

## NOTES AND DISCUSSION

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### THE ANCIENT CIVILIZATIONS OF THE AMAZON: THE PRESENT STATUS OF THE QUESTION OF THEIR ORIGINS

Scarcely fifty years ago the “Indian sphinx” posed enigmas that seemed simple. Known pre-Columbian civilizations were relatively few, and their past, however obscure, could be considered recent in contrast to the millenniums that separate us from the cultures of the ancient Orient. Today this is no longer true. The emergence of new archeological horizons has singularly transformed our summary view of the history of man in the Western Hemisphere. The date of the first human migrations through the Bering Straits has been put back some twenty or thirty thousand years—to the Aztec, Mayan, and Incan civilizations which the Spaniards knew in their full flower. Others have been added which, in turn, give rise to fresh enigmas.

Translated by Elaine P. Halperin.

## Notes and Discussion

### THE CIVILIZATION OF MARAJÓ

Disdaining the rest of South America, archeologists have obviously concentrated their attention and efforts on the Andean civilizations. For a long time it was the tradition, even in scientific works, to compare the Andes, cradle of kingdoms and empires, to the plains and forests of the Amazon, that vast, natural preserve of savage and wretched tribes. However, in the case of both Brazil and Venezuela, enough ancient relics had already been collected and reproduced in the nineteenth century to warrant a subtler way of expressing the contrast between "civilization and savagery." The many burial urns dug up from mounds (artificial hillocks) on the island of Marajó were the first to bear witness to the high level of civilization which certain peoples of the tropical forest had achieved. The technical and aesthetic quality of these relics testify to the presence, at the mouth of the Amazon, of a very ancient people who, in many respects, were different from the modern, indigenous inhabitants of Brazil. The singular geometric designs that ornament the pottery which originated in Marajó Island aroused the curiosity and, unfortunately, the imagination of archeologists. Egyptians, Assyrians, and Chinese were evoked apropos of these lucky finds, to say nothing of the Vikings, to whom was attributed the introduction into the Americas of a "civilization of mounds"—and this long before Thor Heyerdahl had appropriated such romantic reveries. One scholar even perceived in the ornamentation of these ceramics evidence of hieroglyphic writing.

Nothing seemed to indicate that the island of Marajó would become the center of the sturdy and inventive civilization we know it to be. Situated almost below the Equator, with a surface area of 14,000 square miles, it is the largest of the islands that have been formed by the alluvial deposits of the Amazon. It owes its configuration to a slight, rocky basset along the eastern coast. A part of its periphery and its surface, the land and the waters, are as yet inadequately separated. As a result the muddy plains which during the rainy season are transformed into lakes and swamps become, during the dry season, fields whose soil is hardened and crackled by the sun. These stretches of land, alternately moist and dusty, are sprinkled with clumps of palm trees that reveal the presence of an *ilha* (island), an area that rises above the level of the waters. It is here that the archeologist is most likely to find pre-Columbian relics. Marajó, which today is a cattle-raising region, is

not a likely place for farming. For this reason it is difficult to understand why it had become the habitat of a sedentary people who had achieved a certain subtlety in the arts, since the natural resources of the area were more conducive to the life of nomads subsisting on hunting, fishing, and fruit-picking.

It is unfortunate that the Indians of Marajó Island were killed off before anyone had taken the trouble to describe them. No missionary has handed down information about them comparable to the kind of knowledge we possess about other regions of Brazil. The proximity of Belém do Pará, capital of the Portuguese Amazon, was one of the major factors that contributed to the extinction of the inhabitants of Marajó. As early as the seventeenth century they became the prey of slave-hunters. This, together with epidemics, explains why they had completely disappeared by the beginning of the nineteenth century.

The scant information available in official documents contains no allusion to a way of life or to industries that might have been appropriate to the unknown people who made the island famous. Therefore it is hardly likely that the Indians—the Arucas or others—who were in contact with the Portuguese could have been the continuators, albeit decadent ones, of the Marajó civilization. Moreover, no tomb belonging to this cultural phase has as yet yielded any object of European origin, in contrast to neighboring civilizations that survived, until the middle of the colonial period, in the south of Guiana and in the islands north of the Amazon. It seems evident that the Marajó civilization had already expired when Orellana sailed down the Amazon in 1541.

All that we know of the way of life, the social structure, and the beliefs of the people who have bequeathed to us such brilliant testimony of their existence is confined to the data of archeology. That they possessed an advanced political and social organization can be inferred from the very size of the collective undertaking that was able to erect mounds 26 feet high, 400 feet long, and 13 feet wide. The necessity of sheltering villages and cemeteries from the rivers would not have sufficed to mobilize the large number of groups that moved all this soil with the most rudimentary of tools. Leaders were needed to co-ordinate and direct the work. The luxurious character of some of the tombs testifies to the existence of rich and powerful men. The funeral rites combined an unpretentious burial—that is to say, inhumation of the dead man's bones in an urn—with cremation. Clay figures of women were identified, perhaps erroneously, as idols. The presence of clay

## Notes and Discussion

spindles as well as of certain decorative motifs of pottery attests to a knowledge of weaving. As for clothing, the only relics that have survived are the famous terra-cotta loincloths, or *tanga*, to which we will refer later. Because the island of Marajó was almost entirely devoid of rocks, stone objects were extremely rare. Consequently, ceramics are virtually the only things that remain of this enigmatic people. They suffice to justify their fame.

Marajó pottery is characterized by the simultaneous use of several decorative techniques: modeling, painting, and carving. If, for example, one examines the large burial urns—the finest examples of this type of ceramics—one notes, first of all, strongly stylized human faces in bas-relief, modeled embellishments depicting animated beings—men or animals—the only readily identifiable image being that of the cayman. The empty spaces are decorated with geometric patterns which include volutes, saw-cuts, zigzags, “hands with widespread fingers,” “crosses with escutcheons,” etc. To create these adornments, the artist often drew deep lines in clay that was still soft so that, once painted, the whole suggested cloisonné enamel. Occasionally, the designs were carved in the engobe with a stiletto so that they emerged red on a white background or vice versa. Black or brown stripes emphasized the contour of the engraved designs. Extreme stylization of the human face resulted in a T-shaped motif which the artist used most effectively. Similarly, stripes that at first glance seemed to be sprinkled with dots and symmetrical lines proved upon examination to be so many human faces reduced to eyes separated by vertical lines. On certain burial urns the painting and modeling together evoke the summary image of a human being. The lozenge-shaped eyes are often traversed by an oblique line that makes the face look sad. Perhaps in this way the artist wished to suggest mourning or grief, although it is always hazardous to attribute our own symbolisms to a civilization that has disappeared.

Like the Sumerians and the Babylonians, the inhabitants of the Amazonian delta fashioned out of clay objects which are usually made of other materials. Thus terra-cotta chairs were found which remind us of those that modern Indians carve from blocks of wood. Cylinders also made of clay seem to have been used as labial or auricular adornments; but the strangest items among the Marajó ceramics are the triangular plaques, slightly convex and perforated at each end. The shape of these objects and certain worn places in them, as well as their association with female skeletons, gave them the name of *tanga*, or loincloth.

They have been compared to the triangular pieces of bark that the Indian women of Haut-Xingú still wear. A recently discovered tiny statue which has been regarded as suggesting one of these articles of "clothing" would seem to confirm the archeologists' hypothesis as to the purpose of these objects. However, in the collections, there are such large and heavy *tangas* that they can scarcely be identified as loin-cloths. In the absence of any better explanation, they have been catalogued as "ritual objects used in ceremonies of fecundity."

No less enigmatic is the significance of small statues portraying a woman crouching, her hands on her hips. These figurines, akin to those discovered in such great quantities in Venezuela and in Central America, testify to cultural contacts and to an interchange of influence between peoples throughout the Antilles Ocean who have disappeared today. We do not know and doubtless never will know why these objects enjoyed such a vogue. Did they have a religious function? This has been asserted, but no proof has been given.

#### THE CIVILIZATION OF SANTARÉM

The honor of having discovered the second of the great Amazonian civilizations belongs to the famous German-Brazilian ethnographer Curt Nimuendajù. During one of his trips to the Amazon a German missionary told him that the children of Santarém, a city at the mouth of the Tapajoz, were playing with little clay figures and animals called *caretas* ("masks") which they had picked up from the streets after the rains. Intrigued by this tale, Nimuendajù went to Santarém in 1922; there he discovered the former site of a large Indian village. During the ensuing years he explored other archeological sites of the region. His researches were greatly facilitated by the blackish color of the soil in places that had once been inhabited. Often, too, hillocks marked the location of ancient huts, and the outline of roads that had connected the villages was still visible in spite of very tall trees obstructing the path. Nimuendajù was able to pick out more than sixty-five archeological terrains, but neither he nor his successors ever discovered any tombs; this explains why so few complete and intact urns have been exhumed in contrast to the thousands of fragments and broken pieces that were strewn over the ground, sometime forming layers 5 feet thick. In the city of Santarém, which now occupies the site of an Indian village, whenever there are heavy rains, the torrents of water that run

## *Notes and Discussion*

through the streets carry innumerable fragments of pottery into the river.

The style of the Santarém pottery is very different from that of Marajó. It shows a definite tendency toward designs in bas or high relief, toward intricate and capricious forms. It has often been termed "Baroque," and Nils Erland Nordenskjöld even wondered whether it had been inspired by the art of the Jesuits. We might add that even he rejected a hypothesis that was entirely unwarranted from a historical point of view and which an analysis of the decorative motifs completely invalidated. On the other hand, the caryatids and the figures in relief which embellished the great urns of state offer striking analogies with the adornments of the pre-Hispanic ceramics of the Guianas, Trinidad, and the Greater and Lesser Antilles. The ceramics of Santarém are less readily definable than those of Marajó precisely because of the capricious and abundant inventiveness that characterizes them. We will confine ourselves to describing a few of the pieces that are most typical of this kind of pottery.

The so-called "bell-shaped base" urns are of a globular or oval shape, held together on each side by two heads of birds with pronouncedly crooked beaks. The piece of pottery, set on a conical base, is crowned by a multibordered neck and by figures and animals carved in relief. As for the "caryatid vessels," these are bowls adorned with ornithomorphic inlays and appendices resting on a ring worn by three tiny figures crouching along the rims of a base shaped as an hourglass. The ornamentation in high relief is accompanied by motifs that are engraved in the clay. These motifs are geometric in character, although occasionally stylization of people or animals can be recognized. The Brazilian archeologist Frederico Barata collected a series of designs in the same motif and attempted to reconstitute a stylistic evolution going from realism to pure abstraction. Thus, for example, pictures of coiled serpents gradually became mere volutes. However, this evolutive theory about the origin of ornamentation, which goes back to Stölpe, has ceased to be looked upon favorably ever since it appeared that, in many instances, the very reverse took place: a purely geometrical theme often suggested the form of an animal and thus was transformed into a representational design.

When contrasted with Marajó pottery, the Santarém style seems realistic. Whereas the animals designed in high relief that adorn the urns of the Marajó civilization are so unrecognizable that they are

termed "vitamorphous" embellishments, the animals that the Santarém potters used as models are readily identified; for instance, the jaguar with open mouth and spotted body; the agouti, seated on his rump and nibbling fruit; the toucan; and the vulture. Interested as the ceramicists were in the local fauna, they nonetheless devoted a large share of their attention to man. The small people standing on the bodies or on the rims of urns wear diadems and plumes in their hair and heavy adornments on their ears.

The realism that is manifest in the modeling of ornamental figurines is even more marked in certain anthropomorphous urns; they are almost "portrait urns." Although they did not achieve the mastery of the Peruvian potters, the Santarém artists attempted to reproduce familiar gestures of the people they fashioned. For example, one of them has turned his head and is resting it on his right hand, while his left arm hangs down along his thigh; a crouching woman is sucking her foot.

#### OTHER CENTERS OF CIVILIZATION IN THE AMAZON

There is every reason to hope that other archeological centers, perhaps as important as that of Santarém, which was still unknown to us only a quarter of a century ago, will be uncovered by future scientific explorations. We are already familiar with a whole series of sites that have provided us with pieces of pottery in which we perceive affinities either with Marajó or with Santarém art. However, these lucky finds correspond to local cultures whose age, diffusion, and characteristics must be more precisely defined. The limited scope of this article makes it impossible to give a detailed description of these archeological sites, yet a few of these regional civilizations are deserving of brief mention.

The coast of Brazilian Guiana and the islands situated to the north of Marajó Island were formerly occupied by unidentified peoples who have left many traces of their presence behind them. At Counany, in vaulted, subterranean chambers, funeral urns and pottery were found that combine elements of high relief with painted motifs. In the same region, at Maracay, funeral urns were discovered that have a curious form. They portray people seated on a little bench, their hands on their knees. The cylindrical body, the tubular limbs, and the rounded or conical head, in the shape of a lid cover, suggest people who might have been made of stovepipes. Glass beads of European origin found inside the urns leave little doubt as to the period when they were fashioned—

## *Notes and Discussion*

probably the seventeenth or eighteenth century. Furthermore, some vessels of a still later date portray bearded individuals.

The region of Mojó in Bolivia, although situated at the periphery of the Amazon and thousands of miles from Marajó, had also been the habitat of a people who were potters; they erected hillocks upon which they built their houses and under which they buried their dead. Today these abandoned mounds are covered with debris.

Nordenskjöld's excavations in some of these sites, though they have been quite fruitful, give us but scant notion of the archeological wealth hidden there. It is quite probable that these relics were the work of the Mojó Indians, whom the Jesuits evangelized and whose descendants still live in the same region. Originating in the Amazon, the ancestors of these Indians brought to the foot of the Andes a civilization adapted to the conditions of forest life, yet one in which we discern, as we did in regard to Santarém, the remote influence of the civilizations of Central America. In this new habitat the Mojó Indians borrowed variously from other peoples of the Andes perhaps as long ago as the period of the Empire and of the Tiahuanaco civilization, which preceded the Inca kingdom by five centuries.

### THE ORIGINS OF THE INDIAN CIVILIZATIONS IN THE AMAZON

What are the origins of Amazonian civilization? Can they be attributed to historically known people? In what epoch did they flourish? How widely dispersed were they, and what influence did they exert on South America?

Historical resources are of but little avail in attempting to resolve these problems. In admiring Marajó and Santarém pottery in a museum, we can hardly repress a feeling of irritation against the first explorers of the Amazon who proved to be so lacking in curiosity about the customs and crafts of Indians with whom they frequently had friendly relationships. However, they did observe a few striking details which, when contrasted with archeological discoveries, acquire a fresh significance. Let us take, for example, the famous tale of Father Carvajal, who accompanied Orellana when he sailed down the Amazon in 1542.

Referring to the pottery of the Omagua Indians, Carvajal assures us that it was "the most beautiful in the world, superior to the pottery of Malaga, that it was glazed and enameled in all colors and so altogether dazzling that it filled one with amazement, and that it was very skil-



fully designed and painted because these natives naturally fashion and paint everything in the Roman manner.”

These encomiums are scarcely applicable to Santarém ceramics, or even to those of Marajó, for they were neither glazed nor enameled; but they can be bestowed upon the pottery of the Upper Amazonian Indian who fashions urns of great quality even today. These are painted in black and red on a cream-colored background and coated with a vegetable glaze that makes them most attractive. One century later, Father Cristóbal de Acuña, one of the first white men to go up the Amazon as far as Cordillera, referred to the wood sculptures of the Caripuna and Zurino Indians. But all these descriptions have to do with the tribes of the Middle and Upper Amazon; they are not concerned with those of the Lower Amazon, whose civilization was far more advanced. We remarked before that no ancient text mentions the ceramics of the Marajó.

On the other hand, ancient chronicles, although they are mute as regard Santarém pottery, provide us with very useful information about the culture of the Tapajo Indians, who disappeared during the eighteenth century and whose level of civilization was sufficiently advanced to warrant our attributing to them the ceramics discovered on their territory. During the seventeenth century the Portuguese still feared the poisoned arrows of the Tapajos; the latter worshiped painted idols and adored the mummified bodies of their ancestors. Just like certain modern Amazonian tribes, the ancient Tapajos allowed the cadavers of their relatives to rot, then they pulverized the bones in order to drink them diluted with corn beer. In fact, despite many attempts, as yet not a single cemetery containing objects that belonged to this tribe has been found.

The most precious objects of the Amazon are the famous *muyrakita*, amulets in jadeite, usually shaped like a batrachian. Father Heriarte assumed that the Santarém Indians used these objects for commercial purposes. He stated: “It is commonly said that these stones are fashioned in the Tapajos River with a green clay that is molded in the water. The Indians make them under water in the shape of long, round pearls, drinking cups, birds, grasshoppers and other images. When objects thus modeled are taken out of the water, contact with the air transforms them into very hard, green stones.” Naturally, these details are the purest fantasy, but nonetheless they reveal the place where these pend-

## *Notes and Discussion*

ants and amulets in jadeite and amazonite were molded.

A powerful political organization, the worship of ancestors, commerce in ceramics and stonework—all these are signs of a level of civilization that tallies with the artistic quality of the Santarém findings.

Therefore we are almost certain that the civilization of Santarém still flourished at the beginning of the seventeenth century and that it was destroyed by the Portuguese. The excavations undertaken in the black soil of Santarém brought us no stratigraphic information, and none of the modern methods of archeology was applied in the exploration of these sites. Lacking even a relative chronology, it is impossible to reconstruct the origins or the evolution of the Santarém civilization. The situation is quite different in regard to Marajó, where the admirable work of Mrs. Betty Meggers and of Clifford Evans<sup>1</sup> has shed light on the ancient history of the primitive cultures which succeeded one another. Today we know that the so-called "Marajó" civilization emerged at a relatively late date and had been preceded by three "cultural phases" of a very different nature. The first inhabitants of the island were a hunting and fishing people who left few traces of their presence. They were followed—perhaps during the twelfth century A.D.—by a people whose cultural level was close to that of the modern Amazonian tribes. They introduced into the island a civilization that was termed "Anatuba," the name of the principal site whence its relics were exhumed. The "Anatuba phase" is characterized by rather ordinary pottery, adorned solely with engraved lines. The depth of the archeological layers leads one to conclude that the same site was occupied for several centuries; but the absence of any European object justifies the assumption that the Anatuba phase occurred prior to the discovery of Brazil. The so-called "Mangueiras" stage followed, and it, too, corresponds in time with the invasion of tribes whose way of life was adapted to the tropical forest. This second wave of emigrants spread over a large part of the island and even to Guiana. During the course of the ages they were subjected to the culture of Anatuba. Since no cemetery belonging to this people has been discovered, we are inadequately informed about their funeral rites. However, we do know that their urns have engraved lines and that they made clay pipes and labrets. They, too, disappeared before the arrival of the white man.

1. *Archeological Investigations at the Mouth of the Amazon* (Bureau of American Ethnology Bull. 167 [Washington, D.C., 1957]).

Finally, a third people, those of the "Formiga phase," appeared on the Marajó scene before the advent of the true Marajó civilization. This new group was not fundamentally different from the preceding ones; its pottery was also of inferior quality, even though it already built its homes upon mounds and burned its dead.

The archeological phase that corresponds to the Marajó civilization is therefore the fourth on the island. It goes back to the thirteenth or fourteenth century, the date when it achieved its full development. There is no apparent connection between it and the preceding and far more primitive cultures. Far from having developed on the spot, the various archeological sites present us, on the contrary, with an illustration of its slow decadence. During the course of the ages the pottery became less varied and elaborate, and the embellishments were drawn or modeled with less care, which indicates that the art of ceramics had ceased to be a specialized industry. Social disorganization is reflected in the uniformity of the style of sepultures. Thanks to similar indications, we can follow the decline of the Marajó civilization until the time when it culminates by merging with the cultures of the "tropical sylvia."

Archeology, then, teaches us that the "Marajós" came late and that they imported an already mature civilization which rapidly grew decadent. Can it reveal to us the place where this culture was shaped and from where it emigrated? At first the style of Marajó was likened to that of Chavin in Peru, but, in spite of some vague resemblances, the chronological discrepancy makes it impossible to attach great importance to such analogies. The civilization of Chavin, one of the most ancient in Peru, was in full flower several centuries before the Christian Era, while that of Marajó developed perhaps fifteen hundred years later.

Given the current state of our knowledge, it would seem that the cradle of Marajó civilization must be located on the eastern slopes of the Andean Cordillera, at the Equator, or in Colombia. For a long time archeologists explained the formation of the primitive cultures of Venezuela by migrations that arrived by foot from the Andes or else used the waters of the Amazon or the Rio Negro. The Amazon has been explored so inadequately from an archeological point of view that the itineraries attributed to these migrations are inevitably subject to revision. This is all the more true because the entire region where the northern tributaries of the Amazon take their source is still terra incognita to archeology. We hope therefore that some day chance will present us with relics of the cultures from which the Marajó civilization

## *Notes and Discussion*

was derived. While awaiting this lucky day, relationships between Marajó and the ancient Andean civilizations cannot be established save on the basis of comparison between certain stylistic details and types of pottery. When we look at a map and point to the regions in South America where similarities between primitive cultures and the Marajó civilization are most abundant, we realize that these areas seem to be clustered around northern Peru, the Equator, Colombia, and Venezuela—in other words, in the northwest section of the continent. Among the common features which have attracted the attention of archeologists, we can cite as examples the terra-cotta benches, the urns with an annular base, those with hollowed rims, the technique of cloisonné enamel, and pottery adorned with wing-shaped designs.

Lacking a sufficient fund of archeological material, is it possible to find techniques and forms of art among contemporary Indians that are somewhat similar to those of Marajó? As we have already pointed out, the tribes of the Upper Amazon continue to fashion ceramics of a high aesthetic quality. For some time archeologists have called our attention to the resemblance between the painted or carved Marajó urns and these modern receptacles painted in black and red. From this they have concluded that the Ucayali, Huallaga, and Napo tribes had preserved, as survivals, certain aspects of the ancient Amazonian art. This hypothesis, although it is an engaging one, does not explain the disappearance of other decorative motifs, particularly techniques as typical as cloisonné enamel or carving. Meggers and Evans are inclined to believe that both the ceramics of Marajó and those of the Upper Amazon derive from some common source which has not, as yet, been identified. In support of this theory they remind us that on the Rio Napo, one of the Amazon tributaries whose source is in Colombia, funeral urns and pottery were discovered which, in many respects, are akin to those of Marajó. Some of these urns bear such a striking resemblance that it was believed they were procured through trade at the mouth of the Amazon.

The area where certain cultural elements characteristic of Marajó have spread is not limited to Colombia or the Equator. Many of these elements are to be found in the tropical plains of Bolivia or in the valleys of the eastern slope of the Peruvian Andes. This should not surprise us. We have known for some time that the influence of the civilizations of northwest America has made itself felt among peoples living all along the chain of the Andes, so that techniques and inven-

tions peculiar to Central America could have spread from tribe to tribe and reached the very heart of the South American continent.

The civilization of Marajó is in great part a mixture of "Andean" and "Amazonian" elements. In some ways the Marajó peoples resembled the modern Indians of Brazil and Guiana; in others they were similar to the semicivilized Indians of Colombia, whom the Spanish called "gentes de razon." And the region where this meeting of different civilizations could have occurred is precisely either at the Equator or in Colombia. Brazil and Colombia have been in direct contact with tropical cultures far more than has Peru. It was easy for mountaineers to penetrate the Amazonian jungle, just as it was easy for the "savages" of the forest to invade the cold lands because of the valleys that led to the high plateaus. The hybrid nature of the ancient Colombian cultures doubtless enhanced the ability of these emigrants to adapt themselves to the tropical environment.

The influence that Andean civilizations exerted upon the barbarians living east of their domain is somewhat the consequence of very active commercial relations. The inhabitants of the high plateaus needed parrot plumes with which to adorn themselves; they also required resin, wax, hard wood, and bamboo for their industries as well as medicinal herbs for their sick. The "savages of the forest" were the only ones who could supply them. Even today the Quechua Indians come down from their mountains in order to procure these same products. In exchange, the forest Indians were given metal objects. The gold that the Spanish and German conquistadors found in such large quantities among the coastal tribes of Venezuela and Colombia came from the Antioquia region via two commercial routes, one of which followed the course of the Meta and the other the southern slopes of the Venezuelan Cordillera.

In 1501 a Portuguese sailor on the Brazilian coast acquired a bronze ax. When Solis and Cabot came to Río de la Plata, the numerous objects in silver and even in gold that the Indians possessed proved to be their first clue that there existed toward the west a region rich in metals. The words "Río de la Plata" and "Argentine" perpetuate for all time the memory of the commerce in metals which originated in ancient Peru.

At the same time that necklaces, bracelets, pectoral plaques, and diadems in gold and silver reached the Indians of the Amazon and of Paraguay, jumbled accounts were also heard of the Inca Empire. Even before Pizzaro disembarked at Peru, the Spaniards, who were preparing to cross the Chaco deserts, had heard, on the banks of the Río Paraguay,

## *Notes and Discussion*

of a mountain people who lived in stone huts, wore long garments, and had domesticated "long-haired deer" (llamas and alpacas). The Guarani who told them these tales informed the Spaniards that this marvelous country was subject to "Candire, who was the lord of true metal and of all good things." Similarly, Orellana, during his famous trip down the Amazon, collected fabulous tales about the Inca Empire, even among tribes located on the lower stream of the great American River.

The exaggerations with which the Indians embellished their description of the Inca Empire or the Chibcha kingdoms, the confusions that arose because of their ignorance of the language, resulted in the birth of the Eldorado myth which stimulated the Spaniards irresistibly and led them into incredible adventures in the heart of the great Amazonian forest. Once Peru was discovered, the conquistadors identified the source of this wealth, described to them by the natives, not with the Inca Empire, which they conquered, but with a fabulous kingdom, El Paititi or El Gran Mojo, located somewhere east of the Andes. It was not until the seventeenth century, when the Jesuits penetrated into the heart of the Amazonian forest, that the Spaniards renounced their pursuit of this mirage.

Today the supply of metal is exhausted, yet the consequences of the commercial relations between the mountain peoples and those of the forest are still perceptible. The influence of the old Andean civilizations is evident in forms of art, in certain ornaments, and in customs and myths that have been tenaciously preserved among Amazonian tribes even though these disappeared from their place of origin four centuries ago.

### THE TROPICAL FOREST AND CIVILIZATION

The hypothesis of a migration starting from the Andean region explains the advent, in the midst of a tropical jungle, of a relatively advanced civilization; but the decline and disappearance of this civilization after a few centuries raise problems whose scope greatly surpasses the framework of American prehistory. It is a temptation to use the presence of barbaric tribes as an explanation for the end of the Marajó civilization. But archeological findings point to a gradual decadence, not to the supplanting of one culture by another. When Indian tribes of the historical period were scattered over the ancient territory of Marajó, its inhabitants had disappeared or were scarcely different from their less civilized

neighbors. What affliction, then, caused this civilization of the tropics to perish? For archeologists who, thanks to their patience, were able to resurrect the history of Marajó, the answer to this question is devoid of even the slightest doubt: the Marajó civilization died because, in its initial form, it could not survive in the environment in which it had been established.

The reaction of historians and anthropologists to a naïve geographical determinism has often led them, in their interpretation of the facts, to neglect the limitations of the environment. This is notably the case in regard to the humid tropics. The large equatorial forest is scarcely propitious for the development of a civilization. Contrary to a widespread illusion, the luxuriant tropical vegetation is spread over a soil that can nourish only a sparse population. Whenever the forest yields space to food-producing cultures, the soil, alternately washed by the rains and dried by the sun, loses its thin layer of humus as well as the chemical substances that insure its fertility. After a certain number of years the fields wrested from the forest have to be abandoned. The agriculturalists then turn to yet another wooded area and clear it with their axes. The fallen trees are then burned. The new "garden" thus achieved will in turn be abandoned until, after ten or twenty years, when the natural vegetation has been reconstituted, it can again be developed. This system, admirably described by Pierre Gounou,<sup>2</sup> "shows great care in respecting the balance of nature as well as the intention of disturbing as little as possible the slow and delicate processes by which the soil is able to hold up and preserve its fertility under the difficult conditions occasioned by the tropical climate."

Societies that practice this type of agriculture are characterized by a low demographic density and a certain nomadism. Because the agricultural yield is scant and because there are a good many fallow fields, vast areas have to be cultivated in order to meet the demands of the inhabitants. If the soil is cultivated too intensely, the balance between the population and the natural resources is upset. Farmers have either to seek new lands or to resign themselves to vegetating on decreasingly fertile ones.

Such was doubtless the fate of the mysterious Indian tribe that settled at the mouth of the Amazon. In the beginning it must have been a large tribe—the size of the mounds they built testify to this—but its

2. *Les Pays tropicaux* (Paris: Presses Universitaires, 1953), p. 36.

## *Notes and Discussion*

prosperity did not endure more than a few generations. After it had cleared the virgin forests on its territory, it was reduced to cultivating an impoverished soil until the moment when, food resources having become scarce, the very foundation of its civilization was affected. Lacking a surplus production, it could no longer continue its specialization in crafts. The result was a rapid deterioration in ceramic art. The decoration on the urns collected from more recent sites is coarse in comparison to that which graces earlier finds. Generalized poverty must also have leveled the social classes and transformed a hierarchized society into communities with undifferentiated structures. In short, the Marajó civilization tended increasingly to resemble that of the Indian tribes whom the Portuguese killed off during the seventeenth century.

The fate of this civilization reminds us somewhat of that of the ancient Mayan Empire in the tropical plains of Guatemala. Having shone brilliantly for several centuries, it disappeared mysteriously during the sixth century A.D.; the relinquishment of its sites cannot be explained by invasions, civil wars, or epidemics. It seems that the end of the ancient Mayan Empire coincided with the total exhaustion of its soil. When arable land was too remote from urban centers, the population had to abandon the sites in order to settle in regions where it was easier to provide the necessary food.

The example of the island of Marajó illustrates once again the harmful influence which the poverty of tropical soil exerts upon the development of any somewhat complex civilization. To be sure, there were brilliant civilizations in Asia which prospered in a tropical environment, but we must not forget that these civilizations were initially established in other climates and that they occupied warm and damp areas very gradually. Moreover, in the inundated rice fields they possessed an economic foundation which the native populations of America and Africa never knew. The peoples of the Amazon who practiced an itinerant agriculture by clearing the forests probably achieved a level of civilization compatible with their habitat. The proof of this is the fact that the Andean and subsequently the European populations had to adapt themselves to the Amazonian way of life and to its methods of cultivation when they settled in the same environment. In America, as elsewhere in the world, the fate of civilization in tropical countries has been and remains subject to heavy mortgages.