that we can ascribe to a very early period, perhaps we should reserve judgment and turn to the higher lands of Guatemala and to the Pacific Coast, where the situation is somewhat more promising.

Here there are ample evidences of early occupation, although they are often partially erased or deeply overlaid with the numerous large constructions of later Pre-Classic sites. It is often said that these early remains represent a period of village settlements without ceremonial centers, but in fact we have no more remains of villages from this time than we have remains of ceremonial precincts, and no substantial reason to believe that permanent residence must precede the establishment of communal centers, or of the carving of stone. S. W. Miles (1965: 242-8) has surmised that certain boulders carved in the form of fat nude figures comprise the oldest group of sculptures in Guatemala, and has even suggested that they may be more ancient than the sculptures of La Venta. It is true that many of the figures are rudely carved, and none can be compared in artistic quality to the colossal heads of the Olmec, but a number of the larger figures exhibit characteristics defining a distinct sculptural tradition. These figures (Fig. 1) have a face with puffy cheeks, hands resting on a protruding belly, and short legs in horizontal position. Some are shown with closed eyes, as if they were dead or asleep. They may represent a rude version of the Olmec baby motif, but they also resemble the potbellied little dwarfs of the Classic Maya, and especially the obese puffy-cheeked atlanteans of Yucatán.

At Monte Alto, on the Pacific Coast, there are several of these boulder sculptures, and also a very large head carved in the same manner (Fig. 2). Lee Parsons, now of the Peabody Museum, Harvard University, with Edwin M. Shook assisting, is undertaking excavation of this site, and his work should soon give us an indication of the period of this style, and of the nature of the associated remains. Until we have this information, it is futile to guess whether the sculptures represent a substratum of the Olmec development or a provincial manifestation of its boulder-carving tradition, but they do raise the possibility that the primacy of the Olmec tradition many one day be challenged.

At the site of La Venta, there are internal indications of outside influences on Olmec culture. The stelae of this site represent a radical innovation in the mode of sculpture, and in the character of its themes. The sculptures of San Lorenzo present themes that appear to have an essentially ritual motive. Whether the presentation of a baby represents child-sacrifice or whether it documents the descent of an infant from a totemic ancestor, the gesture is unmistakably symbolic. The stelae, on the other hand, are credibly realistic portraits and descriptions of historic scenes. In view of the Olmec reliefs on living rock, found as far south as El Salvador, it may be argued that the stela originated in the Olmec habit of recording their presence wherever they went, and that the lack of native rock at La Venta led to the substitution of artificial slabs. It is a tempting hypothesis, but the numerous plain stelae

found at Pre-Classic sites in Guatemala should make us hesitate to accept it until there has been some investigation of the age of these monuments.

New features seem to arise in the La Venta style with the introduction of stelae. Among these are high, elaborate headdresses, small masked figures in attitudes of violent motion, and above all, the figure of a bearded man with a conspicuously aquiline nose. Miguel Covarrubias points out (1957: 77) that the face of the Olmec figure on Stela 3 of La Venta was deliberately mutilated, while that of the bearded visitor with the aquiline nose was left intact. The implication is that these figures represent two racially distinct groups of people, and it is suggested that the group of the bearded stranger ultimately gained ascendancy and erased the portrait of the native ruler. There is another suggestion of racial mixture in the lidless eyes and deformed



*Fig. 2 Large stone head from Monte Alto, Guatemalan coast.
Courtesy the Milwaukee Public Museum.*

heads of La Venta figurines, for the practice of cranial deformation indicates an ideal of aristocratic beauty derived from some alien source, and at variance with the flat broad noses and round heads of the earlier heroes or demigods represented by the great stone heads.

These considerations lead one to suspect that the culture of La Venta contained a strong foreign component. Much later, three prominent motifs of this component—the bearded man, the bird-mask, and the serpent—appear again in Classic Maya art, and in Toltec times become the symbols of Quetzalcóatl. How ancient they are in the Maya area, we do not know. Remains thought to be contemporary with La Venta are represented in the lowlands only by pottery deposits, and very little more is known about this period in the highlands. In 1951, Edwin Shook reported the discovery of a cache at Kaminaljuyú, intrusive into a mound containing no sherds later than the Las Charcas Phase. The pottery of the cache he ascribed to a transition immediately following this phase. The cache was surrounded with columns of basalt and two shafts broken from “pedestal sculptures.” One of the columns (Fig. 3) was carved on three of its five sides, indicating that it was reused, and had once stood free or had formed a jamb-stone of a free-standing enclosure. Although it is designated as Stela 9, it is almost certainly not a stela, and, in my opinion, is probably earlier than other monuments Miles places in its group. In any case, it cannot be later than the Las Charcas Phase, and the character of the monument is consistent with a date contemporary with Complex A of La Venta, or perchance even earlier.

The sculpture is in bas-relief and shows a single figure apparently blowing on a shell trumpet or shouting. At his feet is an obscure and complex grotesque form. The figure is tall and slim, and shows none of the facial traits that distinguish the Olmec, though it is not bearded as Miles suggests. Tenuous as these indications are, they suggest that highland styles had roots extending back into indigenous cultures of the Middle Pre-Classic period, and that we have yet to explore the early stages of this development before we can judge what, if anything, it owes to the Olmec.

The Late Pre-Classic sculptures of Guatemala and the Pacific Coast feature an elaborate symbolism of heteromorphs or grotesques, in which the human figure often plays a minor role (Fig. 4). The serpent, the monkey, and a sky-bird or winged deity figure prominently in these fantastic compositions, and occasionally there are isolated signs, which may be hieroglyphs. The stocky build of some of the figures of Izapa and their simple attire at times recall figures from La Venta, but the compositions and the themes have little in common at the two sites. Similarities to the Olmec style relate, at this time, to monuments of Tres Zapotes rather than to those of La Venta, and the Olmec were probably the recipients rather than the originators of the common traits, which include god-masks, the serpent, and profuse compositions of round scrolls, as on the stone box of Tres Zapotes, or on the cliff relief at Chalcatzingo.



Fig. 3 Carving on columnar basalt found in a Majadas cache at Kaminaljuyú.

Photograph by E. M. Shook, courtesy the Peabody Museum, Harvard University.

The highland site of Kaminaljuyú shows a great variety of styles. We do not know their sequence, and it is possible that in this great center styles of different localities were coexistent. The two monuments, Stelae 10 and 11, both found in the same Miraflores deposit, are nevertheless very different. Stela 11 is a portrait in the Izapa style, and the masked figure shows facial traits characteristic of the Gulf Coast. Stela 10 (actually not a stela, but perhaps a small altar or panel), on the other hand, is essentially Maya, and carries the earliest known inscription.

In the next, Proto-Classic, period Long Count inscriptions appear on stelae almost simultaneously at Tres Zapotes, in Chiapas, and on the Guatemalan coast. Tres Zapotes Stela C depicts a large rectangular mask, but the others are all portrait stelae, showing one or two human figures, sometimes with a sky-god motif above. The three counts that can be read record dates in the last quarter of Baktun 7, the Eighth Cycle counted from 4 Ahau, which may or may not be the 4 Ahau 8 Cumhu of the Maya count. If it is, there is a hiatus of roughly thirteen Katuns, or 260 years, unaccounted for by inscriptions, between the latest of these dates and earliest known date from the Petén.

Until this hiatus is filled, there will remain a doubt of the identity of the two counts. Day counts are the same everywhere, but the year counts and the names of the months differ in different calendars, so it is possible that highland reckoning placed 4 Ahau 8 Cumhu thirteen Katuns later than did the calendar of the Petén.

The very close stylistic resemblance between the dated Proto-Classic monuments of Guatemala and early monuments in the Petén needs no demonstration here. What is more relevant is that the earliest Petén monuments have little in common with the stelae of La Venta. The full-front position of the



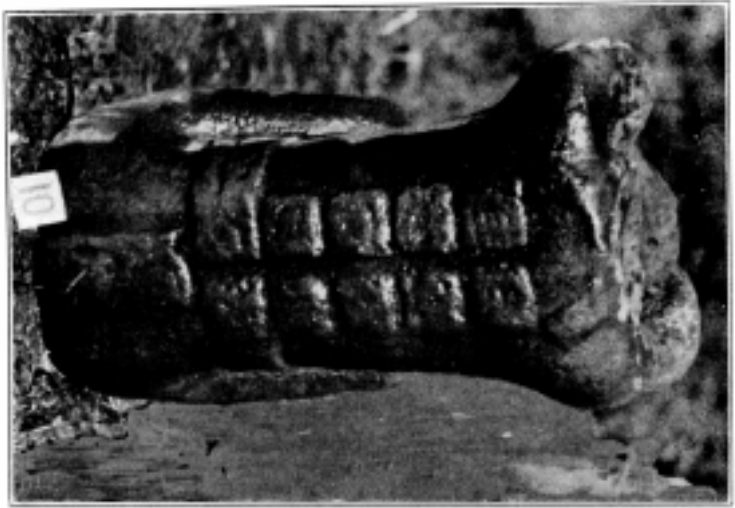
Fig. 4 Sculpture from Kaminaljuyú. Photograph by Joya Hairs.



Fig. 5 *Left, seated figure from Laguna de los Cerros, Veracruz. Courtesy of Medellín Zenil.*

Right, seated figure from Toniná. After Blom and La Farge.

body is never seen on them. Low and high relief are not combined. Arrangements of two figures are absent on stelae. On direct comparison, the Olmec style resembles the Late Classic styles of the Petén much more closely than it does the Early Classic styles. Masks, such as that on Stela C of Tres Zapotes, are used as base motifs only on Late Classic Maya stelae. The full-front presentation of the human body, with feet directed outward, is typically Late Classic, as are small flying figures above the principal scene, as on Stela 4 of Ucanal. When we compare the Olmec seated figure from Laguna de los Cerros, found by Medellín Zenil, to a full-round figure from Toniná (Fig. 5), or the standing figure in the long cloak to Stela T-5 (Fig. 6), or a typical Olmec altar to Monument T-8, it is hard to believe that well over a thousand years separates these sculptures. One could dismiss these general similarities as due to a chance convergence of two independent lines of development, were it not for the curious circumstance that the Medellín sculptures were all



found in or on Late Classic period debris. This means that, unless there has been massive disturbance of the site in recent times, these sculptures were exposed, and probably even set up as late as the debris under them indicates. There is a similar condition at the site of Sin Cabezas, near Tiquisate, on the Guatemalan coast. Here, ranged in a row before a large Late Classic pyramid are three boulders carved in full-round to represent figures seated on pedestals (Fig. 7). The figures are broad-shouldered and stocky, and one of them holds his hands on a protruding round belly. Shook (1950) reports that these sculptures are set in Late Classic fill, and that their heads were all cleanly broken off, though no fragments of them could be found in the vicinity. Miles (1965: 247) identifies these sculptures as Pre-Classic, and suggests that they were set up in mutilated condition at a much later time. Could it be that, after long preoccupation with esoteric cosmic symbolism and rigid



Fig. 6 Left, standing figure from Laguna de los Cerros, Veracruz. Courtesy of Medellín Zenil.

Right, Monument T-5, Toniná. After Blom and La Farge.

iconographic conventions, a secular trend in culture was leading to a revival of naturalism, and the Maya became interested in these early sculptures, using them as models to develop a more humanistic style?

The answer does not lie in analytical comparison. Extensive surveys and excavations are needed to determine whether the resurrection of old monuments was a common practice or a casual incident. However, delayed feedback is not unknown in history, and a clear answer may explain the widespread occurrence of Olmec and Olmecoid objects (such as the small Olmecoid mask found at Mayapán), and the peculiar longevity of Olmec influences.

In conclusion, it seems that no linear scheme of stylistic development originating in the Olmec culture can fit the varieties of sculpture that we can now observe in the two Maya areas. We still lack, however, the vital points of chronology that are needed to provide a framework for the history of styles in the three regions. The most important of these are: first of all, the



chronological position and sequence of the Olmec stelae and rock reliefs (is the evidence for a Middle Pre-Classic date of the La Venta stelae conclusive?); secondly, the correlation of Baktun 7 monuments with the Classic Maya calendar (are Baktun 8 monuments coeval with the Early Classic period in Guatemala?); and last, the sources of the early round-relief tradition of carving at Toniná and Palenque (is there an Early Classic style of sculpture in round relief?). These are not matters for speculation or for inference from comparative studies. Until we have a minimal body of requisite facts, no historical reconstruction is possible. For the time being, it is wiser to keep such questions open than to offer provisional solutions and developmental schemes that cannot be substantiated. We can only hope that archaeologists will have time to investigate the crucial sites before they are all, like Kaminaljuyú, bulldozed out of existence.



Fig. 7 Boulder sculpture from Sin Cabezas, near Tiquisate, Guatemala
Photo by E. M. Shook, courtesy the Peabody Museum, Harvard University.

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DISCUSSION

DR. LEE PARSONS: I would like to add some supplemental evidence that supports some of the things Miss Proskouriakoff was saying. In regard to that early monument from Kaminaljuyú, Stela 9, it is carved on three sides of a shaft of columnar basalt. In the same deposit, Edwin Shook reported a cache of jade. One of the jade figures is Olmecoid in style. One could interpret it as being either early Olmec or derived Olmec. Some of the other jades included spoon-shaped pendants and a duck-billed pendant. This was found together with Majadas pottery and with charcoal that has a Carbon-14 date of about 1000 B.C.

MISS PROSKOURIAKOFF: This would make the carving very much earlier, I should think, because it is, obviously, a re-used carving, and apparently formed part of a construction. It struck me that the use of columnar basalt in this way is very much like its use at La Venta.

DR. COE: The cache itself looks a lot like Olmec jade from Guerrero. But I refuse to accept the radiocarbon date of 1000 B.C. for Majadas pottery.

DR. PARSONS: I agree.

MISS PROSKOURIAKOFF: Why, may I ask?

DR. COE: Because Majadas has got all the shapes of either the end of the Middle Formative or the Late Formative. It has gray, rather speckly, large vessels, and they are quite late Formative.

DR. PARSONS: It is a very unusual style. It almost seems intrusive at Kaminaljuyú.

DR. COE: There is nothing else like it in the area; the whole phase is based on that cache. As for Las Charcas, based upon what has been published and what is in the Guatemala museum, I can't see it as dating much back beyond 500 B. C.

MISS PROSKOURIAKOFF: While the forms of Majadas look to me like Late Pre-Classic, these vessels were of that streaky gray-brown that is so typical of Las Charcas.

DR. COE: Streaky gray-brown on the Pacific Coast goes all the way into the Late Formative.

MISS PROSKOURIAKOFF: That is a different streaky gray-brown. Actually, Majadas is not gray-brown, but streaky gray; it is a different ware, I think.

DR. PARSONS: There are early-looking sculptures on the Pacific Coast which were found in Late Classic contexts: for example, that potbellied fellow from Bilbao. It was excavated along with Cotzumalhuapa-style monuments of the Late Classic. I interpret that as being a resetting or a reuse of an old monument. But then, you might suggest that it was contemporary.

MISS PROSKOURIAKOFF: No, I didn't mean to imply that. I think it is extremely early, and I think it certainly doesn't belong in the Late Classic.

DR. PARSONS: There is another archaic-looking boulder sculpture from Sabana Grande, Escuintla, of a type Suzanna Miles classed as a very early phase, but apparently Shook excavated under the boulder and found Late Classic Tiquisate ware.

MISS PROSKOURIAKOFF: Of course, Eric Thompson found Tiquisate ware under Stela 1 at El Baul.

DR. COE: No, he dug in front of it, not under it.

I would like to refer to Laguna de los Cerros, which I think is a most important site. Recently, Francisco Beverido made a photographic trip there for my project to photograph the remaining monuments which have not been taken to Jalapa by Medellín Zenil and also to photograph the site. There is a lot of sculpture still there. Taken as a whole, it and the pieces in Jalapa are absolutely identical to the corpus of San Lorenzo sculpture. If there were Late Classic pottery under all of them, this wouldn't bother me! This agreement continues down to tiny details; for instance, in Monument 19 at Laguna de los Cerros, which is the tall caped figure, these include the way the knot is tied on the cape, the treatment of the loin cloth, the profile faces on the cape, and, as a matter of fact, the mere fact of wearing a long cape. These details belong to the full corpus of "classic" Olmec sculpture. The problem you raise, however, is extremely interesting. This is what I would call early antiquarianism.

DR. PARSONS: I am particularly convinced of the validity of this hypothesis by the potbellied sculptures from the Puuc period in Yucatan, which are comparable to those potbellied figures on the Pacific Coast. Stylistically, if you just compared the two groups you might assume that they were contemporary, but there is no doubt that they are late in Yucatán.

DR. BERNAL: I think the reuse of monuments, or even of parts of monuments, shouldn't seem so strange, since we see it happening today. You have only to visit a few villages in Oaxaca. Actually, at Chalcatzingo itself—I am not talking of collectors but the people of the village—they take the stones and put them in the adobe walls of the houses, some with the idea of using the stone as decoration. I really don't know anything about Sin Cabezas itself, but the suggestion of reuse doesn't seem at all impossible to me, since such reuse still occurs today. I know of at least ten or fifteen similar cases. And it certainly happened in the Colonial period, during which pieces of either statuary or slabs were placed in the walls of houses as decoration.

MISS PROSKOURIAKOFF: Yes, and we find it also at Mayapán where Puuc carved stone was reused. But I think that Sin Cabezas is a little different because these statues were actually lined up in front of a pyramid in the way that stelae are set up. They were given a special importance, and yet they were without heads.

DR. PARSONS: There may be two equally probable manifestations of an interest in revivalism or archaism. First, copies of ancient styles may have been made during the Late Classic and, second, authentic Olmec sculptures also could have been excavated during Late Classic times and simply reused and reset out of respect for the ancient style. However, I don't think we know for sure which of the two hypotheses is true in the case of Sin Cabezas.

MISS PROSKOURIAKOFF: The only trouble is that there is really no local Late Classic style with which you can connect these sculptures.

DR. BERNAL: Referring to these Olmec sculptures from Veracruz, in general, and particularly the ones that you have mentioned, according to Medellín's reports, practically every single "classic" Olmec object which has been transported to the Museum of Jalapa has been found in association with Late Classic sherds. Frankly, I can't believe that. They were found that way, but they must have been placed there later.

DR. PETER FURST: What about the reuse of early sculptures in Building J at Monte Albán? There a *danzante* could be used upside down in the structure.

DR. BERNAL: At Monte Albán you get *danzantes* reused as late as the end of Period III-B. Of course, there they may be used simply as stones, and not really placed in the position which they probably had originally, I think that in that case, the church at Teotitlán would date from sometime in the Monte Albán II or even I period, which would be rather unbelievable!

MISS PROSKOURIAKOFF: I was just trying to point out the dangers of seriation in circular developments.

DR. COE: Any time when there is antiquarianism or revivalism, seriation is seriously bothered, as on the north coast of Peru during Mochica III when Chavin pottery styles and shapes were revived. What you are talking about in the case of Tonina is very definitely revivalism or antiquarianism. There is a revival of sculpture in-the-round. It is Olmec-looking, no doubt about that, but, on the other hand, nobody would be fooled by this revival into thinking that Laguna de los Cerros is Late Classic—at least I hope not!—or, on the other hand, that Toniná is Olmec in the Pre-Classic sense, just as nobody would be fooled by a Mochica imitation of a Chavin pot. There is always in revivalism a misunderstanding of the full details of the original style, both in its complete pattern and forms, and in the details of ornamentation. Laguna de Los Cerros is clearly Olmec and Pre-Classic. The pottery has been studied by Terence Grieder, who has also seen pottery from San Lorenzo, and the San Lorenzo Phase is very much present there; it is the dominant phase of the

site. Overlying it, there is Villa Alta material of the Early Post-Classic period. The site of Laguna de los Cerros is enormous, judging from the photographs that I had taken. It is not on a plateau like San Lorenzo, but it has got the same linear arrangement of mounds. Laguna de los Cerros should be dug some day. I am sure then that you would find exactly the same situation as at San Lorenzo, with all the monuments laid out in lines—and with probably a great deal of reuse of early monuments by later peoples in Villa Alta times. I feel sure that Laguna de los Cerros is going to be a key site.

DR. HEIZER: What do you make of the fact that it has no big heads?

DR. COE: They haven't been found yet! There are, however, trough-shaped drain stones which have been dumped and buried in a plaza. There must be big heads there. Most of the monuments must still be underground just as most of the monuments of San Lorenzo must still be underground.

DR. FLANNERY: Maybe the bodies are there, too!

DR. COE: I am often asked that question: "Where are the bodies for those heads?"

VIEWS OF OLMEC CULTURE

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It is certainly fitting, both for myself and on behalf of the panel and I am sure of everybody here present, to thank Dumbarton Oaks for this wonderful opportunity. Not only has the symposium been beautifully arranged, but it has developed in a most exciting scientific manner, and we have certainly enjoyed this beautiful place and the very cordial welcome.

I am not really going to deal with Olmec archaeology. Everybody here knows what has been published, and very important papers have been presented today describing the latest discoveries. They have not stopped with the simple exposition of archaeological finds in the field, but the papers have gone into the interpretation of these finds. I had planned to give my point of view on the Olmec culture in general and its importance in Mesoamerica. I must necessarily do this both in a generalized way and as I see it. I know perfectly well that many of you do not see it the same way and will not accept some, or perhaps none, of my points of view, but after all, that is why we get together, to discuss our ideas, to change them or to alter them, not only in view of the facts themselves—the archaeological data—but also, and mainly, in view of the interpretations and the hypotheses that we have formed. Some of what I thought were my best points have already been dealt with by the previous speakers. Others I must necessarily change, in view of the new facts produced today. Thus I will try to combine these different elements.

The antiquity of Olmec culture is no longer a subject of controversy. We all agree that it was previous to any other that we know in Mesoamerica, and already at the level of civilization. This point is of course fundamental for my argument. There are discrepancies with reference to the precise dating, or more or less precise dating, of this antiquity. Until recently we accepted the dates 800 to 400 B.C. for the flourishing of the Olmec world in Veracruz-Tabasco. Today new radiocarbon readings and new discoveries take these dates further back: 1200 B.C., as Coe suggests, or 1000 B.C., as Heizer pro-

poses. These points have already been well-discussed by the scholars themselves, but be this as it may, the Olmec world—and I am now no longer only thinking of Veracruz-Tabasco—is the most ancient civilized period in Mesoamerica. Still, I agree with those who reject the term “mother civilization,” not because I do not think that the future advances are derived from the Olmec world, but because a mother civilization generally refers to one which gives birth to another civilization. In this instance I don’t think this is the case, since in Mesoamerica we are faced with a single civilization, that was born with the Olmec world, that continues, with changes of course but not really basic changes, all through Indian history until the sixteenth century.

Of course to prove, or at least to be able to argue, this hypothesis, we must demonstrate that the fundamental traits of the Olmec world are the same in essence as we find in the later periods. Should it not be so, we would be looking at different and successive civilizations, and not at only one. If we accept—with every possible caution, of course—this unitarian hypothesis it will be valid to think that many aspects of Indian society that we know only from far later periods than the Olmec may be applied to Olmec society, and to theorize that these aspects already existed or at least their origins were already being formed. Moreover, this hypothesis is important to a reconstruction of history and as a guide to our thinking about Mesoamerica.

Before we follow this road, however, it will be necessary to define what is understood by the Olmec world, by this first civilized period in Mesoamerica. There is no question about its existence in the south of Veracruz and the north of Tabasco, where the heartland is placed and where its most characteristic traits are found. Here, we know three fundamental sites and a little bit about a few others. This area—which I have called the metropolitan Olmec world—seems to be limited by the Papaloapam and the Blasillo-Tonalá Rivers, the mountains to the south, and of course the Gulf of Mexico to the north. For the moment it does not matter which of its cities started first, if we accept that at least during a certain period they were all contemporaneous.

But the whole of the Olmec world is much larger than the coastal area described above. It comprises many other peoples, whom I have provisionally called Olmecoids and colonial Olmec. The former are those who have their own advanced culture, and together with the metropolitan area form Olmec civilization. Olmecoid sites developed many traits and also received others from the heartland of the Olmec world. They are those areas, as Flannery has mentioned, that are sufficiently advanced both to use and to understand the advances of the metropolitan area, and to collaborate with it in other aspects. Thus we have that indispensable interaction necessary to the creation of a civilization. This most important point has already been stressed in Miss Proskouriakoff’s paper, when she mentioned that no civilization ever arises out of one area, and that the interaction of different areas and a number of diverse people—although with a basic unity—is necessary to produce cross-fertilization between one and the other.

It has been said that civilization first arose in the metropolitan area. But it seems to me impossible simply to accept this proposition as such. Civilization is not, nor can it be, an isolated column that grows alone from water or from the jungle. It is not the product of a very small area nor of a group that progresses by itself and takes the lead over all others. It is, rather, a series of advances, like waves of the sea when the tide is rising. Each wave goes a little farther than the previous one, and little by little the water level rises until it finally covers the beach. In addition to this gradual rise there is another basic aspect: not all the water is the same. It is formed of various components. Civilization is likewise formed not by an isolated group, but by a combination of more or less neighboring or related groups each possessing different elements. Thus, the Olmec and the Olmecoids form as a whole the tide that covers the primitive world.

Olmecoid areas would include the valley of Oaxaca, and even perhaps parts of the Mixteca (which is very badly known), surely certain areas of Puebla and Morelos, and even perhaps Guerrero. The same is true of large parts of Chiapas and Guatemala, not only the highlands but the coastal region. These areas, together with the Veracruz-Tabasco heartland, are really the nucleus of the Olmec world. In other words, it seems quite certain that numerous areas—not sites but areas—can be proven to have advanced considerably in different ways but basically along the same lines, and more or less at the same time.

The other areas—where those people whom I have termed colonial Olmec lived—were perhaps real colonies, not necessarily in an imperial sense but in the sense of being places that received traits from the advanced Olmec centers but did not themselves produce these advanced traits, or if they did it was on a very small scale. That is to say, these areas, as for instance the Valley of Mexico, had not yet reached the level of civilization. This sector of the Olmec world was then, in my opinion, formed of these peoples who certainly spoke different languages and had to a certain extent different traditions, although they all came together—perhaps in different ways, perhaps even at different moments—to form part of this larger whole. It is this larger whole—the Olmec world—that is at the origin of Mesoamerica; indeed it marks the moment from which we can speak of a Mesoamerica.

Yet it is still an incomplete Mesoamerica, because many traits of high culture are still absent and because in the geographical sense certain regions were surely not within the sway of this culture. If we observe on a map the areas occupied by the Olmec world, we see that they cover most of Mesoamerica, with two main exceptions. One is Western Mexico (in which of course I do not include Guerrero); this area did not receive and did not collaborate in the creation of civilization in the Olmec world, and I think this is precisely the reason why it was always backward and in fact can only be considered as a marginal Mesoamerica, much in the same way that areas of central northern Mexico must be considered. The other exception is more difficult to explain. I refer to the Yucatán Peninsula, where no traces of the

Olmec have been found. The problem is that in later times it was an important part of Mesoamerica. For the moment I have no explanation for this.

From the point of view of the economic basis, or rather the means used to obtain primary subsistence, we can divide the Olmec world into the highland and the lowland regions. Inhabitants of the highlands live in regions without large rivers. Apparently they are the ones who, impelled by need, initiate the idea of irrigation by canals, by "flower pot," or by using wells. They achieve a horticulture. Much later, Teotihuacan will carry this system to its culmination. Although data are still scanty, we already have some indication, as in the Valley of Oaxaca, of the existence of a type of irrigated land since very remote times. The inhabitants of the lowlands, and not only those of the American Mesopotamia, have abundant water, a more fertile climate, and the results are therefore different. Here agriculture is not limited to slash and burn; it also utilizes the damp banks of rivers, which serve as thoroughfares as well. This pattern occurs in the metropolitan Olmec area and perhaps the Pacific Coast. The final triumph of these farmers will be the Classic Maya world; the triumph of the irrigators will be the Teotihuacán world.

Perhaps here is the beginning of the two-faced Janus which is the future Mesoamerica: one body with a Maya face and a Teotihuacán face. This incidentally also explains the interchange and fertilization necessary for continued civilization at a later and more advanced period. Such a situation—also perhaps originating in Olmec times—is reflected even in other cases. Thus, at least in the northern half of Mesoamerica—one of the faces of the god—there always seemed to be two capitals. The well-known example of Tenochtitlán-Tlaxcala at a very late time, the Tula-Chichén situation, that of Teotihuacán-Cholula, and in a larger sense Teotihuacán-Tikal (or some other leading place in the Maya area) seem to corroborate the hypothesis. Of course in the more distant examples the picture becomes blurred and the case is not so clear.

Colonial people are those who only follow ideas begun somewhere else and usually do not reach a high development. They are not inventors of civilization and only make use of parts of it, as far as the circumstances of their habitat and economic, demographic, and other possibilities permit. Tlatilco, Chalcatzingo, and other sites in Puebla and Veracruz would be examples.

Let us examine briefly the various situations that I have sketched in outline, emphasizing only those traits that would endure in all Mesoamerica and may therefore be permanent inventions of the Olmec society. We had left this matter pending. Of course I will only be able to cite some of the more important examples, as well as inferences we can make from them.

In the metropolitan area a considerable demographic increase took place, perhaps reaching the number of 350,000 inhabitants. These probably belonged to at least two different groups. This means that the metropolitan Olmec population at this time is not really homogeneous, and presents the mixture of peoples so necessary to the development of civilization. I emphasize this because for the first time we see here one of the characteristics of Mesoameri-

can cities. Diverse languages were surely spoken in Tenochtitlán and in Tula, and this is probably also true of Teotihuacán. The international character of Mesoamerican empires—an indispensable feature—perhaps dates from Olmec times. This contrasts with the Early Pre-Classic period whose various homogeneous societies, through cross-fertilization, would carry the future Mesoamerican world to the verge of civilization. This fact is essential for our understanding of Mesoamerica. The existence in one city or one small area of different groups living together occurs beyond any doubt in all the examples for which we have historical information; with two or more groups living in a single community, we have a truly metropolitan situation. Looking back further in time, we are of course ignorant about the languages which were spoken so we cannot be sure about this aspect. However, the inference can be made that the linguistic situation was similar, and that not only the linguistic situation but also many other traits of later culture already existed.

To speak of metropolitan Olmec architecture seems exaggerated. Buildings made of earth or clay, rarely employing stone, and with an absence of stucco, lime, and mortar, can only be antecedents to real architecture. Nevertheless, the pyramid already exists here—even though it sometimes assumes unusual shapes, such as that recently suggested by Heizer—and the platforms and patios that will be characteristic are already present. Construction using basalt columns would not continue. On the other hand, the undoubted existence of a rigorous sense of planning and of astronomical orientation in the Olmec cities brings into being the future cities, and even something more basic in Mesoamerica, indeed the very essence of Mesoamerica: the ceremonial society, the feeling for order and for exact proportion, the real mania for ritual, without which we cannot begin to understand Mesoamerican civilization. What occurs in the two principal Olmecoid areas, Oaxaca and the Chiapas and Guatemalan Highlands, is different but essentially similar. The important difference is that in Oaxaca great stone architecture appears, that is, a true architecture whose modest but important origins Flannery recently discovered. Here, too, there is planning and astronomical orientation. It is perhaps in the Valley of Oaxaca that true architecture begins, although as we have noted, this area was fertilized by, and in turn fertilized, other areas.

The large and small sculpture of the metropolitan zone—certainly the most remarkable of its time,—is another trait that later peoples would inherit: the stone monoliths would be revived, especially by the Maya and the Aztec, and the well-polished jades, whose refined tradition would be continued by the Maya or the Mixtec.

In Guatemala there is a series of monoliths which also belong to the same world, although they are cruder than the Olmec. It is not possible at present to judge their precise age in order to clarify which one influenced the other, but it seems clear to me that there is a connection. And while the central Mexican Highlands have not deserved mention with regard to architecture, in sculpture they produce pieces that are Olmec but with a slightly different

flavor, indicating that we have here another related center, also semi-independent. The statue of Chalcatzingo, for example, or various smaller pieces in fine stones, also of high quality, are Olmec but, like Tlatilco in ceramics, they are Olmec variants. They again demonstrate the fruitful action of contact between distant peoples.

The stelae, and especially their inscriptions, present a different problem. Their distribution is common throughout the metropolitan Olmec world and that of the Olmecoids in Veracruz, Oaxaca, and Central America. But generally speaking, they are much less common in the central Highlands: a few appear at Teotihuacán and Xochicalco and other, minor sites, but they do not seem to survive as a basic sculptural concept after the Toltec revolution. The stelae with hieroglyphic inscriptions and dates have a different history. They perhaps began in the Valley of Oaxaca; at any rate, the oldest ones we know are from Monte Albán. The temptation arises to infer that writing and the calendar were invented, or at least first engraved on stone, at this site. Let us keep in mind that Stela C of Tres Zapotes, the oldest dated monument known in the metropolitan Olmec world, is much later. A related aspect is the association of stela and altar. Here too it seems that the Olmec world was not the inventor, but that the idea originated somewhere else—perhaps in the Guatemala Highlands or the Pacific Coast (maybe the Izapa region)—and appears only later in the metropolitan area. Be this as it may, I believe that this complex of stelae with glyphs and date in association with altars admirably demonstrates the essential character of the first civilization in which different areas cross-fertilize and interchange their progressive steps.

The only art form that we cannot trace back to the Olmec world is that of mural painting.

Although we cannot at present determine the exact point of origin, there appear in the Olmec period numerous types of artificial deformations of the human body, as well as items of clothing and adornment that, like other features already mentioned, would characterize Mesoamerica throughout its history. Already at this time we find evidence of cranial deformation, dental mutilation, tattooing, and body or facial painting; and all the long list of jewelry (necklaces, bracelets, ear plugs, nose dangles, etc.) that survives up to Aztec times had already appeared. Perhaps there is less development in clothing, although there are already loincloths, large headdresses, sandals, and capes. Of course, many artifacts developed in previous stages, although made of inferior materials, such as the early figurines modeled in clay—before always feminine, but now masculine—while in the metropolitan world these are now made of stone or jade. It has already been mentioned that the jade or stone objects made outside the Olmec heartland are often much better and more beautifully carved than those made inside it. This may be true, but another explanation is also possible: that these objects were also produced in the metropolitan area but for export, to be exchanged for large stones or other products not found in the Olmec heartland.

This brings us to ceramics, the only field in which the colonial Olmec of minor sites, such as Tlatilco or Las Bocas, seem to have reached greater heights than the metropolitan area. In those villages it became a great art, while in Veracruz-Tabasco it barely went beyond the utilitarian. Here too we see how even distant colonies with little or no ceremonial development in the larger sense, also contributed to forming that civilization. I believe the metropolitan Olmec were not interested in this more modest art form.

But a problem has arisen that I had not envisioned before. That is, I thought that we could talk of high developments, let us say, in the Oaxaca Valley—very generally speaking, the Monte Albán I period—as coeval with the great developments in the Olmec area; whether it is La Venta or Tres Zapotes or San Lorenzo is not important for the moment. The important question is whether the developments occurring in Monte Albán and other places such as the Guatemalan coastal area and those occurring in the Olmec heartland are contemporaneous or not. Of course, if we consider the Olmec heartland to have developed four hundred years earlier—as Coe's data prove—then most probably the great sculpture there, and the other more or less important advances that took place, are to a certain extent prior to those in the Valley of Oaxaca, where the dates for the Monte Albán I period cannot go back as far. Still, the basic argument is not entirely destroyed, because for most important reasons, which have been stated today, especially by Michael Coe, there are two periods of florescence in the southern Veracruz region: one corresponding to large monuments in the round, and a later one corresponding mainly to stelae and sculpture in low relief.

I think that one of the essential contributions that the areas of Oaxaca and perhaps Guatemala made to the Olmec world is precisely in the field of low-relief sculpture. At least it is in Oaxaca that for the first time we have stelae inscribed with numerals and with hieroglyphs. In other words, it seems to be the place where this particular trait of high culture first developed. It may be contemporaneous to the Guatemalan counterparts; it may not. We cannot really be sure of that at the moment. However, whether it is contemporaneous or not, this development occurs outside the heartland of the Olmec world. This then may account for the importance given in the second period of the metropolitan area to stelae and low relief, in contrast to high relief. Remember that high-relief sculpture is virtually absent in the Oaxaca area.

In view of the modest economic basis of slash-and-burn agriculture in the lowlands or incipient irrigation in the highlands, it is difficult to understand the great progress in other aspects. We suggest then—as a very hypothetical explanation—that within the Olmec world the economic-military-commercial association of traits which would later be characteristic of Mesoamerica had already been formed: the war-tribute-commerce complex that we find intimately bound together in the Aztec period. To this complex is joined the market-pilgrimage system. The Olmec imported raw materials to be worked up and in some cases re-exported to other sites. It is not feasible just now to

go into detail about this, and I only suggest the possibility that, although in an incipient form, this basic economic system had already taken shape in the Olmec world. From the political point of view we can suggest a similar inference, also taken from later periods: the empire as a basis of organization, leading to conquest and therefore to the imposition of tribute and commerce. This of course presupposes the existence of a state, although that state could have quite diverse forms: compact, city, etc.

To all this must be added an essential feature: religion. In my opinion the situation is not at all clear. For example, Michael Coe mentioned the possible existence of some of the typical Mesoamerican gods even in ancient Olmec times. I am not prepared at the moment to accept this. My impression is that in the heartland the metropolitan Olmec had not yet reached the level of having concrete anthropomorphic gods. I would say—and this is not my love for Oaxaca speaking but the facts as I understand them—that essentially most of these gods were really invented in the Valley of Oaxaca, since that is the place where we find the earliest unquestionable representations of gods whom we can identify and classify. And if we can identify them, obviously there were those ancient worshipers who could do it better than we can.

In the Olmec heartland we have the famous jaguar, which can—and that I will accept—be considered as a sort of god. This humanized animal already has at least the essential element of all Mesoamerican gods: it is a combination of two or more things. Here it is an animal and a man; in most other cases it is two animals, or three animals, or whatever you want. Still, I don't see in the metropolitan Olmec any clear appearances of recognizable gods. I am not speaking, of course, of figurines or of things of that sort. I am speaking of real gods, the god of rain, the god of this, or the god of that. I am not at all certain about the situation, and perhaps more digging will oblige me to change my point of view, if really recognizable gods—not necessarily recognizable to us, but gods represented with sufficient clarity so that they will not be just "a god," but "this particular god"—appear.

Does this mean that the essential characteristic of Mesoamerican civilization was absent among the Olmec, even if we accept provisionally that they did not have this large pantheon of gods so typical of Mesoamerica? In other words, did they not have a ceremonial complex? I would say that they certainly not only had it, but were the real inventors of it, in all the different areas. It is the only way to explain all the elaborate planning along lines leading north-south (whatever the deviation) and such extraordinary situations as that at La Venta. Here most of the central line is now buried and cannot be seen, but it forms part of a perfectly oriented and organized concept. I think it is no accident that the main street at Teotihuacán, the one that runs north-south, is oriented almost like La Venta. Surely this comes from an earlier ceremonial idea. So it seems that this absolute folly of ceremonialism, which was to pervade Mesoamerican civilization, was already present; even if some of the aspects died with the Olmec, others kept on indefinitely,

THE OLMEC WERE-JAGUAR MOTIF IN THE LIGHT OF ETHNOGRAPHIC REALITY

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In view of the strides Olmec archaeology has made since the early 1940's and the increasingly more sophisticated definition of the formal qualities and distribution of the Olmec style, it is regrettable that there has not been a more searching analysis of the content and meaning of the extraordinary art of this earliest of American civilizations. Few attempts have been made to interpret Olmec iconography in depth; instead, its treatment has been more descriptive than analytical. One can hardly blame the Mesoamericanist for his caution. As Michael Coe (1965b: 751) has observed, we have neither the benefit of definite knowledge nor of inscriptions, readable or otherwise, which might help in discovering the mythical basis of Olmec iconography. It is the purpose of this paper, however, to demonstrate that we are not altogether without resources. Of these the most important is ethnographic analogy, long recognized by archaeologists as a valuable tool for interpretation but largely neglected until now in the analysis of Pre-Columbian art, at least that of Mesoamerica.¹ Compounding the problem is the limbo to which most art historians and anthropologists have consigned the study of Pre-Columbian art. As a result it finds a congenial niche in neither discipline.

¹ Some European scholars have made use of analogies between ethnographic reality and archaeological materials in Central and South America. An especially useful contribution is that of O. Zerries (1962) on the "alter ego" concept and the role of the harpy eagle among South American Indians, which he relates to the numerous Central American gold representations of this bird. Hissink and Hahn (1961) drew attention to the extraordinary degree of correspondence between mythic motifs of the contemporary Tacana of Bolivia and the iconography of Pre-Hispanic art, including Chavín, Paracas, Nazca, Moche, and Tiahuanaco. Another valuable study is that on the significance of the frog in South and Central America by S. H. Wassén (1934a: 613-58; 1934b: 319-70). The same author has also clarified the culture-historical problem of narcotic intoxication by snuffing in relating the archaeological evidence to ethnographic reality in this area and the West Indies (Wassén 1965, 1967; Wassén and Holmstedt 1963).

Attempts have been made at interpretation of at least some of the more pervasive elements of Olmec art. Miguel Covarrubias (1957: 50-83) drew numerous analogies between characteristic features of Olmec art and the meaning these, or their derivatives, assumed in later Mesoamerican civilizations. Largely on this basis it is frequently suggested that the jaguar may have been a rain deity in Olmec times or at least that the pervasive feline motif was connected with rain and fertility. Covarrubias himself was inclined to regard *all* of the jaguar deities and the feline aspects of different gods in the later Mesoamerican civilizations as Olmec-derived, describing them as

an interesting unfolding of an ancient concept, the "Olmec" jaguar deity, into various personalities that acquire individual characters during a millennium-long, varied adoption by different peoples. (1957: 59)

This is a provocative idea but it is not necessary to invoke a unilineal stylistic evolutionism to account for the feline element or even the were-jaguar motif which may be found in all Mesoamerican religious art, though certainly nowhere as predominant or pervasive as among the Olmec. Covarrubias saw the Olmec as a kind of "mother culture" which directly or indirectly gave rise to all the subsequent major civilizations.

Matthew Stirling (1955: 19, Pl. 25) has offered a hypothetical basis for some elements of Olmec iconography by relating a remarkable Olmec stone sculpture realistically depicting a jaguar in the act of copulation with a human female, discovered by him at Potrero Nuevo, to a possible origin myth in which the feline played an ancestral role. Commenting on Stirling's hypothesis, Coe (1965b: 751-2) agrees that it is reasonable to conclude

that this union resulted in a race of infants combining the features of the jaguar and man in varying degrees. These are usually shown as somewhat infantile throughout life, with the puffy features of small, fat babies, snarling mouths, fangs, and perhaps even claws. The heads are cleft at the top. . . . They are always quite sexless, with the obesity of eunuchs.²

All writers agree that Olmec iconography centers on a "jaguar cult," with the were-jaguar and its corollary, the peculiar combination of infantile and feline features (the "jaguar-babyface" motif), as the hallmarks of the Olmec style. Coe (1965b) lists among the main attributes of the adult were-jaguar

² The apparent physical deformities associated with the feline-infant motif such as obesity, puffed eyelids, cleft, drawn mouth exposing toothless gums, and absence of sexual characteristics, have given rise to various hypotheses. Of these the least attractive and most tenuous is that they might represent some kind of interaction of observed glandular disturbances and genetic or chromosomal defects with the Olmec aesthetic ideal (Covarrubias 1957: 58).

Certainly some physical deformities and even certain symptoms of disease were occasionally depicted in Pre-Columbian art. Whatever the reasons why certain formal conventions arose and became institutionalized in funerary or ritual art, especially in West Mexico, it is doubtful that they were inspired by disease.

the V-shaped cleft at the top of the head, the snarling mouth with jaguar fangs (sometimes absent), the flame-like element for brows, and infrequently a small, pointed beard. He observes that these are among the most common iconographic motifs in Olmec figurines, effigy axes, jade plaques, masks, and monuments. It might be added that plants sometimes sprout from the cleft. There are also representations of other creatures, including dragon-serpents, raptorial birds, and flying were-jaguars with large bat-like wings. Two such winged jade jaguars, found in Guanacaste Province, Costa Rica, are in the Brooklyn Museum (Coe 1965b: Fig. 16).

The so-called "jaguar cult" among the Olmec is variously interpreted, but many of these explanations suffer from ethnographic bias in tending to ascribe to a culture of another time those attitudes and concepts which seem most "natural" to us and which are therefore uncritically assumed to possess universal validity. We often read that the Olmec "must have" chosen the jaguar as their principal deity because it was the most powerful and most feared animal in their tropical environment. But this is not how people "choose" their gods, and indeed it is by no means borne out by the ethnographic data on the jaguar's role in contemporary or recent Indian societies. True, the jaguar is often greatly feared for its power (natural and supernatural) and almost everywhere it plays a very special role in the Indian *Weltanschauung*. The supernatural jaguar may be master of the air, of his own species, of all animals and all food plants; he may be bringer of rain, devourer of the planets, foster parent and antagonist of the mythical twins, guardian of sacred places and of gods, and (almost universally) avatar of living and deceased shamans. But he is rarely elevated to the status of "deity" in the true sense of the term, much less the principal deity, even in cultures where we can speak of a pervasive "jaguar cult." Occasionally, certain gods or the spirits of the dead are given some jaguar characteristics (e.g., prominent canines), but this is not the same thing as the deification of the jaguar.

Heinz Walter (1956: 94-6) discovered only four instances of a real jaguar deity in the ethnographic literature. Even here analysis of the data revealed that in three cases the jaguar deity was in reality only an institutionalized version of the well-known "master of the species" concept which is characteristic of hunting cultures but can still be found in the world view of many tropical forest cultivators. The master of the species is a supernatural being, but not a god. Of the four tribes three are Bolivian, the Arawakan Mojo, the Tacana Araóna, and the Panoan Pacaguára; the fourth is the Shipáya, a Tupian-speaking group living between the Xingú and Tocantins Rivers in northeastern Brazil. The Araóna, whose territory adjoins Arawakan-speaking groups to the west and north, appear to be strongly influenced by Andean religion; significantly, their "jaguar god" has the Quechua name *Baba Tsutsu*. Among the Mojo a supernatural jaguar was venerated in a temple hut, attended by a special shaman, called *camacoy*. These shamans were recruited from men who had survived a jaguar attack in the forest and were therefore thought to be favored



Fig. 1 Were-jaguars of serpentine in the Dumbarton Oaks Collection. Height: left, 7 $\frac{1}{4}$ in.; right, 3 $\frac{1}{8}$ in. Provenience, Tabasco.



Fig. 2 Head fragment of a were-jaguar. Collections of the Museo Nacional de Antropología, Mexico. Height of head, just over 3 in. Found at Huimanguillo, Tabasco.



Fig. 3 Serpentine were-jaguar from the Constance McCormick Fearing Collection, Santa Barbara, California. Height, $\frac{1}{4}$ in. Reported provenience, Tabasco.

by the feline deity. If a hunter succeeded in killing a jaguar he had to remain in the temple for several days while the jaguar shaman made sacrifices (especially *chicha*) in his behalf. The supernatural jaguar revealed to the shaman the dead animal's secret name which the hunter then assumed.

There is no reason to doubt Walter's assessment of this jaguar god as an original master of the species who became institutionalized and deified with a temple-priest cult under the influence of Andean high cultures. For example, the deified jaguar is asked to lead the hunter to his prey; if the hunter is attacked by a jaguar and survives, it is a sign of the benevolent attitude of the god as master of the jaguars, and if he succeeds in killing a jaguar, the god, as master of the species, must be propitiated. Also, the shaman asks the deity to prevent attacks on the settlement by jaguars which prowl in the forest. The skull and paws of a slain jaguar are preserved as hunting cultures ritually preserved skulls, horns, and bones of animals to assure their resurrection (Zerries 1954: 165-8; Eliade 1964: 63, 159). Finally, it hardly accords with the idea of a "deity" that the jaguar shaman can engage the supernatural jaguar in combat and force his will upon him in order to protect his community. From these battles the shaman frequently emerges exhausted, with his clothing torn and his face and body covered with blood. Similar bloody encounters between shamans and animal spirits, demons, and the souls of sorcerers occur in other cultures.

Only *Kumupári*, the creator-culture hero and war-and-cannibalism god of the Shipáya, is a real deity in jaguar form (Nimuendajú 1948). However, he too is a special case, because he was a formerly anthropomorphic creator who only assumed jaguar form when he became angry with mankind.

One fact emerges with great clarity from the ethnographic evidence: the jaguar does not derive any unique mythic quality from its animal characteristics. On the contrary, dangers or benefits ascribed to the jaguar spring not from its nature as a dangerous predator but from its inherent supernatural attributes. The jaguar is in fact a man. The world view of the hunter is rooted in the qualitative equivalence of man and all wild animals. They differ only in outer form, and in ancient times even this differentiation did not exist. The jaguar, however, is equivalent only to one category of men who alone possess supernatural powers: the shamans. Moreover, shamans and jaguars are not merely equivalent, but each is at the same time the other.

To return to Olmec art, it seems significant that the jaguar in purely zoomorphic form is rare. Only later is he represented simply as the animal; even then his bearing and associated iconographic elements underline supernatural rather than natural qualities. In Olmec art the jaguar is almost everywhere the were-jaguar, i.e., the feline anthropomorph or the anthropomorphic feline. This man-jaguar motif ranges on a conceptual and representational continuum, from predominant zoomorphism on one end, to nearly complete anthropomorphism on the other. An example of the first extreme is the Dumbarton Oaks statuette (Fig. 1, right); it has the head, body, feet, and tail of a jaguar but

its legs, arms, and clenched hands are clearly human. At the other end of the continuum are the companion piece at Dumbarton Oaks (Fig. 1, left) and the remarkably similar statuette from the Constance McCormick Fearing Collection (Fig. 3). Both are completely human except for the unmistakable facial characteristics of a jaguar. A head fragment (Fig. 2) in storage at the Museo Nacional de Antropología presumably belongs in the same category, although the body of this piece is missing.

Within the range of were-jaguar imagery are the portable and monumental two- and three-dimensional sculptures which are almost entirely anthropomorphic except for the "jaguar mouth." These may appear haughty, stern, or full of brooding power; sometimes the expression is lively, suggesting speech or debate (e.g., the famous figurine-and-celt cache from La Venta). Where the face has a pronounced grimace one wonders whether the artist meant to represent the fierce snarl of the jaguar, as is often suggested, or a feeling of intense inner torment or ecstasy. This may also be true of figurines where the grimace is accompanied by a strangely contorted body posture, as in the miniature "dancing were-jaguars," reminiscent of the Olmecoid *danzantes* at Monte Albán (Covarrubias 1946: Pl. 8; Coe 1965b: Fig. 11). The most completely human although generally sexless were-jaguar types are the hollow ceramic "jaguar-babyface" figurines characteristic of Tlatilco and Las Bocas.

Of particular significance is Coe's observation that human beings

without noticeably jaguar or baby-like characteristics do occur on the monuments and in the climax region, but seldom on the portable art and hardly anywhere outside the area. It is of course not beyond probability that the Olmec artist tended to look at everybody as having a little bit of jaguar-baby in him, but it would be safer to consider as portraits only those depictions without such an aspect. The individuality of some of these human portraits is so strong that they must represent historical personages. Most of these are bearded, like the famous "Uncle Sam" figure on Stela 3, La Venta, and like this, they often have hooked noses. (Coe 1965b: 755)

Occasionally the two distinct types, those with and without were-jaguar characteristics, are juxtaposed, as on La Venta Stela 3, where there are several were-jaguars above the two principal personages. The seated figure in Chalcatzingo Petroglyph 1, though carved in characteristic Olmec style, also seems to lack were-jaguar features, as does the bearded reclining figure in Petroglyph 2. A were-jaguar face appears, however, as a mask or an apparition, at the back of his head, and three other standing figures in the same petroglyph unequivocally represent were-jaguars (Coe 1965a: Fig. 10; 1965b: Fig. 3). Much has been made of this apparent ethnic differentiation in Olmec art. Soustelle (1966: 35) raises the question "whether these two distinct ethnic types correspond to one or more migrations or invasions." Covarrubias (1957: 58) also mentioned this but rightly warned that it is

of course dangerous to attempt to identify a people by physical characteristics shown in their art; there is no such thing as a uniform ethnic type, and it is well known that peoples seldom portray their characteristic type. They rather incline to portray that which results from the aesthetic ideals of their elites.

Nonetheless, the fact remains that the Olmec perceived and depicted two distinct types (three, if we add the colossal heads). I agree with Coe that only those sculptures which lack jaguar features should be considered true portraiture. It follows that those with were-jaguar features, however attenuated, represent conceptual and symbolic, rather than ethnic, reality. The question is why the Olmec artist should have experienced certain individuals in his culture as "jaguars," and what he meant to convey when he translated this emotional experience into two- and three-dimensional form. The South American shaman-jaguar transformation complex seems to me to hold the key to the interpretation of much, if not all, Olmec were-jaguar imagery, for the Olmec were-jaguar has its analogy in a large number of contemporary Indian cultures of diverse linguistic affiliation throughout the northern half of South America as well as Central America; there is at least strong inferential, if not direct, evidence that the same jaguar-shaman concept formerly extended to Mesoamerica as well.

Two of the illustrated figurines (Fig. 1, left; Fig. 3) and the head fragment (Fig. 2) are a good departure point for this discussion because they share certain peculiar characteristics which are not readily apparent in most other Olmec were-jaguars but which seem to be of great significance for the shaman-jaguar transformation hypothesis.

At first glance the larger Bliss figurine and the Fearing statuette share so many stylistic and iconographic characteristics that they might well have been made by the same artist. Even the raw material—a very dark-green serpentine—is the same. However, closer examination reveals sufficient differences in the treatment of detail, such as hands and feet, to suggest that the two pieces probably came from different artists working in the same tradition and expressing the same underlying concept. It is of course possible that one master conceived and carved both pieces but left minor details to be completed by apprentice artists. In any case, there seems little doubt that the two Bliss pieces came from the same master's hand. Indeed, they are said to have been found together in Tabasco (Lothrop 1957: 234). The precise provenience of the Fearing figure is unknown but it also is said to have been discovered in Tabasco. The museum catalogue gives the provenience of the Mexico City head fragment as Huimanguillo, Tabasco, located approximately fifty miles southeast of La Venta on the left bank of the Grijalva River. Whether these sculptures were originally carved in Tabasco is, of course, another matter. The Mexico City head is of a different stone, but in style and iconography it strongly resembles the heads of the Fearing and Bliss pieces. In all three, as also in the standing jaguar, the eyes were inlaid with small pyrites. These are

still in place in the two Bliss statuettes but are missing in the Fearing piece and the Mexico City head. As is frequently true of portable Olmec art, there are traces of cinnabar embedded in various orifices, carved depressions, and minute imperfections in the polished surface of the stone.

All these pieces bear witness to the extraordinary gift of Olmec sculptors for handling material and tools with the delicacy and precision of the jeweler, yet imbuing their creations with monumentality and tremendous plastic force. Coe (1965b: 749) puts it very well when he says of Olmec art: "no matter how small the object, it always looks much larger than it really is."

Upon superficial examination, the Fearing and Bliss figures and the Mexico City head seem to be wearing jaguar masks. The Bliss statuette was so interpreted by Lothrop (1957: 234) who thought it represented a woman. Leaving aside for the moment the absence of overt male sexual characteristics which, along with certain fine-line engraved markings on the front of the body, misled Lothrop into assuming the figure to be female, the details of the head make it clear that the artist did not intend to portray a masked being, but rather conceived the jaguar features as an integral element of the personage portrayed. All three figures have a clearly defined dividing line differentiating the jaguar features of the face from the rest of the head. However, what the carver has done is to leave the *back* of the head raised, rather than the front, and this part, together with the ears, is unquestionably human rather than feline. This curious phenomenon gives one the distinct feeling not of a mask (which would stand out, however slightly, from the front of the head) but rather of *the human skin carved or peeled away to reveal the jaguar beneath*. The fact that the same imagery is repeated precisely in all three pieces indicates that we are dealing not with a stylistic aberration but with a well-defined mode of representing a phenomenon which the Olmec believed to be real and which the artist (perhaps himself a religious specialist) had experienced emotionally.

The sculptures are highly naturalistic representations of the human figure, marvelously rendered with faithful attention to the interplay of muscles and body posture to convey the feeling of great inner tension and potential power. At the same time the jaguar face is convulsed into a tortured grimace. But this conveys far more the feeling of some emotional stress almost beyond bearing—indeed, the ecstatic experience *par excellence*—than the ferocity of a snarling feline. If these figures are what I think they are, then this problem resolves itself, since the ecstatic experience, the breakthrough in plane, so to speak, is characteristic of all shamanism, and the ecstatic experience of jaguar transformation, with or without the use of narcotics, is a characteristic of shamanism throughout tropical South America.

Some comments should be made here about Stirling's intriguing interpretation of Monument 3 from Potrero Nuevo in relation to the feline element in Olmec art. Indeed it might illustrate what the Olmec believed about their origin, although mythical matings between animals and humans are a frequent theme in the traditions of peoples who do not regard a particular animal as

their ancestor, but who do conceive of absolute qualitative equivalence and interchangeability of outer form between man and beast, deriving from a complete lack of differentiation in the mythical "first times."

On the other hand, there are traditions in tropical South America in which jaguars play an ancestral, generative role as original fathers or mothers; in fact, several peoples regard themselves, or are regarded by their neighbors, as Jaguar-Men or People of the Jaguar. According to Gerardo Reichel-Dolmatoff (1950-51: 266), the Chibchan Kogi of Colombia "are the People of the Jaguar, their land is the Land of the Jaguar, their ancestors are the Jaguar People." In the Kogi creation myth cycle, ancestral jaguars, or jaguar-people, play the central role. A long series of jaguar people was born of the Universal Mother even before the birth of the first human people, and there are numerous stories of *Habia Nabia*, the Jaguar Mother; *Kashindukúa*, the Jaguar Father with attributes of the Great Shaman; *Duginávi*, the Jaguar Brother; *Námaku*, the Jaguar Chief, and others (Reichel-Dolmatoff 1950-51: 265-6). It is important to note here that the jaguar people were anthropomorphic and zoomorphic at the same time and that they could transform themselves at will into one or the other form. Of the mythical ancestors, it is said that they were jaguars in human form and that when night came they changed into jaguars because of the knowledge possessed by *Kashindukúa*. Jaguars are responsible for all the food plants of the Kogi (a concept they share with the Tacana of Bolivia and other tribes) and in the cosmology jaguars will be instrumental in the end of the world. It should be stressed, however, that in the Kogi world view jaguars represent less a danger than the essential vital force. It goes without saying that jaguar ancestry and shaman-jaguar transformation are by no means mutually exclusive.

On a different conceptual level, the Apapocúva-Guaraní of Brazil regard their neighbors, the Caingang, as jaguars in a very real sense, not because their ancestors were jaguars but rather because they have the souls of jaguars (Nimuendajú 1914: 305-6). This belief is founded in the Apapocúva concept of the dualistic human soul, called *ayvucué* and *acyiguá*, respectively. These represent the two sides of human nature: all that is good, quiet, and well-behaved is in the *ayvucué*, and all that is intemperate and violent in the *acyiguá*. For example, appetite for mild vegetable foods has its origin in the *ayvucué*, whereas desire for meat comes from the *acyiguá*. Since the latter represents the animal component of the dual soul, the properties of the animals which contributed to its formation determine the temperament of the person concerned. The worst thing that can happen is for a man to have the *acyiguá* of a dangerous beast of prey, such as the jaguar, because the *acyiguá* of such an animal always has dominance over the *ayvucué*. For this reason, according to Kurt Nimuendajú, the Caingang are not comparable to or symbolic of jaguars, but are by nature jaguars, appearing in human form. It is not just that the Apapocúva regard the Caingang as jaguar people, the latter also characterize themselves as jaguars in the literal sense (Nimuendajú 1914: 371). In

preparation for fighting they paint themselves with black spots or stripes and their war cries sound like the cry of the jaguar. According to Nimuendajú, the identity is taken so literally that occasionally there is a kind of “psychological disorientation” by which a *minanti*, or “dreamer” of jaguars, turns into a *mi-vé*, or “seer” of jaguars. The *mi-vé* believes himself to be the intended lover of the daughter of the master of the jaguars, separates himself from all his relatives and friends and prowls the forest alone until he enters a trance in which a supernatural jaguar appears and shows him the way to the jaguar people or the jaguar woman.

This is reminiscent of shamanic initiation with implicit or explicit ritual death and rebirth through a supernatural jaguar (or a Great Shaman in jaguar form), reported for some other South American peoples. For example, among the Arawakan Ipurina of the Juruá-Purús region of Amazonas:

The young man who is to become a shaman is sent into the forest; there he remains until a great jaguar appears to him; through him he is certified and he returns to his village as an initiated shaman (Kunike 1915: 20).

Seclusion deep in the forest with strict abstentions to achieve the proper initiatory vision is reported also by Paul Ehrenreich (1891) for other Arawakan tribes, among them the Paresi of the Mato Grosso, although he mentions the jaguar initiation specifically only for the Ipurina.

A very detailed story of shamanic initiation by the Great Jaguar Shaman was recorded among the Bolivian Tacana by Karin Hissink and Albert Hahn (1961: 401-2). The tradition concerns a twelve-year-old boy who walked into the forest to collect the fruits of the *saya* palm. While he climbed about in the crown of the tree, *Iba Bana*, the giant-winged jaguar who is also a great *yanacona* (shaman), sat down by the tree to wait for the boy. The boy stepped on *Iba Bana*'s back and *Iba Bana* flew off with him into another world. When the boy failed to return home his mother consulted a *yanacona*, who, by means of coca, divined the boy's fate and told her not to worry:

“Your son is alive. He is not on this earth. *Iba Bana* has taken him away to his world. He will come back after one year. He will return at the same time that *Iba Bana* took him away. . . .” So the mother knew that her son was to become a *yanacona*.

When the son reappeared on the day the *yanacona* had prophesied, he walked in silence into the cult house where he collapsed before the altar as though dead. The *yanaconas* rubbed him with narcotic powder to bring him back to life but it was not until after sundown that he finally stirred. Again the *yanaconas* rubbed him with narcotic powder. Then they carried him home and laid him in his hammock. When the boy finally awoke he told his parents not to cry, because he was alive and the *edutsi* (deified spirit beings or gods) did not want them to weep. Thus, ends the narrative, “the parents and the people knew that he had become a *yanacona*.”

Of the Sanemá, a Venezuelan Yanoáma group, Johannes Wilbert (1963:

222) reports that the future *héwiawan* (literally “Bat-Person”) goes alone into the forest where he encounters *Omáokóhe*, a giant supernatural bipedal jaguar who is Master of all the Felines and who strips him of his human flesh—without, however, injuring any of his bones. The initiate asks the Great Jaguar to replace his flesh and *Omáokóhe*, covers his skeleton with the flesh of a supernatural bat. Zerries (1964: 238) points to the close linguistic relationship between this Great Jaguar *Omáokóhe*, and the Yanoáma culture hero and creator deity *Omáo*, one of the celestial twins whose mother was eaten by a Great Jaguar. Her uterus containing the unborn twins was rescued by Frog Woman who became the twins’ foster mother. The twins later cause the Great Jaguar’s death and *Omáo*, creates the first people out of trees. He leaves the earth when his twin brother attempts the seduction of his wife (Wilbert 1963). To what extent *Omáokóhe*, as the initiatory Great Jaguar of the *héwiawan* and possible hypostasis of *Omáo*, can be identified with the Great Jaguar who is the antagonist of the celestial twins *Omáo* and *Soáo*, is difficult to determine, though the data are certainly suggestive (Zerries 1964: 238).³

THE JAGUAR-SHAMAN TRANSFORMATION COMPLEX

Whereas the jaguar-twin motif complex may have only peripheral significance in the present context, the feline as the initiatory being of the shaman is of the greatest significance. If one concept cutting across geographic, linguistic, and cultural boundaries among South American Indians can be singled out, it is that of the qualitative identity between jaguars and shamans and accordingly their interchangeability of form. Alone among men, shamans are capable of transforming themselves into jaguars whose inherent qualities they share; the reverse side of the coin is that jaguars—at least those appearing under unusual circumstances or those attacking human beings—are not animals, but transformed shamans or sorcerers, or the soul bearers of deceased shamans who assist their living disciples as tutors and spirit helpers (Karsten 1964). Even where a real temple cult has developed around a jaguar deity (or deified Master of the Jaguar Species), as among the aforementioned Mojo of Bolivia, the concept of shaman-jaguar transformation exists. Those who escape unharmed

³ The relationship of the jaguar to the celestial twins is extremely complex and to do it justice would take us too far afield from the central theme of this paper. Suffice it to say that the motif is widely distributed and often involves the jaguar as both antagonist and benefactor of the twins. Zerries (1964: 241-4) cites numerous versions in which the mother of the twins is killed by the Jaguar People or a Great Jaguar, whereupon the pair is rescued and raised by a foster mother. She, in turn, combines the attributes of Frog Woman and Mother of the Jaguars or is transformed from frog to feline. She is later slain by the twins in revenge for their real mother’s death but this is really a creative act in that from her bones or ashes grow the first cultivated plants. Valuable studies of the celestial twin motif complex in South America are those of Ehrenreich, 1905; Gusinde, 1930; Métraux, 1928, 1932; and Kuhne, 1955. Also useful is Zerries’ (1934: 237-44) discussion because it centers on the distribution of the basic myth and its various elements among Carib- and Arawak-speakers and the marginal or hunting-and-gathering tribes, such as the various Yanoáma groups and the Warao in Venezuela, northern Brazil, and the Guianas.

from a jaguar in the forest are considered to be favored by the feline deity and are initiated into a guild of jaguar shamans who carry out all the rituals connected with jaguars and who are able to call and propitiate their spirits. According to Zerries (1961: 19-20), they are also reported to have the capability of transforming themselves into jaguars.

One of the earliest accounts of shaman-jaguar transformation in South America is that of Pater Martin Dobrizhoffer (1822), a German priest who served among the Abipon, a Guaicurú-speaking tribe of Paraguay, in the mid-1700s. In a chapter, "Of the Conjurers, or rather the jugglers and cheats of the Abipones," he writes that all his Indians believe in the power of conjurers

to inflict disease and death, to cure all disorders, to make known distant and future events; to cause rain, hail, and tempest; to call up the shades of the dead and consult them concerning hidden matters; *to put on the form of a tiger*,⁴ to handle every kind of serpent without danger, etc., which powers, they imagine, are not obtained by art, but imparted to certain persons by their grandfather, the devil. (Dobrizhoffer 1822: 67)

Subsequently he describes his vain attempts to convince the Indians that there was no such thing as the transformation of a shaman into a jaguar:

At another time, when these bugbears imagine anyone inimical or injurious to them, they will threaten to change themselves into a tiger, and tear everyone of their hordesmen to pieces. No sooner do they begin to imitate the roaring of a tiger, than all the neighbors fly away in every direction. From a distance, however, they hear the feigned sounds. "Alas! his whole body is beginning to be covered with tiger spots!" cry they, "Look, his nails are growing," the fear-struck women exclaim, although they cannot see the rogue who is concealed within his tent, but that distracted fear presents things to their eyes which have no real existence. It was scarce possible to persuade them out of their absurd terrors: "You daily kill tigers in the plain," said I, "without dread, why then should you weakly fear a false imaginary tiger in the town?" "You fathers do not understand these matters," they replied with a smile. "We never fear, but kill tigers in the plain, because we can see them. Artificial tigers we do fear, because they can neither be seen nor killed by us." (77-8)

Compare this to the account of a Tacana informant recorded by Hissink and Hahn (1961: 398) during the 1952-54 Frobenius Expedition to Bolivia:

A *yanacona* (shaman) tried several times to tempt me to learn how to become a jaguar. As such I would have power over other people. The *yanacona* took me into the forest and I had to take up a certain spot. When I heard twigs breaking next to me and looked in that direction the *yanacona* stood there beside me in the form of a jaguar. I was frightened and wanted to flee. Then the *yanacona* again stood in front of me in his previous form and laughed at me. After this experience I was no longer tempted to learn the art of transformation.

⁴ Italics mine.

In certain areas and language groups the conceptual equation of shaman and jaguar goes so far that a single linguistic term is used for both. This is true especially in the northwest Amazonic basin (eastern and southeastern Colombia and northwest Brazil). According to Theodor Koch-Grünberg (1909-10, Vol. 2: 155), all of the Betoï-speaking tribes use the same basic word for shaman and jaguar. A good example is the Detuana group of Betoï languages (Hanke 1964: 40-59): The common term for shaman here is *dzaika*, that for jaguar *dzaja*. The same linguistic identity of shaman and jaguar is to be found among the Tucanoan-speakers of the same general area (Bödiger 1965). Indeed, the Tucanoan term is a very close cognate to that used by the Betoï-speakers and, as we shall see, also by the Witoto, whose language is classified as independent by Cestmir Loukotka (1968).

Approximately thirty tribes belong to the Tucanoan language family. These are separated by the Witoto and some Carib-speaking tribes into a western and an eastern group, with little, if any, cultural contact between them. All however, share the concept of shaman-jaguar transformation and most, if not all, use the same or a closely related term for both. According to Ute Bödiger's recent survey of the Tucanoan world view, the common name for either shaman or jaguar among the Siona is *yái*, and among the Corrugaje, *dyái* (Bödiger 1965: 42-4; 150-3). Both belong to the western group. Arsenio, a shaman of the Siona, was called *yaiguaje*, "one of the jaguar people," or "jaguar man." The same terminology was reported earlier by Plácido de Calella (1940-41). The Witoto, whose culture in many respects seems intermediate between that of Paleo-Indian hunters and Neo-Indian tropical forest cultivators, call their shaman *ikodyai* (Preuss 1921: 22). Bödiger points out that this term consists of two Tucanoan words, *dyái*, jaguar, and *iko*, soul.

The close relationship between shaman and jaguar which exists among the western Tucanoans, including the Siona, Corrugaje, Koto, ~~Pioje~~, Macaguaje, and Tama, can be demonstrated for the eastern Tucanoans also. Here, identical terms for jaguar and shaman are to be found among the Tuyuka, Uasona, Uaiana, Ömöa, and Buagana (*yéi* or *yái*); the Tucano (*yaí*); the Uanana and Uaikana (*yáiro* and *yáido*, respectively); and the Cubeo (*yauwi* or *yavi*).

Because of the scarcity of published ethnographic data for the Tucanoan-speakers, especially in the area of religion, it is difficult to say whether all jaguar spirits or all spirits with jaguar characteristics can be seen as the souls of former shamans, even though this seems to apply at least to the western Tucanoan-speakers and even though all Tucanoan tribes believe in shaman-jaguar transformation, to which transmigration of the soul of the dead shaman into the jaguar is usually the corollary. Among the Macaguaje, a western tribe, the jaguar is definitely not only the living shaman's avatar but also the shaman's teacher and spirit helper. According to Bödiger, this is presumably so because shamans receive their knowledge from deceased shamans and the jaguar embodies such a soul. Significant is the fact that the Siona call their shaman not only *yai* or *yaiguaje*, jaguar or jaguar man, but also *uattí*, meaning

spirit, because he is equated with the *uattí* spirits which he controls and with whom he makes contact in trances induced by the narcotic *yagé*. However, the *uattí* spirits themselves are embodied in jaguars, so that there seems little doubt that the *uattí* are the souls of dead shamans acting as the helpers and teachers of the *yaiguaje* (Bödiger 1965: 44). Since shamans are themselves jaguars, no shaman is ever attacked by a jaguar. Calella (1940-41: 737-50) says of the *yaiguaje* of the Siona that when they "encounter a jaguar in the forest, they call out, My name is *yái!* Then the jaguar does not harm them."

Thanks to a recent monograph by Irving Goldman (1963), the data for the shaman-jaguar equation among the Cubeo are somewhat more complete than for other Tucanoan-speakers. The Cubeo have a concept of supernatural power which they call *parié*. There are two kinds of shamans, one called the *pariékokü*, or man of power, and the other *yaví*, or jaguar (Goldman 1963: 262-7). Every *yaví* is a *pariékokü*, but not every *pariékokü* is a *yaví*. Rather, according to Goldman, "the *yaví* is the supreme shaman, the one who can take the form of a jaguar, who consorts with jaguars, who maintains the jaguar as a dog . . ." (262).

Goldman's informants (none of whom was a *yaví* because no *yaví* was willing to discuss his work with him) were not entirely agreed whether all jaguars or only some were *yavís*:

Some informants said flatly that every jaguar was a *yaví* or the dog of a *yaví*, or a jaguar into which a *yaví's* soul had entered. When a *yaví* dies, his ghost spirit (*dekókü*) becomes a jaguar. According to this view, the jaguar is feared because he is not an animal but a fiercely predatory man. Other informants explained that there are both ordinary jaguars and jaguars who are *yavís*. Both views agreed on the point that the fierceness of the jaguar is of human origin. Those who believed in ordinary jaguars said those were the kind that might run from a man. (1963: 263)

Koch-Grünberg (1909-10, Vol. 2: 155) says of the same tribe that their shamans also turn into jaguars when they get old simply by donning jaguar skins. Much the same is true of the Carib Taulipang, whose shamans

are completely convinced that they are able to transform themselves into jaguars by putting on the *kaikuse-zamatále* ("the jaguar's dress"). In so doing they reverse their entire body, so that the stomach is turned upward. The back descends to become the stomach. Hands and feet become rounded and armed with claws, like the paws of the jaguar, and are turned backward. (Koch-Grünberg 1916-28, Vol. 3: 200)

In his magical incantations for curing, the Taulipang shaman merges his own personality with that of the supernatural jaguars who live under the earth or in the water. They assist him as his spirit helpers and he becomes—indeed he already is—one of them. In one such chant transcribed by Koch-Grünberg (1917-28, Vol. 3: 225-6) the shaman speaks of the illnesses sent by the various animals of the forest or the savannah to "weaken the flesh." He too is threatened by them, but by using pepper plants in a magical way he

succeeds in frightening away the illnesses of animal origin and so becomes immune to them. When the people are struck by such a disease, he chants,

[they] must call upon me, for I am the black jaguar. . . . I drive away the illness. They have to call on me. I am the tapir-jaguar. I too am here. . . . It is me they have to invoke if they wish to frighten it (the illness) away. I am the puma-jaguar. I too am here. . . . I extract the illness from their backs. It is me they have to call. I am the multi-colored jaguar. I too am here. . . .

The ethnographic literature leaves no doubt that most—if not all—Carib-speaking tribes in northern Brazil, Venezuela, and the Guianas shared these concepts of shaman-jaguar equivalence and metamorphosis. For example, while Koch-Grünberg was staying with the Yecuana (Makiritare), a jaguar came within a few feet of the house and remained there for some time, growling and snarling, before he finally turned tail and disappeared into the forest. When the ethnographer mentioned the incident to one of the Indians he was told:

“That was no jaguar, that was a shaman trying to get his bench.” I said, “Then why didn’t he let me know? I would have put the bench outside for him.” Hanging inside the house is a large stool, carved of heavy wood in the form of a jaguar, of the kind required by shamans for their nocturnal cures. (Koch-Grünberg 1917-28, Vol. 1: 291)

While visiting another Yecuana group, the Majongkong, during a raging grippe epidemic, he was permitted to witness a lengthy curing ceremony during which the shamans, painted with stripes and red spots and seated on their jaguar benches, chanted and howled like jaguars all night and much of the following day. When he rose around noon to find something to eat he was warned by the young men not to enter the forest because it was full of prowling jaguars who had been summoned by the cries of “their human colleagues, the shamans” (Koch-Grünberg 1916-28, Vol. 1: 234). Here, as elsewhere, narcotic trances play an important role in spiritual transformation.

Some beliefs of the Tacana-speakers of northern Bolivia regarding shaman-jaguar transformation have been mentioned. Central to Tacana cosmology is the concept of a great flying jaguar who is a transformed human being, who functions as master of all animal species and of many natural phenomena, and who is a powerful shaman. The mythological material available for the Tacana has been greatly enriched by recent studies of Hissink and Hahn (1961).

There seems no doubt that Tacana religion and ritual are influenced by Andean concepts; one might add that these and other tribes of the Bolivian highlands and adjoining tropical lowlands seem to share with the Pre-Hispanic Andean high cultures certain basic motifs. A hypothesis of ancient “co-tradition” finds support in the extraordinary degree of correspondence noted by Hissink and Hahn (1961: 539-53) between their mythic data and Andean art motifs, including the flying were-jaguar, the double-headed serpent with sawtooth back as sky symbol, masters or guardians of animals and plants with feline characteristics, anthropomorphized objects such as tools and weapons, etc.

The common Tacana term for shaman, *yanacona*, stems from the Quechua, although in Inca as well as Spanish colonial times its meaning was very different (Friederici 1947: 662). *Caquiahua*, the principal deity of the Tacana, who is identified with a sacred mountain and mountain chain, is likewise of Andean origin. Nevertheless, the Tacana world view is basically similar to that of the South American tropical forest cultivators, with an underlying, and still very strong, component of typical hunting ideology. The latter is evident in such concepts as those of masters, mothers, or guardians of various animal and plant species; qualitative equivalence and interchangeability of form between animals and men, derived from an original state when animals, men, and plant life were as yet undifferentiated; propitiation of slain animals, etc. Another notion which clearly derives from hunting ideology is that a hunter who kills more animals of a certain species than he and his family can consume may be punished with illness and even death by the guardian of that species (Hissink 1964: 202-4). The same idea extends to guardians of plant life. The *yanacona's* task is to divine the origin of such illnesses and to determine the proper propitiatory acts to effect a cure.

The flying jaguar represents a significant motif complex in Tacana cosmology and myth. Flying jaguar beings are variously known as *iba bana* (*iba*= jaguar, *bana* = tree) and *ebaquie iba* (*ebaquie* = up high or above, *iba*= jaguar) (Hissink and Hahn 1961: 32S-33). The airborne jaguar is dualistic; he functions as antagonist and as benefactor, as a danger to man and the universe as a whole, and as master or guardian of the air, earth, water, and all animal and plant species; as bringer of the seasons, wind, and rain; as guardian or emissary of the deities (*edutsi*) and especially of *Caquiahua Edutsi*; as earth bearer or supporter of the earth bearers; as regulator of darkness and light (by alternately raising and lowering the earth or the earth bearers); and as the initiatory being of shamans. When a flying jaguar threatens the community, the *yanaconas* can put him in a temporary trance by blowing narcotic tobacco snuff at him; they then drive him away. Under certain conditions he may even be killed by magical means. The flying jaguars themselves are believed to be powerful *yanaconas*; originally they were human beings who were transformed at their own request or as punishment for some transgression by the old Earth Mother and female creator deity, *Eaua Quinahi*.

Still other supernatural jaguar beings, likewise regarded as great *yanaconas*, are *Marúri*, the Master of the Jaguar Species, who is at one and the same time the *iba bana* of the Earth Mother, *Eaua Quinahi*, and *Marúri aba*, the *iba bana* of the creator god, *Caquiahua*.

Marúri aba, also characterized only by the name *iba bana*, is the first guardian who has to be overcome on the journey to *Caquiahua* [presumably by the shaman]. . . *Marúri aba* is not only guardian and watchman of *Caquiahua*. He is also dispatched by the latter as his messenger. In that case he grows wings and appears as a flying jaguar (Hissink and Hahn 1961: 331-2).

The Tacana distinguish several classes of *yanacona*, the two most prestigious being the *tata hanána*, who functions as priest in a regular temple cult as well as shaman, and the *mau*, who is the typical shaman without priestly overtones. The *tata hanána* is directly responsible to the *edutsi*, or deified beings, especially *Caquihuaca Edutsi* and *Eaua Quinahi*, the Earth Mother, to whom he travels in his narcotic trances. The *mau* answers to the supernatural master of shamans, called *Mau Isháua*. Both are believed able to transform themselves into jaguars (the *mau* also has the jaguar as his principal spirit helper); restore themselves and others to a complete state and new life after initiatory dismemberment (ritual death and rebirth); travel to other worlds; enter trances and establish contact with the spirits by coca-chewing, tobacco-smoking, and the use of other hallucinogenic substances; predict the future; diagnose and cure illnesses; recover strayed or kidnapped souls; drive away the *ebaquie iba* by means of narcotic tobacco powder; and cause their enemies to fall ill or die (Hissink and Hahn 1961: 390-401). The difference between the *tata hanána* and the *mau* seems to correspond to that between the *héwiawan* and the *sablí* of the Venezuelan Sanemá (Wilbert 1963). Another type of *yanacona* is the *ayahausca* shaman, who relates to a supernatural master of the hallucinogenic *Banisteria* vine to reach the trance state essential to Tacana shamanizing (Hissink 1964: 202).

The direct method of changing form at will and without any special preparation has been mentioned in the account of the *yanacona* who alternately appeared to his disciple as a man and as a jaguar. Another method is to "think" one's *enidu*, or shadow soul, into leaving one's body, climb a tree, and jump down head-first. The *enidu* reaches the ground in the form of a giant jaguar with numerous lives and a heart formed of the hairs of different forest animals. Jaguar transformation can also be achieved by tumbling or somersaulting. Informants varied in their opinions on the vulnerability of such a transformed jaguar, some insisting that there was no way of killing one, others that thirteen arrows are necessary, still others that the same featherless arrow without a point (*puma*) which can be used magically on a flying jaguar is effective also for the were-jaguar. Should a were-jaguar be killed by magical means, he returns to human shape and is buried as a human; if the were-jaguar is a transformed shadow soul, his injury or death is duplicated in the *enidu*'s owner (Hissink and Hahn 1961: 397-8).⁵

Ecstatic intoxication and sexual abstinence need still to be considered in relation to shamanism, to shaman-jaguar equivalence and transformation in South America, and by extension, to certain motifs in Olmec art.

⁵ Koch-Grünberg writes (1917-28, Vol. 3: 201) of a Taulipang shaman-chief who was greatly feared as an evil sorcerer. He appeared in the form of a jaguar to one of Koch-Grünberg's informants, who succeeded in wounding the jaguar with an arrow. The sorcerer was said to have fallen ill at the same moment.

Psycho-active intoxicants, at least in the form of some narcotic snuff powder, most probably akin to *Piptadenia* snuff, have been known and used in South America for more than three millennia.⁶ The earliest paraphernalia for snuffing now known are a whalebone snuff tablet and a snuffing tube discovered by Junius B. Bird near Huaca Prieta, Chicama Valley, Peru, and dated by him ca. 1200 B.C. (Wassén 1967: 257). These, and the many effigy snuffing implements of more recent date discovered in archaeological sites in Chile, Argentina, Peru, Uruguay, and the Amazon basin provide a remarkable thread of continuity, both in form and iconography, which leads from the prehistoric lowland tropical forest cultures to the Andean civilizations and from them directly into the historic period and the contemporary ethnographic scene (Wassén 1964, 1965, 1967). The archaeological evidence and related ethnographic data have important bearing on the shaman-jaguar complex as well as on the phenomenon of shamanic flight or celestial ascent.

S. Henry Wassén (1965; 1967: 233-89) and Zerries (1965: 185-94) have recently demonstrated that the well-known "alter ego" carvings from the lower Amazon depicting a jaguar behind and above a man are in fact paraphernalia connected with the preparation, storage, and use of the powerful psychotomimetic *Piptadenia* snuff. Zerries (1965: Figs. 5, 7, and 8) illustrates three wooden jaguar-supported *Piptadenia* mortars from the confluence of the Trombetas and the Amazon; two are double-headed, the heads facing in opposite directions. One cannot but wonder whether the famous carved stone mortar in the shape of a jaguar from Chavín de Huantár in the collection of the University of Pennsylvania Museum (Dockstader 1967; Pl. 90) might not also have been used for the preparation of *Piptadenia* snuff. This may apply also to the elaborately carved Central American jaguar metates or grinding tablets (Dockstader 1967: Pls. 150, 152, 192), especially in view of the fact that ceramic snuffing tubes with small bowls have been found in archaeological sites in Costa Rica (Stone 1958: 16; Wassén and Holmstedt 1963: 23; Wassén 1965: 24-6, and Fig. 2).⁷ The juxtaposition or combination of jaguars and birds on snuffing paraphernalia is closely bound to the widespread concept of birds as

⁶ The two most widely used psycho-active preparations are a drink whose main ingredient is an extract from one species of the genus *Banisteriopsis*, and a powerful snuff powder whose main constituent is usually the crushed seed of the *Piptadenia* tree. These snuffs are variously known as *parica*, *yopo*, *cohobo*, *villca*, etc. *Datura* and tobacco are also widely used, and in several regions snuff powders and narcotic infusions are prepared with several varieties of psychotropic plants mixed together. See Cooper (1949: 525-58), S. H. Wassén and B. Holmstedt (1963), and Wassén (1964, 1965, 1967).

⁷ A bifurcated snuffer with two tubes ending in a small bowl, from Jalisco, is believed to have been found in a shaft-and-chamber tomb of ca. 100-250 A.D. (Furst 1965a: 612-13). A redware horned figurine from Colima holding a snuffing tube to his nose and Colima redware snuffing tubes are also known to me. Figurines of this type may represent shamans (Furst 1965b: 29-60). The type of snuff used in West Mexico is unknown. Possibly it was tobacco; however, several species of the genus *Piptadenia* (*P. flava* and *P.*

tobacco spirits or patrons of ecstatic intoxication, and as the avatars or spirit helpers of the shaman in his celestial flight, which he experiences in a state of ecstasy induced with psychotropic substances (Wassén 1965: 24-9). Wassén (1967: 277-83) derives the motif of the feline as such on ethnographic snuffing paraphernalia in lowland South America and archaeological counterparts from Chile, Peru, Argentina, and Uruguay directly from the concept of the shaman as jaguar (see Wassén 1967: Figs. 8, 16, 18, 22, 30; Dockstader 1967: Pl. 183). The combination of jaguar (shaman) and bird in relation to intoxicants with psychotomimetic effects may perhaps explain the origin of the Tacana feathered and winged were-jaguars (*iba bana* and *ebaquie iba*) who are regarded as great *yanaconas*.

In Olmec art we also find the bird-jaguar motif, e.g., the winged were-jaguars from Guanacaste, Costa Rica, the incised jade "spoon" from Guerrero, and the incised La Venta jade earplugs illustrated by Coe (1965b: 754, Figs. 29-31). The "spoon" has a were-jaguar face in profile inside the bowl and a bird on the handle, facing in the opposite direction. The American Museum of Natural History also owns a jade "spoon" with a carved bird head at one end. The clearest Olmec depiction of a raptorial bird, perhaps an eagle, with a "kan cross" in the eye, appears on an obsidian core from La Venta; more or less anthropomorphized birds or "were-birds" with raptorial characteristics are found on several other objects from La Venta and elsewhere (Coe 1965b: 753). There are also the jade pendant from the Dumbarton Oaks Collection in the shape of a human head with a duck bill (Lothrop 1957: Pl. I), and the famous duck-billed anthropomorphic Tuxtla Statuette which, though no longer purely Olmec, is at least derived from the Olmec style.

I have long thought that the Olmec jade "spoons" might be stylized birds, but until I saw the illustrations by Wassén (1967) of stylized bird-shaped stone carvings with cavities, found in the shell middens at Santa Catarina, Brazil, and read his discussion of their likely use as receptacles for *paricá* snuff powder, the possibility of the jade spoons as receptacles for psychotomimetic snuff had not occurred to me. This is speculative since we do not know whether the Olmec shamans used snuff or other narcotics; however, in view of the great antiquity of snuffing and the widespread use of psychotropic plants in South and Central America, as well as in Mexico, it would be surprising if they did not. At the time of the Conquest, *piciétl*, a bright green psychotomimetic powder made of the dried and pounded leaves of the *Nicotiana rustica* L. was used for ritual cleansing in curing and as an ecstatic intoxicant; in some areas

constricta) are found in West Mexico. Whether their seeds or other parts contain hallucinogenic substances is not known. It might also be of more than passing interest that the major hallucinogenic alkaloid of some *Piptadenia* species, bufotenine, is also present, as its name implies, in toads of the common genus *Bufo* found all over Central and South America (Daly and Myers 1967: 970, Table 1). Frogs or toads are a pervasive archaeological motif and in mythology are frequently identified with jaguar transformation (Zerries 1964: 242-4).

of Mexico it is still used in native religious ritual and curing (Wasson 1966: 330). According to Fray Bernardino de Sahagún (1950-63, Book 11: 146) *piciétl* "intoxicates one, makes one dizzy, possesses one." The powder can be inhaled directly through the nose; formerly it was also mixed with lime and made into a wad for chewing, much as coca and lime are chewed in the Andes. The subject of snuffing in Mexico has hardly been broached, although there is some literature on other hallucinogens (see, for example, Safford 1920, Furst and Myerhoff 1966; Hoffman 1966: 349-57; Miller 1966: 317-28; Wasson 1966: 32957). No Olmec objects securely identifiable as snuffing tubes are known. However, many collections of Olmec jade include longitudinally drilled tubes which could have served as snuffers, even though such objects are generally described as beads. Also, as in South America, Olmec snuffing tubes might have been made of wood or bird bone.

In South America the ethnographic data we have on ecstatic intoxication in relation to shamanic transformation (especially Koch-Grüberg) make it clear that the narcotic substances taken by the shaman do not *cause* him to assume jaguar form but rather allow the jaguar already within to reveal himself-as, in the analogous Jekyll-and-Hyde story, the brew which Jekyll drinks does not change him into something alien to himself but only into his other self. Nor is the shaman in the power of the intoxicant; it is he who controls it, and through it, the spirits of nature-so long as the proper ritual requirements are fulfilled. Related specifically to jaguar metamorphosis, the psychotomimetic intoxicant might be seen as a mechanism enabling the shaman to intensify his emotions to the point of experiencing completely his other self.

This is the case with shamans of the Carib tribes of the Orinoco-Ventuari whom Koch-Grünberg visited extensively. On ritual occasions, all the adult men consumed quantities of *kahí*, a powerful narcotic beverage made from vines belonging to the genus *Banisteriopsis*, but only shamans became jaguars during ecstatic intoxication. One Yecuana showed Koch-Grünberg the vine and told him that within it was contained "the shaman, the jaguar" (Koch-Grünberg 1917-28, Vol. 1: 323). In highly charged curing ceremonies (e.g., during a gripe epidemic) the shamans, seated on jaguar-effigy stools, achieved ecstasy and became jaguars while consuming great amounts of the *Banisteria* beverage; as jaguars, they called on their spirit helpers and wrestled with the disease demons. However, there were evidently circumstances when the jaguar inherent in the shaman might inadvertently come out without any special effort and when metamorphosis into a jaguar was actually quite inappropriate to the occasion. To quote Koch-Grünberg (1917-28, Vol. 3: 201) again:

Aküli [a Carib shaman informant] told me that in the course of a big dancing ceremony held in the dance house on the Roraima he himself had changed into a jaguar, and this before the very eyes of the people, who fled and barricaded the house. He had climbed up one of the house posts and fallen down. When the people had told him about it the following day he had been most embarrassed.

Metamorphosis through a psycho-active substance, in this case tobacco, is implicit also in a Warao tradition in which a man teaches his brother the secret of transforming himself into a jaguar by the intensive smoking of a magic cigar. As jaguars they raid a burial place and dig up the dead. An Indian comes along and fatally wounds the brother, who thereupon changes back into a man and dies. The other brother, in the form of a jaguar, avenges his death by killing the Indian (Wilbert 1968). One is reminded here of the Tacana tradition that a were-jaguar can be successfully opposed only by magical means (arrow, tobacco powder)—prerogatives of the shaman—and that if a transformed jaguar is fatally wounded he changes back into a man. There also comes to mind the precautionary question of the Sanemá (Yanoáma) hunter when he meets any jaguar in the forest: "Are you a jaguar or are you a shaman?" If the jaguar replies that he is a shaman the hunter prudently retreats, for to challenge or threaten a transformed shaman would assure fatal consequences (Johannes Wilbert, personal communication).

SEXUAL TABOOS AND THE ASEXUAL MOTIF IN OLMEC ART

Sexual abstention before, during, and after all ritual acts and during initiatory training, is a well-documented shamanic phenomenon which may shed light on the real meaning of the peculiar characteristic of sexlessness in Olmec were-jaguar figurines. Sexual abstinence applies especially to all activities connected with the various psychotomimetic plant substances used by the shaman to achieve contact with the other world.

The Tucanoans, for example, believe that the power which the shaman exercises over nature and the spirits which rule over the plant and animal species, is concentrated in his power over the narcotic *Banisteria* beverage (here called *yagé*), and that this unique power would be gravely endangered by sexual activity during its preparation and its use by the shaman (Bödiger 1965: 45-8). Among the Siona, *yagé* is prepared in a special place by a novice shaman. The training of the novice has two major phases, the first designed to cleanse the body through various narcotic plant and bark extracts, to initiate him into the knowledge only shamans have of the forest, and to impress him with his duties to the community, at whose service he will place himself without reservation following his initiation. This phase is already accompanied by food and sexual taboos. The second and most important phase is that of initiating him into the use of *yagé*, which brings about the trances during which he will establish contact with the other world. During this time the taboo against all sexual relations is vital, for, as he is told by the shaman: "If you do not strictly avoid women, the *yagé* will not give you its visions" (Bödiger 1965: 47-8). The *yagé* jealously insists on complete sexual abstention and if this condition is not observed, the shaman might die when he uses it. Noting that the Guardian of *Yagé* is conceived as female, Bödiger (1965: 49) cites an analogous situation among the Cuna of Panama and Colombia whose

shamans must abstain from sexual intercourse while searching for medicinal plants, because the female plant spirits are extremely jealous.⁸

The novice shaman of the Jívaro likewise has to abstain from sexual intercourse during his training (Karsten 1955: 172). No married couple can live in the same house with him and even his food must be prepared by an unmarried man or a virgin. Should he violate these taboos the consequences would be fatal, for the mystical poison which he has absorbed into his body would not only fail to "ripen" but, on the contrary, cause his death.

Perhaps the most arduous initiatory experience was that of the Carib shaman, who had to observe the strictest sexual abstinence in the face of erotic excitation by pubescent girls who each night painted his entire body with red paint and even danced with him (Andrés 1938: 336). These girls made twelve ceramic bowls which, decorated with a spiral stairway symbolizing the ladder to the sky, were designed to transport the novice to the other world with the help of Grandfather King Vulture, the most important of the spirit helpers. According to Koch-Grünberg (1917-28, Vol. 3: 335-7), the Carib shaman's training lasted for three years and more, during which the novice not only abstained from sex but was permitted to eat so little that he was reduced to a virtual skeleton (reduction to skeleton=initiatory death).

Food taboos and length of initiatory training vary but the sexual taboo is evidently universal during all ritual acts for the rest of the shaman's life. Two examples from contemporary Mexico are of interest, one from the Huichols of the Sierra Madre Occidental in Jalisco and Nayarit, with whom I worked during 1965-67, and the other from the highland Maya area. During his training, which includes a minimum of five pilgrimages from West Mexico to the sacred peyote country in San Luis Potosí, in the north-central high desert, the Huichol *mara'akáme* (shaman-priest) must observe long periods of strict sexual abstinence and numerous food taboos. Sexual abstinence is a strict requirement immediately before, during, and immediately after all ceremonial activities, especially for the duration of the peyote pilgrimage, which may last between forty and forty-five days. Maud Oakes (1951: 57-8) reports much the same thing for Todos Santos Cuchumatán, a Mam-speaking community in the Department of Huehuetenango, Guatemala, where she had the following conversation with the sister of the *Chimán Nam* (shaman-priest) Macário:

"When he was young, Macário's wife ran away with another man. She ran away because she wanted a man for a husband, not a *Chimán Nam*."

"What do you mean?" I asked.

⁸ Perhaps this is the reason why the hallucinogenic *Ipomoea* seeds are called "seeds of the Virgin" or "La Señorita" in Oaxaca, and why they must be ground by a virgin (B. P. Reko 1934; Wasson 1966). It must also be virgins who gather and grind the divinatory mushrooms in the Valley of Juxtaluaca in the Mixteca, and the leaves of the *Salvia divinorum* in Ayautla and San José Tenango in the Sierra Mazateca (Wasson 1966: 346).

"The *Chimán Nam* can never touch a woman during *costumbre*⁹ time and five to twenty days before. Now Macário performs much *costumbre* throughout the year, though not much during the rainy season. Because of all this his wife ran away and he never took another woman."

We should perhaps re-examine the asexual phenomenon in Olmec art in the light of these strong sexual taboos which seem to be almost universally associated with shamanic initiation, ecstatic transport, and other shamanic ritual, as well as with priesthood in general, rather than interpreting it as the portrayal of a pathological condition or priestly emasculation (Dávalos Hurtado 1951). There is frequently a strong sexual element in shamanism which expresses itself in different ways in different geographical and cultural contexts: change of sex, sexual relations between shamans and tutelary spirits or celestial instead of human wives, transmutation of sexual energy, etc.; all imply abstention from a "normal" sexual life for the shaman (Eliade 1964: 71-4, 79-81, 257-8). Dávalos Hurtado (1951: 133-41) may have come close to the truth in interpreting the Olmecoid "danzantes" of Monte Albán as priests engaged in an ecstatic ritual dance, but I suggest that the flower-like designs or scrolls which replace their sexual organs, as well as the absence of sexual organs on were-jaguar figurines, be considered as metaphorical rather than literal, symbolizing ritual celibacy rather than recording sexual atrophy or castration.

SHAMAN- JAGUAR IDENTIFICATION IN MEXICO

Except for the Huichols and perhaps remnants of the Lacandon Maya in Chiapas, nowhere in modern Mesoamerica has aboriginal belief and ritual survived to nearly the extent that it has in tropical South America. While jaguar symbolism in Pre-Columbian art can often be clearly identified with priestly status,¹⁰ there is also persuasive documentary and linguistic evidence for shaman-jaguar equivalence in comparatively recent times. As George Foster convincingly demonstrated, the component parts of the Mesoamerican phenomenon of nagualism are in fact

⁹ Literally "custom," used to mean prayer, ceremony, ritual, etc., of the traditional, non-European kind.

¹⁰ For example Roys (1967: 198) notes that the jaguar appears frequently "in the older Maya art, indeed it goes back to some of the earliest monuments; but before the appearance of an intrusive Nahua culture in Yucatan this animal is always connected with the priesthood. Only in the Toltec temples do we begin to find it a symbol of the warrior class. . . ." One cannot help wondering whether the plumed and often anthropomorphic jaguars in the Teotihuacán murals, especially the conch-blowing jaguar procession below the Palacio del Quetzalpapálotl, are not metaphorical representations of priests, especially since, at least in Aztec times, the blowing of conches, even war conches, was the exclusive prerogative of the priesthood (Sahagún 1950-63, Book 2).

merely local manifestations of native American beliefs. . . . In many parts of North and South America the native peoples believed that certain individuals possessed the power to transform themselves into animals in which form they did mischief. Ancient Mexico and Guatemala shared this belief. (1944: 87)

There are two closely related aspects to nagualism. On one hand, the nagual is the sorcerer who changes into an animal. But in some areas, notably Oaxaca, Veracruz, Chiapas, and Guatemala, nagualism also pertains to the belief that a person has an animal alter ego, or companion animal.¹¹ According to Foster (1944: 92-3), the bond between man and his animal is so close

that there is practical spiritual identity; it is but a step to assume that the human can take at will the animal form. The idea that when either companion animal or human is injured and dies the other suffers a like fate is the most striking characteristic of this aspect of the phenomenon. Modern and early accounts cite the innumerable cases in which an animal is shot and at the precise moment someone in a nearby village drops dead, his body showing the same wounds as the animal.

This is much like the beliefs about were-jaguars and other alter ego animals in South America and elsewhere. The term nagual comes from the Aztec stem *nauaal*, which through affixation of the article *tli* becomes *naualli*; compounds from the stem denote something hidden or disguised (Foster 1944: 85, 88-9). Georg Friederici (1926: 69) explains *nagual-naualli* as

the bewitched one, the enchanted one, one disguised as werewolf, the sorcerer in animal form; the animal spirit which stands in the closest relationship with a human from birth on and in a sense is one with him. . . . The personal spirit, the alter ego of the individual. Through its aid the adept can practice sorcery etc., and especially acquire the power of "shape-shifting," that is, transforming himself at will into some animal.

Sahagún (1950-63, Book 10: 31) differentiates between *qualli naualli* (good sorcerers) and *tlaueliloc naualli* (bad sorcerers):

The sorcerer [is] a wise man, a counselor, a person of trust—serious, respected, revered, dignified, unreviled, not subject to insults. The good sorcerer [is] a caretaker, a man of discretion, a guardian. Astute, he is keen, careful, helpful; he never harms anyone. The bad sorcerer [is] a doer [of evil], an enchanter. He bewitches women; he deranges, deludes people; he casts spells over them; he charms them; he enchants them; he causes them to be possessed. He deceives people; he confounds them.

There is another reference which hints strongly at jaguar transformation by "sorcerers" (*naualli*) or "conjurers" (*nonotzaleque*). In his discussion of the

¹¹ See also Holland (1961, 1964). Holland's work provides a useful example of the value of ethnographic analogy for the interpretation of some aspects of Maya civilization.

so-called *ocelutl*, by which he evidently means not the ocelot but the jaguar, Sahagún (1956-63, Book 11: 3) describes the use of the skin as follows:

The conjurers went about carrying its hide—the hide of its forehead and of its chest, and its tail, its nose, and its claws, and its heart, and its fangs, and its snout. It is said that they went about their tasks with them—that with them they did daring deeds, that because of them they were feared; that with them they were daring. Truly they went about restored. The names of these are conjurers, guardians of tradition, debasers of people.

As in South America, the shaman can transform himself simply by donning a jaguar skin. A possible Olmec analogy is the ceramic were-jaguar figurine dressed in a jaguar skin from Atlilhuayan, Morelos (Covarrubias 1957: 61).

Jaguars (“lions” or “tigers”) and birds are mentioned in early accounts as the animal metamorphosis of the *naualli*. In Nicaragua, *nawa*, a local form of the Aztec *naua*, is used by the Sumu Indians specifically for jaguar. This is

an identification understandable when it is realized that this animal is perhaps the most common and ancient disguise of the transforming witch. These Indians believe in witches who change themselves into owls and other forms, but they are not called naguals. (Foster 1944: 100)

There remains some linguistic evidence for an ancient equation between shaman-priest and jaguar in the Maya area in the so-called Books of Chilam Balam, the sacred writings of the Maya of northern Yucatán. *Chilam* means priest, shaman, or interpreter of the gods, while *balam* means jaguar. Chilam Balam may be translated as Priest-Jaguar or Jaguar Priest. However, *balam* can also mean priest (Roys 1967: 111, footnote 3) or “sorcerer” (Recinos 1950: 94, footnote 1). Of the four original ancestors of the Quiché Maya, three were named Balam. This identification of the priestly ancestors with the jaguar is explained by Recinos as follows: “It must be noted that *balam* also has the meaning of sorcerer, and that the ancient Quiché, who believed in sorcery and incantations, saw their first fathers as sorcerers and wizards.”

Such beliefs are a common theme in origin myths in North and South America and in the Old World as well: the first ancestors are human and animal at the same time, without qualitative or formal differences between them. Eventually the bond is broken and animal and man assume their permanent shape, with the exception of the shamans who alone are capable of re-establishing mystical solidarity, because they can transform themselves at will into their animal alter egos or their animal tutelary spirits. To quote Mircea Eliade (1964: 94): “Each time a shaman succeeds in the animal mode of being, he in a manner re-establishes the situation that existed in *illo tempore*, in mythical times, when the divorce between man and the animal world had not yet occurred.”

The phenomenon of Mesoamerican nagualism, as an agglutination of two apparently different concepts, that of animal transformation and that of the companion animal or animal alter ego, has its almost identical counterpart

among the Buryat of Siberia, an area where shamanism was preserved, until recently, in its classic forms. Here the shaman's tutelary animal spirit, called *khubilghan* (from *khubilkhu*, "to change oneself," "to take another form"),

not only enables the shaman to transform himself; it is in a manner his "double," his alter ego. This alter ego is one of the shaman's "souls," the "soul in animal form," or, more precisely, the "life soul." Shamans challenge one another in animal form, and if his alter ego is killed in the fight, the shaman very soon dies himself. (Eliade 1964: 94-5)

Nagualism can apparently be understood as a local manifestation of shamanism in general, even though in Mexican syncretic folk beliefs the transforming shaman has become the "sorcerer" who does mischief in his animal form.

The above evidence does not negate the possibility of deification of the jaguar or of certain gods appearing in jaguar form, especially where deities developed out of deified ancestors or their animal counterparts or alter egos. Among the contemporary Tzotzils the companion animals of the elders and shamans are the largest members of the cat family, with a great jaguar as the alter ego of the most important elder of the community (Holland 1964: 304). The companion animals

of the elders and curers are lineage gods which occupy the highest levels of the sacred mountain. . . . The companion animal of the *principal* of *principales*, a giant jaguar, has the most imposing position from which he consults directly with the ancestor gods in matters concerning the rule of his inferiors.

The contemporary beliefs of the Tzotzil in a society of companion animals centered around sacred mountains

may have had prehistoric Maya counterparts centered around lineage pyramids in ancient Maya archaeological sites. Ancient Maya ancestor worship may have functioned as a supernatural system of social control, as it still does among the Tzotzil and Tzeltal. (Holland 1964: 306)

In discussing the role of ethnographic analogy in the interpretation of archaeological materials, Raymond Thompson (1958: 5) observed that

the archaeologist who formulates an indicated conclusion is suggesting that there is a correlation between a certain set of archaeological material percepta and a particular range of sociocultural behavior. He must test this conclusion by demonstrating that an artifact-behavior correlation similar to the suggested one is a common occurrence in ethnographic reality.

Furthermore, Thompson said, in order to support the proposed correlation, it must be demonstrated that it derives from a pattern of repeated occurrences in a large number of cultures. This condition I believe has been fulfilled for the suggested correlation between the Olmec were-jaguar motif, and, by exten-

sion, at least some of its analogies in post-Olmec times, and the widespread, indeed almost universal, shaman-jaguar identity in contemporary or recent Indian cultures. If the analysis has any validity, the were-jaguar figurine ceases to be naturalistic portraiture, depicting an ethnic type, an aesthetic ideal, or a pathological condition—or a combination of all three. Rather, the feline characteristics become a kind of badge of office, the manifestation of the supernatural jaguar qualities inherent in priest or shaman, his spiritual bond and identity with the jaguar, and his capacity, unique among men, of crossing the boundary between animals and humankind by achieving total spiritual transformation.

The “scientific world view” to which we are all captive makes it difficult to reach meaningfully into the metaphysical, esoteric areas of the past—or, for that matter, the present—but at least we can be certain that in Pre-Hispanic art, as in the art of other non-Western peoples, things are rarely what they appear to be at first glance. The question is how to achieve that second look and make it yield meaningful results. It seems obvious that the most valuable and perhaps the only tool at our disposal in this respect is ethnographic analogy, which, as Kwang-Chih Chang (1967: 229) properly observes, “is the principal theoretical apparatus by which an archaeologist benefits from ethnological knowledge.” It is probably also the only theoretical apparatus by which we may eventually achieve classifications in Pre-Columbian art which agree reasonably closely with the cognitive systems of its creators, rather than only with our own.

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DISCUSSION

DR. COE: When you get far enough back in time in the New World and look at all facets of life, not only beliefs but social structure and political organization on a very primitive level, you begin to realize that, from the aboriginal United States down to southern South America, there is a deep, underlying structure that must have come from Asia. I suspect that if you went into the relationships between people of high rank or power and large cats—tigers, if you like—you would find many Old World parallels.

I am thinking especially, however, of the color-direction concept, which is spread all around the edges of the Pacific—a concept which sets up very specific relationships between colors and world directions. Five or six thousand years ago, there may have been a single culture that extended all around the edge of the Pacific. We don't need to talk about trans-Pacific diffusion here, but about migration. This early mode of thought might have been reflected in Olmec iconography; if so, we must perhaps let go of some of our ideas about Quetzalcóatl and Tezcatlipoca, and get back into this very primitive world of ideas. On this level of almost pre-agricultural peoples there are many social-structural resemblances between the primitive peoples of Asia and the New World. I think that you have something here, and that we can make too much of the later religions. However, the gods are probably there, at least some of them, and they probably all have jaguar characteristics. Perhaps by, say, 800 or 400 B.C., they are beginning to take much more recognizable form. Yet I really am quite impressed with the man-jaguar transformation idea, and I think that there is a great deal to be learned about Olmec iconography using these ethnographic principles.

MISS PROSKOURIAKOFF: What I thought was most interesting about your paper was that it makes more sense out of the kind of symbolism that the Olmec were using. It may be mystical, but it is still a realistic representation, which is much more congruent with other representations of the Olmec, and quite distinct from Maya art, which tends to be allegorical, and Post-Classic symbolism, which tends to be emblematic. For example, in the idea of Quetzalcóatl, which is, I think, purely a Post-Classic idea, the symbol of the serpent is used simply as an emblem of an entirely different entity. But you begin with a basic realism, and I think that you are entirely right about this.

DR. FURST: Even in the Quetzalcóatl myth, of course, there is the story of Tezcatlipoca being turned into the jaguar: when he is thrown into the sea, he becomes a jaguar, and he devours a race of giants that inhabits the earth. This idea actually comes right out of hunter-gatherer mythology.

MISS PROSKOURIAKOFF: I am sure it does, but I think that it was taken quite

differently there. By the time that it had become a mythology, it was not the myth it had been in earlier time, and it is never represented realistically but simply in emblems of gods. I disagree with Dr. Bernal's statement about the multiplicity of Middle American gods. I think that this is a very late development, and depended upon the political development of the Aztec state. There probably were many small local gods, but the notion that the Maya civilization had a great many gods, I think, is completely wrong. We never have gods represented before the Post-Classic period, by which time there is a great proliferation of idols. In neither the Teotihuacán culture nor that of the Classic Maya, nor in any of the earlier cultures, was there really what you might call an idol or god that we could identify. But they do have these zoomorphic and also formal symbols which are combined and recombined in various ways, I think to represent cosmic entities.

DR. FURST: I am particularly interested in applying some ethnographic data to various aspects of Mesoamerican symbolism, working, for example, on the conch-shell cult at Teotihuacán and in West Mexico, by finding out what people think about conch shells, and looking for data on those societies that still use conch shells, or did fifty or a hundred years ago. Using this approach, you might find that the jaguar-conch shell association at Teotihuacán has to do with the priesthood and that the jaguars are in fact priests.

MISS PROSKOURIAKOFF: In studying symbolism, you take into consideration not only the meaning of it, which you derive ethnographically, but its use. For instance, whether it is used emblematically, allegorically, or realistically.

DR. FURST: As for the Olmec, I think they are using the symbols quite realistically.

MISS PROSKOURIAKOFF: That is what interested me in your paper, because you are taking symbolism back, you are tracing it to a much more realistic stage than we get in later times, and I think that this is a contrast between the Olmec civilization and symbolism, and the Maya civilization and symbolism, which developed abstract symbols from originally realistic representations.

MR. MICHAEL KAN: On the figures you have shown here, are there flame brows? If so, what do you make of them?

DR. FURST: Since I can't answer that question, I want to give you another very interesting one. I am giving a seminar on Pre-Columbian art, and some of the people in the seminar have done a great deal of work in other areas, so some very wild ideas are being thrown back and forth. One of the most interesting mythic themes in South America is the association of frogs with fire. The frog is the fire-bringer. There are endless myths in which the frog is killed by the culture hero, explodes in a rain of fire, and down come all these beautiful flames; then the culture hero catches the fire and gives it to the people. When I mentioned this, one of my students said, "There are a number of South American toads that have in their skin a poison which, if you get it into your blood stream is very dangerous, but which if you eat it, has a psychedelic effect." This is true. The skin of these toads has a chemical content which has roughly the same effect as peyote,

which is very well known for its color visions, as are datura and other psychedelic drugs. This might possibly be the origin of this fire idea. You eat the frog and then you get these exploding visions of flame and fire raining down. It certainly is an interesting idea, because the association of the toad with fire seems a little far-fetched. Why the frog, when there are many other animals that could have been chosen? I don't know how far we could carry this; we are on very slippery ground in applying 1900 or 1950 ethnographic data back to 1000 B.C. Yet in these traditional societies mythology does survive to an extraordinary extent. I have collected myths among the Huichols which read as if they were dictated to Lumholtz seventy-five years ago; and Lumholtz's deluge myth is absolutely, word for word, identical with the deluge myth material that I have collected. Seventy years of the most intense acculturative pressures on the Huichols have not changed the myth. So I see no particular reason why it should have changed very much from ancient times.

DR. GORDON EKHOLM: I would just like to underline the statement that Michael Coe made in his other remarks, that many things that seem to relate Asia and the New World are very probably of this early substratum. In a recent paper, Peter Furst discussed the interpretation of certain western Mexican figurines, namely, the shaman's horn on the front of the head. I think he came to an explanation of that without really paying any attention to the Pacific Ocean. Perhaps even the Middle American calendar is one of these old things, or perhaps basic elements of the Middle American calendar might go back to Upper Paleolithic times. There has been a great deal of interest in Paleolithic art as possibly being calendrical. It is possible that all these things go way back. We always underestimate in our assumptions what might have gone along with these great early migrations in the world.

DR. FURST: We always think of migrations in terms of the mammoth hunters, but if migrations took place into the New World as late as, say eight or nine or ten thousand years ago, which they seem to have done, then, for one thing, the dog was brought into the New World as a domesticated animal, since the dog is generally associated with very late Upper Paleolithic or Mesolithic times in the Old World. If there were possibilities of migrations at 8000-6000 B.C., let us say, all kinds of concepts which developed in the Neolithic in the Old World may have been brought into the New World, perhaps even early agriculture. We should rethink these old ideas about what people were capable of in the Upper Paleolithic. I don't see any reason why it shouldn't be possible that some of these ideas do come out of the Upper Paleolithic and Mesolithic into the New World. We can explain them perhaps in terms of a common hunter-gatherer or archaic substratum rather than in terms of direct trans-Pacific or trans-Oceanic diffusion.

DR. EKHOLM: This doesn't mean that there aren't later trans-Pacific contacts.

DR. COE: There is probably a substratum related to the earliest migration from Asia. Numerical classifiers, according to recent work of Brent Berlin, are found in languages all around the edges of the Pacific basin and are hardly found elsewhere. This concept may have been part of the substratum, along with color directions, the dragon idea, world trees—and perhaps the man-jaguar.

At first I thought that the Bliss figurine of the man-jaguar was a bald old man—and he may yet be, because I don't think these concepts necessarily preclude each other. The Summer Institute of Linguistics has reported for the Chol Maya an extraordinary cave god, who, perhaps, is a rain god. He is not further identified, but he is conceived of as a bald old man. It is therefore possible that the bald-old-man idea was added in the usual Olmec transformational way to the idea of the man-jaguar.

The Mexico City head is particularly important to your thesis—that is, the concept of the man's skin being pulled or taken away from the face, because I notice that on the top of the forehead there seem to be actual veins or arteries represented coming up from the eyebrows. I have never seen this in the flame-brow motif. It looks as though the whole front part of the face were flayed.

DR. EKHOLOM: On the Bliss figurine there are blood vessels on the chest; this is the same thing.

DR. COE: They are vein-like and there is no question about it. We have here a flayed figure.

DR. FURST: One must remember that baldness is not a Mongoloid but a Caucasoid trait. Here you get into great problems. Balding is a European genetic trait which you also get among the Australian aborigines. This does not mean that you might not have an occasional bald Indian, and a pure Indian at that.

DR. EKHOLOM: Yes, but balding could be the same as artificial beards—or rather, just the opposite!

MR. KAN: The fact that it was rare probably made it a mark of divinity.

DR. COE: At first I thought that the Dumbarton Oaks figurine was a fake. Gordon Ekholm convinced me that it is good, and I am a hundred per cent behind it today. I think this point ought to be raised because it has been called a fake.

DR. FURST: As for the head from Huimanguillo, unfortunately, we cannot find out who dug it. It is listed in the catalogue as coming from a controlled dig; I was hoping that it was Stirling or Drucker who dug it, but apparently not.

DR. COE: Huimanguillo often is a synonym for La Venta in catalogues.

DR. FURST: Notice the position of the Fearing statuette with the left knee up and the right leg folded under. One can carry these things too far, but it is amazing how many figurines have that specific position, especially shaman figurines from western Mexico. In Yaqui shamanism and in shamanism in the Oaxaca area the left leg up and the right leg folded under is considered the fighting position of the shaman rising up to struggle against the demoniac forces. This exists apparently in many more cultures than I had originally thought. These are very old concepts which have survived all through Mesoamerica and South America.

ADDENDUM

THE PRE-CLASSIC OLMEC IN CENTRAL MEXICO: SITE DISTRIBUTION AND INFERENCES

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The publication in 1934 of George Vaillant's Gualupita paper and Eulalia Guzman's Chalcatzingo report marked the recognition of the Olmec presence in the Mexican central highlands. Since then, these initial discoveries have been reinforced by equally important Olmec finds at Tlatilco (Covarrubias 1943, 1950, 1957; Moedano Koer 1957; Piña Chan 1951, 1952, 1958; Romano 1962, 1963), Tlapacoya, Santa Cruz, Atlilhuayan (Piña Chan and Valentín López G, 1952), Las Bocas (Coe 1965a), and innumerable pieces from unknown sites in Guerrero. Various theories have been presented to account for the Olmec presence. Because of the quantity of small, portable Olmec stone objects coming from Guerrero, Miguel Covarrubias (1957: 76) hypothesized Olmec origins in that region, Román Piña Chan (1955: 26), one of Mexico's foremost Pre-Classic scholars, has felt until recently that Morelos might be the focal point of Olmec culture, with dispersions from Morelos into the Gulf Coast region and the Valley of Mexico. More recently we have been presented with opinions of highland Olmec as possibly a style adopted by village chiefs having commercial ties with the Gulf Coast (K. Flannery, p. 105, this volume), an Olmec empire formed by a military conquest (Coe 1965b: 771), the wholesale dispersal of Olmec culture groups to the highlands (Berger, Graham, and Heizer 1967: 9; Coe, Diehl, and Stuiver 1967: 1400), and finally the theory that highland Olmec sites may have a commercial trade orientation (Coe 1965a: 122-3; Jiménez Moreno 1966: 14). The problem, in other words, remains: in what manner are Pre-Classic Olmec artifacts present in central Mexico, and what was the method of this diffusion? Does highland Olmec represent simply a religious cult diffused possibly by contact or by Olmec missionaries, a group migration, a military invasion, or trade orientation?

One phase of a recently terminated year of research on the Pre-Classic Olmec in the highland state of Morelos, which I conducted, was to analyze all known

and newly discovered Pre-Classic sites from the standpoint of archaeology, ecology, geology, and geography, in an attempt to ascertain if any patterning was present. Within a short time it became apparent that certain patterning did indeed exist, and the following conclusions are based upon the results of that phase of the project.

Geographically, Morelos is one of Mexico's smallest states, and lies directly to the south of the Valley of Mexico, being separated from the Valley by a large mountain mass, which contained (at times) active volcanos during the Pre-Classic. The north and central portions of the state, excluding the foothills in the extreme north, are characterized by broad valleys and plains, separated by long north-south-trending mountain ranges. The southern portion is quite mountainous and adjoins the state of Guerrero. The best access through these southern mountains, on foot, is along the river valleys which cut southward into Guerrero, for the mountains are otherwise inhospitable.

Within Morelos and western Puebla, six truly Olmec sites are presently known: Las Bocas, recently published by Michael Coe (1965a), which, however, yielded no good stratigraphic data in a recent, unpublished excavation;¹ Chalcatzingo, the only highland site with bas-relief carvings in Olmec style (Cook de Leonard 1967; Gay 1966; Grove n.d.; Piña Chan 1955); Atlhucayan, which yielded a magnificent hollow baby-face figurine to a road crew (Piña Chan and Valentín López 1952); Gualupita, excavated in 1932 by Vailant (1934); La Juana-San Pablo, a site at which I excavated, and a portion of which was known to looters and collectors under the name of Santa Cruz (Coe 1965a: Map, p. 9, Figs. 77 and 79); and La Era, a new site discovered accidentally by looters. I classify these sites as truly Olmec in that they are the only sites known at present yielding hollow baby-face figurines, white-rimmed black ware, spouted trays, cylinder seals, and excised black wares with the jaguar-paw-hand motif.

The geographic orientation of these sites is important. Chalcatzingo, possibly the most famous, if not the most important of the Morelos sites, is located at the eastern end of the long alluvial-volcanic plain that covers much of central and eastern Morelos. It is the most imposing of all the highland Olmec sites, being located at the foot of the cliffs of the central of three great igneous hills that thrust strikingly out of the flat plain. These igneous masses, located beside the only river in eastern Morelos, are not only landmarks throughout central and eastern Morelos, but also stand near the entrance to one of the few passes running through the hills separating Morelos from western Puebla. In appearance Las Bocas, in western Puebla, strikes the

¹ Excavations were conducted by Piña Chan at Las Bocas (he called the site "Caballo Pintado") in January, 1967. In a discussion with students assisting Piña Chan in the excavations (Piña Chan was not at the site at that moment), I was told they were finding only disturbed, looted soil in their strata pits, with Aztec-related materials mixed with the Pre-Classic.



Fig. 1 Olmec sites in Morelos.

observer as a miniature Chalcatzingo, with its location at the foot of a Chalcatzingo-like hill and cliff. The site of Las Bocas occurs on the east side of the Izúcar de Matamoros valley, while on the west side of the same valley is the pass which we mentioned as running from Chalcatzingo. Las Bocas is at the mouth of a valley system, quite constricted at this point (and hence the name Las Bocas, "the mouths"), which leads eastward towards Tehuacán (and ultimately the Gulf Coast). Returning to Morelos sites, Atlihuayan, on the Río Yauatepec, and La Juana-San Pablo, on the Río Cuautla, are essentially at the northern mouths of these valleys which run southward into Guerrero. The site of Atlihuayan also lies at the point where a pass running through the hills from the Cuernavaca valley enters the Morelos central plains. La Juana-San Pablo, too, lies near the point where it is connected via a long valley with the southern Cuernavaca valley and western Morelos. La Era lies below La Juana-San Pablo at the junction of another westward running valley with the Río Cuautla. Finally, we have the site of Gualupita, which today lies within the city of Cuernavaca; thus any geographical or ecological information which could have been gathered at this site has been destroyed by the expansion of the city, or by a lava flow which partially covered the site, probably during the Middle Pre-Classic (Grove 1967: 33-4).

Other Pre-Classic sites in Morelos are numerous, but yield only minor, Olmec-related materials, including white wares with rims decorated with the incised double-line-break, and the so-called "laca" wares. The sites also lack the elaborate burial practices and offerings (hollow baby-face figurines, etc.) found at the sites I have suggested as being truly Olmec. These Pre-Classic sites which show only minor Olmec influence are located in the agriculturally rich areas of Morelos, usually in the fertile valley bottoms, alongside rivers or springs. In comparison, the purer Olmec sites such as Chalcatzingo and La Juana-San Pablo, etc., are located in areas that are ecologically poorer from an agricultural point of view.

Of all the possible theories concerning the Olmec presence in the Morelos and western Puebla area, only one fits neatly into the patterning of site distribution: the trade route theory. We find two Olmec sites at strategic points along the Río Cuautla, the main river cutting from Morelos into Guerrero and also an apparent alignment of Chalcatzingo at one end of the main Morelos-Puebla pass, and Las Bocas on the other side, at the mouth of a second pass running east towards the Gulf Coast. Mexican anthropologist Wigberto Jiménez Moreno, who has been one of the proponents of a trade route theory, has pointed out in his essay in the book *Ancient Oaxaca*, that Chalcatzingo is located near a trade route which "... from time immemorial has connected this region with that of Itzocan" (1966: 14). Itzocan is today Izúcar de Matamoros, and in Pre-Hispanic times was an important market center. As previously stated, Las Bocas lies at the east side of this valley, actually immediately east of the town of Izúcar de Matamoros. When Jiménez Moreno wrote his article, he was unaware of the presence of Las Bocas, yet he suggests that a

trade route passed from Itzocan into eastern Puebla and the Gulf Coast. This trade route would have commenced at Las Bocas.

Thus, it is my suggestion that Olmec sites in Morelos and western Puebla served as commercial control centers, directing the flow of goods from Guerrero and central Mexico to the east and ultimately the Gulf Coast. I further suggest that Olmec sites in the Valley of Mexico, namely Tlatilco and Tlapacoya, served a similar function. Tlatilco, while located beside some minor rivers and near the ancient lake, was also located near a rather broad pass running through the mountains into the regions of the northern lake and further north. Tlapacoya may have served as a control center for the eastern valley and portions of northern Veracruz.

In the abstract of this paper, prepared for the 1967 American Anthropological Association meetings and written before my data were completely analyzed, I mention that the majority of Olmec sites are usually located at the foot of large cliffs (in the Morelos-Puebla area). It was suggested to me by another anthropologist that perhaps this showed a military nature for highland Olmec, for cliffs offer a good defensive position. While this would be true, I should point out that it is often only the burial areas that lie below the cliffs, and I therefore suggest that there may possibly be a religious significance to this relationship, but the topic is of secondary importance to this paper, I do however suggest that Chalcatzingo may have been not only an important trade control site—a junction point where the Olmec trade route from the Valley of Mexico into Morelos and eastward, and the route north and eastward from Guerrero, connected—but also that it was one of the first major Mesoamerican religious-trade centers, a phenomenon common in later periods, with Teotihuacán, Cholula, Xochicalco, and other centers.

In the abstract I further suggested a Tlatilco-Olmec ceramic complex in central Mexico. Perhaps that assumption was terminologically premature, but on the basis of my analysis of the Morelos data, and upon an examination and seriation of Tlatilco burial lots in the Museo Nacional de Antropología in Mexico,² I suggest two Olmec phases in the highlands; the earliest corresponding to Las Bocas-type materials, with hollow baby-face figurines and a purer Olmec assemblage, and a later phase exhibiting more localization of styles and an abundance of red-on-brown wares, stirrup-spout bottles, and an absence of hollow baby-face figurines, etc. Essentially this second phase becomes "Olmecoid." Although a complete discussion of these changes is beyond the scope of this paper, I do view these phases as essentially evolu-

² This seriation was suggested by Piña Chan in his thesis, 1951: chart between pp. 41 and 42. Grieder worked with the Tlatilco materials in the Museo Nacional de Antropología during the summer of 1967 and kindly gave me a copy of his seriation, "Tlatilco: style sequence of burials." In 1967, following my Morelos field research, I too worked with the Tlatilco materials in the museum, and performed my own seriation, which agrees fairly closely with Piña Chan's.

tionary, and suggest that the major changes are directly attributable to changes seen by Berger, Graham, and Heizer (1967: 8-9) and Coe, Diehl, and Stuiver (1967: 1400) in Gulf Coast Olmec sites. The major change in the highlands was, I suggest, a lessening of Gulf Coast Olmec control over the trade, allowing a localization of ceramic traits and possible influences from other regions on the ceramics.

I wish to add in conclusion, that when I suggest that the patterning of highland Olmec sites supports the trade route hypothesis, this certainly does not preclude the possibility that there was Olmec military activity connected with this trade, a phenomenon which we know occurred with the Aztec *pochteca*. I simply suggest that trade was the major force to which we should attribute Olmec presence in the Mexican central highlands.

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