PREHISTORIC PORTO RICAN PICTOGRAPHS

By J. WALTER FEWKES

Introduction

Not the least significant of the many survivals of a prehistoric race in the West Indies are rude pictures cut in rocks and called pictographs or petroglyphs.[1] A study of their forms, geographical distribution, and meaning is an important aid to our knowledge of the origin and development of Antillean culture; it affords valuable data bearing on the migration of the race and points the way back to its ancestral or continental home.

Although there exists considerable literature on the pictography of the Lesser Antilles, the Bahamas, Jamaica,[2] and Porto Rico, little has yet been published on that of Cuba and Santo Domingo. Both of the latter islands were thickly settled at the time of their discovery, and we should expect to find in them many pictographic evidences of prehistoric occupancy.[3] Undoubtedly continued research will make them known to anthropologists.

The most important contribution to the pictography of Porto Rico is by A. L. Pinart,[4] whose pamphlet, although rare, is accessi-

[1] Mallery (1893) restricts the term "petroglyph" to productions where the picture "is upon a rock either *in situ* or sufficiently large for inference that the picture was imposed upon it where it was found." Following this restriction the majority of pictures here considered would be called "petroglyphs"; but as this article contains other forms, I retain the older term "pictograph" for both kinds.

[2] J. E. Duerden, "Aboriginal Indian Remains in Jamaica," *Journal of the Institute of Jamaica*, vol. III, No. 4.

[3] While in the Dominican Republic I heard of several pictographs, among others a cluster on the shore of Lake Henriquillo, but I did not inspect them. According to H. Ling Roth ("The Aborigines of Hispaniola," *Journ. Anthropological Institute*, vol. XVI, p. 264), "Descourtilz also (*Voyage d'un Naturaliste*, Paris, 1809, vol. II, pp. 18–19) says rock carvings of grotesque figures are to be found in the caves of Dubeda Gonaïves, in those of Mont Sélle, near Port-au-Prince, and in the Quartier du Dondon near Cap François (Cape Haïtien)."

[4] *Note sur les Pétroglyphes et Antiquités des Grandes et Petites Antilles*, Paris, 1890. Folio facsimile of MS.

ble in part through extracts published by Mallery.[1] The former authority spent some time in Porto Rico and was the first to point out the wealth of pictographic material on the island. I have seen many of the pictographs described by him, and have independently rediscovered several others which he mentions. His pamphlet is an important contribution, although on account of its rarity it has been overlooked by some of our foremost students.

Among other important contributions to our knowledge of Porto Rican pictography may be mentioned the small pamphlets by Dumont and Krüg,[2] both of whom practically consider the same specimens, having apparently derived their knowledge not from personal inspection but from a manuscript preserved in San Juan. The pictographs which they describe, and of which Krüg gives a full-page plate, are said to be on a rock called *Piedra de la Campana* ("Bell stone"),[3] poised on two upright rocks in the middle of the Rio Grande de Loisa, not far from the town of Gurabo.

A perusal of these publications induced me to visit Gurabo, and although I was not able to find these pictographs, I was rewarded by the sight of a boulder, also poised on two upright rocks, situated in the Loisa river half-way between Caguas and Gurabo. This stone, locally known as the *Cabeza de los Indios* ("Head of the Indians"), was found to bear several rude incised figures which were too illegible to be identified.

A recent addition to our knowledge of Porto Rican pictography is a brief article by O. W. Barrett in the *Popular Science News*.

[1] "Picture-writing of the American Indians," *Tenth Annual Report of the Bureau of Ethnology*, p. 136, 1893. Since writing the above lines I have received a copy of this work, which is particularly important as pointing out localities in Porto Rico in which pictographs occur. Pinart mentions these figures from the following places: In the caves of Bonilla, Conejos, and Islote, near Arecibo; Arcillos and Planados, near Ciales, and Malloquin, at Cabo Rojo. He refers to river pictographs near the mouth of the Cano del Indio at Ceiba, at the junction of the Rio Ceiba and Rio Blanco, and at the Loma Muñoz, above Rio Arriba, in the Fajado district. The *piedra pintada*, or painted rock, said to be situated on the road from Cayey to Aibonita, and the rock with pictographs on Don Pedro Farez's farm near Carolina, are possibly "pillar stones." Pinart's illustrations are too imperfect to aid the student in identifications.

[2] L. Krüg: "Indianische Alterthümer in Porto Rico," *Zeitschrift für Ethnologie*, Berlin, 1876. Dr D. Enrique Dumont, *Investigaciones acerca de las Antiqüedades de la Isla de Puerto Rico* (*Borinquen*), Habana, 1876.

[3] Said to have been used as a bell to call the natives together.

There are also scattered references to the subject in popular books on the island which have appeared since the American occupancy; these have a value in pointing out otherwise unknown localities in which pictographs may be found. Porto Rico apparently has a larger number of these rock pictures than one would at first suspect, but in a short article I cannot hope to do more than to call attention to a few typical forms.[1]

Classification of Porto Rican Pictography

In a general way Porto Rican pictographs fall under the following heads[1] with reference to the localities in which they are found: (1) River pictographs, (2) cave pictographs, and (3) pictographs on the boundary stones of enclosures identified as dance plazas. Of these the first group contains perhaps the best specimens of stone cutting, but those of the third class are in many instances very finely executed. The river pictographs are commonly found in isolated valleys of the high mountains, and, as a rule, are cut on hard rocks the surface of which has been worn smooth by the water — two factors quite favorable to good technique. The caves of the island are confined to a soft, calcareous formation, the surface of which is never very hard and is seldom smooth. The pictographs in these localities, while more easily cut than those on river boulders, are more readily effaced by erosion, and are seldom as finely executed as those of the river type. The pictographs found on rocks surrounding dance plazas are, as a rule, finely made and well preserved. In all three types it would appear that greater care was given by the Antilleans to the technique of pictographic work than by contemporary peoples in North America north of Mexico.

River Pictographs

Some of the best specimens of aboriginal Porto Rican pictography were found on boulders in the rivers or in the vicinity of running water. They often occur on rocks which rise out of the

[1] Dr Stahl, who has published the most complete work on the Borinquen or Porto Rican Indians, appears to have overlooked their pictographs.

[1] The claim that the prehistoric Porto Ricans possessed a form of hieroglyphic writing has not been substantiated. The "specimens" with these characters upon them are believed to be fictitious.

middle of streams or near waterfalls, so that it is not inappropriate to designate this type as river pictographs, to distinguish them from others found in caves or graven on the rude aligned stones which enclose ancient dance plazas. My studies of the river pictographs were mainly limited to those of the valley of the Rio Grande de Arecibo, one of the large rivers of the island, which rises in the high mountains south of Adjuntas and flows northward into the Atlantic near the town of Arecibo.

There are many evidences that there was formerly a dense Indian population along the fertile banks of the Rio Grande de Arecibo and its tributaries, and many indications that this region will later yield most instructive discoveries to the archeologist. The town of Utuado, which forms an especially good center for archeological work on the island, is situated in the high mountains about due south of Arecibo, on the right bank of the river, being readily accessible by the fine carriage road connecting Arecibo and Ponce. Its surroundings afford some of the most beautiful and picturesque mountain and river scenery on the entire island. Utuado occupies the angle formed by two rivers, one of which penetrates the isolated district of Jayuya (a most instructive region to the archeologist); the other is the main stream along which extends the road to Adjuntas, thence over the high sierras to Ponce. The town is situated in a territory formerly ruled by Guarionex, a cacique who, in the conquest of the island, is said to have led more than a thousand warriors against Sotomayor. We can still trace in the immediate vicinity of the pueblo several large village-sites and plazas where the Indians assembled for ceremonial and other dances, while near by are found some of the finest examples of pictography known in the island.

Among the many collections of pictographs found in the neighborhood of the town of Utuado, one occurs on a river boulder situated at the southeastern corner of the estate of Sr Roig. One can readily find this boulder by following the road from Utuado to Adjuntas, passing the Roig farm-house on the right, and continuing about three miles from the former town. The boulder lies on the right side only a short distance from the road, and is situated conveniently near a dance plaza which will be presently described.

The pictographs, some eight or nine in number (figure 1, plate XLV), cover the entire northern upper face of the boulder on a flat surface about fifteen feet above the base. Their general forms are as follows:

That shown in figure 2 is one of the best of the pictographs on this rock: it is well made and consists of a circular head with two projections or horns on the top, pits for eyes, and an oval mouth connected by a line which extends upward midway between the eyes. The oval body contains a median line with other lines partly effaced, parallel to one another and probably representing arms.

A second pictograph with a horned head (figure 3) resembles, in its general shape, the one last described. It has a circular mouth connected with the outline of the head. The body has a similar medioventral line with horizontal lines suggesting arms. Eyes are represented by small pits. It will be observed that these two pictographs are practically identical in all particulars.

A second kind of pictograph (figure 4), also found on the stone in the middle of the river, consists of two concentric circles in the inner one of which are pits representing the eyes and mouth. It has a mediofrontal line bifurcated at the center of the inner circle, and lines radiating from the outer circle,[1] suggesting a solar emblem.

Figure 5 is directly comparable with the last; but while the latter has the eyes and mouth in the middle of the inner circle, in the former the inner circle contains an elliptical body. On one side this figure has a projection which is indistinct on account of a fracture in the surface of the rock, but, like the preceding pictograph, lines radiate from the outer circle.

An instructive feature of several of these Porto Rican pictographs is the median groove which connects the mouth with the ring-groove bounding the face. This anomalous way of drawing the face reappears in certain South American or Colombian pictographs from Chiriqui,[2] and in one of the figures ascribed to Dr See-

[1] See the figure with similar radiating lines in Stahl's *Los Indios Borinqueños*, pl. IV, fig. 20.

[2] For McNeil's sketch of the pictographs see *Sixth Annual Report of the Bureau of Ethnology*, p. 22.

man we find also the added horns. Whether these figures may be rightly interpreted as "cup structures" or not is beyond the function of this article; but the existence of a connecting groove or line from the mouth to the top of the head between the eyes in pictographs from Colombia and Porto Rico is certainly suggestive. It may be added to the many other likenesses between the prehistoric culture of the Antilles and that of the aborigines of the northern countries of South America.

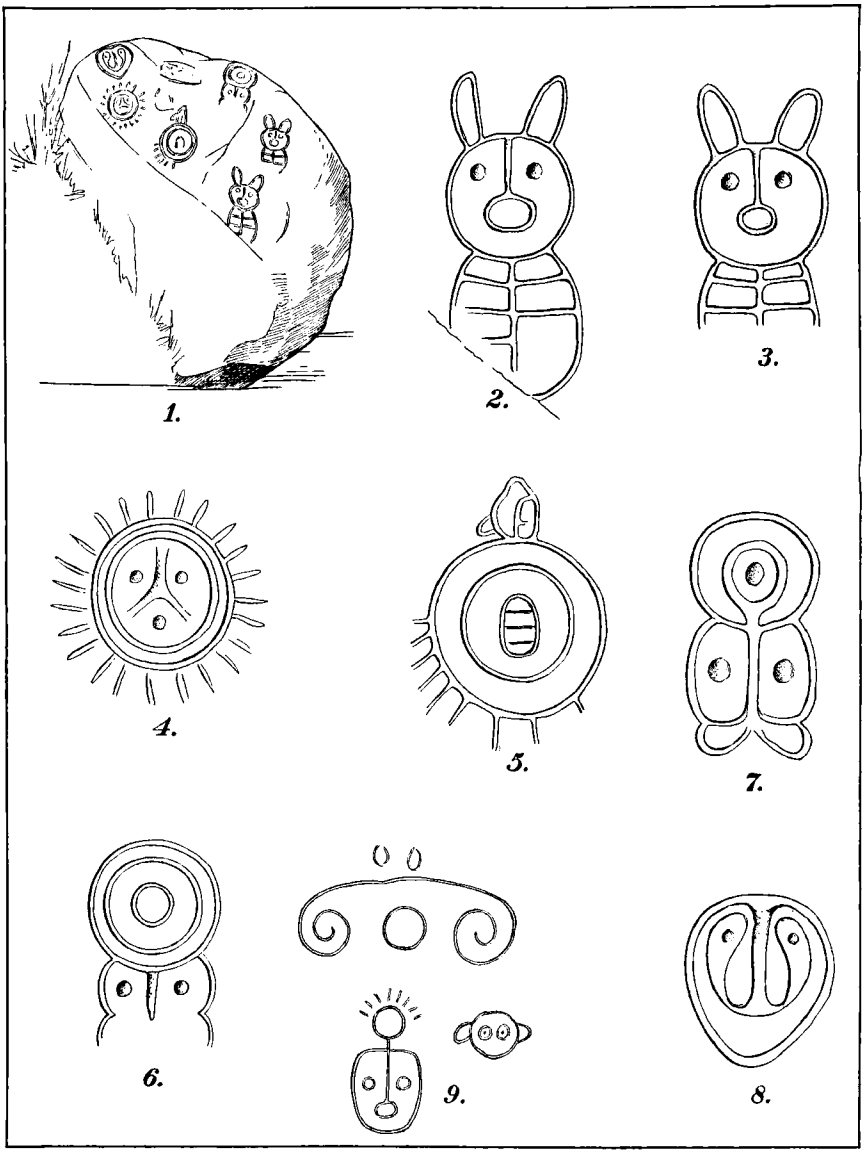
In figure 6 is shown a circular figure resting on another in which we detect eyes as if it were a head, and as though the intention had been to depict a body and a head with a crown or head-ornament. The face shown in figure 7 has eyes and a nose, but no mouth and no representation of the body. It is well made, and although differing somewhat from the others, is apparently not a new type.

Several smaller pictographs are found near those described, but they are so worn that their forms could not be definitely traced. They apparently are circles with enclosed pits, or geometrical figures, one of which suggests the moon.

The circle is a common form of ornament on many different specimens of Antillean handiwork, as pottery, idols, stools, and carved shells. Several mammiform idols which I have collected bear circles cut in low relief or incised on the back or apex. Mason[1] has mentioned the presence of this ornament on pillar-stones, and I am familiar with specimens of those problematic stone rings, popularly called "horse-collars," in the ornamentation of which the circle is also used as a decorative motive.

Perhaps one of the best examples of the use of the circle in ornamentation, and one which to my mind is highly suggestive, occurs on a rare and perhaps unique specimen of Antillean wood carving which I saw in the city of Puerto Plata, in Santo Domingo. This specimen represents a coiled serpent; it was carved from a log of black wood and has a highly polished surface. The details of the head, body, and tail, and especially of the mouth, eyes, and

[1] "The Latimer Collection of Antiquities from Porto Rico in the National Museum at Washington, D. C." *Smithsonian Report*, 1876. Reprinted with pamphlet on Guesde Collection, 1899.



PORTO RICAN RIVER PICTOGRAPHS

scales on the belly, are naturally and remarkably represented. Most significant of the noteworthy carvings on this serpent image are the incised circular figure in the middle of the back of the head and the four similar figures on the body. These circles alternate with triangular markings and other incised lines.

The association of these circles with the serpent idol (for as such we must regard this carving), and the interpretation of the circle as a sun symbol, are a suggestive repetition of a world-wide mythological conception of an esoteric connection of sun and serpent worship. In this individual instance, however, it may be no more than a coincidence. I am much more interested in the fact that the back of the head and body of this wooden serpent effigy is decorated with circles, from a wholly different consideration which can hardly be regarded as a coincidence. The backs of the heads of several mammiform idols have these same circular figures cut with great care; they also sometimes appear on the rear surface of the stone collars which I have identified as the backs of serpents. I believe that these facts, taken with others, reveal the true nature of "ring-stones" and mammiform zemis, to the elaboration of which hypothesis a special paper must be devoted.

The pictograph shown in figure 8 is oval in form with two pits representing the eyes and a median groove between them. Although this is a rare form, it is generally comparable with those previously described.

Two horns on the head of the pictographs recall similar appendages to the heads of figures from the island of Guadeloupe, reproduced in Mason's monograph. The proper interpretation of these appendages is beyond my ability, but attention may here be called to the fact that in stone amulets and in burnt clay figures the Antilleans often represented the fore-legs or arms above the head. In such cases, however, hands, fingers, or claws are commonly indicated, but no sign of these appears in the pictographs.

There is a second collection of well-preserved river pictographs on a rock in the middle of the same stream, higher up than those on Sr Roig's farm, near Sr Salvador Ponz's house. These also are readily accessible from the road, being cut on a boulder in the river just back of the out-houses of the residence. Their situation, how-

ever, is such that good photographs of them are impossible. An examination of these shows that they do not differ greatly from those just figured and described as on the boulder which marks the southeastern corner of the Roig farm. Of these I have made the sketches shown in figure 9, which are repetitions of those already considered, and which likewise occur on the walls of caves, as will later be described. In the upper member there are two spirals facing each other and united. Unlike the other spiral-formed pictographs this figure has a circle between the two terminal spirals. In a lower figure there is a repetition of the human face with its mouth connected by a median groove with the top of the head, and above it a circle with radiating lines recalling solar rays. This upper figure would appear to represent a crown [1] drawn out of perspective, and the radiating lines the feathers which were appended to it.

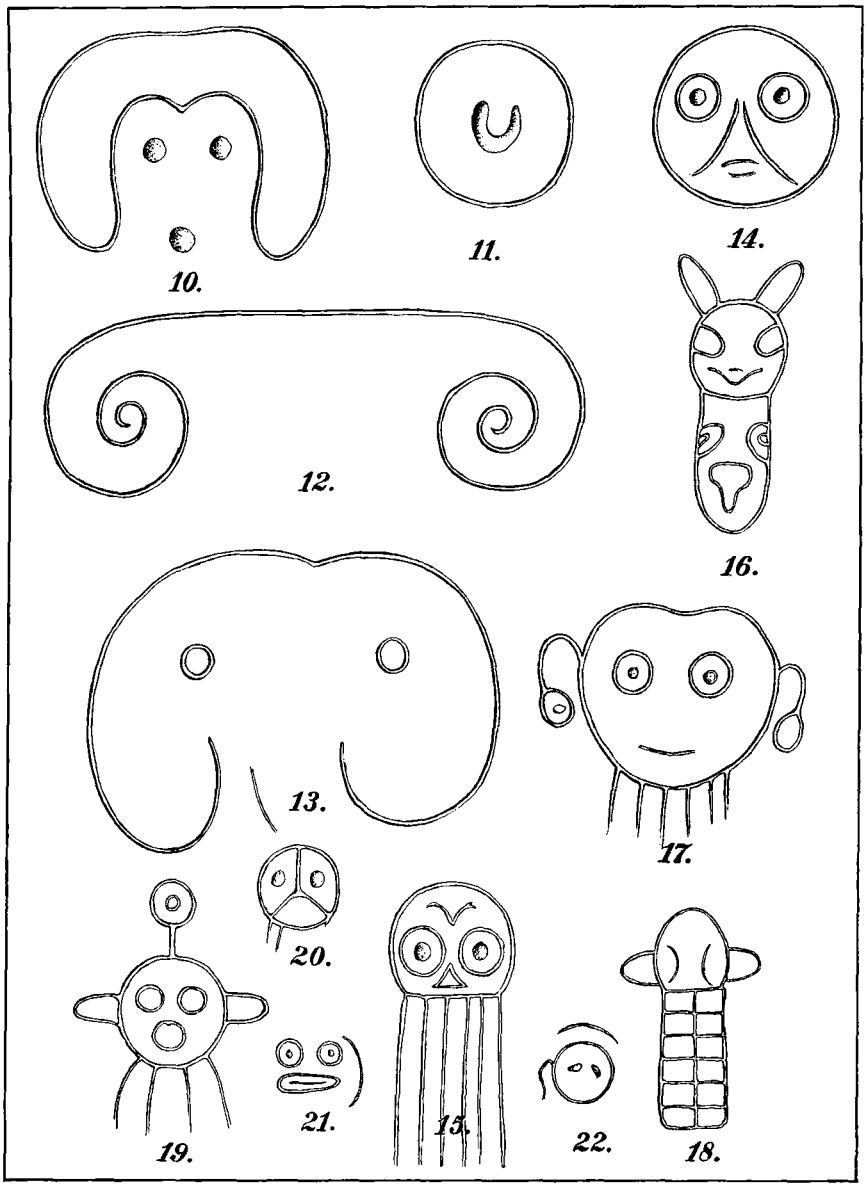
Still ascending the river a few hundred yards beyond the pictographs last recorded, one reaches a beautiful waterfall called El Salto de Merovis, situated about six miles from Utuado, where also is found a collection of river pictographs, but differing somewhat from those described. The river here plunges over high boulders and between immense rocks, resting here and there in deep pools. These smooth, water-worn rocks afford a fitting surface for pictographic work, specimens of which are found scattered over the larger boulders projecting above the falls and the still water of the pools. Several of these pictures are barely legible, others, although easy to trace, from their position are difficult to photograph successfully. The accompanying illustration (plate XLV, 10) shows one of the forms found near the falls.

Another pictograph represents a face, about a foot in diameter, with three pits for the eyes and mouth. There is no representation of a body and no attempt to depict the ears or other appendages to the head.

In figure 11 is a circle in which is contained a crescent suggestive of the moon.

In figure 13 of the same plate is a pictograph of the same gen-

[1] There are frequent references by early writers to crowns with feathers worn by persons of rank, like caciques. Guacanagari gave Columbus one of these objects, which he took to Spain to present to the king and queen.



RIVER AND CAVE PICTOGRAPHS IN PORTO RICO

eral type as that shown in figure 12, with two circles for eyes, and radial lines, apparently representing feathers, projecting from the top.

Figure 17 has a pyriform face with ear-pendants well represented. The eyes are circles with central pupils; the mouth is rudely indicated, and parallel lines depend from the chin. This example, which is one of the best at the falls, is found high on the front of a boulder the slippery sides of which almost forbid climbing.

Figure 12 is a long, almost straight line with a spiral termination at each end. The whole figure measures about a foot and a half, and may be a whirlpool symbol.

Near that last mentioned is a pictograph (figure 14) with eyes, nose, and mouth well represented. Above the latter appear two crescentic marks, facing each other, indicating the cheeks. Among numerous other pictographs on these rocks are two circles, each representing a human face with eyes and mouth clearly indicated.

Several pictographs are found on rocks in the river beyond the falls. One of the largest collections occurs near Adjuntas, and there are others between the falls and Utuado.

Some of the most instructive river pictographs in Porto Rico are found on the eastern end of the island. There are many near Fajado, and others are on the Rio Blanco not far from Naguabo. A short distance from Juncos, near the road from Humacoa to that town, there are several river pictographs of the same general character as those described.

My attention has been called to a pictograph which is a profile sketch of a mammiform zemi, or idol, with a conical extension on the back. I have also seen a rock-etching with a body of zigzag form, recalling lightning. The forms which these pictographs take are almost numberless, but in all there is a common likeness to the incised decorations found on wooden and stone stools, idols, and other objects of undoubtedly prehistoric manufacture.

The majority of these clusters of river pictographs, especially those along the Rio Grande de Arecibo, occur in the neighborhood of dance plazas, of which I shall presently speak.

Cave Pictographs

Numerous pictographs are found also in the caves so common in the calcareous rocks of the island. The number of these caverns

in Porto Rico is very great, but not all of them contain Indian pictures on their walls. In many cases they may once have existed, but have been covered up by stalactitic deposits on the walls, and in others may have been erased or destroyed by superficial erosion. As a rule cave pictographs are not cut with the same care as the river pictographs, from which they also differ in size, shape, and apparently in significance. The botryoidal forms taken by many of the stalactites lend themselves to relief carving which is often clearly combined with surface cutting, thus affording intermediate forms between pictographs, or cuttings on flat surfaces, and sculptures. Many of these cave pictographs are found in places not now readily accessible; others occur on slabs of rock which lie on the cave floor.

The Cueva de las Golondrinas ("Cave of the Swallows") near Manati, and El Consejo ("the Council-house") near Arecibo, are typical localities for the study of cave pictography. The former is situated about three miles north of the town of Manati, not far from the ocean. Its entrance is large and open, and it extends only a short distance into the side of the cliff. This cave is about fifty feet wide and deep, and shows evidence of formerly having been somewhat larger. Considerable work was done in this cave by excavation, which was continued for a week with a force of fifteen workmen. I was enabled to clear out the floor, removing from the débris which covered it over two cart-loads of fragments of pottery, among which were many clay heads that formerly served as handles of bowls, and other relief ornaments. There were likewise found polished stone implements, carved shell and bone objects, and other specimens of Indian handiwork.

The walls of this cave were covered with a sticky, greenish black substance which had partially concealed some of the pictographs, but others of large size and good workmanship were quite readily seen. The fallen boulders at the back of the cave also had good pictographs cut upon them. Over ten rock-carvings were counted on the walls and there were others which were undoubtedly obscured by the covering that had become deposited over the walls. The more striking pictographs from this cave are as follows:

One, about eight inches in diameter, cut about breast high on a rock which had fallen from the roof. A slab of stone bearing this picture was cut out, but on account of its great weight it was not brought away.

Figure 15 represents one of the best of all the pictographs in this cave. It measures about eighteen inches in diameter, and was cut on the projecting front of a fallen boulder, making the face very prominent. The body is represented by parallel lines.

Figure 16 represents a pictograph about a foot long, consisting of head and body, with legs appearing one on each side, folded to the body. Like some of the river pictographs near Utuado, it has two horns or anterior appendages, one on each side of the head. This figure recalls the outline of small stone amulets from Porto Rico and Santo Domingo.

The pictograph shown in figure 19 belongs to a type somewhat different from the preceding, but recalls those on the river rock (figure 5) near Utuado. The appendages to the side of the head resemble ears. On the top of the head there is a smaller circle with which it is connected by a groove. Eyes and mouth are represented by three rings.

Figure 18 consists of a rectangular body marked off into squares, with an oval head and ear appendages. There are no indications of eyes, but the cheeks are represented by crescentic grooves.

The three pictures shown in figures 20–22 represent faces, but they have been much eroded and disfigured by time. Originally they were evidently more complicated than their present outline would seem to indicate.

Some fine pictographs are to be seen in the cave called El Consejo,[1] on the estate of Mr Denton, not far from Arecibo. The neighboring hamlet, school, and hacienda bear the name Miraflores. This cave is reached by an hour's ride by coach to Byadera, thence by horse another hour, and by climbing up the mountain to the entrance, which is quite easily accessible. The cave is spacious, roughly dome-shaped, and lighted at the end opposite the entrance by a large arched opening which looks out on the steep mountain

[1] Miss A. B. Gould has kindly given me these interesting notes of her visit to this cave.

side. This opening was in all probability the original Indian entrance, for all the carvings are placed near that end as if to decorate it or to be conspicuously in view as one entered the cave. There are seven faces or heads, all close together and all on one side of the archway. One of these pictographs is especially conspicuous; it is well made, partly in relief, with what appears to be a head, nose, and pointed chin. The other six faces are simpler, consisting of pits arranged in triangles sometimes surrounded by a line to indicate the face. Of these, two faces are cut on rounded protuberances and four are merely incised in the flat rocks. One of these, called by a peon "*el Dios major de todos*," had the eyes cut obliquely or sloping from the nose upward. Similar oblique eyes have been noted on many pottery heads, one of the best of which was collected by the author near Santiago de los Caballeros in Santo Domingo.[1]

As the name "*el Dios*" implies, there survives in the minds of the Jibaros, or country people of Porto Rico, a belief that these pictographs were intended to represent Indian gods. Of the same import also is the lore concerning caves among these people, which in part at least is a survival of the reverence with which caverns were regarded in aboriginal life. Stories that caves are the abode of spirits are widely current among the unlettered people of Porto Rico and Santo Domingo. According to a superstition which prevails among many of the West Indian islanders, some of these caves are still inhabited; it is said that if objects are placed at their entrance they are removed within a short time by troglodytes, and débris at the cave mouth is said to be swept away in a manner otherwise inexplicable. I was told by a man who owns one of the finest wooden stools in Santo Domingo that he obtained it from a Jibaro who said that while hunting a goat in the mountains he strayed into a cave which had not been entered in modern times. Penetrating an inner chamber he saw in the dim light what he supposed to be one of these cave-dwellers. He struck at it with his machete and fled, but later returned to find that the object of his fear was a wooden stool which he removed and later sold. As if

[1] One of the zemis figured by Charlevoix in 1731 (*Histoire de l'isle Espagnole ou de S. Domingue*, t. 1, p. 61) has oblique eyes.

to corroborate the story of this *paisano*, the object, which is hideous enough in form and feature to frighten any one when encountered in the gloomy environment of a cave, still shows the marks of the machete. A wooden stool or *duho* from "Turk's or Caicos islands," in the Smithsonian collection described by Mason, is said to be hacked "by the hatchet of a vandal." Perhaps the mutilation was due to fear rather than to malice.

I had a good opportunity for collecting current folklore regarding caves in the course of some excavations in the Cueva de las Golondrinas near Manatí. It was believed that considerable treasure had been buried in this cave by pirates, and excavations had been made in the floor to find a chest of gold supposed to be hidden in it. Deep holes showed that considerable work had been done there from time to time in search for the treasure. The country people believed that this work should be carried on only at night, and during its prosecution voices are said to have been repeatedly heard by the workmen, and warnings not to disturb the soil were often repeated by unseen denizens of the place. Of course no treasure was found, but there was a feeling among some of the workmen that the cave was inhabited by spirits who appeared from time to time, especially after dark.[1]

Although the existence of these pictographs and the great quantity of débris, consisting of ashes, pottery fragments, and other human rejecta, show that the caves of Porto Rico were resorted to by the prehistoric inhabitants of the island, it cannot be said that the evidence is all that might be desired to prove continuous habitation. These caverns were used for ceremonies, and at times as places of refuge; the dead were also undoubtedly placed in them with mortuary offerings. Some of the caves were sacred and contained idols, others were secular shelters, resorted to for protection

[1] The Indian belief that caves were the dwelling-places of spirits is mentioned by several writers of the sixteenth century. These spirits were supposed to leave the caverns and wander over the earth at night. The superstition is still current in several West Indian islands. The Antilleans, like the Pueblo Indians of our Southwest, believed that the first man and woman emerged from a cave in the earth or were born of the Earth Goddess. The dead were supposed to return to the caves, consequently (especially as ancestor worship played a most important rôle in their worship) they performed many of their ceremonies in caves and subterranean caverns.

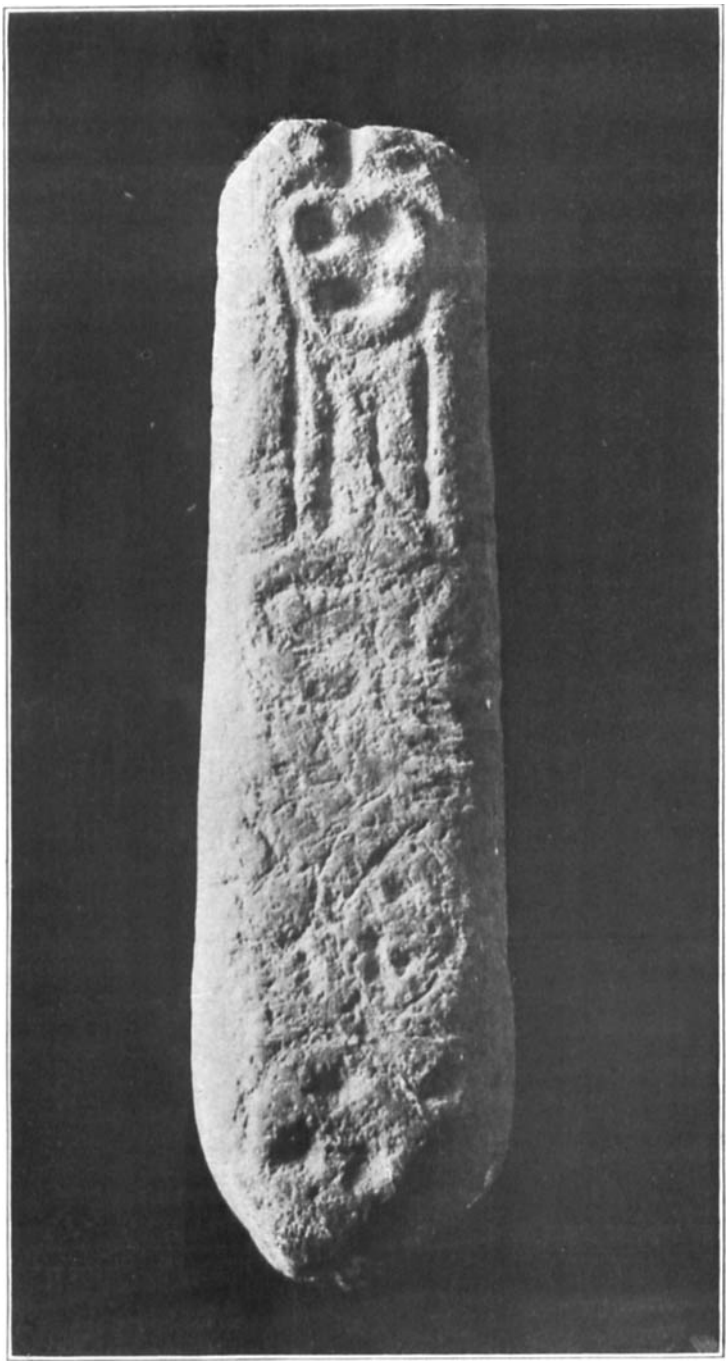
from the elements, or as camping places of Caribs, whose canoes were drawn up on the neighboring beach. To the last-mentioned class belongs the Cueva de las Golondrinas. The people who used it encamped in its shelter and cooked their food there, as the broken fragments of pottery and the numerous bones of animals attest. They may have visited it for religious purposes also, as the pictographs would imply; they may have buried their dead in its remote recesses, but if they did so the skeletons have long ago disappeared. Whether they were occasional visitors from distant islands or natives of Porto Rico cannot be told, but so far as the material which has been exhumed from the floor of the caves indicates, the former visitors were racially related to the Caribs of the Lesser Antilles and those of the coast of Santo Domingo. We know that the Caribs from near-by islands, like Vieques, were accustomed to land on the Borinquen coast, kill the men, and carry off the women into slavery; they even remained and made settlements, in course of time assimilating with the Borinqueños by marriage. It does not appear improbable, therefore, that the beach near the entrance to this cave may have been a Carib landing place, and the cave a shelter which they sought while encamped on the island.

Pictographs on Stones Bounding Enclosures

Among the problematical objects in the Latimer collection, described by Professor Mason, are certain rudely cut monoliths to which he applies the name pillar-stones. These objects vary in size and shape from simple slabs decorated with incised pictographs on one or both surfaces to rude idols with a head sculptured on one end. One of the more elaborate examples is illustrated in plate XLVII.

Of the function of these pillar-stones no suggestion has been made up to the present time. Mason calls attention in his description to the rude technique as compared with that of smaller stone objects, called idols, referring to Fray Ramón Pane's account[1] of

[1] Fray Ramón Pane, a Catalan Franciscan priest, was one of the few early fathers who could speak the language of the natives of Santo Domingo. At the request of Columbus he prepared an account of the religion of the natives of Hispaniola, which was printed in the *Life of Columbus* ascribed to his son Fernando. Harrisse strongly questions the authorship of this life, but there seems no good reason to doubt that it contains a true copy of Pane's account of the religion of the natives.



PILLAR STONE FROM PORTO RICO

the temples of the caciques or chiefs in which it was customary to have images "carved of wood or stone or shaped of clay or cotton,[1] generally in some monstrous form." On consulting Pane's description of the stone idols, I find that he nowhere refers to what we know as pillar-stones. The massive stone slabs were not house gods of caciques, but were the boundary walls of enclosures near prehistoric pueblos — places in which were held ceremonial dances and games. A proper understanding of my interpretation of these stones necessitates a brief description of the enclosures.

At various places on the islands of Porto Rico and Santo Domingo the traveler may have pointed out to him certain rectangular areas known to the country folk as *cercados de los Indios*, *juegos de bola*, or *bateys*. These enclosures in Porto Rico were first identified and described by Dr Stahl in his well-known work, *Los Indios Borinqueños*.

As indicated by their names, these areas are supposed to have been connected in some way with an Indian game of ball, and in corroboration of this interpretation attention is commonly called by the natives to stone balls, supposed to be artificial in shape, which are found in or near the enclosures.

The *bateys* which I have examined are generally situated on terraces above the river-beds, high enough to be safe from the great freshets which commonly accompany hurricanes. Their floors, which are comparatively level, are slightly depressed below the surface, and the whole structure is bounded by laminated stones, arranged in a row, the original alignment of which is now much disturbed. Along the coast, where the land has been under cultivation for centuries, these aboriginal structures have been more or less obliterated, but in the mountains there still remain several which are well preserved.

Similar *bateys*, sometimes called *cercados de los Indios*, have been reported from Santo Domingo by Schomburgk and Ober. According to the former another one of these enclosures at San Juan de

[1] One of the most remarkable of these cotton images was described and figured by me in 1891 in an article "On Zemis from Santo Domingo" (*American Anthropologist*, vol. IV, pp. 167–175). The head of this specimen is a human skull, the body and limbs of cotton cloth. The object has also been figured by Mr Rudolf Cronau in his work on America.

Maguana is circular in form and "consists mostly of granite rocks, which prove by their smoothness that they have been collected on the banks of a river, probably at the Maguana, although its distance is considerable. The rocks are mostly each from thirty to fifty pounds in weight, and have been placed closely together, giving the ring the appearance of a paved road twenty-one feet in breadth, and as far as the trees which have grown from between the rocks, permitted me to ascertain, 2270 feet in circumference.[1] A large granite rock, five feet seven inches in length, ending in obtuse points, lies nearly in the middle of the circle. . . . The cavities of the eyes and mouth are still visible."[2]

It is instructive to learn that enclosures similar to these *bateys* have been observed in British Guiana. Mr C. Barrington Brown describes a ring of stones somewhat smaller than that at San Juan de Maguana. In this structure the aligned stones were two to three feet high and five to six feet apart, the circle being only about thirty feet in diameter. This ring of stones apparently had a pillar-stone with a pictograph on it, for Mr Brown says that upon one of them was "a deeply cut picture of a frog." The Peruvians had similar areas enclosed by a row of aligned stones.

I have more especially studied these enclosures along the Rio Grande de Arecibo and its tributaries, where there are several well-preserved examples. It would be conservative to say that in prehistoric times the banks of this river along part of its course were so thickly lined with these places that one at least could hardly have been lost to sight at any time, especially near the present town of Utuado.[3] In my investigations near this town I learned of over twenty of these enclosures, the most important of which

[1] While in Santo Domingo I was told that similar but smaller enclosures are found in several localities in this island, and that they are known as "*corrales de los Indios.*"

[2] Mr H. Ling Roth's comment on Schomburgk's identification is as follows: "His supposition as to the figure being an idol is quite guess work." On the contrary I think there is considerable probability that the supposition is a correct one, since like idols of massive form are found in Porto Rico within or near similar *juegos de bola.*

[3] This modern settlement probably stands on or near the site of an Indian town of the same name in the caciquedom of Guarionex, who was hostile to the Spaniards. It is mentioned by Oviedo, under the name Otoao, in his account of the flight of Juan Gonzales after the death of Sotomayor. I find no mention in early writings of a cacique of that name.

are situated in the following *barrios* or wards of that town: 1, Cayuco; 2, Arenas; 3, Salto Arriba; 4, Vivi Abajo; 5, Jayuya; 6, Mameyes; 7, Paso del Palma; 8, Don Alonso; 9, Alfonso XII.

There is considerable variation in the size and outline of these enclosures, as well as in the state of preservation of the boundary stones; but as a rule they are rectangular areas slightly depressed below the surrounding plain and are bounded by a row of aligned flat stones set on edge, the individual stones being more or less widely separated and often disturbed. It is common to find small mounds[1] just outside the wall of the enclosure, but these in some cases have been so reduced in size by the cultivation of their surface that it is now impossible to determine their original contour.

In my studies of one of these enclosures at Utuado I found that the main road from that town to Adjuntas had cut through the edge of one of the mounds, revealing, a few feet below the surface, a layer of soil containing fragments of pottery, a few broken celts, and the long-bones of an adult. This discovery induced me to extend a trench diametrically through the mound, parallel with the side of the enclosure. The depth of this trench, at the middle of the mound, was about nine feet. The excavation revealed that the mound rested on a hard gravel base, and was composed of soil so rich that some of it was carried away by the neighboring farmer for use as fertilizer. This earth was very moist and ill-adapted to the preservation of bones or other fibrous material. Nevertheless, we found ten skeletons of adults and infants, with mortuary objects so distributed as to indicate that they had been placed there as offerings. One of the best preserved of these skeletons was found in a sitting posture, with the legs drawn to the chest, and with ceramic objects lying at one side. The frontal bones of the skulls were abnormally flattened, as in those from the caves in the northern part of Santo Domingo, described by Dr Llenas.[2]

The discovery that these mounds are Indian cemeteries sheds light on the nature and use of the neighboring enclosures. The conclusions drawn from my excavations of the Utuado mounds are

[1] I identify these mounds with the *caneys* mentioned by Antonio Bachiller y Morale, in his well known work, *Cuba Primitiva*.

[2] *Dècouverte d'un Crane d'Indien Cigüayo a Saint-Domingue*, Nantes, 1891.

that large numbers of the dead were buried just outside the dance courts, and that the elaborate *areitos* or mortuary dances were held in the latter. There is also evidence of the interment of the dead in caves, human skeletons from the cave at Jobo, near the road from Arecibo to Utuado, having been given to me by Dr Cabello; but the majority of the prehistoric Porto Rican dead were undoubtedly buried in the cemeteries above referred to.

Of the nature of the dances performed by the Antilleans at the time of the interment little is known, but from what has been described by Gumilla as occurring among the kindred Orinoco tribes, it is probable that they were very elaborate. One custom is especially noteworthy: Among certain of these tribes it was their habit to place staves around the grave, to the ends of which were tied stone effigies or images imitative of the heads of the totems of the dead. Apparently this custom was also practised by the people who lived near Utuado, in corroboration of which theory it may be mentioned that a stone face was found on or near the mound. This stone face resembles the so-called masks described and figured by Mason, but its size and general shape preclude its use as such. Moreover, certain other objects of the same general shape have a groove on one side in which is fitted a stave to which the whole object was tied. There is good evidence that these so-called stone masks were really mortuary emblems which were fastened to sticks and set about the graves of the dead, where they remained for some time, especially when mortuary dances were being performed in their honor.

In considering the use to which the Indians put these enclosures Dr Stahl points out that if they marked the dwellings of chiefs, the walls over which a child might jump would be useless for protection. The boundary stones were not placed in line to indicate burial places,[1] although cemeteries were not far away; for the enclosure is sunken below the level of the adjacent plain. The popular theory that they were places for ball games is no doubt sound so far as it goes, but these gatherings were only one of many kinds held by the prehistoric Indians of Porto Rico.

[1] Evidently the ancient Porto Ricans had several ways of burial, as Oviedo asserts in regard to the Haytians. The cemetery in the valley of Constanza, mentioned by Schomburgk (*Athenæum*, 1852, pp. 797–799), may have been similar to that near Mameyes.

The general appearance of these enclosures, with their idols and pictographs carved on some of their boundary stones, and the presence of neighboring mounds (some of which were burial-places, others the sites of prehistoric pueblos), confirm my belief that they were plazas in which were celebrated the ceremonial dances called *areitos*, especially those mortuary rites of ancestor worship which reached such high development among the prehistoric Porto Ricans. Here were performed dances commemorative of the dead interred near by, and here songs were sung in memory of their ancestors, as Oviedo and others have stated.

In addition to ceremonial *areitos*, games also, no doubt, took place in these enclosures, which correspond in a measure to the plazas of the pueblos of our Southwest, which are used for all public functions.

The Indian town must have been near by, for Oviedo says that near each pueblo there was a place for *batey* or the ball game.[1] While the appropriateness of the name locally given to these enclosures has a foundation in tradition, and while they may have been used by the Indians for games, the discovery of the adjacent cemeteries indicates that they were used also in the performance of *areitos*, of which the Porto Rican aborigines had many kinds. But as games among the Antilleans were probably half secular and half religious, there is no reason why they should not have been performed in plazas sometimes used for purely ceremonial *areitos*.

The discovery of stone balls in these enclosures is often mentioned as an indication that these places were used in ball games, implying that the stones were the balls used. This belief, which is a common one among the country folk of the island, has little to support it on examination of the objects themselves. In Oviedo's account of the game, the ball used is said to have been made of a resinous gum, so that stone balls do not fit at all his statement of the method of playing the game. Indeed, some of the larger stone

[1] The prehistoric Porto Ricans did not build permanent stone or adobe habitations, but only temporary structures with a wooden frame and palm-leaf covering. These have long ago disappeared, but their sites still remain in the form of mounds just outside the *juegos de bola*. In Muñoz's description of an Indian pueblo near the coast, no mention is made of a neighboring *batey* or dance plaza.

balls, which are over two feet in diameter, could hardly be carried by a single man. Moreover, many of the balls are not spherical, but are simply water-worn boulders in the form of oblate or prolate spheroids. Considering these facts, I have serious doubt whether the stones could have been used in the ball game described by Oviedo, although this does not of course preclude their use in some other game. Their presence in graves and in dance plazas indicates that they were enough prized to have been brought there for a purpose, and I offer the following speculation as to their use:

Water-worn stones are symbols of running water, the worship of which is highly significant in the rain ceremonies of primitive agriculturists. In an almost universal confusion of cause and effect, so common among primitive people, these stones, shaped mainly by running water, are believed to have magic power to bring rain or to cause water to fill the stream-beds. Hence they were gathered by the Indians and carried to dance and other ceremonial places where they are now so commonly found. We often find that water-worn stones are worshiped by other primitive agriculturists because of the belief that these objects cause the water, which has given them their form, to increase, just as the frog, which lives in moist places, is believed to effect an increase in the water supply.[1]

It is interesting to add, in discussing the probable use of these stone balls, that Dr Stahl, who has given much attention to the botany of Porto Rico, after stating that part of the description of *batey* given by Oviedo was derived from the game played by the South American Indians, declares that there is no natural vegetable product in Porto Rico which furnishes an elastic gum[2] that could have served the aborigines for the balls used in the game. Whether or not the prehistoric Porto Ricans played the ball game described by Oviedo is beyond the scope of this article, but certainly the

[1] Many instances might be cited in which, among primitive men, water-worn stones and sticks or water animals are believed to be efficacious in bringing water. To these may be added shells of water animals, water plants, and other objects — in fact anything from the water or pertaining to it.

[2] Stahl regards it as probable that this *goma elástica* was obtained from a tree, *Siphonia elastica*, peculiar to the mainland ("costa firme").

stone balls found in the dance plazas could not have been used in the manner Oviedo describes.

But the above explanation does not fully account for the name "*juegos de bola*," which survives from early times and which evidently originated among the Spaniards, who, from knowledge of the use of these enclosures, applied it to the latter. The prehistoric Porto Ricans may have performed, in these enclosures, games or ceremonies with stone balls; such games were known to Oviedo, but in his description he does not carefully distinguish them from those in which elastic balls were used. Similar games, which have been ascribed a phallic significance, are recorded from Yucatan and elsewhere. In the absence of documentary proof of the existence of a prehistoric game with stone balls in Porto Rico we have little basis for speculation regarding their "phallic" significance, but that this game, when it existed, had a symbolic germinative meaning among the tribes which practised it is not improbable.

An examination of the boundary stones of several of the dance plazas reveals the significance of Professor Mason's so-called pillar-stones. Some of these stones, still standing, bear pictographs representing faces and heads identical with those which Mason describes, leaving no doubt of the identity of the two. The massive pillar-stones, sometimes sculptured into rude idols, more often with only the head cut in relief, and most commonly bearing an incised pictograph, formerly stood with other aligned stones which formed the enclosures used by the aborigines for the performance of their public dances and games. A pillar-stone found near one of the Utuado dance places belongs apparently to the same type as those described by Mason. It has a human face cut on one side near the end, in the same manner as one of the specimens in the Latimer collection.

This may be an appropriate place to call attention to the markings on the side of the face depicted on one of the pillar-stones in the Latimer collection. Professor Mason says (page 379): "On the right side of the face are two hieroglyphic marks, the one in the shape of a heart, and the other resembling a cleaver with two small furrows running from the edge. Now and then a heart-shaped stone implement turns up in our collection; but we are not

to suppose that the American aborigines used this to symbolize the human heart itself or the domain of Cupid."

I believe the heart-shaped and cleaver-like markings on the side of the head depicted on this pillar-stone represent ears and ear-pendants. These pillar-stones, some of which are simply slabs with pictographs upon them, sometimes take the form of rude idols in which the head and sometimes the bust are cut in relief. There are representatives of these in the Latimer collection, and I have seen others at various places in Porto Rico. Some of the latter are of great size and weight, as one which formerly stood in the plaza at Rio Piedras, not far from San Juan. This specimen weighs several hundred pounds, and when I saw it served as a curbstone in front of the "Farmácia Monclava" at Rio Piedras, but later it was carried by the director of public works to San Juan, where it now remains.

One of the best of these pillar stones with sculptured head formerly stood on one side of the dance plaza near Utuado. It was about four feet high and represented a female with head and bust well carved in relief. Later this idol was carried to Arecibo and for many years stood on a pedestal before the house of the Mercedes plantation, but in the great cyclone called "San Ciriaco" [1] it was overthrown and covered with débris which has not been removed.

A consideration of some of these and other forms of pillar-stones naturally leads to rude massive idols which they more closely resemble, and consequently it may be best to restrict the term "pillar-stone" to those stones of pillar form which bear incised pictures and are without carving. Both forms are found among the boundary stones of the enclosures described above, and may have had a like significance. Some of the "stone images or pillar-stones" described by Mason had nothing to do with the boundaries of dance enclosures, while others had. Obscurity might be avoided by restricting the former term to slabs containing pictographs.

Conclusions

It remains, in conclusion, to say that Porto Rican pictographs, whether found on river boulders, in caves, or on pillar-stones sur-

[1] On August 8, 1899, Utuado and the other towns and plantations along Arecibo river suffered severely from this hurricane.

rounding dance places, are similar to those which have been recorded from the Lesser Antilles — St John, St Vincent, Guadeloupe, and others.[1] This resemblance tends to support the theory that the people who made them in prehistoric times were practically one and the same. The proximity of the river pictographs to running water, no less than their forms, allies them to similar pictographs on the Orinoco and other rivers of Venezuela and Guiana. We may justly suppose that the prehistoric Porto Ricans regarded them with much the same reverence as do the people of Guiana their *timehri*, or rock-carvings, described by Im Thurn. The general character of the river pictographs in Porto Rico and their situation in or near running water clearly indicate that they mark places of ceremony, and were connected in some way with water worship, which is known to have formed a conspicuous element in the religion of the Antilleans, who had a feeling of awe for these waterfalls and especially for the mystic figures upon the adjacent rocks. The rivers in which they are found are often turbulent, overflowing their banks, setting at naught the work of the farmer, and, at times when hurricanes rage (which the Indian ascribes to the Sky God, Hu-ra-can), devastating the valleys through which they flow. It would have been natural for the Indians to resort to such places as waterfalls, where the power of the water is most manifest, to appease the angry god, and here we would expect to find rock-etchings and other evidences of such gatherings.

The argument for the possible derivation of the ancestors of the West Indian islanders, so far as pictography goes, corroborates that based on other and more significant data. Antillean pictography is decidedly South American rather than North American. Undoubtedly, when we are dealing with such highly conventionalized figures as these, there is striking uniformity among primitive people all over the globe, so that too great weight should not be given to similarities in culture; but neither should we neglect likenesses, especially when taken in connection with other data indicating tribal migrations and racial affinities. Aboriginal Porto Rican pictography is essentially the same as that of the Lesser Antilles,

[1] See Ober, "Aborigines of the West Indies," *Proc. Amer. Antiq. Soc.*, April 25, 1894.

which is practically identical with that of Guiana and parts of Venezuela. Moreover, this similarity is not limited to that part of these two countries fringing the Caribbean sea, for the same likenesses may be detected far into the interior of South America where the Orinoco and the large rivers of Guiana have their sources. Pictography of the West Indians thus supports philology, technology, and religion, as witnessed by ceremonies and beliefs, indicating that the Antilleans originally came from South America, or that man in his distribution has followed the same law of migration to these islands as plants and animals, and came from the same continental land mass.

I believe that the West Indies were originally peopled by colonists from South America, who made their way from the delta of the Orinoco, passing from island to island until they occupied all the Antilles, great and small. Of all the Orinoco tribes these pioneers of the Antilleans were more closely allied to the Guaranos, or Warrans, who now inhabit the delta, than any other; but lapse of time profoundly changed the culture of both, the latter having greatly degenerated while the former, long since having passed away, once reached a comparatively high stage of culture. Although descended from a related stock, originally the same as that of most of the now wretched "Warrans," [1] the members who migrated to the West Indies developed in Hayti and Porto Rico a distinctive culture, as shown by their characteristic polished stone work. Cuba and Jamaica also shared this culture, but only partially, for in these islands there appear to have been savage intrusions from north and west.

The culture attained by the Hayti and Porto Rico people was threatened on the east by the Caribs, who also came from South America and who overran and conquered all the Lesser Antilles to the eastern end of Porto Rico.

The Carib invasion of the West Indies was but a continuation of their conquest of the tribes which preceded them in Venezuela along the banks of the Orinoco. In early times numerous sedentary peoples, who had developed a certain degree of culture, in-

[1] For an interesting account of a visit to one of the pile villages of these Indians, see Gumilla, *El Orinoco ilustrado, y defendido*, etc., vol. I, pp. 161–172, Madrid, 1745.

habited the banks of this mighty river. In a way they were all distinctly related in language, customs, and religion. They were of necessity a fluviatile race, or were experts in building canoes and in navigating them in these great streams. From somewhere, perhaps the interior of the country, the so-called Caribs descended upon the river peoples, and those whom they did not destroy they drove into such inaccessible regions as the Orinoco delta. Not satisfied with the destruction they had wrought in the Orinoco valley on the mainland, they extended their depredations to the islands, ravaging the coasts of Santo Domingo and Porto Rico, and practically absorbing the race which preceded them in the Lesser Antilles.[1]

But, as always happened in conquests of this kind, especially where women were captured and taken to wife by the conquerers, the Caribs became more and more a mixed race, both in blood and in culture. An assimilation of the original people and the Caribs had in fact taken place in the Lesser Antilles, which resulted in a culture which was *sui generis*. In the Greater Antilles this mixture of the two peoples had not gone so far, although the wave of Carib invasion had practically reached Culebra and Vieques island and had also made itself felt in Santo Domingo and Porto Rico,[2] so that the eastern end of the latter island was practically Carib by the time it was settled by the Spaniards.

If we recognize the mixed character of the aborigines which Ponce de Leon found in Porto Rico — partly Carib, partly an antecedent race, or descendants of the union of the two which had occurred in the Lesser Antilles or earlier in the valley of the Orinoco — a discussion of the question whether Porto Rican pictographs are Carib or not can hardly lead to any important conclusion. From the point of view of blood or culture the island Caribs were no longer the same people as their ancestors in the interior of Venezuela.[3]

[1] I hope to be able to enlarge my discussion of this question in an article more general in its scope.

[2] Some of the early accounts even call Porto Rico a Carib island, and on old maps the sierras on the eastern end are named the Carib mountains. There was a strong infiltration of Carib blood on the island, but the preëxisting people had not been wholly absorbed.

[3] "All the Island, Orinoco, and Guiana Caribs," writes Brinton (*The American Race*, pp. 251–252), "can thus be traced back to the mainland of northern Venezuela."

I have limited this paper to what may technically fall in the group of symbolic markings known as pictographs, but believe that a proper discussion of the meanings of these rock-etchings implies an examination of incised designs on stone, wood, clay, and other objects of aboriginal manufacture. There is abundant material of this kind awaiting study, but it cannot be considered in this place. This account, however, would be incomplete if it did not call attention to the fact, which in the main goes very far to establish the antiquity of these pictographs, that there is a close similarity, amounting to identity, in their form, to the incised ornamentation of stone and wooden stools,[1] idols, and ceramic objects. As there is no reasonable doubt of the antiquity of the latter, we are justified in ascribing an equal age to the rock-etchings.

In the opening pages I have pointed out the paucity of our knowledge of the pictography in two of the islands of the Greater Antilles, and have ascribed this absence rather to imperfect exploration than to real absence of pictography in the islands mentioned. But it is certainly significant that these picture-writings are so common in that part of the West Indies inhabited by Caribs, and so rare in Cuba and Santo Domingo. There is no doubt in my mind that the Caribs were the authors of the pictographs of the islands which they inhabited, and they may also have inscribed many of those in Porto Rico, especially in its eastern part; but there is some doubt about the makers of the Utuado pictographs

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The word *Carib*, as the designation of a heterogeneous collection of people of mixed blood in which now one, now another, stock predominates, has outlived its scientific usefulness. As now defined, or undefined, it means nothing, not even similarity in language. Contrast, for instance, Father Breton's translation of the Lord's Prayer of the "Caribs of the Antilles," with that of the "Caribs of the Continent," or those who live in the Venezuelan state of Barcelona, as published by Rojas (*Estudios Indigenes*, pp. 203–204).

[1] Called *duhos* or *turey*. The latter name is still given in Porto Rico to native seats used by the Jibaros. The name *turey* was also applied to the sky and means the "brilliant or shiny object." The *duho* was the most shining object in the Indian cabin. When Gumilla visited the wretched survivors of the Guayquiri, a remnant of a tribe allied to the Warrans and also to the ancestral Antilleans, he found that they had seats made of logs of wood *which they called in their language tures*, the same as the prehistoric Porto Ricans. He found these Guayquiri were the remnant of a large "nation" living on the south bank of the Orinoco, and that the Caribs had almost wholly destroyed them, as they did most of the other members of this stock who lived along this great river and its tributaries. (*El Orinoco ilustrado*, vol. II, p. 66.)

in the sierras of Porto Rico, although Guarionex, who was cacique of this region, may have been a Carib. I am inclined to think that the natives of Borinquen were as expert in this work as the Caribs of Guadeloupe and St Vincent; certainly my studies in Porto Rico have shown the existence of pictographs all over the island, in the mountains as well as on the coast.

We know so little of the conventional symbolism of the aborigines of the Antilles that it is difficult to hazard an explanation of the meaning of individual pictographs, but we may very properly suggest an interpretation of their general signification. Their position, whether in caves, near rivers, or on boundary walls of dance plazas, implies their connection with rites or ceremonies, and the great care given to the cutting of them shows that they were not merely of passing or temporal importance. They were, in other words, religious rather than secular symbols, as similar figures still are to the primitive people of Guiana. They represent powers or beings which were worshiped, for among them are figures of the Sun or Sky God and of the whirlwind or whirlpool. These symbols are almost universal, especially with sedentary people among whom earth and sky worship is so pronounced. In addition to the two symbols of great nature gods, or magic powers of sky and earth, many of the pictographs represent other gods or subordinate powers. They are conventionalized figures of zemis,[1] or ancestral clan tutelaries, practically totems of the prehistoric peoples who performed their rites and ceremonies in the neighborhood of the rocks upon which they are found.

[1] A *zemi*, as elsewhere explained, is a spirit, or the image, picture, or symbol of the same. The skull or other bones of the dead also served as zemis, and the same name was sometimes applied to a *boii* or priest when he personated a spirit. Sometimes a man painted his zemi or totem on his body, sometimes he cut it on the rocks in the form of pictographs. See "Prehistoric Porto Rico," Vice President's Address, Section H, *Proc. Amer. Assn. Adv. Science*, vol. LI, 1902.