

Development and Function of the Tikal Ceremonial Center

GEORGE F. GUILLEMIN

Tikal, Petén
Guatemala

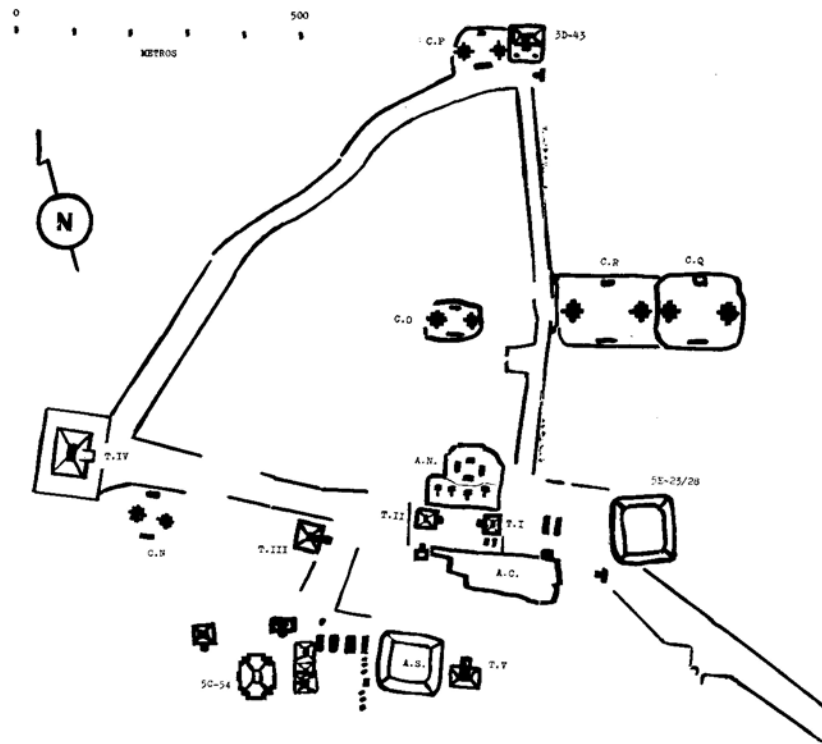
INTRODUCTION

Based on their religious tradition, their myths and legends, the Maya formed their views of the universe and tried to identify themselves with it. Thus they created a world of their own and Tikal is one reflection of it. The priests, high up in their temples served as liaison between sky and earth and were conscious of their position: theirs was the knowledge, the power, the glory. They took pride in the vertical thrust of their architecture which gave their metropolis a "cosmic dimension".

But the high dignitaries have disappeared over a thousand years ago. The jungle has reclaimed its rights and has covered the remains of a brilliant past. We are left with ruins and mysteries. How did the great "city" come to be? what actually was its nature and purpose? Advanced agriculture, complex religion and stratified society are too general answers to satisfy our curiosity as to more specific aspects of the thought behind the ceremonial center. At first it is indeed a baffling experience to try to make any sense from the plan of the monumental site. It is scattered in all directions partly concealed by debris and vegetation. There is no visible continuity in the whole concept nor any definition as to motivation of so many temples and monuments. Just one element seems to indicate some degree of homogeneity and sustained tradition:

THE ORIENTATION

A brief look at the Tikal map (Carr & Hazard, 1961) is sufficient to reveal one striking detail; from the monumental temples and



Plan showing the main buildings for the religious cult at Tikal:

T.I, T.II, T.III, T.IV, T.V	Great Temples
A.N.	North Acropolis
A.C.	Central Acropolis
A.S.	South Acropolis
C.N, C.O, C.P, C.Q, C.R	Twin Pyramid complexes
3D-43	Main temple of H Group
5E-23/28	Great platform base (unfinished)
5C-54	"Lost World Pyramid"
Ball courts	are situated South and East of Temple I, and West of the South Acropolis.

palaces at the heart of the site to the modest little house platforms of the periphery, the buildings appear to be oriented. The fact that the North Acropolis, the most ancient and sacred focal point of the ceremonial center, is arranged to face the cardinal points, is therefore no surprise. Even so, it remains a very significant characteristic, as even the constructions of the formative period—deeply buried below the later stages of the Acropolis—are oriented, as excavation has shown.

The trait is common among Mesoamerican cultists, however, it is indirectly derived from successful agriculture, dependent in good measure on a knowledge of seasons combined with the use of a calendar and the study of astronomy. The mayan idea of a quadrilateral world and the specific orientation of their urbanism relate to the latitudes where the sun rises and sets at the summer and winter solstices. Specialists in these matters formed part of the religious hierarchy that was in charge of the agrarian cult. Apart from the basic need to synchronize agriculture with meteorology, it must have been practical and somehow psychologically reassuring to be aligned with the solar trajectory by means of the orientation of the buildings, be they secular or religious. As long as the East building—of ritual importance—was oriented, the other constructions would follow the trend, especially where there are four houses forming a court, as this is orderly and practical. But one also suspects that some superstition may have been involved (as prognostication and exorcism may have been involved in the ceremonial ball game). Furthermore, astronomical observation was aided by oriented constructions, even during daylight, as the contrasting lighted and shaded facades are a ready indicator of the rythm of the seasons, easily interpreted by the trained observer, as they reflect the changing positions of the sun. The summer sun in Northerly latitudes carries rain, while the Southern sun of December brings the dry season. Thus the observer knows the world keeps going round, he knows what is coming next and feels part of the system. This would account for a feeling of some degree of security and satisfaction for the present and for the immediate future.

It may be noted that the orientation of the constructions is not in exact alignment with the geographic North; there is a deviation of ten and more degrees, clockwise. The variation may also be less

or even run counterclockwise. For the usual deviation a possible explanation may be offered: if the orientation was observed at sunrise at the time of equinox (Sept. 21, March 22)—the sun over the equator—the azimuth was automatically shifted in the indicated direction due to the situation of the point of observation in the northern hemisphere (Northern latitude $17^{\circ} 13.3'$ at Tikal).

It is apparent that Tikal had contact with other formative ceremonial centers. However, it is difficult to define from what direction the trait under study came. Moreover it is likely that it was introduced at the time the inhabitants came and settled. It would appear that the trait existed prior to the stela cult which, according to comparative archeology, is related to the Southern Maya region (Highlands and Pacific Coast of Guatemala, including Izapa). In that zone lies the site of Kaminal Juyu which, besides having an oriented plan, has temples facing each other on the East-West axis and stela cult (the significance of this detail will be treated later). It is therefore likely that both traits—oriented constructions and stela cult, along with the connected ideas, such as sun and water cult (down peering deity) and chronology (initial series)—may have come from that zone which was itself interrelated with the Olmec and Teotihuacan cultures. If the traits did not arrive at the same time, the stela cult might have come in second place, when the settlement was well underway in its development and at a time when the religious hierarchy had gained the sufficient authority to implant a theocratic political system.

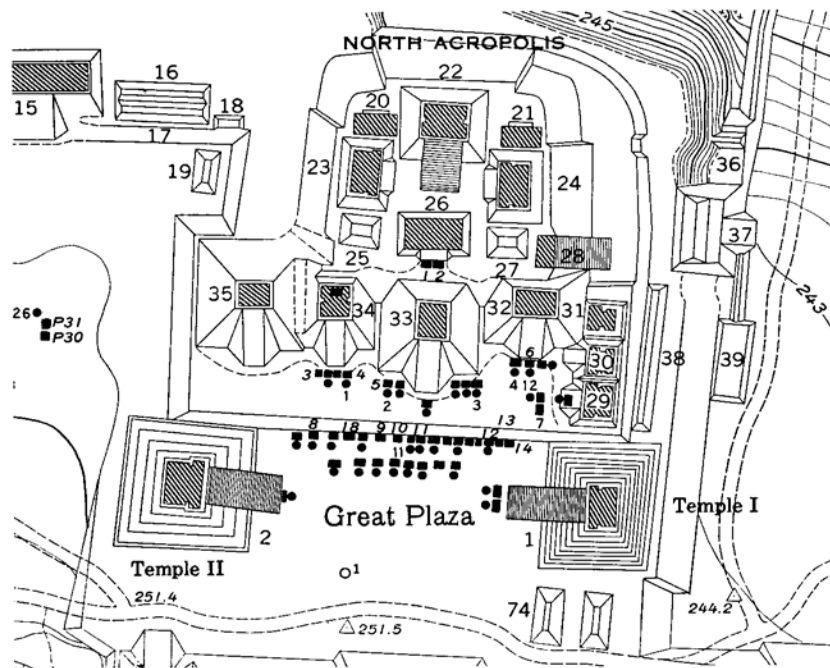
As the North star was familiar to the Yucatecs, who called it Xaman Ek, it may have been used as a reference for the orientation of buildings. The Pleiades and Sirius could also have been useful for that purpose, and other possibilities are also open. An exhaustive study might throw some light in the problem, but the many variations noted lead one to believe that the orientation was applied as a matter of belief and principle, in a symbolic manner, and visibly without intention of mathematical exactness. Due to the many fluctuations in orientation, a specific study undoubtedly would produce some coincidences, but it is to be feared that question would soon arise as to the interpretation of such coincidences, as either an intentional or a casual happening. Therefore, such a study, in addition to being complex and lengthy, is likely to offer little prob-

ability of producing conclusive results. Under such circumstances, one would be inclined to consider that the sun, as a diurnal body, is a more practical reference for orientation than the stars, and, above all, the sun was more important in religion and daily life. In conclusion, the orientation would be a more religious concept than an urbanistic norm. As we shall see, Tikal is more of a ceremonial center than an urban center. Hence, Tikal's oriented construction would indicate sun worship, with generalized and deeply rooted practices. This trait was shared by many Maya ceremonial centers while ignored by some.

While a relationship between the orientation of architecture and the trajectory of the sun is not absolutely vital to demonstrate the physical evolution of Tikal, we now face the complex task of trying to demonstrate that the twin pyramid arrangements are mainly an imitation of the Great Plaza which, in turn, would represent an enlarged version of the North Acropolis. In addition to orientation, these groupings are similar in the distribution of the buildings, as we shall see.

NORTH ACROPOLIS

After some time in use, and several transformations during the pre-classic period, the North Acropolis settles on a lay-out that is kept throughout the development of Tikal. This lay-out is identical to one found at the initial stages in Complex A-V of the Uaxactun Acropolis (whose development has been studied by A. L. Smith (Washington, 1950) and beautifully rendered by Proskouriakoff). It consists of a large platform base, sustaining three temples, one at the North side and two facing each other over a free space on an East-West axis. At Tikal, these three temples, numbered 5D-22 (North), -23 (West) and -24 (East), are clearly the older and more important of the buildings, although four minor structures (20, 21, 25, 27) were added later—as floor stratigraphy shows—at the corners on the platform, filling the free spaces. The South structure (5D-26) varied somewhat in nature and importance in the course of time; as at Uaxactun, it controlled the access to the ceremonial complex. The continuity of this original arrangement, as we shall see, makes it a fundamental trait of the Tikal ceremonial center.



Detail, as mapped by James E. Hazard. (Tikal Report No. 11.)

On the other hand the Tikal architectural and sculptural traditions are not free of fluctuations, this may reflect a cosmopolitan way of life, with contacts and currents of ideas to and from the outside. It may be speculated that the East and West temples were dedicated to the rising and setting sun respectively, and that the North temple was dedicated to the Northern sun with a combined cult of rain and possibly other weather deities. As already noted, it is the sun moving North, due to its relative position with the earth, that brings the rainy season, i.e. fertility and abundance. A masonry altar-like stair-block, built in the upper part of the stairway of temple 5D-22 second, discovered in 1965 by William R. Coe, is decorated by a big stuccoed, redpainted and black outlined sun mask—Kinich Ahau—, it has been reburied because of its extreme fragility. This element confirms that the sun was an object of worship in this ceremonial complex, as was the rain. Great masks with large noses have been



View from Central Acropolis. Foreground: two palace structures. Background: Temple I, North Acropolis (left).

found on the facade of the pyramid of this temple (5D-22) and 5D-33 and can hardly be anything else but representations of Chac, the rain god. As strange as it may seem that a sun and rain cult might have been combined in one temple, these natural phenomena are interdependent.

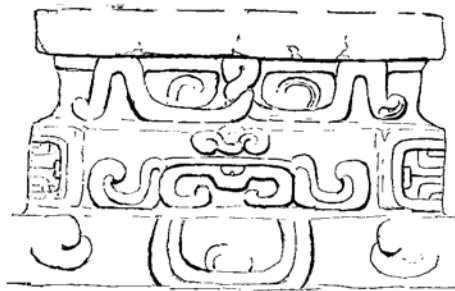
During a primitive phase of the Acropolis, a form of specialized arrangement was used with the important Structure 5D-Sub 1 first (discovered by E. M. Shook in 1960) on the North side. The building has masks apparently the shape of jaguar heads. This might represent an Olmec trait, which would not necessarily mean that the



View of North Acropolis (from S-W.) Foreground: Structures 34 & 33.

temple was not intended for the sun and rain cult. There are indications that the jaguar can be related to both. The carved lintel of Temple III, for example, shows a close relationship between the jaguar and Chac. Stela 4, one of the early monuments at Tikal, also may imply such an association. The figure, with an Olmecoid face, has a jaguar headdress and wears shells as a necklace. Shells are related to water, as we shall see. The rain cult seems to be more specifically connected with Chac and Tlaloc; nevertheless there are many cases of the jaguar being associated with the water lily and related with the high priests carved on stelae and temple lintels at Tikal and elsewhere.

Stucco modeled mask: Kinich Ahau, made on masonry stairblock of North temple of North Acropolis. (Structure 5D-22.) (provisional drawing—CFG).



Building 5D-Sub 3, at the South side of the early arrangement mentioned, controlled the access, indicating that the cult was restricted. In front, at either sides of the stairway, modeled stucco reliefs in serpent shape were found. The serpent's name "caan" also means sky and the bicephal serpent, a sky deity; it is thus apparent that religious ideas that are to flourish two centuries later, during the classic period, are already present. The East temple 5D-Sub. 9 did not have a corresponding West counterpart (W.R. Coe, 1965). Instead two small structures, possibly shrines, existed there. North and East appear to be most significant in the cult. A great building,



Detail from altar 7: long-nosed head with fleshless jaw, in a plate; mat design possibly symbolizing the intricate solar evolutions. Cyclical implication.



Great mask on pyramid of temple 33 (early phase). A Chac variant.



The Moon Goddess with rabbit. Incised on obsidian from sub-stelae caches.

Detail from a frieze in Central Acropolis. Long-nosed deity with fleshless jaw.



probably meant for a more generalized collective cult, also existed in the same period. This Structure 5C-54, known as the "Lost World Pyramid", with its East and West stairways and North-South projections, had in itself a symbolism of the world's four directions.

The Acropolis was enlarged and built anew many times. But it finally became overcrowded and obsolete and must have remained accessible only to the privileged few. The increasing necessity for larger cult facilities must have caused urbanistic problems. The next practical area for expansion was situated just South of the Acropolis. Substantial filling and earthmoving was done on the East and West sides of the newly formed Great Plaza.

To the observer, the North Acropolis seems to have grown Southward. The four temples (Structures 5D-32, 33, 34 & 35) at the

Detail of stela 4. Note olmecoid face, jaguar headdress, long-nosed down-peering deity, shell necklace.



southern edge of the Acropolis demonstrates this fact. Yet, those four temples should be regarded as a development of the Great Plaza ceremonial complex, for the North Acropolis had been left behind (see section, Coe, 1965) as a partly obsolete, but respected, focal point of the ancestral religious cult while the Great Plaza had taken over as the main place of worship.

GREAT PLAZA

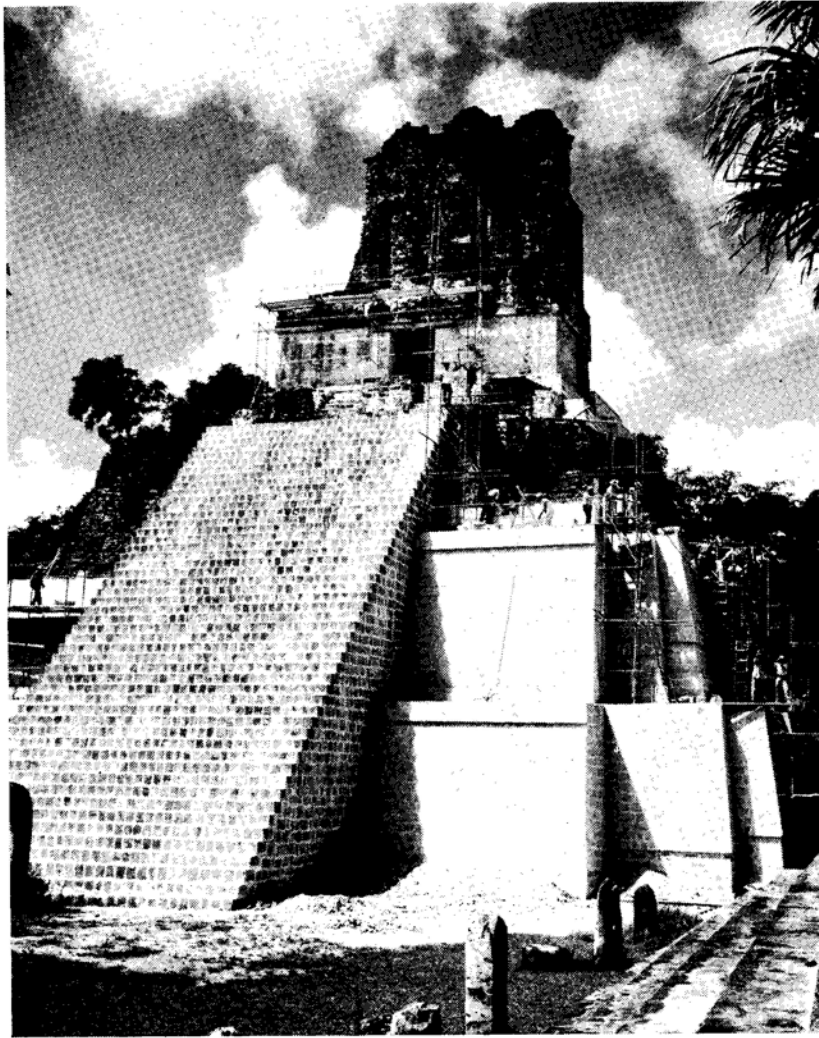
The final phase of temple 22 is dated about 550 A.D. while Temples I and II are dated about 700 A.D. It was essentially during the intermediate period of approximately 150 years that the Great Plaza was used in its primary shape. As for temple 33, it went thru at least three stages before the final one. Similar circumstances may have prevailed in the early phases of Temples I & II. In other words, it may be imagined that East-West facing temples had been erected, shaping the Great Plaza in late early classic times with Structure 5D-33 (in its earliest phase) as the Northern "pendant" to them. The early versions of Temples I & II are difficult to determine, due to their destruction in ancient times, but excavation indicates signs of early building activity at both sites. Whereas Structure 33 is centered on the axis of the North Acropolis, Temples I & II and the Great Plaza are slightly off center to the West. This was probably done on purpose because the terrain to the East was sloping down more abruptly than to the West; a substantial economy in earth moving was the result. Structures 32, 34 and 35 are subsequent additions. They are partly due to the importance given to the Great Plaza and North Acropolis ceremonial complexes. Similar considerations may have applied for other additions such as the three little early classic temples (Structures 5D-29, 30, 31) North of Temple I, and to Structure 73, South of Temple II, where the last piece of free space was available.

At the top of the stairway of Structure 33 no evidence remained of a possible stair-block comparable to that found in temple 22. Remains of one were found and reconstructed in Temple II; the small

At the East side of Great Plaza: Temple I. Left foreground: inscription on stela 5.



2 - Ethnos 1968



At the West side of Great Plaza: Temple II. Two sides of its pyramid are being reconstructed.

podium thus formed must have been intended for the performance of rituals in full view of the public congregated in the Plaza. On the other hand, in the Northern half of the Plaza and on the North Platform, in front of temples 33/35 is a great number of stelae with

their altars where to receive offerings and sacrifices; the figures carved on some of the stelae acted as intermediaries and impersonators of the deities of the agrarian cult, among which the sun and rain were all important and closely interrelated with the feathered serpent and the complex religious apparatus derived of a certain bureaucratization of the supposedly theocratic system.

The increased religious activity with a partial popularization of the cult appears to have brought the ceremonial center into full bloom. If it is considered that a fundamental objective of the cult was to obtain rain, then the career of rainmaker, in the midst of a tropical zone benefited with a rather well defined and generally sufficient rainfall, proved to be a rewarding one. In fact, the thriving religious hierarchy now could afford building more and ever taller and awe inspiring temples. The higher hierarchy that officiated at the Great Plaza and North Acropolis lived, we suspect, in the nearby Central Acropolis that was constantly growing. A building with nine doorways (Structure 120) was erected at the South side of the Great Plaza, close to the East corner and the ball court (Structure 74, South of Temple I). There are notions that the ball game was related with the Tlaloc and rain cult, and with human sacrifice and the underworld. Nine-doorway buildings will be treated together in the chapter on twin pyramid complexes.

PALACES

There has been some discussion about the Central Acropolis, as there is doubt as to the purpose of the many palaces constructed there. Contrary to certain opinions, such buildings are adequate lodgings as long as they are in good conditions, their thick walls are insulating and regulate the temperature, also, curtains were in use to seal doors. It is not easy to demonstrate irrefutably that palaces were for domestic use; possibly, the many isolated rooms with built-in masonry couch-like benches are best indication for it. Kitchens ought not to be expected inside the palaces, they probably were in function in more open perishable houses, likely where the servants had their lodgings. Undoubtedly some of those buildings, may have served for ceremonial and administrative functions and an alternative residential use may have occurred in some cases. As there



Three of the four stuccoed wooden Chac figures (37-40 cm high) from burial 195. Object held by figures is a symbol for "precious water".

is nothing left of the perishable furniture, one may try to gain an impression from comparison with other outside examples. a) At Piedras Negras, lintel 3 represents a throne session, with members of the family of the ruler appearing to be present, including children accompanied by a girl, likely the older sister; their presence suggests that they are at home, even if no actual proof of that can be offered. b) At Bonampak, the painted murals show scenes with women and children on rich benches in palace atmosphere; thru a supposed lateral doorway a small child is brought by a matron to the scene of a sumptuous ceremony. c) Four elaborately painted and carved wooden panels had been placed on the floor of tomb 195; most likely those panels had been removed from the palace of the deceased, where they may have decorated doorway lintels, they hardly belonged in a hut. d) At Iximché, a late post classic site, we find clear evidence of domestic life in the palaces situated around ceremonial courts. It might be hard to explain why the Tikal elite, at the height of its prosperity, should have lived in huts, while the

elite at Iximché, in other more unstable times and in a site of lesser category, lived in better conditions. It must be stated, however, that due to its density, the clear separation of social classes, and the well defined organization of its ceremonial center, Iximché tends to be more characteristic as a city. This impression, nevertheless, may be partly due to the fact that Iximché offers better chances of interpretation because of the existing written records. At Tikal, except for the Central Acropolis, and perhaps the South Acropolis, the palace structures are irregularly distributed and situated according to the terrain; they form agglomerations of varied importance. Such dispersion is likely a reflection of the local rural settlement pattern, the main difference residing in that buildings of the central zone of Tikal are of better quality and larger size. The limited urbanization does not imply that the elite should have used huts as their residential quarters while there were fine palaces at hand. As for the common people and the peasants, within or outside the general ceremonial area, they lived in housings built of perishable materials.

In spite of the fact that a stable and peaceful life is supposed to have prevailed, slight indications of feudalism are found. Some tensions and frictions must have occurred with neighbouring ceremonial centers with which Tikal undoubtedly had many contacts including family and political links. About two miles North of Tikal runs a long defensive moat, extending East-West, flanked by swamps at both extremities (Puleston & Callendar, 1967) and a similar moat exists in the region Southeast of Tikal. In view of this, it is to be supposed that the relations between Tikal and Uaxactun, Naakum, Yaxha, and possibly including other sites further to the South and the East, were not exempt of incidents.

OTHER TEMPLES

That more great temples were built in various directions, but not in the previous arrangement, rises questions and demands explanation. (We will refer to Temples IV & V at the end). According to the available iconography one may judge that some of the separate temples and ceremonial complexes are dedicated to the same cult with possible variations and specializations. They also satisfied the ambition of the rulers who could thereby show their status and keep

the people busy. The hierarchs that appear on stelae and lintels of temples and who acted as priests and as god impersonators may be the same who are carved in heroic size on the roof comb of the great temples, so as to share in the glory of the gods. The construction and renewal of temples seems sometimes related with burials placed underneath such structures. This trait, along with the heroic figures on the roof combs, may contain a symbolism of rebirth or of cyclical renewal. The notion of cyclical renewal may be part of the symbolism in the carved altars 6 and 8 at Tikal, where Chac and possibly a god impersonator seem involved with death and sacrifice. This is reminiscent of the Aztec sacrifice of Tezcatlipoca (there it was renewed yearly).

As noted in the early phase of the North Acropolis, a special importance was given to East and North temples. Two sizeable North temples (Structures 5C-49 & 5D-77) are found in C Group, accompanied by East temples; the Temple of the Inscriptions, temple 5E-38 and the "Seven Little Temples" are East temples. If we had to speculate as to the possible meaning of the Seven Little Temples, it might be conjectured that this specialized complex also was meant for the sun and rain cult, with each temple dedicated to specific seasonal changes and sun positions during the year (the Southernmost and Northernmost temples, for example, would have to do with the winter and summer solstices respectively, while others might have to do with equinoxes, possible petition and thanksgiving for the rain and the crops). The three ball courts may have served for games to honor special occasions and to provide the proper offerings; the parallel courts pertain to the complex of the seven temples. More will be said about the ball game.

Temple III is difficult to explain, for in spite of the fact that its carved lintel tells us we are dealing with the usual cult, we remain at a loss to tell why it stands there isolated, apparently disconnected, situated to the West. Its specially broad doorway and its alignment with Temple I to the East are probably meaningful.

That no attempt was made to build another ceremonial complex of the size of the Great Plaza may be due to several reasons, the main one may have been that the primacy had to remain with the Great Plaza due to its link with the North Acropolis, as traditional focus of the cult and place of burial of the first hierarchs.

TWIN PYRAMID COMPLEXES

On the other hand the Great Plaza had no pretention of exercising a monopoly: if it may not be equalled, it may be imitated. From approximately the turn of the late classic period on, twin pyramid complexes were being periodically constructed, copying the lay-out of the Great Plaza. At first they were rather small and of imperfect bilateral symmetry; later, the area they occupied rivalled that of the Great Plaza, although the buildings were much more modest and simplified. The shape and nature of the four structures forming each complex became unified; we shall examine them briefly.

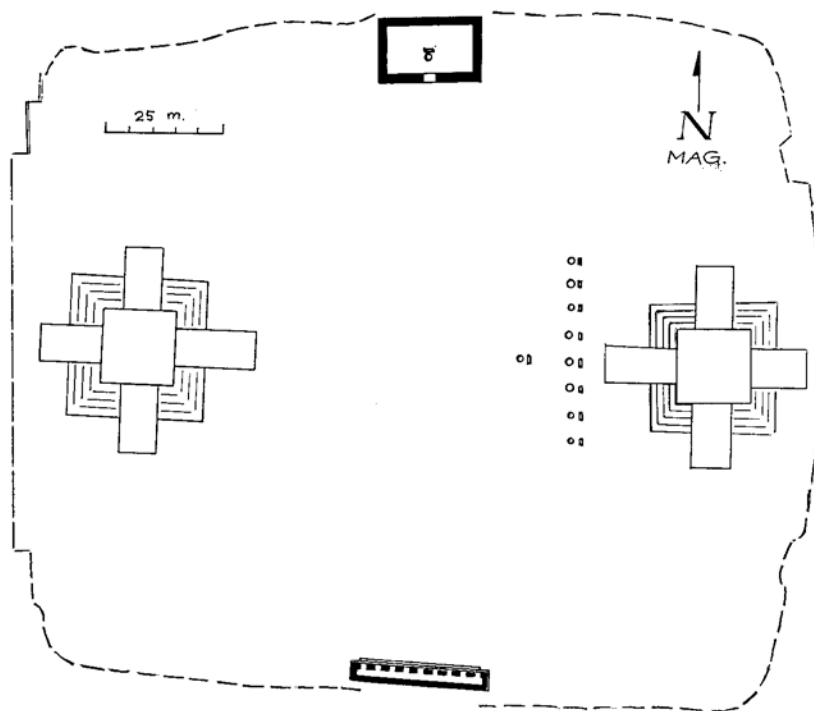
South building

The vaulted nine-doorway building was for ceremonial use, it acquires a definite position, although its attribution remains problematic. It occupies the central position of the South side of the court. It may be related to the idea of the nine lords of the night.

While excavating "Q" complex in 1958, the idea that these complexes were inspired by and related to the Great Plaza first occurred to the writer, it regained attention when a nine-doorway building (Structure 5D-120) was uncovered on the South side of the Great Plaza. On the other hand, explorations undertaken by C. Jones apparently reveal that the South buildings in other twin pyramid complexes also have nine doorways. From the onset a subordination of the twin pyramid complexes to the centric Great Plaza could be inferred by the net of monumental causeways that links them to it.

It should be noted that the North Acropolis also was provided with a nine-doorway building, it is not on the platform, but at a short distance from the Southeast corner. That structure (5D-38) has two phases of construction and does not appear to be of domestic use (according to N. Hellmuth).

While the interior of the nine-doorway building of complex "Q" consists of one long narrow room, without separations, two nine-doorway buildings, Structure 5D-120 on the Great Plaza, and Structure 5D-17 in complex "N", have separations, which would tend to make them suitable for possible non-permanent habitation. This circumstance is reminiscent of Mexican and Guatemalan Highland



Plan No. 3. Twin Pyramid Complex Q.

chronicles indicating that there were houses on ceremonial courts used to lodge people meant for sacrifice.

It is curious that printed red hands are found in different types of buildings, as is the case of Temple I, the Temple of Inscriptions and the nine-doorway building in complex "Q". This tends to link them as to the cult they are related to. In the apparent scene of sacrifice in the Bonampak mural, the emblem of the red hand is twice represented; this is suggestive that the said sign might pertain to an hypothetical sect or cast of sacrificers or simply to the "corporation" of priests. According to Frans Blom (1957, p. 15), the Lacandons indicated the printed hands mean the building is concluded, "the god has finished his house"; the hand also appears in inscriptions as a sign for completion of a period. Both ideas have something in com-

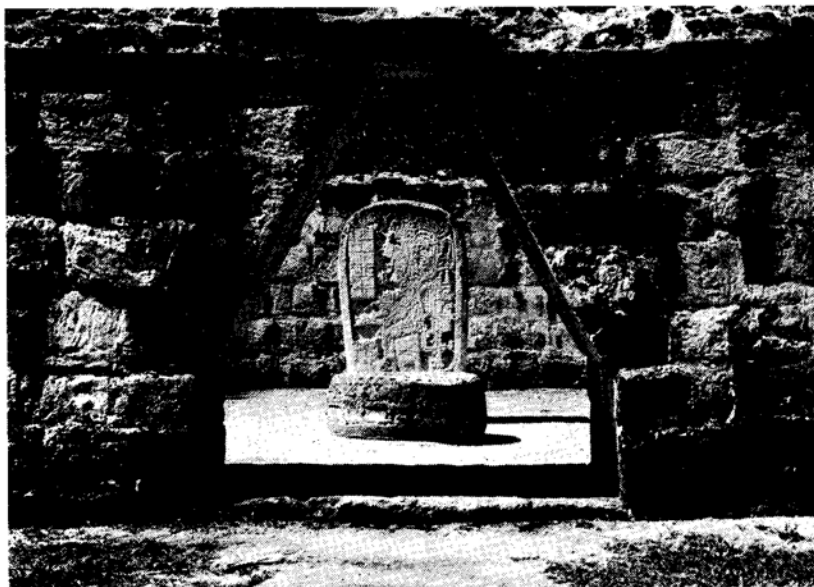


At the South side of Great Plaza: nine door-way building. (Structure 5D-120.)

mon; that a ceremonial building just completed would be marked when taken over by the priesthood is likely. Certain period endings and inaugurations of buildings are occasions susceptible of requiring appropriate ceremonies and sacrifice.

North building

Instead of a North temple there is an apparently roofless enclosure building with a carved stela and altar inside. The dates inscribed on stelae indicate that twin pyramid complexes were constructed at



North building in Twin Pyramid Complex Q.

katun endings up to 9.18.0.0.0. (790 A.D.). The figure of stela 22, in Complex "Q", shows the cult is related with rain and agriculture, as the high priest carries a bag with Tlaloc in profile, has Chac-decorated anklets and apparently sows maize; above, there is a sky deity. While access to this monument seems to be exclusive (entrance thru doorway), nine stelae and altars in front of the East pyramid are of free access.

Twin pyramids

The number of stelae in front of the East pyramid of each one of the complexes is indicative of increased religious activity there, although there is no way of telling if these monuments were in use simultaneously and whether they had been erected at one time in each complex, as is likely. The location of these stelae may have to do with the belief—known from late Mexican sources—that the rising sun needs much energy to ascend to the zenith; sacrifices must have

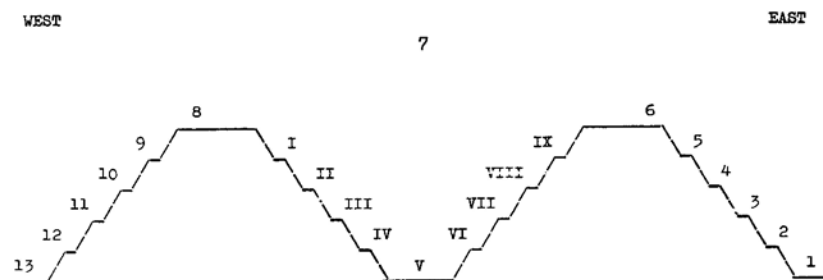
taken place in front of the stelae. This aspect of the cult may possibly have been prevalent in the popular levels of the religion. In the periphery of Tikal the inhabitants lived in small groupings of about four houses; frequently the building on the East side of the patio shows indications of ceremonial use. The same happens in rural areas distant from Tikal (as D. Puleston reports). This detail would tend to sustain the previous suggestion that East pyramids with their stelae may pertain to a popular cult level. We have noted the existence of other East temples, but those are not related with many stelae.

The East-West temples, then, are substituted by two pyramids, each with four stairways facing the cardinal points. Excavation of the East pyramid (Structure 4E-36) revealed but little remains of the stairways; from that partial evidence, the possibility that the total number of steps for both pyramids may have summed up 365 is left open; such a symbolism of the solar year would naturally have been more explicit and obvious for the more simple minded worshippers. Here again, the cult in the twin pyramid complexes would appear to belong to a lower echelon as that of the Great Plaza which also may have become overcrowded and could have been relieved by twin pyramid Complexes O, Q, R. Similarly, Complex P complemented H Group and Complex N is close to Temple IV. Remains of three more such complexes are known, they were superseded by changes and new constructions; these ceremonial complexes might have had a temporary importance while big temples were being constructed or transformed. Several twin pyramid complexes seem to have coexisted at one time and did not become obsolete soon, as completely new groupings were constructed close to each other instead of simply renewing and superimposing on old ones, as would have been practical and customary.

Back to the question of the possible 365 steps and symbolism of the solar year represented on temples, other examples may be mentioned from the outside: at Chichen Itza, the Temple of Kukulcan has 365 steps; at Teotihuacan, the Temple of Quetzalcoatl is supposed to have had the feathered serpent repeated 365 times on its terraces, and at Tajin the main temple is said to have a niche for each day of the year (or 364).

The only twin pyramid exposed and partly reconstructed has five

terraces. It may be assumed that the other pyramids from the known complexes also had five terraces. A symbol of the underworld might be implied, the same as for the nine-doorway buildings, as the four terraces or levels of the East and the West, plus one final level, that of the court floor, could be interpreted as nine. If we may boldly speculate, both the sun trajectories in the underworld and in the sky could have been visualized thru the twin pyramids. The East pyramid would serve for both ascents—from the Nadir to the earth surface, and from the earth to the Zenith—while the West pyramid would serve for both descents. As can be followed on our diagram:



the sunrise would start at court level, at the East side of the East pyramid (step 1), the five next steps by scaling the terraces to the top (steps 2-6), and the Zenith position (step 7) in heaven is the end of the ascent; the afternoon descent is by ways of the West side of the West pyramid, from top to lower terrace (steps 8-12) and unto court level (step 13). The courts are due to earth moving and generally well defined and separated from the surroundings, so that court level may count as steps, as we have just assumed; the heaven of the Maya cosmology is supposed to be subdivided in 13 steps. So as to conform with the idea of the nine steps and the nine lords of the underworld, that trajectory would have to start from the top of the West pyramid, climbing down in easterly direction in five steps, down the terraces and unto the court floor, to its center representing the Nadir (steps I to V) and on to the first terrace of the East side of the East pyramid, the four lower terraces complete the nine steps (VI to IX); the top of the pyramids, regarded in this case as the top limit of the underworld, remain uncounted. If this is acceptable, it

would imply that the sun trajectory is figured as a very steep climb to the Zenith and on down at a sharp angle, whereas the underworld trajectory would be assumed to be elliptic or gently curved. There is presently no way of proving that all this is what was in mind. Actually there are still indications among the contemporaneous Quichés that the idea of the steep ascent of the sun and down at a sharp angle actually existed. The idea of five levels of the underworld and seven levels for the sky, with nine and thirteen steps respectively, also existed, since it does exist in the Tzotzil cosmology (W. R. Holland, 1963). Time may tell if these ideas are applicable to Tikal. As for our patient reader, he is free to take it or leave it. To visualize it one must take the twin pyramid complex as a stage adaptable for two different "tableaux": sky and underworld.

The increased facilities for religious activities are not to be interpreted exclusively as a popularization of the cult, for it also may speak for a bureaucratization of the institutions, as more and more individuals wanted to satisfy a need for prestige, even if at a different echelon. Such proliferation would of course tend to endanger the social balance in the long run. At any rate, the overall expansion of the ceremonial center certainly speaks for a growth of the population and for a prosperous religious cult. It also represents further specialization and stratification of society and religion. The suspension of construction activities shortly after 790 A.D. (9.19.0.0.0-Complex R), about one century before the disintegration of the institutions, is significant. While we still find remains of a modeled-carved orange vessel (a pottery type of the post-classic period) in the central doorway of the South building of Complex Q, indications are that Twin pyramid complexes may have been progressively left in disuse. Did the slow-down and the subsequent standstill hit the middle class hierarchy first? Is the fatigue mainly due to a precarious social balance? or are other hypothetical factors, including crop failure and pathological conditions also responsible for setting the stage for the final collapse? Those questions will have to remain unanswered, for in spite of the extensive fact gathering obtained from field archaeology, it would prove impossible to reconstruct a complete and satisfactory picture of the joint circumstances that directly or indirectly did intervene in the ultimate outcome.

RELIGIOUS IMPLICATIONS

We have attempted to visualize the physical evolution of the Tikal ceremonial center and to show that the solar system influenced the nature of the religious cult and the lay-out of the center itself. On the grounds of such considerations the religious aspect may be studied from a more definite angle and the resulting implications might be of some use, although one should be prepared for future revision of some of the interpretations and speculations advanced. Here then, are some thoughts that first come to mind.

Had it not been for the large scale successful practice of agriculture on which Tikal depended, the ceremonial center would never have attained its monumental proportions. Such plenty suggests that the worshipers of the cult as well as the gods must have been punctual. The remarkable achievements in astronomy, in the arts and in architecture only permit a limited appreciation of the classic Maya's intellect. As for their philosophic thought, most has been lost due to the destruction of written documents. As much as the idea of death related to the underworld did exist, there also must have been the thought of resurrection, possibly linked with solar cycles related to seasons and alternating drought and rain, that is: life and death. More than a symbol, that was a fact of life for a people depending on agriculture. There is actually little to sustain the idea of resurrection, archaeologically speaking. For one thing, in spite of the fact the direction connected with death is commonly West, where the sun sets, the extended burials of the elite are generally oriented to the North. If those dead had the privilege of reaching the resurrection of the paradise of the rain gods ("Tlalocan", as the Mexican would call it), it might imply that this paradise could be reached thru the North, abode of the Northern rain serpent.

The relationship between *sun and rain* is not a new notion. "I am the shower from the sky, I am the moisture of the clouds", says Itzamna (Lizana, 1893, p. 4, Mediz Bolio, 1949, p. 13, Thompson, 1939, p. 152). About Itzamna, A. Tozzer states: "In the maya rites this deity was closely associated with the rain", and also: "There may have been four Itzamnas, connected with the four chacs or bacabs and hence with rain." (1957, p. 201, 113.)

In view of the fact that the sun rules over seasons and due to the vital importance of rain, the mentioned sun/rain relationship was

bound to receive special attention. Beyond the existence of chacs and sun good associated in one same temple (as we have seen in Structure 5D-22 2nd), the iconography of the stelae of Tikal and other sites includes sky deities at the same time as priests apparently sowing corn and carrying attributes of both Tlaloc and Chac. Ceremonial bars in serpent shape carry in their jaws the sun god or Chac, alternatively. The rainbow may have had its part in inspiring the myth of the feathered serpent. Painted on a plastered wooden bowl from burial 195 is a feathered serpent with various colours applied lengthwise, probably to imitate the rainbow. As the rainbow often occurs under circumstances when sun and rain are closely intermingled, it might represent the alliance of the two elements. In fact the Chortis believe the rainbow to be a Chik-Chan (Wisdom, 1961, p. 445), a rain serpent.

There are instances when it becomes very difficult to differentiate Chac from the sun god because of the similarity of their traits. One such case is the mask worn by the priest from stela 11 at Yaxchilan; it is said to be a sun mask and yet it is very much identical to the "Chac" figures in fishing scenes incised on bone from burial 113 at Tikal; likewise, censers with modeled figures that could represent the sun just as well as Chac, appear on the Northern slope of the Cuchumatanes range. Therefore it seems likely that an idea existed of a metamorphosis from one to the other, with possible mutant forms or ample margin for local or temporal variants in the portraiture, and also the possible mythical kinship or simple association that would make them identical or ambivalent. Such things are certainly feasible in the highly versatile and intricate pantheon of the Maya.

An obvious circumstance that demonstrates the patent link between sun and water is the following: seen from the coasts, the sun emerges from the Ocean each morning as it rises, and it submerges in the Pacific each evening as it goes down. Such an impressive show must have occupied an important place in the beliefs of the Maya. It is reminiscent of the genesis of the world according to the Popol Vuh; the feathered serpent, resplendant in the darkness, dominates the waters, picture they may have imagined to be a sort of underworld prior to the sun emerging for the very first time, and which suggests that this birth perhaps was the event that marks the starting date

of the maya calendar and its long count. In this connection we are inclined to believe that the periodical erection of dated stelae was likely intended to mark ages of the venerated sun, the march of time with its anniversaries, solar and other astronomical cycles and, last but not least, to indicate personal data of the momentary priest-ruler in charge, as a deputy or even as an impersonator of the sun god. Apparently this was an hereditary position kept by means of a dynastic system (T. Proskouriakoff, 1961). If there was a mystic of the numbers, it seems logical that they were meant as a memento of the early stages of religion, thru its myths and legends, and not so much as part of a cult of time *per se*. Along those lines, a few stelae (such as stela 10 at Tikal) register such high numbers that they hardly can reflect anything else but mythological-astronomical elucubrations.

Back to our original discussion, not only inhabitants of the coasts were aware of said circumstances, but also people from the interior seem to have paid attention to the sea that receives and gives the sun back, a clear sign of a symbiosis of sun and water. There are abundant indications at Tikal that there was veneration for water and for the sea, as all kind of elements from the sea were sacred and are found in ritual offerings; they were placed in burials and caches in temples (including Temples I & II, and 5D-22), and they were worn as priestly attributes.

Stela 4 already has been mentioned; in stela 31 the lateral figure that carries a shield with the effigy of Tlaloc in Teotihuacan style also wears a necklace made of shells (probably bivalves *Lyropecten subnodosus*— H. Moholy-Nagy, 1963), while Tlaloc wears the same shells as ear pendants.

Besides various types of shells, remains of fish, turtles, a crocodile, corals and sea weeds have been found in Tikal burials and caches. A relevant parallel is to be noted from Yucatan: "Plants and animals found near a cenote are sacred and are creatures of the rain Gods." (Tozzer, 1957, P. 214); whereas the original source for this statement is lacking, the thought sounds genuine.

The subject of Kinich Ahau Itzamna would deserve an exhaustive analysis: starting with the various shapes of the sun and rain gods, we come to the connection with the "celestial dragon", the feathered serpent and the rain serpent Chik-Chan. Brinton, in 1894, and

Thompson, in 1939, have tackled this arduous problem. We have no intention of elaborating here, but will be content with merely emphasizing the significance of the relationship existing between rain and the Northern sun: Ytzamna thul Chac, as god of the clouds, figures in the Chilam Balam of Chumayel and of Tizimin, Itzamna rules over the cardinal points the same as do the Chik-Chans, and it is said that the Chik-Chan of the North is the most powerful and the others are his slaves"; as "celestial God of the rains, lightnings and of fertility" the Chik-Chans still figure in the contemporaneous ethnology, they are reported among the Chortis by Ch. Wisdom and R. Girard (Araujo, Rodriguez, Solis, 1965, p. 49).

The site of Copan, in the Chorti area, offers a spectacular example of the place the Northern Chik-Chans must have occupied during the classic period: Temple 22, a North temple to the East court, had its doorway in the shape of an enormous serpent mouth, while the internal doorway of the sanctuary is framed by sculpture representing such essential elements of the maya cosmology as underworld, chacs-bacabs as sky bearers, sky serpent and associates (Kuch Vinajel-Balumil or Vashak Men, as the Tzotzils would call them). Little imagination is necessary to figure a god impersonator, in full paraphernalia, in the midst of the majestic frame of symbolic beings. Covered with jade and quetzal feathers, from his dominant position, he would concede audience to high priests and dignitaries and these would not show up empty handed. Some of the finest and most sensitive Copan sculpture belongs to that temple, it includes suggestions of gods of maize or agriculture. It is apparent that abundance, life and beauty are deriving from the Northern Chik-Chan and the Chacs. Another impressive North situated (and South facing) Copan ceremonial building, the so-called "Reviewing Stand", has undoubtedly to do with water and rain cult because of the great shells on the terrace. The rattle with the ik sign (=breath, wind) and with feathers on top (not a torch with flames) may have to do with the wind that carries the rain clouds, while the figure that carries the rattle is likely a deity of the sun and rain cult. At Tikal, remains of a modeled monster at each side of the doorway of the North temple to the Great Plaza (Structure 5D-33, 2nd) may well represent the sky monster or the Northern Chik-Chan; its bent arms or forelegs are comparable to those in temple 22 at Copan.

It is clear that the specific relationship rain and Northern sun reflects regional meteorological conditions, they are by no means prevalent over the whole of the maya area. For instance the Mam of Colotenango (Dep. Huehuetenango)—studied by H. Lehmann and L. A. Valladares—are known to turn toward the Pacific Coast (South) and invoke "K'man above the sea" when the rain is due to come, and it is from that direction that the rain clouds come. Another example may be taken from the Tzotzils of Chiapas: W. R. Holland (1963, p. 92) reports that each of the gods of the cardinal points has a function related to life and is associated with a colour; "The white god in the East sends the rain; the white god of the North [gives] the corn."

As we have already repeated, the sun in Northern latitudes has a special importance as propiator of rain. This makes it clear that the North-South evolution of the sun, within the solsticial points at the horizon, is to be considered just as significant as the daily East-West trajectory. At Tikal the ball courts are oriented on the North-South axis, which tends to confirm that the game can be related to rain cult. In case there were three markers on the floor of the court, as it occurs at Copan for example, the North and South markers would symbolize the solstices while the central one could be for the equinoxes.

Seler had suggested that the ball game was meant to imitate the apparent trajectory of the sun and the moon. His theory was impugned because of the existence of many ball courts oriented North-South that could not symbolize the East-West trajectory of the sun. Considering that those courts have broad playing walls in talus, with markers on the superior edge besides of those on the long axis, the playing area at disposal is quite ample and can symbolize the four world directions and its two axes, in which the sun moves. The constant comings and goings of the sun apparently were helped by the feathered serpent, just as the Aztec Xiucoatl was doing. "According to one myth, Huitzilopochtli represented the sun. He was born with or provided with a "serpent of fire" as an aid. It was he who carried the sun in the heavens." (Tozzer, 1957, p. 116.)

There are indications that the sun and rain cult was present before the classic period; Tlaloc is already known from a ceramic type (purple-on-red) said to pertain to the early pre-classic phase in



One of the awl-like incised bone artifacts from Burial 116 (at Tikal) shows the hand of a painter holding a brush, issuing from the open jaws of a serpent. This suggests that the feathered serpent was considered by the classic Maya as the God of Learning and inventor of hieroglyphic writing, a notion present in post-classic traditions from Yucatan and Mexico.

Southern Guatemala. Early structures at Kaminal Juyu are oriented and marine materials and cinnabar (red colour discussed below) are already found in a pre-classic burial at Tikal—Burial 85, approx. 1 A.D.—(W. R. Coe, 1963). The sky deities and Chac figurations of formative type carved on stelae of the Pacific Coast and Kaminal Juyu, of which some are reputed to be cycle 7 monuments (M. Coe, 1957), are a confirmation of the preceding suggestion. Among the symbolic colours given to the world directions, red is the colour of the rising sun and it would seem to be an idea known in pre-classic time.

Ah Kin, according to Yucatec traditions, and Aj Kij, an expression still known among the Cakchiquels and Quichés, means "he of the sun" or astronomer of the sun and it is used to name calendar priests. Aj Relebalkij, lord of the rising sun, was a title in use among the Guatemalan Highland chiefs. The sun was called "lord", "our father" or "our grandfather" by the Maya (Thompson, 1960, p. 11). At Tenochtitlan the high priest had the title of Quetzalcoatl while the founder of Utatlan was called Gukumats (both titles meaning feathered serpent) and a Cakchiquel chieftain changed into a feathered serpent by throwing himself into water. The title of Ahau,

currently used among chiefs, has as glyph a stylized figure accepted as a symbol of the sun. We have listed these examples to back up the following suggestion: from elements contained in the iconography, it is clearly apparent that the maya hierarchs were trying to show their association or even possibly their kinship with the sky deities, the sun and the feathered serpent in particular. It may not have been difficult for the people to confuse the impersonators with their role. Reference has been made of four carved and painted panels placed on the floor of tomb 195, each one has at its center a hierarch inside a large cartouche with four indentations (quatrefoil), a shape suggestive of the kin glyph (sun, day), or a variant of the "cross of Quetzalcoatl"; the carving was red painted and the background was stuccoed and coloured in maya blue, a probable symbol for sun and water again, and a link between the priest and the elements. There are other examples of the quatrefoil as frame for subjects related to the cult, the most notable one being the markers from the Copan ball court. The bulk of the Tikal iconography, such as stelae and carved lintels from temples—not to exclude carved and modeled friezes, roofcomb figures and masks—were painted in red, very likely because they were related to the sun cult. Finally, it is to be noted that in the Guatemalan Highlands the term "cakja"—red house—was used to name temples, by a coincidence the blood from the sacrifice shares its colour with that of the sun as it rises from the underworld. One is induced to admit that the Maya had the idea of a blood relationship with the sun as part of their credo. We have already discussed the interwoven entities of the sun, the feathered serpent, the rain god and the rain serpents, it may finally be noted that, from traditions, the Yucatec Maya used to call themselves serpents, and that the Cakchiquels say that man was fashioned of a dough of corn kneaded with blood of the serpent (and of the tapir). The idea of consanguinity seems indeed to have existed, it may explain better why burials of the elite were so profusely provided with cinnabar, as a symbol of the sun in the underworld.

As burials from other ancient cultures in other continents and other ages also were supplied with red pigment, the question naturally arises whether this trait might have a connotation similar to that of the maya religion. That problem is open.

CONCLUSION

As is well known, important maya deities could be present in the four world directions, by means of hypostases, besides of retaining their central position. On the other hand, there is an Itza legend in which "Zamna" has pyramids built toward the cardinal points, at the start of each road (E. Abreu G., quoted by Vela, 1967).

To conclude, an interpretation of the final lay-out of Tikal may be attempted. With the ambition of imitating the gods and their universe, the lords of Tikal had in mind to magnify the sacred ceremonial focus by giving it four satellites or hypostases in the form of great temples situated in the four usual directions, an idea quite within the maya religious frame of mind. Their project was well underway in its execution. The topography had been taken advantage of so that the temples should stand out; the chosen spots are at irregular distances from the center, for otherwise the terrain slopes down and becomes disadvantageous for the purpose. A study of the terrain (see map Carr & Hazard, 1961) shows that the planing came late as the central group (North Acropolis and Great Plaza) could not possibly be situated just in the middle of four satellites, nevertheless the position is rather well centered at the intersection of a cross that would link the four temples. If the evolution of the ceremonial center could have been foreseen with that final projection, a different site might have been chosen for the sacred Acropolis. But a prevision for several centuries ahead of time could not have been expected then and neither could it be now. From temple 33, the situation looks like this: to the West is Temple IV, at less than 700 meters distance; to the South is Temple V, at little over 300 meters; to the North is the main temple of H Group (Structure 3D-43), some 800 meters distant; it may be surmised that this temple, of already respectable proportions, would have been modified in a future opportunity, a bigger one comparable to Temples IV and V would have been built by superimposition. Finally, to the East, at a distance of less than 300 meters, where a great platform base (Structure E5-23/28, 100×120 meters, over 10 meters high) was under construction, a temple would have been built. Neither the pyramid, nor the temple were ever constructed, however. To judge from the size of the base in formation, this might

have become the biggest temple of all, but it appears that the populace could not or would not build colossal works any more. This attempt at equalling the gods having been frustrated, the increased magic power that perhaps had been expected to be derived was not obtained and the sacred city started to crumble before it was ever finished.

SUMMARY

The Tikal ceremonial center is adapted to the religion whose main end is the propitiation of natural and supernatural forces, this in function to the necessities of agriculture, the basic source of food. Religion is not only linked to the solar system, it is also adapted to the regional meteorology. The rain cult prevails, combined with the sun cult. The sun defines the seasons, as its incursion to the northern hemisphere brings the rainy season, for which reason it is entitled to a specific worship.

Since the pre-classic period the ceremonial complex of the North Acropolis is in use with its three temples situated to the North, the East and the West.

As of the late classic period the Great Plaza becomes the main focus of the religious cult, with its three temples arranged in the same manner as those of the North Acropolis. Conjointly, a twin pyramid complex was being built at katun endings, with ceremonial buildings distributed in the traditional fashion.

A final projection of the ceremonial center appears to have been the construction of four great temples toward the cardinal points and situated on marginal eminences. The project was not completed.

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