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THE MAYAS: "GREEKS OF THE NEW WORLD"

Even in the beginning America was a land of promise. According to Greek legend, the souls of dead heroes took up their abode on the "Blessed Islands" of the western sea. These were the Elysian fields where mortals became gods in a newer and better life. In other ancient chronicles it was said that beyond the sea of darkness, which was the unknown Atlantic, lay the lost continent of Atlantis. Solon had spoken of it; Strabo mentioned it in his famous geography, and Plato was convinced that a great civilization had flourished there until it was destroyed by a tremendous quake and swallowed into the sea. Atlantis came to mean Utopia, and Francis Bacon entitled his essay on the ideal state "The New Atlantis." Many maps of the Middle Ages show other sections of the Western world: Antilia, Saint Brendan's Isles, Brazil, and the Island of the Seven Cities. Whether or not the ancients had in some devious way actually heard of America may never be removed from the realm of legend, nor may we ever know whether a great culture did exist on some now lost continent or island, with those who survived its destruction moving westward to the mainland, there to begin life anew.

Far more likely, however, is the archaeological view that man first came to American shores in successive waves across the Bering Strait from Asia. Perhaps to these early Asiatics were added a few Polynesians who arrived in their dugouts from the far reaches of the southern Pacific. In any case, the American red man fifteen or twenty thousand years ago began to chart his own destiny, upward and alone, completely isolated from progress in other parts of the world.

During the first centuries of the Christian Era relatively high types of primitive civilization were reached in at least three widely separated regions. The Teotihuacán culture, noted for its great pyramids, arose in the Central Valley of Mexico. At more or less the same time Central America and the Andean area were producing very distinct cultures of their own.

The former was the early Maya culture of Central America; the latter, the Tiahuanacan, or even more vaguely termed "pre-Inca" culture of the Andes. As our archaeological investigations of the early Mayas and pre-Incas have touched only the high spots, so to speak, the origin of both remains much of a mystery. After thousands of years of snail-like progress through the vast level of that early archaeological period known as the Archaic, they finally appear on the horizon of history. Until recently we knew of very few beginnings, few halfway points, few connecting links to trace the development of these peoples. Due to the paucity of historical data they seemed almost to emerge as Athena from the mind of Zeus, near the zenith of their perfection. Their decline and fall were almost as mysterious. At an early date in the history of our era they dropped suddenly from their lofty heights and their cultures disappeared from the historic scene, swallowed up, overwhelmed, or absorbed by those which followed them.

At any rate, when the Spaniards arrived in Central America, Mexico, and Peru, the Teotihuacán, Maya and pre-Inca cultures were already dead. Their great centers, long since abandoned, were overgrown with forest and weeds. Many of their finest temples were masses of fallen stones, crumbled masonry, accumulated silt, and gaping holes where the woodwork had rotted away. In Mexico the Aztecs, whom the Spaniards encountered, had appropriated many of the achievements of their predecessors. In the Andean highlands the vast empire of the Incas had rolled like a juggernaut over all previous civilizations, and some of their most imposing monuments were constructed on bases found in the regions they had overrun. As for the Maya, Teotihuacán and pre-Inca peoples, they had either reverted to a state of semi-savagery or had been absorbed in the main currents of their conquerors' way of life.

But this is getting far ahead of our story. All of these Indian civilizations made contributions that were fundamental to the regimes which overpowered them, and these in turn were the foundations upon which the Spaniards had to build. The Indian background of Latin America is fundamental in history. In many regions Spaniards and Indians mingled and their cultures became one. In Mexico, Guatemala, Colombia, Ecuador, Peru, Bolivia, and Chile, Indian blood is still strong, and in all these countries except Chile there are today far more mestizos and Indians than pure whites. The greatest contemporary Mexican and Peruvian art is shot through with indigenous themes, colors, and rhythms. Except for the small upper class, evidences of Indian thinking and custom are apparent in every expression of life. There can be no understanding of these countries without a clear knowledge of their native past, its greatness and its decay.

The history of Indian America must be approached from a point of view essentially different from that employed in studying the development of

western European civilization. In America there are almost no ancient records to guide us; there was never any contact with other civilizations outside the hemisphere, and consequently no exchange or analogies with nations whose history we know. Individuals do not stand out in Indian America, for few individuals are known, and many of these are lost in the mist of fable. We are not even certain where the red man came from, or how, or when. Such progress as we can trace is in terms of the culture substance of entire peoples. Unstudied and unrecorded, it moved ponderously forward in the folk arts and crafts of regions and of centuries. "We should realize that the earth must be our archive, the shovel our reading glass, and that nature, eternally destroying to create anew, has scattered our materials over mountain, plain, and forest" from Alaska to the southernmost sea.[7]

The archaeologist works mainly with broken things, with objects which have been wrought by human hands and shaped with a loving heart. If he is successful and makes a real "find," these objects are rescued and preserved for all to see. But the mind and heart "that reached beyond the requirements of utility and created a lovely thing . . . that endowed a Parthenon with the transcendent grace that has survived through destructive ages—that is the ultimate subject of the archaeologist's quest. Ancient monuments fascinate because of their builders, and builders are interesting for what they wrought under the urge of creative mind. Who? When? Whither? are the questions with which the archaeologist challenges the refuse heaps, the scattered shards, the broken shafts, to tell of the builders who came and lived and went their way into the templed past. Only as they are reflections of minds and spirits are ruins of importance. . . .

"At first, the archaeologist views a succession of tragic pageantries. Broken columns mean broken states. The wreckage of cities denotes the destruction of community aspirations. Ruins of house mounds tell of hallowed home life ending in sorrow. Fragments of pottery, basketry, fabrics, wearing apparel, bits of modeling, faded touches of color, record the age-long striving after perfection. Shattered temples, shrines, sanctuaries, holy places, reveal the yearning of the human spirit to find, to unite with, the Divine. By way of ritual, rhythm, song, and symbol, man approaches the deific presence. But all this goes the way of his material creations. . . .

"It is a mystifying thing that man, creator of all the beautiful and majestic cultural products of his world, should at the same time be the most brutal destroyer. Let a people create palaces of beauty, cities of delight, a cultural world which would seem to be the supreme objective of human effort, and another people must do its fiendish best to blast it from the earth. Let life become tranquil, happy, abundant in all that is desirable in existence, man rises up to crush it into poverty and utter annihilation. . . . 'They left a desert and they called it peace. . . .' Man does not hesitate to put out the torch that has lighted humanity for a thousand years."[8]

Many a superb marble from the Acropolis has gone into the lime pits of Athens; many a stone column fashioned with years of love by some unknown Maya sculptor has been hammered into bits to fence in a Central American pigsty; many a fine Inca wall has been wrenched from its perfection stone by stone to go into the house or barn of some inhabitant of post-conquest Peru. The monolithic stones of ancient Bolivian Tiahuanaco, considered by some to be the greatest monument in all America, were for years consistently ground into rubble for railroad ballast that La Paz might have an outlet to the sea.

But the Earth Mother, which was soil and seed to send man's striving up toward the stars, now with a marvelous persistence covers the scene of his ruin and his decline with friendly fingers of wind, rain, and sand, making her own dark womb into which are poured his highest creations, his highest reaching. "Over the ruins of cities, winds pile the friendly soil. Rains undercut the foundations of walls and columns so that they may fall and be concealed from vandals. . . . Nature is relentless in her protective work. She will convert fertile lands into desert wastes, cultivate valleys into impenetrable jungles, to the end that man's spiritual past may be saved for the life of the future."[8]

The job of the archaeologist is to re-create these things. He cannot depend on what historians have said. They do not agree. In America he cannot even go to what the Indian himself has written, for he has written almost nothing. No Inca, Maya, or Aztec ever wrote a complete sentence, or even made a start toward inscribing a chronological history of his people. Tradition fades into legend, legend into religion, religion into art. Back of all these is the psychology and growth of the people. That part of their history which cannot be falsified must be uncovered and restored to life. To the archaeologist "no idle fancy is the concept of the Earth Mother."

Early Spanish writers who witnessed the scenes of the conquest and the downfall of the Aztecs and Incas wrote of them in terms with which they were personally familiar, and in so doing drew out of focus the perspective of ancient Indian life. They used the words "empire," "civilization," and "culture" in a European sense, because that was the only way in which they felt able to describe this spectacular new world so completely different from anything they had seen before. The sincere historian berates "this handing on of a picture that every archaeologist knows to be misleading. . . ."

"As a matter of fact they saw no *civilization* at all—only barbaric culture, expressed in the riot of color derived from tropical birds, insects, flowers—a region where plant and animal life furnished gorgeous costumes for brilliant pageantry. In the Old World this meant royalty, wealth possible only to kings, power possessed only by emperors who exacted tribute and homage from subject peoples. In the New World it meant the ordi-

nary life of all the people, tribe, or community, born into a world of color, reared in a perpetual round of invocation of deific powers to whom all this ceremony must be pleasing, all this splendor of ornament acceptable, because they were givers of it to man."[8]

When we use these terms of our own civilization—there are no others—the primitive earthiness of the American red man who never learned to read or write must be constantly borne in mind. While our civilization was developing its techniques of use and progress, the Indian was interested only in beautifying what he had. No man ever lived closer to the earth. He accepted life as he found it, and his unity with it was almost complete. Every force of nature was a part of his experience and of his religion and art. There were no higher techniques, no drives or urge to progress to separate him from what he knew and accepted. A wonderful plastic sense was innate in *all* of his people, and all of his people had a hand in creating and enjoying their art. It was as much a part of their daily lives as the impersonal drinking glass is a part of ours. We put use first; he never thought of use as separated from beauty. It is this complete integration of life which was then and is now the Indian's greatest strength. He carried it through countless ages alone, then when the Spaniards tried to break it down he reached up and drowned the white man in his sea of blood. The mestizo of today can never get away from being a descendant of the Indian who came to these unknown shores from some far place so many eons ago to blend himself completely with the great American earth.

Whatever his origin, the red man probably reached the great central valley of Mexico about eight or nine thousand years before the birth of Christ, and soon afterward began his migration toward the south, which ultimately peopled the distant region of the Andes. These early Indians were primitive and nomadic savages, wanderers across the face of the earth with no fixed homes or nation. No broader social conception than that of the tribe had entered their thinking, and whatever arts they had were crude refinements that grew naturally out of the daily necessities of their lives. When they had cleared one district of its fruit, its fish, or its game, they moved on to another. Their society was an endless cycle of hunting, gathering, and moving, which prevented the development of any permanent populated centers, and thus made impossible the sustained effort upon which civilization depends.

Then there occurred a fortuitous circumstance that altered the whole course of the Indian's life: the discovery of corn. No one knows exactly how this grain was first produced. Some say that it was domesticated from a wild variety of maize, others that it represented a hybrid between some unknown plant and the Mexican wild grass called teosinte, which will readily cross with corn, the pollen of either plant fertilizing the other.[9] In any case, corn or maize gave to the American red man his first chance to

produce a quantity of food sufficient for his needs instead of his having to forage for it like a wild beast, and frequently on a day-to-day basis only one jump ahead of starvation. It enabled him to put an end to his nomadic life and settle down to an agricultural existence.

This experience was not new on the stage of history, for the civilizations of Asia had built their staff of life on rice and those of Europe were nurtured on wheat, just as the Indian cultures of America came to rest on corn. When the red man settled down in a fixed region to cultivate this new food, he at once changed the tenor of his life and began that long ascent which finally produced the great indigenous cultures of Mexico, Central America, and Peru. It is no wonder that corn entered so deeply into his art, into his religion, and into his thinking. There were corn myths, corn rites, corn goddesses, corn dances, corn prayers and songs, and ears of corn wrought in stone, gold, or silver as art motifs in many widely separated regions. Corn raised the Indian out of a state of complete savagery to the level of a great folk culture. It lifted him bodily from the unknown extent of the Archaic. It was more than a food to him, more even than the symbol of his religion; it was a way of life.[45]

One of the earlier tribes which made the most of this new agricultural existence was the Maya. When the Mayas first enter the currents of history we find them living in the lowlands on the Gulf coast plain of Mexico. Their land was extremely fertile, and when corn was put into cultivation there it was fruitful beyond their fondest hopes. Greater stores of food than had ever before seemed possible were rapidly accumulated, and the tribes of the Mayas prospered mightily. At about the time of the birth of Christ they pushed inland to the region of northern Central America, and finding this land good, established themselves there, principally in the Guatemalan lowlands. It was here that the first great Indian culture arose.

Once established on fertile soil and with sufficient knowledge of cultivation to attain a measure of productive stability, the Mayas soon found themselves in possession of the prerequisites of cultural development: they had stores of food which relieved them of the necessity of constant moving and impermanent thinking, and in between crops they enjoyed a certain amount of leisure time which they could devote to purely aesthetic expression. As in the case of many other early civilizations their religion and art were fused into one. This gave to their culture a refinement and beauty not achieved by any other indigenous American group. On the other hand, by concentrating on the spiritual, the refined, and the purely aesthetic, they paid little attention to the material techniques of supporting life.[7] Unlike the Incas of Peru, they built no great stone cities, no vast systems of irrigation, and their society was not blended into a strong social whole. Their people lived in the bush around their great religious centers in flimsy houses of reeds and mud. Only when some outstanding ceremony brought them all together did these centers teem with a large population. On

those occasions the people who had come forth from the bush to raise the great stone structures as symbols of their mass expression then came forth again to worship and thus to reaffirm their single destiny. As one of the finest of modern archaeologists points out, this was somewhat the same situation that prevailed in the Middle Ages when so many poverty-stricken towns of individually wretched humans toiled together to construct the magnificent Gothic cathedrals that loomed massively from the misery of ordinary daily life as symbols of the mass aspiration and the mass expression of glory and of art. The same thing had also happened in many Asiatic civilizations, whose wondrous carved architecture has survived by many centuries the miserable dwelling places scattered over the surrounding countryside.[7] This is not to say that Maya temples and religion stood on a pinnacle above and beyond the common people, for rather the opposite was true. The Mayas poured themselves into this, their supreme art, with the whole of their bodies, their minds, and their devotion.

Before his home had become fixed on expansive and fertile land the Indian had been content to let time flow by, measureless and unlimited, without beginning or end. The single day or at best such general terms as the "hot" season, the "cold," the "dry," or the "rainy" season were his only conceptions in indicating the passing days. Now, however, with crops to be sowed, cultivated, harvested, and stored, some more accurate measurement of time became a necessity. How many moons did the long rains last which gave their waters to the famished earth? How many crops could be planted and gathered while the bright evening star showed itself in the sky? How many suns long were the hot days of summer? When the Maya set himself to pondering over these things he became more acutely conscious of time, and eventually the result was a calendar. By correlating the shorter cycles of the moon with the longer ones of the sun and of Venus, he arrived at a year of eighteen months of twenty days each, plus five "unlucky" days, making a total of three hundred and sixty-five. He also used a shorter and purely arbitrary or symbolic religious calendar of only two hundred and sixty days. Astronomical observatories were constructed in which Maya scientists could tell exactly when the sun had reached the equinoxes (March 21 and September 22) and the solstices (June 21 and December 21). In the light of these observations and of others made by studying the phases of Venus, Lord "Big Eye" of the heavens, such corrections as were necessary were made from time to time. In order not to throw our own seasons out of focus we insert an extra day in our calendar every four years, February 29. In their computations the Mayas did the same thing, adding an extra day to each fourth year, and over longer periods twenty-five extra days to each one hundred and four years. One archaeologist who has devoted his life to the study of Maya lore states that this calendar was so exact that no confusion could exist between any two days

within a period of more than three hundred and seventy-four thousand years. It was more accurate than the finest measurement of time known in the days of Greece or Rome, and was superior to any calendar used during the Christian Era until Pope Gregory's modifications were incorporated in 1582.[11]

The Mayas attained these results by a careful study of the heavenly bodies; this in the course of time naturally led their scientists to become excellent astronomers and mathematicians, and also exerted a strong influence on their architecture and art. Every eighteen hundred days, or about every five years, chronological monuments or stone columns called stelae were erected on which the date, certain astronomical positions, and other still undeciphered information were recorded. The Mayas knew the courses of the principal stars and planets and were able to predict eclipses with great accuracy. Their stelae were often magnificently carved and thus represent art as well as scientific and historic expression. Perhaps when all of the recorded dates are found they will help to place many other early American cultures with which this race came in contact. According to some archaeologists, the dates of many Maya cities are already more accurately known than those of ancient Babylonia, Greece, or even imperial Rome.[11] But the specialists do not all agree as to just how the Maya calendar should be correlated with Christian dates. Consequently, while the sequence of events and even the amount of time elapsing between any two events are unquestioned, the concurrent Christian year varies according to which correlation one wishes to accept.[7] Further investigations will no doubt clarify this point.

The supreme expression of Maya culture, however, was not their calendar but a highly refined system of sculptured hieroglyphics. The loving care which was lavished on the execution of some of these complex symbols turned them into veritable artistic motifs. Other native races did borrow and even simplify many of their characters, but the Maya glyphs still stand as the only native American writing comparable to the graphic systems of Egypt, China, or Babylonia.[11] In addition to being inscribed on the chronological stone stelae these hieroglyphics were written on long strips of maguey (century plant) fiber which could be folded like Japanese screens and were thus easier to handle than the scrolls of the ancients. The figures were beautifully illuminated and were written on both sides of the sheet. "The paper was given a smooth surface by a coating of fine lime and the drawings were made in black and in various colors."[12] Deerskin and bark also sometimes took the place of the maguey strips. Although the Mayas were said to have had "many books upon civil and religious history, and upon rites, magic, and medicine," only three of their manuscripts or codices have survived.[12] Even these are incomplete and exist only in facsimile. Their subject matter seems limited to the calendar, numbers, and religious ceremonies.

Maya glyphs are of especial interest to students of languages because they are the only written characters ever found which represent a transition stage between a purely "pictorial" written language and one based on "sound" or phonetic symbols. In the "pictorial" language only concrete objects whose pictures might be drawn or represented could be expressed. A man, for example, would always have to be some kind of figure or character resembling a man. This limited expression, for feelings, actions, descriptions, and abstract ideas could be rendered only in the crudest fashion. Whatever could not be drawn could not be said in writing. However, in the "sound" or phonetic language toward which the Maya system was evolving at the time of the downfall of Maya civilization, the characters stand for sounds of words and make no attempt to present the idea in a pictorial manner. This increased manyfold the power of expression. It meant that the gap between a purely primitive or visual type of culture and the abstract refinements of higher civilization was rapidly being closed. But at this stage of their development the Mayas, divided by civil rivalries and strife, fell before the onslaught of the fierce Toltec warriors from the Mexican plateau. After a relatively brief period of fusion and cultural renascence, many of their great centers, for reasons as yet imperfectly understood, were abandoned to the tropical jungles and the shifting sands.

The Maya system of writing consisted of about four hundred simple characters and two hundred compound characters, something like 10 per cent of them being phonetic symbols. Almost none of the abstract characters have yet been deciphered, and only about half of the pictorial ones, mainly those dealing with chronology. Consequently, up to the present moment archaeologists, with considerable intelligent guesswork, are able to figure out only the general drift of Maya writing without being able to translate any of the details or shades of meaning. Another difficulty encountered in translating the Maya glyphs is that they are so interwoven with decorative motifs that it is often impossible to tell where the writing stops and the decoration begins. This is especially true of inscriptions on stone, for the sculptors apparently thought that all blank spaces were unsightly and often filled these in completely, sometimes using glyph-like characters to do so. No key to the Maya hieroglyphics has ever been found, nor has any tablet or stone like the Rosetta stone with parallel versions of the Maya and some other more readily translatable language ever been discovered. Only a single authority, the Spanish bishop, Diego de Landa, studied and recorded these Maya glyphs soon after the conquest. The bishop drew up what he thought was a complete alphabet, but what he actually compiled was an ambiguous hodgepodge of characters. When Landa asked the natives of Yucatan to give him the symbol for a certain sound or letter, they would do so, but these symbols apparently stood for many other things as well, so the resultant alphabet is not

at all basic. Furthermore, this same bishop's fanaticism was the cause of the destruction of many invaluable Maya manuscripts which he is said to have gathered and burned as the evil documents of an idolatrous people. He did his work with the thoroughness of a good inquisitor, for only three incomplete Maya codices have survived. At the same time it must be said in Landa's favor that had his compilation not been made, much that we do know of ancient Maya glyphs and history would lie beyond an impenetrable veil.

A considerable remainder of our knowledge of these people has been obtained from the *Books of Chilam Balam*, purportedly written by a Maya priest of Yucatan, and from the *Popul Vuh*, a legendary and mythical history in the Quiché language of Guatemala. Both of these books were written after the conquest by native scribes who had learned the Spanish language and alphabet. These scribes, however, did not write in Spanish but simply used the Spanish script in order to reproduce as phonetically as possible their own native idioms, the *Chilam Balam* being in Maya, and the *Popul Vuh* in Quiché. The stories contain some fragmentary history, but are occupied mainly with popular myths. The *Popul Vuh* tells of the giant-killing and other exploits of a pair of "Hero Twins," and the *Books of Chilam Balam* "go somewhat into family history" and prophesy that "at the end of the thirteenth age [around 1500] white men would arrive in Yucatan." The first shipwrecked Spaniards set foot on those shores in 1511. Neither book goes very "far toward relieving the confusion that beclouds the Maya world."[13]

Maya mathematicians kept pace with the scribes and astronomers, and their calculations, while not exactly like our own, were extremely accurate. They knew the use of the zero symbol, the basis of modern mathematics, and in their higher numbers used a vigesimal instead of a decimal system. All numerical systems have been based in some way on the digits of the hands, or the feet, or both, for it is natural that man should begin his efforts to count in this manner. The Arabs who first gave us our own zero and decimals went by tens, while the Mayas proceeded by twenties. Their multiplication was also on a vigesimal basis. For example, our number twenty-seven signifies two times ten plus seven. In the Maya system a similar two-numbered figure would be two times twenty plus seven. When proper correlations are made this method works out as satisfactorily as our own.

Just as we begin our era with the birth of Christ, the chronology of the Mayas began with a definite date which happens to go back many centuries earlier. One specialist says that in terms of our calendar this date would be August 11, 3114 B.C., the significance of which is lost to us. The earliest certain dates which have been discovered on carved monuments go back to the beginning of the Christian Era. A date that correlates with 31 B.C., found on a broken stela south of Vera Cruz (Tres Zapotes) is ac-

cepted by many archaeologists, while another broken stela from El Baul in western Guatemala may bear the date A.D. 36. Carbon 14 and other calculations place the dates of several Maya substructures earlier than either of these.[180]

The earliest or Archaic Era of Maya history, or about the first nine hundred years, which stretched between 600 B.C. and A.D. 300, was the formative period and included the early migration of the race into the Guatemalan lowlands. The original habitat was possibly along the eastern Mexican coast. During this period the Mayas worked out the laborious beginnings of their calendar, their system of writing, the basis of their architecture, and an incipient art. The following six hundred years, A.D. 300 to A.D. 900, saw the formation of the so-called Classic Period which reached its zenith during the last three centuries of that span and found expression in the marvelous stelae, pyramids, and temples spread over northern Guatemala and other neighboring regions. During this period there began a gradual extension of the Maya frontier toward Yucatan, and by the end of the Classic Period these new colonies were firmly established and populated. At about this time the movement eastward seems to turn into a full mass migration, almost a flight away from the Central American centers toward the new land to the east.

Throughout the following half a century, more or less, there is a break in Maya history, and all chronology seems to disappear. This hiatus lasted until nearly A.D. 1000, when architecture and art in a new style began to appear. Perhaps pestilence, war, the wearing out of the soil, or the necessity for more "living room" caused this decline of the old Maya centers and the period of black regression which followed. In any case, it appears that during the prolonged transition period the Mayas were struggling to survive and to re-establish themselves after whatever holocaust it was that had wiped their old centers from the map. A people fighting for its life is hardly in any frame of mind and certainly does not have the time to think in terms of art or even to record the happenings of its day. Consequently, these years constitute the "Dark Ages" of Maya history. Once they were concluded, however, there is a great renaissance, and the flowering of a new culture seems to take up where the old had left off so many generations previously. Although the style was somewhat different and more modern, many fundamentals were essentially the same, except that the new Maya art embodied strong Toltec influences.

This new Maya-Toltec culture was centered in the Mexican peninsula of Yucatan and passes through three frequently intermingling phases. The first hundred years (A.D. 900 to A.D. 1000) represent an intermediate stage during which the new beginnings were consolidated. The years A.D. 1000 to A.D. 1200 show the resurgent art at its height, and the last two centuries (A.D. 1200 to A.D. 1400) represent a decline of the Maya-Toltec culture. The best-known center of this culture was Chichén Itzá, dedicated to the

God of the Plumed Serpent, called Kukulkan by the Mayas and Quetzalcoatl by the Toltecs and Aztecs. This city had been founded many centuries previously, possibly as early as A.D. 450, but it had not been continuously inhabited. The Chichén Itzá that we see today is mainly Maya-Toltec in its architecture. Around A.D. 1200 the city was abandoned after its defeat by the walled town of Mayapan whose rulers controlled most of Yucatan until 1441. The period 1200–1441 was one of disintegration. Pilgrimages were still made to Chichén Itzá, but its heyday was past. Mayapan, Tulum, and Izamal were the principal centers of this final stage. Magnificent as it is, Chichén Itzá never equaled the pure Maya art of the Classic Period.

Among the outstanding creations of this period were many magnificent pyramid-temples decorated with delicate stone carvings. These were always built on a height facing a great plaza and were situated in the center of thickly populated districts. They served as the Maya "civic centers," but as the higher expressions of these people were mostly of a religious rather than of a social or political nature, they reflected these sentiments. The façades of many of the temples were covered with brilliant frescoes in red, white, green, blue, and yellow. The sculptured figures were also highly painted, but little of their polychrome has survived exposure to the elements. As the years passed and one type of carving succeeded another, Maya sculptors dug deeper and deeper into the face of the stones on which they were working, and some examples of their handiwork stand out in such bold relief that it seems almost as if they are of separate and superimposed blocks, which is not the case. How these sculptors were able to fashion such perfect figures with the crude stone tools at their disposal passes understanding. One archaeologist who was working in the field recently gave a group of the natives a set of primitive stone tools and set them to carving a huge block. After a week of laborious effort they had been unable to make the slightest impression on their subject.[14] One possible conjecture to be drawn from all this is that there were Maya iron tools fashioned out of meteoric fragments which have since rusted away. Such implements have been located in the United States even among more primitive races, but not a single one has ever been discovered in Mexico or Central America. There is no reason to believe that iron was ever reduced from ore which does occur in great abundance in some of these regions.

Besides this highly wrought sculpturing the Mayas incorporated in some of their temples the finest wood carving in America, perhaps the finest of the ancient world. Most of these pieces have rotted away in the humid atmosphere of the tropics, but several altars and lintels of steel-hard sapote wood have been preserved. One such altarpiece, which is now in the museum at Basel, Switzerland, is a "richly costumed" representation of Kukulkan, God of the Feathered Serpent, surrounded by exquisitely wrought carvings of interwoven faces and hieroglyphics. This famous piece came

from the ruins at Tikal, Guatemala, and "is a master work of the highest order, unsurpassed by any piece of wood sculpture in the old world. The design is exceptionally elaborate even for Maya art. The subject is a richly costumed personage holding a standard or baton in his right hand, his face framed in the open mouth of a grotesque monster. He is enclosed beneath the arched body of a feathered serpent of extraordinary design, the head appearing at the left. Perched on the serpent arch above is the figure of a mythical bird monster. . . . The central design is surrounded by hieroglyphic inscriptions among which are exquisitely carved portrait faces. It is said that a companion piece to this remarkable work of ancient American art was lost in the jungle in the process of transportation from Tikal to the seaboard."[13]

The earliest complete structure indicating Maya lines which has been discovered is a beautiful pyramid of silvery white, obviously part of an astronomical observatory which was uncovered in the jungles of Guatemala at a place called Uaxactún.* This pyramid is ascended by a series of stairways "flanked with pairs of great grotesque stucco masks, each eight feet square. The upper ones represent enormous human faces with slit-like eyes, large bulbous noses, filed teeth, and lolling tongues. The lower masks seem to be highly conventionalized serpent heads."[9] These are the words of its discoverer and excavator, Dr. S. G. Morley. He goes on to say that the construction in its entirety is "unquestionably one of the most magnificent examples of aboriginal American architecture extant—a silvery white, stucco covered pyramid of exquisite proportions and perfect outline."

This large pyramid faced a line of three smaller ones, the four of them so arranged that the Maya astronomer-observer placed on the main structure would see the sun rise from directly behind the other three at the exact periods of the equinoxes and solstices. The earliest date recorded in glyphs at Uaxactún is A.D. 328, but the glowing stucco substructure of the main pyramid goes back to the first century. Maya astronomical lore dates from an even earlier epoch, circa 300 B.C.[179]

The Mayas rarely constructed buildings of more than a single story, so in order to give an appearance of great height they usually erected their temples on mounds of earth or rubble, sometimes naturally and sometimes artificially formed. The outside surfaces were always coated with stucco or stones and mortar in such a manner that the entire mound seemed to be an integral part of the building raised on its summit. Temples having the appearance of several stories in height were in reality separate structures placed one behind the other, each being erected on a mound higher than the one in front of it. The total effect was that of a rising-staircase construction majestic in its sweep. Usually the temples surmounting these terraces were crowned by combs or slender flying façades that resembled the crests

* Pronounced *Wah-shock-toon.*

of ancient warriors' helmets. No indigenous American race ever learned the use of the true arch, the basis of European architecture; consequently Maya interiors and ceilings were of necessity very narrow and low unless the roof was constructed of light materials, such as thatch or wood. Sufficient support for heavier roofings was a constant vexation, and in many Maya buildings there are evidences of columns reinforced from time to time in order to prevent a total collapse. Whenever an interior was made larger it was generally at the expense of safety, but the term "larger" is purely relative, for all rooms were small and dingy. Not knowing the laws of architectural support, the Mayas had to rely on massiveness of walls instead of on arches, and as a result the proportion of wall space to actual room space was sometimes nearly forty to one.

Stucco was used to a considerable extent in most of these structures, and in the later years of the Yucatan or new culture period round columns with square capitals borrowed from the Toltecs of the Mexican plateau were frequently employed. Many of these embodied the stylized motif of the feathered serpent, some entire columns being representations of that sacred bird-reptile with ends of a heavy tail and jaws, both foreshortened, touching the roof and base respectively.

Three great ceremonial centers of the Classic Period are Tikal, Guatemala, a few miles from Uaxactún, and Palenque and Bonampak in southern Mexico. At Tikal the oldest date recorded in stone is A.D. 292, but other evidence indicates that the Mayas were building here five centuries earlier. Among Tikal's many tall pyramids is the highest in Mayaland soaring to 229 feet. Palenque reached its peak after Tikal, around A.D. 700. "All great Maya ruins are touched by magic, but Palenque more than most . . . for me it is second only to the Parthenon in terms of unadulterated beauty," writes Katherine Kuh. The scene suggests a poetic Chinese painting in which the luxuriant rain forest is blended with a fairy-tale architecture. Bonampak, hidden in the jungle until its discovery in 1946, is the site of the best Maya murals (c. A.D. 800), whole walls of glowing priestly figures.

Another famous cluster of ruins, which represents the Maya Renaissance in Yucatan, is at Uxmal, a few miles west of Merida. Uxmal rose in importance after the old classic centers in Guatemala and Chiapas, Mexico, were abandoned, around A.D. 900. One group in the concentrated complex of buildings at Uxmal suggests a cloister, and so was called the Nunnery Quadrangle. Another of the many beautifully decorated buildings at Uxmal is the Governor's Palace, a purely arbitrary name, which is three hundred and fifty feet long, with a mosaic façade composed of thousands of pieces of stone. Another structure, called the House of the Pigeons, is surmounted by a roof comb fifteen feet high and two hundred feet long. The faces of this crest, writes the archaeologist E. L. Hewett, are a mass of interwoven "mosaic masks, roof-comb ornament, open tracery suggesting latticework in stone—a wealth of geometric decoration, rivaling Mitla in

design, and surpassing it in the variety of its patterns."[13] The walls of these structures are massive in the extreme, and their "small, dark interiors were places of mystery to the populace, cells for the priests for secret ritual, affording the seclusion that was necessary for maintaining the pall of superstition over the people."[13]

Besides these six centers there are at least a dozen or two more whose surfaces have barely been scratched. No attempt has been made to clear away the surrounding growth and rubble and to restore them to their former glory. Archaeologists frequently visit these places and cut down some of the rankest plants, but within a few months after they have departed the tropical jungles have again closed over shattered walls with discouraging rapidity. Groups of these ruins cover Yucatan, the northern Central American lowlands, sections of southern Mexico, and parts of the Guatemalan highlands. In this last region is located the famous city of Utatlan, sacked by Pedro de Alvarado, one of Cortés's lieutenants, which some authorities consider as being in the same category with the Aztec capital of Tenochtitlán (Mexico City) and the great Inca center of Cuzco. It does seem likely that after the decline of the new Maya culture on the peninsula of Yucatan, probably due to a combination of civil wars, conquests by outsiders, a loss of all feeling of union or pride in race, and perhaps the inroads of tropical fevers, many of the remaining Mayas trekked back to the interior Guatemalan highlands where the climate was cooler and more healthful and the means of defending themselves were afforded by Nature herself. Thousands of descendants of the older race still live in this region as well as in Yucatan. Some archaeologists believe that this highland region was the cradle of their culture, and that after expanding eastward and meeting a slow defeat they returned to their native mountains like homing pigeons. It is true that many, many thousands of the Indian inhabitants of present-day Guatemala still speak Maya dialects, still fashion beautiful pottery in the old designs, and still weave by hand some of the finest fabrics in all America. It is also possible that among them other old traditions of their race may survive, and that there still may be alive a few to whom have been handed down the secrets of Maya history, mythology, and art, who perhaps may even possess the knowledge to read, to write, and to interpret the ancient inscriptions of their ancestors. If such persons do exist they hold the key that will unlock many a fascinating chapter of now-hidden Maya lore.

In the meantime, whatever conclusions the specialists may reach about this gifted race must rest on an imperfect knowledge of their written language and on a detailed examination of the ruins and relics which have survived the jungles and the centuries. Even in this regard their work of interpretation will be limited until a greater proportion of the principal archaeological sites have been carefully excavated. So far only a single great center, that located at Chichén Itzá in Yucatan, comes within this cate-