



From a painting by E. G. Casedy.

BAY ISLAND POLYCHROME I VASE WHICH CONTAINED CENTRAL VOTIVE  
CACHE, DIXON SITE, ROATAN

SMITHSONIAN MISCELLANEOUS COLLECTIONS

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ARCHEOLOGICAL INVESTIGATIONS IN  
THE BAY ISLANDS, SPANISH HONDURAS

(WITH 33 PLATES)

BY

WILLIAM DUNCAN STRONG

Anthropologist, Bureau of American Ethnology



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# ARCHEOLOGICAL INVESTIGATIONS IN THE BAY ISLANDS, SPANISH HONDURAS

BY WILLIAM DUNCAN STRONG  
*Anthropologist, Bureau of American Ethnology*

(WITH 33 PLATES)

## INTRODUCTION

The following report is based primarily on an archeological reconnaissance of the Bay Islands carried out by the Smithsonian Institution during the months of April and May, 1933. In June and July, 1931, the Boekelman Shell Heap Expedition of the American Museum of Natural History had made a similar survey of the islands. Through the courtesy of the latter institution and of Junius Bird, archeologist of the Boekelman Shell Heap Expedition, I have been permitted to include their data with ours—a happy combination, since the results of both expeditions overlap and supplement one another in many ways. Prior to either of the above investigations, in 1930, and again in 1931, Mr. Mitchell-Hedges, working under the auspices of the Museum of the American Indian, Heye Foundation, spent several months on the Bay Islands and gathered together a very large number of fine specimens. Through the courtesy of the Museum of the American Indian, I have briefly studied this collection, which is assigned to the various islands but is without data as to sites or exact provenience. On this account, and because adequate description would require a separate report, I have used the Mitchell-Hedges material mainly for general comparative purposes.

The itinerary of the Boekelman Shell Heap Expedition was as follows: June 30, 1931, the schooner *Clodia* arrived at Utila Island; July 10, left Utila for Roatan Island; July 17, left Roatan for Bonacca Island; and July 22, left Bonacca for the mainland. The Smithsonian Expedition on the motorboat *Amigo* arrived at Roatan Island April 25, 1933; reached Helena Island May 6; left Helena for Barburata Island May 7; visited Morat Island May 11; arrived at Bonacca Island May 12 and left May 17; arrived at Utila Island May 18 and left May 21 for Roatan. From Roatan we returned to the mainland on May 23. Thus, together, the two expeditions spent only 48 days on



the islands. Both lack of time and the circumstances of each expedition made exhaustive researches impossible. However, the results attained and the problems defined seem worthy of publication. From the archeological standpoint not only the Bay Islands but also the major portion of the Spanish Honduras mainland form an important and little-known field.

The Bay Island survey of the Smithsonian Institution was an extension of a plan conceived and organized by A. W. Payne, research associate of Johns Hopkins University, to conduct an archeological investigation of the Patuca River region of northeastern Honduras. The work of the expedition was financed throughout by Norman A. Haskell, a student in geology at Harvard University. Mr. Payne, Mr. Haskell, and the writer comprised the expedition, which was in the field from February to July, 1933. I am especially indebted to Mr. Haskell for sketch maps of Bay Island sites used in this paper. Dr. L. S. Rowe and other officials of the Pan American Union furnished maps, advice, and other valuable assistance. To Junius Bird I am indebted for the use of his excellent notes, photographs, and collections now in the American Museum of Natural History. At the latter institution Dr. Clark Wissler, N. C. Nelson, Dr. George Vaillant, and Miss Bella Weitzner were all extremely helpful in my work. For much comparative data, manuscript material, and advice I am especially grateful to both Dr. Vaillant and Dr. Samuel K. Lothrop. At the Museum of the American Indian, Heye Foundation, Charles Turbyfill aided me greatly.

In Honduras the officials of the Government at Tegucigalpa and the Governor of the Bay Islands, Señor Charles Osgood, made our work possible and extended us many courtesies. Similarly the officials of the United Fruit Company, and of the Truxillo Railroad Company at Puerto Castilla, assisted us throughout the entire expedition in every conceivable manner. For this, and for very many personal courtesies we are extremely grateful. Thanks are also due to Captain Boynton, of Oak Ridge, Gerald Borden, Joe Saba, and the other members of the crew of the *Amigo*, who were willing workers and good companions.

At the National Museum E. P. Henderson made numerous mineral identifications, H. A. Rehder identified various molluscan remains, Gerrit S. Miller, Jr., identified mammal remains, and Dr. George S. Myers identified fish and reptile bones. For this assistance I am extremely grateful. Dr. Dale Stewart has examined our small and fragmentary collection of human skeletal remains, but this, as well as Mr. Bird's more extensive collection of crania, will be reported on by

others at a later time. The frontispiece and the text figures in the present report are the work of E. G. Cassedy, artist of the Bureau of American Ethnology. Finally, I am very grateful to my wife, Jean Stevens Strong, for numerous translations and other technical and critical assistance.

#### ENVIRONMENTAL BACKGROUND

"Las Islas de la Bahia" are a charming and comparatively little-known group of islands 10 to 40 miles north of the northern coast of Spanish Honduras. Located on the Caribbean Sea, not far east of the entrance to the Gulf of Honduras, they are clearly visible from the mountainous mainland (see map, fig. 1). The group is made up of three large islands, Utila (Utila),<sup>1</sup> Roatan (Roatán, Ruatan, Guayama), and Bonacca (Guanaja, Guanassa), and the smaller islands, or island groups, Helena (Masa, Elena, Helen), Barburata (Borburata, Barbareta, Barbaretta), Morat (Goamoreto, Murat), and, closest to the mainland, the two Hog Islands (Cayos Cochinos). Roatan is the largest with a length of about 30 miles and a maximum width of 9 miles. Helena is really a small eastern extension of Roatan, being separated by a mangrove swamp and a narrow, in part artificial, channel. Bonacca is the second largest and is even more mountainous than Roatan. Utila is third in size and is low, swampy, and heavily forested. Barburata, Morat, and the Hog Islands are all small and rugged. With the exception of low-lying Utila, the islands, covered with dark green forest, rise majestically out of the blue tropical sea in a most alluring fashion.

The island chain is formed by the tops of a great submerged east-to-west mountain range, around which coral reefs have formed and rich soil has accumulated. Bonacca is the highest of the islands, a peak near the center reaching 1,200 feet. Roatan has a mountainous west-to-east backbone which reaches a height of 800 feet at the western end. Utila is the lowest of all, having only one hill 290 feet high at the eastern end. The formations are for the most part limestone, and the islands are surrounded by intricate coral reefs, some above the surface of the sea but most of them marked only by white lines of breaking surf. In the interior valleys a rich alluvial soil occurs, the product of decaying vegetation, and the hills are covered with red clay, which usually supports a dense vegetation. There are no rivers on any of the

<sup>1</sup> I follow the orthography given in the 1925 edition of the U. S. Hydrographic office, "Map of the Western Shore of the Caribbean", except that the names Borburata and Murat are changed to Barburata and Morat to conform to local usage. The following brief ecological account is based on standard works on the region, the majority of which will be cited later, and on personal observation.

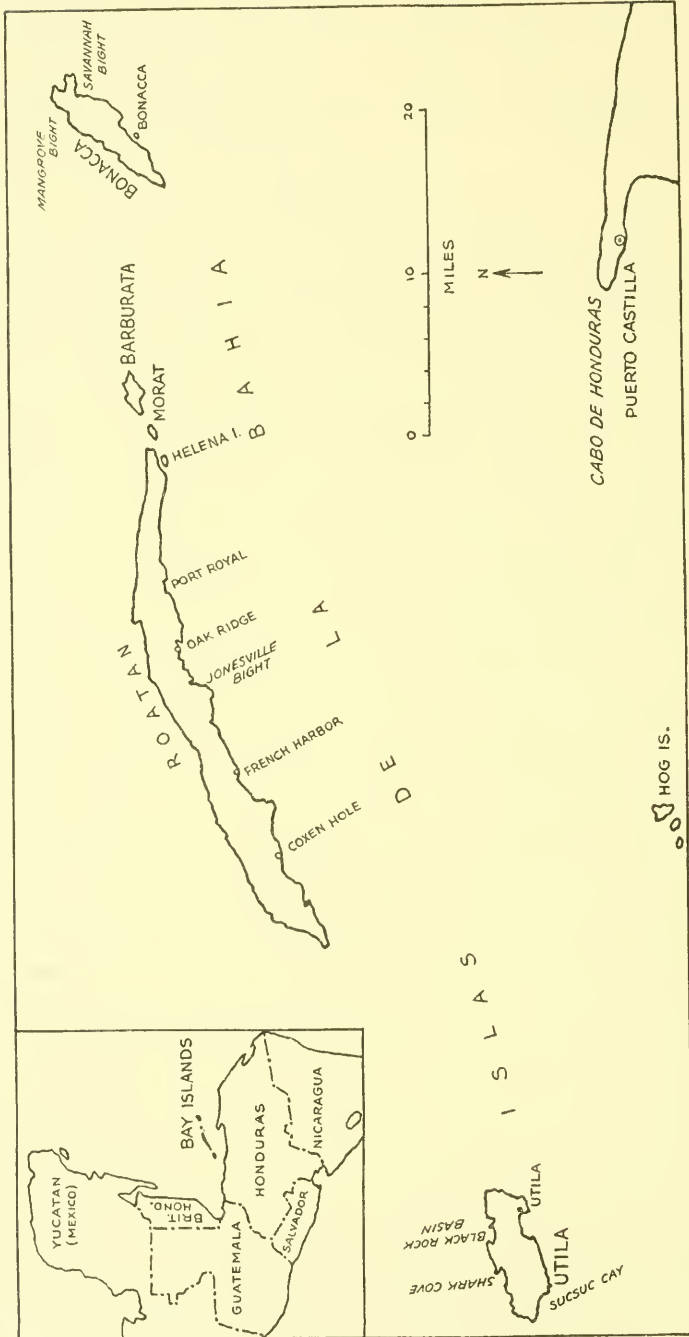


FIG. 1.—Map of the Bay Islands.

islands and only a few small streams, often terminating in the many mangrove swamps. Springs of good water are rather numerous. Roatan is marked by a number of salt-water lagoons or drowned valleys, which form a system of interior waterways on the south side.

All the main harbors are on the protected southern shores away from the prevalent northeast trade winds. From west to east these consist of East Harbor on Utila; Coxen Hole, Dixon Cove, French Harbor, Oak Ridge, and Port Royal (formerly important, but practically deserted at present) on Roatan; and Bonacca Harbor within the reefs on the southwest tip of Bonacca Island. Only a few scattered families of Black Caribs live along the northern shore of Roatan, and on all the islands the population centers on the side toward the mainland. Access from the mainland is simple, and small native craft ply back and forth at all seasons. The period from November to February, however, is dangerous, owing to frequent "northers," which may do much damage. From the middle of June to the middle of August the islands are subject to squalls, and revolving storms or hurricanes occur occasionally at this time of year. However, the Islanders are a maritime people and are not often caught out under such circumstances.

The climate is similar to that of the adjacent mainland of Honduras but is said to be cooler, owing to the surrounding water. The temperature is lowest during the rainy season from September to February, which is a period of heavy showers rather than steady rain. It is not oppressive during the dry season and the nights are usually pleasantly cool. Along the shores the cool sea breeze is pleasant, but the densely forested interior valleys are often stifling. The islands are said to be more healthful than the mainland and have not been subjected to cholera or other epidemics that have ravaged that region. The British colony on the Mosquito Coast prior to 1778 sent malaria patients to Bonacca, where they recovered rapidly.<sup>2</sup> However, malaria does occur to some extent, and there are numerous mosquitoes, sand flies, and bottle flies on the islands, though in April and May they were not nearly so bad as on the mainland. To escape the mosquitoes, and for the sake of coolness, the town of Bonacca has been built on low cays out in the harbor. Rheumatism is reported as having been very prevalent<sup>3</sup> and apparently is still rather widespread. Beyond these superficial observations I dare not go.

<sup>2</sup> Young, 1842. Rose, 1904, chap. 12, describes a smallpox epidemic on Utila in 1891.

<sup>3</sup> Mitchell, 1850. Quoted at some length by Squier, 1858, pp. 116-121. This account gives a rather detailed picture of Bay Island conditions in the middle of the nineteenth century.

The island flora is abundant, and, as would be expected, is very similar to that of the mainland.<sup>4</sup> Large numbers of pines grow on some of the higher ridges, especially on Bonacca, which led Columbus to call it the "Isle of Pines". Other portions exhibit complete rain forest characteristics, with tall hardwood trees, lianas, epiphytic plants, and a dense lower layer of small palms and shrubs. Many of the higher slopes are covered with cohune or corozo palms, some of the lower lands and sand spits support large groves of coconut palms, and gloomy mangrove swamps fringe considerable portions of the shore line. Savannas are rare, but small open areas occur, especially on Bonacca and Utila. The fauna of the islands is also basically that of the mainland minus practically all of the larger mammalian and many of the larger avian species. In regard to flora and fauna it would be of great interest to know what relation the Bay Islands bear to the Antilles, which, though almost 400 miles distant, probably have exerted some influence, since both wind and ocean currents bear from that direction. There are no large mammals in the Bay Islands except the manatee; jaguar, ocelot, tapir, deer, peccary, and monkeys do not occur. The agouti or "watusa", a rodent the size of a large hare, is the main island game animal. The raccoon is probably also present on the islands. The domestic hog was introduced into the Bay Islands by Cortez in 1525 or 1526 and spread rapidly in a wild state. (Conzemius, 1928, p. 62.) The avifauna of the islands appears to be somewhat limited, especially as regards land birds. The curassow, guans, and macaws are absent. There are two species of parrots, which are still very numerous. Of these, the yellow-headed species (*Chrysotis auripalliata*) has long been highly regarded as a pet on account of the facility with which it learns to talk, and its export from the islands began at a very early date. (Conzemius, 1928, p. 63.) Black vultures, blue pigeons, small woodpeckers, grackles, large brown cuckoos, flycatchers, warblers, and vireos were observed on all the islands. Water birds are numerous; herons, egrets, ibis, pelicans, and frigate birds were particularly noted.

Among the lower orders, snakes are not particularly abundant, and we saw none during our visit. The deadly fer-de-lance and the rattlesnake are said not to occur. The "tomagoff" (sp. ?), a smaller form said to be related to the fer-de-lance, does occur, but strange to say is not thought to be dangerous. Other snake species are undoubtedly present, and many iguanas and other smaller lizards abound, especially in the coconut groves. Of larger reptiles, both

<sup>4</sup> For a brief summary of the ecology of the Mosquito Coast, see Conzemius, 1932, pp. 1-8.

the crocodile and the caiman occur, but we saw neither. Fish, as would be expected, are a very abundant source of food; a large number of species occur. Sharks of various species are numerous, but do not seem to be as much feared by the natives as are the many barracuda. Mollusca abound, the various whelk and conch species being an important item of island diet, as are the large crayfish. The teeming insect life is probably similar to that of the mainland; the troublesome mosquitoes, sand flies, and bottle flies of the coast have already been mentioned, and horseflies are annoying in the bush. Wherever domestic stock is abundant, the small red ticks or "garra-patas" are a great source of annoyance to man. So much for the natural setting; the colorful history of the Bay Islands will now be briefly sketched in.

#### HISTORICAL AND ETHNOLOGICAL BACKGROUND

The question as to what white men first "discovered" the Bay Islands and the adjacent mainland of Honduras is one that an archeologist may justly shy away from. According to Fiske, it was the trio, Vincente Yañez Pinzon, Juan Diaz de Solis, and Americus Vespuccius, in the years 1497-1498.<sup>5</sup> This date has been discounted by various other historians, who claim that the evidence of their association and voyage is too tenuous for acceptance. Fortunately, it is a matter of slight importance in the present connection, since neither Pinzon, Solis, nor Vespuccius have left any observations that can be referred to the Bay Islands.

One is on safe ground, however, in regard to the fourth and last voyage of Columbus. The great Admiral sighted the island of Bonacca (Guanaja) on July 30, 1502, and it was from this place that he first gazed upon the Central American mainland, searching in vain for the great cities of Asia that, to the day of his death, seemed just beyond his farthest voyaging.

Besides the Admiral's, there are some five eye-witness accounts of this voyage.<sup>6</sup> In addition, the historians, Las Casas, Peter Martyr,

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<sup>5</sup> 1892, II, chap. 7. Fiske believes that these three, inspired by the second voyage of Columbus, sailed from Spain to the Bay Islands and the mainland near Cape Gracias á Dios, and thence north up the coast perhaps as far as Chesapeake Bay. This voyage of Pinzon and Solis is usually given the date of 1506, assigned by Herrera (see Cenzemius, 1928, p. 59, and Navarrette, 1829, p. 46), but Fiske cites Gomara, Oviedo, and other sources indicating that it was prior to 1500.

<sup>6</sup> The letter of Columbus to the Spanish Sovereigns, written from Jamaica in 1503, Hakluyt Society, 1847, pp. 169-203; the letter of Diego de Porras, Navarrette, 1829, I, pp. 283-284; the Testament of Diego Mendez, in 1536, Hakluyt

and Herrera give very complete accounts.<sup>7</sup> Of these the first two are especially valuable. While Las Casas was writing his great work at Valladolid, between 1552 and 1561, he had access to all the invaluable letters and papers collected by Ferdinand Columbus, and in addition he was intimately acquainted with the family of the great explorer. Peter Martyr was also a personal friend of many of the explorers, and owing to his high position in the Council of the Indies, he had ample opportunity to satisfy his intense personal interest in the new lands of which Europe was then just becoming fully aware. Herrera compiled his material at a later date.

Columbus himself, merely mentions Bonacca, which he called the "Isle of Pines". In regard to the mainland to the south and east he mentions that the natives used sails, had elaborate cotton textiles, worked copper with crucibles and forges, and that in Cariay (the Mosquito Coast) he saw an elaborately sculptured sepulcher and heard of others. The people, he says, were fishermen and barbarians speaking many languages and adds that he saw more gold in Veragua (northern Panama) in 2 days than he had seen in the Antilles in 4 years. This letter in its totality is one of the most tragic documents in history.

De Porras says that Bonacca would measure 20 leagues around but that it contained nothing of benefit, presumably gold or treasure. He describes its inhabitants as a warlike people of good stature, who were archers. From Bonacca he states that the adjacent mainland appeared high and near, being only 10 leagues distant. From this island they took an Indian to translate for them, who gave them the names of some of the mainland provinces. De Porras stresses the savage nature of the peoples to the south, who were so cautious that groups living only 20 leagues apart did not understand each other. The testament of Diego Mendez does not mention the Bay Islands.

In the Probanzas of Diego Columbus is the testimony of Pedro de Ledesma, pilot and captain of the warship *Vizcaino*. Ledesma states that "12 leagues before the mainland they found an island that the Indians called Guanaja and the Admiral called 'of Pines' where

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Society, 1848, pp. 204-234; the Probanzas of Diego Columbus, in 1515, Navarrete, 1825-1829, III, p. 556; the letter written by Bartholomew Columbus, in 1505 or 1506, HARRISSE, 1866, p. 473; and the "Historie del S. D. Fernando Colombo; Nelle quali s' ha particolare, & vera relatione della vita, & de' fatti dell' Ammiraglio D. Christoforo Colombo, suo padre . . . etc. In Venetia, MDLXXI. Appresso Francesco de' Franceschi Sanese." The edition here cited is the reprint of London, 1867, Cap. 88, pp. 288-296. See Columbus, Ferdinand.

<sup>7</sup>Las Casas, 1875, II, chap. 20; Herrera, 1726-1730, Dec. 1, Lib. V, Cap. V; and Peter Martyr, 1812, 4th chap. of 3rd decade, pp. 481-482.

they leapt ashore and talked with a Señor who called himself Imbibe, and from here they crossed over toward the mainland which is called the land of Maya in the language of the Indians and from here to the coast ahead as far as a cape which the Admiral called Gracias á Dios". Bartholomew Columbus states that "The Island of Banassa which they discovered here has very robust people who worship idols. Their food is mostly a certain bleached grain the height of a *cesare* which grows just as it grows in the *ballcare* in clumps, from which they make excellent bread. . . . In this place they took a ship of theirs (the natives) loaded with merchandise and wares and were told that it came from a certain province called *Maïam* or *Iuncatam*<sup>8</sup> with many garments of silk [sic] of diverse colors."

Ferdinand Columbus was a boy of only fourteen when he accompanied his father on his last voyage. Subsequently he gathered together a great library of books and manuscripts pertaining to the discoveries of the period. This magnificent collection, some 20,000 volumes, furnished the source material for most of the early historians, but about four-fifths of the collection has now disappeared. The "Historie" written by Ferdinand Columbus, survives only in the Italian translation of Alfonso Ulloa. It is thought that the latter may have tampered with the text in places.<sup>9</sup> Las Casas apparently had access to the same manuscript sources and the concurrence of the two accounts, at least regarding this immediate region, is close. Las Casas will be quoted at some length and only additional facts in the "Historie" need be given here, for some of these seem to have the human touch of an eye witness not found elsewhere.

Ferdinand called the island Guanara, and locates it 12 leagues from the mainland near the point his father called "Casine". Later, in 1508, he says, this point was designated as the Cape of Honduras on the voyage of Solís. The island contained nothing of worth save pieces of earth called *calcide*, from which copper is smelted, and some of the sailors, thinking this was gold, kept pieces for a long

<sup>8</sup> Lothrop 1924, p. 13, and 1928, pp. 354, 355, points out that the word "Yucatan", a Spanish corruption of the native phrase, did not come into use until 1517, whereas this letter was written in 1505 or 1506. The original document bears out this contention inasmuch as the words "vel Iuncatam" are superscribed over the word "Maïam" and do not belong to the original text. See Brinton, 1882, p. 10. Lothrop concludes that this touched-up passage is doubtless the source of the assertion of later historians (and ethnologists) that the captured canoe came from Yucatan.

<sup>9</sup> HARRISSE, 1871, and elsewhere, has attacked the authenticity and value of the "Historie", but FISKE, 1892, I, p. 340, defends it as "of priceless [historical] value".



time. While his half brother, Bartholomew, was ashore, a canoe laden with merchandise arrived from the western parts toward New Spain. Of the flint-edged, wooden swords in the cargo Ferdinand says that they cut naked men like steel, and he remarks on their copper axes which were similar to the stone axes of other Indians. He mentions their maize drink "similar to English beer" and says of the cacao nuts that they were so highly valued that if one fell "everyone bent to seize it, as if it had been their eye". Columbus released all but "one old man called Giumbe, of good authority and prudence" who served faithfully as guide and interpreter "wherever his language was understood". When they reached an area where it was not understood, "which was before we arrived at Cape Gracias á Dios on the coast of Orecchia", he was given presents and sent back to his own country "very contented".

Columbus, according to Ferdinand, proceeded to Casine from Guanara. Here the people were of the same disposition as those of the other island (Bonacca), who did not have such broad foreheads. There were many languages among them, and the Spaniards had to talk by signs since their interpreter had been with them too short a time to know their language, nor did he know the Indian language of Hispaniola, which many of the sailors had learned.<sup>10</sup> The people who lived near Casine wore the same sort of painted shirts and small squares over their loins as those who were in the trading canoe. Some wore shirts like those of the Spaniards, reaching to the navel and without sleeves. They made breastplates of cotton which turned the blows of their own weapons and even those from some of the Spanish arms. Their arms and bodies were decorated with burned or painted designs of lions, deer, turreted castles, and other diverse figures. The more noble wore small squares of white and red cotton instead of caps, and some had tassels of hair hanging on the forehead. The faces of some were dyed black, others red, and some streaked, while still others blackened their eyes or wore bird beaks, all of which they believed made them beautiful, but to the Spaniards they appeared as devils. They brought several hundred loads of provisions, including excellent chickens of their country, roasted fish, red and white beans similar to kidney beans, and other things

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<sup>10</sup> This is a somewhat obscure passage: "Il prefetto allor comandò che fossero lor donati sonagli, e *Ave Marie*, e altre cosette: e dimandò loro per segni delle cose della regione per lo interprete sopraddetto: ancorchè, per esser poco tempo, che era con noi, non intendeva i cristiani, per la distanza, come che poca, della sua terra della Spagnuola, ove molti de'navigli aveano appreso il parlare indiano: nè meno intendeva gl'istessi Indiani; . . ."

as presents. Having delivered their presents they fell back without saying a word.

Of the people to the east, as far as Cape Gracias á Dios, he says that they were black, of ugly appearance, and very savage. They had nothing of copper and, according to the nearby Indians, they ate human flesh and fish raw as they killed them. Their ears were pierced with so large a hole that one could easily pass a hen's egg through, hence Columbus called that region *Orecchia* (the coast of ears).

The account of Las Casas is as follows:

Finally, with great difficulties, dangers and indescribable labor, they arrived and discovered a small island that the Indians called Guanaja, and it had for neighbors three or four other islands, smaller than this one, that the Spanish afterwards called Guanajas, all were well populated. At this island the Admiral commanded his brother Doñ Bartolomé Colón, Governor of this island, that he go ashore as captain of a boat and get news; he went, taking two boats full of people, found the natives very peaceful and of the type of those of the other islands [i. e., the Antilles], except that they did not have broad foreheads, and, because there were many pines there, the Admiral named it Isle of Pines. This island is a matter of 12 leagues distant from the cape that they now call Cape of Honduras, where there is or was the Spanish city that they called Trujillo, and which now has five or six residents; . . . . As soon as the Governor had gone ashore at this island of Guanajes or Guanaja, a canoe full of Indians arrived, as long as a galley and 8 feet broad; it came loaded with goods from the west, and must be certainly from the land of Yucatán, because it is near here, a matter of 30 leagues or so [sic]; in the middle of the canoe they had an awning of matting made of palm which they call *petates* in New Spain, inside and under which were their women, children and property and goods, so that neither the water of the sea or of the sky could wet anything. The goods and things that they brought were, many cotton blankets, very gay with many colors and designs, and sleeveless shirts, also colored and designed, and some of the sashes with which the men cover their private parts, of the same colors and designs. Item, wooden swords with some grooves in the blades and there were attached with pitch and fibres certain flint knives, small copper hatchets to cut wood, and bells (*cascables*) and some medals, crucibles to melt the copper; many cacao nuts which they use for money in New Spain, and in Yucatan, and in other parts. Their supply of provisions was corn bread and some edible roots, which must have been those which in this Española we call *ajes* and *batates* (sweet potatoes), and in New Spain *camotes* (sweet potatoes). Up to 25 men came in the canoe and they did not dare defend themselves nor flee seeing the ships of the Christians, and so they took them in their canoe to the Admiral's ship; and those from the canoe climbing onto the ship, if it happened that their underclothing was caught, then they put their hands in front of them, and the women covered their faces and bodies with shawls as the Moors of Granada used to do with their scarfs.

The account of Herrera is practically identical, except that he mentions that the sleeveless shirts were without collars and reached

to the knee; that the cotton blankets were not only colored but were also decorated with needlework; that the men's sashes were of the type called in New Spain *mastil* (i. e., breeches), and that the Indian boat crew had a wine or beer made of maize. He continues, that the Admiral was impressed with their honesty and modesty, "and treated them very well, and taking from them some of the showy things to take back for a sign he ordered given them things of Spain in recompense, and he permitted all of them to go in their canoe except an old man who seemed a judicious person so that he could give them word of what was in this land; because the first thing of which the Admiral inquired signs, was showing them the gold that they give him news of the land where it was: and because that old man pointed out, that they had it toward the parts of the East, they retained him, and took him until they did not understand his language [just west of Cape Gracias á Dios] before they let him return to his country". Las Casas' and Herrera's description of the people on the adjacent mainland agrees with that of Ferdinand Columbus.

The account of Peter Martyr contains a few variants. The explorers came to an island,

which the inhabitantes call Guanassa, so flourishing and fruitefull, that it might seem an earthly Paradyse. Coasting along by the shores of this Ilande, hee [Columbus] mette two of the Canoaes, or boats of those provinces, whiche were drawne with two naked slaves against the streame. In these boates was caryed a ruler of the Ilande, with his wife and children, all naked. The slaves seeing our men alande, made signes to them with proud countenance in their maisters name, to stand out of the way, and threatned them, if they would not give place. Their simpleness is such, that they neyther feared the multitude, or power of our men, or the greatnesse and straungenesse of our shyppes. They thought that our men would have honoured their maister with like reverence as they did. Our menne had intelligence at the length, that this ruler was a great marchant, which came to the marte from other coastes of the Iland: for they exercise buying and selling by exchange within their confines. He also had with him a good store of such ware as they stande in neede of, or take pleasure in; as laton belles, rasers, knives, and hatchettes made of a certayne sharpe yellowe bright stone, with handles of a strong kinde of wood: also many other necessarie instruments with kytchen stuffe, and vesselles for all necessary uses: likewise sheetes of Gossampine cotton, wrought of sundry colours.

Columbus then proceeded to a large land "ten myles distant" which the inhabitants called Quiriquetana but which he named Ciamba. When he landed, the inhabitants flocked around without fear and brought the Spaniards gifts of food. In this great land there were two regions, one called Tuia and the other Maia. The country was pleasant and well wooded. Beside "Gossampine" and "date trees", from which textiles and long, broad swords and darts are made

respectively, maize, yucca, potatoes, and various medicinal plants were abundant. The inhabitants "are of hih and goodly stature, well lynned and portioned, both men and women covering their privie partes with fyne breeches of gossampine cotton, wrought with divers colours". The natives, to make themselves beautiful in their own eyes, painted their bodies red and black with "the iuyce of certayne apples which they plant in their gardens for the same purpose". Plant, flower, and knot designs were employed for such paintings, according to the fancy of the individual. Peter Martyr concludes with the statement that: "Their language differeth utterly from theirs of the Ilandes neere about them [the Greater Antilles?]."

The death of Isabella in 1504 was a sad blow to the Indians of the Caribbean, for she had been much interested in her new subjects and had ordered that they be well treated. The bars having been let down by Ferdinand, enslavement of the natives went on apace and both the Greater and Lesser Antilles were soon depleted of their native population. Since the importation of negro slaves into the Spanish Dominions was forbidden, expeditions were soon sent far afield in search of captives to work the mines. The peaceful inhabitants of the Bay Islands did not escape, and from 1516 to 1526 suffered several raids by Spaniards from Cuba and Jamaica. Since the enslavement of Indians who took up arms against the Spanish or were cannibals was permitted, it was simple enough to justify these expeditions at home. One of the first of these raids occurred in 1516, when two vessels from Cuba rounded up a great number of Indian slaves on the Bay Islands. They were batted below hatches, and the larger vessel sailed to Cuba, leaving the men with the smaller vessel to round up the survivors. Arriving at Santiago, the Spaniards left only a few of their number on guard while the others went ashore. Apprised of their departure by the ensuing silence, the Indians broke out, killed the guards, and hoisting the sails, made their way without compass or chart across more than 650 miles of open sea to their island homes. On their arrival they fell upon the remaining Spaniards and soon drove them away. Unfortunately, this act of poetic justice was soon upset by the arrival of more Spaniards from Cuba, who, after a desperate fight, broke down the Indian resistance and sailed away with some 400 slaves.<sup>11</sup> It is not remarkable that after such happenings as these, Francisco Hernandez de Cordoba with two other leaders, returning from Yucatan in 1517, received such a hot

<sup>11</sup> For more details see Herrera, 1601, Dec. II, Lib. II, Cap. VII; also Squier, 1858, pp. 605-606; and Conzemius, 1928, pp. 59-62.

reception from the Bay Islanders that they "lost the major part [of the attacking force] by the impetus and destruction of their slings and arrows." (Alcedo y Herrera, 1883, pp. VIII-IX.)

It was Hernando Cortez, the iron-handed conqueror of Mexico, who brought to an end the enslavement of the surviving Bay Islanders. During his brief stay at Trujillo (1525-1526) he despatched one or two armed expeditions to drive off slave hunters from the islands. He states that the Indians were peaceably disposed and that he desired by mild treatment to reduce them to the service of the crown. In a letter to Charles V, dated September 3, 1526, he states that owing to these slave-hunting expeditions, some of the Bay Islands had become entirely depopulated.<sup>12</sup> From this time until 1530, when the enslavement of Indians was prohibited throughout the Spanish Dominions, the Bay Islands were not further molested.

Cortez had undoubtedly brought blood and iron to the peoples of the valley of Mexico, but to the harried Bay Islanders he brought peace and comparative safety. Their chiefs sent in their allegiance and received letters of protection and, in return for their abundant fish, Cortez gave them some sows and a boar, whose wild progeny soon overran the islands. From this time on, the Bay Islands were governed from Trujillo, the newly founded capital of Honduras, and the Indians supplied the town with fish, cassava, and maize. They were employed in public works and, besides fishing, transported passengers and freight by sea. The Spaniards regarded them as very ingenious, stating that they made excellent cordage and cables as well as providing pitch, tar, and lime.<sup>13</sup>

Close as the contact between the Islanders and the Spaniards appears to have been during this brief halcyon period, there seems to be very little on record concerning the customs of the Indians. When López de Salcedo was appointed Governor of Honduras in 1527, he attempted to learn what he could concerning the religion and customs of the Indians of that province. Herrera's summary of the results of this inquiry are tantalizingly brief. He states that there were three principal idols near Trujillo which were worshipped in temples. One of these was located on an island about 15 Spanish leagues from Trujillo. Possibly this was at Plan Grande on Bonacca, but at any rate it would seem to have been on the Bay Islands. The idols were all of female shape and of a green marblelike stone. They were attended by a priest with long hair, who was forbidden to marry and

<sup>12</sup> See Conzemius, 1928, pp. 61-62, for references to the original sources.

<sup>13</sup> Conzemius, 1928, pp. 62-63, and D. Francisco de Avila y Lugo, cited by Squier, 1858, p. 610.

who, through the power of the idol, had great influence in the community. In addition, the Indians had other idols and adorations to which they made sacrifices. The idols served to ward off bad luck and bring good fortune to the farms and towns. The priest was called *Papa* and taught the sons of the upper classes (*caballeros*) at the temple. To challenge the power of the idols, Hernando de Saavedra burned the one nearest to Trujillo, and the priest, who had said that the idol would destroy any who profaned it, thereupon cut off his hair and became a Christian. (Herrera, 1726-30, Dec. IV, Lib. I, Cap. VI.)

The century of quiet, during which Spanish effort had been concentrated in the richer fields of Mexico and Peru, was brought to a close by the rise of the buccaneers in the Caribbean. These marauders found the Bay Islands a favorable and strategic haven, and the Spanish soon began to look askance at the Indian plantations there which offered food and shelter to their enemies. The raid of Van Horne in 1639 brought matters to a crisis, and in that year De Avila, Governor of Honduras, was requested by the President of the Audiencia of Guatemala to investigate conditions on the Bay Islands and to define a policy toward them.<sup>34</sup> De Avila reports that there were then about 400 Indians on the islands living in four towns, Guanaja, Masa, Roata, and Utila. The people of Guanaja, especially the grandson of the cacique, were conspiring with and aiding the buccaneers, but the Indians of the other islands seemed to be loyal to Spain. The town of Guanaja (Bonacca) had 84 tributaries (i. e., adult men); Masa and Roata had barely 14 tributaries, of whom about 9 were *encomienda* to one Gonzalez. Masa was evidently located on Helena Island and Roata about 2 leagues from Barreros (a port on the southern shore of Roatan marked by red *barrancas* visible from the sea). The people of these two towns, it is said, suffered much from mosquitoes, whereby the population had been reduced. Utila had as many as 22 tributaries who were *encomienda* to another Spaniard. The main port seems to have been East Harbor, and the Indians had their corn-fields inland. All four towns had been burned by the Dutch in that year.

Although De Avila makes no written recommendation for the removal of the aborigines, this was then being seriously considered. It actually took place in 1650 after the recapture of the islands from the English logwood cutters and illicit traders, who had seized and fortified Port Royal. This affair will be mentioned in another place.

<sup>34</sup> This report is published in translation by Squier, 1858, pp. 608-614.

It is not known how many Indians remained after this fighting and turmoil subsided, but all that did were removed to Guatemala, where they either died out or rapidly disappeared as a distinct people. (Conzemijs, 1928, pp. 65-66.) So ends the Indian history of the Bay Islands.

With the ensuing history of the Bay Islands we are less directly concerned. Certain phases of the buccaneer and the following period are mentioned later in connection with Port Royal. The last British claim to the islands was formally established in 1850. This was considered by the United States as being in direct opposition to the Monroe Doctrine and the Clayton-Bulwer treaty of 1850, and a tense diplomatic situation developed. The matter was peacefully settled in 1859 when Great Britain negotiated a treaty by which the islands were returned to Honduras. Since that time they have formed the Department of the Bay Islands under the Republic of Honduras. Although Spanish became the official language in 1872, English is still spoken by the bulk of the somewhat heterogeneous population. Indeed, it was not until 1902 that the majority of the English population realized that their assumed British nationality and claims to British protection were without any basis in fact. (Rose, 1904, chap. 15.)

Considering the early and close contact between the Spanish and the original Bay Islanders, which extended from 1503 until 1650, it is surprising that not enough of the native language survives to place them linguistically. Neither early sources nor recent linguistic research give much direct aid in this regard. The former are obscure, but they do suggest that both the culture and language of the Bay Islands was very close to that of certain major groups on the adjacent mainland.

There has been much discussion concerning the language spoken by the interpreter whom Columbus acquired from the trading canoe at Bonacca. Lothrop denies that there is any evidence of this canoe having come from Yucatan and cites the early writers to prove that the province of Maia, here referred to, was actually on the Honduras mainland.<sup>15</sup> More recently, Blom has stated positively that the traders were Maya, presumably from Yucatan. He bases this conclusion on the term *Maiam*, and the word *zuyen*, which he says Bartholomew Columbus gives as the native name for the square cloaks found in the canoe. In the Motul dictionary the Maya word *zuyem* is given for

<sup>15</sup> Lothrop, 1924, 1927. In the latter he suggests that the canoe may have been en route to Yucatan with chipped stone, etc., but there seems to be no direct evidence for this.

similar cloaks.<sup>16</sup> The latter bit of evidence would go far toward settling this controversial point, since it would indicate that the traders spoke Maya, or at least used a Maya term for such articles of clothing. However, I have been unable to find the word *suyen* in the Bartholomew Columbus letter as given by HARRISSE (1866), or in Las Casas, Oviedo, or other primary sources. If it does occur in an eye-witness account it strengthens the case for the traders being Maya, but I cannot vouch for this.

Two citations from early historians, given by Blom, offer evidence that canoes from Yucatan commonly traded in this region. Oviedo states: "Because along said coast there is an extensive trade in said fruit cacao, which is used as money among the Indians, and which is very useful and precious, and richest and most highly estimated merchandise which they have, canoes go from Yucatán loaded with clothing and other goods, to Uluá, and from there they return loaded with cacao." (Oviedo, III, 1853, p. 253.) Landa writes that "the occupation to which they are most inclined is trading, carrying salt, clothing and slaves to the lands of Uluá and Tabasco, exchanging it for cacao and beads of stone which both were like money and with this money they could buy slaves and other beads, granting that they were fine and good, which the chiefs wore as jewelry during the feasts, and they had other beads made out of certain red shells which were valued as money and personal jewelry, and they brought them in their network bags." (Landa, as cited by Blom, 1932, p. 546.)

It is evident, therefore, that the region around the mouth of the Uluá was an important trade center where much cacao was obtained, and that canoes such as the one encountered by Columbus were common carriers along this coast. This, however, does not mean that only the Maya indulged in the carrying trade. Bartholomew Columbus, speaking of a people south of Cape Gracias á Dios, says: "Following farther as far as a land called Cariai in which live people of good strength who live by industry and trading as they do in the province which is called Maia" (HARRISSE, 1866, p. 472.) Hence, there seems good reason to believe that not only Yucatecan Maya, but also Chol or Chorti Maya and Jicaque from the Uluá region, the Bay Islanders themselves, and certain peoples on the Nicaraguan coast, all indulged in coastal trading.

<sup>16</sup> See Blom, 1932, pp. 533-534, 546, and 548. Dr. Blom (letter of August 24, 1934) calls my attention to an error in this paper in regard to footnote 2, which should occur after the fourth instead of the third paragraph. In a later letter (October 1, 1934) Dr. Blom points out that the word *suyen* is used by Cogolludo (vol. I, p. 8, 1867 edition). Cogolludo, however, cannot be regarded as a primary source in this regard.



Concerning the location of the province of Maia, Lothrop believes it was on the Honduras mainland but that the term was only accidentally, not linguistically, cognate with Maya proper. Blom believes that it refers to the Maya regions of Yucatan. The eye witness, Ledesma, and the historian Peter Martyr, are specific in locating the province of Maia on the Honduras mainland. Bartholomew Columbus makes Maia equivalent to Yucatan but, as already pointed out, this equivalence may well have been a later and alien addition to his text. Las Casas, and after him Herrera, assign the canoe to Yucatan, but this may have been based on the touched-up letter, as Lothrop believes.

As the evidence now stands, there is no positive proof regarding either the language spoken by the traders at Bonacca or the location of the region of Maia. Regarding the first, it is clear that "Giumbe" could make himself understood among certain groups on the mainland adjacent to the Bay Islands, but it is equally certain that several different languages were spoken even in the immediate vicinity of the Cape of Honduras. My own interpretation of the evidence is that "Giumbe" and his fellow merchants had come from the western part of Honduras, probably from near the mouth of the Uloa, and that their native tongue, which may have been Chol or Chorti Maya, Jicaque, or even Lenca, was understandable to numerous mainland groups to the west of Cape Gracias á Dios. As to the provenience of the land of "Maia", I incline toward the testimony of Ledesma and Peter Martyr, that it was on the Honduras mainland. If it were one of the provinces of the culturally advanced Uloa region occupied by Maya, all the bits of evidence concerning these much-discussed traders fall into line. However, there may be difficulties, linguistic or otherwise, of which I am unaware, standing in the way of such a solution. In any case we are no nearer an answer to the original problem concerning the linguistic affiliations of the Bay Islanders.

A compilation of modern linguistic classification leads to no more definite results. Squier states that there are good reasons to believe that the people of the Bay Islands and those of the adjacent mainland pertained to the same stock. He classified both as Lenca, a group in which he also included Jicaque and Paya. (Squier, 1858, pp. 252, 604.) In 1910 Lehmann grouped the Sumu and Miskito as close linguistic affiliates of the Talamancan subdivision of the Chibchan stock, with the Paya, Lenca, and Jicaque as more remote members.<sup>17</sup> In his later work he indicates that the people of the Bay Islands

<sup>17</sup> Lehmann, 1910, pp. 711, 723. This classification is not universally accepted; see Lothrop, I, 1926, pp. 13, 18.

were Paya in speech, on the grounds that in 1622 Spanish missionaries took Bay Island Indians to the Paya to serve as interpreters. His map shows Paya on the mainland to the south and east of Trujillo and on the Bay Islands. (Lehmann, 1920, II, pp. 629, 631, and map.) The Jicaque are indicated on the mainland opposite the islands. A small Nahuatl colony inland from Trujillo, which Cortes mentioned, is also shown on the map.

According to Thomas and Swanton the available sources indicated that the Jicaque occupied the Honduras coast from Puerto Cortez to just beyond Trujillo, taking up a considerable part of the modern province of Yoro. They place the Paya to the east of the Jicaque. Although the Bay Islands are not specifically designated as to speech affiliations, they are directly opposite the bulk of the Jicaque. (Thomas and Swanton, 1911, pp. 73-76, 78-81, and map.) Conzenuius favors the last classification inasmuch as he argues that, since the Jicaque occupied the opposite mainland, the Bay Islanders were also of Jicaque speech. He denies Lehmann's assertion that they were Paya on the basis that Columbus acquired a Maya (sic) interpreter at Bonacca who could converse with mainland peoples as far east as Cape Gracias á Dios. Hence he argues that the Maya tongue served as a *lingua franca* along the entire coast and that the Bay Island interpreters taken to the Paya spoke Maya and not their native tongue. (Conzenuius, 1928, p. 68.) This last argument seems somewhat tenuous. However, the argument of Lehmann that because the Bay Islanders could communicate with the Paya, therefore the Bay Islanders were Paya, seems to me equally unconvincing. Adjacent peoples, even of totally different linguistic stocks, that have been long in contact are often bilingual. I have used an Eskimo interpreter to make contacts with Algonkian Indians, and when we went up the Patuca River in 1933, we had a Miskito interpreter to talk to the Sumu, and there we found Sumu who could speak Paya.

All of which involved discussion merely demonstrates that we do not know what language was spoken by the aborigines of the Bay Islands. The language is undoubtedly extinct today, but the archives may yet yield a Bay Island vocabulary to solve the difficulty. In the more remote portions of the Department of Yoro several groups of Jicaque still live in isolation, up the Patuca and in Nicaragua are the remnants of the Sumu, while in the interior of Honduras the Paya are still numerous. When their languages and surviving cultures have been analyzed by linguist and ethnologist, more light will be thrown on these problems than is now available.

## EXPLORATIONS

## UTILA ISLAND

The Boekelman Shell Heap Expedition while at the Bay Islands did their most extensive work on Utila, whereas we spent only our last 4 days there. As a result the following section is based primarily on the excavations of Bird and his companions, supplemented by our own brief reconnaissance. We visited and sampled all the main sites where they worked, and in addition each party visited certain sites not investigated by the other. William Waterhouse, of East Harbor, who justly bears the reputation of being the best guide on the island, was employed by both parties. The town of East Harbor is a very attractive place, and the officials and other residents were pleasant and hospitable. From Utila one gets a magnificent view of the mainland, and the great blue mountains of Honduras loom impressively in the distance. The island itself, while flatter and probably better for agriculture, is less picturesque than the others of the group.

## BLACK ROCK BASIN

## SITE I, URN AND SKULL BURIALS

The Boekelman Expedition was the first to do scientific work at these important sites, working, as we did, from a vessel anchored in Black Rock Basin, which is one of the very few island harbors on the north shore. Both parties rather arbitrarily distinguished two sites (see map, fig. 2) to the west of Black Rock Basin, although for a mile or so along this low coral and sand shore there are a series of aboriginal occupation and burial sites. These have been considerably dug over by local treasure hunters, but there is undoubtedly still a great deal of undisturbed evidence to be secured.

To reach site I from the vessel (map, fig. 2) we rowed in a small boat to the west end of the basin. Landing here at a small native plantation, we walked west about half a mile along the low shore line, which consists of rough coral rock interspersed with occasional bits of sandy beach. The entire shore line is heavily grown up with large coconut palms. Within half a mile of the west end of the basin potsherds, conch shells, and other traces of aboriginal occupation appear, and these extend to the west with varying intensity for at least half a mile and perhaps farther. Bird, in his notes, refers to a small shell heap about 600 feet inland from the beach, near site I, and states that two former shell heaps in this vicinity had been burned for lime. The only sites we saw during our brief visit were on, or just back from, the beach.

The ground at site 1 is about 6 to 8 feet above sea-level at the highest point. Beginning toward the water, Bird and his party ran a trench (trench 1, fig. 3) through the main section of the deposit. This revealed first about 12 to 18 inches of light wind-blown sand. Below

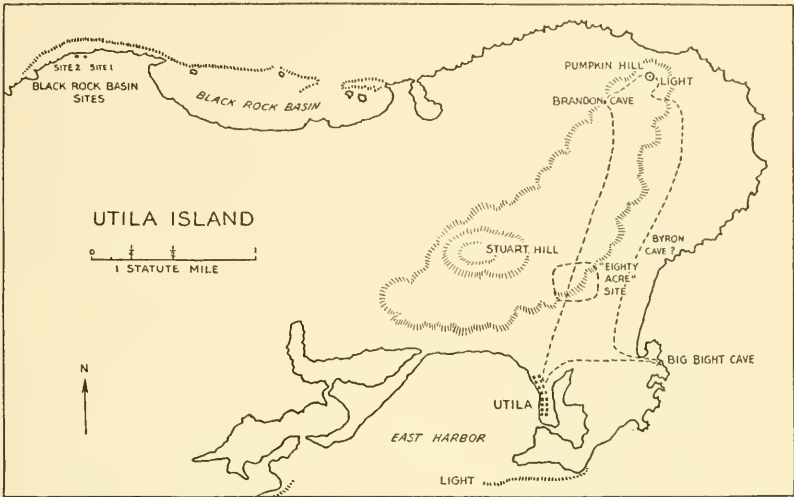


FIG. 2.—Map of east end of Utila Island.

this was a layer of black earth, mixed with sherds and other cultural debris, of varying depth (see fig. 3), and below this was white, unmixed, beach sand. The layers were not always clear-cut or of equal thickness throughout, as the diagram indicates. I may add that digging here was extremely difficult, owing to innumerable palm roots

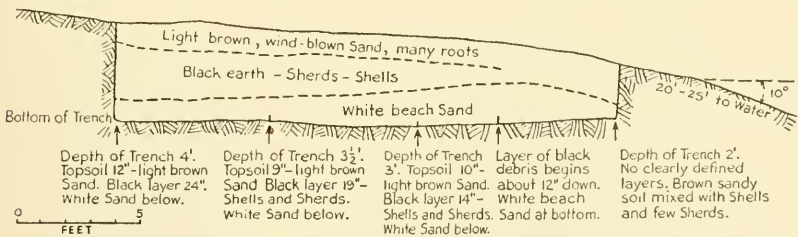


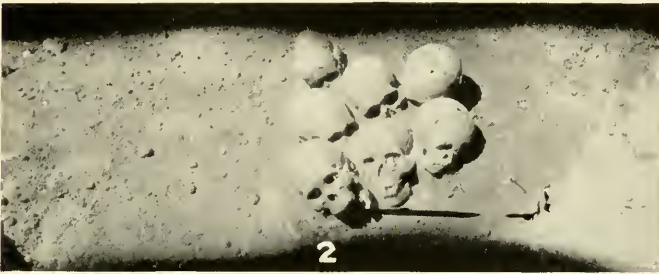
FIG. 3.—Cross-section diagram of trench 1, Black Rock Basin, site 1, Utila.

heavily interlaced in the top levels. The trench indicates that the shore at this point had been occupied for a considerable period, during which a layer from 1 to 2½ feet thick, full of broken pottery, fish and animal bones, and broken shells, had accumulated.

Over this some 18 inches of wind-blown sand had been deposited, in the main by natural agencies. The burials here are intrusive into these deposits (see fig. 5).

The burials at site 1 were located by test pitting in the vicinity of trench 1. The rims of burial urns 1 and 2 were struck 18 inches below the surface. They were in the black mixed layer, but were surrounded by white beach sand (pl. 2, fig. 1). Burial urn 1 (pl. 3, fig. 1) is of monochrome red ware without any slip. It is 45 cm high, 26 cm outside diameter at mouth, and .5 cm thick in the middle portion. The vessel is not highly polished and is sand-tempered. It contained two skulls. The only attempt at decoration is a narrow line of punctate marks around the neck. Burial urn 2 (pl. 2, fig. 1) was similar to the last in both size and type. It contained one small stone mortar and a number of human bones, including three slightly worn molars, one scapula, one clavicle, three skull fragments, and a few ribs and leg bones, some of the last being charred. The rim of burial urn 3 was within 5 inches of the surface. Both rim and neck were broken off, and the remainder of the pot was cracked (pl. 2, fig. 1). The vessel was not preserved but in general type seems to have been very similar to urns 1 and 2. The earth over this urn was loose, and it appeared to have been disturbed within recent times, as all the human bones were freshly broken and very much mused up. It contained fragments of skull and other human bones and the broken leg from another pottery vessel.

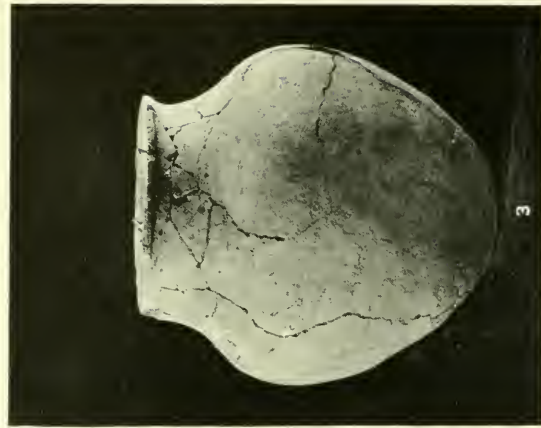
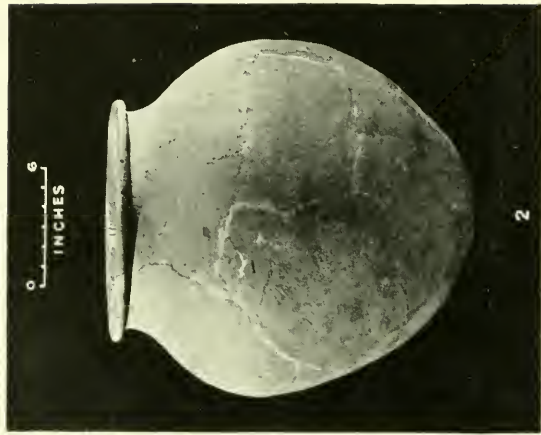
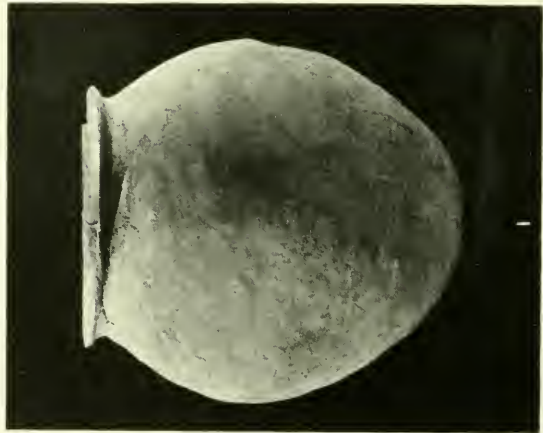
The arrangement of these urns (1-3) and the adjacent skull and bundle burials is shown in the photographs (pl. 2) and Bird's diagram (fig. 4). Just south of urns 1 and 2, about 18 inches below the surface, was a group of seven skulls closely packed together, all facing south. The mandible accompanied each crania in its normal position, and these were the only skulls found in that condition at the site. Skull 1, broken while in the earth, was that of a child with primary teeth still in position but secondary teeth formed in bone; skull 2 had peculiar pockets in the bone; skull 3 had the third upper molar just formed in bone (discarded); skull 4 had no teeth in the upper jaw and the secondary first molar, left side, lower jaw, just emerging; skull 5 was that of an adult male with worn molars; skull 6, no data; skull 7, a child, same state of development as skull 1. A short distance east of this group, and at the same depth, were five other skulls, all facing south. These were 2 feet west of burial urn 3 (see pl. 2, fig. 1; fig. 4). The three skulls to the north had two femora in front of their facial portions. Behind the two skulls to the south were six or seven femora laid roughly north and south (fig. 4).



Photographs by Junius Bird.

**BLACK ROCK BASIN, UTILA**

1. Burial urns 1-3 and skulls.
2. Skull burial.
3. Burial urns 7-8 and skulls around burial urn 6.



Photographs courtesy of American Museum of Natural History.

**BLACK ROCK BASIN, UTILA**

1. Burial urn 1.
2. Burial urn 7.
3. Burial urn 8.

Another group of urn, skull, and bundle burials occurred close by. The rim of burial urn 4 was within 6 inches of the surface (fig. 5). It was protected on three sides by vertically placed pieces of coral rock, the ends of which projected slightly above the ground, and on

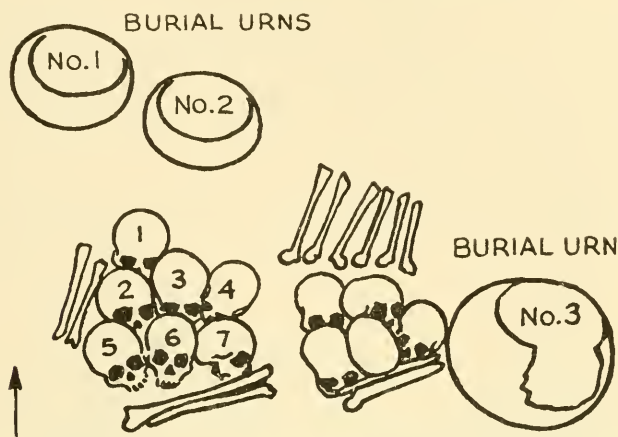


FIG. 4.—Diagram of skull and urn burials 1-3, Black Rock Basin, site 1.

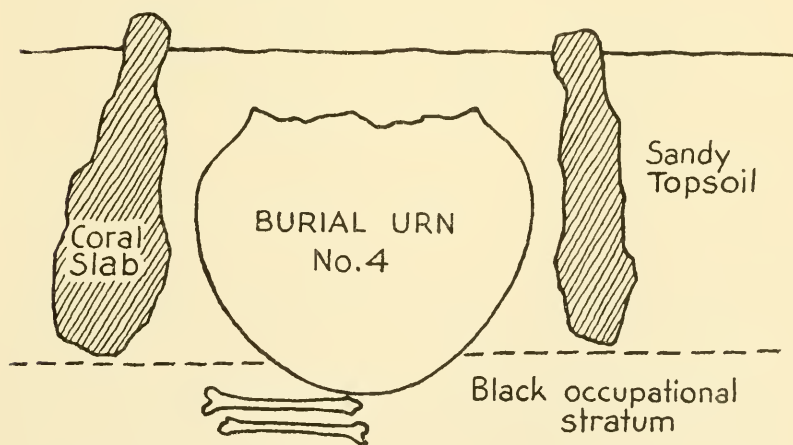


FIG. 5.—Cross-section diagram of burial urn 4, Black Rock Basin, site 1.

the fourth side by several large fragments of other pots nested together. The bottom of urn 4 was 22 inches deep, in the black occupational stratum. The rim, neck, and shoulders were broken away, and a piece 6 inches in diameter was missing from the bottom of the vessel. This urn, generally similar in type to the others, was



not saved. The vessel was filled with sand from the surface and contained only a few fragmentary human bones, six or seven vertebrae, lower leg bones and a section of femur. Beneath the urn was a partial bundle burial.

Burial urn 5 was close to 4 and of the same type: The protecting coral slabs projected above the surface, and a rectangular grinding stone with rounded edges was to one side. The bottom of the urn, which was not saved, was 24 inches below the surface and had a small, perfectly round hole made from the inside in the bottom. It contained two adult skulls, a complete skeleton, and a few fragments of a child's cranium and jaw.

The disposal of skulls around burial urn 6 was particularly striking (pl. 2, fig. 3; figs. 6, 7). The urn, which was not saved, was

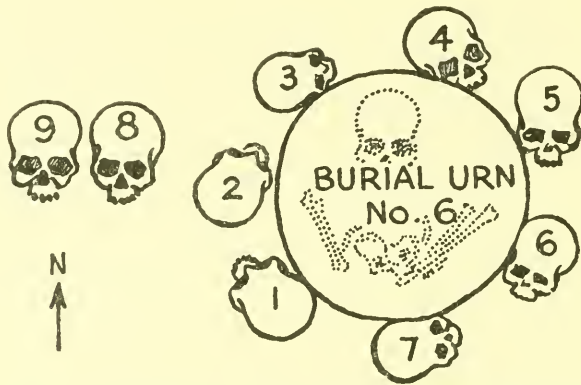


FIG. 6.—Horizontal diagram of skulls and burial urn 6, Black Rock Basin, site I.

badly broken in its upper portions and was mixed with numerous other sherds in the top soil. The rim must have been within 6 inches of the surface. Beach sand had sifted about the pot and skulls, and the original pit had evidently been filled with it. The bottom of the urn rested in the black occupational stratum 28 inches below the surface (fig. 7). Coconut palm roots were growing through the urn and the skulls. The burial urn itself contained the skull and disarticulated bones of one individual, evidently an old man. Around the urn were seven skulls, all apparently adolescents of about the same age. With one exception (fig. 6, skull 7), all were facing clockwise. The tops of the skulls were 10 to 13 inches below the surface. There were two other skulls (8, 9), with slightly heavier supraorbital ridges, to the west of the burial urn (pl. 2, fig. 3); these

faced south. All the skulls were filled with beach sand composed largely of minute shell fragments. Underneath burial urn 6 was a mass of closely packed human bones in a pocket of white beach sand (fig. 6); (these are not indicated in Bird's original vertical diagram, but I have added them in accord with his description). As far as could be determined, this mass included 14 femora, 14 lower leg bones, 14 upper arm bones, 7 jaws, 7 pelvic portions, and a disproportionately small collection of ribs and vertebrae. Slightly above the burial urn and to the north was a bundle of long bones, apparently from the same adolescent individuals whose skulls were placed around the burial urn.

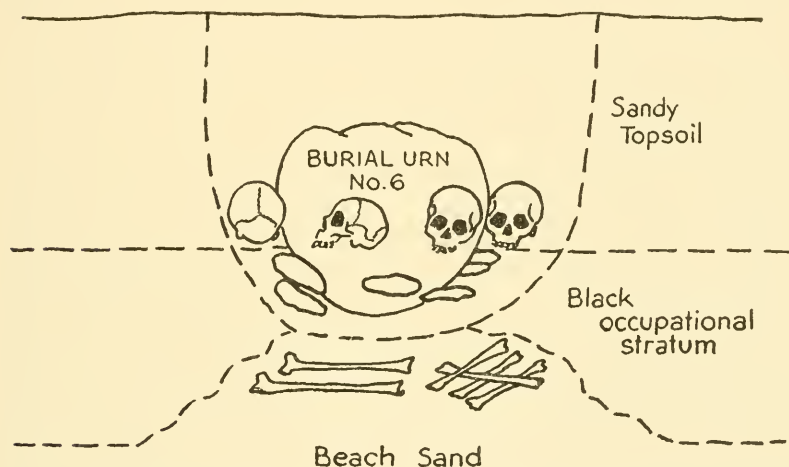


FIG. 7.—Cross-section diagram of skulls around burial urn 6, Black Rock Basin, site 1.

Burial urn 7 (pl. 3, fig. 2) was  $3\frac{1}{2}$  feet northeast of urn 6 (pl. 2, fig. 3). Like all the others, it is of monochrome, red-brown ware, with sand tempering. The vessel is 42 cm in height, with an outer mouth diameter of 27 cm; in thickness it varies between 1 and .5 cm. It has more of a neck than urn 1 (pl. 3, fig. 1) and an obliquely everted lip. The rim was 10 inches below the surface with the bottom resting in the black occupational stratum. The upper half was full of sand, then occurred a single layer of potsherds, and below this were two skulls, one adolescent, the other more mature, both very poorly preserved. In addition, there were three vertebrae, two fragments of pelvis, and a small mandible, apparently that of the adolescent skull.

Burial urn 8 (pl. 2, fig. 3, and pl. 3, fig. 3) was 1 foot north of urn 7 on the same level. This vessel has a pleasing shape with considerable neck but a small everted rim. It is 34 cm in height, 28 cm in outside mouth diameter, and .8 cm thick at the neck. Half of a similar urn had been placed over the aperture of urn 8 but had broken into small fragments. Urn 8 contained two adult skulls (only one of which was saved) and a child's skull with holes in the forehead. No long bones were present, but there were numerous vertebrae and ribs; two vertebrae, fused together, were preserved. One of the adult skulls was that of an old person and lacked any teeth in the maxillary.

Bird's material from site 1 is segregated according to depth. Since the specimens preserved include only about 40 potsherds and 2 other artifacts, the results thus obtained, although valuable, are not striking. The ceramic material, with the exception of the burial urns previously described, is all broken and of a monochrome, red to buff, sand-tempered type. The upper layer extends from the surface to a depth of 18 inches. This very roughly coincides with the wind-blown sand stratum, although, as figure 3 indicates, the respective depths of the strata were variable. From this upper layer there are at hand some 17 sherds, including 10 rim sherds. One of the latter is from a thin, highly polished, red bowl, with one perforation for "crack lacing". Three are decorated with incised, punctate, and relief adornment, and one has a raised and notched horizontal band on the neck. Two large sherds come from big vertical jars with slightly flaring necks. One of them is decorated by an incised panel, 6.3 cm wide, below the neck, having a St. Andrew cross with punctate marks where the lines cross; the other has incised double scrolls with four punctate marks diagonally through their centers (compare pl. 24, *a*). Two sherds from simple open bowls are both incised, one with an elongated double scroll, the other with irregular crisscross lines. One rim sherd is identical with the burial urn rim type (pl. 3, fig. 2). There are two thin (.5 cm) body sherds with linear and curved ornamentation by incision and relief. One basal fragment with a bored hole 2.5 cm in diameter is similar to the burial urns. There are two hollow conical feet, one plain with three irregular perforations and the other decorated by incisions, punctate marks, and raised vertical strips, on which are other punctate marks. Two rim sherds have vertical loop handles; one is plain and the other has crudely incised lines extending its length. The latter handle is from a vessel with two raised scalloped bands extending around the neck where the handle is attached. The only nonceramic artifact from this stratum is a much battered celt (8.5 cm long, 3.6 cm thick) of hard gray stone.

Some 25 sherds are listed as coming from a depth of 18 to 28 inches, a layer roughly corresponding with the black occupational stratum. Of these, four are rim fragments of small, plain, open bowls; eight are rim fragments from wide-mouthed, plain vessels with a short neck and flaring lip; and two are rim sherds from straight-walled, probably annular-based vessels without decoration. Only two sherds are decorated: one well-polished fragment is from a straight-walled vase and has a step design between double incised lines around the neck; the other is from the same type of vessel but of coarse red ware with incised square and scroll designs. There are two vertical loop handles, one of which has ridged edges. Three hollow conical feet are cylindrical down to a sharply tapering point, they are deeply incised and punctured, suggesting some sort of a conventionalized head. One conical foot is long and slender (7.5 cm in length), and one is a hollow hemisphere without decoration. All the feet come from medium-sized vessels. The only other artifacts are a saddle-shaped piece of pottery, possibly a burnisher; a notched pottery net sinker (?) 2.5 cm in length; and a perforated cowrie shell from the interior of burial urn 1. There are also a considerable number of shark and other fish vertebrae and unworked shells in Bird's collection, but it was not possible to have these identified in the time available for study.

Our own collection from this site is a mere sample of 20 sherds, all of the red to buff monochrome ware and very similar to the above. They were obtained from test pits in a previously disturbed area and hence have no stratigraphic value. Three sherds have the raised band with scallops or points around the neck where it joins the body. There is one entire rim of a small urn 23 cm in outside mouth diameter, with a probable diameter of some 25 cm for the entire vessel. It has a somewhat constricted orifice and a low, flaring rim. There are two other rim sherds from similar vessels. Two cylindrical pointed feet and one conical foot, as well as one loop handle, are similar to the above. About half the sherds have rather simple incised designs. The remainder are plain and, as a rule, coarse in texture. Besides the potsherds we obtained a flat pendant of dark green talc (3.5 cm in greatest width), which has a conventionalized jaguar face incised on one surface (pl. 11, *h*). A round disk (9.5 cm in diameter and 2.5 cm thick) of rhyolite porphyry with rounded edges and a biconodont perforation 2 cm in diameter suggests a mace head, but the shaft hole is very small for such usage. A section of a prismatic flake knife of obsidian (7 cm long) and two smaller fragments were also found (fig. 15, *a, b*). One section of a polished cylindrical roller pestle 12.5 cm in diameter was noted.

Bird states that the decorated sherds came from the upper levels and that all the sherds from the lowest level were plain. The foregoing analysis of the collection bears out, in the main, his own observations made at the site. Some decorated ware does come from below the 18-inch level, but it is markedly more abundant above than below this line. Next to the nature of the urn burials, this is apparently the most significant result of the excavations at this site.

#### SITE 2

This concentration of cultural detritus, apparently part of the same general deposit, is located 400 feet west of site 1. Guided by Mr. Waterhouse, we visited the site the same day we examined site 1. The deposit is made up of broken pottery, shells, fish remains, etc. Fragments of human bone were noted, but no complete urns or burials were encountered by either party. Bird dug a cross trench here (trench 2) and also a test pit. There are no diagrams of these excavations. This trench apparently reached a depth of between 4 and 5 feet, the upper 18 inches or so consisting of somewhat intermixed wind-blown sand, the next 3 feet of black occupational debris, and below this the unmixed beach sand. Bird states that potsherds were very abundant, all being plain, unpainted ware, usually red but sometimes black at the center with red surfaces. He also observes that the sherds in the upper refuse had ornamented knobs and legs with some raised decoration, whereas the sherds from the lowest level lacked decoration.

As at site 1, the material from this site that was saved is in large part allocated as to depth. The largest amount of material, however, comes from the surface down to a depth of 20 inches, the material preserved from below this depth being almost negligible. Probably the collection saved was definitely selected to show the more complex pieces. From the surface down to 20 inches come 20 fragments of hard, well-polished bowls or jars, all more or less smoke-blackened. A few have loop handles, and several are decorated with designs made in relief or by incision. Some 25 sherds come from small to medium, plain jars with constricted necks and low to medium flaring rims. One or two have straight necks, and one open bowl has concave vertical walls and a rounded bottom. Another group of highly polished, thin, brown sherds come from a vessel with a concave "dimple" in the bottom. One solid, vertical loop handle, and several broad loop handles decorated with raised and sometimes notched ridges, are present. There are several decorated feet, two of which are hemispherical with

holes suggesting eyes and with "noses" in relief, and one represents the head of a snouted animal, possibly the tapir.

From 28 to 36 inches come five sherds of dull brown ware; a large fragment (7.5 cm high and something over 30 cm in diameter) of an open-mouthed bowl; and four other rim sherds with low flaring rims. One of the latter is of the urn type. None of these pieces is decorated.

The nonceramic material from trench 2 includes two very shallow, ovoid "dishes" of pumice, of which the longest is 17 cm in length. The exact depth and the purpose of these pieces is uncertain. There is also one rectangular "burnisher" of pumice, 7 cm in length. One leg of a hard, gray, long metate (upper layer, surface to 18 inches), and sections of two "roller" stones, one of polished granite (upper layer, surface to 18 inches) and one of white coral (depth uncertain), were recovered. One small fragment of an obsidian flake knife (from a depth of 10 to 20 inches) is present. Of shell artifacts, a much worn celt with a sharp edge, manufactured from the ridged portion of a conch, comes from a depth of 36 inches. There are nine smoothly worn fragments of cowrie and conch shells from various depths, which suggest tools, but they also occur in the unmixed, underlying sand, and their form probably results from wave action.

The test pit also yielded considerable broken pottery. From the upper layer, surface to 12 inches, there are 12 rim sherds from medium to small vessels with constricted necks and low flaring lips. Two of these have incised designs around the neck, and two of the larger rims approach the urn type. Two large fragments are from thick, open bowls; one fragment from a flat, slightly concave plate; two vertical loop handles; and three decorated legs are from this level. One of the last is a long, hollow cone (10.5 cm in length) with a compressed tip and seven perforations of various sizes; one is similar but shorter with a flattened tip; and the last is hemispherical with four perforations (one at the tip) and is decorated with two small "adornos" in relief. From a depth of 12 to 15 inches come four coarse, dark red rim sherds, two being from small open bowls and two from jars with slightly flaring rims. From a depth of 21 to 27 inches come two rim sherds, both plain, one from a small open bowl with a slight contraction around the neck, the other from a globular vessel with a low, sharply everted rim. One other plain red potsherd comes from this level. The only nonceramic artifacts from this test pit were a few bored shells and shark vertebrae.

In addition to the material just described, Bird's collection from site 2 contains a certain amount of pottery from uncertain depths.

This can be described in conjunction with the small collection that we made at the site. Fragments of large, thick, open-mouthed bowls are fairly common, as are those of medium-sized jars often with vertical loop handles. The handles are both thin and flat, and round and solid, in type. A number of sherds of polished brown ware also occur. Several snouted lugs suggest tapir or peccary heads, and one is too conventionalized to permit even a guess as to the animal represented. On the whole, however, elaborate lugs are not particularly characteristic of any of the Black Rock Basin sites. About 20 pieces are feet from tripod vessels. The majority of these are long (10.5 cm being the greatest length) and conical, with six perforations into the hollow interior, and usually with circling incised designs and little "adornos" in relief. The tip is usually compressed but sometimes modeled to suggest two legs or some other form. One is a hollow, round ball with two perforations; and four more are of the same type but are decorated with "adornos", more perforations, and incisions. The hollow legs nearly all have, or did have, gravel rattles in them. Two feet are solid and much conventionalized; one of these is of the short cylindrical type with punctate decoration, the other suggests an animal head with two punctate eyes, three punctate teeth, and a buttonlike nose. More or less elaborate tripod feet, it may be added, are apparently more usual here than are lugs.

Amidst the occupational debris were many conch, whelk, and other shells, both large and small. The conch shells usually have been broken on the side in removing the meat. Mammal bones include the manatee and probably others not identified. Turtle and iguana remains are rather common. Fish bones are numerous, especially many varieties of shark vertebrae, many of which have been perforated. Bird has a considerable amount of such material (A.M.N.H. collections) that has not been analyzed. Our much smaller collection yielded the following: several fish vertebrae, probably those of the jew fish (*Promicrops*); the jaw of a puffer fish (perhaps *Diodon*), and two jaw fragments of the parrot fish (*Scarus*).

#### BRANDON HILL CAVE

On a rocky ridge not far to the southwest of Pumpkin Hill (see map, fig. 2) is a deep cave of which one hears as soon as "relics" are mentioned to anyone from the islands. According to stories from many sources this remarkable cave penetrates down to salt water, or according to another version extends all the way to the southeast shore of Utila. A golden cup, a rusty sword, and a crucifix, as well as

a cache of rifles, are among the finds reported from here, and the gold cup incident at least is apparently true. (See Rose, 1904, p. 147.) Incredible tales of magic and buried treasure float from mouth to mouth around the islands, and a folklorist would have a rich field for investigation among both whites and negroes. While no "treasure" finds other than this one gold cup (apparently looted from some church) ring true, the rumors have their inevitable concomitant in a senseless destruction of Indian sites in the fruitless search for gold.

Brandon Hill Cave is a beautiful place, and wherever its winding limestone passages may actually lead, they are extensive enough to satisfy the most ardent cave explorer. The mouth of the cave is difficult to reach, but having once attained it, one may sit at ease in the cool entry chamber. There is about a foot of dust on the floor, which has been much turned over, but we were able to find two pieces of what appeared to be white rock painted bright red on one face. These on analysis proved to be thick pieces of pottery. A few plain brown sherds were also recovered as well as fragments of green glass bottles. A fish line extends down the steep, narrow crevice leading into the deeper passages of the cave. Mr. Haskell and Mr. Payne crawled down and along these winding, bat-infested cracks for about half an hour but returned without having reached the end or having seen any likely places for excavation.

Bird explored this cave until the descending crevices became too small to permit passage. The material which he obtained indicates that at least the main chamber was occupied by the aborigines. This collection includes some 21 sherds from the shallow dirt floor just inside the entrance, all of which had been turned over by treasure hunters. The majority of these are of the plain monochrome, red or brown ware, but there are a few sherds that are highly polished and one that is incised. Several are from small open bowls and one from a small jar with a short vertical neck. One sherd is part of an annular base, and one is a loop handle. The pottery ranges from 1.2 cm to .3 cm in thickness. The thin sherds are of light brown ware and may be Polychrome I in type, but if so, all traces of paint have disappeared. The two most interesting sherds, however, are covered with a chalky white lime slip on the inside and a bright red paint on the outer surface. This paint has worn off in places, the white showing through. The sherds are .7 cm in thickness and are probably from the same vessel as those which we found. Seventy-five feet inside the entrance Bird found four sherds on the rock floor; all are dark brown, and two are rather elaborately incised with curved lines, scrolls, and dashes.



The other finds include a fragment of a stone bowl (2.5 cm thick) made from a hard conglomerate highly polished on the inside, and a portion of a hemispherical hammerstone with one polished surface. Particularly interesting is a complete, sharp-edged celt (8.8 cm in length), ovoid in form, which is made of conch shell. A fragment of an obsidian knife, several large land snails with perforations, various other fragmentary and whole bivalve shells, and five pieces of a dark glass bottle are also present. There are several fragments of animal bone and a number of small human skull and other bone fragments which are highly mineralized. The latter are of considerable interest but unfortunately no likely places for more complete burials could be found in the cave.

#### BYRON CAVE

This cave, the approximate location of which is given on the map (fig. 2), is some distance inland in a wooded area and was rather difficult to locate. It was explored by Bird but not visited by our party. Bird reports that the small cave opening leads back into the rock from the bottom of a craterlike formation. For about 60 feet it is low and narrow, opening into a fair-sized room with a deep pool of fresh water at one side. Bird secured several lime incrustated sherds in the passageway and, by diving, brought up one vessel from a depth of about 18 feet in the pool. This was located with a flashlight, the deep dive being made even more hazardous by the low roof over a portion of the pool. This bowl is about 30 cm in diameter with a globular body, a slightly contracted neck and a low, swollen, everted rim. The only decoration is an incised line around the neck. The sherds from the chamber and passageway include a small section of an undecorated globular pot (perhaps 25 cm in diameter) which has a constricted orifice but no rim; a portion of a short-necked bottle or water jar (perhaps 20 cm in diameter); and half of a globular bowl with a slightly constricted orifice and a low, slightly flaring rim. The latter has a small vertical loop handle and an estimated diameter of 15 cm. The small sherds from the passageway have a calcareous incrustation about 1.5 mm in thickness on their surface. All the pottery from this site is of plain red ware, fairly well polished, and the majority of the pieces are somewhat smoke-blackened. They are obviously utilitarian types.

Bird states that the inner cave is poorly adapted for habitation and, as there is a good fresh-water pool in the outside crater, believes that

the inner cave served as a hiding place. Such places must have been at a premium when the Spanish slave hunters were harrying the Islanders.

#### BIG BIGHT CAVE

This interesting site is close to East Harbor (see map, fig. 2) and has been rather thoroughly cleaned out by other visitors. It is locally known as "Big Bight Cave" and consists of a rough, basinlike area of rough rock or coral perhaps 25 yards in diameter, in which there are a number of cracks, pits and caves full of fresh water. According to Bird the formation here is volcanic in origin while my own hasty impression was that it was tumbled coral rock. The pools are surrounded by great irregular masses of needle-sharp rocks, and the holes have from 1 to 6 feet of water in them, many being inaccessible. Flat, smooth pieces of coral are laid as stepping stones from the inland edge of the basin to the main water hole. The site is only about 30 or 40 feet from the sea.

By stripping and diving, I secured a representative collection of potsherds. I presume Bird obtained his in the same manner for the only pieces noticed by us were in the water. Bird mentions it as "a water hole used by Indians" and states that "the surface of all sherds show the effect of lying in water; in nearly all cases the sand tempering is exposed on the surface". His collection includes 2 small complete vessels and some 13 sherds. All the pottery is of the monochrome red or brown type without any visible slip. One complete bowl is 6 cm in height with a slightly contracting neck, plain rim, and a wide mouth. The other is 5.5 cm in height, it is a small plain jar with globular body, a restricted orifice and a slightly flaring, medium high rim. A half portion of a large open bowl with an annular base is rather striking (fig. 34, *b*). It is 11 cm in height, of coarse, brown, sand-tempered pottery, and has two solid, vertical loop handles and a double line of bosses around the body. There are five fragments of medium-sized jars with slightly flaring rims ranging from 2 to 4.5 cm in height. Three of these have rather crude incised, applique, and punctate decorations. The most elaborate sherd is from a shallow open bowl with flaring lips and a tall tripod base. The legs are cylindrical with round swollen tips and raised upper portions with punctate decorations. Around the body, below the rim, is an incised series of panels, each containing two opposed step designs. There are two separate feet from similar vessels which, like the above, form rattles; one of these may be from the same bowl, but the other is of mammi-form or cascabel shape. There is one small, solid, rectangular lug

and a much worn sherd with a rather elaborate incised design consisting of a repeated double spiral ending in two dots.

Our sample collection consists of half an open bowl and some 16 other sherds. These are all monochrome, ranging from brown to red, grit-tempered and coarse in texture. Most of them are coated with coral, which is almost a centimeter thick on some sherds, and many other sherds at the site had been fastened into the rocks by coral growth. The largest fragment is from an open bowl (18 cm in diameter) with a round bottom and a low concave neck which flares out slightly at the top. There are rim fragments of several round pots of medium size with low, slightly flaring rims, and several others from small round bowls with no necks but thickened rims. No other artifacts were noted at the site.

Although the water in the accessible caves is fresh, there may be some that is brackish. That this was a water hole used by the Indians seems the most logical explanation. The whole site, however, gives the impression of having once been a great cave that has fallen in, and it is tempting to explain the presence of numerous broken pots in inaccessible places in this way. Our own examination of the site was too hurried to check this hypothesis.

#### “ EIGHTY ACRE ” AND OTHER SITES

This site was evidently not worked by the Boekelman Expedition, but on Bird's composite photograph of the east end of the island he locates a “ mound with potsherds ” in the vicinity. Mr. Waterhouse took us to the place and is responsible for the statement that it covers 80 acres. It is certainly a large and important site and, being close to Stuart Hill, is probably one of the main habitation places connected with the stone causeways and other ceremonial features there which are mentioned by Rose (1904).

We examined an area of several acres on the edge of some low hills (see map, fig. 2), all of which is covered with broken pottery and kitchen refuse. There are a large number of low, irregular mounds here which seem to be composed in considerable part of refuse. They also contain human burials. We dug shallow pits into two of these mounds, but although we found some scattered human bones and teeth, along with sherds and other refuse, we did not strike any definite burials. Mr. Waterhouse stated that both extended and flexed burials, with the bones in rather firm condition, had been dug up here.

Our sample collection from here includes 24 sherds. These, like all other pottery noted at the site, are monochrome, ranging from brown to red in color. They are tempered with white (coral) grit and are rather well polished, although they lack any but the simplest attempts at decoration. Three fragments are from thick, round-bottomed, open bowls, one of which has a small ovoid lug with "coffee bean" eyes. Six sherds are from smaller open bowls, one of which has a perfectly flat rim. Nine are from small bowls with restricted orifices and low slightly flaring necks. Only one of these has a lug and irregular vertical incisions near the neck. A crudely modeled, solid conical leg and a thick body sherd (1 cm in thickness) are the only other pottery pieces. Other detached feet and lugs, some of which were modeled, were noted at the site.

There are six fragments of prismatic flake knives of black obsidian and many similar pieces were found in the mounds. Fish bones are very abundant, our sample containing four shark vertebrae (species indeterminable), the jaw of a hog fish (*Lachnolaimus maximus*), and others of indeterminable species. Shells did not seem to be very abundant, but a few mammal bones were noted. The fragments of the latter which were saved are too incomplete for identification. Irregular calcined stones and charcoal were observed in the mounds. Our examination of the site was extremely brief but sufficient to indicate that it was a definite habitation site, containing much material and apparently of considerable extent. Taken in conjunction with the stone causeways reported as converging on Stuart Hill, of which we were unaware at the time of our visit, the "Eighty Acre" site seems highly important.

As a whole, the island of Utila is obviously an extremely promising place for extensive archeological research. Habitation, ceremonial, and burial sites are all present, and of these only one or two have been even seriously sampled. The island as a whole has not yet been examined even for surface indications, and this is especially true of the western end. Here on the surface of the ground near the small settlement of Sucsac Cay (see map, fig. 1) Bird obtained a small collection of sherds. These include two fragments of open bowls; two rims of large urnlike vessels with sharply everted lips; several rims from medium to large jars with low necks and flaring lips; one loop handle, and several body sherds. All are of course red ware without slip or decoration. We heard of other burial grounds in this part of the island which evidently resemble that at Black Rock Basin, but we had no time to visit them.

## ROATAN ISLAND

Roatan, the largest island of the group, appears to have been the least exploited archeologically. The Mitchell-Hedges collection from Roatan is small and seems to have been acquired mainly by gift or purchase. The Boekelman Shell Heap Expedition worked one site in Jonesville Bight, visited Port Royal, and purchased a small collection from the vicinity of Coxen Hole. We visited the same places and, in addition, excavated a hitherto untouched offertory site near French Harbor. In the present discussion these sites will be described, commencing with Port Royal near the eastern end of the island, and proceeding west to the vicinity of Coxen Hole.

## PORT ROYAL

If the buccaneer period in the Caribbean ever becomes the subject of direct archeological investigation, Port Royal will not be neglected. Once the most important harbor in the islands, Port Royal in 1933 had a population of one American and a scant handful of native Hondurans. Here is a setting that for beauty and romance rivals Stevenson's "Treasure Island". Backed by steep, jungle-covered hills, the great empty harbor is defended by encircling coral reefs, through which only two narrow deep-water entrances penetrate. Old stone forts guard the channels, the ruins of a buccaneer town are hidden in the dense bush on the mainland, and, as a final touch, there is even a "pirate's cave" located on a small creek, whose bed is full of old broken rum bottles (see map, fig. 8). Since no aboriginal remains could be found at Port Royal we spent only one day here. However, with adequate time for exploration, native sites could probably be located, and the colonial remains in themselves merit a much more extensive examination than we were able to give them.

With the beginning of the seventeenth century, Spanish domination of the Bay Islands began to be disputed by a horde of freebooters of English, French, and Dutch nationality, and in the ensuing struggle Port Royal, as the most easily defended harbor, became the scene of repeated violent struggles. The first important raid on the islands came in 1639, when a party of Dutch buccaneers under Van Horne ravaged Utila and Bonacca. It was at this time that the Spanish began seriously considering the removal of the Indian population from the Bay Islands, which was finally effected in 1650. (Conzemius, 1928, pp. 64, 65.) Meanwhile, in 1642, Port Royal was occupied by a considerable number of English logwood cutters and illicit traders from the region that is now British Honduras, and the harbor was

strongly fortified. Piratical raids from here so annoyed the Spanish that they sent Francisco Villalva y Toledo with four men-of-war to drive out the invaders, but so forbidding were the defenses that he returned to the mainland for reinforcements. In March 1650 he returned and, after some hard fighting, drove the freebooters from the island. The struggle and the subsequent removal of the few remaining natives depleted the islands, and for some years they lay waste, only feebly occupied by Spain. (Conzemius, 1928, p. 65, and Squier, 1858, p. 615.)

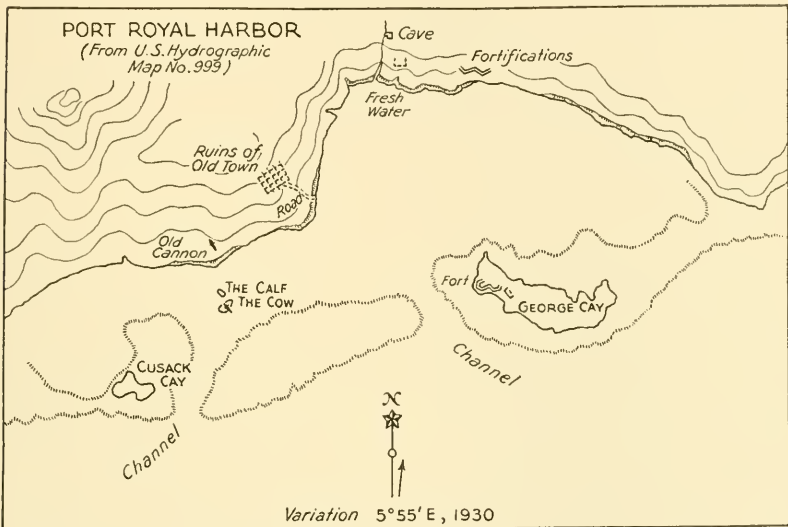


FIG. 8.—Map of Port Royal harbor showing buccaneer remains, Roatan.

In 1742 the British made an attempt to obtain possession of most of the Atlantic Coast of Central America. As part of this plan they occupied Roatan and fortified Port Royal with materials brought from the mainland. (Squier, 1858, pp. 615, 616.) Several English visitors at a somewhat later date mention this and give some interesting details. Strangeways states that there is a "Careening Kay" (for beaching and scraping vessels) at the northeast end of Port Royal Harbor, and quotes the following passage from the *Columbian Navigator*: "In Port Royal Harbor British ships formerly obtained wood; and they procured water from a rivulet in the NW. part of the harbor. The harbor is capacious enough to contain 20 or 25 sail of the line. Formerly there were two batteries here; one on the west end of George's Isle, and the other on a high point of land on the SW. part

of the harbour. The heights of Roatan command such an extensive prospect, that no vessel can pass to the Bay of Honduras without being seen from them." He adds that the English took possession of Roatan in 1742 and built a fort in which they put 250 men commanded by Pitts, a logwood cutter. (Strangeways, 1822, pp. 40-42.) About 1827 Roberts visited the islands. In regard to Port Royal he says: "This beautiful island has an excellent harbor, easily defended; it was once in the possession of the English, who erected batteries completely commanding this harbor, and marked out a space at its end for the erection of a town." At the time of Roberts' visit none of the islands were occupied, owing, he states, to danger of Indian attacks. (Roberts, 1827, p. 276.) Although England specifically gave up her claims to this region in the treaty of 1763, she nevertheless retained her hold on Roatan, the piratical inhabitants of which caused so much trouble to Spain that, in 1780, she once more declared war.

The events which followed are described by the Bishop Pelaez (quoted by Squier, 1858, pp. 616, 617):

On the 24th of September, 1781, advices reached Truxillo, which were immediately communicated to the government at Comayagua, that certain negroes and others, to the number of about 300 men, had constructed three forts at the entrance of the principal port [Port Royal] of the island of Roatan, armed with 50 guns, and that three armed vessels cruised in the neighborhood, the object of the whole being to intercept the ships plying between the kingdom of Guatemala and Cuba. It was reported that these freebooters had 3,000 barrels of provisions for their support, and that their object in holding the port was to make it a refuge for their vessels, which were no longer allowed to go to Jamaica.

When this information reached Guatemala, the President Galvez made arrangements to expel the intruders. He called out the militia of Amatitlan, Zacatopeque, Chiquimulu, Santa Ana, San Salvador, Nueva Segovia, Leon, Olancho, Tegucigalpa, and Comayagua. The company from Leon numbered 200 men, under the command of Colonel Don Josef de Navas; San Salvador sent 300 men, and Santa Ana 200; and Don Miguel Machado, of Gracias, headed 200 men, equipped at his own cost.

In the meantime, two Spanish vessels of war, the Santa Matilda and Santa Cecilia, of the royal navy, with a sufficient number of *piraguas* from Bacalar, arrived at Omuá, and the forces above mentioned, under the command of Galvez himself and his Lieutenant Estacheria, embarked on the 2nd of March, 1782. They steered direct for Roatan, and at once attacked the forts erected to command the principal harbor [Port Royal]. After a heavy cannonade, detachments of the troops landed and opened regular trenches against the forts, which were so closely invested and hotly pressed that on the 16th of the month they surrendered at discretion. The lives of the defenders were spared, but all their dwellings, to the number of 500, were destroyed.

The British also had settlements on the islands of Bonacca and Morat, all of which were captured by Galvez. The prisoners were ex-

changed at Havana and only a few Negroes who fled to the swamps of Roatan escaped.

Things were evidently quiet around Port Royal for almost 15 years; then in 1796 the British forcibly deported some 5,000 Black Caribs (a mixture of Carib Indian and African Negro) from St. Vincent on the Windward Islands to Roatan. (Squier, 1858, pp. 618, 619, and Conzemius, 1928, p. 58.) These people, who had been attached to French interests, were giving the British much trouble, hence they were deported en masse and landed at Port Royal. It is not clear whether the British intended to reserve their dominion over the Caribs or were simply getting rid of them. In any event, the Captain General of Guatemala justly regarded it in the light of an invasion and sent armed forces to Roatan where the Caribs gladly surrendered without resistance. Most of them quickly accepted the invitation of the Honduras Government to come to the mainland, though a small number preferred to stay on the then deserted island of Roatan. For the remainder of the eighteenth century the Bay Islands were undisputedly held by Spain, and a small garrison was maintained on Roatan (Henderson, 1811, p. 204), probably at Port Royal.

Not until the middle of the nineteenth century did Great Britain again assert her claims to the Bay Islands, and again it was Port Royal that was the scene of action. (Squier, 1858, p. 620; Young, 1842, p. 147.) In 1838 a group of liberated slaves came to Roatan from the Grand Cayman Islands, desiring to settle. The commandant at Port Royal informed them that they must first obtain permission from the Honduras Government. Certain of the immigrants did so, but others appealed to the British Superintendent at Belize. This officer shortly thereafter appeared off Port Royal in the sloop of war *Rover*, landed forcibly and, running down the flag of Central America, hoisted the British flag. Young thus describes the affair: "A British sloop of war appeared off the port; a boat full of men was dispatched to the shore, the Central American flag hauled down, and that of Old England planted in its place. Shortly after the vessel set sail the commandant pulled down the English colors and hoisted his own, which was no sooner observed than the vessel was put back, and landed a party of seamen and marines. The Central American flag was lowered, and two or three of the middies amused themselves by dancing on it. The commandant and his soldiers, notwithstanding his vociferous protestations, were put on board of the vessel, and had the mortification of seeing, on their departure, the meteor flag of Old England waving in the breeze. They were landed on the beach at Truxillo with a few gentle hints as to their future



behavior." Since the ensuing British occupation and later relinquishment of the Bay Islands have been mentioned elsewhere, we may conclude this brief historical sketch of Port Royal with the above somewhat anticlimactic affair.

We spent the day of May 5, 1934, in exploring Port Royal Harbor. It was a clear, windy day, and the guardian reefs were lines of high, white breakers, but inside the blue waters of the harbor were placid. We came in the west channel (see map, fig. 8) and passed the two rocks, the Cow and the Calf, on the former of which there is said to have been a cannon, but only the emplacement now remains. Bird's map of the harbor shows another old cannon on the mainland opposite, but we did not see this. These guns, with others on Cusack Cay, would have made entry to this channel extremely hazardous. We anchored at the head of the bay, where the small stream comes in, and visited an American by the name of Painter, who was the only occupant of the bay we encountered. He had several complete rum or sack bottles which he had found near his house (pl. 4, fig. 2). In type they closely resemble English sack bottles of the seventeenth century.<sup>18</sup> Under his guidance we proceeded about 100 yards up the small creek, the bed of which was littered with fragments and basal portions of irregularly blown, heavy green bottles of the sort illustrated. Here, cut out of a crumbly limestone cliff, is a rectangular cave about 35 by 15 feet in floor dimensions and about 5 feet high (fig. 9). The square walls and columns clearly indicate an artificial origin. The floor is composed of soft dust and dirt, but an apparent lack of artifacts, combined with the none too safe appearance of the cave walls, discouraged extensive digging. To the east of the creek Mr. Payne discovered some stone house foundations about 80 feet long and 20 feet wide. These were in dense bush and their total extent was not determined. They may or may not be the same as the "fortifications" indicated on Bird's sketch map (see map, fig. 8). Mr. Painter stated that there were stone foundations of what appeared to be a town, with a stone paved road leading to the shore, on the point west of his house (see map, fig. 8), but our time was too short to permit us to visit the place. This is probably the English or buccaneer town which the Spanish destroyed in 1782.

Leaving the creek mouth, we returned across the harbor to George, or, as it is locally known, Fort Cay. After considerable wandering through almost impenetrable low bushes we reached the battery that

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<sup>18</sup> Compare the type shown in the *Illustrated London News*, p. 902, fig. 3 c, Dec. 3, 1932.

extends along the northwest face. Here are emplacements for some six or eight cannon (pl. 4, fig. 1), protected by low walls about 5 feet thick of closely cemented slabs of limestone, brick, and coral. The cannon themselves had all disappeared. About 50 yards southeast of the main battery is a stone structure of massive masonry, locally known as "the powder magazine". It is a little distance from the shore and consists of a heavy wall facing the sea and two short end walls, with a separate and less massive rear wall that is unattached. The structure is some 8 feet high and the front wall is pierced by several loop holes. These have a single aperture on the inside and a double aperture on the outside so arranged that they can-

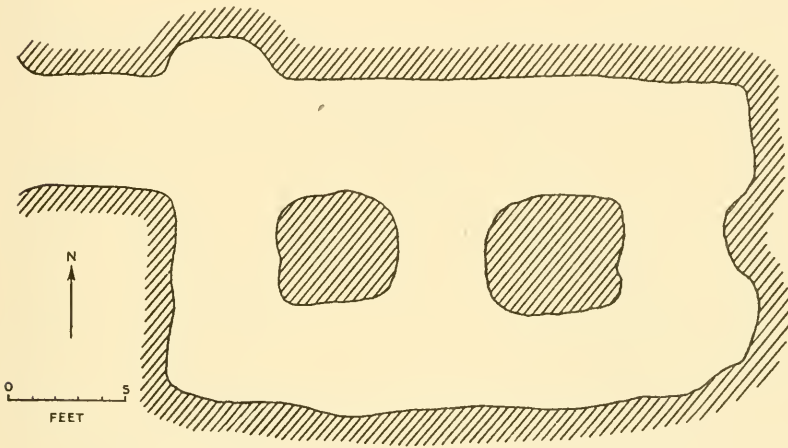


FIG. 9.—Floor plan of "buccaneer" cave, Port Royal harbor.

not be penetrated by direct fire. The inner sides of the stone walls have neat socket holes about a foot off the ground, probably for the insertion of floor beams. Near to this structure we noted several very large holes that had been dug in recent years, perhaps by treasure hunters. Captain Boynton pointed out one of these which he had seen soon after it was dug some years ago. A heavy, square object had evidently been removed from the hole and, at that time, the barked logs used as a skidway to roll the object to the beach were still in evidence. We saw nothing more romantic, however, than a few bits of iron and some old fireplaces near the battery, unless the omnipresent broken bottles on the beach be so considered. From its exposed position I rather doubt that the main structure here was the magazine; more probably it was the central "keep", fire-control or lookout station.

After a night during which a strong southeast breeze forced us to shift anchorage several times, we left Port Royal in the early morning. We had neither seen nor heard of any Indian remains in the vicinity, but it was with deep regret that we passed out between the silent, crumbling batteries, once the pride of "the brethren of the coast".

#### JONESVILLE BIGHT

This small lagoon or series of drowned valleys is located about 1 mile west of the beautiful little town of Oak Ridge (see map, fig. 1). Samuel Cooper, a long-time resident of Oak Ridge, told us of the finding many years before of painted pottery on the densely wooded

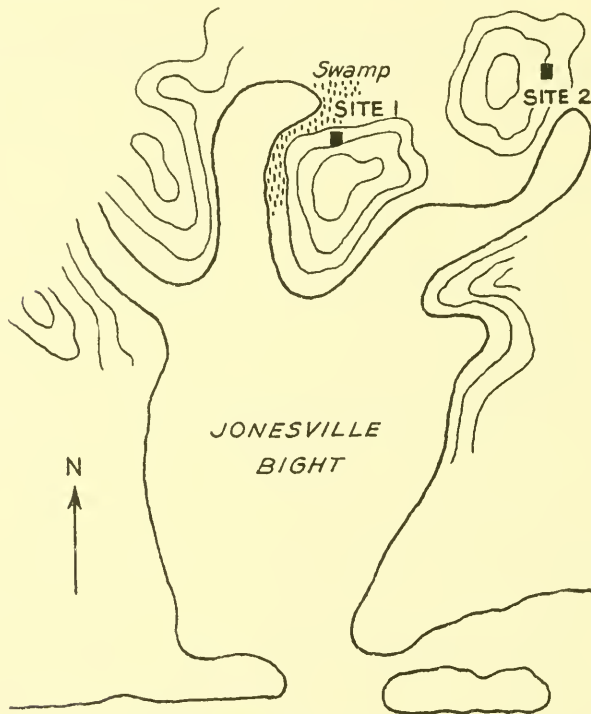


FIG. 10.—Sketch map of Jonesville Bight, Roatan. (Made by Junius Bird.)

ridges behind the town. We made a morning's expedition in search of this or similar sites but failed to locate any archeological evidence, although the ridges behind the lagoons would seem to be promising sites for offertories. That afternoon, April 29, 1934, the *Amigo* took us around to the head of Jonesville Bight (see map, fig. 10) to a site (site 1) which had been visited by the Boekelman Shell Heap Expedi-

tion in July 1931. Since Mr. Bird worked this site rather thoroughly and obtained a considerable collection here, the following account is primarily based on his notes and collections, supplemented with such additional material and information as we were able to gather.

#### SITE I

Jonesville Bight has three arms, and site I is located east of the central arm (see sketch map, fig. 10). The eastern shore here is fringed by a mangrove swamp, and to reach the site one enters the first opening in the dark wall of mangroves after the lagoon turns to the east. This is a shallow tidewater stream about 6 feet wide, which will float a dinghy drawing 14 inches. One follows this stream about an eighth of a mile through the mangroves until it is possible to step out on the low sand and mud shore. Here the land is level as far as the foot of the hill to the south, which can be seen through the scanty vegetation. Following the foot of the hill to the east, one comes to a triangular rock about 14 feet high, which juts out from the hill. Directly up the hill from this rock is a cliff about 75 feet high with a slight overhang. This affords a dry shelter for a strip 33 feet long but with an average width of only 2 feet. Near the center, however, the width of the shelter is about 8 feet. Below this the ground dips sharply to the north at an angle of about 40°, and a talus slope of large blocks of stone forms the bottom of a small gorge, which extends some 200 feet to the level bottom land. On either side of the small sheltered area great rocks jut out, and it is difficult to follow along the face of the cliff.

Digging showed the sherds and other artifacts to be entirely on the surface except at the very foot of the cliff, where they were buried to a depth of 10 to 12 inches. Sherds occurred over the entire area, which measured 8 by 33 feet. No charcoal or other evidences of fire were noted, and kitchen debris was lacking. The bones and teeth of a domestic hog were found on the surface, but these were probably later additions. A few human teeth and skull fragments were found in the deposit. Other objects present were large numbers of queen and horse conch shells. Nearly all the queen conch shells had a smooth round hole at the center. These were the most weathered, apparently owing to the perforation, which had been made so that they could be used as trumpets. Examinations of the vicinity, made by Bird and by our party, revealed no other signs of human occupation. The cliff beyond the site extends vertically upward for about 30 feet and then ascends very steeply to the top of the hill, which is entirely covered by irregular blocks of stone. From the nature of the site,

which is difficult of access and poorly suited for habitation, and from the nature of the artifacts recovered, site 1 was in all probability an offertory shrine and burial place rather than a dwelling site. In the following discussion of artifacts the collections of both parties have been merged. Bird's collection, which is the most extensive, is in the American Museum of Natural History and ours in the United States National Museum.

#### CERAMICS

No complete vessels were found at this site; Bird's collection includes 250 sherds and ours 50 sherds. In both collections these were selected, and a large number of sherds, especially undecorated pieces, were left at the site. However, although undecorated, plain red sherds were more common at site 1 than the following tabulation indicates, the proportion of decorated ware at this site was very high. The combined sherd collection falls into the following main types:

No. of sherds	Type
10.....	Thin polychrome (Polychrome I)
20.....	Medium polychrome (Polychrome II)
270.....	Red, unslipped ware. (Of these, 53 are more or less elaborate lugs, 132 are elaborately incised sherds, and 85 are plain sherds.)

The thin polychrome pottery from this site is very limited in amount but very definite in type. It is characterized by an orange slip and elaborate line decoration in black and red-purple. All 10 sherds are from the Bird collection, as I found no sherds of this ware at the site; hence its rarity in the collection reflects its actual rarity at the site. The body sherds show complex design motifs; two rim sherds have a typical, double black line above and a red line below, and the other sherds are from the lower portion of vessels and are marked by heavier black, red-purple, or dark orange lines. One rim sherd (fig. 11, *k*), perhaps transitional between this and the next type, has a geometric design in red-purple and black on both surfaces. The sherds are small, the largest being 6.5 cm in length, and they range from 5 to 7 mm in thickness. There are two lugs that, owing to erosion, lack any slip. One of these is of the applique rider type (fig. 22, *b*), the other a slight variant of the iguana type (fig. 22, *c*). The temper in most of the sherds is too fine to be visible, but in one or two, gray grit can be distinguished. Since this type of ware (Polychrome I) will be analyzed in detail later in relation to other sites where it was more abundant, further discussion can be deferred.

The Bird collection contains 16 sherds of polychrome pottery that do not fall into the above type. I collected four sherds of this ware at site 1, Jonesville Bight, but did not encounter it commonly in the islands, nor does the Bird collection contain much from other island sites. This ware, which I have designated Polychrome II, suggests



FIG. 11.—Polychrome II rim sherds, Jonesville Bight offertory. (White, red brown or orange; hatching, dark brown or dull black.)

a conventionalized and somewhat simplified development of Polychrome I. It is characterized by a high polish on a red-brown or dull orange slip, with designs in dark brown or dull black (fig. 11). It has a fine gray-grit temper and is fairly thin (3 to 8 mm thick, average 5 mm). The designs are rather well applied but tend to be somewhat

isolated and rather simple (fig. 11). The most striking single element is a unit "twined or braided" decoration (fig. 11, *a, b, c*). The single and multiple scroll is common (fig. 11, *a, b, c, e, f, g, h*) and the "twined or braided" element above referred to (fig. 11, *h*) may be derived from this simpler motif. Concentric diamonds with a central dot (fig. 11, *e, f*); angular lines with dots in the angles, occurring between black borders (fig. 11, *d*); wavy black, vertical lines and half scrolls are also used (fig. 11, *f, g*). The above are mainly neck decorations. Below the neck heavy geometric or curvilinear designs occur (fig. 11, *a, b, c, l*) and, in one case (fig. 11, *c*), this dark design has a darker border. One sherd (fig. 11, *k*) has linear designs in black and red-purple on an orange slip occurring both inside and outside of the lip, but, as previously stated, this sherd may be either of Polychrome I type or transitional between I and II.

Since no complete vessels were recovered, shapes must be determined from the available fragments (fig. 11, see rim outlines). Jars with a restricted orifice, a slightly contracting neck, slightly flaring lips, and large vertical loop handles (the latter in two cases with a conventionalized manatee head adornment) are evidently common (fig. 11, *a-d, g*). To judge from the rim fragments, these vessels were rather large, perhaps 30 cm in height. Cylindrical vases with slightly contracting necks and swollen lips occur (fig. 11, *e, f, h, j*). Small open bowls with a rounded bottom (fig. 11, *i*) or with a definite break between wall and bottom (fig. 11, *l*) are also present. The cylindrical jars (fig. 11, *h, j, k*) rather strongly suggest Polychrome I shapes. The occurrence of a number of borings in rim sherds for "crack lacing" (fig. 11, *a, g, k*) suggests that ware of this type was highly valued and carefully mended when not irretrievably broken. The rarity of Polychrome I and II sherds is likewise significant in this regard.

The third type of ware at this site may be termed monochrome, although painted decoration occasionally occurs. The monochrome ware falls roughly into two classes, an elaborately incised type and a plain or very poorly decorated type. At this site, however, the elaborately incised ware is predominant. Monochrome ware of these two classes will be analyzed in considerable detail later in connection with two sites on Barburata Island; hence for the present a rather brief description will suffice.

The elaborately incised ware at site 1 is particularly characterized by fragments of tall cylindrical jars with elaborate lugs and annular bases. Large and small bowl fragments with elaborately modeled

tripod legs also occur. The sherds from this site, however, are so badly broken up that shapes and sizes are hard to determine. Rim fragments fall into three main types: those of more or less vertical jars; contracted necks with low slightly flaring rims (much like fig. 11, *a-d*); and contracted mouths, with no neck, but with swollen lips. One of the latter is unique in having a broad, flat, horizontal groove running around the rim, separating it into a lower inner and a higher outer portion. The paste of this ware is well made and well fired, attaining a hardness of 5 in some cases. It ranges in color from light buff to dark red, with a red-brown the prevailing tone. No slip is visible on the great majority of pieces. The surface is well polished in most cases, burnished in others, and in four cases the sherds are fired to a slaty consistency showing gray blue on the inner surface and in cross-section, but polished brown on the outer surface. These are the pieces that attain to a hardness of 5.

Two large fragments are rather unique. The first of these is a small jar (7.5 cm in diameter at the mouth) with a constricted neck and flaring spout. Only the neck and rim are present. The color is a dark brown. It has dark grit tempering, is well polished, and is unique in having vertical fluting down the neck at 4-cm intervals, the square spaces between being decorated with small, even punctate marks. The second unique fragment has a similar constricted neck and three incised lines around the shoulders, below which is a vertical incised pattern. The latter design is obscure, because the lower portions of the vessel are missing.

Decoration in this ware is achieved by incision, applique, elaborate lugs and feet, as well as by form and polish. There are some 15 fragments of tiny jars with delicate incision and punctate design plus applique work (pl. 5, *e, f*). These are very thin (2 mm in thickness in several cases). Two of these small fragments have incised grotesque faces, with "coffee bean" eyes and peaked noses in relief. The heavier ware ranges from very hard, beautifully incised sherds to coarser, crudely incised pieces. In thickness this type of pottery ranges from 2 to 10 mm. Step, fret, cross-hatched designs or combinations of these with dots, double scroll and dot, and curvilinear human or monstrous faces (pl. 5, *d*) all occur (similar to pls. 24, *a, b*; 26, and 30, *a, b, c, c*). Only three sherds of this monochrome type of ware have a visible slip. Two of these are rim fragments of straight-walled vessels, with a dark red slip and an incised step design reinforced with black paint (similar to pl. 18, fig. 1, *e*). The third is a highly polished fragment with a flat, projecting rim. It



has a dark red slip, and there are traces of a black design on the flat rim.

Some 53 lugs were recovered. These are very similar to lugs from site 1, Barburata Island (figs. 24-27). Seven lugs are of the vertical type (*e*) with the constricted center at the point of attachment (compare fig. 26, *a-c*). Some are extremely grotesque, others very plain. Two rather unique face lugs are figured (pl. 5, *a, c*) but of these, one (pl. 5, *a*) may come from a figurine. The 17 detached feet recovered at this site are similar to those from site 1 on Barburata Island (compare fig. 28). One conical modeled foot represents a human being (pl. 5, *g*); two cylindrical feet, one hollow and one solid, suggest a manatee head; one hollow cylindrical foot is like figure 28, *d*; and three solid, thin, rectangular feet are like figure 18, but lack the incisions. Fragments of annular bases are rather common, and one of these has the reversed **L** perforation characteristic of various marble vases from the Uloa River.

The plain or crudely decorated monochrome ware was scantily represented at site 1 and is even more poorly represented in our collections. To judge from the sherds of this type, the plain vessels ranged from heavy jars, slightly less than 1 meter in height, to smaller open bowls and flat saucers only 4.5 cm in diameter. The majority of the plain rim sherds are from medium-sized vessels with restricted orifices and low, more or less flaring rims. No clear distinction can be made between the plain and the elaborately incised monochrome ware at this site, since many of the plain sherds are more highly polished and thinner than some of those that are incised. The distinction is made, however, owing to the fact that it seems to have significance elsewhere and that the low proportion of plain as opposed to incised sherds at this site is very striking.

No complete figurines were recovered, but several fragments were found. One grotesque hollow head (pl. 5, *b*) of brown pottery is similar to those from site 1, Barburata Island (pl. 28, fig. 1, *a-c*) except that the hands on the face are unique. There were five fragments from similar figurines. In addition, there are two five-fingered hands and a number of rolls of fired clay that probably came from figurines. An object of unknown use was a concave oval disk of brown pottery with a perforation at each end (compare fig. 29, *b*).

#### OTHER ARTIFACTS

Ground-stone artifacts were not numerous but included a small mace head (3.7 cm high) of white marble with vertical incisions down the sides (pl. 17, *i*); a thick, sharp-edged little celt (3.5 cm wide)

of gneiss (pl. 16, fig. 1, *j*); a beautiful little celt of dark green jade, or jadeite, with a very sharp edge (pl. 17, *k*); a bulletlike pendant of gray scatite, and a handful of green talc and diopside beads of disk, cylindrical, and round shapes (similar to pls. 14 and 17, *a*). Only one artifact of chipped stone was recovered, an oval knife (8 cm long) of white stone fairly well retouched.

Bird found a number of unworked rock crystals in the deposit, but we found none. Shell artifacts were rather numerous. There were 11 disk shell beads (1.2 to .5 cm in diameter); 58 perforated *Margenelis* shells, each with a rough hole punched through the back; two dozen perforated snail shells (*Cerithium muscarum* Say); a dozen perforated "bleeding teeth" shells (*Nerita versicolor* Linné), and a number of unperforated snail shells. Two disks (3 cm in diameter) of pink shell; two small triangular pendants, each with a horizontal hole through the tip; seven olive shell ornaments, each with one end ground down and a hole through the back; a ground-down cone shell; a thick, ovoid, shell disk with a hole through the center and a rounded groove around the sides; and two unworked clam shells,<sup>19</sup> the only ones found at the site, complete the list. We found two barbs from a sting ray at the site.

The most numerous animal remains were 65 canine teeth of the raccoon, each perforated at the root end. In addition, there were 39 of these broken teeth evidently from the same necklace. A portion of a bone tube 8.5 cm in length had been cut off and rounded at one end. The bone cannot be identified as to type. As previously mentioned, two portions of the jaw, one ground-down tusk, and several loose teeth of a domestic hog were found by Mr. Bird at this site. They were on the surface and probably had no connection with the site beyond the fact that a pig, gone wild, had used it as a shelter and died here. Could it be proved that the bones were left by the Indians, however, it would date their latest use of the place as after the time of Cortez. Bird found two human mastoid bones, one human lower jaw, and a fragment of a second human jaw; we found a few human teeth, including several markedly spatulate incisors, and two small human skull fragments. All these fragmentary human remains were scattered at random through the deposit. Possibly they were once in urns, with the smaller offerings, but if so, earlier visitors at

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<sup>19</sup> The above shell identifications are those of Bird. It did not prove feasible to have all Bird's molluscan material in the American Museum of Natural History examined by experts.

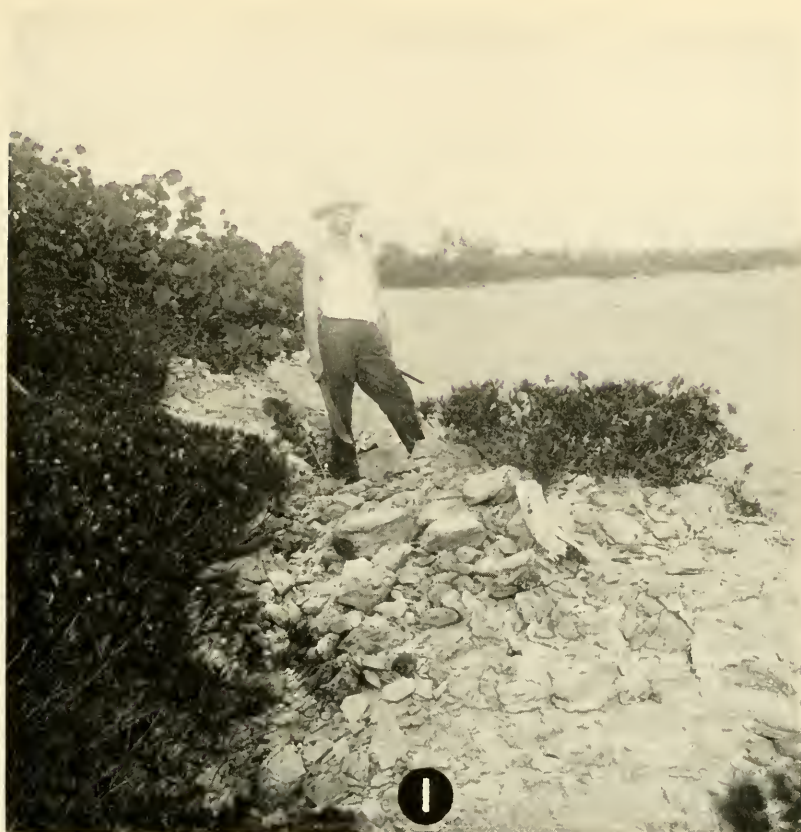
the site had broken them and scattered their contents. In this regard it is significant that in 1927 or 1928 Sr. Luis R. Diaz, of Oak Ridge, found a small carved head of green talc at this site. This turbaned head is practically identical with one found by us in an offertory vessel near French Harbor (see pl. 11, *f*). Mr. Bird obtained a photograph of this specimen, which was in the finder's possession. Since one party at least had removed material from site 1, it is probable that it had been disturbed several times before either Bird or our party visited it. That it was an offertory rather than a dwelling site, however, seems well borne out by an analysis of the remaining material.

#### SITE 2

Having completed our examination of the main site we accompanied our guides to some caves on the west shore of the eastern arm of Jonesville Bight (see site 2, map, fig. 10). These are located about half a mile northeast of the landing place, up on the side of the hill. They consist of a series of clefts in the face of a vertical cliff. Fallen slabs have wedged into these splits, and one can crawl beneath these, in one place for about 50 feet. Several crevices converge at one point into what might properly be called a cave, but evidences of human occupation were of the slightest. We found one sherd of coarse red pottery near the entrance but nothing else. The floor was covered by a layer of sandy dust, in places perhaps 4 feet deep. We sank a pit to a depth of 3 feet in one corner and encountered animal bones at about 2 feet but no ashes, artifacts, or other evidences of occupation. It is possible that complete excavations here might be rewarded, but our superficial examination was not promising. Bird examined this site in 1931 but found nothing. Local people report that on top of this hill, locally known as Marble Hill, is a large cave 30 feet deep that must be reached by the use of ropes. No human evidence was reported from here and we did not examine it.

#### FRENCH HARBOR

Our discoveries in this vicinity, although entirely accidental, were perhaps the most important on the entire trip. No sites had been reported at French Harbor (see map, fig. 1) and we called there primarily to obtain gasoline and mail from the mainland. While we were waiting for the arrival of the schooner bringing these supplies, an acquaintance was formed with Ogilvy G. Dixon, a long-time resident



**PORT ROYAL, ROATAN**

1. Old buccaneer fort.
2. Old rum bottles.



Photograph courtesy of American Museum of Natural History.

ELABORATE MONOCHROME SHERDS AND FIGURINE FRAGMENTS,  
JONESVILLE BIGHT OFFERTORY, ROATAN



2

DIXON SITE, ROATAN

1. Central offertory vase *in situ*.
2. Offertory vase (Polychrome I) after removal.



a



b



c

2



3

d



e

4



f



INCHES

DIXON SITE, ROATAN

1. Monochrome vessels.
2. Monochrome vessels *in situ*.
3. Slab metate and roller pestle.
4. Monochrome vessels.

of French Harbor. Mr. Dixon reported having seen pieces of broken pottery some 20 years earlier while prospecting for new plantation land on the high ridge behind the settlement. Lacking more promising leads, Haskell and I, with Jerry Borden and Joe Saba, accompanied him on a search for this place.

#### THE DIXON SITE

Heading northeast from the settlement, we climbed a series of steep ridges until we reached the central, east-to-west ridge that forms the backbone of the island. Cutting our way through dense brush, we climbed this ridge, which reaches an altitude of some 750 feet. Here our guide appeared at somewhat of a loss, as well he might after so long a time, but began a diligent search for two "Adam's Needle" trees which marked the spot. According to Dixon, these rather small, thorny palms (probably a species of *Bactris*) nearly always occur near pottery deposits on the ridges. After considerable vain searching, Haskell and I sat down to appreciate the view which, from here, takes in both sides of the island. To the north the ridge breaks off almost precipitously down to a coastal strip around Big Bight, the plantations of a few Black Caribs, who are the sole occupants of the north shore, coming close up to the steep central ridge. On the south an equally extensive view is likewise revealed, but the mountainous mainland was shrouded in the smoke of plantation-clearing fires, which at this time of year darken both the islands and the mainland.

Rather to our surprise, one of the boys returned to say that they had found the site. It proved to be on the highest part of the ridge in this vicinity, which formed a knob some 40 feet wide and about 90 feet long from east to west. To the north this space was edged by limestone rocks, which dropped off precipitously over the rim; to the south the slope was more gradual but still rather steep. As is the case along the entire ridge there was dense vegetation over all, including the steep northern face. Through the bush, however, limited glimpses of both sides of the island could be obtained. The site is located about 2 miles from French Harbor in a northeast direction, but the "trail" to the site is about three times that distance. The knob is some 20 to 30 feet higher than the rest of the ridge but is not visible as a distinctly higher area from any great distance.

There were no artificial constructions marking the place. The two small "Adam's Needle" trees, remembered by Dixon, and a few plain sherds unearthed in soil-testing many years before were the



only distinctive land marks. Later work demonstrated that the central portion of the knob was covered by a roughly circular artifact area approximately 35 feet in diameter. The predominant material here was an immense amount of broken pottery, mostly of a coarse, red, unpainted ware. The entire deposit was thinly covered with soil and humus, and the artifact layer itself was not thick, ranging from 6 inches in total depth (including top soil) on the edges to 2 feet at the center. Within this roughly lenticular deposit potsherds of variegated sizes were extremely abundant and other artifacts in lesser proportions. Clearing and excavation revealed no particular order in the deposit except that the main offering occurred in the central part of the artifact area. About 10 feet northwest of this was a group of small, rudely incised pots (pl. 7, fig. 2), and a few feet to the northeast of the central offering were several broken metates, figurines, and flaked stone knives. The latter occurred scattered throughout the deposit. There was a small pile of conch shells 10 feet south of the central cache. The majority of these were perforated, apparently for use as trumpets. Excavation revealed some charcoal but no ash deposits, camp debris, nor human or animal bone. There were no traceable living or house floor levels, and the presence of numerous complete artifacts and models of complete artifacts amidst the mass of broken pottery indicated that the site had served as an offertory rather than as a place of habitation. This conclusion was strengthened by the nature of the central deposit or offering.

The votive cache was encountered on the second of the two days which it was possible to devote to the site. It appeared first as a mass of nested potsherds extending from a few inches below the surface to a depth of 2 feet (pl. 6, fig. 1). The majority were large sherds of a plain red ware, though a few were polychrome in type. They were tightly packed, forming a complete covering for the enclosed offering. Complete pots did not appear to be represented—rather a collection of large sherds so arranged as to suggest a thick deposit of forcibly nested pots. It was impossible to preserve all these sherds for laboratory study; hence it is not known whether any restorable pots were present. The protective covering averaged 10 sherds in thickness above and below the votive offering. The latter consisted of a perfectly preserved polychrome pot (pl. 6, fig. 2). On the lip of the pot was a medium-sized, much-worn stone celt. The vessel itself proved to be full of sifted-in black earth and smaller offerings. A number of green stone beads, the most numerous type of offering,

appear in the photograph (pl. 6, fig. 2). In all, there were 487 objects in the vessel, as follows:

1 large copper ring.	1 small stone gorget (rectangular).
1 small copper ring.	2 incised stone disks (small).
2 shell tubes.	3 rounded pebble pendants (crudely incised).
30 variegated copper bells.	4 T-shaped stone pendants (small).
1 rounded piece of copper.	1 incised ring.
5 small, notched <i>Oliva</i> shells.	23 small stone pendants.
1 six-pointed star of shell.	2 partially perforated pebble pendants.
7 shell labrets.	1 small, unworked pebble.
3 triangular shell pendants.	26 incised stone beads (various shapes).
6 pieces of cut shell.	3 cruciform stone beads.
1 fragment of stone bead.	164 cylindrical stone beads.
18 fragmentary shell beads.	68 round stone beads.
6 carved stone faces (excellent).	88 disk stone beads.
4 carved stone faces (cruder).	2 triangular stone beads.
2 carved stone human figures.	1 highly polished, small stone celt.
5 incised pieces of stone.	
2 bird figures of stone.	
1 spindle whorl of stone (maze design).	

Near the central cache was a small worn celt, a broken lava metate, two small tumblerlike clay vessels, a crude canoe-shaped pottery vessel, and a larger troughlike object of pottery. All of these can be seen in the photograph (pl. 6, fig. 1). In addition, a considerable number of quartz crystals, a curved plain metate and muller (pl. 7, fig. 3), and two celts were found close by. As discussion of the artifacts will show, many of the objects were broken when found, but the presence of a number of perfectly preserved pieces, as well as the indubitable offertory nature of the central cache, suggests ceremonial deposition of all the material rather than refuse accumulation on a habitation site.

#### CERAMICS

The ceramics from the Dixon site fall into two main types, a numerically preponderant monochrome ware and a small amount of polychrome pottery.

The polychrome ware (Polychrome I) is best represented by the complete vessel (pl. 1), which contained the central votive offerings. This is a well-made but slightly asymmetrical vase, 20.3 cm high. The mouth of the vessel is slightly ovoid in form, measuring 11.8 cm in width parallel to the two lugs and 12.2 cm at right angles to them. The body of the vessel averages 3 mm in thickness. The lugs serve as rattles through the inclusion of small pieces of gravel, and each

represents a human face with uptilted nose, punctate eyes, and raised ear plugs. The face projects from the body of the lug in a manner suggesting inclusion within the mouth of a shark or serpent (fig. 12). However, as later discussion of lugs on this ware will show, this may be illusory. Like the lugs, the tripod feet, which are perforated on the inner side, also serve as rattles. The painted design is considerably weathered, but owing to its duplication on both sides of the vessel it has been possible to restore it with complete accuracy (compare pl. 1 and pl. 6, fig. 2). This design is executed with black and purplish-red lines on a uniform orange-red slip, which covers the entire pot.



FIG. 12.—Detail of lug, central offertory vessel (Polychrome I, pl. 1), Dixon site, Roatan. (White, orange-red; black, black; hatching, purplish red.)

The central black and purplish-red design in the main panel is a variant of the widespread plumed serpent motif. It consists of a grotesque head with eye, nose, and mouth indicated and decorated with nose ornaments, ear plugs, and an elaborate plumed headdress (pl. 1). The body is a conventionalized serpent form with a short writhing midsection decorated with plumes and ear plugs. The body terminates in a conventional tail tip formed by a square crossed by three vertical lines. The small design in the panel above is the same motif, done solely in purplish-red and considerably simplified. Likewise, the small panel above each lug is the same design even more condensed (fig. 12). Inside the rim is a broad, purplish-red line and

below this, forming a band about 3 inches in width, are traces of what may have been a black design. This last is too faint and obscure for delineation or even for certainty. These design elements in their totality are best indicated by the illustrations (pl. 1, pl. 6, fig. 2; fig. 12).

In addition to the complete vessel less than a dozen sherds of the thin polychrome ware (Polychrome I) were noted and preserved. A few others of this type were undoubtedly present in the deposit, but they were very rare. Discussion of this pottery, which is a distinct type, will be deferred until the more abundant Polychrome I ware from site 1, Indian Hill, on Barburata Island has been analyzed. Anticipating, however, it may be stated that among these sherds from the Dixon site there is one lug representing an aberrant applique rider type (pl. 23, *d*). Four feet represent two types, one is spurred (like fig. 22, *i*), the other three are of a simian type (like pl. 23, *e*). The other sherds of this ware are tiny and nondescript. Besides the thin ware sherds, there is one thick sherd (6 mm in thickness) from an open bowl with a dark red slip and a wavy black line design on the outer surface. This last is not in the same tradition as the Polychrome I pieces and probably represents a variant of the better class of monochrome ware.

As has been previously indicated, monochrome, unslipped ware made up the major portion of the artificial deposit. Since the paints employed on the island wares generally seem to have been rather fugitive in quality, it is dangerous to lay too much stress on this last factor. However, the prevalence of incising and the greater thickness of the apparently unslipped ware is rather distinctive. By far the larger portion of the pottery at this site showed no sign of having been painted. Although most of the ceramics were broken, we collected 16 whole or restorable vessels of the unpainted type. The groupings of five small, incised vessels just northwest of the central cache suggests that they too served as special offerings (pl. 7, fig. 2, shows two of these). Most of the vessels recovered entire were rather small and rude in execution, and it is probable that they were merely models of larger and better utilitarian pieces. Their crudity, plus the fact that an attempt has been made to suggest ornate decoration, bears out this supposition.

The plain ware from this site is rather uniform as to color, being a reddish buff on the outer surface and a brick-red below the surface. Whenever pieces have been chipped or rubbed, this brick-red coloring is apparent. The ware is predominantly crumbling in texture, with coarse, white gravel employed as tempering. The inner surfaces of

several pieces indicate that they were built up by the coiling process. The size of the vessels is highly variable; they range from small pieces (presumably models of larger forms) to very large vessels which, to judge from fragments, were at least 1 meter in diameter with a thickness of from 2 to 5 cm. Some of the small pieces are relatively thin (5 mm in thickness), but this is rather exceptional.

A variety of shapes are represented (pls. 7, 8). One common type, unfortunately represented at this site in complete form only by miniature pieces, is a cylindrical vase with an annular foot, incised designs on the body, and two vertical lugs on the sides. These range from an almost vertical form with flaring lips to a type markedly constricted just above the base and lacking any flare to the rim (pl. 8, fig. 1). One small vase (pl. 8, fig. 1, *i*) was once elaborately decorated with incised lines and punctate impressions, but weathering has left only a faint indication of this former complexity. The others have simple geometric line and punctate ornamentation (pl. 8, fig. 1). Both the shapes and the decoration of these smaller vessels, as well as the ornate but crudely modeled lugs, suggest a somewhat careless copying of better models. As will become evident when the pottery from similar island sites is discussed, these small crude vases should probably be regarded merely as models of larger vases in daily use, the latter being offered for the most part only in a broken condition, whereas the small, crude, but complete models were made primarily for offertory purposes. Unfortunately, only one incomplete larger vessel of this type was recovered at this site. Unlike its smaller imitations, it is composed of thin, well-finished pottery (3 mm in thickness) with fine grit tempering. The annular base is decorated with broad, horizontally incised lines and heavy punctate marks. The upper body being absent, the main design is but scantily represented by applied strips of clay and punctate impressions. This applique design probably represents one version of the "manatee" motif (for more complete examples see pl. 18, fig. 2, *a, b*; and fig. 18). Fragments of these well-finished vessels were found at several other sites (pl. 24).

A pottery object of this general cylindrical type with a flare at one end is unique as to the extreme thickness (16 mm) and coarseness of the ware, the absence of lugs or decoration, and the lack of any bottom (pl. 8, fig. 1, *h*). From its present condition it is impossible to tell whether a crude vessel or an open tubular artifact was intended, but the slight rounding at the smaller end suggests the former.

Another type, represented by five pieces, is a rounded bowl or cup-shaped vessel with one or two vertical loop handles on the sides (pl. 7,

fig. 4, left, and pl. 8, fig. 2, *a, f*). Of the five vessels of this form, only one (pl. 8, fig. 2, *f*) is smooth and polished, the others being coarse and irregular in form and decoration. This well-finished piece is unfortunately too badly broken for accurate reconstruction as to its rim portion. The body is globular with a flattened, markedly convex bottom. The small loop handle (only one is present) is ridged on the edges with a line of raised notches in the center, and occurs on the portion of the pot where the sharp slope toward the apparently constricted mouth begins. The vessel walls are rather thin (5 mm thick). This fragment is probably part of a once utilitarian vessel. The other four vessels are round-bottomed and are so crude as to suggest their hasty manufacture solely as offertory pieces. One is complete (pl. 7, fig. 4, *e*) with two incised vertical loop handles. The same type of crude incision extends in a band around the upper body. Like the other complete vessels of this type, the vessel has a slightly flaring rim. It is crudely and irregularly modeled but is not as thick as the gross handles and rim suggest, being only 6 mm in lower body thickness. A small vessel (pl. 8, fig. 2, *a*) is rather similar but differs in its decoration, which consists of small, vertical lines incised on the body, loop handle, and just inside the rim. The modeling of this piece is also very irregular. Better modeled is a similar vessel (pl. 7, fig. 4, *f*) decorated with two rows of short vertical lines separated by horizontal incisions. Only one vertical loop handle was formerly present. The last bowl of this type is extremely crude (pl. 7, fig. 1, *b*) and appears to have been punched out of a lump of clay. It formerly had two vertical loop handles and the upper body is ornamented by uncertainly executed, short, vertical incisions. Its thickness is extremely variable (6 to 11 mm).

Two globular vessels with constricted necks are present (pl. 7, fig. 1, *a*, and pl. 25, *a*). The largest of these is better modeled and polished than the majority of the small vessels previously described. Its rim is formed by an attached ribbon of clay and its decoration, consisting of incised and indented lines, is irregular (pl. 7, fig. 1, *a*). The smaller vessel (pl. 25, *a*) is likewise fairly well modeled and polished, with two tiny lugs at the base of the short neck. Fine grit tempering has been employed in forming the paste of both. A round-bottomed pot with a slightly flaring lip and wide mouth (pl. 8, fig. 2, *g*) is somewhat cruder in manufacture than the former. This vessel appears to have been made without handles or lugs and is rather thin (5 mm thick). The tempering is white grit somewhat coarser than in the last two vessels. Its form is unique in the present

collection. All three of the above vessels have a buff surface patination with the underlying brick-red color showing through wherever they are worn or broken.

Four small saucerlike vessels come from this site (pl. 8, fig. 2, *b, c*). Three of these are shallow with round bottoms. They average 7.5 cm in diameter. The fourth (pl. 8, fig. 2, *b*) has a flattened bottom and a raised rim. All are crude in modeling and are various tones of brown, red, and buff. Their purpose, whether utilitarian or for offertory models, is problematical.

An interesting canoe-shaped type is represented by two vessels (pl. 8, fig. 2, *d, e*). The larger of these was found close to the central offering. It was apparently broken when deposited but has been restored from the nearly complete portion recovered (pl. 8, fig. 2, *e*). The modeling, although rather crude, definitely suggests a "pitpan" or river canoe in form. The piece is of the brick-red pottery with gray-buff patination. It has been poorly fired, being black in mid-section with rather coarse sand for tempering. The second vessel of this type (pl. 8, fig. 2, *d*) is rather different, having depressed, rounded, and incised ends. One end of the upper edge is notched. Its color, tempering, and modeling are similar to those of the vessel just described. A boat form is suggested, but this is far less definite than in the former case, and a bird or animal form may have been intended. Unfortunately, the larger troughlike pottery object behind the central offering (see pl. 6, fig. 1) was not preserved. Its general form faintly suggests a canoe, but it lacked any definite bow or stern extension. It was of the same type of pottery as the two pieces just described but was considerably larger than either.

Owing to the difficulty of removing material from this inaccessible site in the short time at our disposal, only a small sample of the abundant broken pottery could be brought out. This small sherd collection adds some details missing in our discussion of the more complete pieces. It shows that large, well-made vases with intricate and highly conventional vertical lugs were represented. These large lugs, well represented in the Indian Hill collection (see pl. 24, *b*), are obviously the original types from which the small crude miniature vessels (pl. 8, fig. 1) were modeled. There are also two small horizontal lugs, with punctate or incised decoration, that are especially characterized by projections or "horns" at each end and a depressed center. A heavy, red rim sherd with deep, firm incisions and punctate marks represents a fragment of one of the large, utilitarian, cylindrical vases. Three brick-red pottery fragments, very heavy and coarse, are covered with incised circles each about 1 cm

in diameter. Although the three pieces are evidently from the same object, they do not fit together, and the nature of the object remains obscure. The design suggests the warts on a toad or possibly the scutes on an alligator's hide. Numerous vertical strap handles decorated with heavy incised lines, crude punctures, and in one case two raised "coffee bean" eyes are also present. One broken-off, rounded, tripod base is especially noteworthy on account of its size (5.6 cm in upper diameter), since it indicates that very large tripod vessels of plain ware were in use. The remaining sherds are from types already described or else without any particularly noteworthy characteristics.

Two almost complete pottery figurines (pl. 28, fig. 1, *e, f*), two unique pottery heads (pl. 28, fig. 2, *c*; fig. 13), and three detached arms from such pottery figures were recovered. The complete figure (pl. 28, fig. 1, *e*) is an unusual type. The projecting jaw, broad nose, wide mouth, perforated ear, and incised necklace are noteworthy. The arms extend down the body, and the fingers touch just above the crotch. No sex is indicated, but a male is suggested by the form and features. It is made of coarse red pottery, is 16.5 cm in height, and is solid throughout. The second figurine (pl. 28, fig. 1, *f*) is very crude, and the arms are missing. It is of the same material as the last, solid, and 12 cm in height. A crude attempt to indicate costume, or perhaps merely to decorate, is indicated by the roughly rectangular incised lines on the front of the body. The features are amazingly crude, but the punctate eyes and broad nostrils suggest the better-made figure already described. However, the prognathous jaw, projecting snout, and hump-backed appearance are unique. The tempering in this figurine is coarse gravel, whereas in the former it is much finer.

The two pottery heads are likewise of different types, although both are modeled from the same coarse red pottery. The first of these (fig. 13) is crudely realistic. It is solid and stands 15 cm in height. Particularly noteworthy are the "coffee bean" eyes, raised mouth with the tongue showing, flat incised ears, and the peculiar broken handle for attachment or for holding. The realistically modeled neck is broken off at the base. The second head is less realistic (pl. 28, fig. 2, *c*) and has a small hollow inside, which opens into the basal concavity through a small opening (2 cm in width) with a raised rim. The aquiline nose, punctate mouth, perforated ears, and the large punctate eyes with slightly raised rims, of this head are noteworthy. The uses to which those two objects may have been put is uncertain.



Three solid detached upper limbs from crude pottery figures are also present. They range from a large, three-fingered piece (2.5 cm in diameter), which may have come from a reptilian form, to a small, curved, fingerless limb 8 mm in diameter. The intermediate-sized piece, a forearm and hand, is the best modeled, having five fingers

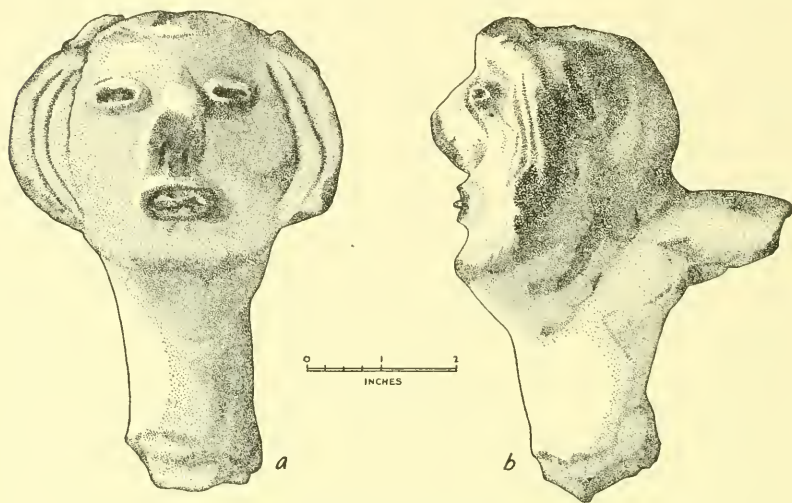


FIG. 13.—Modeled pottery head, Dixon site.

and a series of incised circles with punctured centers around the wrist, apparently depicting a bracelet (pl. 27, fig. 2, *f*). The smallest pottery limb probably came from figurines such as are shown from Indian Hill (pl. 28, fig. 1, *a-c*); the types to which the others were affixed is unknown.

#### METAL

A considerable number of copper artifacts were found at this site. The majority of these pieces came from the central votive offering, the polychrome vase containing 30 copper bells of various sizes, two copper rings or ear spools, and a hammered disk of copper. In addition, about half a dozen identical small copper bells were found in the soil near this central offering. The bells range in length from 1.8 cm (pl. 10, *c*) to 7 cm (pl. 9, *d*), and several types are represented. The largest bell (pl. 9, *a*) is broken, and one flange has been crumpled up to hold the clapper, which, as in all the other bells, consists of a piece of gravel or a small pebble. The top of this bell is flat and, like the neck, has fine incisions or lines

suggesting the use of wire in the building process, although actual wire does not seem to have been used. The loop is round and solid. There is one smaller bell of similar type (pl. 9, *h*). The most common type has a more marked pseudo-wire technique around the neck and has a round wire loop for suspension as shown in the illustration (pl. 9). A few specimens lack this neck (pl. 9, *b*), and some pass directly from the pear-shaped body to the wire loop (pl. 9, *g*). Seven small bells have animal faces in good relief (pl. 10, *a, b, d, f*), one has a complex wire scroll in quadruplicate at the top (pl. 10, *e*) and one bell, the smallest, is globular (pl. 10, *c*). A considerable number of all types have been broken and bent up to retain the clapper. This, in conjunction with the broken and worn appearance of the majority, suggests that they had been used for a long time prior to their deposition as an offering. As to their original source, all that can be said at present is that they closely resemble certain of the copper bells found in a large cave deposit on the Uloa River, which were described by Blackeston (1910 b). Presumably, the bells had been cast in molds, but I do not pretend to understand the exact techniques employed. Aside from the bells the two rings are the only definite copper artifacts. The larger of these (pl. 9, *c*) is 4 cm in diameter and has two holes for fastening in a central disk, which has disappeared. The small ring (pl. 9, *f*) has only a slightly concave edge and lacks perforations. It is not welded together as in the first case, and the two edges overlap. Its use is uncertain, but it may be a broken or unfinished ear spool. The flat disk of copper (pl. 9, *e*) is hammered all over its surfaces, and the edges are smooth. Whether it is an unfinished piece or once served as a pendant is uncertain.

Through the courtesy of the Bureau of Standards, a spectrochemical analysis was made of (a) the copper disk (pl. 9, *e*), (b) a bell with a definite neck and a face in relief (like pl. 10, *f*) and (c) a pear-shaped bell (like pl. 9, *g*). For these data I am grateful to Dr. Lyman J. Briggs, Director of the Bureau of Standards, and to B. F. Scribner, who made the analyses. Aside from their future value in any comprehensive study of aboriginal copper bells, the analyses indicate that (a) and (b) are similar in composition, but that (c) differs rather markedly. It seems probable, therefore, that the ultimate source of the pear-shaped bells (pl. 9, *g*) was different from that of the majority, which have definite necks and in some cases decoration in relief.

The analyses were made as follows:

The arc spectra of cleaned portions of the three specimens burned on pure copper electrodes as a base were photographed (Spectrogram No. R 613 ab) and the spectra were examined for the sensitive lines of Ag, Al, As, Au, Ba, Be, Bi, Ca, Cb, Cd, Co, Cr, Fe, Ga, Ge, Hf, Hg, In, Ir, K, Li, Mg, Mn, Mo, Na, Ni, Os, Pb, Pd, Pt, Re, Rh, Ru, Sb, Si, Sn, Sr, Ta, Th, Ti, U, V, W, Zn, and Zr.

The elements found present and the comparative estimates of the amounts of each are given in the following table. The qualitative scale used in designating the amounts of the elements present, ranges from very small to large concentrations as follows: faint trace, trace, very weak, weak, moderate, strong, very strong.

*Analyses of Three Copper Pieces from Votive Cache, Dixon Site*

Element	Cu (a)	Cu (b)	Cu (c)
Ag	Moderate	Moderate	Moderate
Al	Faint trace	Faint trace	Trace
As	None	None	Strong
Au	None	None	Trace
Bi	None	None	Trace
Ca	Very weak	Trace	Very weak
Co	None	None	Faint trace
Fe	Moderate	Moderate	Moderate
Ga	Trace	Very weak	Weak
In	None	None	Faint trace
Mg	None ?	None ?	Faint trace
Mn	Weak	Weak	Weak
Ni	Trace	Trace	Moderate
Pb	Very weak	Very weak	Weak
Sb	None	None	Very weak
Si	Trace	Faint trace	Faint trace
Sn	None	None	Moderate

GROUND STONE

In this class the numerous small stone objects found in the complete offertory vessel will be considered first. Nearly all of these are skillfully worked, and many of them by their green color and polished condition suggest jade or jadeite. As a matter of fact no artifacts from this site proved to be of these materials. The majority of the small offertory pieces are of talc, including all the best carvings. This material has a wide range of color, though green is the dominating tone in the present collection. Apple-green is perhaps the most common color, though olive-green, jade-green, apple-green with dark flecks, turquoise-blue (rare), buff (often with a rusty brown patination), grayish white, and gray-black artifacts of talc are present. Talc is relatively soft and can be easily scratched. Beside talc,

diopside is the most common mineral represented. In outward appearance the two minerals are very similar, but the latter is much the harder of the two. Certain artifacts of both these materials are considerably eroded, and a small portion of both are covered with a rusty brown patination. Ten artifacts, mostly large round beads, are of marble. They are gray-white in color with considerable green flecking, this last probably due to copper contacts. Two small and badly eroded beads are of calcite. Ten artifacts are of serpentine, including the only unworked pebble in the cache, which is of indurated serpentine. Several of the serpentine artifacts are merely perforated pebbles, and in two cases the perforations do not go through the object. The lack of finish on most of the very resistant pieces is in contrast to the delicate workmanship manifested on many of the more easily worked pieces of talc.

Three small heads surmounted with elaborate headdresses are the most striking pieces (pl. 11, *d, e, f*). They are of apple-green talc with single perforations extending horizontally near the top. In two of the pieces (pl. 11, *d, e*), a small face is represented at the bottom by oval incised eyes and a nose, and the headdress, presumably of quetzal or other plumes, takes up the greater portion of the artifact. The central one of these heads (pl. 11, *e*) is the most artistic in finish, especially as regards the exquisite representation of feathers in stone. The third piece (pl. 11, *f*) differs in having a larger, well-modeled face with slanting oval eyes and large nose. The headdress is also different and may represent some sort of a cloth turban held in front with a round brooch. It is a well-executed and beautifully symmetrical piece. Three other faces are not so well finished, and two of them appear to be merely simplified versions of the first two (pl. 11, *a, b, c*) with different types of headdresses. One of these is bluish gray (pl. 11, *a*), another (pl. 11, *c*) a light green. The third (pl. 11, *b*) is turquoise-blue and has a unique type of square-cut face. All these heads (pl. 11, *a-f*) have the same sort of horizontal perforation through the headdress portion and were probably strung with beads. The perforations average about 3 mm in diameter and are slightly biconodont, meeting near the center. In two pieces each end of the perforation is considerably larger close to the openings, giving a marked funnel-shaped ending to the boring.

Besides the plumed heads, there are a number of other small human or anthropomorphic carvings (pl. 11, *j-r*). One of these of very dark olive-green talc (pl. 11, *k*) bears considerable resemblance to the piece with a square-cut face previously described. The rich, dark color and the clearly delineated features, which in-

clude a very prominent nose, are its most noteworthy characteristics. Next to it is a very interesting carving suggesting a death's head or perhaps a tattooed face (pl. 11, *j*). The treatment of the nose and mouth especially suggest a skull, whereas the incised circle on the cheeks, square on the chin, and scroll on the forehead may indicate either painted decoration or tattooing. There is only one ear or, more probably, ear ornament. Another piece (pl. 11, *l*) may have served as the tip for an atlatl or spear thrower, but if so it must have been more ornamental than useful. The slanting upper portion of the piece has a smoothly worn plane surface with a very small perforation near the top bored in from both sides. The actual aperture itself is only 1 mm, but the cone-shaped openings on each side are twice that diameter. Such a small hole for lashing would probably not permit hard usage unless some strong adhesive, of which no traces remain, were used as well. The piece is carved in the form of a human face with prominent eyes and thick protuberant lips. Viewed horizontally, instead of vertically as in the illustration (pl. 11, *l*), the entire piece suggests the head of a serpent or that of the condor or king vulture. Whether this is intentional or not remains uncertain, as does the original use to which the object was put. The material is a very dark green talc, containing numerous imperfections. It is highly polished.

Another piece (pl. 11, *o*) represents a small face surmounted by a large headdress. The material is a dark green talc and the perforation occurs behind the face. The crudest object in the plate (pl. 11, *m*) is of gray-white talc with brown incrustations. A simple geometric face is incised on one surface. Next to this is a unique piece, the rear surface of which is shown in the illustration (pl. 11, *n*). The front surface has only three incisions, suggesting the eyes and nose of a human face. Taken in conjunction with the face just mentioned (pl. 11, *m*), this last marks the extreme of a series of simplifications beginning with the elaborate faces with headdresses (pl. 11, *d*, *e*, *f*) and ending with this piece, on which the three dots alone suggest its anthropomorphic character. More interesting, perhaps, is its hollow back with three large perforations (5 mm in diameter) at sides and bottom. The object probably served as a bead from which pendants were suspended. It is made of dark green talc. Another object of similar color and material probably represents a broad, conventionalized face with a narrow and unusual type of feather headdress (pl. 11, *q*). The perforation (2 mm in diameter) in this specimen is likewise behind the face and has exceptionally large biconodont openings (9 mm in diameter). The next specimen

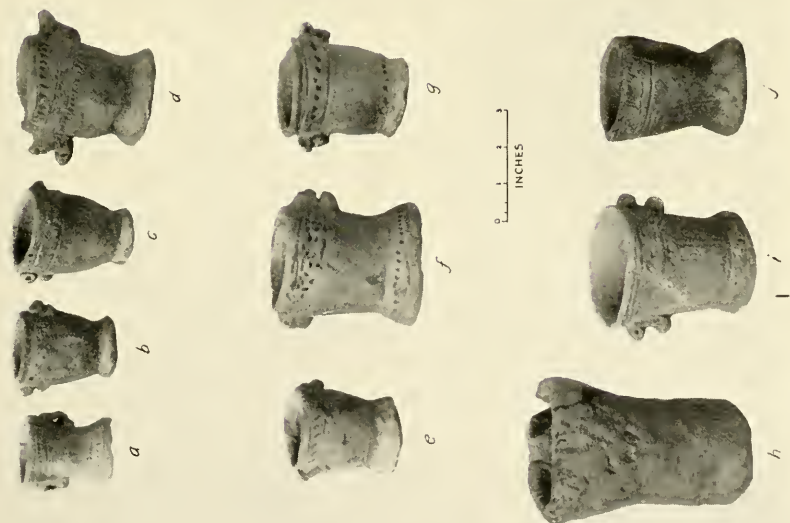
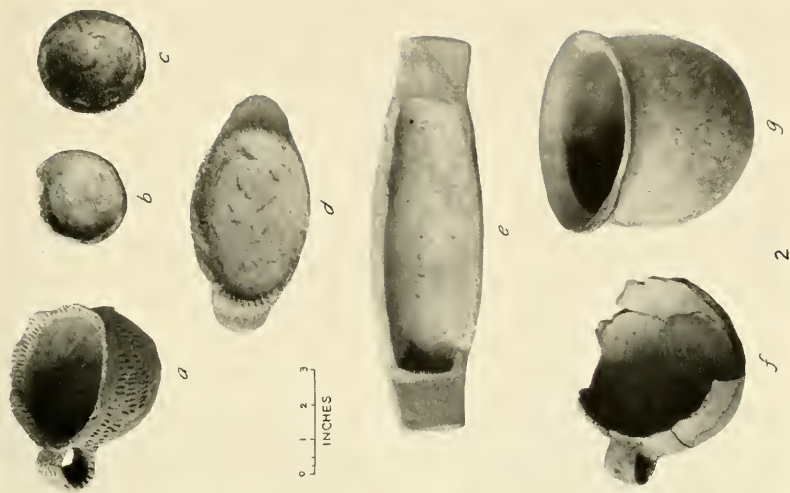
(pl. 11, *p*) is somewhat similar in being highly conventionalized and also has a similar perforation, though this is in the upper rather than the lower portion. The last object on the plate (pl. 11, *r*) is of light green talc and appears to be a highly conventionalized human figure with three dots, as in the case previously mentioned, suggesting the face.

The largest human representation in the offertory vessel was an ornamental celt of apple-green talc 7 cm in length (pl. 12, *e*). Incised decoration consists of large circle and dot eyes, a linear mouth, a suggestion of arms and headdress, and vertical and horizontal lines on front and back. The butt end of the celt where the carvings occur is larger than the blade, perhaps representing some sort of socket. A perforation about 9 mm in diameter extends horizontally from shoulder to shoulder. A purely ornamental or ceremonial purpose of this artifact is indicated by its relatively soft material, the absence of any sign of usage, and its perforation and decoration. Another small celt (pl. 13, *c*) of diopside is beautifully worked. It is of a hard material with a sharp cutting edge but shows no signs of use. In color it is a mottled brown and light bluish green. Its length is 4.6 cm.

One spindle whorl of gray-green talc is incised on the upper and larger face with a unilinear maze design of considerable complexity (pl. 12, *b*). The perforation for the spindle has been vertically gouged out, leaving irregular vertical ridges which are lacking in the majority of other perforated pieces. A unique carving of very light green talc represents some sort of bird with a horizontal perforation through the head (pl. 12, *a*). A globular pendant (pl. 12, *c*) of green-blue talc is so weathered that, aside from the suggestion of square incised eyes at the top, the remainder of the design is obscure. Two buttonlike objects of dark green talc are of unknown use (pl. 12, *d, g*). The complete specimen, in addition to the larger center perforation, has a small hole at the top. A circularly incised ring, carefully carved from light green talc with two purple streaks down one side, is too small (1 cm in inner diameter) for a finger ring (pl. 12, *f*). Both edges are raised and three incised lines run around the outer circumference between the raised ridges. A fragment of what may have been a plain, polished ring without incisions was also found with this cache. The five objects at the bottom of the plate (pl. 12, *i-m*) are all of various shades of green talc. They served as pendants, as all are carefully perforated. In addition, three other simple objects of this general type are not illustrated. One simple pendant (pl. 12, *h*) is unique in lacking any perforation, an incised line around the smaller end probably serving as an attachment for the suspension cord.

This cache contained one rectangular stone gorget and 32 small stone pendants. The largest and best of these is of serpentine and, having two perforations, may be classed as a gorget rather than a pendant (pl. 13, *a*). It is greenish black in color, and its polished surface is decorated with three groups of vertical lines. The other pendants of serpentine (pl. 13, *m-p*) are much simpler, consisting primarily of flat, polished pebbles perforated at the small end. Two of these have incomplete perforations (pl. 13, *p*, is an example). Besides those figured, there are two similar serpentine pebble pendants, in one of which the perforations, commenced from both sides, are incomplete. In addition there is an unworked pebble of indurated serpentine, 3.6 cm long, which was also in the same pot. Three beautifully colored pendants with single perforations are of diopside (pl. 13, *b, d, g*). Two of these are round and were originally apple-green in color, though this is more or less streaked with brown (pl. 13, *b, d*), and the third is a well-made rectangle of apple-green flecked with black specks and some brown patination (pl. 13, *g*). Pendants of talc are most abundant, numbering 14 in all. Good examples of these are illustrated (pl. 13, *c, h, j, k, l*). Besides the thin, round, and subrectangular pendants of talc, there are several perforated pebbles of this material which resemble similar serpentine pieces (pl. 13, *i*). All these artifacts were probably worn as additions to bead necklaces or else as ear and nose ornaments.

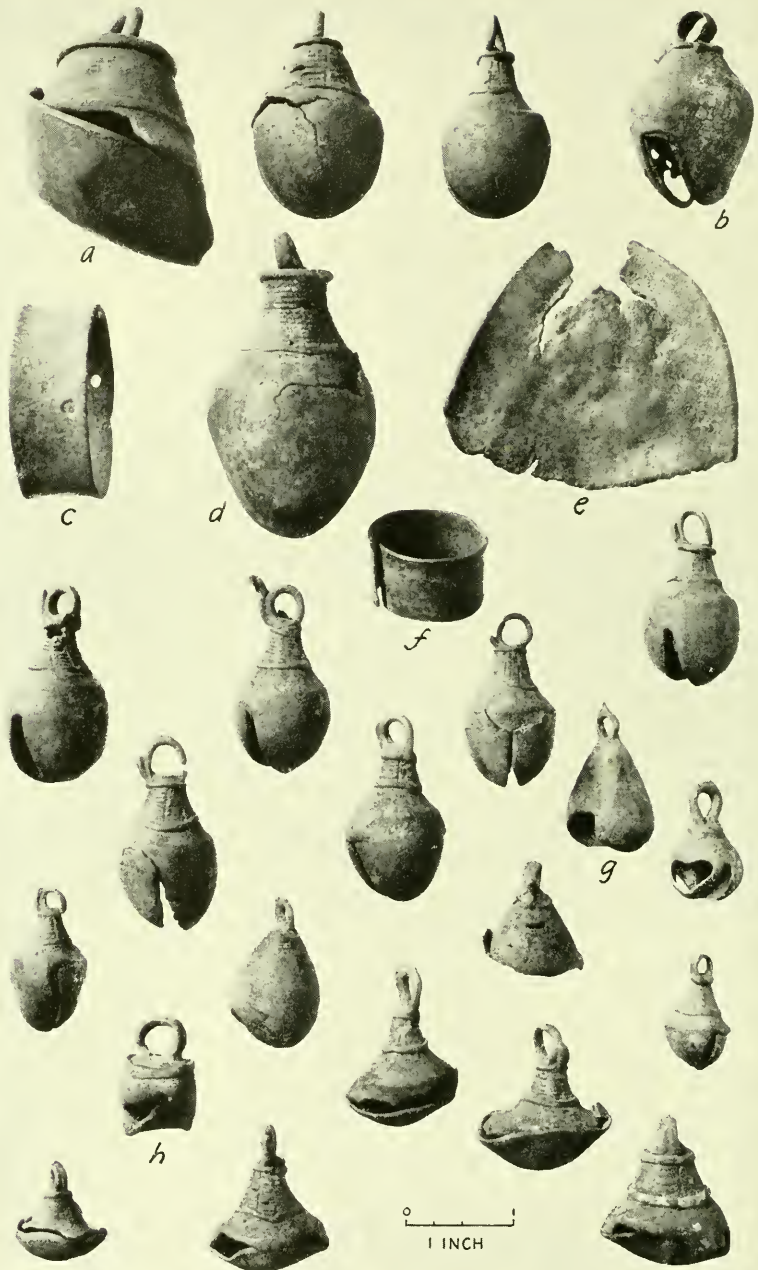
In all, 372 beads were found in this one vessel. Of these, 18 were of shell, in a more or less fragmentary condition. Two much-eroded beads, one small and cylindrical and one cruciform (pl. 14, *d*), are of calcite. Nine large to medium, round beads are of gray-white marble. These are for the most part flecked with green due to copper contacts and are somewhat rough on the surface, showing their crystalline nature. One long, cylindrical incised bead is also of marble. There are 80 beads of diopside, of which 49 are cylindrical of various sizes, 29 are round and of all sizes represented in the entire collection, 1 is square in cross-section, and 1 is triangular. One beautifully polished black bead of cruciform shape is of serpentine (pl. 14, *c*). The remaining 261 beads, comprising all the above mentioned types, are of varicolored talc. All the incised beads (pl. 14, *e*) are of talc except the one cylindrical marble bead with incisions on one end (pl. 14, *e*, top center). The other marble beads are of the round type. The fact that incised beads are predominantly of talc is probably due to the greater ease with which that material may be worked. With the above exceptions, there seems to be little correlation between form and material in the present collection of beads.



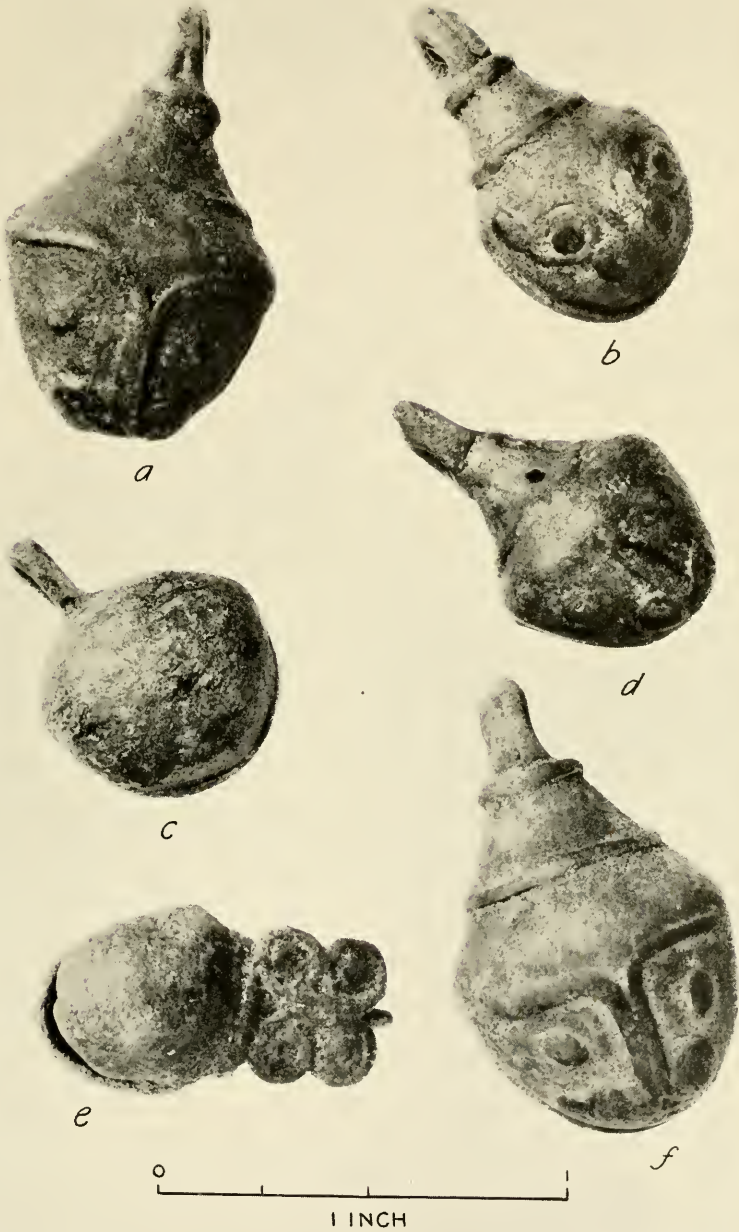
DIXON SITE, ROATAN

1. Cylindrical model vases.
2. Canoe-shaped and other monochrome vessels.





COPPER BELLS AND ARTIFACTS FROM CENTRAL VOTIVE CACHE.  
DIXON SITE, ROATAN



MODELED OR UNIQUE TYPES OF COPPER BELLS FROM  
CENTRAL VOTIVE CACHE, DIXON SITE, ROATAN



SMALL ANTHROPOMORPHIC CARVINGS OF GREEN STONE

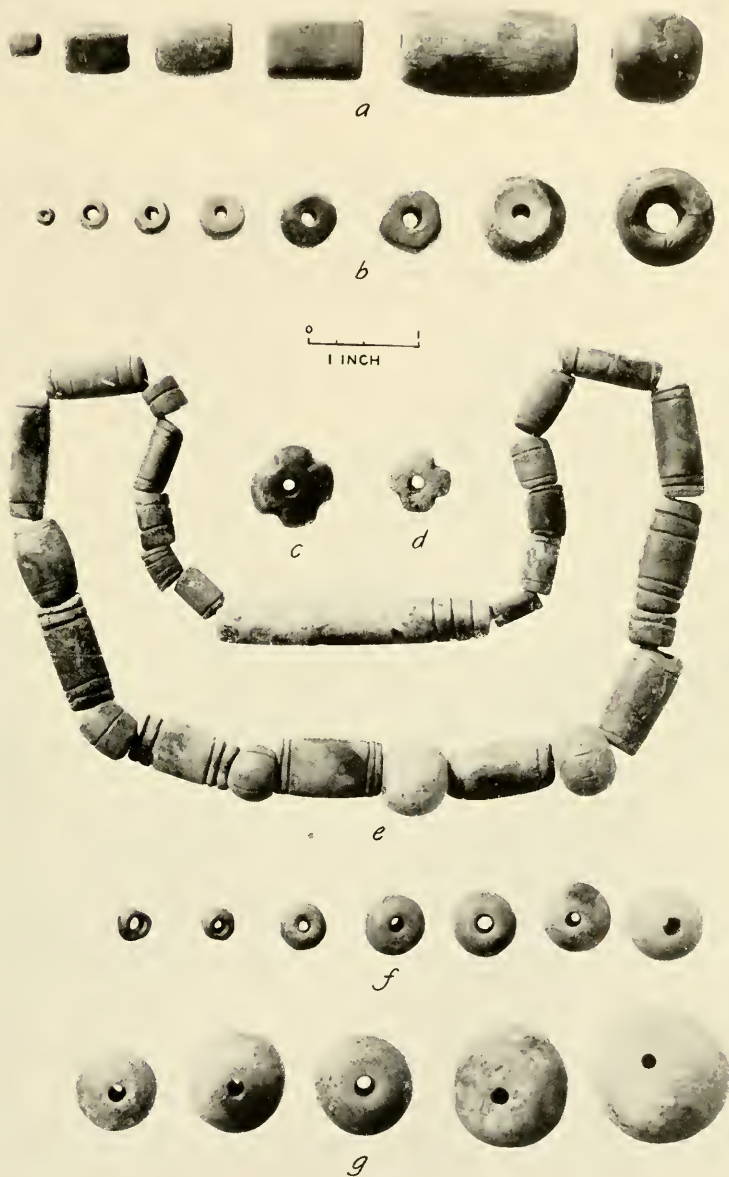
*g, i*, from site 1, Barburata; *h*, from Black Rock Basin, Utila; all others from central votive cache, Dixon site, Roatan.



SMALL STONE CARVINGS AND VOTIVE CELT FROM  
CENTRAL CACHE, DIXON SITE, ROATAN



STONE PENDANTS AND SMALL CELT (C) FROM CENTRAL VOTIVE CACHE,  
DIXON SITE, ROATAN



TYPES OF STONE BEADS, CENTRAL VOTIVE CACHE,  
DIXON SITE, ROATAN



SHELL ORNAMENTS

*c, e*, from Helena; *d*, modern specimen (*Oliva porphyria* Linné); all others from central votive cache, Dixon site, Roatan.

The main types of beads in this cache are shown in the illustrations (pl. 14). The great individual and size differences suggest that each piece was worked out and ground down separately from the others. The majority of perforations are smoothly bored, presumably with some sort of a drill, sand, and water. Boring was done from both ends and frequently the holes meet at somewhat of an angle. The holes are very even throughout their length, and an idea of the average size of perforation can best be gained by noting those illustrated (pl. 14). In only a very few cases do the holes fail to extend entirely through the object. Three main types predominate: (a) cylindrical or rectangular (pl. 14, *a*), (b) round (pl. 14, *g*), (c) disk or round

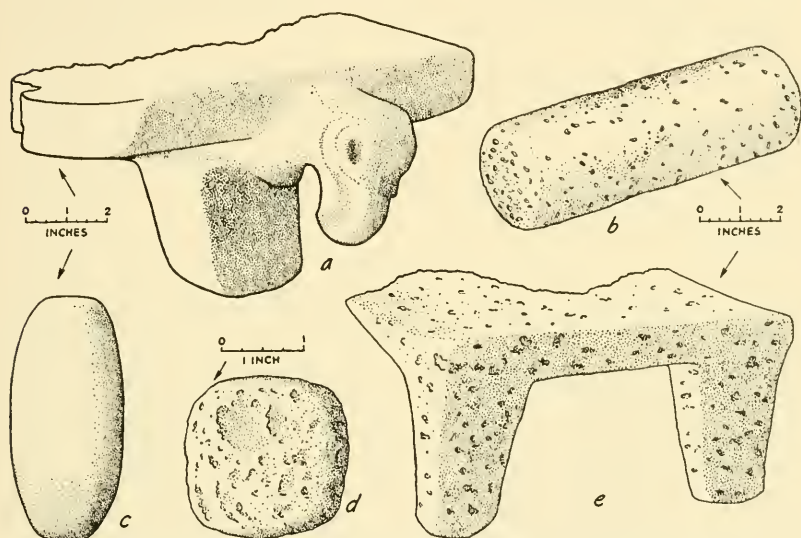


FIG. 14.—Broken metates, mullers and hammerstones: *a*, Indian Hill, site 1, Barburata; *b-c*, Dixon site, Roatan.

with flattened top (pl. 14, *b*); but there is so much individual variation between and within all these major forms that a more exact classification would lead to hair splitting. The incised decoration that occurs on a small percentage of the beads (pl. 14, *e*) is simple, consisting of lines around the ends of cylindrical beads and simple geometric patterns on some of the round beads. The high polish and surface patination of many of the beads suggest that they have been worn and handled over a considerable period of time. These factors combined with the intrinsically pleasing nature of the materials employed gives them a very attractive appearance, often lacking in beads of more uniform manufacture. This completes the list of small ground stone objects found within the complete offertory vessel at this site.



Besides the small artifacts of polished stone from the central offertory vessel, fragmentary metates, manos, celts, hammerstones, and one ornate club or mace head were found in the larger deposit. Only one complete metate was found here (pl. 7, fig. 3); it consisted of a smooth-surfaced but curved granite slab, 35 cm long, 28 cm wide, and 7.5 cm in thickness. The grinding face had been worn smooth, but it was otherwise unworked. A cylindrical roller pestle (31 cm long) of the same material was found nearby (pl. 7, fig. 3). A corner fragment of another polished granite metate with a squared leg was also noted. Owing to difficulties of transport, these were not carried away. Near the central offering was the end portion of a rectangular gray lava metate (pl. 6, fig. 1; fig. 14, *e*), which in its original condition probably had three legs. Two other manos were recovered, one (fig. 14, *b*) a cylindrical, well-worked piece of gray volcanic rock 18.5 cm in length, the other a subrectangular piece of polished granite 15 cm in length with squared ends that had been used for hammering (fig. 14, *c*). A small, rounded cube of granite from this site has all four sides deeply pitted apparently from use as a hammerstone (fig. 14, *d*).

Six complete and three broken celts of polished stone were recovered. The largest of these is of quartz diorite and is 17 cm long. Another celt is similar but smaller (pl. 16, fig. 1, *a, b*). Both these pieces are highly polished and excellently shaped, and the sharp blades of both show evidence of considerable use as chopping tools. Three smaller celts of dacite are shorter and less gracefully shaped. Two of these are shown (pl. 16, fig. 1, *c, d*). The larger was placed just over the lip of the central offertory vessel (pl. 6, fig. 1, and pl. 16, fig. 1, *c*). The cutting edges of all three are much chipped from extensive usage. A small celt of andesite has a very smooth, sharp edge but has been split or ground down along one side of the long axis. A very small celt (pl. 16, fig. 1, *f*) of quartz diorite is well polished but very thick (1.3 cm in thickness) for its length (3.2 cm). Two small broken celts are of diopside, one being of the short, thick type, whereas the other (pl. 16, fig. 1, *e*), which is black in color and excellently polished, is very thin (1 cm in thickness). Both of these blade fragments have a sharp, smooth cutting edge. If we consider all nine polished celts or celt fragments from this site (pl. 16, fig. 1, *a-f*), both the general excellence of workmanship and the extreme variation in size are noteworthy. The fact that the large and medium-sized blades show signs of considerable usage, whereas the smaller ones do not, probably indicates that the latter had other than utilitarian value.

An elaborately worked mace head of diorite constitutes an interesting find (pl. 19, fig. 1, *c*). The object is 4.4 cm in height and has a smoothly worked perforation 3.1 cm in diameter. Although rather regular, this circular perforation tapers very slightly from each end to the middle. Decoration is attained by four large mammiform projections of excellent and uniform workmanship. The tips of two adjoining projections show old breaks apparently from usage.

#### CHIPPED STONE

The largest object of chipped stone is a crudely worked, T-shaped ax of hard indurated shale (pl. 19, fig. 2, *c*). The rounded cutting edge shows evidence of prolonged usage. Several other artifacts of this type were noted at the Dixon site but were not taken away.

Four complete and two broken long oval or elongated diamond-shaped knives of chalcedony were found at the Dixon site. The retouching technique applied to three of these pieces is excellent. Two pieces of translucent gray-buff chalcedony are especially delicate both in form and in retouching. The first of these (pl. 16, fig. 2, *b*) is 18.7 cm in length and only 8 mm in central thickness. Besides the very regular and small retouching on the extreme edge, there are a number of larger nicks suggesting usage. The artifact is complete except for the extreme tip on one end. The second of these pieces (pl. 16, fig. 2, *a*) is perfect but tapers more rapidly to one end than do the other knives. It is 17.4 cm in length and 8 mm in central thickness. Since the smaller, sharper point of this artifact is of lighter color, apparently owing to less patination, and is thicker than the other end, I am inclined to believe that this portion was formerly within a perishable handle of some sort. The knife first described has a very similar outline but shows no color or patination difference between the two ends. In each of the two blades, however, it is the longer points which have nicks apparently resulting from use as a cutting implement. There is, therefore, not only a logical presumption, but also some definite evidence, indicating that these artifacts were originally supplied with handles. A third knife, only two-thirds of which was recovered, is of the same type as the above (pl. 16, fig. 2, *c*). It is slightly heavier than the former, being 1 cm in central thickness. The three remaining pieces are only partly translucent, are oval rather than diamond-shaped, and are of somewhat cruder manufacture. The largest of these is 18 cm in length and 1 cm in central thickness (pl. 16, fig. 2, *c*); the other specimen figured (pl. 16, fig. 2, *d*) is the thickest of all, being 1.4 cm thick in the center. The

third piece, of mottled yellow-brown chalcedony, has one end broken off. It is similar to the last two and is not figured. Whether any, or all, of these three artifacts had handles is not indicated by the specimens themselves. There seems to be no positive way of telling whether these knives were primarily of ceremonial or of utilitarian significance. It is tempting to regard the finer specimens, at least, as knives of sacrifice, but although this may well have been true, it is not demonstrable from the evidence at hand.

Besides the above large specimens, two smaller chipped points were recovered. The larger of these (fig. 15, *d*) is of black obsidian and is 10 cm in length. The tip is broken, and the edges show evidence of considerable usage and are much blunted. It was probably employed as a knife. The smaller point is of felsite (fig. 15, *c*). It has a broken

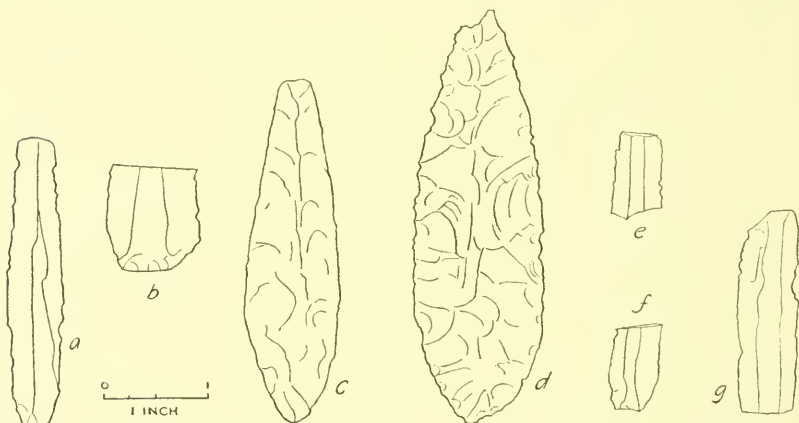


FIG. 15.—Chipped stone artifacts: *a, b*, Black Rock Basin, site 1, Utila; *c, d*, Dixon site, Roatan; *e, f*, Indian Hill, site 1; *g*, Indian Hill, site 2, Barburata.

point, but the edges are fairly sharp and show little or no signs of usage. This suggests that the artifact, which is 7 cm long, may have been a dart or javelin point.

Aside from definite artifacts, the most noticeable stone objects at the site were large numbers of quartz crystals, ranging in length from some 14 cm to very small pieces. None of these showed signs of workmanship, but all had definitely been placed at the site as offerings. A double handful was found in close proximity to the central offering. As it proved very difficult to convince our guide that these were not precious stones, possibly diamonds, he was presented with a considerable number of them. In addition to the one artifact already described, only one small fragment of obsidian was recovered. There were some irregular boulders in the deposit, but these were from the limestone ledges close at hand.

## SHELL

Besides large conch shells with perforations, the only other shell artifacts from this site were found in the central offertory vase. These small artifacts include 1 six-pointed star, 5 shell danglers, 7 labrets, 3 triangular pendants, 18 more or less fragmentary beads, and several irregularly cut or ground shell fragments.

The six-pointed star (pl. 15, *f*) is considerably battered and both surfaces are somewhat eroded. It is probably made from a bivalve (*Laevicardium elatum* Sby.) found only on the Pacific coast from Mexico northward. The identification is based on unique wavy ridges or laminations that show on the reverse side of the star and are characteristic of this species. The specimen is 4.5 cm in greatest width and is decorated on one side by a broad, deep incision outlining the star. There is a small perforation in the center surrounded by an incised line. Its use is unknown. The shell danglers (pl. 15, *a, b*) are likewise interesting in regard to their source, which is mainly the Gulf of California, though the species (*Oliva porphyria* Linné) may occur further south in the Pacific. The present specimens are chalky white, in marked contrast to the rich natural coloration of the shell, which consists of an intricate and beautiful series of fine, zigzag brown lines on a shell-pink background (pl. 15, *d*). Such exquisite shells must have had high trade value, and their occurrence here on the Atlantic side of the Isthmus, far from their natural range, is interesting. In manufacturing the danglers, one tip has been removed. A notched hole made for suspension, and a considerable portion of the opposite end has been ground down. Their use is unknown, but their shape and method of perforation suggest that they may have been used as a decorative and musical fringe for ceremonial garments. Two of the danglers from the vase are nearly complete (pl. 15, *a, b*); the other three are badly broken but of the same type. A small *Oliva* (sp.?) shell (pl. 15, *g*) has a more central perforation but is cut in the same manner.

The shell labrets (pl. 15, *h-m*) have been ground down from some thick shell, but the species is not identifiable from the worked pieces. Presumably, these were worn as lip ornaments with the button inside the lip and the elongated oval portion outside. With one exception (pl. 15, *h*), all are perforated, with the external opening large and the inner opening small. The purpose of these unequal biconodont perforations, whether for an inset of some sort or for some other reason, is unknown. The largest specimen (pl. 13, *i*) is 3.8 cm in length and 1.4 cm high. Besides those figured, there are two broken

fragments of labrets. There are three small triangular pendants, two with a vertical (pl. 15, *u*) and one with a horizontal perforation (pl. 15, *o*) at the small end. In addition, there are three unperforated shell triangles of about the same size. The shell beads are much disintegrated and form a rather heterogeneous group (pl. 15, *p-t*). Several are thin and roughly circular with biconodont perforations (pl. 15, *p-r*), 11 (for the most part badly broken) are cylindrical (pl. 15, *s*), and, finally, one flat, thin section of ground shell (pl. 15, *t*) has a curved perforation through its entire length (3.4 cm). Besides the above shell artifacts, the offertory vase also contained one small unworked pelecypod shell and three fragments of the same material.

Two unusual artifacts were included in the contents of the offertory vase (pl. 15, *u, v*). They are ground-down shell and have a brown patination and green copper stains. Each has a hole (averaging 4 mm in diameter) drilled longitudinally and on a gradual curve. The unbroken piece has one large and one small hole drilled latitudinally near one end. They evidently were used as beads.

#### VICINITY OF COXEN HOLE

Neither the Boekelman Expedition nor our party made any excavations near Coxen Hole, but several local collections were examined, and some of these were purchased by the former expedition.<sup>20</sup> At the store of Sr. Charles Osgood, Governor of the Islands, we examined a small collection of monochrome pottery consisting mainly of ornate but crude models of larger vessels. They were very similar to the smaller pieces already described from the Dixon site and had been found on one of the ridges behind the town. Bird took notes and photographs of a small collection owned by Doña Carmine e Yorgas, of Coxen Hole, which had been found in the interior of the island directly inland from the town. The collection includes five unslipped, red to brown vessels (monochrome), of which two crudely incised, small, egg-cup-shaped vessels (like pl. 8, fig. 1, *a-g*) were obviously offertory models. The other three had round bodies and constricted openings. One had a low, everted lip, and two had taller cylindrical necks with slightly flaring lips. One of the latter had an interlocking double scroll design with recurving punctate marks at the ends of the lines, and two lugs shaped like apes' heads. There was also a three-legged metate (28 cm long, 18 cm wide, and 12.5 cm high at one end,

<sup>20</sup> A.M.N.H. nos. 1596-1605.

9 cm high at the other) of volcanic rock. The two short legs were at the low end. It was accompanied by a roller pestle of hard gray rock.

A collection purchased by the Boekelman Expedition includes a small vessel of polished red ware found by a farmer on the north shore of the island opposite Coxen Hole. Another group of specimens purchased, obviously part of an offertory deposit, were said to have come from "a grave" in the middle of the island northeast of Coxen Hole. This collection includes 144 beads of green talc, marble, jadeite and diopside (pl. 17, *a*); a plumed head of green talc covered with a brown patina (pl. 17, *c*); a thin disk pendant of dark green jadeite (pl. 17, *e*); three copper bells, of which the two larger specimens have a basal portion of the pseudo-wire technique type (pl. 17, *f, g*) and the two smaller specimens (pl. 17, *b, d*) have obscure designs in relief. The two larger bells are of heavy, dark metal, suggesting bronze or hardened copper, and both contain rough pebbles as clappers, whereas the clappers are missing from the two smaller, thinner specimens. In addition to the pieces illustrated, this collection contains four ornate (monochrome) pot lugs, one of which is unique in having a tenon, as though made separately to be inserted into the wall of a vessel prior to firing; a torpedo-shaped pendant (4.5 cm long) of gray steatite; a small triangular shell pendant; six flat, cylindrical shell beads; and a small piece of metal, which analysis proved to be copper plated with gold. The last is the only specimen containing a large portion of gold in either of our Bay Island collections.

Bird also made a sketch of a unique soft sandstone "mortar", which has a squared top (50 cm in width), a flange which extends down from the top about 10 cm, and a tapering rounded base. It stands about 50 cm high, and when found, is said to have had a cover of sandstone. The interior forms a truncated cone 42.5 cm deep with the widest portion at the rim. A small irregular hole has been broken all the way through the base. According to local report it was found by a young American in some sort of a mound about a quarter of a mile inland from Coxen Hole. Like all finds in this region, it is said to have had "money" in it, which the finder took. During our stay we were told of several sites near Coxen Hole where pottery occurred but were unable to visit them. Several people also told us of sites near Dixon Cove that had been more or less dug over by local men. It is probable that the west end of Roatan contains much interesting archeological evidence, but we had no time to investigate, nor, so far as I know, was that part of the island examined by Mitchell-Hedges or the Boekelman Expedition.

## HELENA ISLAND

This small island is to all intents and purposes an eastern extension of Roatan, being separated from the latter only by a very narrow winding lagoon which traverses a dense mangrove swamp. It is a deep little channel but is said to be in part artificial. (Conzenius, 1928, p. 65.) We arrived at the southeast corner of Helena, having run down outside the cays from Port Royal. Guided by a local colored man called Sam, we paddled in two small canoes about half a mile up the picturesque channel just referred to. The black water of this swamp passage is edged abruptly by myriads of twisting man-

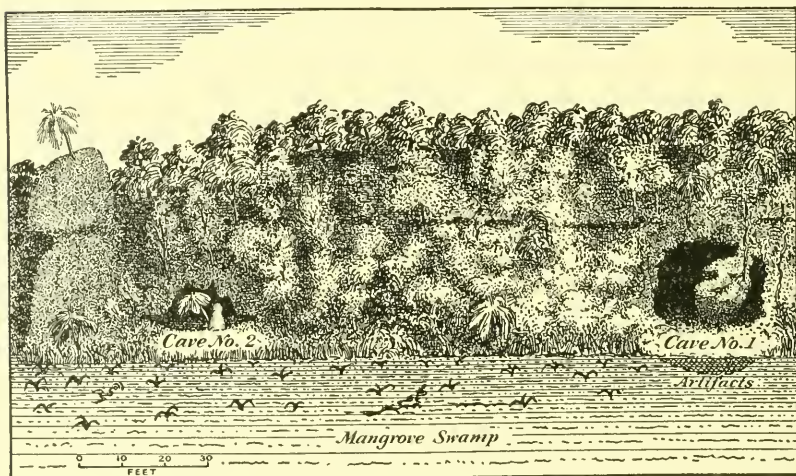


FIG. 16.—Sketch of caves on Helena Island.

grove roots. It is shut in by these trees, interspersed with coconut palms, and the air was dense and hot. White ibis and a number of species of herons added to the tropical effect. Making a landing on the tree buttresses and muddy banks of the eastern side, we walked over the dried surface of the swamp for about 150 yards to a line of steep coral cliffs that border Helena Island on the west. This abrupt escarpment varies from about 40 to 60 feet in height (see map, fig. 1, and sketch, fig. 16) and is wooded. Behind the cliffs the island is high and more open, with tall grass and low bush. Descending abruptly into the dismal swamp, the cliff with its weirdly eroded surface, trailing vines, and crowning trees is picturesque in the extreme (fig. 16).

## CAVES I AND 2

The site where artifacts had been found proved to be a cave (cave 1, fig. 17) and a rock-ledge shelter (cave 2, fig. 16). The two are about 90 feet apart and just above the level of the swamp. Sam had found this site in gathering coconuts and had previously guided Mr. Mitchell-Hedges to the place. Cave 1 (fig. 17) had a steep approach and two entrances, only one of which was large enough for a man to enter easily. The walls were considerably blackened by smoke. There were no signs of any recent fires. No floor deposit of any extent was present, and aside from the smoke-stained walls the only evidence of aboriginal occupation were a few unslipped red potsherds in the crevices and on the abrupt slope before the cave. Excavations in the black, evil-smelling muck below the cave, however,

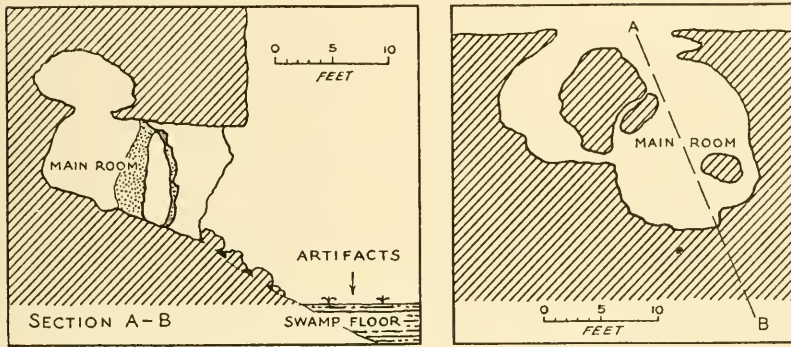


FIG. 17.—Diagram of cave 1, Helena.

yielded a considerable number of artifacts. The artifact-bearing area appeared to be roughly semicircular, with about a 10-foot radius, directly in front of the cave. In the muck and ooze no deposition lines were visible, and no artifacts were found below 2 feet in depth. They occurred irregularly from the surface to this depth. Broken and unbroken conch and whelk shells were abundant, and the miscellaneous artifacts recovered suggested that the place had been a temporary living site. Our excavations were limited by the short time available, and it is probable that more extensive work, especially with some sort of screen and washing technique, would yield a goodly number of specimens in addition to those obtained by Hedges and by our own party. However, the deposit next to the cave seemed to be exhausted when our work ceased, and I am inclined to believe that the entire site is one of very limited extent. Grubbing in the black, oily mud



and water was extremely unpleasant, and the omnipresent flies and mosquitoes did not help. An amusing though at times painful aspect of the work was furnished by the numerous land crabs lurking in the muck, which felt like highly desirable artifacts but pinched like demons.

The rock shelter (cave 2) was much smaller than the above and consisted of a niche or ledge 24 feet long and 6 to 7 feet above the level of the swamp (fig. 16). The ledge tapered in width toward both ends, being about 4 feet wide in the center. The roof was formed by the overhanging cliff, and the floor was concave with a niche or shelf some 3 feet higher at the south end. In the concavity was about a foot of brown dust and scaled-off fragments from the walls containing potsherds and a few artifacts. Sam had previously obtained here two or three complete pots, which he had sold.

Particularly striking was a stalagmitic formation, 5 feet in height, which stood in the center and on the outer edge of the main shelf (fig. 16). This definitely suggested a life-size human form having a rounded head and blocklike body. It was natural in origin, although the smooth, almost polished condition of the head may have been the result of human activity. Mounted well above the level of the swamp against such a striking natural background, the object at once suggested some sort of a fetish. Owing to the density of the mangroves at this place, some of our photographs did not come out; however, the field sketch gives a good idea of the object and its situation (fig. 16). Aside from the few artifacts, there were no other signs of human occupation, nor were the walls of the shelter smoke-stained.

We searched along the cliffs for a considerable distance in both directions and climbed to the top in several places without discovering any further human evidence. Several other clefts or small shelters, as well as the foot of the cliff, were carefully examined with similar negative results. On the basis of our examination and excavation, which occupied considerable parts of two days, the site consisted of only the one habitation cave and the rock shelter, or more probably shrine, nearby. The following artifacts were recovered or noted at this place.

#### CERAMICS

From cave 1, or rather from the muck at the foot of its steep approach, one complete pot and a large number of sherds were recovered. This pottery was covered with oily black muck and in many cases by a lime incrustation. All sherds were taken to the lagoon and washed, and an attempt was made to fit as many pieces together

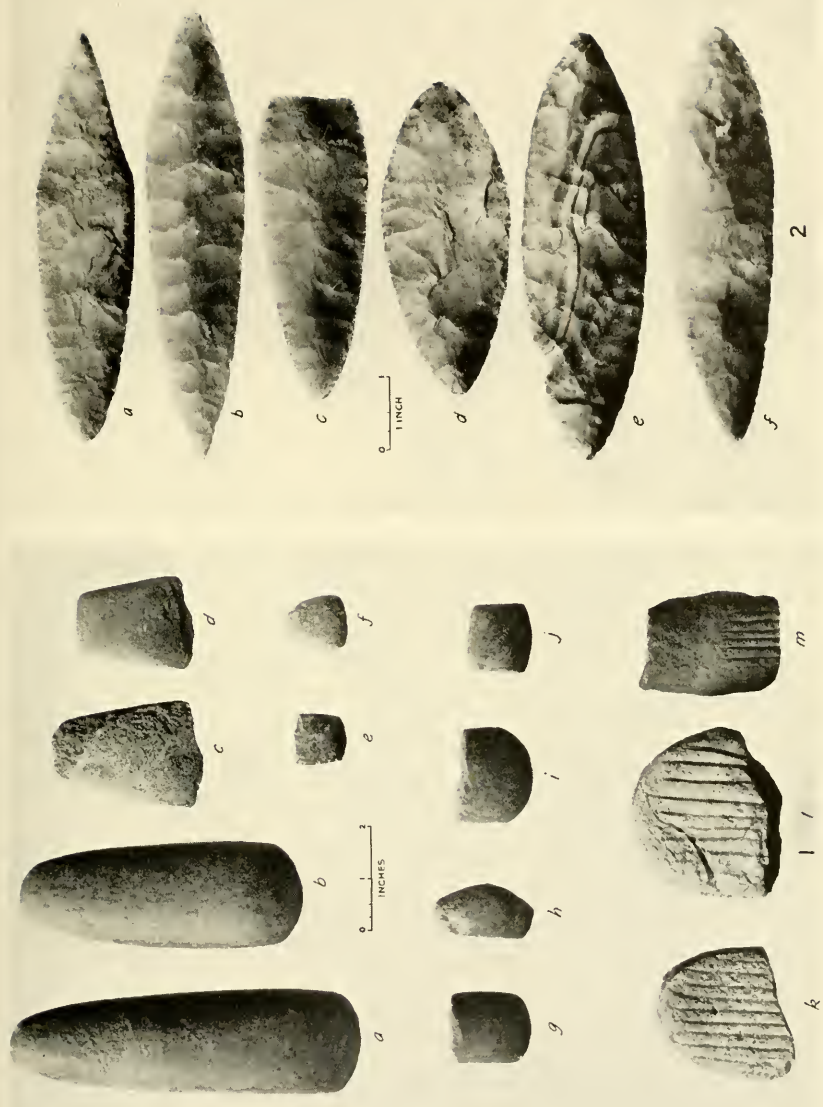
as possible, since we could not take the entire collection. In this we had no great success, as the sherds had evidently been deposited through sweeping or washing from the cave and were not parts of pots crushed *in situ*. The great majority of the sherds were unslipped red ware (monochrome), of which seemingly representative samples were preserved, along with all sherds decorated in any manner. In the following description it must be remembered that unslipped and undecorated red ware was greatly preponderant at the site. Owing to the greater space required to discuss the more elaborate types, it might appear that these decorated pieces were predominate, whereas actually they represent only about 10 per cent of the total.

The complete pot (pl. 31, *d*) from cave 1 has a badly eroded surface on which the rather heavy white grit tempering is visible. It is globular and without handles, decoration, or traces of any slip. The sherd collection is a mixed lot and certain types occurred here, as is true of the Mitchell-Hedges collection, which were not found elsewhere. Polychrome I is represented by four sherds of a dull brown-orange which are very thin (3 mm in thickness) and highly polished. They have at present no traces of painted designs. Three are from a rounded bowl with contracting mouth and slightly swollen lips without any flare. The fourth sherd is from a flat-bottomed vessel with one hollow foot, of truncated cone form, containing a pottery ball. Polychrome II is represented by two eroded sherds, one of which has traces of design. The latter is a curved fragment from a large bowl (6 mm average thickness) of dull orange color with traces of a rather wavy linear design in dull black. The other sherd is part of a broad, vertical strap handle with a conventionalized manatee head lug on the upper bend (like fig. 11, *a, d*). These type identifications are very probable but not positive.

There is another small group of sherds that do not fit into any Bay Island ceramic class yet distinguished. One striking rim sherd (pl. 18, fig. 1, *c*) is highly polished and decorated by paint and incision. It is a dark red with a dull white band below the rim. On the white is a weathered design in black divided into panels; one of these has a single fret design, the other a complex arrangement of lines and dots suggesting the skeuomorphic glyph designs which occur on early Uloa Polychrome ceramics. Below this white and black border is a portion of a skillfully incised design suggesting a conventional animal or monster. A second very striking vase with a slight neck contraction is represented by three sherds, one from cave 1 and two from cave 2. The former (pl. 18, fig. 1, *e*) shows the design. It has a red slip

with a panel around the neck of solid black and darker red steps separated by strips of body color. These and the panel borders are outlined by incision. From the two upper black borders peculiar linear designs extend to the lip. There are traces of a black body design, but these are entirely obscure. It is somewhat paradoxical that the paint on this sherd from the muck in front of cave 1 is better preserved than that on two other fragments of the same vessel from cave 2, which was bone dry. The sherds from cave 2 were covered with a brown incrustation which can be only partially removed. A basal sherd from cave 2 may have come from this same vase, though this is problematical. It is of similar ware and thickness with traces of black paint over the exterior. The piece is a portion of a flat bottom with one thin, solid rectilinear foot 5.5 cm in breadth. Three other sherds from cave 1 are from a poorer-grade vessel with a dark red slip and irregular black linear design. The rim sherd (pl. 19, fig. 1, *a*) may be from this last vessel. These sherds do not fit into any of the present Bay Island classifications, but two of them (pl. 18, fig. 1, *c*, *e*) are similar to pieces obtained on Helena by Mitchell-Hedges and may be related to early Uloa Polychrome wares. One rim sherd from a large straight-walled vase (pl. 18, fig. 1, *b*) was covered with a brown calcareous deposit, but where this can be removed, traces of a white slip and black design can be seen. Below this faintly preserved, painted-design panel is another of incised frets. A rim sherd, from a smaller vessel, is so heavily coated with this same incrustation that only bare traces of a similar incised design can be seen. These two sherds are similar to the elaborately incised monochrome pottery, but the presence of a shiny white slip on one of them seems unusual.

Elaborate monochrome sherds are fairly abundant in the present collection. One-third of a large vessel of this type was recovered (fig. 18). The panels of incised design, the monstrous human or simian faces, and the "snakes" in applique are interesting. Two of the heads appear to be extreme conventionalizations of the manatee head motif though they resemble the duck-bill platypus as much as anything else. The vessel had a tripod base, and the incised foot is solid. There are three basal portions of medium-large jars with annular bases showing incised, and in one case applique, decoration. The largest has an outside basal diameter of 17 cm. Two have slightly concave bottoms, but the largest has a convex bottom with a marked "dimple" in the center. This broken vessel has external design panels of opposed step elements, each pair enclosing a dot. In the others, panels with short line and dot designs occur. In addition,



STONE ARTIFACTS, VARIOUS SITES

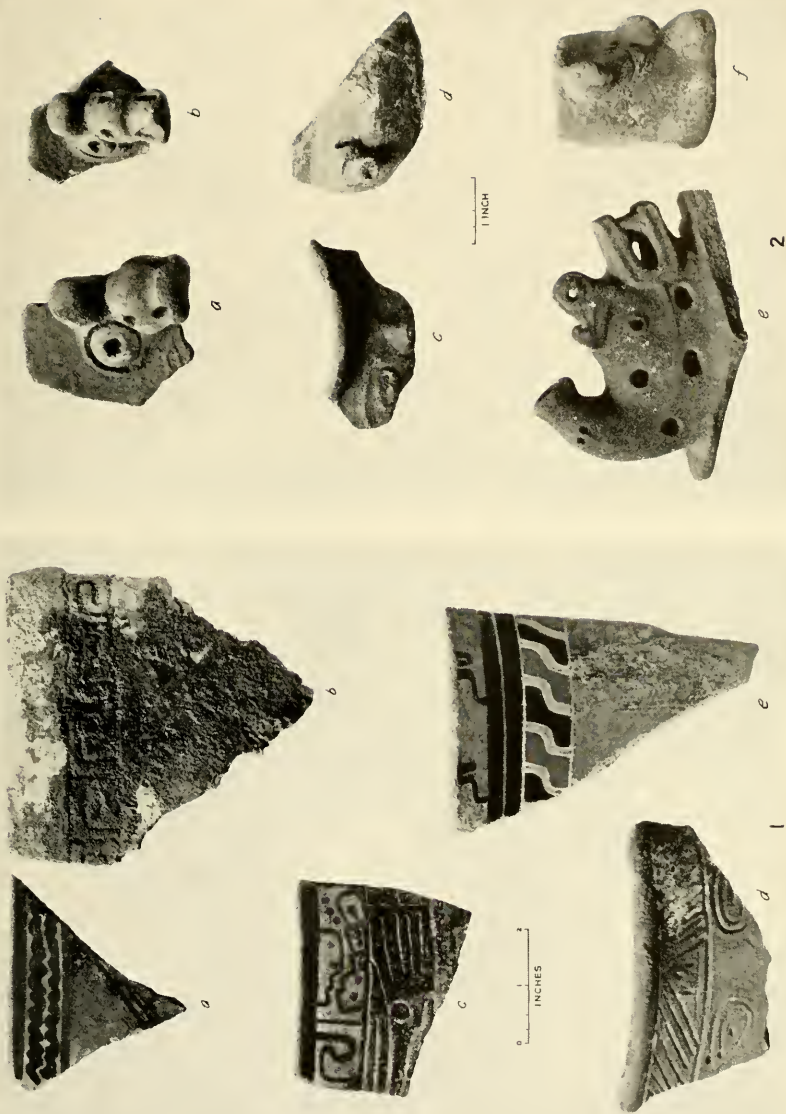
1. Ground stone celts and bark beaters: *a-f*, Dixon site, Roatan; *g, k*, Marble Hill Fort, Bonacca; *h, i*, Indian Hill, site 1; *l*, Indian Hill, site 2, Barburata; *j*, Jonesville Bight, Roatan; *m*, Morat Island.
2. Chipped stone knife blades: *a-c*, Dixon site; *f*, Helena.



Photograph courtesy of the American Museum of Natural History.

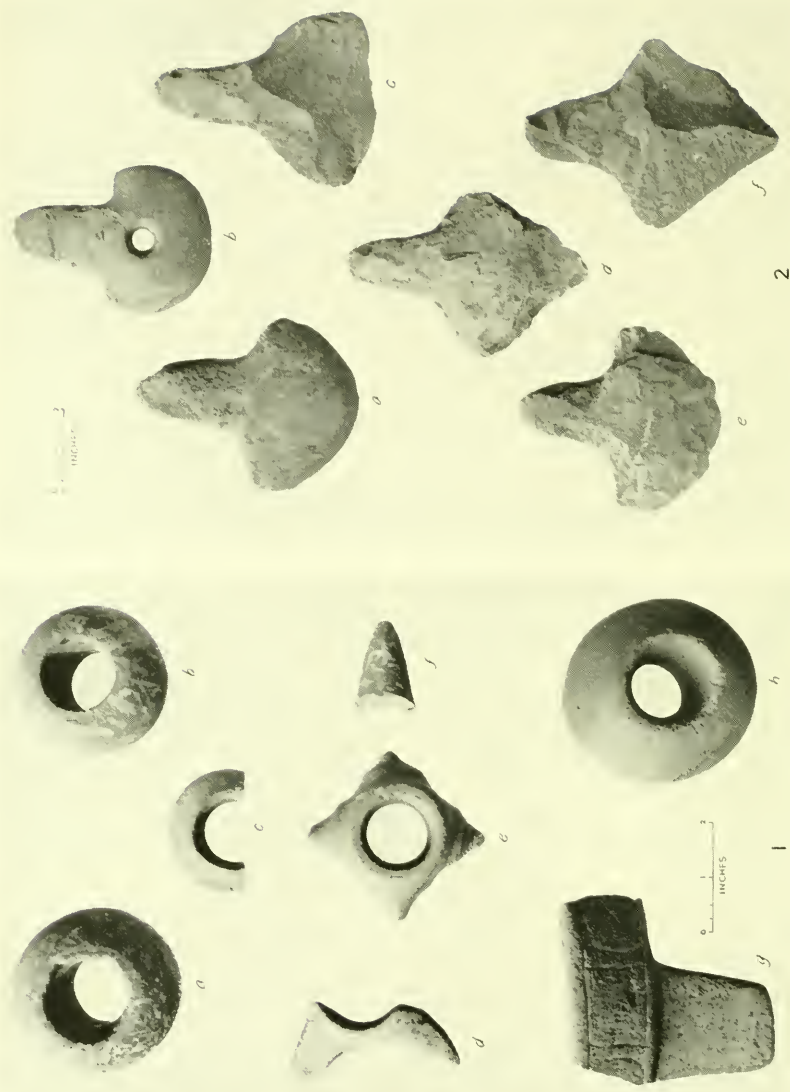
**COPPER BELLS AND SMALL STONE CARVINGS**

*a-g*, vicinity of Coxen Hole, Bonacca; *h*, Kelly Hill, Bonacca; *i, k*, Jonesville Bight, Roatan; *j*, Marble Hill Fort, Bonacca.



## HELENA ISLAND

1. Painted and incised sherds (*a*, *c*, *e* retouched to bring out design).
2. Modeled monochrome sherds.



STONE ARTIFACTS, VARIOUS SITES

1. Ground stone mace heads and potstand fragment: *a-c*, Helena; *d, f, g, h*, Indian Hill, site 1, Barbarata; *e*, Dixon site, Koatan.  
 2. Ground and chipped T-shaped axes: *a-c, f*, Helena; *d*, Indian Hill, site 1, Barbarata; *e*, Dixon site, Koatan.

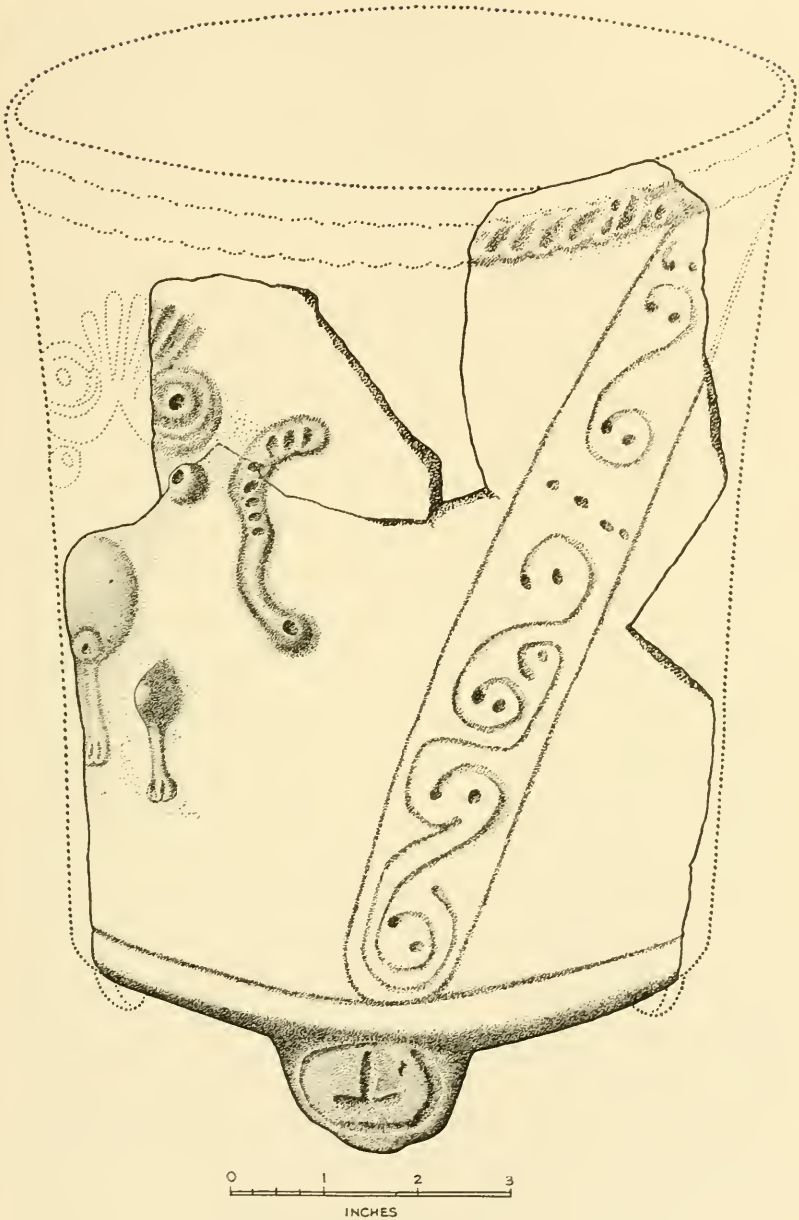


FIG. 18.—Fragmentary elaborate monochrome vessel, Helena.



there are three rim or basal flange fragments from similar vessels; two of these have the opposed step and dot design, and the third has angular lines and dots. Two rim sherds from a highly polished red vase have an outside bevel below the rim. A small portion of body ornamentation on these pieces shows a rectangle of lines in relief containing incised square and curvilinear motifs. Of the three detached feet in the cave 1 collection, two are hollow cylinders flaring toward the top and decorated with punctate markings, and the third is of the thin, solid rectilinear type.

In the cave 1 collection are about a dozen rim sherds of rather coarse, brick-red pottery. All but two of these plain monochrome sherds are from large to medium pots with more or less constricted necks and low flaring lips (similar to pl. 30, *h-l*). The two sherds are from small open bowls, one has a direct, the other a definitely incurved rim. The largest of the sherds with low, flaring rims are similar in type to the small burial urns from Black Rock Basin, Utila. The others appear to have been smaller utilitarian vessels. Aside from simple incised line and dot, or small, rough applique tabs on a few of these, they are undecorated. This sample seems fairly typical of a large amount of the discarded sherds at cave 1.

Cave 2 contained a small amount of broken pottery and one shell bead, but nothing else. As previously stated, a number of complete vessels and considerable other material had been removed by Mitchell-Hedges and the man who discovered the site. All the sherds from this rock shelter were thickly coated with a pinkish incrustation, similar to the powdered debris in the hollow, and in some cases, a whitish, calcareous deposit had been added to this. Conditions for preservation seemed better here than in the perpetually damp mangrove swamp muck, yet in one case, at least, deterioration was more marked. I refer to the red and black painted sherd (pl. 18, fig. 1, *e*) from cave 1, which had retained its color, whereas a fragment from the same vessel in cave 2 bore only the faintest traces of paint. A smaller rim fragment of the same vessel however, under a whitish calcareous coating retains the black collar design almost as well as the larger sherds from cave 1.

In addition, there were three other fragments of slipped ware. One of these is the thick basal fragment (9 mm in thickness) with a solid, rectangular lug, which bears traces of a highly polished black slip. The two remaining painted pieces are obviously from thin Polychrome I vessels and consist of a typical nose-tilted face lug and a hollow flattened, conical foot. Both bear faint traces of characteristic polychrome designs. The foot contains a piece of gravel as a rattle.

Six sherds, at present without traces of any slip, are rather elaborately modeled. The most elaborate of these is a lug representing a plumed alligator or possibly serpent (pl. 18, fig. 2, *e*) with the short tail curving outward and upward and open at the end. The tip of the animal's jaws just reaches the rim of the almost straight-walled vessel from which this fragment was broken. A round, perforated secondary lug on top of the figure's head and a space formed between the jaws and behind the solid teeth may have served for the attachment of carrying cords or decoration. The figure is hollow, and a passage extends from a round perforation in the center of the mouth, through the entire body and out at the top of the tail. There are seven punctate decorations on each side of the lug; of these, the three nearest the body of the pot and the large perforation below the eye actually penetrate to the hollow interior, but the others are not complete. The round tail tip rather suggests the end of a whistle or ocarina, but the lug cannot be made to whistle; hence the perforations are probably for decoration rather than use. A fragment modeled as a human face represents an interesting type of jar (pl. 18, fig. 2 *c*). A complete vessel of this type, which was found by Mr. Boekelman at Marble Hill Fort (fig. 34, *a*), will be referred to later. Another anomalous fragment, probably a figurine, has appendages modeled in high relief and a definite rounded rim on what appears to be the base (pl. 18, fig. 2, *f*). Two lugs are of the manatee type, one definitely suggesting this animal (pl. 18, fig. 2, *a*), as do the majority of such pieces, whereas the second (pl. 18, fig. 2, *b*) is conventionalized with the nasal portion unnaturally drawn out. The extreme of this type of conventionalization appears in the "duck-bill platypus" type of manatee design on a large sherd from cave 1 (fig. 18). Another small bowl fragment has a rather common type of lug (pl. 18, fig. 2, *d*) that may also be derived from the manatee motif.

Three sherds are decorated with deep incisions. One of these has a rather complex design (pl. 18, fig. 1, *d*). Only a few undecorated pottery fragments occurred in cave 2. One of these, a considerable portion of a small jar, has a flaring mouth. Another plain fragment of similar thickness (5 mm) has a broad, vertical loop handle. The four remaining plain ware sherds are too fragmentary to merit discussion.

Considering the ceramics from both these nearby sites, two points seem especially noteworthy. First, cave 2, apparently a shrine, had a majority of decorated pottery and only a small amount of plain ware, whereas the reverse was true in cave 1, which was a living site. Second, the occurrence of fragments of the same especially fine

painted pot (pl. 18, fig. 1, *c*) in the muck below cave 1, and also in the hollow below the stalagmitic "image" at cave 2, suggests that broken fragments, especially those from fine vessels, were regarded as suitable offerings.

#### GROUND STONE

No metal or metal work was recovered at this site. Ground stone artifacts were limited to six pieces. The most striking are two large mace heads of attractively mottled felspar porphyry (pl. 19, fig. 1, *a, b*). The largest of these is 5 cm in height and 7.7 cm in diameter and has a perforation 4 cm in diameter. A smaller mace head of diabase has been broken in half (pl. 19, fig. 1, *c*). Particularly noteworthy is a T-shaped ax of felsite (pl. 19, fig. 2, *b*). Its chipped surface has been ground to a sharp edge, and there is a perforation where the narrow butt runs into the blade. Another specimen of diabase porphyry lacks this central perforation but is otherwise similar (pl. 19, fig. 2, *a*). These axes were probably hafted, as the central perforation in the one strongly suggests, but could have been used in the hand as well. The ground T-shaped ax is merely a refinement of the more numerous chipped axes of this type (pl. 19, fig. 2, *c-f*). Only one stone bead was recovered, a small, round, light green bead of diopside. It has already been noted that, aside from one shell bead and some pottery fragments, all artifacts came from the muck below cave 1.

#### CHIPPED STONE

Two chipped, T-shaped axes of diabase were preserved (pl. 19, fig. 2, *c, f*) and a number of others were found. The variety of forms that these common artifacts assume is shown in the illustration (pl. 19, fig. 2). One oval knife blade of chalcedony was recovered (pl. 16, fig. 2, *f*). It is well worked and almost complete, but is not as thin (11 cm in thickness) as the best from the Dixon site.

#### SHELL AND WOOD

Three shell artifacts were recovered: two large shell (*Oliva porphyria* Linné) "bells" or danglers from cave 1 and a rectangular shell bead (pl. 15, *e*) from cave 2. The "bells" consist of medium-sized shells, cut off at one end and perforated at the other (pl. 15, *c*). It is of interest that this species is found on the west coast, but not on the east coast, of Central America. They came from the muck below the cave and are hard and in good condition. The rectangular

shell bead from cave 2 has a coral-pink surface on one side and is white on the other (*Spondylus* sp. ?). Numerous large conch shells were found, the majority of which had been broken open to extract the meat. A few examples, however, were complete and had a small, roughly picked hole opposite the natural opening. These last were probably used as signaling trumpets.

From the muck in front of cave 1 came a small fragment of wood 6 cm in length, which shows signs of cutting on one end. It is too fragmentary to suggest any type of artifact but has a certain importance as a hint that mangrove swamps in this region may be found to contain valuable perishable material of this sort.

In conclusion, it seems significant that the great majority of the utilitarian artifacts came from cave 1, furthering the probability that cave 2 had importance mainly as a shrine. Probably the sporadic occupation of cave 1 which, owing to its location, could hardly have been a year-round residence site, was primarily due to its proximity to the striking natural formation in cave 2.

An examination of that part of the Mitchell-Hedges material in the storage collections of the Museum of the American Indian which is allocated to Helena Island reveals many types not represented in our much less extensive collection. Since the sites already mentioned are as far as I know the only ones worked by Mitchell-Hedges, the material probably comes from these. There is a large amount of broken Polychrome I pottery of the thin type with an orange slip and black and red-purple designs, already described. In addition, there are a number of light buff sherds, apparently of the same ware, that have brown designs, often representing rather crude and conventionalized plumed serpents. All the usual Polychrome I lug types are represented, with the addition of (a) a fairly numerous bird head type, which may or may not have incised eyes and a knob or spur on the crown; and (b) an ovoid lug with a perforation on each side and a small knob or ridge on the top. Both types of lug have the usual black and red-purple rings around the base and, occasionally, painted bands over the upper portion. One unusually interesting vase strongly suggests late Copan or Uloa wares. It is straight-walled with a white slip, on which are very crude warrior figures in red. Around the neck is a band of skeuomorphic glyphs. This vessel is unlike any other that I have seen from the islands. There are also a number of Polychrome II sherds and a number of pieces that appear to be transitional between the two polychrome wares.

The collection contains a large amount of the elaborately incised monochrome pottery. In addition to most of the types already de-

scribed, there are a number of variants of the partly incised and partly applique anthropomorphic and monstrous figures. Elaborate and grotesque lugs and some restored vessels with round tripod feet are represented. There are several complete ocarinas or whistles (like pl. 27, fig. 2, *a-c*) of this elaborately incised monochrome type. The undecorated monochrome ware is represented by a considerable number of simple red vessels and sherds, usually round-bodied with low, flaring lips. To judge from this collection, all of the pottery types described in the present paper were originally represented on Helena Island.

Ground stone artifacts are well represented. There are several crude, low bowls of white marble, one cylindrical pestle of lava, and a beautiful petaloid celt (18 cm in length) of black stone, which has been chipped into shape and subsequently polished to a lustrous finish. There are several ordinary celts of gray stone and a star-shaped mace head of coarse brown lava. The collection contains a number of small green talc heads, but none that is very well finished; there are also square pendants and beads of similar materials. There is one chipped stone knife and one small-stemmed projectile point of brown chert, as well as several of the crudely chipped T-shaped axes. Evidently this Helena site contained much more abundant and varied material than Captain Boynton and the Negro Sam, who were both with Mitchell-Hedges, remembered. As a cross-section of nearly all Bay Island types it is rather remarkable.

#### BARBURATA ISLAND

On leaving the Helena site the *Amigo* proceeded to Barburata Island and anchored near Pelican Point (fig. 19). Barburata is an exquisite little island about  $2\frac{1}{2}$  miles long. Around the island are coral reefs, some of which are large enough for habitation, supporting a heavy growth of coconut palms and unbelievable numbers of land crabs. Owing to the protecting reefs, the lagoon on the south side of the island is a favorable anchorage, though in certain winds it is hard to find a holding ground. An east wind was sweeping the lagoon during our first night and we were forced to shift anchorage several times. During most of our visit to the islands this strong wind was extremely annoying, though it was never dangerous as are the "northers" which come later in the season.

The first morning after our arrival we rowed to the mouth of a little stream that comes down to the southeastern shore. This valley was a veritable paradise; first one passed through a fringe of cocoa

palms laden with nuts, where dragonlike iguanas were numerous, then on into a marvelous grove of wild fig trees with great buttressed trunks and stately branches (pl. 20, fig. 1). The little stream of brown, rippling water, the pervading scent of lime and orange blossoms, and the chatter of flocks of parrots, mingled with the cooing of wild blue pigeons, gave the final touches to the exquisite setting. Following up the stream, we began to climb onto the rolling hills until we came out

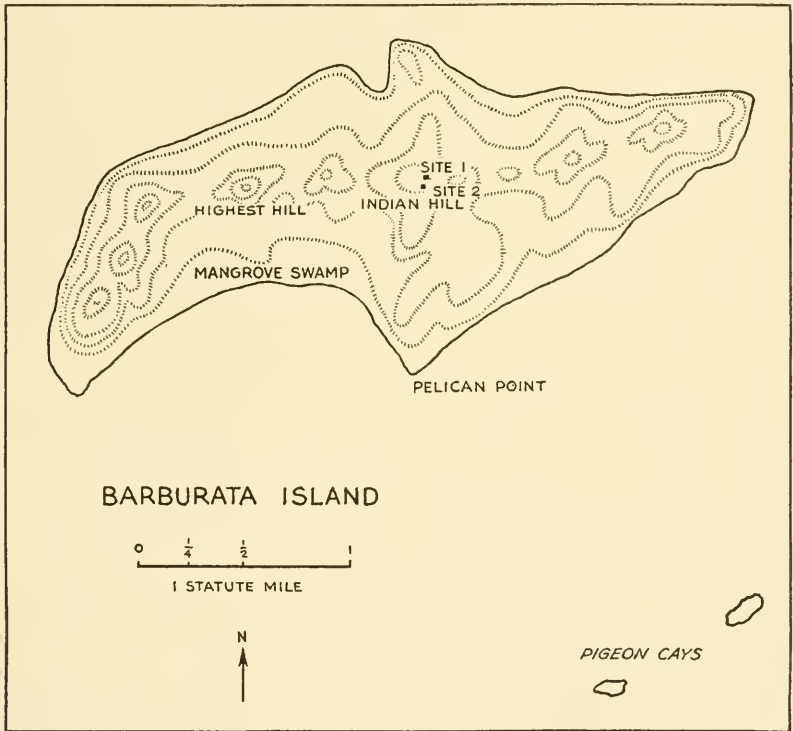


FIG. 19.—Sketch map of Barburata Island. (Made by Norman A. Haskell.)

on a bald spur below Indian Hill. From here the western end of the island can be seen with its rolling surface dotted with open cattle pastures and thick clumps of trees. On this knob several unslipped, red potsherds were picked up, along with one red pottery bead. Continuing on to the northeast, we passed on through thickets of corozo palms covered with nuts, into the dense forest that covers the top of Indian Hill (map, fig. 19; pl. 20, fig. 2). Here two offertory sites are located.

## INDIAN HILL

## SITE I

The first of these offertories that we investigated is just below the crest of Indian Hill to the northeast. Indian Hill is approximately in the center of the island and its summit is about three-fourths of a mile from the southern and somewhat closer to the northern shore (see map, fig. 19). We estimated its altitude at about 300 feet. Site I is marked by two great wild fig trees, one living and one dead, around which, over a space approximately 75 feet from east to west and 60 feet from north to south, is a mass of broken pottery and other artifacts. This deposit is covered by only a few inches of earth in those places where it has not been disturbed. Much of the site had been dug over in a haphazard fashion by earlier visitors. These include the workers of Mr. Mitchell-Hedges' party and a number of local treasure hunters. A tree of considerable size had been cut down to get at the artifact deposits under its roots, and there was a large amount of broken material left on the surface and around this tree (pl. 20, fig. 2). Since it was not possible to remove all this material for detailed study, I made sketches and notes concerning the types represented, which will be incorporated with the following account of artifacts recovered from this site. Owing to lack of time, workmen, and adequate tools, our own excavations were hardly more systematic. Since the central portion of the deposit had been completely pitted, we dug mainly in the northwest corner, taking out a wedge-shaped section, and on the northeast where we came from the edge into the center of the deposit. On the edges the artifact layer was very shallow but became thicker as the center was approached, until it reached a depth of something over 3 feet. This was the thickest portion of the deposit that I observed, but it is possible that in the much-disturbed center it is somewhat deeper. Although the above-mentioned factors, as well as the brevity of our visit, precluded a systematic stratigraphic study, an attempt was made to record the relative depths of various types of artifacts. The most notable result that appeared in this regard was that the bulk of the thin, polychrome pottery (Polychrome I) and a few green stone carvings recovered came from the upper portions of the deposit, usually within a foot of the surface. For the above reasons and others shortly to be discussed this must be taken as a probable rather than a positive indication of their relative age.

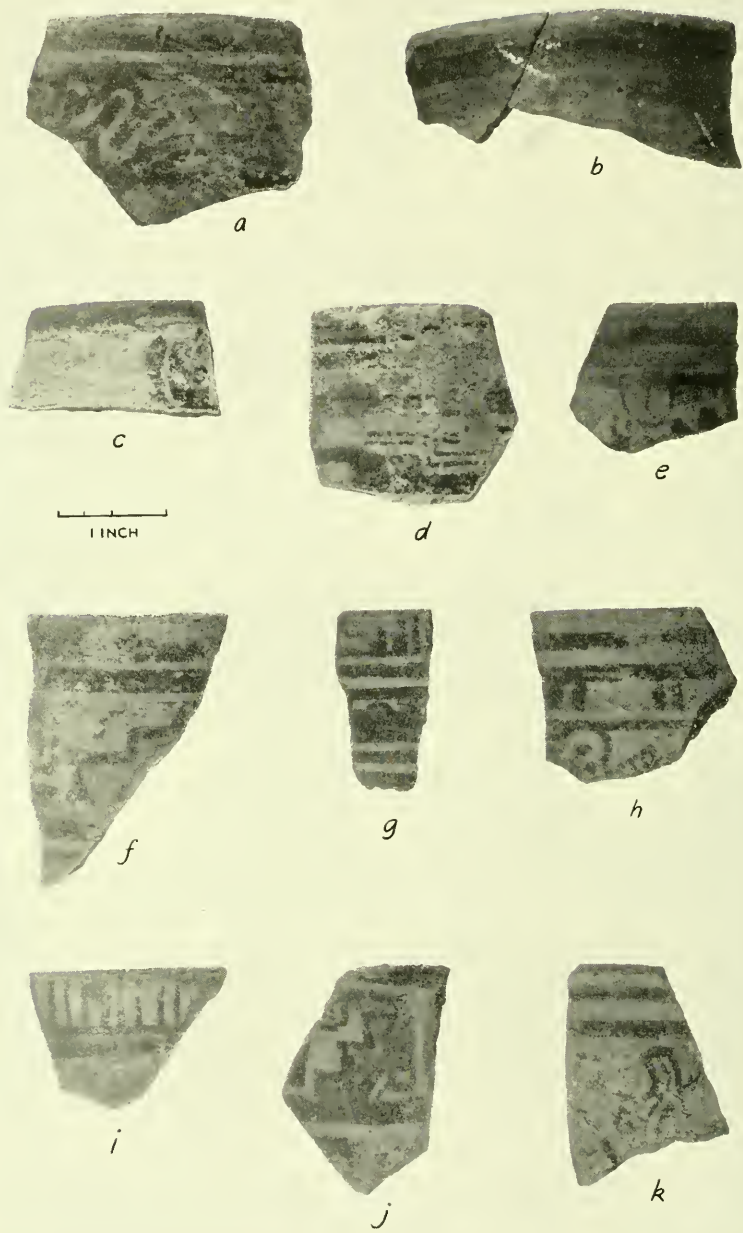
In general nature, the deposit was similar to that at the Dixon site but more extensive. Most striking was the enormous amount of broken pottery. Entire pots were rare, but enough whole and re-



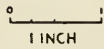
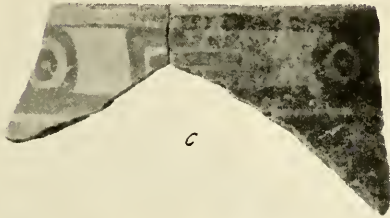
INDIAN HILL, BARBURATA

1. Wild fig grove below Indian Hill, Barburata Island.
2. Broken artifacts left at site 1, Indian Hill, Barburata.

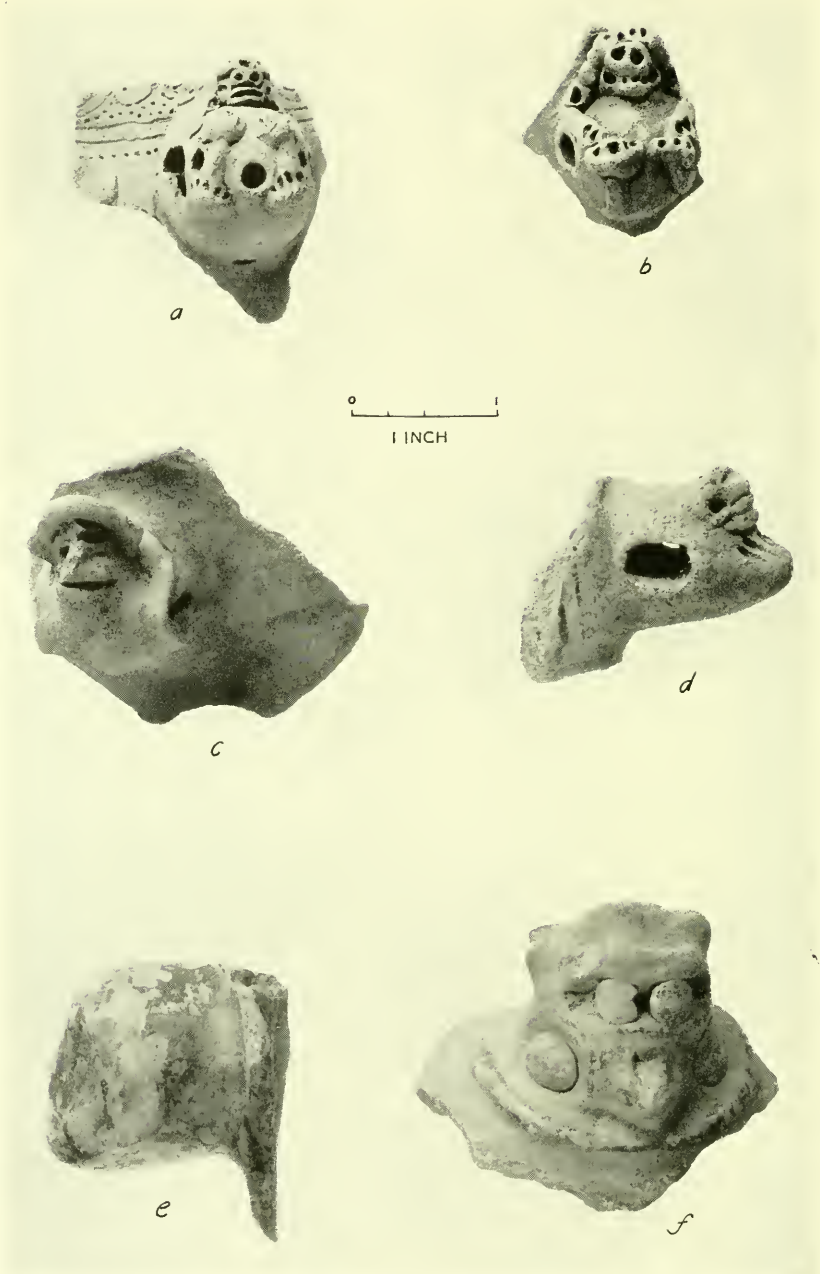




POLYCHROME I RIM SHERDS, INDIAN HILL, SITE 1



POLYCHROME I SHERDS, INDIAN HILL, SITE 1



DETACHED LUGS

*a, b*, monochrome; *c-f*, Polychrome I. *d*, Dixon site; others Indian Hill, site 1.

storable pieces were obtained to give some idea of the various forms represented (pls. 24, 25; figs. 29, 30). Plain and decorated metates, the latter type all broken, were fairly abundant (pl. 20, fig. 2). In addition to the numerous artifact types, a considerable number of conch and whelk shells, rough rocks, a little charcoal, and a few animal bones were noted. A few fragments of human bone and some teeth were likewise recovered. No evidence of definite burials, fireplaces, or house floors was observed. At least 90 per cent of the artificial deposit consisted of closely packed broken pottery.

Unlike the Dixon site no view could be obtained from this place, owing to the dense growth of corozo and other small palms which surrounded it. If these were removed, however, a good vista of at least the northern shore could be obtained. As at the Dixon site, there were no surface structures of any kind.

#### CERAMICS

Site 1 yielded a large amount of pottery, as well as interesting data on the classification and relationship of the two major wares previously noted at the Dixon site on Roatan Island. In addition to a large collection of sherds, 11 complete or restorable vessels and 15 miniature pots were obtained and about 15 whole or restorable vessels (mostly duplicates) had to be sketched and left at the site, owing to our very limited transportation and storage facilities.

Two distinct ceramic types were noted, a thin, polychrome ware (Polychrome I) and the monochrome ware. No Polychrome II sherds were found at this site. All the whole or restorable vessels and 99 per cent (estimated) of the broken pottery pertained to the monochrome type. After careful study it has been possible to demonstrate a definite relationship between the two types, a matter which will be brought out as each ware is analyzed in detail. This fact, in conjunction with the more superficial occurrence of the thin polychrome ware, will be discussed when sites 1 and 2 on Indian Hill are compared.

The thin, polychrome ware will be discussed first. All sherds of this type encountered were preserved, giving a total of 203. However, owing to the occasional disappearance of painted decoration through weathering, many such pieces were probably not recognized in the field. After thorough cleaning and analysis in the laboratory, certain lug types thought to pertain exclusively to the monochrome red ware were also found to belong to the thin, polychrome ware. It appears, therefore, that our collection of the latter ware might have been somewhat increased had washing facilities been at hand. Nevertheless,

including all Polychrome I types, this ware made up a very small percentage of the total pottery deposit in the offertory.

As at the Dixon site, the Polychrome I ware is very hard with a fine paste. It varies from 5 to 9 mm in thickness, averaging around 7 mm. It has been thoroughly and evenly fired and highly polished prior to applying the slip and painted decoration. Tempering, often invisible to the naked eye, is of fine white grit. Sherds are mostly of small size, resulting from the breakage of small to medium-sized vessels. The majority have an orange slip ranging from dark orange to light buff, the latter color being rare. Most of these sherds bear portions of painted designs in black and purplish red. Six sherds have a cream-white slip with black and red designs. A considerable number have only traces of slip and painted design, and a few, indubitably of this type, are so eroded that both slip and design have entirely disappeared.

Since no complete or restorable vessels of this ware were recovered, shapes and designs must be reconstructed from fragments. There are 67 rim sherds; only one of these retains part of a lug, and none has handles. Separate lugs are common. They were placed below the rim and have broken off, usually where they joined the body of the vessel. Rim cross-sections are remarkably uniform and are either slightly swollen or of the same thickness as the body of the vessel. Three rim types can be distinguished: (a) with mouth slightly contracting (fig. 22, *f*), (b) intermediate (fig. 22, *e*), and (c) with mouth strongly contracting (fig. 22, *d*). Practically all rim sherds have an outside design on the neck, usually of purplish red and black (pls. 21, 22). Owing to differential weathering, this design is more or less eroded. Sixteen of the rims have designs on the inside as well as on the outside (fig. 20). These differ in no essentials from outer neck designs. They will be discussed shortly in relation to polychrome design as a whole.

The more numerous body sherds appear to be from small rounded pots or semicylindrical vases. Apparently the larger portion of the body surface was covered with painted design. To judge from fragments, and from the complete vessel at the Dixon site, lugs were usually attached close to the angle between body and neck. Both lugs and feet apparently were modeled on the body at the same time that the pot itself was shaped. Both are hollow and contain pottery balls or gravel, demonstrating their use as rattles. The majority of the lugs are modeled and fall into three main types: (a) nose-tilted (fig. 22, *a*), (b) applique rider (fig. 22, *b*), and (c) iguana head (fig. 22, *c*). Of the 28 painted lugs, 7 are of type (a), 11 of type (b), and 5 of

type (c). The remainder represent human or simian forms (pl. 23, *e, f*), animal (fig. 23, *b*), or unusual or intermediate forms (pl. 23, *c*). One lug (pl. 23, *e*), which might be either human, simian, or a conventional jaguar, is almost identical with a lug figured by Gordon (1898, pl. 1, fig. 12) from the Uloa river.

Of the three main lug types, those with the nose-tilted face (a) are best preserved, all retaining both slip and design. Type (b) lugs are more eroded than (a), and type (c) lugs are without either slip or design except in two cases. Presuming that weathering conditions have been equal for all, as would seem to have been the case at least



FIG. 20.—Polychrome I rim sherds (inner surface), Indian Hill, site 1. (White, orange-red; black, black; hatching, purplish red; cross hatching, darker red.)

since their deposition in the offertory, this may indicate the older and the later types in vogue. Such a sequence is likewise suggested by the fact that type (a) seems to have developed from type (b) through the "applique rider" face being dropped from the top to the tip of the lug, with the encircling arms thus forming a ridge around the face, thereby giving type (a) lugs the appearance of a face projecting from a fish or reptile mouth. Three rather aberrant lugs (pl. 23, *a, c*) further this suggestion of a developmental transition between types (a) and (b). It should also be noted that both lug types (b) and (c) occur in the monochrome ware as well as in the thin, polychrome (pls. 23, *a, b*; fig. 24, *d, f*; pl. 27, fig. 1, *a*). In many cases it is



FIG. 21.—Polychrome I sherds, Indian Hill, site 1. (White, orange-red; black, black; hatching, purplish red; cross hatching, darker red.)

impossible to be certain to which ware the badly weathered lugs actually belong (fig. 24, *f*). Type (a) lugs, however, seem to be definitely limited to the thin, polychrome ware (Polychrome I).

To judge from the present collection, handles were exceedingly rare in this thin, polychrome ware. One vertical handle with characteristic painted decoration was recovered at this site (pl. 22, *d*). Basal portions and foot fragments of this ware are rather uniform, a round-bottomed vessel with three conical feet predominating (pl. 22, *e, f*; pl. 1). Bottoms are either flattened between the tripod feet or marked by a flattened curve that expands rapidly above the feet.

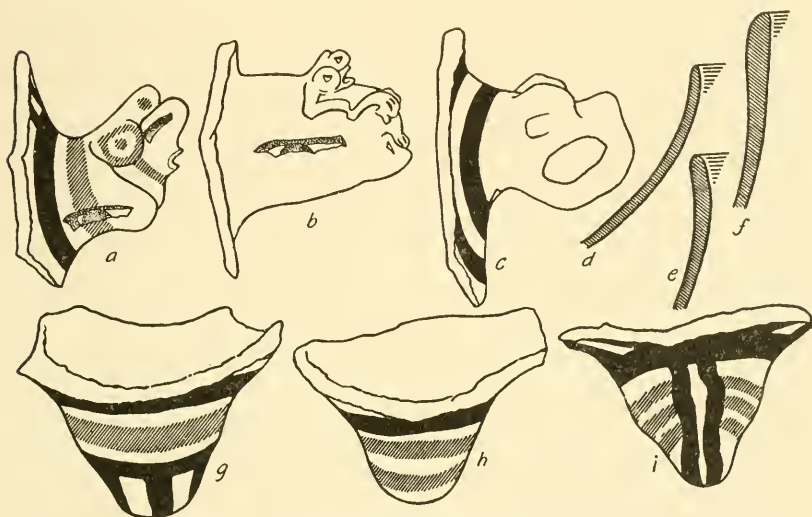


FIG. 22.—Polychrome I rim, lug and foot types, Indian Hill, site 1. (White, orange red; black, black; hatching, purplish red.)

In the present collection all basal fragments come from vessels with three coniform feet. Some 25 sherds with attached feet were recovered. They fall into three main types: (a) humped (fig. 22, *g*), (b) conical (fig. 22, *h*), and (c) spurred (fig. 22, *i*). One example, already described as a lug (pl. 23, *f*), has a worn surface on the back of the figure's head and may have served as a foot. From the complete vessel obtained at the Dixon site (pl. 1) it can be seen that the type (a) lug and the type (a) foot are associated on the same vase. Owing to excessive breakage prior to deposition, the correlation between other lug and foot types is uncertain. In general, the lugs and feet are among the most numerous and best-preserved thin, polychrome sherds from this site.



Originally, the major portion of the outer surface of this thin, polychrome ware was covered, first with a slip and then with a painted design. Around the outside of practically all rim sherds occur purplish-red and black, linear designs. There is nearly always one encircling heavy black or red line and often more. A solid black or a red step design is very common, and decoration in general tends toward the geometric (pls. 21, 22; fig. 20). Some 16 rim sherds have an inside border of design (fig. 20), which is generally the same as that on the outside of the rim. The use of heavy black lines or, more rarely, red lines to set apart the combined red and black rim design is typical (pls. 1, 21, 22).

In all, 98 body sherds were recovered. From these it appears that a large proportion of the body was covered with painted designs—purplish-red and black lines on an orange slip predominating. Recognizable design units include concentric rectangles (rare), concentric circles (common), single frets, interlocking frets, hatched irregular triangles (rare), and plumed serpents or monsters (10 sherds). Of the latter only details such as plumes, ear plugs, eyes, and tail tips can be distinguished (pl. 21; fig. 21). These suggest a close similarity to the more complete "plumed serpents" on the Dixon site offertory vase (pl. 1). Designs on lugs, exclusive of modeling, are for the most part circles or simple geometric designs in black and purplish-red (pl. 1; figs. 12, 22). From the 37 basal sherds recovered, these designs appear to be very similar to that on the complete pot (pl. 1; compare pl. 22, *e, f*). Broad, purplish-red bands with black bands above are common (pl. 22, *f*). Designs on feet are generally simple circles or geometric patterns in red and black (fig. 22). The modeling and incising on lugs and feet have been mentioned and can be seen from the illustrations. Summing up, it can be said that the Polychrome I sherds from this site present a rather uniform and distinctive appearance as a ceramic type. Furthermore, analysis of the Indian Hill (site 1) sherds indicates that the complete vessel of this ware from the Dixon site is typical.

Compared to the quantity of thin, polychrome ware, the amount of monochrome, red to brown ware at this site was enormous. Only a very limited selection of this latter type could be transported. Besides the 11 complete or restorable vessels, and the 15 miniature vessels, some 200 monochrome sherds were saved. Some 15 more or less crude vessels of this ware were sketched and measured, being left at the site along with a great mass of fragmentary pottery. Since all types of complete and model vessels of this ware were preserved, or sketched in the field, these can be regarded as a representative sample

comparable to the collection of all thin, polychrome sherds encountered. The sherd collection of monochrome pottery, however, cannot be regarded as a random sample, since the majority of those saved were decorated with incising or modeling. It must be borne in mind then, that although the following discussion of complete and restored vessels is fairly typical of the monochrome ware as a whole, the sherds figured represent a very decided minority as compared with the less ornate fragments left at the site.

Two restored vessels are outstanding examples of the most ornate and finest type of red (to buff) ware (pl. 24, *a, b*). The sherds from which these two vessels were restored were found rather widely scattered at a depth of about  $1\frac{1}{2}$  feet in the sherd deposit. They had evidently been deposited in a broken condition; hence the collection of sufficient pieces to make an accurate reconstruction was very tedious. A considerable number of sherds from vessels of this advanced type were found and samples preserved (pl. 26), but these were not in sufficient quantities to permit accurate restoration.

The cylindrical vessel (pl. 24, *b*) is 23.5 cm high and 17.5 cm across the mouth. It is light buff in color, inside and out, and the pottery is extremely hard. The paste is very smooth, and no tempering is visible. A high polish has been given to both inner and outer surfaces. As is true of most of the monochrome ware, no slip is visible. The bottom is slightly concave with a raised "dimple", 6 cm in diameter, in the center. The bottom is raised 3.5 cm on the perforated annular base. The two conventional modeled lugs, the scroll design between incised panels, and the incised and perforated annular base, indicate that this type of pottery is a simplified version of the art style which finds its best expression in the famous carved marble vases of the Uloa River valley of the Honduras mainland. (Gordon, 1898a, pl. 12, figs. *e, f*; Steinmayer, 1932, fig. 18, p. 20.) The vessel is also of interest as being the apparent prototype of the small model offertory vases from the Dixon site (pl. 8, fig. 1) and elsewhere in the Bay Islands. The conclusion that this striking and excellent type of large vessel was used as a model seems logical when the larger and smaller vessels are closely compared. The reasons for regarding the small offertory vessels as models have previously been discussed.

The second of these striking vessels (pl. 24, *b*) is similar to the last in color and technique except that its polished inner surface is a slate-blue, apparently the result of differential firing. It is the same height as the last but has a central diameter of 21.4 cm. The swollen body is unique. The reconstruction is accurate, inasmuch as the entire base and one entire profile, including a section of rim and one con-

ventionalized alligator head lug, are present. However, the asymmetry of the reconstruction is probably due to the fact that complete rim and central diameters could not be accurately determined from the fragments secured. The simpler unit of incised design is a double scroll with two perforations at each end. The larger unit is a grotesque monster with an aquiline nose in relief, a round, tooth-fringed mouth, a panelled body, and scrolls around the head suggesting the tentacles of an octopus or the legs of a centipede.

The remaining complete or restored vessels from the site are less striking. One well-made, small vessel (11 cm high, 10.5 cm diameter at the mouth) is rather ornate (pl. 25, *d*). Decoration is achieved by incised lines and panels enclosing punctate markings. It has a tripod base, the feet being of the spurred type (fig. 22, *i*) more characteristic of the Polychrome I ware. The vessel is buff in color, hard, and well modeled. Two jars, one medium-sized (pl. 25, *f*) and the other small (pl. 25, *e*), can be considered together. Both are globular, the larger 18 cm in greatest diameter, and both have the same type of decoration. This consists of a series of incised, double line curves, with a punctate mark in the center of each, which encircle the neck. On each side of the neck is a linear anthropomorphic figure in low relief with extended limbs, having head and eyes formed by a small raised lug. The small vessel has a restricted orifice but a surprisingly large, flaring spout. The larger vessel likewise has a restricted orifice but the spout is missing. There is a color difference, inasmuch as the larger vessel is brick-red and the smaller vessel light buff. Both came from a depth of about 3 feet near the central part of the deposit. A small globular vessel (pl. 25, *b*) has a short neck and incised concentric loops on the body. A medium-sized vessel (9 cm high), partially restored, has a definite ring base and resembles a salad bowl in shape (pl. 25, *c*). It is reddish buff in color.

Fifteen tiny clay vessels were preserved (fig. 29). These are probably offertory models of larger vessels and for the most part are of extremely crude workmanship. They appear to have been carelessly modeled from lumps of sand-tempered clay and then hastily fired. All are red-brown in color with two exceptions, which are buff-colored and better polished (fig. 29, *h*, *i*). Common forms are represented in all cases but one, a double-spouted, tripod jar, which is unique in our collections (fig. 29, *c*). These tiny vessels occurred at various depths throughout the deposit. The 15 complete or restorable vessels, unavoidably left at the site, represent common island types. They were all small, unslipped, and range from buff to brick-red in color. Their forms are shown in the illustration (fig. 30, *b-i*

and *n*). Taken in conjunction with the larger complete vessels and the tiny models, this entire series would seem to offer a fairly representative collection of ceramic forms so far as the monochrome ware is concerned.

The elaboration that frequently characterizes part of this ware is best demonstrated by the intricate incising on certain vessels (pls. 24, 26, 27) and the multiplicity of modeled forms taken by lugs and feet (figs. 23-28). It is undoubtedly significant that the most elaborate vessels were completely shattered and the sherds widely scattered in the deposit. This suggests that they were carried to the site in a broken condition and not ceremonially killed *in situ*. It should be noted that although elaborate incised work is characteristic of much of the ware, this incising ranges from the pleasing and intricate to the crudest sort of linear and punctate markings. Moreover, some complete vessels have no incising of any sort. It should be remembered that most of the sherds in the deposit were without incised decoration. However, bearing this fact in mind, it is justifiable to concentrate attention on the more ornate vessels and portions of vessels, since these show the artistic skill and conventions of the native artisans in a manner best suited for cultural comparisons.

In order to visualize the art styles represented by incising and the modeling of handles, lugs, and feet, in the monochrome ware, each of these features may be considered in order. Handles are not abundant, but 11 vertical loop handles occur in the sherd collection. One of two joined cylindrical clay rolls is surmounted by a grotesque human face (fig. 25, *a*). Another has an anthropomorphic figure (pl. 27, fig. 1, *a*) of the applique rider type more common on lugs of both the monochrome and the thin polychrome ware. A third very ornate handle consists of a roll of clay indented to suggest a double twisted cord and surmounted by raised punctate decorations (pl. 27, fig. 1, *b*). In addition, one loop handle has a modeled bird (fig. 23, *f*), two have simplified manatee heads modeled on the upper portion, two are long and narrow bands with three vertical grooves extending their length, one is a simple band with two punctate marks at each end, and two are simple bands with a central vertical ridge surmounted by spurs.

The monochrome ware reaches its greatest complexity in the wide variety of extremely elaborate, but for the most part very grotesque, lugs. These adornments were evidently portions of medium-large, intricately incised vessels, which were usually offered in a broken condition. They range in color from brick-red to light buff and are all from carefully modeled vessels of good technique. Their manner

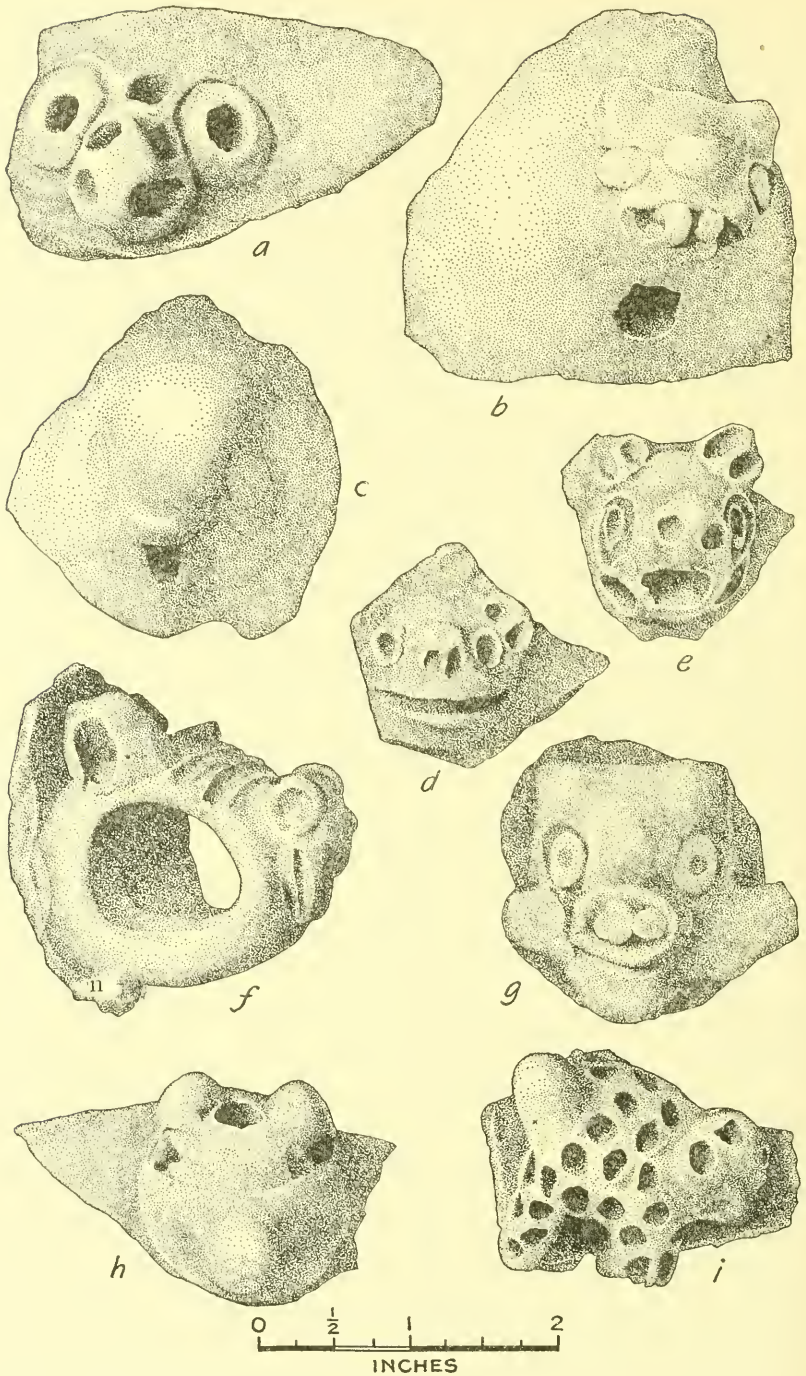


FIG. 23.—Polychrome and elaborate monochrome lugs and handles, Indian Hill, site I. *b*, *c*, *g*, Polychrome I, but paint eroded; remainder, monochrome.

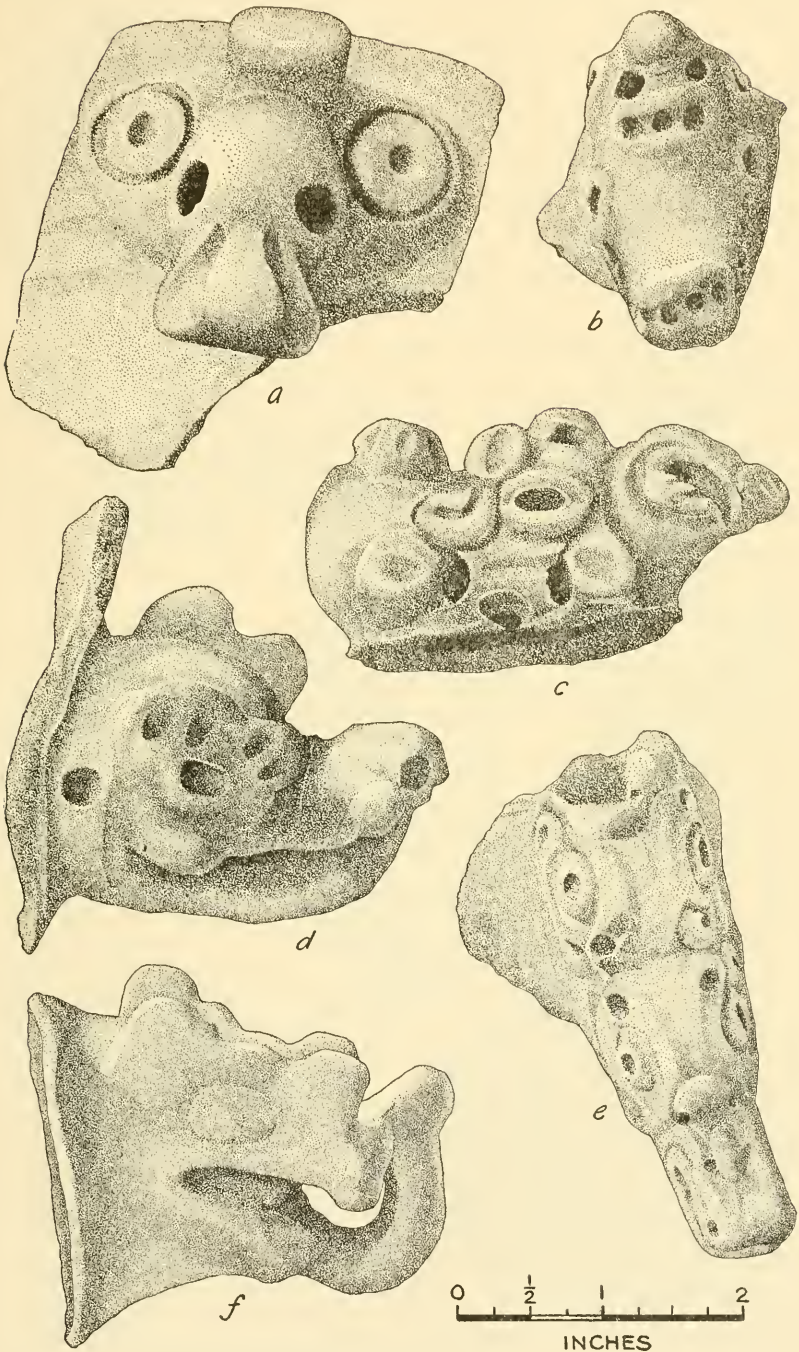


FIG. 24.—Elaborate monochrome lugs, Indian Hill, site 1. *f*, probably eroded Polychrome I.

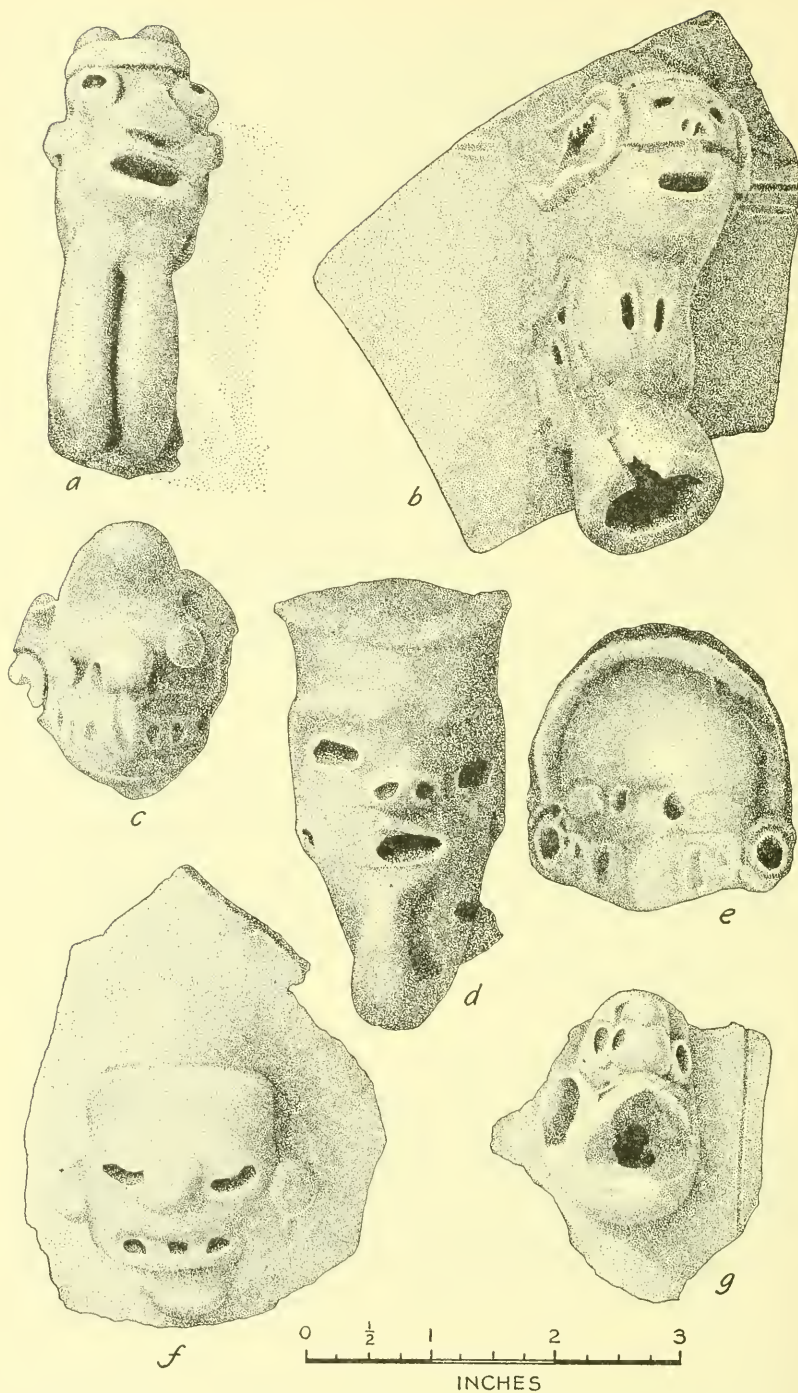


FIG. 25.—Elaborate monochrome handle, lugs, and foot, Indian Hill, site 1.

of attachment can be seen, not only in the two large restored vessels (pl. 24, *a, b*), but also in the smaller, cruder, but complete models of these vessels from the Dixon offertory (pl. 8, fig. 1). The lugs appear to have commonly been molded on the vessel as part of the original coiling process. They are extremely difficult to classify, owing to their extreme conventionalization and to the fact that the various forms blend into one another. The 65 unattached lugs in the present collection were definitely selected from the large number uncovered at the site, but in making this selection an effort was made not only to represent the range of types but also to represent roughly the numerical proportions of each type as noted in the excavation.

The largest class of lugs (*d*) comprise attached heads, and in a few cases complete bodies, of anthropomorphic, monstrous, or animal forms. There are a wide range of motifs. The animal forms include six manatee heads, which range from the naturalistic (fig. 24, *a*) to the very conventional (fig. 23, *a*). It may be noted that this manatee motif with the two concentric circles on each side (fig. 24, *a*; pl. 18, fig. 2, *a, b*) is very widespread both on the Bay Islands and on the Honduras mainland. There are five cat heads or figures (fig. 23, *d, e, i*), one raccoon or coatimundi (fig. 23, *h*), one peccary (fig. 24, *b*), one alligator (fig. 24, *e*), one bat (?) (fig. 25, *c*), one currasow (pl. 27, fig. 1, *d*), one hammerhead shark (pl. 27, fig. 1, *c*), and two iguana heads (fig. 24, *d*; pl. 27, fig. 1, *e*). Of this list it is interesting to note that only the bat, raccoon, manatee, iguana, alligator, and hammerhead shark are found in the Bay Islands. The jaguar, ocelot (probable sources of the cat motif), peccary, or currasow do not occur on the islands, though all are abundant on the adjacent mainland. In regard to the fundamental relationship between the two main ceramic types noted at island sites, it is significant that practically identical iguana head lugs (fig. 22, *c*; fig. 24, *f*) and very similar cat head lugs (fig. 23, *b, g*) occur in the thin, Polychrome I ware. To return to the monochrome ware, five more or less grotesque human head lugs are at hand (fig. 25, *e, f*). Two of these, evidently representing human skulls (fig. 25, *e*), are identical and from the same pot. In addition to the above, 10 lugs are too conventionalized for classification (fig. 27, *d, f*). Of these, three are ovoid, thin in vertical section, and perforated at the lower part of the tip, thus rather suggesting a tapir's snout. Three are short, rounded lugs with mouth, nose, and eye perforations possibly derived from the manatee motif (compare fig. 23, *a*). Three are rather cylindrical with raised "coffee bean" eyes and, in two cases, with punctate decoration suggesting stripes or spots (fig. 27, *f*). One is merely a small pottery



knob. The purpose of all these lugs may well have been for the attachment of suspension cords, but their extreme elaboration suggests that the idea of adornment rather than utility had become dominant in the minds of their makers.

The second most numerous class (e) is a double-ended, vertical lug constricted in the center and attached at this point to the body of the vessel (fig. 26; pl. 24, *b*). There are 22 of the broken-off lugs; of these, 15 have a definite perforation in the lower end of the lug, whereas 7 others lack this hollow or perforation. These are the most elaborately conventionalized of all the lug types; they occur on the

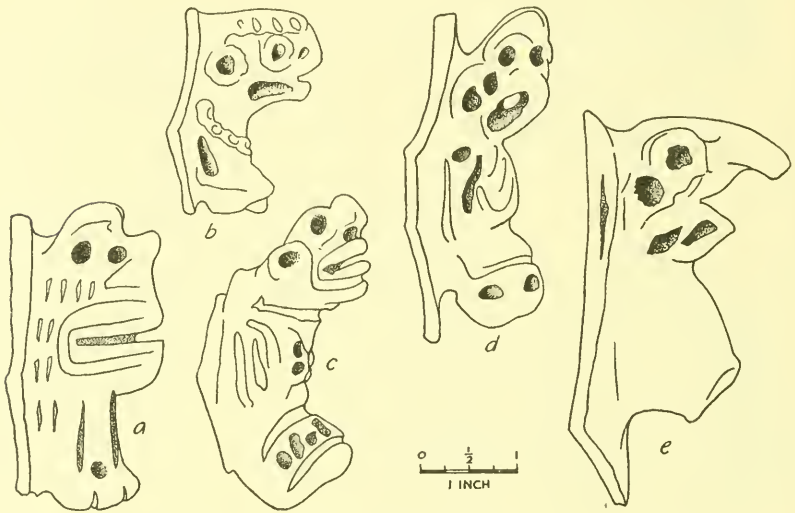


FIG. 26.—Vertical, elaborate monochrome lugs, Indian Hill, site 1.

finest monochrome ware vessels (pl. 24, *b*) and are obviously closely related to the lugs on the splendid marble vases from the Uloa River valley. One of the hollow-ended lugs is definitely human (fig. 25, *b*), and another is very similar to this piece but lacks the head, having a hollow tube at each end. One, a very small example, suggests a jaguar, and two are variants of the manatee motif. A large example suggests the tapir (fig. 26, *c*). There are nine elaborately modeled and incised lugs with punctate decoration (fig. 24, *c*; fig. 27, *c, e*; fig. 25, *g*). All of these have a grotesque, humanoid quality of the gargoyle variety. They may be seen in profile on the complete vessels and models (pl. 24, *b*; pl. 8, fig. 1) and in the drawing (fig. 26). Of the seven lugs lacking the perforation at the lower end, one is definitely human

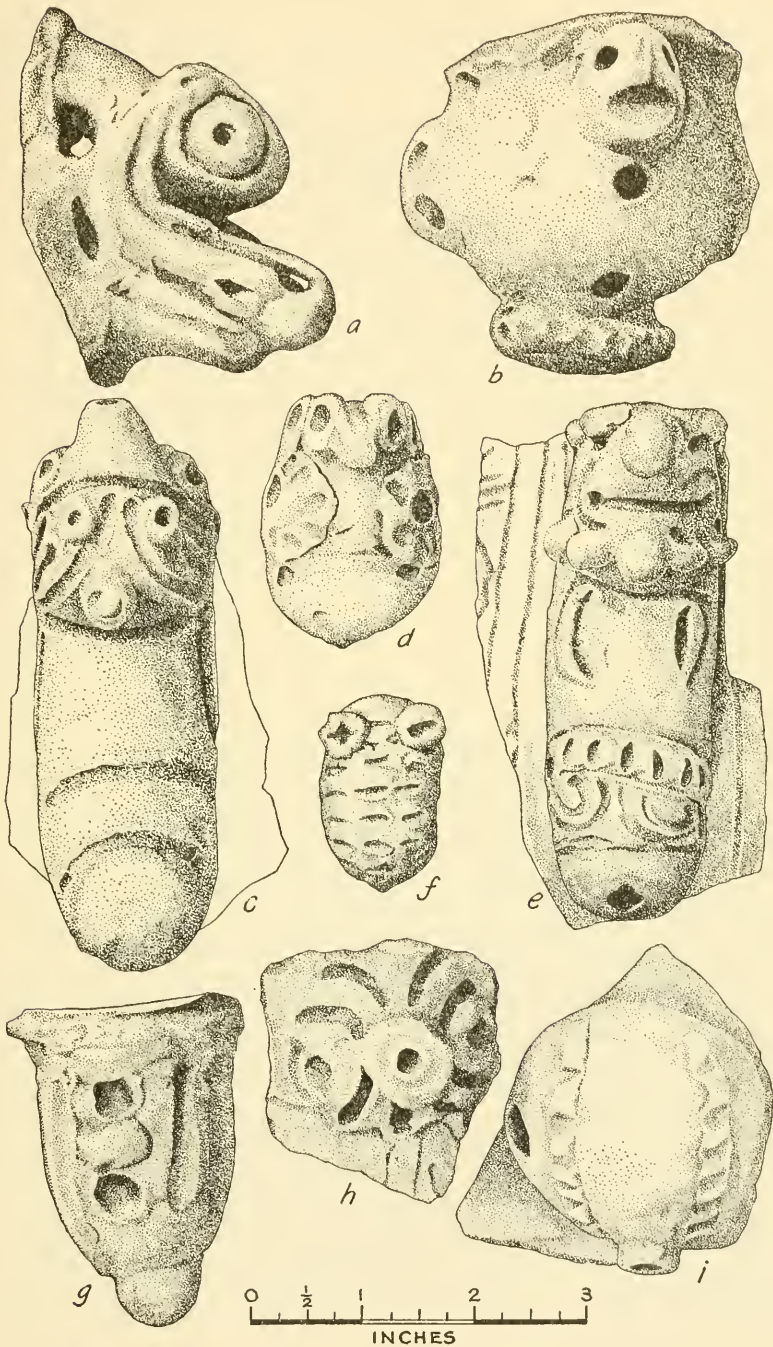


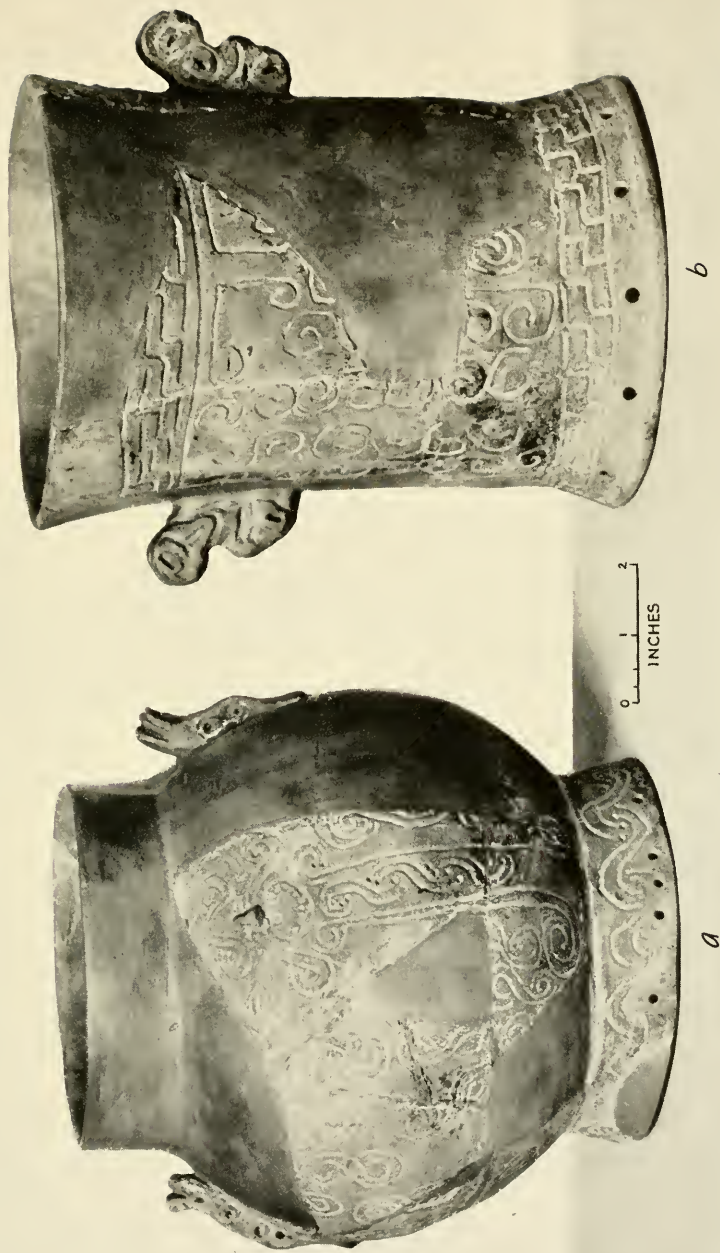
FIG. 27.—Elaborate monochrome lugs and feet, Indian Hill, site 1.

(fig. 26, *c*), one is a jaguar (fig. 26, *d*),<sup>21</sup> two are grotesque humanoid faces (fig. 26, *a, b*), and three are too conventional for determination (fig. 27, *d*).

The third type of lug is simply the "applique rider" (fig. 22, *b*) previously mentioned when the Polychrome I ware was discussed. Of the 11 lugs of this type, 2 have traces of slip and design and 1 is incised (pl. 23, *a*), incising being characteristic of the monochrome ware. The remainder may have belonged to either pottery type, depending on whether their present unpainted condition is original or due to erosion. Since certain of these applique rider lugs clearly belong to one or other of the two types of pottery, while the others are uncertain, it can be seen that here is another strong link between the two ceramic wares. It has already been suggested that the unique, Polychrome I lug, type (*a*), developed from this applique rider type (*b*), and it is undoubtedly significant in this regard that type (*a*) is limited to Polychrome I ware, whereas type (*b*) not only occurs in both wares but, to judge from the present collection, is most characteristic of the monochrome ware.

It is often impossible to distinguish feet from lugs in the latter ware (fig. 27, *h, i*). Certain fragments described as lugs may actually have been feet, and vice versa. Where rims or definite basal portions are present, or where wear indicates usage, the distinction is clear, but these criteria are often lacking. However, since the native artisans seem to have regarded both feet and lugs more as adornments than as utilitarian features, and as similar motifs occur on both, a strict distinction is not vital. The annular foot is particularly characteristic of the finer, incised vessels of the monochrome (red to buff) ware and of the models of this type of vessel (pl. 24, *b*; pl. 8, fig. 1). There are no indications that it occurs often on Polychrome I vessels. Other characteristic types of feet are shown in the illustrations (fig. 27, *b, g, h, i*; fig. 25, *d*; fig. 28). The very large foot with elaborate incising (fig. 28, *a*) is apparently from a large and ornate vessel. Two of these feet from different vessels were saved, and a number of others were left at this site (pl. 20, fig. 2). The excellent modeling of negroid-like human features on another cylindrical foot is striking (fig. 28, *c*). A shorter, cylindrical foot with characteristic punctate decoration is also noteworthy (fig. 28, *d*). All three of these latter types are very common on the adjacent mainland. The simpler feet are either mere knobs (fig. 28, *e*) or hollow ovoid projections with slits and applique

<sup>21</sup> This is remarkably similar to those on the Uloa River marble jar figured by Gordon, 1898a, pl. 1, fig. 12.

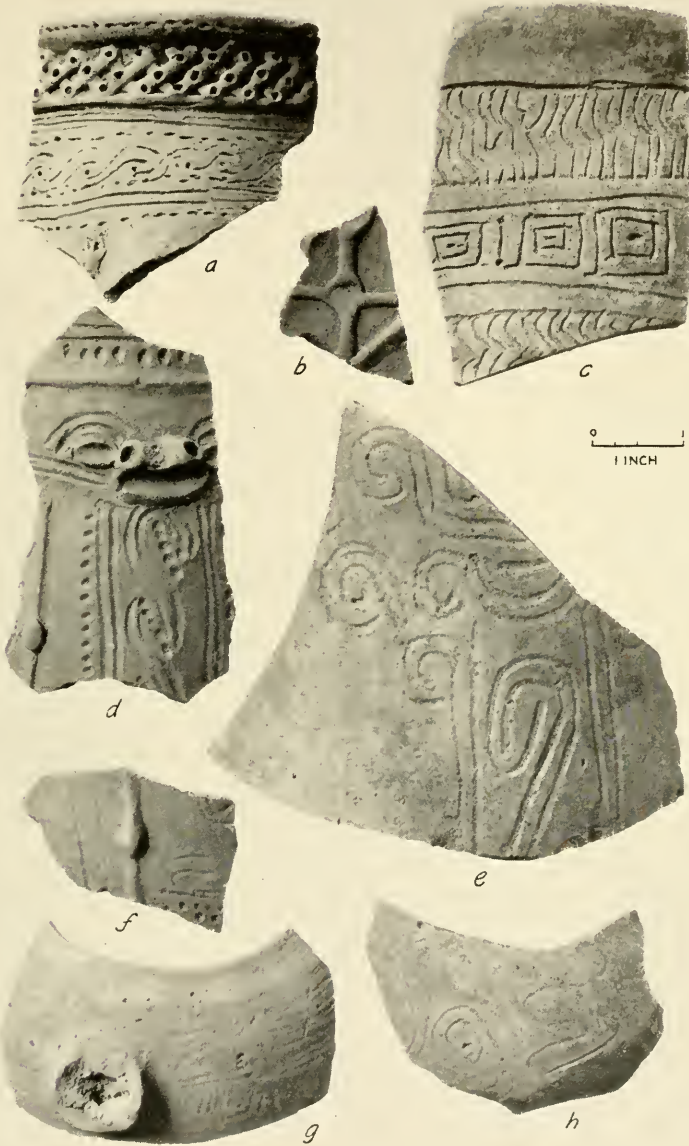


ELABORATE MONOCHROME VESSELS, ULLOA MARBLE VASE TYPE OF DECORATION, INDIAN HILL, SITE 1

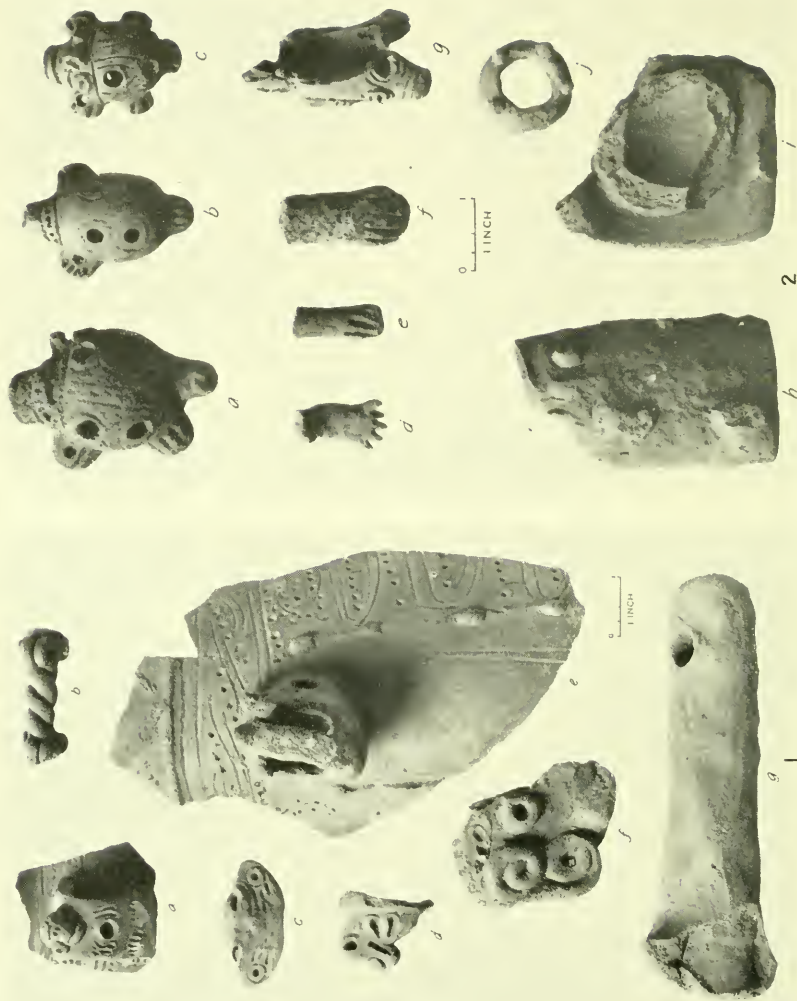


MONOCHROME VESSELS

*a*, Dixon site, Roatan; *b-f*, Indian Hill, site I.



ELABORATE MONOCHROME SHERDS. INDIAN HILL, SITE 1



DIXON SITE, ROATAN; INDIAN HILL, SITE 1, BARBURATA

1. Elaborate monochrome sherds; *g*, handle of incensario, Indian Hill, site 1.
2. Pottery whistles, figurine and figurine stool fragments; *f*, Dixon site, Roatan; remainder, Indian

decorations (fig. 28, *g, h*). Like those on the Polychrome I ware the hollow feet usually contain pottery balls or gravel rattles. The two wares as a whole have distinct types of feet, the annular base, for example, being confined to the monochrome ware in the present collection. One monochrome vessel with spurred feet of Polychrome I

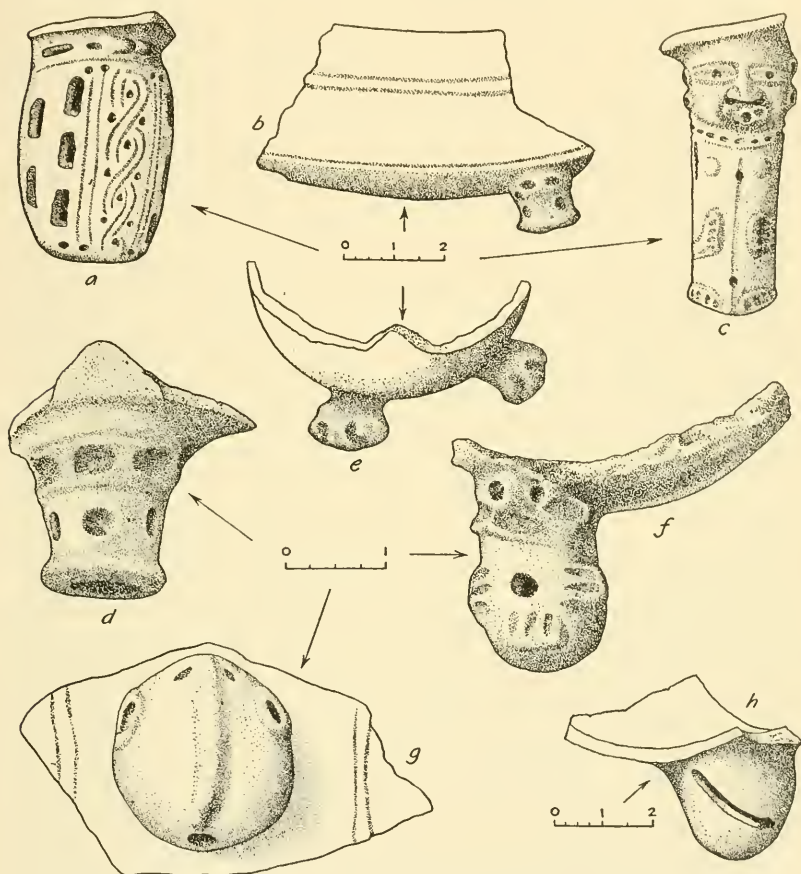


FIG. 28.—Basal portions and feet from elaborate monochrome vessels, Indian Hill, site 1.

type (pl. 25, *d*) is an exception in this regard. Perhaps the most outstanding characteristic of both these wares is the prevalence of the tripod base in every case where feet are present.

This site was exceptional in regard to the uniformity of its ceramics for, with the exception of eight sherds, all the pottery collected pertains to the two main styles just discussed. The most interesting



of these exceptions is one small sherd of Plumbate ware<sup>22</sup> found in the upper foot of the deposit. The sherd is thin (3 mm in thickness), is dull greenish gray in color, and has a definitely glazed appearance on both sides. It is lighter on the inner surface and is dull brown in cross-section. The tempering material is too fine to be distinguished. Another sherd is smoked black and polished on the outer surface and red-brown on the inner. Five small rim sherds suggest the usual monochrome ware except that they show traces of red and black geometric designs. Two of these are also incised. These suggest the medium-thick, painted, and incised sherds already noted at the Dixon and Helena Island sites. One thin body sherd has a uniform, light red slip, plus a delicately incised, double line design.

The figurines from this site are of unslipped red to brown pottery. Three almost complete figurines, two broken bodies, four detached heads, and four detached arms were recovered. They came from various depths in the deposit, but no stratification of types was noted. The three nearly complete figurines (pl. 28, fig. 1, *a-c*) are of an exceptionally grotesque type. The very ornate but rather crude decoration in applique and punctate techniques is striking. Two have raised, grotesque faces, or noses, suggesting skulls, and all have raised "coffee bean" eyes and elaborate headdresses. Breasts and navels are accentuated, and one (pl. 28, fig. 1, *b*) has a suggestion of male genitalia. One figure (pl. 28, fig. 1, *c*) has an incised fillet around the bottom, and all have rounded bases. There is no clear indication that any of these figures were originally seated on stools or pedestals, but from the abrupt break where the body ends, this is possible. All have solid heads and hollow bodies. Except for punctate marks on upper body and head, their backs are undecorated.

A simpler type of figurine (pl. 28, fig. 1, *d*) has a hollow body and crudely modeled, solid head. Its base is broken and missing. Three of the separate heads suggest this type of figurine (pl. 28, fig. 2, *a, b, e*) except that they are hollow. They were apparently made separately from the missing bodies and have broken off at the point of juncture. Like the other figurines, they have been built up by the coiling method. These four pieces comprise a very simple, crudely modeled figurine type, which lacks ornate adornment and headdress. The portion of body recovered (pl. 27, fig. 2, *h*) has "coffee bean" breasts and navel but lacks the elaborate decoration of the other figurines having these same features. The stumps of an arm and,

<sup>22</sup> For the characteristics, temporal and spatial range, and probable point of origin of this ware, see Lothrop, 1927, pp. 204-208.

especially, of a leg, suggest a similar fragment from cave 1 on Helena (pl. 18, fig. 2, *f*). The fourth detached head (pl. 28, fig. 2, *d*) is unique in being thin and rectangular. It is solid and has a fillet around the top, raised eyes and nose, and a vertically incised mouth. Its purpose and the type of object to which it was formerly attached are uncertain. The four detached arms (pl. 27, fig. 2, *d, e*) are simple pottery cylinders with flattened hands and fingers, which were formerly attached to figurines.

The three figurine "stools", or pedestals, (pl. 27, fig. 2, *i, j* and fig. 1, *f*) constitute an interesting feature. One of these is definitely a stool, having the remains of four legs underneath plus a knob in the center at one end (pl. 27, fig. 2, *i*). The round body of the figurine has been broken off the upper surface. It is made of hard, well-polished, buff pottery, and the edges are notched. A small, circular ring of brown pottery, which sits evenly on four small legs, has the upper portion broken off (pl. 27, fig. 2, *j*). Its purpose is unknown, but it may have been a figurine base. Similarly an unusual piece of coarse red-brown pottery, one side of which is decorated with a double coil of clay, raised circles, and indentations (pl. 27, fig. 1, *f*), has had some sort of round body broken off the reverse side. None of these fragments fits any of the bottomless figurines previously mentioned, and only one of them (pl. 27, fig. 2, *i*) can be positively identified as a stool.

Four whistles or ocarinas were recovered, of which only one is perfect (pl. 27, fig. 2, *b*). This specimen, with four stops, and a tubular mouth piece at one end, whistles clearly. Besides the four upper stops there is a hole on the lower surface where the mouth-piece joins the body. It strongly suggests a manatee in form, and the two upper flippers are perforated for suspension. Its upper surface is decorated with an incised and punctate design. Two others are similar, but in each case a small break just below the lip prevents whistling. The larger one (pl. 27, fig. 2, *a*) is an even closer replica of a manatee, especially in head form. It is composed of coarse brick-red pottery with white grit temper. The third and smallest one (pl. 27, fig. 2, *c*) has a birdlike face with "coffee bean" eyes and a projecting nose just below the neck. Like the perfect specimen, this last is of well-polished, light brown pottery. A fragment of a fourth whistle (pl. 27, fig. 2, *g*) is of similar ware but represents a stocky conventionalized human figure. A number of complete ocarinas of this anthropomorphic form were seen in private collections on the islands; hence the type is much more abundant than the present collection indicates.

Among the objects of unknown use are six slightly concave disks of coarse red pottery ranging from 4 to 8 cm in diameter. Three have two holes near one edge (fig. 29, *b*), one has two holes close together near one edge, and two fragments have only one perforation on the edge.

One heavy, roughly modeled handle of red-brown pottery (pl. 27, fig. 1, *g*) has a longitudinal perforation from end to end, and a similar perforation (1 cm in diameter) from side to side near the rounded

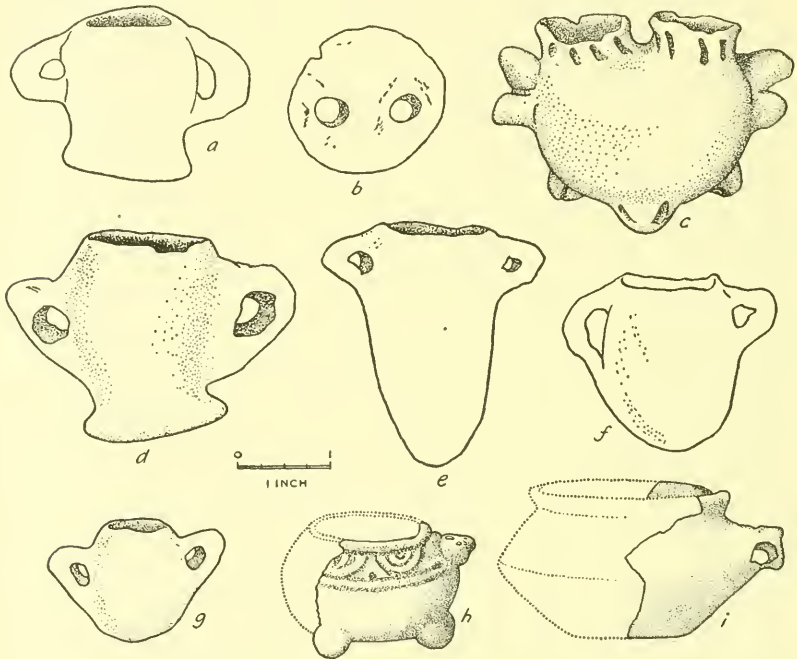


FIG. 29.—Model vessels from Indian Hill, site 1.

tip. A bowl or basinlike extension has been broken off the other end. The piece strongly suggests the handle of an incense burner. This completes the description of ceramics from this site except for pottery beads, which will be discussed under the latter classification.

#### METAL

With one small exception, no metal work of any sort was recovered by us from Indian Hill offertories. The exception, from site 1, is a very thin piece of hammered-out copper (pl. 29, *i*), which is 2.2 cm

in length and has two tiny perforations. It is brown on the outer faces, green where the edges have crumbled away, and was probably worn as a small pendant.

#### GROUND STONE

Although no cache of small stone carvings was found by us at this site, four interesting green talc ornaments were recovered. They were scattered in the deposit at depths of about 1 foot. Two of these (pl. 11, *g, i*) are very similar to carvings from the Dixon site on Roatan Island (pl. 11, *d-f*), and one of them (pl. 11, *i*), with slight variation of headdress, is almost identical with one from the Dixon offertory vessel (pl. 11, *f*). The other (pl. 11, *g*) falls into the same general class but is not so well modeled. In regard to material, technique, and perforations, these two pieces are identical with those previously described from the Dixon site. The third carving is unique (pl. 29, *c*) in size, shape, and design. Of dull apple-green talc, it is 6.5 cm in length by 3 cm in basic diameter. An animal with prominent teeth, probably a highly conventionalized jaguar (although it most resembles a "laughing" horse), is shown in relief. The artifact has a longitudinal perforation 1 cm in diameter extending from end to end. It is well worn and smooth and was recovered at a depth of about 1 foot on the northern edge of the deposit. The fourth piece referred to is of dull gray-green talc and suggests some sort of mnemonic device (pl. 29, *a*). However, no such purpose has been determined, and the designs seem to be too irregular in application to make such an explanation feasible. A biconodont perforation marks the top, and two tips made by three vertical notches on each side mark the bottom. The back is unmarked except for the two incised lines around the neck. It is 8 cm in length and was found near and at practically the same depth as the third carving described above.

A considerable number of beads of various types were recovered, and these were also scattered at random throughout the area which we dug. About half of these closely resemble beads from the Dixon site. There are 14 round beads of diopside (the largest 2.2 cm in diameter), which are identical with those from the Dixon site (see pl. 14, *f, g*), and of these 7 are very badly eroded. Only 14 green talc beads were recovered; 9 are cylindrical, 2 are similar but incised, and 3 are small disk beads. Most of these are broken. One blank, of gray-green talc, is cylindrical, 3.7 cm long, and has the beginning of a small hole at each end. Half of the beads recovered are of crude brown pottery, a type not hitherto noticed. The majority of these are

either ovoid in form (14) or globular (22) (pl. 29, *e*). All are perforated and roughly modeled. They range from 7 mm to 3.3 cm in greatest dimension. One thin disk bead of pottery has circular ridges (pl. 29, *g*). In addition, four solid balls of hard brown pottery, probably the rattles from broken feet or lugs were recovered. A large bead (2.7 cm in diameter) of polished red pottery was found on the surface of the bare hill about 100 yards southwest of site 1. The finest bead, however, is of clear quartz crystal (pl. 29, *f*) and came from a depth of 8 inches in site 1. It is a beautiful specimen and has a biconodont perforation with a tiny aperture where the two borings meet.

A considerable number of large specimens of ground stone were noted at site 1 (pl. 20, fig. 2), but only a few samples could be taken away. The majority of these had been exposed by earlier excavations, but a considerable number of broken fragments and one or two complete pieces were encountered in our work. Portions of at least six large polished granite metates, originally with three legs, were encountered (pl. 20, fig. 2). The best example, which was preserved (fig. 14, *a*), is of hard gray granite and has a king vulture or condor head on one end. Several of the legs on the fragmentary metates were carved in a simple maze or a fret design (pl. 20, fig. 2). One complete granite metate without legs was encountered. It was 45 cm long by 36 cm wide, of an even thickness (about 5 cm) throughout, and evenly curved with raised ends. Four fragments of three-legged lava metates (similar to fig. 14, *e*) were noted. There was also one complete specimen of this type, its surface measuring 28 cm by 20 cm, which had two legs at one end (10 cm high) and one at the other (15 cm high). All complete and broken metates showed signs of long-continued use.

Numerous roller pestles were present. Two were of granite, about 23 cm long and originally rounded, but worn somewhat smaller at the ends and rectangular through use (similar to fig. 14, *c*). There were a large number of broken cylindrical manos of smooth, polished granite. All were highly polished and of even diameter (the largest was about 15 cm in diameter). The type is well shown in the illustration (pl. 7, fig. 3; pl. 20, fig. 2). In addition, there were several cylindrical and round manos of the porous gray lava (like fig. 14, *b*).

Two fragments of polished diabase pot rests were encountered. One of these (pl. 19, fig. 1, *g*) is 9 cm high and has an estimated diameter of about 30 cm. The other (pl. 20, fig. 2, lower center), about the same size, was accidentally left at the site. Each fragment had one foot (probably part of a tripod base) supporting a smoothly

polished ring, which sloped down inwardly from the edge to form a rest for a pot. The complete artifact was evidently a concave ring supported on three (or more) legs. The outer surface of the specimen preserved is marked by incised squares enclosing faint circles, which may have been faces (pl. 19, fig. 1, *g*), and the outer surface of the other piece (pl. 20, fig. 2, lower center) is marked by a joined series of incised ovals. This is an interesting artifact type and was not elsewhere encountered by us either on the islands or on the mainland.

Another interesting group of artifacts comprises several crude marble bowls (fig. 30, *j-m*). Seven of these were found at various depths, and in the litter left by earlier diggers, but only two were preserved. All are of white marble, and all have been considerably eroded, or etched, since they were originally shaped, indicating some antiquity,



FIG. 30.—Outline sketches of vessels left at Indian Hill, site 1. *a*, small pottery mask; *j-m*, small marble vessels.

though the material is rather friable at best. The surface of each was granular and crumbly with flakes of graphite and other harder minerals composing the marble projecting. The best example (similar to fig. 34, *c*) measures 12 cm across the mouth and is 8 cm in height. It has three knobs for legs and is badly weathered and cracked, with broken edges. This piece was found at a depth of about 2 feet near the northern edge of the deposit. Three other pieces are similar (fig. 30, *j-l*) but lack legs and are even cruder. Three are only slightly concave and one has an end projection like a handle (fig. 30, *m*). The use to which these objects were put is unknown. Taken in conjunction with the fine, unslipped but incised pottery from this site strongly suggesting the exquisite marble vases of the Uloa River, these very crude vessels of marble seem paradoxical. Possibly the marble available to the island people was of too inferior a grade to permit elaborate incising, and the mainland technique was therefore applied in a somewhat simplified form to pottery. Whatever the explanation, the

occurrence of such closely similar designs, shapes, and lugs, as well as marble bowls, here and along the Uloa River is too striking to be fortuitous.

Only two broken celts were found at site 1. One (pl. 16, *i*) of quartz diorite, consists of a sharp, rounded blade portion. The other (pl. 16, *h*) is of dark, polished, green diopside and is also very sharp. One corner of its irregularly shaped blade is broken off. Both blades show signs of usage.

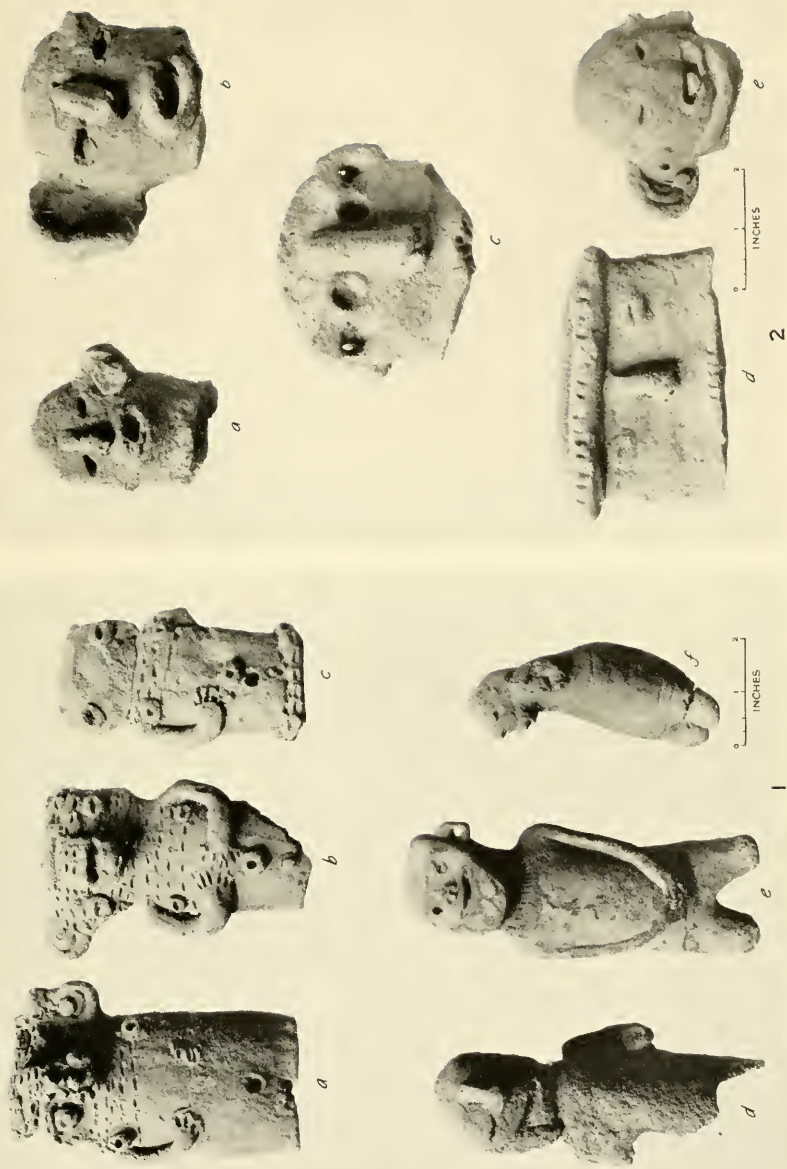
One complete and two fragmentary polished stone mace heads were found. The first of these (pl. 19, fig. 1, *h*) is very large (8.6 cm in diameter) and heavy. The material is a gabbro. A large central perforation (4 cm in diameter) is only very slightly smaller at the center than at the two apertures. One fragment, of considerably etched white marble (pl. 19, fig. 1, *d*), is from a star-headed mace or club head. Two points are present, though originally there were five or six. It is 3.3 cm in thickness through the socket hole. This material is not very durable, and the weapon may have had ceremonial or other value. There is one point (pl. 19, fig. 1, *f*) from a similar mace head of the same attractively mottled felspar porphyry material noted in mace heads from cave 1, Helena Island. This is a hard mineral, and such a star-headed club would have had practical value as well as esthetic appeal. The piece is 4.2 cm in length and has been cleanly broken off where it joined the central disk of the club head. The occurrence of star-headed clubs here is of interest from the standpoint of distribution.

#### CHIPPED STONE

A number of T-shaped, chipped axes or choppers of diabase were found at various depths in the deposit (pl. 19, fig. 2, *d*). These are common artifacts throughout the islands and assume a considerable number of shapes (pl. 19, fig. 2). At site 1 the majority were of the typical T-shape, but one with a single side blade and another coarse, oval blade of diabase without a stem were also found. No ground T-shaped axes were found here. No retouched projectile points or knife blades were found, but two small fragments of obsidian prismatic flake knives were noted. Each broken section is about 2 cm long (fig. 15, *e, f*).

#### SHELL

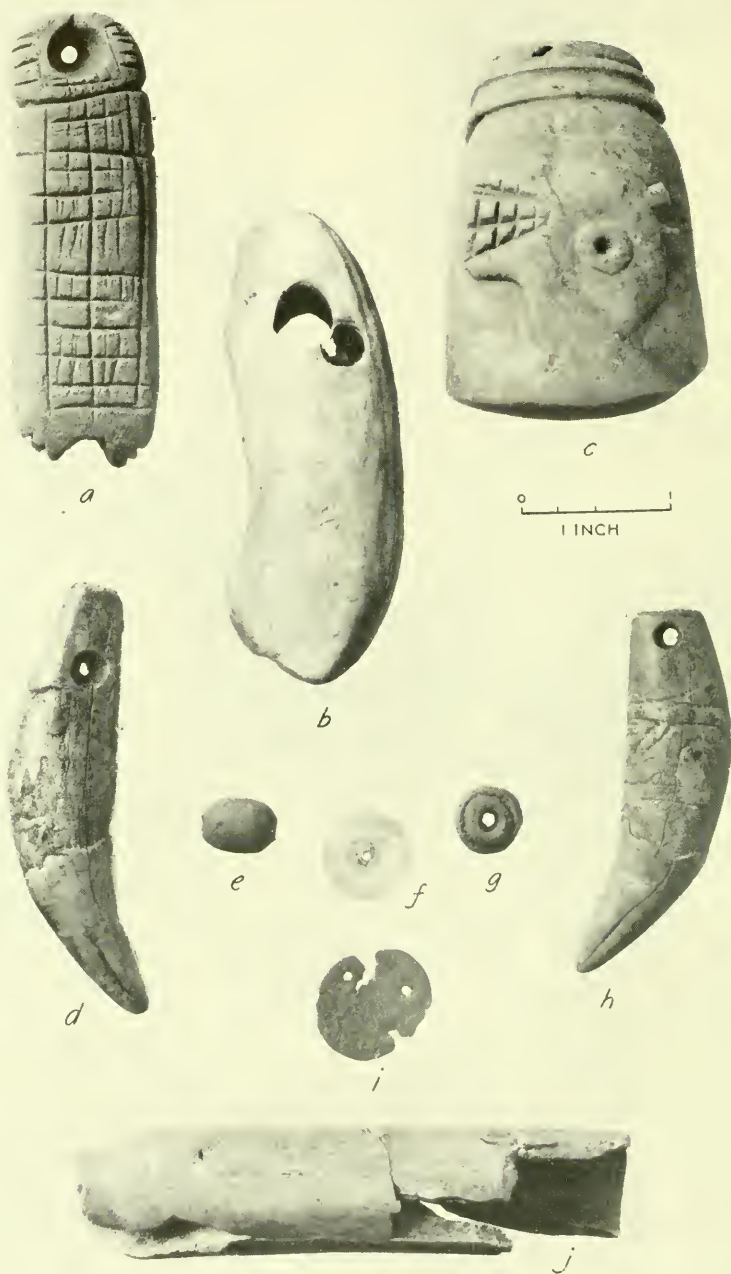
Besides the occasional conch shells with perforations, which probably served as trumpets, very few pieces of worked shell were found. One thick section of the outer lip of a heavy Pacific coast shell



COMPLETE AND BROKEN FIGURINES

1. *a-d*, Indian Hill, site 1; *c, f*, Dixon site, Roatan.
2. *c*, Dixon site, Roatan; remainder, Indian Hill, site 1, Barbarata.

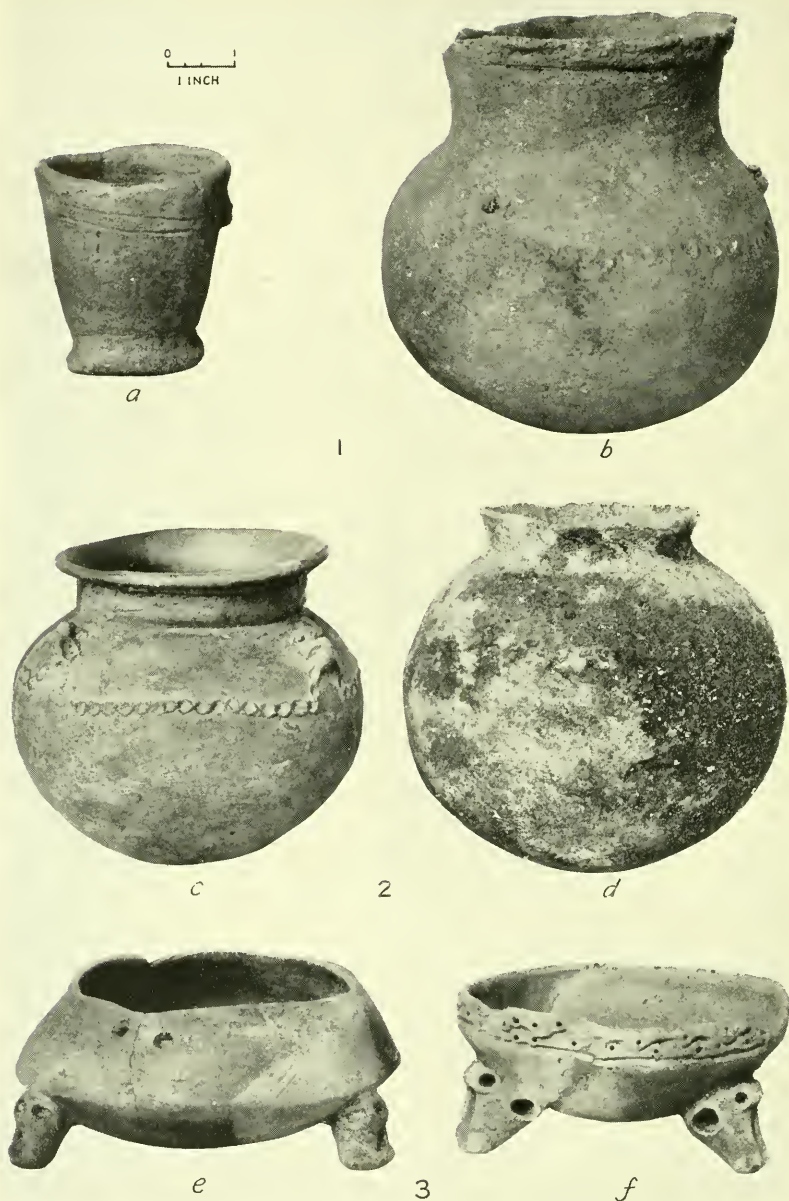




VARIOUS SMALL ARTIFACTS, INDIAN HILL, SITE 1



MONOCHROME SHERDS, INDIAN HILL, SITE 2



## MONOCHROME VESSELS, VARIOUS SITES

1. Indian Hill, site 2.
2. *c*, Plan Grande, Bonacca; *d*, Helena.
3. *e*, Sacrificial Spring, Bonacca; *f*, Michael Rock, Bonacca.

(*Strombus accipitrinus*, Lam.) (pl. 29, *b*) is ground down in a curved oval form and has a complete perforation (1 cm in diameter) and a partial one in juxtaposition at one end. There are also two flat, much-weathered triangles of heavy shell ground down at the edges. They are 5.2 cm in length and average 8 mm in thickness. The use of these objects is unknown, though they rather suggest small, incomplete shell celts.

#### BONE

One bone artifact of unknown use was recovered at this site (pl. 29, *j*). The only other artifacts of this general type were two large perforated canine teeth of the jaguar found in the upper part of deposit. One has been cut down like a wedge toward the base and has a biconodont perforation but is not otherwise worked (pl. 29, *d*). The other has been cut off squarely at the base, is perforated both vertically and horizontally, and is neatly incised with double scroll line and dot patterns above the enamel (pl. 29, *h*). This incised portion is stained green on one side through copper contacts and may at one time have been copper coated. It has already been noted that the jaguar is not included in the Bay Island fauna though abundant on the mainland.

#### HUMAN, ANIMAL, AND OTHER REMAINS

No human burials nor signs of cremation were encountered, but several human teeth, both adult and juvenile, were found amidst the pottery and other cultural detritus. Some sort of interments, therefore, were made at the spot, but their nature could not be determined. A very few animal bones and fish vertebrae in addition to some unworked whelk and conch shells were found, but their scarcity suggests that they were remnants of feasts or food offerings rather than ordinary kitchen refuse. Similarly, a little charcoal, numerous pebbles, and a number of rough quartzite and coral rocks occurred in the deposit, but there were no fireplaces or markedly burned places. House floors or signs of any definite habitations were totally lacking. A few small quartz crystals were encountered, but they were not at all abundant as was the case at the Dixon site.

#### SITE 2

This second offertory is located on the tip of a descending ridge about 125 yards southeast of site 1 and about 40 to 50 feet lower down. It is situated in the midst of dense jungle; its exact limits were not determined but it appears to cover an area about 40 feet in diameter.

There were no surface indications other than several irregular pits, each about 6 feet square; elsewhere the deposit was covered by several inches of soil. The depth of the deposit is close to 2 feet at the center, thinning out toward the edges. A number of large wild fig and other great trees grow around the site, and dense thickets of corozo palms and other shrubs hem it in. Since no view is obtainable from here and it has no marked topographic features, the reason for its selection as an offertory is obscure.

This site was visited by the party of Mitchell-Hedges, and the various pits were made at that time and later by Joe Saba. The latter, who accompanied Hedges, stated that over 100 more or less complete crude pottery vessels had been removed from the site and that there had been many nested pots of which all but one or two inner vessels were broken. These inner vessels were of plain ware and contained nothing but fish bones and small shells. Joe stated that in all his work here he had never encountered a painted vessel or sherd, and my rather brief excavations at the site corroborated his observation. Unslipped pottery, however, is present in enormous quantities, though we found only two complete vessels (pl. 31, *a, b*). Joe also stated that he had found human bones and teeth at this site but no regular burials. In our brief examination a few small fragments of human bone were encountered scattered at random amidst the sherds.

The predominant feature of the site is the enormous quantity of undecorated monochrome pot sherds and the comparative rarity of other artifacts. No metates were seen, but several subrectangular manos about 20 cm long and one cylindrical, polished granite fragment 12.5 cm in diameter were found. There were numerous rough pestles or hammerstones, often merely conveniently shaped pebbles or boulders. The most interesting ground stone artifact was a fragmentary, ridged and grooved oval bark beater of calcite (cave onyx) (pl. 16, fig. 1, *l*). The specimen had evidently received long and hard usage. There were numerous large pieces of unworked rock in the deposit, and several of these had been subjected to great heat. Their crumbling texture was the same as that employed for tempering in the coarser pottery. Fragments of schist, green serpentine, and pumice, one piece of the latter being used as a rattle in a pottery foot, were preserved. One fragment, 5 cm in length, of a black obsidian prismatic flake knife, its edges blunted with much use, was found (fig. 15, *g*) but no other chipped stone artifacts were seen. On the whole, stone artifacts of any sort were remarkably scarce, and the larger forms such as metates with legs were lacking. Conch and whelk shells were present, but no shell or bone artifacts were noted.

## CERAMICS

In general, the foregoing description of the red monochrome pottery at site 1 would apply equally well to the mass of pottery at site 2, with the exception that highly polished, incised and modeled types are much more abundant at the former site. At both sites occur very large sherds of coarse red ware from pots, possibly burial urns, which must have been at least 1 meter in height and nearly as much in diameter. These are tempered with broken-up coral rock. The two complete pots present little that is new; one is a small offertory model of a larger pear-shaped vessel with a thick annular base (pl. 31, *a*), and the other is a crudely modeled and incised cooking pot with smoke stains on the outer surface (pl. 31, *b*). Both these pieces and the majority of the sherds show definite traces of having been built up by the coiling method. In the case of the cooking pot the neck has been made separately and attached to the body, and the same is true of another detached neck in the present collection. A very small model pot with a broken rim is extremely thick and crudely modeled and incised. A particularly fine vessel is represented by a fragment with one attached leg (pl. 30, *e*). The leg terminates in a heavy foot suggesting that of a tapir, and the graceful bowl is highly polished and pleasingly incised. Other well-polished and neatly incised rim sherds (pl. 30, *a-c*) are apparently from open bowls or from pots with vertical necks. Pottery with crude incisions and small modeled lugs (pl. 30, *f*) is also rather abundant. Separate lugs at site 2 are not as abundant as at site 1, nor do they seem to be as elaborate in modeling and decoration. The most elaborate in the present collection is a large but typical applique rider lug, similar to those from site 1 (compare pl. 23, *b*). It shows no trace of a slip and is gritty in texture and buff in color. Since this form of lug occurs on Polychrome I pottery, this one specimen is the only approach to that ware noted at site 2. However, it will be remembered, that at site 1 the applique rider lug type occurs more commonly on the monochrome ware than it does on the polychrome type. The three other lugs at hand, and those noted at the site, offer no radical departure from the more simple monochrome lugs described at site 1. The very characteristic, double-ended vertical lugs with grotesque modeling (fig. 26) seem to be lacking at site 2, and even the simpler, attached head or body lugs are not at all common. Decorated feet for monochrome ware vessels, although not abundant at site 2, are present and in type and elaboration are similar to those at site 1. In the collection selected at site 2 are six feet. The one illustrated (pl. 30, *e*) is

excellent, and a smaller version of the intricately incised, hollow, ovoid foot (fig. 28, *a*) is also present; two others are similar to figure 28, *h*, and two are similar to those on a bowl from Michael Rock (pl. 31, *f*). Thus, although a few excellent examples occur, the wealth of intricately incised and modeled lugs and feet noted at site 1 is lacking at site 2. Two fragments of annular bases were noted; one of these is decorated with short, curved lines ending in dots, the other is well polished but lacks incisions or other decoration. One sherd with a gray-blue inner surface suggests the elaborate, cylindrical type of vessel (pl. 24), and a small model (pl. 31, *a*) represents a simpler version of this type. The scarcity of this type of sherd, however, agrees with the lack of elaborate vertical lugs already noted. The intricately incised, solid pedestal of a small red ware pot (pl. 30, *g*) is a rather unique specimen.

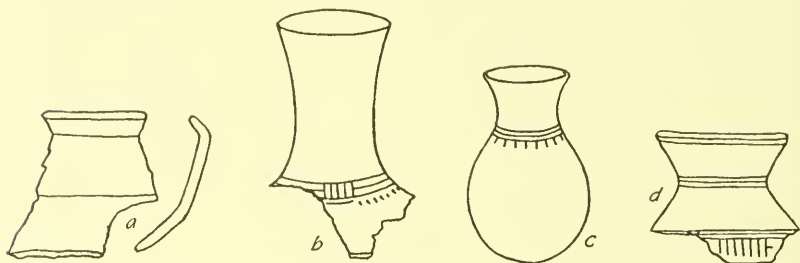


FIG. 31.—Outline sketches of characteristic plain monochrome pottery, Indian Hill, site 2.

To judge from our own small excavations and from the mass of sherds exposed by earlier digging, plain red monochrome pots with swollen bodies, contracted necks, and flaring lips (pl. 30, *h-l*; fig. 31) are strikingly predominant among the complete and broken ceramics at site 2. The more elaborate types just described do occur, but they represent a very small proportion of the deposit as compared to this large to medium type with swollen body, contracted neck, and low flaring lips. Many of these are extremely thick, the sherd figured (pl. 30, *k*) being 1.5 cm through at the neck, and the thicker the vessel, the more coarse is the ground-up coral tempering. Other sherds of this type noted at site 2 were 2.5 cm in thickness. Another type (pl. 30, *i*), with a low, much-everted rim, is thinner (.5 cm thick at the neck) and comes from a vessel with an estimated height and mouth diameter of about 25 cm. Identical rim sherds were noted at cave 1, Helena Island, and at Black Rock Basin on Utila Island, where they served as urns for partial burials. Although the "urn" type

was not specifically noted elsewhere, this general type of pot with contracted neck and flaring lips was also abundant at site 1 and at nearly all the island sites we visited.

This concludes the general description of the cultural material present at site 2. The absence of certain types of objects common at other sites is striking. The lack of metates with legs, celts, mace heads, and other ground or chipped stone artifacts as well as certain types of pottery has already been mentioned. Carved heads and pendants of talc or other stone were not seen, and no stone beads were noted. One pottery bead of coarse red ware (pl. 30, *d*) was the only type found. No shell, bone, or metal work was encountered in our excavations. In regard to all these items it should be remembered that such conclusions are based on a mere sampling of the deposit, the examination of the abundant material left by earlier diggers, and the statements of one of the most assiduous of the latter individuals. On the other hand, many other sites, no more exhaustively worked, yielded not only the majority of site 2 types but many of the others as well.

#### COMPARISON OF SITES 1 AND 2

It has already been mentioned that the Polychrome I pottery and the green stone carvings were found in the upper 1 foot of the deposit at site 1, whereas the usually unslipped monochrome ware occurred both with and below these types. It is impossible to demonstrate this statistically for a number of reasons. We were working desperately against time, with two untrained workers and without adequate equipment for carrying on a thorough stratigraphic study. Although care was taken to note the depth of the polychrome sherds and the carvings, there may have been errors, and the present conclusion must be checked by more careful work before it can be unreservedly accepted. Nevertheless, my own observations at site 1 convinced me that this was the case. It is striking, therefore, that at site 2 no polychrome pottery was found and that the great bulk of the monochrome pottery was of the simplest type. The absence of green stone carvings and the rarity of sherds suggesting ornately incised jars are also significant facts in this regard. All of these features were present at the Dixon offertory, Helena Island, and at site 1, Indian Hill. The limited sample available from site 2 may account for the observed absence there of certain less-abundant types of ground and chipped stone as well as bone artifacts, but it can hardly account for the lack of definite pottery types, for pottery was present in great abundance. On this account I am inclined to believe that site 2 may represent a



somewhat earlier period than site 1, and that the polychrome and elaborately incised pottery, plus the green stone carvings, all characteristic of the upper layers at site 1, had not yet come into vogue on the islands when the site 2 offertory was in use.

This conclusion leans rather heavily on the observed stratification of types at site 1, and it is freely admitted that this support is not beyond question. Nevertheless, there is no doubt that the site 2 monochrome pottery is identical with the same type of ware from site 1, with the exception that certain more or less elaborate types are missing; nor that the Polychrome I pottery of site 1 is absent from site 2. It is hardly conceivable that social stratification in the same group at the same period could account for these differences, since nearly all of the ceramics were deposited in a broken condition, and had the two accumulations been simultaneous, some of the polychrome and more elaborate monochrome ware would almost certainly have found its way into site 2. It is tentatively concluded, therefore, that site 1 is later than site 2. Since the connection between the superficially unlike Polychrome I and the monochrome wares has been demonstrated, it would thus appear that the influences leading to the development of the Polychrome I (and probably, the definite Uloa River type of incised decoration) were not active on Barburata Island at the time when the site 2 offertory was in use.

Considering the divergent nature of the two offertories on Indian Hill, it is extremely unfortunate that the Mitchell-Hedges collection, assigned to Barburata Island, is not segregated according to sites, since his men worked in both offertories. The storage collection from this island in the Museum of the American Indian is very extensive and contains a large number of complete pottery vessels. Most striking is a tremendous number of simple monochrome (red to buff) vessels, predominantly with round or ovoid bodies and low to medium flaring spouts. A few, of the same general form, have markedly constricted necks and medium to long, bottlelike spouts. The uniformity and nature of this pottery makes it highly probable that this is the collection from site 2 referred to by Joe Saba. With this probable exception the remainder of the material must be discussed as a unit, although our own investigations, coupled with the observations of Joe Saba, indicate that the polychrome pottery and more elaborate artifact types came from site 1 rather than site 2. Polychrome I pottery is represented by a large collection of sherds. This accords very closely with the material we obtained from site 1, which has just

been described. I did not see any Polychrome II sherds in the collection. There is a large amount of the elaborately incised monochrome ware, including the usual variety of lugs and strap handles, but the only unique form noticed was a lug suggesting the head of a vulture in profile. A complete flat-handled, shallow-bowled, incense burner demonstrates that this type occurs in the monochrome ware, as was suggested by the round handle from site 1, previously described (pl. 27, fig. 1, *g*). There are also a large number of small monochrome model pots, which are extremely crude. Especially interesting are three large sherds of Plumbate ware identical with the one sherd we obtained at site 1. The largest of these includes a considerable portion of upper body, neck and rim. The form is bottle-like, with a much constricted orifice and a short cylindrical neck; the body is decorated by horizontal ridges giving the fragment a shingled appearance. The dark, metallic blue-gray color of this sherd is blotched with brown areas. There are 10 figurines of monochrome (buff to red) pottery of a crude oval type, the largest being 15 cm in height.

In addition to ceramics, the collection includes some 30 polished stone celts of various sizes, 3 round and knobbed mace heads, 1 metate fragment with an elaborate vulture head at the end, and one-third of a granite pot rest with two legs, and two carved feline-head ornaments. This last is similar in form to the two fragments from site 1 already described. Of the smaller objects, several small anthropomorphic carvings of a gray, greasy steatite are present, and there are several perforated jaguar teeth and a considerable number of talc beads. There is one large, round copper bell with a crude human face in relief, which has a hammered wire ring for suspension and one small smashed copper bell. Chipped stone artifacts include three large ovoid knives of brown chert, one small stemmed and one small oval projectile point, and some fragments of prismatic flake knives of obsidian. All of these latter objects suggest material from the Dixon offertory and probably supplement the list of offerings at site 1, Indian Hill.

#### OTHER SITES

There are undoubtedly places of aboriginal occupation on Barburata but we did not see or hear of any during our short stay. Mr. Haskell noted potsherds and conch shells on the top of the highest hill on the island (see map, fig. 19), and there are probably other offertories on the various hills and ridges. Very probably there are old dwelling sites near the ends of the island or on the north shore that we were unable to explore. It is highly desirable that if such exist they be very

carefully excavated to check and supplement the apparent stratification, both vertical and horizontal, which occurred in the two badly disturbed offertories on Indian Hill.

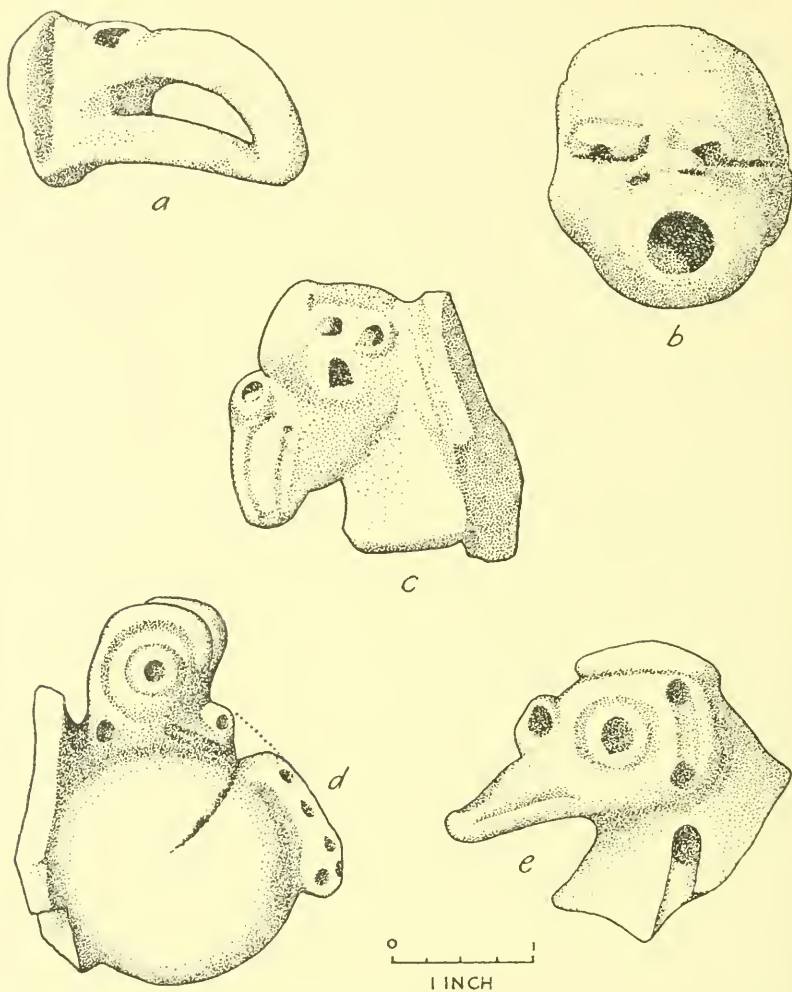


FIG. 32.—Monochrome lugs: *a*, Pine Ridge, Bonacca; *b*, Kelly Hill, Bonacca; *c*, Stanley Hill, Bonacca; *d*, *e*, Morat Island.

#### MORAT ISLAND

From Barburata we proceed to Morat Island (map, fig. 1) and anchored inside the reef on the eastern side. Haskell and Payne, with two of the boys, walked along the main ridge of the island. This ridge runs the length of the island and terminates in a hill at each end.

A little broken pottery and one stone artifact were picked up from the surface on the tops of these hills. From the hilltop to the southwest they brought back 2 well-modeled bird head lugs (fig. 32, *d, e*), and from that to the northeast about 10 small sherds. These include two rims from small bowls with constricted orifices and flaring lips, and a thick body sherd (.9 cm in thickness). All sherds from Morat are a reddish monochrome, except one curved sherd with a conventionalized manatee head lug. This lug has a purplish-red framework of design around it. The shape of the lug suggests Polychrome II, but the painted design is more like Polychrome I. The only nonceramic artifact recovered was the central portion of a cylindrical stone bark beater (pl. 16, fig. 1, *m*). One end is completely covered with narrow longitudinal grooves, the other rounded for a handle.

Possibly there are offertory deposits on top of these hills, but other than the few sherds, no surface indications were noticed. The shore line was not examined, and there may be aboriginal sites there. We had only a few hours on the island and did no digging.

#### BONACCA ISLAND

This island seems to contain more striking surface indications of aboriginal occupation than do any of the others, but archeological material from here is not very abundant. An exception to this statement is the Mitchell-Hedges collection assigned to Bonacca, in the Museum of the American Indian, the bulk of which presumably came from the Sacrificial Spring. The Boekelman Shell Heap Expedition and the Smithsonian Expedition examined numerous sites on Bonacca, but owing to lack of time for any extensive excavations, they obtained comparatively little material. The island is one of the most attractive of the group and, given adequate time for exploration, would undoubtedly yield far more evidence of native occupation than is now available. The only modern town of any size is that of Bonacca on Sheen Cays (see map, fig. 33), but there are good anchorages on both the northwest and southeast shores, from which all portions of the island could be examined. At present, only a strip northeast across the island from the town of Bonacca and a narrow strip between Savannah and Mangrove Bights (see map, fig. 33) have been reported on. We were greatly assisted in our work by Sandy Kirkconnel of Bonacca town, who owns the Plan Grande portion of the island and who guided us on that portion of our trip. As was true on nearly all the other islands the local officials and residents were very friendly

and gave us all possible aid. From Bonacca the great mainland mountains back of Belfata and Trujillo, and on Black River, are all clearly visible.

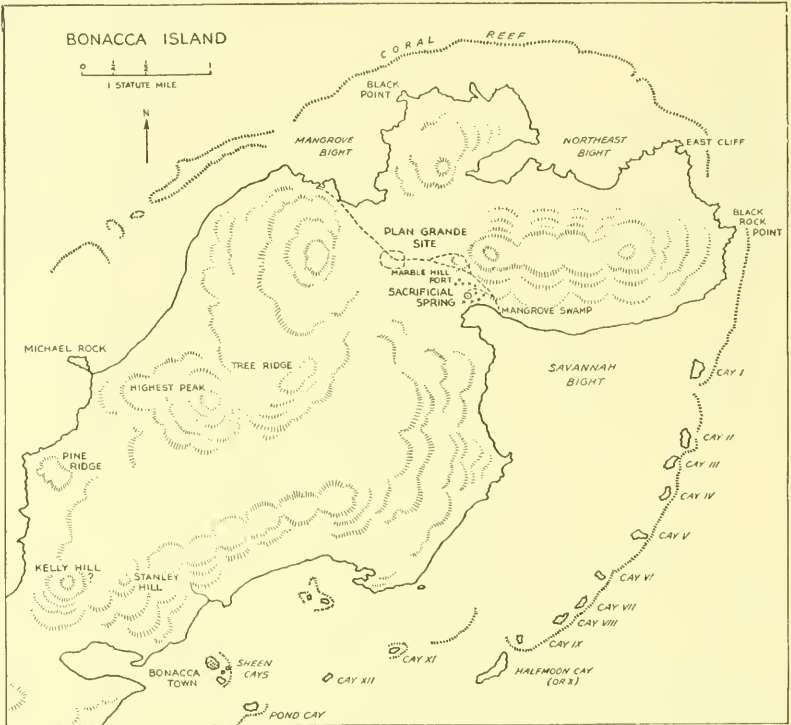


FIG. 33.—Map of Bonacca Island.

#### STANLEY HILL

The first site examined by us was Stanley Hill, which towers above the low coral reefs on which the little town of Bonacca is built (map, fig. 33). Mr. Payne climbed up and collected a small amount of broken pottery. He reported that the top of the hill appeared to have been terraced, leaving a mound of rocks in the center, and that there were several old trails. At least one of these appeared to have been artificially cut out and they all converged from different directions to the top of the mountain. At present there is a flag pole here on which a flag is raised on special occasions by the people of Bonacca town. There is a magnificent view from the hill. Bird reports that broken pottery occurs in the central pile of rocks and that some sherds are scattered over the surface of the hilltop, occurring to a depth of 6 to

8 inches in one small area. His small collection includes 16 much-weathered, red to brown (monochrome) sherds and lugs. The body sherds are rather plain, but the lugs include several of the vertical, centrally constricted type (compare fig. 26), a manatee head type, a snouted animal head, one conventionalized human figure, and a bird head (fig. 32, *c*). Two pottery balls from hollow leg rattles were found. Besides pottery, two disk beads of green talc and two cylindrical granite hammerstones are in the collection.

Payne's collection includes one complete shallow pottery plate (11.5 cm in diameter), and about two dozen sherds. All but one are of a uniform pinkish-red color without any slip, but the majority have rather elaborate incising and modeling. Two fragments are from open bowls with round bottoms, vertical, slightly concave walls, and slightly flaring lips; both have a well-executed incised step design on the walls. Two rim sherds are from large open bowls with an elaborate incised panel of double scrolls, each terminating in two dots on the side. Six others are from small bowls with low flaring or swollen rims, and elaborate geometric incisions. A fragment of a heavy loop handle has a conventionalized manatee head modeled on the bend and a polished brown surface but no visible paint. In form, at least, it suggests the Polychrome II type of handle (fig. 11, *a, d*). There are three elaborate and grotesque vertical lugs, one representing an alligator head; the others are too conventionalized for determination. Of the three detached and broken feet, two have human faces where they join the body of the bowl, and the third suggests a manatee flipper.

As a whole, the ceramic sample from the top of Stanley Hill is of high grade, elaborately incised and modeled monochrome ware and suggests a ceremonial rather than a utilitarian deposit.

#### KELLY HILL

In Bird's collection from Bonacca there is a small but very interesting lot of material from Kelly (or Kellie's) Hill, but there are no notes, map references, or photographs by which this hill may be located. I am inclined to believe that this is a somewhat higher peak to the west of Stanley Hill (see map, fig. 33) and have tentatively designated it as such, subject to future correction.<sup>23</sup> The potsherds

<sup>23</sup> While this report was in preparation, Mr. Bird was in Bolivia, and later in Labrador; hence it was impossible to consult him. In October 1934, however, just as this paper was going to press, he was in Washington. He confirmed the above general location and added to or corrected certain other points.

from this site include both an elaborately incised (and modeled) monochrome ware and three polychrome (Polychrome I) rim sherds. The former type is brown to red in color and is unslipped but highly polished in most cases. Flat-bottomed vases; jars with round bodies, contracted orifices, and flaring rims; and jars with annular bases are represented. The sherds are badly weathered but show traces of rather elaborate incised decoration. There are nine cylindrical feet; the majority are hollow and rather long with incised and punctate decoration; two suggest conventionalized alligator heads and two similar human figures. There are 11 lugs of an elaborately modeled type. One is almost identical with a lug from Helena Island (pl. 18, fig. 2, *e*), and one (fig. 32, *b*) vividly represents the head of a howling monkey "howling". Three rim sherds are of thin, polychrome ware (indubitably Polychrome I, like pl. 21). They are from cylindrical vases with slightly flaring rims and have an orange slip, three black rings around the neck, and black and red-purple body designs. The latter are too badly weathered for the designs to be made out. There is one broken lug, probably of the iguana type.

Besides pottery fragments there is one excellently worked ear spoon (1.3 cm in diameter) made of what appears to be gray jade (pl. 17, *h*). There are also a small, ovoid, incised pendant of green talc (2 cm in length) with three dots suggesting a human face, and two cylindrical beads of green talc. The only bones present were a few from some species of small bird. The nature of this site is not clear, but from the type of material present (elaborate monochrome and thin Polychrome I pottery, with jade and talc ornaments) it would appear to have been a previously disturbed offertory.

#### PINE RIDGE

A somewhat similar but less interesting and smaller lot of material was collected by Bird on Pine Ridge (map, fig. 33). There are no notes or photographs referring to this site but it can be located in a general way on the map. There are some 10 potsherds, all of red, unslipped (monochrome) ware. One is the rim of a small jar with flaring lips, several are from open bowls with extremely rude incisions, and there are a few vertical loop handles and two small lugs. One of these is a conglomeration of globules, each with a punctate mark, the other the head and curved pointed beak of a bird in profile (fig. 32, *a*). Three much-weathered pottery disks (9 to 12.5 cm in diameter) are designated as "pot lids" by Bird, but I am inclined to regard them as the broken-out bottoms of cylindrical jars. There is

a much-weathered stone implement (19.5 cm in length) with an ovoid head, flattened on two faces, and a small, cylindrical, rounded handle. No grooves are visible on the two faces, but the implement strongly suggests a bark beater. The other objects consist of one fragment of a crude marble bowl; half of a discoidal marble stone; a fragment of pumice, grooved by use; two small fragments of cylindrical, polished roller pestles; and a crude disk bead of gray steatite. This material has a utilitarian aspect and contrasts markedly with the ornate and presumably ceremonial material from Kelly Hill.

#### THE SACRIFICIAL SPRING

The sites which we examined on the northeast end of the island can be reached from either Mangrove or Savannah Bights, but the latter, being on the lee side of the island, is the safest anchorage (see map, fig. 33). From the latter place we visited the Sacrificial Spring where Mitchell-Hedges and Lady Richmond Brown obtained a large collection in 1930. The site can be easily reached by following the trail half way to Marble Hill and then branching off across a mangrove swamp for a short distance (see map, fig. 33). Unfortunately, at the time of our visit we had not read Mitchell-Hedges' account of the discovery. This account in part is as follows:

Arriving there, Lady Richmond Brown and I, accompanied by our natives, entered a valley, on each side of which rose great hills. The first quarter of a mile we traversed of this sinister place almost dispelled any expectations entertained by us that within this region could possibly be the evidences of what was once a vast civilization.

The bed of the valley, which was almost perfectly flat swamp, seemed to hold the chill of death as one entered the gloomy depths of the jungle. The ground squelched beneath our boots and the stench which arose from the swamp as we cut our way through the undergrowth told of rotted and decayed vegetation—vegetation which had laid there disintegrating for thousands of years; poisonous—the very atmosphere was the breath of a sepulchre.

From the ooze towered a forest of white mangroves, their fantastic roots curling over the ground in every direction like the tentacles of a giant octopus. Hideous snakes, great land crabs and noisome fungi appeared to be the only life in this land of rot. Only that which was loathsome seemed to have its being in the faint ghostly glimmer, where a few sickly beams of sunlight struggled through the interlaced branches of the mangroves.

We toiled on cutting and hacking every foot of the way with our machetes. The heat was overpowering, mosquitoes and botlas flies swarmed about us, while the perspiration trickled down our bodies until finally our shirts, breeches and boots were sodden.

A miniature stream crept through the swamp, and this we followed. [There follows an account of a fierce encounter with an enraged iguana which, for lack of space, I must omit.] . . .



Suddenly and without warning the swamp ended, and we stood at the base of a limestone cliff which rose sheer from the flat morass—an impassible barrier.

From breaks and fissures in the rock at its extreme base, the waters of a spring gurgled forth, limpid clear. We dashed ourselves flat gratefully burying our faces in the water. But in a flash we recoiled, spitting disgustedly—literally sickened. The water was highly mineralized, the taste of sulphur predominating.

But the moment of our mortification marked the beginning of a discovery which conceivably may change the scientific conception of the history and age not only of Central America, but of the entire continents of North and South America. For there, lying close to the rock wall and at the bottom of a pocket formed by the stream we saw a significant fragment of pottery.<sup>24</sup>

Digging in the mud at the base of the rocks where the spring issued, they found an immense amount of broken pottery and many complete pieces. These included figurines, incised and modeled pots, jadeite beads and plaques, bolas (mace heads?), painted pottery, a stone vase (soft "like tooth paste" when excavated) and a granite (sic) figurine (fig. 37, *h*). At the bottom of the mud they struck solid rock forming a marble basin. Mitchell-Hedges regarded this as a sacred well or *cenote*, the waters of which probably had highly curative properties, hence the belief in its sacred character. On the face of the cliff above he discerned a flat rock or "pulpit" from which he suggests that, as at Chichen Itza, "the most beautiful virgins were sacrificed" before the eyes of the populace spread out over the plain (sic) below. According to the account, over 1100 specimens were obtained here within a space of three square yards.<sup>25</sup> The collections made by Mr. Mitchell-Hedges assigned to Bonacca, now in the Museum of the American Indian, will be discussed as a unit later, since they are not segregated according to sites.

When we visited the site, mud completely covered the basin described by Mr. Mitchell-Hedges (pl. 32, fig. 1). There was a considerable flow of water issuing from the rocks, forming a stream 2 or 3 inches deep and about 3 feet wide. The water was slightly brackish but quite drinkable and refreshing. Mr. Payne took a bottle back to the hospital at Puerto Castilla, where it was analyzed by the authorities but no unusual chemical properties could be discovered. The muck area, some 20 to 30 feet in diameter, was littered with broken pottery (pl. 32, fig. 1). We dug to a depth of 3 feet and fragments of pottery apparently occurred below this. Aside from one almost complete tripod vessel (pl. 31, *e*), nothing was found

<sup>24</sup> Signed article by Mitchell-Hedges, The Washington Herald, Sunday, Aug. 10, 1930.

<sup>25</sup> Signed articles by Mitchell-Hedges, The Washington Herald, Sunday, Aug. 10, and Sunday, Aug. 17, 1930.

but sherds. The rock walls do not rise abruptly above the spring—rather they consist of a tumbled pile or talus slope of limestone and marble boulders. We climbed over these for a considerable distance but did not see the flat rock or “pulpit” described by Mr. Mitchell-Hedges.

We removed a sample collection of sherds and the one complete vessel. The latter (pl. 31, *e*) has short solid legs, and the edges appear to have been ground down. There are two borings for lacing across a crack. The vessel is a dull yellow color, and there is no slip, at least at present. Aside from the top flare and punctate marks on the feet, there is no decoration. The sherds are all of high-grade pottery but are rough-surfaced, probably as the result of long soaking. The majority are of elaborate monochrome type, but one sherd suggests Polychrome I and another Polychrome II in form. The former is a solid lug of brown pottery suggesting a bird's head with three crests. The latter is a rim with a broad, vertical strap handle (similar to fig. 11, *a, d*) but without the characteristic manatee head lug. In neither case are affiliations with Polychrome I and II ware positive, since no traces of paint remain. However, the forms fit in with these types better than any others.

About 24 sherds, mostly rims, are from elaborately incised vessels, many of which seem to have had the Uloa marble bowl type of decoration. Applique work is rather rare. Double scroll and dot incised decoration is common. There are two ornate lugs from this monochrome ware; one is of the vertical, centrally constricted type, the other of the projecting type with elaborate incision and applique work, giving it a grotesque appearance. Of the three basal fragments, one is an annular base with an incised step design and a row of holes around the bottom; another is from a small tripod vessel with short decorated feet (like pl. 31, *f*); and the third, from a large vessel of composite silhouette, has one hemispherical foot containing a clay ball. There are three separate feet; one is hollow and hemispherical with two holes and applique and incised decoration where it joins the body, one is a hollow cylinder flaring toward the top, and the third, a hollow cylinder with rounded tip, has an applique face where it joins the body, two perforations on one side and one on the other. As a whole, this collection suggests ceremonial rather than utilitarian ware, but it is a selected, not a random, sample.

#### MARBLE HILL FORT

Marble Hill is a steep little pinnacle, about 150 feet in height, of tumbled marble rocks. The great white cliffs and boulders and the

tall trees give it a most picturesque appearance. It stands to the north of the mangrove swamp and on the southeastern edge of Plan Grande, being only a short walk from Savannah Bight (map, fig. 33). It is apparently inaccessible except from the northern side, where a narrow pathway, in part artificial, leads up to the top. This pathway is exceptionally interesting owing to two partially artificial terraces on the steep slope, which have been carefully built up with large flat slabs of rock. In the center of each of these is a series of narrow, rough steps, and on the outer edge of each terrace is a breast-high wall of boulders and piled slabs. A few men behind these fortifications could easily defend the hill top. There are potsherds, conch shells, and other cultural debris scattered amidst these crude but effective constructions. The density of the trees and hanging vines, combined with the impossibility of getting far enough away to gain perspective, prevented photographing. Owing to these factors, as well as to the wildly tumbled nature of the rocks generally, the fact that this approach is in considerable part artificial might easily be overlooked. Mr. Haskell and I made a very careful examination and concluded that considerable portions of the terraces, walls, and steps were definitely artificial.

The area on top is fairly level, with the exception of a number of steep pinnacles, and includes an acre or two. It had recently been partially cleared to make a small plantation. The rocky pinnacles contained a good number of potsherds, obsidian chips, broken artifacts, animal bones, fish bones, and conch and whelk shells. This type of material also occurred thinly scattered all over the top of the hill. We tried to work our way around the edge of the rim, but the tumbled rocks and dense brush made this impossible. So far as I could tell, there was no other practicable way up except the fortified trail already described. Test pits in the cleared area revealed little in the way of artifacts; these were more abundant under and around the rocks and on the surface. The place has all the appearances of being a fortified retreat to which the people of Plan Grande could retire in time of need. There is said to be a spring near the base of Marble Hill, but I did not visit it. On the north, west, and south sides of the hill, at the base, are a number of great crevices or cracks formed by huge slabs splitting off the cliff and piling up. We found only a few sherds in these, but Bird and his party got a considerable amount of material from such places, especially on the west and southwest sides of the hill. Mitchell-Hedges gives a thrilling account of explorations

here, which penetrated deep into the very bowels of the earth,<sup>28</sup> but we either missed this place or did not recognize it.

Bird has only a few notes and no photographs pertaining to this site but made a large and interesting collection. His catalog indicates that most of this material came from the crevices on the southwest side of the hill, the other material, I presume, coming from the north slope and the top. The ceramics from Marble Hill include Monochrome, Polychrome I, and Polychrome II types. Monochrome ware, mostly of the elaborately incised type, is the most abundant. Mr. Boekelman found one small effigy jar (11 cm high) of dull, polished red ware (fig. 34, *a*) beneath a fallen rock slab. The only other complete vessel is a very crude, unpolished red bowl with a flat bottom and a slightly flaring rim. There are numerous sherds of the elaborately incised monochrome type from open bowls, vases, or jars with an annular base, and round pots with constricted orifices and slightly

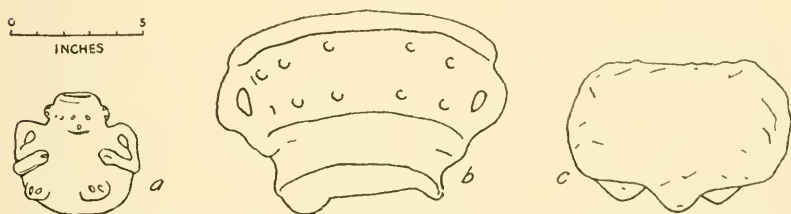


FIG. 34.—Monochrome vessels and marble bowl: *a*, Marble Hill Fort, Bonacca; *b*, Big Bight cave, Utila; *c*, Plan Grande, Bonacca.

flaring rims. Hollow cylindrical and conical feet which rattle, hemispherical feet with rattles, and solid, thin, rectangular feet (like fig. 18) of varying heights are present. The broken-off lugs include vertical, centrally constricted types; one death's head (similar to fig. 25, *e*); one grotesque animal with upturned snout; a bird's head; several manatee heads with the concentric circle design on each side (similar to pl. 18, fig. 2, *a*, *b*); and one crude turtle or alligator in relief.

Polychrome I ware is represented by one typical bodysherd (4 mm thick), which has an orange slip and part of a plumed serpent design in black and red-purple. Four lugs suggest that combination between Polychrome I and the elaborately incised monochrome types which occurred at site 1, Indian Hill. These include two polished, brown, delicately incised sherds with applique rider lugs, both of thin pottery; and two somewhat aberrant lugs, with coarse incisions, suggesting the iguana head type.

<sup>28</sup> See The Washington Herald, Sunday, Aug. 10, 1930.

Polychrome II ware is represented by one large rim sherd (5 mm thick) from a vessel with a restricted orifice, straight medium high rim, and swollen lip. The neck is decorated with a black line and dot design on a red-brown slip. Another rim sherd has a dark red slip and a conventionalized manatee head lug on the side. The vessel is 1 cm thick at the lip, and the lug is surrounded by a black line frame. There are six vertical loop handles with a manatee head in relief on the upper bend (similar to fig. 11, *a, d*). These are typically Polychrome II in type, but only traces of brown slip and no design elements remain, owing to weathering.

One fragment of a gray steatite jar, possibly a leg, and one-third of a broken granite bowl or mortar (15 cm high) with thin walls and thick bottom, all smoothly polished, were found. From "the floor of Marble Hill Cave" come two broken, oval bark beaters, both fully grooved around the edges; one is smoothly worn on both faces, the other has only one face, which has beautifully even, narrow, length-wise grooves. From Marble Hill, area not specified, comes an exceptionally beautiful little celt (3.8 cm long) of dark green jade (pl. 17, *j*). There are also two small jade and three green talc cylindrical beads and a ball of marble (3 cm in diameter) with two holes started from each side but not meeting. There are traces of a rather elaborate herringbone design on this piece, but it is too badly eroded for analysis.

Bird's collection contains 39 human teeth "found scattered among the sherds", indicating that the Marble Hill "caves" were probably used for burial purposes. In his catalog Bird gives a "list of finds at site on southwest side of Marble Hill, Bonacca. Shell Ornaments: 76 *Marginella* shells, perforated; 18½ olive shells, end cut and side perforated; 1 olive shell, end bored; 1 cone shell, large end cut and side perforated; 1 cone shell, large end bored, center, cut on sides; 4 cone shells not cut or bored; 4 round shell disks ( $\frac{3}{4}$  inch diameter to  $\frac{1}{2}$  inch); 3 round shell disks with hole in center; 5 irregular shell pendants ( $\frac{3}{4}$  to  $\frac{1}{2}$  inch long); 8 shell beads; 2 perforated spondular shells (1-4 holes); 2 perforated cairns shells; 15 perforated *Turritella* shells". These specimens are in the possession of Mr. Boekelman.

Our small sherd collection from Marble Hill contains plain and elaborate monochrome pieces but no polychrome ware. Some 16 sherds of highly polished, dull red ware are present, and several of these pieces have been bored for crack lacing. A few have simple incisions, and one has an applique eye and nose. All but two are from bowls with low, slightly flaring lips or else direct rims. One of the former has a restricted orifice and high flaring lips, the other is part

of a graceful cylindrical vase with three small, solid feet. There are a number of potsherds, both plain and incised. Two rather coarse vertical strap handles have angular rather than rounded curves. There are two detached lugs; one of these is of the vertical, centrally constricted type with elaborate punctate decoration, the other is a fragment of applique decoration. There are five separate feet; one is conical from a tall tripod bowl, two are similar but shorter, one is a solid cone, and the last is hemispherical and hollow with elaborate incised punctate and applique decoration. The collection is not particularly distinctive but seems for the most part to represent the more elaborate type of monochrome ware.

#### THE PLAN GRANDE SITE

The Plan Grande is the most striking ruin we visited in the Bay Islands. It was briefly mentioned by Young, in 1842 (Young, 1842, p. 48) as a stone wall a few feet high containing fissures or niches made for the admission of peculiarly cut, three-legged stone chairs, presumably the seats of idols. Conzenuius also gives a brief description of the site, stating that it might possibly be of buccaneer rather than Indian origin.<sup>27</sup> The party of Mitchell-Hedges visited the site in 1930, and he has published a diagram of the enclosure<sup>28</sup> that differs very considerably from the plane-table map made by Haskell and myself (fig. 35).

Mitchell-Hedges compares the site to Stonehenge, but believes it to be incalculably older on the basis of the disintegration of the rock slabs. He mentions the trench started in mound 1 (fig. 35), which yielded broken pottery. His assistants, Mr. Stein and Mr. Hudson, obtained six very fine ax heads, several figurines, a small stone altar, broken decorated pottery, and fragments of large metates with legs from an earth mound, probably mound 4 (fig. 35). Their most spectacular discovery, according to the newspaper account, was a hollowed stone too heavy to move, which suggested a stone font.<sup>29</sup> This may have been the stone seat sketched by Bird (fig. 36). On the hills to the east of the site (map, fig. 33) Mr. Stein and Mr. Hudson found a large boulder with incised rectangular lines around a cross. All the lines are double with regularly spaced cross lines, giving the design

<sup>27</sup> 1928, pp. 66, 67. There seems no reason to believe that the site is not of native origin.

<sup>28</sup> Signed article by Mitchell-Hedges, *The Washington Herald*, Aug. 24, 1930.

<sup>29</sup> *Idem*. The illustrations in this article show this stone, the carved rock, and the diagram.

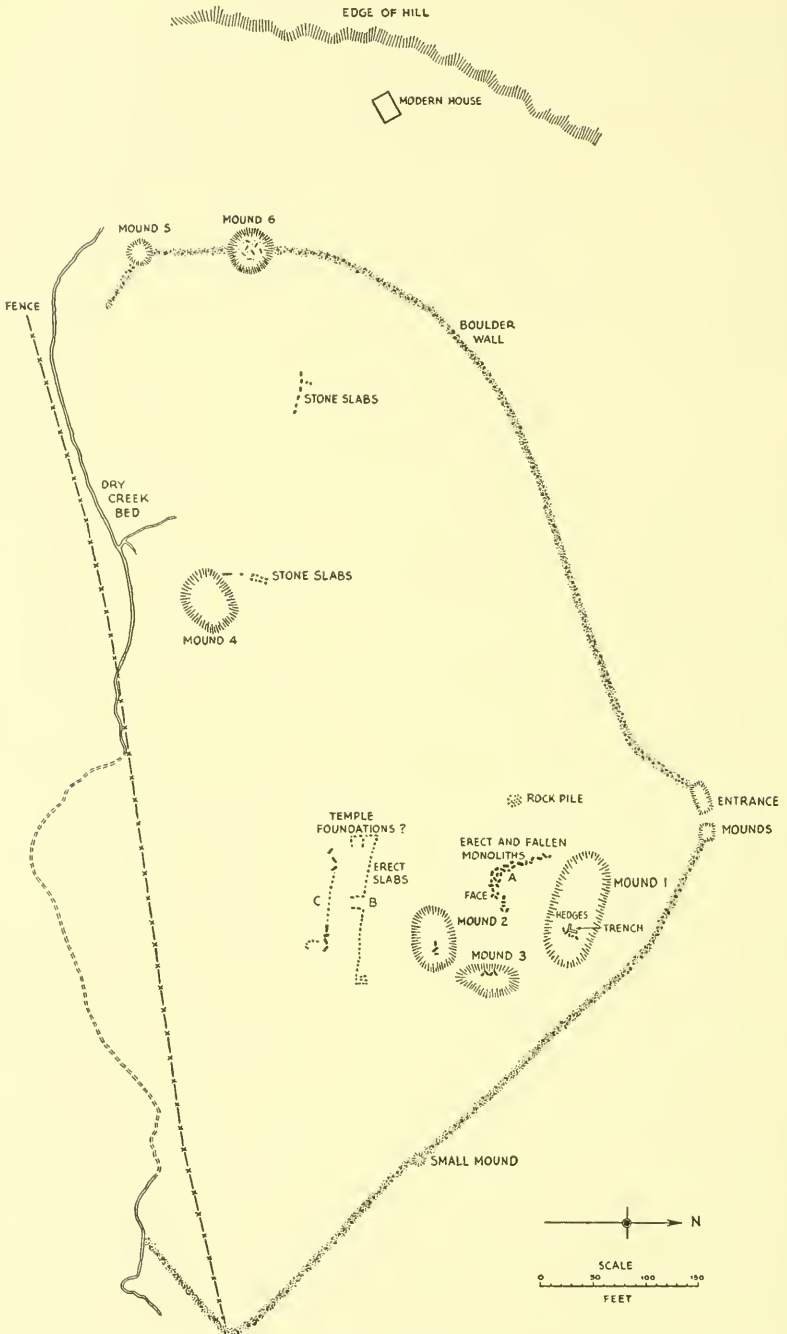


FIG. 35.—Map of Plan Grande site, Bonacca. (Made by Norman A. Haskell and W. D. Strong.)

a ladderlike appearance. A mile to the south are said to be outlying portions of the site;  $4\frac{1}{2}$  miles due east Mitchell-Hedges reports figurines, obsidian spear heads, beads, etc; and 5 miles due west they found other specimens. As Mitchell-Hedges says, it is a big site, and is as yet barely scratched.

Bird and his companions spent one day at this site and made some valuable observations. They landed in Savannah Bight and walked across to Mangrove Bight, searching for the "tombstones" or "cemetery" as the Plan Grande site is called locally. They were told of a cave on the hill just south of Mangrove Bight, and near the base of this hill they found a few sherds and, under a large rock, a crude pot and a celt. Bird states that the place was not suitable for occupation, nor were there any shells or cultural detritus in the vicinity; hence he regards it as a casual storage place. The vessel is of coarse brown ware with crude decorations, and the celt (8.5 cm long) is of

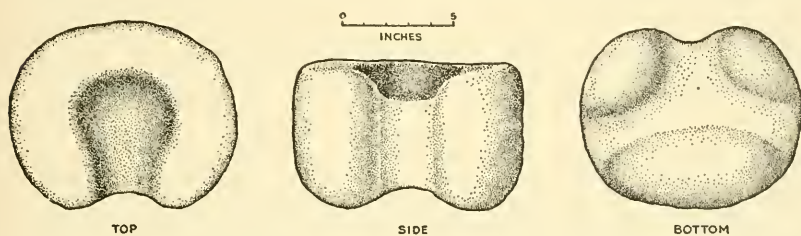


FIG. 36.—Sketch of small sandstone "chair for idol," Plan Grande site.  
(From sketch by Junius Bird.)

battered gray granite with a sharp, polished edge. The complete neck of a plain red vessel, originally about 1 meter in height, was found here. The other finds at this place were a very crude tripod pot with solid legs of coarse brown pottery and a small concave saucer of the same ware. We also visited a "cave" near here, after a very rough climb, which proved to be merely a deep fissure without any signs of human occupation.

That afternoon they reached the Plan Grande site and started a detailed survey of the enclosure, but owing to lack of time they were unable to finish it. They found a small stone mortar just protruding above the surface near mound 1 and a roughly cut stone suggesting the "chairs" described by Young. Possibly this is the same specimen as Mitchell-Hedges' "font" (fig. 36). It is made of hard, much-weathered gray sandstone and was imbedded in the ground. They left it beneath one of the leaning stone slabs, but it had either disappeared by the time of our visit or else we overlooked it. The stone "mortar"



(fig. 34, *c*) mentioned above is of much-eroded white marble and has three short, conical legs, being practically identical with some of the marble bowls from site 1, Indian Hill. Bird also found on the surface inside the enclosure a fragment of a large metate with a squared leg. In addition to the above, his collection in the American Museum of Natural History includes a battered celt of hard green stone with both ends broken off, and (from a test pit west of mound 1) six thick red sherds (2 cm in thickness), two similar sherds with low flaring rims, one short cylindrical leg, and a vertical loop handle composed of two joined pottery coils. The heavy sherds and rims strongly suggest the burial urns from Utila, and it is very probable that an adequate series of trenches at this site would reveal urn burials, though none has as yet been reported from here.

The following description of the main site is based primarily on a plane-table survey made by Haskell and myself, which required a day and a half. The surface of the enclosure, although seemingly flat, is actually uneven and is covered with dense coconut palms and some low brush, making sighting difficult. I have also incorporated some of Bird's data as well, but a series of measurements that he made of a considerable number of the erect and fallen stones seems too detailed for incorporation at this time. The Mitchell-Hedges diagram, previously referred to, is too far off in directions, dimensions, and locations to make any comparison profitable. At present the site is a "cocale", where copra is gathered; one of the mounds (fig. 35) is fenced in as a pigpen, and a wire fence stretches across the southern opening, cutting off the "cocale" from the brush land to the south. The overseer's house is located to the west of the enclosure.

As one approaches the Plan Grande enclosure from the north, a low wall of boulders is encountered (fig. 35). This is here about 6 feet high on the outside and only 3 feet high on the inside. The wall is from 3 to 4 feet wide and probably averages about 4 feet in height, the stones being piled in no particular order. It encloses a space about 350 yards long from east to west and 280 yards from north to south. There are a few hollows or rude shelves in this wall, which may be remnants of the niches containing "stone chairs" mentioned by Young in 1842. The southern half of the enclosure has no wall but is defined by the dry channel of a stream, forming a steep-walled canyon of some depth. On the west mound 5, a small mound 8 feet high, and a short spur terminate the wall. Slightly north of mound 5 is mound 6, a larger but lower mound (6 feet high), composed entirely of boulders and slabs, some of which



BONACCA

1. Sacrificial Spring.
2. Erect monolithic stones, Plan Grande.



Photographs by Junius Bird.

**PLAN GRANDE, BONACCA**

1. Temple foundation slabs (?).
2. Monolithic slab on mound 3.
3. Crudely carved, erect stone slab.

have recently been arranged as benches. From mound 6 the wall extends northeast in a double curve until it reaches two small mounds (6 to 7 feet high), between which is apparently the entrance to the enclosure. The wall curves sharply southeast here, and less than halfway down its extent is another small rock mound. At its southern extremity the wall turns diagonally west and in a considerably tumbled fashion crosses the creek, forming a low dam. Here it apparently terminates. The surface of the site generally is marked by monochrome potsherds and some other artifacts, and the creek bed especially is full of broken pottery. Mitchell-Hedges reported considerable deposits of sherds in the creek walls, but although we obtained a considerable collection in the bed itself, we found only a few sherds actually in the banks.

Coming through the entryway over a rise of ground, mound 1 is first encountered. This is the largest of the mounds, being 85 feet long, 55 feet wide, and 8 feet high, with a rounded top (fig. 35, mound 1). Toward the east end just west of the five erect stone slabs is an L-shaped trench some 15 feet long,  $2\frac{1}{2}$  feet wide, and  $3\frac{1}{2}$  feet deep at the deepest point, made by the Mitchell-Hedges party. We cleaned off the walls of this trench, which showed the upper mound to be composed of earth with some small rocks and a few monochrome potsherds in the upper 1 foot. Mound 3 is just south of mound 1 and is slightly smaller and only 3 feet high. It is marked by four big, erect stone slabs, one of which is 6 feet high (pl. 33, fig. 2), 3 feet broad, and less than 1 foot thick. It is not carved but nevertheless definitely suggests a stela. With mound 2, which is  $5\frac{1}{2}$  feet high and marked by three erect slabs, mounds 1 and 3 form an irregular rectangle closed in to the west by a large number of erect monolithic stones (fig. 35, A). These are set up in a rough L shape; some are erect, others are leaning over, and yet others have fallen flat (pl. 32, fig. 2). They resemble grave stones, and one or two are phallic in form. Only one stone at the site is carved (pl. 33, fig. 3); it has three incisions suggesting a crude face. The mass effect of these monoliths is much more impressive than the photographs indicate (pl. 32, fig. 2; pl. 33, figs. 1-3). The largest erect stone is  $6\frac{1}{2}$  feet high,  $2\frac{1}{2}$  wide, and less than 1 foot thick, and the largest fallen stone is 9 feet 10 inches long, 2 feet wide, and only 5 or 6 inches thick. The purpose of this monolithic complex is puzzling. We dug several test pits near the more striking monuments but found only a few potsherds. Adequate trenches here might well reveal urn burials.

South of mound 2 is an interesting alignment of small slabs set up on edge (fig. 35 B, pl. 33, fig. 1) and forming a rectangular align-

ment about 40 yards from east to west. The form of these erect slabs suggests the foundation of a temple or similar building, especially in the center, and again at the west end, where a double room is suggested. Test pits here were not productive. South of this low enclosure is an irregular alignment of large leaning or fallen rock slabs (fig. 35, C). Mound 4 (fig. 35, mound 4) is 7 feet high and appears to be composed of earth. Here, according to the newspaper account, the Mitchell-Hedges party secured a number of specimens. To the north and to the northwest are two more alignments of vertical rock slabs, many of which are still erect. About 80 yards west of the enclosure a great jungle-covered hill rises abruptly.

Although potsherds and other artifacts may be found almost anywhere within the enclosure, they are not very numerous and no refuse heaps were encountered in our work. The boulder walls, which are not especially well adapted for defense, the earth and stone mounds, and the stone alignments all suggest adjuncts of a temple or ceremonial site rather than a place of regular habitation. Taken in conjunction with Young's description of niches and "seats for idols", the general arrangement here calls to mind the temple and idol on an island 15 Spanish leagues from Trujillo that were mentioned by Salcedo in 1527. There is no way to prove that this was the Plan Grande site, but, so far as present researches are concerned, the complex around Plan Grande (which includes Marble Hill Fort and the Sacrificial Spring) is by far the greatest and best-preserved island ceremonial site on record. One of our local guides, however, stated that there was another site very similar to Plan Grande near Black Rock Point, but we were unable to visit this site. Moreover, as will be shown shortly, both Bird's party and our own evidently missed an important ceremonial place at Stuart Hill on Utila Island (see Rose, 1904); hence it is undoubtedly premature to draw any such comparative conclusions at this time.

Our small sample pottery collection from Plan Grande was obtained from the surface, from the trial pits inside the stone walls, and from the dry creek bed. It includes a few Polychrome I and II sherds, but the majority of the pieces are of plain or elaborate monochrome ware. From the dry creek bed comes one restorable vessel (pl. 31, fig. 2, *c*), a globular pot 12 cm high of brick-red ware. It is fairly well polished and is decorated by a line of indentations making a sort of guilloche pattern caught up by small applique lugs. An iguana head lug showing traces of black paint is the only Polychrome I piece. Polychrome II is represented by a rim fragment (like fig. 11, *a, d*) and two fragments of similar handles with small conventional manatee head lugs.

These are without paint at present and are classified solely on form and surface finish. There are about 20 rim sherds of monochrome ware; four of these have elaborate incisions below the rim, and one has applique decorations as well. The others are plain and range from a well-polished to a coarse surface finish. All are from small to medium pots; some have medium-high, some low flaring lips, and others have none. Four have swollen rims. There are four separate lugs; two of the elaborate modeled and incised vertical type with a central constriction, and two of the conventionalized grotesque projecting type. Two fragments of annular bases with incised step designs, and in one case with a series of holes around the bottom, are present. Two large, hollow tripod feet have applique faces where they joined the body of the pot, another has six vertical openings in three rows but lacks the face, and still another is solid and cylindrical (7 cm in length). Four feet are solid cones with applique, incised, and modeled decoration. Two are hemispherical in form; one of these is hollow with incised and applique decoration, the other is solid and plain.

#### MICHAEL ROCK

While working at Plan Grande the *Amigo* was anchored in Mangrove Bight. On the completion of our survey we proceeded down the coast to Michael Rock (map, fig. 33), which is a tongue of high ground jutting out into the sea. The narrow neck on the shore end would be under water in a very high tide, but the rocky peninsula is perhaps 60 feet high near the tip. On the highest point amidst large boulders and fallen leaves we found considerable broken pottery. This was all on the surface and digging produced no results.

The collection obtained from Michael Rock includes one practically complete small tripod vessel (pl. 31, fig. 3, *f*). It is 13 cm in diameter, has short, solid but ornate feet, and is decorated outside the rim by a short curved line and dot pattern of incision. There are also about 20 sherds, which, like the above vessel, have all been blackened by recent brush fires. Owing to weathering and burning, all are coarse in surface texture with grit or coarse gravel tempering very prominent. They are rather ornately but carelessly decorated with incision and applique decoration. All are from small vessels. The majority are from vases with straight or slightly contracting walls without marked rim. Only two have contracted necks and low flaring rims. The majority have rude geometric incised patterns on the upper body and neck. Crisscross, angular, and short dash lines, as well as curved or straight lines enclosing punctate marks, are common incised design

motifs. One applique design consists of a crude face composed of three raised circles and two modeled, four-fingered hands in relief. A larger sherd has a vertical handle; both the handle and body have vertical ridges enclosing punctate marks. Two sherds have small lugs suggesting a degenerate version of the vertical, centrally constricted type. There are five other lugs in the collection; three are irregularly modeled solid knobs, one consists of three applique circles in a group, and the largest (5 cm long) is crudely modeled and hollow, with long irregular slits down the side and a grotesque face at the tip. No artifacts, other than the above, were found at this site.

THE MITCHELL-HEDGES COLLECTION IN THE MUSEUM OF THE  
AMERICAN INDIAN, HEYE FOUNDATION

The storage material from this collection assigned to Helena and Barburata Islands has already been discussed. Before the Bay Island exhibition material at that Museum is considered, the storage material assigned to Bonacca must be briefly analyzed. Particularly striking are five complete or only slightly broken vessels of the thin polychrome (Polychrome I) type (fig. 37, *b, c, e, f, g*). I presume that

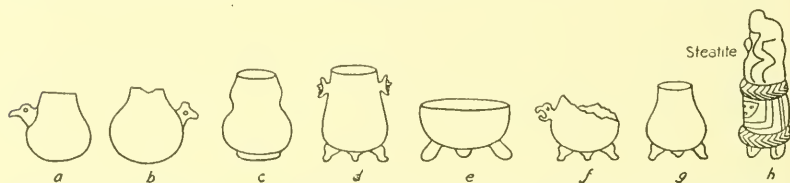


FIG. 37.—Outline sketch of Polychrome I vessels and carved steatite image (*h*), in the Mitchell-Hedges collection, Museum of the American Indian, Heye Foundation.

these are from the Sacrificial Spring, since nearly all but faint traces of the painted design and slip have vanished, evidently as a result of long soaking in water. At present they are all a rather uniform mottled gray or dull gray-brown color. From the traces of design still visible, the nature of the paste, the type of lugs, and the fact that there are two vessels without paint but otherwise almost identical with our Dixon site offertory vessel (pl. 1), there seems to be no doubt that they belong to the Polychrome I ware. This is highly important, since it throws light on many of the shapes characteristic of the type. One slightly broken jar has a white slip, a black line design, and iguana head lugs (fig. 37, *f*). There are a number of Polychrome I sherds that may have come from other sites on the island, since the paint is intact. These present many of the Polychrome I

characteristics already referred to, but in addition there are variations in shape, color, and design, which could only be adequately treated by a more detailed analysis of this rich material than is possible here.

There is a large number of complete vessels, lugs, and fragments of the elaborately decorated monochrome ware, including some very tall pieces (30 cm in height). One large red vessel, beautifully fluted, is noteworthy. Numerous annular bases are present, and one of these has an opposed step design offset with upright and inverted T's, so deeply incised as almost to penetrate the walls. This is nearly identical with the design cut in the annular base of certain marble vases from the Uloa. Simple monochrome pottery types are rare, but the majority of the clay figurines assigned to Bonacca are crude, simple, and red in color.

One of the most interesting and significant finds made by the Mitchell-Hedges party in the Sacrificial Spring on Bonacca was a small image (38 cm high) of gray steatite, representing a human with an animal crouched on his head (fig. 37, *h*).<sup>30</sup> This little statue, although rather complex, is crude and presents a somewhat unfinished appearance. The upper figure suggests a seated monkey with a square featureless face; below this is a rounded cylinder with a pediment and capstone, both decorated with incised chevron designs. The combined figures are supported on three rectangular legs. On the front of the rounded cylinder is a broad semi-ovoid human face with definite features; two bent arms are faintly shown in relief and two small knobs on the chest. Although this little statue is crude, it definitely calls to mind the stone human figures supporting animals especially characteristic of the lake region of western Nicaragua. (See Lothrop, 1921, especially figs. 69, *c* and 70, *a*.) There are several simple steatite figurines, a fragment of a stone pot rest, and other more common types of ground stone artifacts in the Bonacca storage collection.

The selection of artifacts from the Mitchell-Hedges Bay Island collections on exhibit in the Museum of the American Indian is very striking. The specimens are not labelled as to island or other provenience but, taken as a whole, the case gives an excellent picture of the finer class of Bay Island artifacts. Of the Polychrome I ceramic type, there is one mottled gray vase with faint traces of design (fig. 37, *d*) which is almost identical in form with the Dixon site offertory

<sup>30</sup> See signed article by Mitchell-Hedges, *The Washington Herald*, Sunday, Aug. 17, 1930, for a brief mention of the finding and a photograph of this piece. It is on exhibit in the Museum of the American Indian.



vessel (pl. 1; pl. 6, fig. 2). This is probably from the Sacrificial Spring on Bonacca. A smaller vessel (fig. 37, *a*) with a bird head lug has a dull orange slip and a purplish-red and black design of geometric nature. There are a considerable number of Polychrome I lugs. The iguana head type is represented by both painted and unpainted examples; one of these, showing traces of paint, is unusual in having a high crest and a downward-curving proboscis. There are a large number of applique rider lugs, some of which are very large, but all of this type are unpainted. The nose-tilted type (fig. 37, *d*) is present, and all of these show painted design. In addition, there are several painted bird head lugs, one with three crests projecting (rather similar to fig. 37, *b*).

This exhibit material contains a splendid series of complete, restored, and fragmentary vessels of the elaborately decorated monochrome type. A simple outline sketch (fig. 38) indicates some of the variable shapes characteristic of this ware. A slender, tall, cylindrical



FIG. 38.—Outline sketch of elaborate monochrome vessels, in the Mitchell-Hedges collection, Museum of the American Indian, Heye Foundation.

vase (fig. 38, *g*) from the Sacrificial Spring and a small embossed pot with "lizard head" lugs (fig. 38, *e*) are particularly striking. A highly polished, centrally constricted vase with three solid cylindrical feet (fig. 38, *c*) is of especial interest, as it has two conventionalized manatee head lugs with incised concentric circles. To judge from the numerous fragments (pl. 18, fig. 2, *a, b*; fig. 24, *a*) of this type that we obtained, this was a common Bay Island form. As in our own collections, a few of the highly polished "monochrome" vessels show traces of a slip and simple painted design. Of the incised designs the grotesque human figure with octopuslike tentacles (similar to pl. 24, *a*, and pl. 26, *e*) is rather common, especially on vertical jars. There are many detached lugs of the grotesque monochrome type. An alligator lug, identical with one we recovered on Helena Island (pl. 18, fig. 2, *e*), is probably from the same vessel. The collection also contains a dark red (burial?) urn about 1 meter in height. It is conical in shape with a big, round bottom, a narrow neck, a short slightly flaring rim, and two large, solid, vertical loop handles.

Many pottery figurines are on exhibit; some of these, of dark brown pottery, have the grotesque features and fillet work decorations of the specimens from site 1, Indian Hill (pl. 28, fig. 1, *a-c*). One headless specimen, of brick-red pottery, is seated with arms akimbo and short, rounded legs projecting in front. One unusual lug or flat pottery head has the well-modeled features more common in the Uloa valley. (Compare Gordon, 1898a, pl. 10.) There are a number of the round or oval pottery whistles; three of these represent human figures and are unusual for the Bay Islands in having what appears to be a dull white slip. Two of these have grotesque conventionalized faces like Indian Hill figurines (pl. 28, fig. 1, *a-c*).

The Mitchell-Hedges exhibit collection has one complete roller stamp of plain brown pottery with an intricate incised diamond pattern. A hollow-ended and incised cylinder of steatite of about the same size suggests a similar usage. Another interesting artifact type is a small brown pottery labret identical in form with those made of shell from the Dixon site (pl. 15, *h-m*).

Two small copper celts (about 9 cm long) with broad, sharp blades and squared edges and butts are unique. They call to mind similar implements in the trader's canoe encountered by Columbus. Aside from these, work in metal seems rare in the Mitchell-Hedges collection.

There are several small carvings of what appears to be dark green jade or jadeite, and a number of green talc. One large, elaborately carved bead and a flat plaque with humanoid faces in relief are both of jade or jadeite. The remainder of the smaller carvings are somewhat similar to, but less complex than, the small carvings from the Dixon site (pl. 11). One bead of quartz crystal (like pl. 29, *f*) and a considerable variety of other beads like those from the Dixon site (pl. 14) are present.

A rather unique specimen is an unfinished, slender jar (18 cm high) with two vertical lugs, carved from a block of steatite. There are two small tripod bowls (similar to fig. 34, *c*) of white marble. Two beautifully shaped petaloid celts, each about 30 cm long, are present. One of these, of dark stone, still shows chipping on the butt, although the sharp blade is well polished. The other, of gray-green stone, is highly polished over its entire surface. Three cylindrical roller pestles, the largest about 45 cm long, are of the usual type. Although the foregoing description of this large collection makes no pretense at being either complete or exhaustive, it has been included as an essential part of our present knowledge of Bay Island archeology.

## SUMMARY AND COMPARISON

## THE BAY ISLANDS

Previous reports on Bay Island archeology are not extensive. For the island of Utila, Rose has presented some interesting observations.<sup>31</sup> He notes that there is considerable broken pottery scattered over the island and that large jars are occasionally dug out. Small earth and rock mounds are found in many parts of the island, and on the south shore these occur within 100 yards of the beach. In 1897 a mound on the north side of the island was opened by treasure hunters, and a large decorated red vessel covered with six red plates was found at a depth of several feet. The vessel contained smaller vessels, chipped points, stone and ivory (shell?) celts, coral beads, and clay figurines. The most striking of the smaller vessels was a "glazed" dark brown "water pot" in the form of a "bear". The projecting head had a rattle, and the tail, which had been broken off, once served as a handle. According to Rose, Stuart lull (which neither Bird nor myself visited) is said to be the point of convergence of several cobbled causeways and appears to be paved on top with coral and black flint rock. One of these boulder causeways extends northeast to "an Indian burial ground at a place called Bamboo", another leads in the opposite direction to Rock Harbor on the northern side, and a third leads to the vicinity of East Harbor. In places these causeways are covered with earth, but at others they are clearly visible and sometimes still in use. Rose carefully mentions two cobbled roads, one at the "Middle Path" and the other at the "Eastern Path", which he had built, so that these will not be confused with the aboriginal constructions. We neither saw nor heard of any native causeways during our hurried visit to the island, nor of the "Indian Well" at East Harbor, which originally had a circular form with funnel-shaped walls of stone.

Roatan, the largest island, has received the fewest notices. Young (1842, p. 48) states that Roatan exhibits even more proofs of Indian occupation than does Bonacca, and Conzemius examined one elaborately carved, three-legged metate, which was said to have been found near Port Royal. It was held for an exorbitant sum as the only metate of this type in good condition found on the Bay Islands. (Conzemius, 1928, p. 67.) In the Museum at Liverpool are three tripod bowls, one of which has applique decoration and a human figure looking over the rim, which are from the island of Roatan

<sup>31</sup> Rose, 1904, chap. 4. This little book is rare; it is not in the Library of Congress, but the library of the Pan American Union has a copy.

“ found on the top of a high hill, among what appeared to the finder, Captain Fraser, the ruins of an altar ”.<sup>31a</sup>

In 1842 Young mentioned the occurrence of abundant traces of a large Indian population on Bonacca. Near Savannah Bight he reports a large savannah containing fruit trees and an aboriginal stone wall a few feet high with fissures or rude niches made for the admission of peculiarly cut three-legged stone chairs, presumably the seats of idols.<sup>32</sup> As previously mentioned, Bird was fortunate enough to find and sketch what seems to be the last of these on the surface at the Plan Grande site (fig. 36). Young also describes chairs elsewhere on Bonacca that had been cut from solid rock. Conzemius briefly describes the Plan Grande site and mentions the occurrence of other erect or leaning slabs on Bonacca. He states that many of the latter have partly obliterated rude carvings, one of these being near Marble Hill. According to the same authority, ornamented granite vases of the type described by Pownall in 1779 occur on the islands. (Conzemius, 1928, pp. 66, 67; Pownall, 1779, p. 320; Spinden, 1925, fig. 1.) Spinden made a brief visit to the islands and mentions shell heaps like those near Trujillo, which contained the same type of pottery. He adds that metates occur on the islands but not in large deposits. Certain of the flamboyant newspaper accounts of Mitchell-Hedges have already been referred to.

Although it is obviously premature to attempt a detailed classification of Bay Island sites and cultures on the basis of the foregoing observations and the reconnaissance work reported in the present paper, this may be done in a very tentative manner to facilitate comparison with adjacent regions. The major archeological types so far reported from the Bay Islands are summed up in table 1.

From this tabulation it appears that the majority of known sites are on hilltops (1, 10, 12, 15, 16, 17, 19, 21), next are caves or rock shelters (3, 9, 11, 19), whereas springs or water holes (4, 5, 18) and large level sites (2, 6, 20) are less frequent. The majority of the hilltop sites seem to have been offertories or shrines of some sort; the large Plan Grande enclosure looks like a religious center, one cave on Helena like a shrine, and the fresh-water spring (18) on Bonacca was full of varied and numerous offerings. Habitation sites are surprisingly rare. Black Rock Basin, the “Eighty Acre” site, cave 1 on Helena, and possibly Plan Grande are the only ones on record.

<sup>31a</sup> Bollaert, 1861, p. 314, pl. 3.

<sup>32</sup> Young, 1842, p. 48. LeBaron, 1912, p. 222, mentions these as “immense stone chairs.”

TABLE I.—*Summary of Bay Island Sites*

Sites	Nature of site	Ceramic types present	Other important remains
1. Stuart Hill (Utila).	Ceremonial.	?	Stone causeways and pavement (?) (Rose).
2. Black Rock Basin.	Urn and skull burials, shell and refuse heaps.	Monochrome (elaborate rare, plain abundant).	3-legged and flat metates, roller pestles, stone and shell celts, mace head (?), green stone pendant, obsidian flake knives.
3. Brandon Hill Cave.	?	Polychrome I (?). Monochrome (both elaborate and plain) (red painted sherds).	Stone bowl, shell celt, obsidian flake knives, mineralized human bone.
4. Byron Cave.	Water hole (?).	Monochrome (plain).	None observed.
5. Big Bight Cave.	Water hole (?).	Monochrome (plain).	None observed.
6. "Eighty Acre" site.	Habitation and burial.	Monochrome (plain).	Low earth mounds, obsidian flake knives (probably many other types of artifact).
7. Sucsac Cay.	Habitation (?).	Monochrome (plain).	None collected.
8. Port Royal (Roatan).	Buccaneer forts, town, and cave.	None seen.	One elaborate metate reported (Conzemius).
9. Jonesville Bight.	Offertory (and burial?).	Polychrome II. Polychrome I. Monochrome (elaborate common, plain rare).	Figurine fragments, small mace head, small jade celt, green stone pendant, stone beads, chipped knife and projectile points, shell artifacts, raccoon tooth necklace, scattered human bones.
10. Dixon site.	Offertory.	Polychrome I. Monochrome (both elaborate and plain).	Figurines, copper bells, copper rings, 3-legged and flat metates, roller pestles, manos, celts, mace heads (one star-headed), green stone pendants, chipped knives and projectile points, chipped T-shaped axes, shell artifacts, many stone beads.
11. Helena Island, caves 1 and 2 (Helena).	Ceremonial (2) and habitation (1) caves.	Polychrome II. Polychrome I. Monochrome (elaborate and plain) (also unclassified polychrome pieces).	Natural stone fetish (2), mace heads, ground T axes, chipped knife blades, chipped T axes, stone beads. (Mitchell-Hedges collection contains marble bowls, green stone pendants, petaloid and plain celts, stemmed chipped points, which may have come from these sites).

TABLE I.—Continued

Sites	Nature of site	Ceramic types present	Other important remains
12. Indian Hill, site 1 (Barburata).	Offertory (and burial?).	Polychrome I. Plumbate ware. Monochrome (elaborate and plain).	Figurines, figurine stools, ocarinas, incensarios, 3-legged and flat metates, roller pestles, manos, stone pot rests, marble bowls, celts, mace heads (one star-headed), green stone pendants, pottery and stone beads, chipped T axes, shell artifacts, carved jaguar teeth, obsidian flake knives, fragments of human bone. (The Mitchell-Hedges collection contains copper bells probably from this site.)
13. Indian Hill, site 2.	Offertory (and burial?).	Monochrome (elaborate rare, plain abundant).	Manos, roller pestle, oval stone bark beater, obsidian flake knife.
14. Morat Island.	?	Polychrome (I or II?). Monochrome.	One cylindrical stone bark beater.
15. Stanley Hill (Bonacca).	Ceremonial.	Monochrome (elaborate).	None observed.
16. Kelly Hill.	Ceremonial (?).	Polychrome I. Monochrome (elaborate and plain).	Jade ear spool, green stone pendant, stone beads, bird bones.
17. Pine Ridge.	?	Monochrome (plain).	Roller pestles, cylindrical bark beater, marble bowl, steatite bead.
18. Sacrificial Spring.	Offertory (probably a water hole as well).	Polychrome II (?). Polychrome I. (Mitchell-Hedges collection). Monochrome (elaborate and plain).	Figurines, steatite carving of ape on human pedestal, jadeite and green stone carvings and beads, stone bowls, mace heads (foregoing mentioned in Mitchell-Hedges account, probably much other material not listed).
19. Marble Hill Fort.	Fortification, habitation, burial caves (?).	Polychrome II. Polychrome I. Monochrome (elaborate and plain).	Steatite vessel, granite bowl, jade celt, marble ball, stone beads, oval bark beaters, shell artifacts, human teeth (in caves).
20. Plan Grande site.	Ceremonial (habitation and urn burial?).	Polychrome II. Polychrome I. Monochrome (elaborate and plain).	Earth mounds, boulder walls, erect slabs, small stone "chair," metates with legs, roller pestles, stone celts, marble bowl.
21. Michael Rock.	?	Monochrome (elaborate and plain).	None observed.

At Plan Grande erect stones like foundation walls suggest rather pretentious buildings, but elsewhere we have no evidence as to houses. The earth and stone mounds at this place suggest ceremonial structures, whereas the low earth mounds at the "Eighty Acre" site are refuse heaps containing scattered burials. Similar mounds are reported from Utila and Bonacca but were not encountered by Bird or by our party. Caves such as that on Brandon Hill and number 1 on Helena indicate only transitory occupation, but the rock shelter at Jonesville Bight was evidently an offertory. This seeming paucity of habitation sites on the Bay Islands is striking. Whether this is a definite indication that the Bay Islands should be regarded as fundamentally a religious center, like Cozumel or the Island of Sacrificios, can only be demonstrated by more thorough investigation accompanied by adequate spade work.

Nor is the exact nature of the hilltop shrines or offertories altogether clear. The only undisturbed place of this sort encountered—the Dixon site—contained indubitable, carefully guarded offerings, but showed no trace of human burial, cremation, or deposition of partly cremated remains in jars. The other hilltop sites of like nature containing similar material, such as the Jonesville Bight, Indian Hill, and Marble Hill offertories, all contained scattered, fragmentary human remains, but all these had been too badly disturbed to determine their original nature. The best explanation seems to be that these sites were fundamentally shrines where devotees deposited offerings, ranging from the elaborate votive cache at the Dixon site, to ordinary utensils, model vessels, and handfuls of potsherds. In addition, to judge from the urulike vessels at certain of these sites, in conjunction with small fragments of human bone, these offertories also served as the final resting place for disarticulated or partially cremated remains of certain priests or nobles. Whether these remains were placed in urns or special vessels must be determined by future discoveries. At present definite evidence suggesting cremation on the Bay Islands is confined to the few slightly charred human bones which Bird found in burial urn 2 at Black Rock Basin on Utila. Thanks to Bird's painstaking excavations on that island, the nature of certain urn and separate skull burials is clear. In the light of adjacent regions one would be inclined to suspect that these burials in old middens served for commoners, whereas priests and persons of distinction may have been disarticulated or cremated and certain portions of their remains placed in the offertories. The possibility of class distinctions in regard to the different ceramic and artifact types

at the different offertories will be mentioned later. All these matters, however, require more extensive and careful work before they can be fully answered.

The occurrence and association of the known Bay Island ceramic types are indicated in table 2. Plain monochrome ware is present at all the sites and occurs by itself at five sites (table 2). The latter sites, with the possible exception of Pine Ridge, are either places of habitation or water holes. Elaborate monochrome is the next most abundant and occurs at 13 sites, nearly all of which seem to be ceremonial. These two wares blend imperceptibly into one another and are certainly related. At Black Rock Basin, and again at Indian Hill site 1, there were stratigraphic indications that the plain type predominated in the earlier periods. The more elaborate monochrome ware seems to have come into vogue later and is most often associated with Polychrome I. Polychrome I occurs definitely at eight sites, all of which

TABLE 2.—*Association of Bay Island Ceramic Types*

Site:	2 <sup>a</sup>	3	4	5	6	7	9	10	11	12	13	15	16	17	18	19	20	21	Totals
Plain Monochrome. . . . .	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	18
Elaborate Monochrome	×	×	..	..	..	..	×	×	×	×	×	×	×	×	×	×	×	×	13
Polychrome I. . . . .	..	×	(?)	..	..	..	×	×	×	×	..	..	×	..	×	×	×	..	9
Polychrome II. . . . .	..	..	..	..	..	..	×	..	×	(?)	..	×	(?)	..	×	×	×	(?)	6
Plumbate. . . . .	..	..	..	..	..	..	..	..	..	×	×	..	..	..	..	..	..	..	1

<sup>a</sup> Site numbers given in table 1.

<sup>b</sup> Rare.

are ceremonial. At Indian Hill site 1, it occurred in the upper portions of the ceramic deposit in association with elaborate monochrome. These two wares are also definitely related in form and decoration. Definite Polychrome II was found in small quantities at just three sites. All of these were ceremonial in nature. Stylistically, Polychrome II suggests a degeneration or simplification in style from Polychrome I, to which ware it seems definitely related. As to sequence, there is therefore some stratigraphic evidence that plain monochrome precedes elaborate monochrome ware and Polychrome I. The elaborate monochrome is evidently contemporaneous with Polychrome I. On stylistic grounds Polychrome II appears to be later than Polychrome I, but there are no stratigraphic clues as to its age. Finally, the Mitchell-Hedges collection with its considerable number of aberrant ceramic pieces indicates that the above is at best only a partial picture of the development of pottery styles in the Bay Islands.

The above evidence in part answers the question as to whether ceramic differences in offertories indicate differential age or social



status. Site 2 on Indian Hill contained large amounts of plain monochrome pottery, only a smattering of elaborate monochrome, and no polychrome pieces. It also lacked copper, green stone pendants, or beads and generally suggested a simple culture. Since plain monochrome is early at site 1, Indian Hill, and at Black Rock Basin, I incline to regard site 2, Indian Hill, as an early offertory. From the uniformity with which Polychrome I and II pieces occur on ceremonial sites and are absent from habitation places, it seems probable that these painted wares were made or acquired for ceremonial or similar special functions. The fact that they are entirely lacking in a definite offertory at least suggests that they were not in vogue when the votive deposit was built up. Similarly, green stone and copper artifacts nearly all come from ceremonial sites or offertories, and in the great majority of cases these are associated with the most elaborate monochrome and the polychrome wares. The presumption is strong that this is a relatively late complex. At the Dixon site, where very simple monochrome pottery greatly predominated, the central votive cache consisting of a Polychrome I vase full of copper bells and ornate green stone ornaments was probably a later addition to an older offertory. It is difficult to explain on other grounds the discrepancies in artifact types occurring here.

As a whole, the present evidence suggests that with all its apparent diversity, Bay Island culture can be regarded as a more or less homogenous unit. Ceremonial and habitation sites share the same artifact types, although certain classes predominate in each kind of site. Thus, plain monochrome ware, so abundant in habitation sites, occurs also at all offertories or shrines. Similarly Polychrome II, Polychrome I, and elaborate monochrome have all been demonstrated as definitely linked, and the two monochrome wares are closely related. This indicates that the majority of Bay Island shrines were for the most part used by Bay Island peoples over a considerable period of time, rather than by visitors or pilgrims from elsewhere. The observable ceramic development alone postulates an occupation of considerable duration. When one comes to analyze the components of this local culture, however, it is clear that they have been drawn in from a number of sources, some of which must have been rather distant. This is equally true of the widespread and relatively simple culture manifested in the habitation sites and older shrines, and in the apparently later polychrome pottery, copper, and green stone artifact complex at other shrines. To approach this problem we must look farther afield.

At the present time it is difficult to institute adequate comparisons between the archeology of the Bay Islands and that of closely adjacent

regions. This is due in part to the fact that the Bay Islands are incompletely known, but even more because they lie on the northern border of an extremely important but little-worked archeological field, including all of northeastern Honduras and northeastern Nicaragua. From Copan in the north to the lakes of Nicaragua in the south is an air-line distance of nearly 400 miles across a territory apparently rich in cultural remains. None of these sites has been scientifically excavated, and many have not even been located on the map. Yet so prolific are the cultures of this area that a type-by-type comparison of Bay Island artifacts with those on record through purchase or cursory excavation from this larger region would fill a considerable volume. All that can be attempted here is to indicate in some manner the possible relationship of certain Bay Island cultural types to those of the areas designated. For present purposes the latter may be somewhat arbitrarily classified as (a) northern Honduras east of Ceiba, (b) the Uloa River region, (c) Copan and other Maya sites, (d) the interior of Honduras, (e) western Nicaragua and northern Costa Rica, and (f) eastern Nicaragua.

#### NORTHERN HONDURAS EAST OF CEIBA

The coastal region of Spanish Honduras has been only superficially investigated and, with one exception, no scientific excavations have been made.<sup>33</sup> There are numerous large sites consisting of earthen mounds, either isolated or formally laid out around rectangular courts. Rubble walls and crude stone work occur at some of these. Spinden also reports numerous circular or oval villages with palisades and moats. At Bonito Farm, south of Trujillo, he examined an oval boulder fortification containing a rectangular mound ascended by rough slab steps. Pottery, chipped knives, and green stone celts were found here. Shell heaps occur near the coast, and these contain both extended and flexed burials. He does not mention urn burials, but there is a strong probability that they occur, since great urnlike vessels and human bones are frequently washed out along the banks of the larger rivers. Certain of these, such as the Aguan and Paulaya, have great masses of pottery and other cultural detritus in their banks. Votive caches appear to be rather numerous, especially along small streams, but unlike those on the Bay Islands they seem to contain

<sup>33</sup> See Pownall, 1779; Rogers, 1782; Spinden, 1925; Popenoe, 1931; Conzemius, 1932, pp. 42-46; and Strong, 1934 a, b. Bird excavated several shell heaps near Trujillo for the American Museum of Natural History, but the results are as yet unpublished.

elaborately carved stone bowls, elaborate metates, great carved stone "tables", but little or no pottery. The bulk of the ceramics from coastal sites and in local collections are of the monochrome, brown to red type with grotesque plastic ornaments. I have not seen any of the elaborately incised type so strongly suggesting Uloa River marble bowls, however. Painted pottery is less abundant but does occur. Spinden found pottery with red and yellow sizing near Olanchita, and crude figurines near Maloa. In shell heaps near Trujillo Bird got considerable pottery similar in form and color to Bay Island Polychrome II. This mainland ware, however, is considerably richer in color, especially dark reds, and long tripod feet modeled like alligator heads seem to be fairly common. At Esperanza on the Bonito River I found a few sherds of Bay Island Polychrome I.

A little carved jadeite and great numbers of green talc artifacts occur in this coastal region. Near Puerto Castilla local diggers have obtained great numbers of large and small anthropomorphic celts (pl. 12, *e*) and beads, especially very massive and long cylindrical types made of green talc. Many other Bay Island artifact types occur; elaborately carved stone bowls and metates are common, but copper artifacts, mace heads, bark beaters, pot stands, and figurines seem rare. Giant stone metates or tables and enormous carved roller pestles occur at sites just back from the coast. Small grotesque pottery masks, of the type figured by Rogers many years ago, and small boot-shaped pots occur in mounds on the Black River. The Museum of the American Indian has several chipped T-shaped axes, with a perforation through the blade, from the Paulaya River. When discovered by the Spaniards, this general region seems to have had a population of Jicaque and Paya peoples interspersed with some Nahuatl groups.

#### THE ULOA RIVER REGION

For present purposes this area includes the lower valleys of the Uloa and Chemilicon Rivers and the district around San Pedro Sula. Some reconnaissance work and a little excavation has been accomplished here.<sup>34</sup> Cut stone architecture or elaborate stone structures have not been reported. Formally arranged mound groups seem to be

<sup>34</sup> Gordon, 1898 a; Blackeston, 1910 a, b; Steinmayer, 1932. Vaillant, 1927, pp. 266-271, has reclassified the pottery obtained by Gordon. An important paper by Dorothy H. Popenoe, "Some Excavations at Playa de los Muertos, Uloa River", is in process of publication by the Peabody Museum, Harvard University. I have not seen this paper but have read the brief and highly suggestive "archeological setting" provided for it by Vaillant.

rather common. These are usually of earth, often with a burned red clay core and sometimes capped or surrounded by rough stones. Rough stone causeways and encircling walls occur. One mound contained a stone vault with several jars full of offerings, including jade plaques, beads, and clay figurines. Broken pottery occurs in most of the mounds. Stone carving on a large scale does not seem common, but Gordon figures a crude anthropomorphic statue of Chorotegan type from near the Uloa.

On both rivers occur "Playas de los Muertos" (beaches of the dead), which are particularly extensive on the Uloa between Santiago and Santa Anna. In the river banks near such places Gordon and Blackeston found mixed human bones and artifacts to depths of over 20 feet. Blackeston obtained two dolichocephalic skulls from here.<sup>35</sup> Steinmayer notes that the graves of nobles are stone-walled and distinct from those of commoners. He also describes the finding of one of the elaborately carved Uloa marble bowls in this vicinity. According to Spinden (1925, p. 540) two of these marble vases were found near Santa Anna in a grave containing a typical Costa Rican amulet of the type imported into Chichen Itza during the twelfth century. This tends to date the marble bowls as a late type.

Mrs. Popenoe opened a number of undisturbed graves at one of these playas and was able to clearly separate the monochrome from the polychrome pottery wares. These have hitherto always occurred mixed, owing to redeposition by the river and other causes. Gordon obtained no definite stratification but noted that the deeper deposits were the richer. Urn burials probably occur, but I know of no definite record. When Mrs. Popenoe's data are available, both ceramic and burial types will be better known.

At present little that is definite can be said regarding Uloa monochrome wares save that many Bay Island monochrome types are present. These include tripod vessels, cylindrical handled incensarios, whistles, and flat and cylindrical pottery stamps. The Uloa whistles and stamps are both more abundant and elaborate than the few on record for the Bay Islands. The Uloa figurines and pottery heads, which are both modeled and molded, are better made than those of the Bay Islands, where figurines made in molds seem to be uncommon. The grotesque applique types of the Bay Islands are not on record for the Uloa district. Pottery labrets from this area are very similar to

<sup>35</sup> From near Santa Anna came a deformed male skull with filed and inlaid teeth of Maya type and with a jade bead in its mouth; Blom, Grosjean, and Cummins, 1933.

those of shell from the Dixon site. Tetrapod or shoe-shaped vessels, vessels with neatly engraved panels of Mayoid cast, and the spouted chocolate pot, forms which occur in the Uloa, are not on record for the Bay Islands.

The polychrome wares from the Uloa are abundant and complex. In the Vaillant classification, Uloa Polychrome I and II suggest degenerate early Maya types. One vessel from Helena, collected by Mitchell-Hedges, which has a white slip, crude red processional figures, and a panel of skeuomorphic glyphs, and also some sherds from there (pl. 18, fig. 1, *c, c*) in our collection, suggest these styles. Uloa Polychrome III and IV, however, find numerous analogies in Bay Island Polychrome I. All three wares seem to have the same basic colors, and all have design areas around the neck set off by black lines, conventionalized plumed serpent, or elaborate step or other similar painted designs. Bay Island Polychrome I and Uloa Polychrome III and IV ceramics appear to be thin, without swollen lips, and all three make use of similar animal head lugs. Owing to the rarity of complete vessels, total forms cannot be compared. Although there seems to be considerable resemblance here, the Uloa Polychrome III and IV wares appear to be richer in color and more crowded in design than the Bay Island Polychrome I.

According to Vaillant, Uloa Polychrome V develops out of IV by a simplification of patterns and a thickening of lines. Globular olla shapes occur that have low necks and handles with knobs on them. Although sometimes richer in color, the designs are more isolated and geometric, consisting of frets, dots, circles, wavy vertical lines, etc. This ware, Uloa Polychrome V, very definitely suggests Bay Island Polychrome II. Plumbate ware in the Gordon collection consists of two Type III effigy vessels, one of which has a Chorotegan body. This ceramic type seems to fall between Polychrome II and III in the Uloa series.

Of the ceramics of the region, Vaillant summarizes as follows (1927, p. 271):

There are in western Honduras, isolated fragments that suggest an occupation of the country by people with a culture affiliated to that generalized stage of human development in Middle America known as the "Neo-Archaic". Scattered through the Uloa valley are the remains of people who made a diverse and variegated pottery. The polychrome phases of this development represent degenerations of late Old Empire Maya pottery (Uloa Polychrome I) and a varied and complicated series of forms and decorations like those in the early (?) Pipil horizon in Salvador (Uloa Polychrome II-IV). Another style is like that made by the late (?) Pipil and the Lenca-Matagalpa in Salvador (Uloa Poly. V). A mass of undecorated [unpainted?] pottery exhibits, in the main, features more

Chorotegan and Neo-Archaic than Maya, although unpainted Maya wares are very imperfectly known. The trend of the pottery suggests the years after the fall of Copan, although what the successive stages are is conjectural.

By correlating the Uloa polychrome series with the dated ceramic series from Copan, Vaillant tentatively places Uloa Polychrome III and IV subsequent to the sixth century and Uloa Polychrome V about the close of the twelfth century. Plumbate III in the Uloa is placed immediately prior to Polychrome III.

In the present state of knowledge these datings cannot be regarded as final, but they are extremely suggestive as regards the Bay Islands. If the stylistic relationship here suggested between Uloa Polychrome III and IV and Bay Island Polychrome I on the one hand, and Uloa Polychrome V and Bay Island Polychrome II on the other, proves to be correct, then Bay Island Polychrome I may be approximately dated. Since the impetus of both these polychrome styles seems to have come from the west, their vogue in the Bay Islands would probably be of later date than the vogue of their ceramic prototypes in the Uloa Valley. This suggested time sequence fits in very well with the circumstances under which they occur on the Bay Islands, and the association there of Plumbate ware and Polychrome I offers further confirmation.

Work in metal seems to be rather rare in the Uloa valley. Gordon found none, but Blackeston (1910 b) reports on a great cache of elaborate copper bells from a cave. Many of these closely resemble Bay Island types. Steinmayer gives an analysis of a copper celt. The finest objects of carved stone are the exquisite marble bowls, but stone faces and other carvings occur. Numerous jade, jadeite, and talc heads and plaques occur, some of which are practically identical with the small elaborate heads from the Bay Islands. Oval and square bark beaters, obsidian flake knives, and perforated conch shells have been reported. The Uloa valley was thickly populated, presumably with scattered Jicaque, Lenca, and Maya groups, when the Spaniards first visited it in 1533, and with adequate excavation should yield a long and important record of human occupation.

#### COPAN AND OTHER MAYA SITES

It is a far cry from the rudimentary temple enclosures, rough stone foundations, crudely marked monolithic monuments, and earth mounds of the Bay Islands to the enormous mounds, stone temples, sophisticated and luxurious stone carvings, and dated stelae of Copan. It is significant, however, that in the rubble foundations of certain early

structures of Copan and in the adjacent forest occur rudely carved stone figures of Chorotegan style similar in type to those from Costa Rica, Nicaragua, and the highlands of Guatemala.<sup>38</sup> The structural comparison here made holds for all the great Mayan cities, whereas the smaller sites, especially those of British Honduras and northern Spanish Honduras, in their comparative simplicity somewhat lessen the gap. Natural shrines, similar to those in the Bay Islands, are apparently rather widespread throughout the Maya territories, especially in the later periods. Gann describes one of these just south of Chetumal Bay where Caucasian artifacts, late Maya pottery, jade, copper bells, and stone knives occurred. "The little island was not a burial-place, for not a human bone was found upon it, but rather one of those 'sacred places' found throughout the Maya-Toltec area, where it would appear that offerings were made to the gods, by being simply laid on the surface of the ground within a space covered by large stones. Most of these offerings, but not all . . . were 'killed' before being offered, by being broken into fragments." The custom of making offerings at certain traditionally or scenically significant places is not confined to Middle America, but the above correspondence to Bay Island shrines is particularly close. The fact that far more ceremonial sites than habitation sites are known in the Maya area, as is true in the Bay Islands, may be more of a commentary on archeologists than on native customs.

At Copan, burials occurred in at least one mound and in numerous stone-lined vaults or tombs. Maudslay found many redware dishes and pots containing human bones and lime in one sepulchral vault. The vaults, which were in the main structures, under courts, or in small mounds, contained the richest offerings. In mound 36, both individual and mixed burials with simple gifts were encountered. Vaillant notes that this mound contained so many excellent potsherds that ceremonial breakage is suggested. In caverns about 4 miles from Copan masses of partially cremated human bones were found, and calcined human infant and animal bones occurred in jars. The pottery

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<sup>38</sup> Owing to the depth and complexity of this field the present comparison can obviously have only suggestive value. The sources for specific statements made herein follow in the order cited: Morley, 1920, pp. 421-422; Lothrop, 1921, p. 316, 1926, p. XXVI, 1927 a, pp. 204, 197; Gann, 1927, p. 54, 1918, pp. 127, 75, 86, 61, 120-122, 1914-1916, p. 37; Maudslay, 1889-1902, vol. I Text, p. 31; Gordon, 1896, pp. 26-32, 1898 b; Vaillant, 1927, pp. 228, 227-262; Ricketson, 1925, pp. 391-392; J. E. Thompson, 1931, pp. 326, 332; Mason, 1928; E. H. Thompson, 1897 a, pl. 13, fig. 2, 1897 b, pl. 7, fig. 1 and pl. 8, fig. 2; Merwin and Vaillant, 1932, pp. 62-83.

associated with these cremations is a rather high-grade but plain ware in which bottle-necked forms are common. It is sparingly decorated with fluting or incision. This ceramic type does not occur in the main ruins and is presumably older.

Elsewhere in the Maya area cist or tomb burials and inhumations in mounds occur. Certain individuals were partially cremated and their ashes deposited in urns or vases. In northern British Honduras, Gann encountered three types of Maya burials, the poorest consisting of 40 to 50 flexed individuals in large flat mounds; single individuals with better gifts in high mounds; and third, "priests or caciques" in stone chambers containing painted vases, green stone ornaments, etc., in large high mounds. He found one example of half-burned human fragments in a large pottery urn. Eric Thompson found suggestions of what may have been urn burials in association with Pre-Holmul I pottery in the southern Cayo district, and Gann found a skull in what appears to be a Holmul I vessel in northern British Honduras. Gann also found 40 human skulls disposed in rows under a stone chamber in a mound in northern British Honduras. This suggests the orderly skull burials in Utila but appears to be rather unique in the Maya field. In general, skull burials seem rather rare, but urn burial in one form or another may have been a rather early ingredient of Maya culture.

On the basis of association with stela caches, tombs, or other dated structures (and where these are lacking, on purely stylistic grounds), Vaillant has classified the ceramic collection from Copan into three major divisions (Copan I-III). Aside from the complete vessels, the sherd collection in the Peabody Museum was probably selected to obtain the finest pieces; hence various monochrome types may well be lacking. As the plain types from Copan would presumably show more resemblances to Bay Island ceramics than do the incomparably better polychrome wares, the collections are hardly comparable. Moreover, the matter is extremely complex, and to suggest correlations, should any exist, on the basis of descriptions and photographs would be more than hazardous. This stricture applies equally well to the correlation earlier suggested between certain Uloa polychrome and Bay Island polychrome wares, but there the geographic and cultural gap is not so extreme, and the attempt may be more justified. It may be noted that according to Vaillant's tentative scheme the earliest Uloa wares (Polychrome III-IV), which seem to resemble Bay Island Polychrome I, are apparently later than Copan III.

According to Vaillant, the occurrence of a single incised sherd and the crude sculptures previously referred to suggest that the earliest



occupants of Copan derived the basis of their culture from some section of that shadowy, widespread civilization which embraced the various components at present designated as the Q complex. From the same evidence Lothrop is more specific in postulating that the antecedent culture at Copan was Chorotegan. It is of interest that tomb 10, containing vessels of Copan II type, also contained vessels and effigy jars of Nicoya Polychrome and Plumbate ware. An incense burner with a cylindrical handle was found in tomb 6. Copan III pottery includes Chorotegan pear-shaped forms (which also occur on the Bay Islands) and vertical braid panels around the neck (common in Uloa polychrome wares), and is without glyph bands. Maudslay (vol. I, pp. 22) figures two elaborate pot stands of coarse red pottery from Copan. The last periods at Copan, according to Vaillant, suggest that Chorotegan peoples may have lived in the buildings and occupied the tombs. According to Spinden (1915) and Lothrop (1927 a), Maya art of the "Old Empire" type survived a long time in eastern Salvador, finally fusing with the later Pipil cultures. It is this stylistic survival and fusion, subsequent to the "fall of Copan", which seems to have passed from Salvador into the contemporary Uloa valley polychrome types.

To attempt a comparison between Bay Island ceramics and those from all other Maya sites is a task far beyond my capacity. The study of Maya ceramic growth, although still in its infancy, already indicates that there were several basic ceramic divisions within this one field. Moreover, the pottery available from most of the major sites is mortuary in type and hardly gives a representative sample of the average range. A few scattered notes, however, may be of value. In the Pre-Holmul I, and, to a less extent, in Holmul I pottery obtained by Eric Thompson in the southern Cayo district of British Honduras are certain resemblances in form, surface treatment, rim shape, incised and raised decoration, and handles, to the plain monochrome ware of the Bay Islands. The same can be said of the cruder vessels from caves in this region collected by Mason. These include large, crudely incised ollas, bowls with annular feet, and knobs employed for decoration. From northern British Honduras Gann obtained figurines seated on stools, crude figures attached to incense burners shaped like egg cups, pottery stamps, and a modeled pottery head with a socket, which in purpose vaguely suggests a handled head (fig. 13) from Roatan. The effigy human foot and leg vessels that he obtained in the same region have southern affiliations, though the type has not yet been reported from the Bay Islands.

In Yucatan E. H. Thompson collected small, monochrome, model pots from the chultuncs of Labna that suggest Bay Island forms; and from the cave of Loltun he figures incised fragments, rims, legs, and handles similar to Bay Island monochrome sherds, both plain and elaborate. The pottery of Holmul I type collected by Merwin is mortuary in nature and perhaps too fine to be representative of the ware generally. According to Vaillant, Holmul I pottery includes bowls with round tetrapod supports, bowls with concave bottoms, pot stands, spouted pot forms, and annular bases, and there is sparing use of complicated design forms. The pot stand, he points out, is rare or lacking in the valley of Mexico but is common in Costa Rica and is apparently linked with the annular base. The pot stand of stone and various forms of the annular base occur in the Bay Islands. In the elaborate monochrome vases with designs like Uloa marble bowls the annular base and concave bottom are combined. Some similarities in form also exist between Bay Island monochrome tripod vessels and Holmul tetrapods and tripods. In painted design there are some resemblances between Holmul I and Bay Island Polychrome I in regard to degree of isolation of patterns, conventionalization, and combination of rectilinear and curvilinear motifs, but the forms of these two wares are widely different. The tetrapod foot and the spouted chocolate pot type, characteristic of Holmul I, are apparently absent from Bay Island sites. Thus, although there appear to be no correlations between early Holmul and any Bay Island ceramic types as a whole, there are certain traits which they share in common.

Vaillant states that Holmul I pottery generally does not resemble subfloor ceramics from Uaxactun. Holmul I and Huastec ceramics share the pot stand and annular base but are otherwise very different. The Holmul pottery tradition, he concludes, was apparently originally derived from the southeast and appears to be most closely connected with early forms from Salvador. Although qualitatively Holmul I might be considered on the "archaic" horizon, ethnologically it has no connection with the early cultures of the Valley of Mexico. The forms fit into a complex of shapes that are widely distributed through Central and South America but are not so characteristic of the Valley of Mexico.

From the foregoing sketch it is obvious that any adequate ceramic comparison must include a résumé of the pottery of Salvador, of the highlands of Guatemala, and of the Valley of Mexico, in addition to that from other Maya sites, but this is far beyond our present scope. All that can be suggested here is that certain of the Maya ceramic

divisions, in their earlier and in their simpler manifestations, share certain traits which apparently persisted later in the Bay Islands.

The nonceramic culture of the Maya, aside from temples, sculptures, and stelae, has been little stressed. Just as ceramics were for so long overshadowed by stelae, so now the simpler artifacts are in danger of being overshadowed by ceramics. Any deep understanding of Maya culture must result from a correlation of all these factors. A brief sketch of small, nonceramic artifacts from the same sites that were mentioned in regard to pottery may give a sample for comparative purposes. At Copan Morley deals almost entirely with dating, Vailant almost entirely with ceramics. Gordon concentrates mainly on buildings and excavation, but mentions the occurrence of obsidian spear points, disks of obsidian, a beautiful stone chisel, small stone axes, obsidian knives, arrow points, jadeite disk beads, and jade inlays in human teeth. In tomb 2 occurred cut shell ornaments, pottery whistles, bone needles, and two beautifully carved peccary skulls, and in tomb 3 a horse's tooth (perhaps carried in by rodents) and jadeite ornaments. Under stelae 3 (Middle Period, date 9.11.0.0.0) occurred four small jadeite ornaments, very well cut and polished, each piece with a longitudinal hole for suspension. At least one of these, now in the Peabody Museum at Harvard, rather closely resembles certain of the turbaned figures (pl. 11, *d, e, f*) from Bay Island offertories. Tomb 11 at Copan contained several elongated oval knives of chipped white flint, of similar shape but even finer workmanship than the best from the Bay Islands (pl. 16, fig. 2, *a, b*). The metates from Copan in the Peabody Museum are of a plain rectangular type, often of lava, and the mullers are either of the roller pestle or the flat rectangular type. Maudslay collected a small green stone "death's head" with a hollow perforated back, and, in a cylindrical votive jar, found numerous shell figurines similar to those of stone that Eric Thompson obtained with Holmul V pottery in the Cayo district. Maudslay also figures (vol. 1, pls. 21, 22) jade and diopside beads, elaborate stone faces, jade buttons (pl. 12, *d, g*), and a green jade ear spool (like pl. 17, *h* in material and shape). This list is not complete as regards published material from Copan, let alone collections not yet reported on, but gives a sample for comparative purposes.

From southern British Honduras, in small Maya sites of different periods, Eric Thompson reports many votive caches consisting of vases containing offerings placed under altars and in temple mounds. Two simple but excellent small jade heads came from such caches (Thompson, 1931, pl. 32, 1-4); one of these is very lifelike and has a hollow back with holes for suspending other ornaments (like pl.

11, *n*), the other is similar but has a distorted mouth suggesting the bird bill extension which Lothrop has shown to be characteristic of certain Chorotegan statues. The most common type of jade figurine, however, seems to be a small, full-length figure with folded arms. These are rather crude in execution. Jade beads, ear spools (similar in type to pl. 17, *h*), and "buttons" (similar to pl. 12, *d, g*) were found. Elaborate shell carvings, disks, and beads are common. An interesting find was a mirror of iron pyrites. A small celt with an asymmetrically curved blade, and a long granite celt with inscriptions carved on the blade are figured, as is also an ovoid chipped knife of honey-colored flint with two notches at one end. From Maya burial mounds and similar sites that were opened by Gann in northern British Honduras come a number of artifact types. One pair of copper tweezers (copper bells are mentioned elsewhere, 1927, at a late site in the same region), a disk of iron pyrites, small jadeite masks with hollow backs (one of these, of limestone, has the "bird bill" type of mouth), green stone beads, and ear spools (like pl. 17, *h*) occur. A green stone chisel and a celt of the same material with inscriptions; round metates with three legs; long rectangular metates with and without animal heads; and long rectangular mullers and hammerstones are listed. A beautiful soapstone lamp, believed to be post-Caucasian, is unique. Chipped artifacts include slender oval knives, long stemmed spear heads, flint arrow points with stems, a chipped flint celt, obsidian flake knives, scrapers, and large numbers of flint eccentrics. Circular shell disks and shell beads also occur. Inlaid teeth are common.

In the chultunes of Labna, in Yucatan, E. H. Thompson obtained an object of iron pyrites, a stone collar, crude stone heads, four-legged metates, roller pestles, ovoid and grooved bark beaters, stone balls, jadeite and other stone beads (some of the latter painted green), knives of obsidian and flint (some similar to pl. 16, fig. 2), both side and end scrapers of flint, an engraved bone ring, an engraved shell disk, a lip plug of shell (type?), and other shell ornaments. From the caves of Loltun, in the heart of the northern Maya area, the same excavator obtained a considerable amount of material. The following artifact types are mentioned or illustrated: simple carved pendants of stone, clay and shell; jade, stone, iron pyrites, and shell beads; elaborately carved disks and "buttons" of shell; cut and perforated shell "danglers" (pl. 15, *c*); roller pestles; hammerstones; round stones; a broken celt; a small perforated stone; bone awls and needles; broken chipped "spear" points; ovoid chipped knife blades; obsidian

flake knives; round and rectangular side scrapers of flint; small, stemmed arrow points; clay pellets (from hollow feet); and filed human teeth.

Merwin and Vaillant make the following report regarding smaller artifact types from various periods at Holmul. Metal artifacts, aside from iron pyrites, are unknown here, as is the case at all early Maya sites. Ground stone includes jade ear spools (similar in type to pl. 17, *h*), jade beads, iron pyrite beads, limestone spindle whorls, cupped stones, and rubbing stones. Mullers and metates are not mentioned. Shell work is very abundant; cut conches, shell rings, shell beads, elaborately inscribed shell disks, perforated and halved shells, shells containing pigment, and partially worked and unworked shells are listed. Chipped flint implements include chisels, picks, a rough flint celt, "spearheads", and obsidian flake knives. Bone artifacts include bone beads, perforated animal jaws, a small inscribed skull, numerous sting ray barbs, finger rings, carved jaguar and alligator canines, perforated teeth, human teeth filled with pyrites, a bird bill perforator, and worked deer bones. In addition, green paint, red ocher, mica fragments, pieces of sulphur, and a piece of slate painted red are reported.

In the foregoing lists no attempt has been made to point out temporal or local group distinctions. The material is presented solely as a more or less random sample of presumably Mayan cultures which may be compared with Bay Island collections.

Finally, a word as to the probable sequence of cultures at Copan. Dated monuments prove that the major ruins were occupied by the Maya for a period of 276 years, then the dated monuments cease. It has often been assumed that this cessation marks the fall of Copan, and that the Maya abandoned the site at that time, but there is no proof of this. Rather, the fact that the region was occupied by numerous groups of Maya speaking the Chorti dialect, when it was discovered by the Spanish in 1530, suggests that though for some reason the cultural impetus lagged, the Maya population lingered on in the region. Possibly owing to pressure from Nahuatl tribes from the highlands, who seemed to have reached Salvador and points south by the tenth century, the Maya of the Copan region may have been reduced to scattered groups living amidst the Lencan and other bordering tribes. As to the earliest culture at Copan, Lothrop and Vaillant have already been cited to the effect that it appears to have been either Chorotegan or a similar but as yet undefined civilization, distinct from the Maya.

## THE INTERIOR OF HONDURAS

Our knowledge of this great area is extremely spotty and incomplete. No large scientific excavations have been attempted, and only a small portion of the country has been examined for sites.<sup>37</sup> In the vicinity of Copan are many smaller Mayan sites, as well as others like La Florida on the upper Chemilicon, which may be Chorotegan (Squier, 1869; Lothrop, 1926, p. 90). Farther to the east in the Department of Comayagua are a number of ruins consisting of large, terraced pyramidal structures, often stone-faced; conical mounds of earth; and walls of rough stone. Some stone carvings and well-made painted pottery have been reported from these sites (Squier, 1858). The best known site in this region is the hilltop fortress and religious center of Tenampua (Squier, 1858 and 1869; Popenoe, 1928). This site is strongly fortified by stone walls, and the surface of the mountain is covered with numerous terraces and rough mounds. The latter fall into three main groups, which are formalized in arrangement. The mounds are of earth paved with stones, or of rough rocks paved with slabs. Crude stone stairways ascend the terraces and certain mounds. Certain of the rocks are inscribed with simple geometric patterns of a local type. Elaborately painted tripod bowls, incised vessels, an elaborately carved stone metate of the openwork Nicaraguan type, obsidian lance points, and round stone balls are reported from the site. Plain metates, with and without legs, and oval mullers in a broken condition are numerous. Squier (1869) figures a remarkable painted vessel from here, with handles and legs suggesting twisted cords. It contained chalcedony beads and a pottery whistle. Mrs. Popenoe figures another tripod vessel with somewhat similar designs in dull red and coffee colors on a cream slip. Squier noted much broken pottery and numerous burned human and animal bones at the site. Tenampua is in the heart of the Lenca country and may have been one of the Indian strongholds reduced by Montejo. The remains are very probably Lencan. Mrs. Popenoe found little to suggest Mayan and a great deal to suggest Nicaraguan and Costa Rican influences.

Proceeding farther to the east into the Department of Olancho, one encounters other ruins, though none appear to be so impressive as Tenampua. On the Olancho and Guyape Rivers, in the general vicinity of Juticalpa, are several sites that were examined by the Smithsonian Expedition in 1933. These include one at a place called Dos Quebra-

<sup>37</sup> Sources cited are: Squier, 1858, pp. 133-139, and 1869; Spinden, 1925; Popenoe, 1928; and Strong, 1933 a.

das, where there are an enormous number of earth and stone mounds covering a very large area. Most of these mounds are small, suggesting house mounds, but some are large, ranging from 30 to 40 feet high. One mound is covered with big granite slabs, many of which formerly stood erect. The largest, about 12 feet high, had recently been knocked down by lightning. Broken pottery is abundant at the site. Most striking are large vessels of composite silhouette, which have long tripod feet. The feet are hollow, containing rattles and are often modeled to represent alligator or reptile heads. Large bowls with restricted orifices have vertical strap handles with small conventionalized manatee lugs at the bend. These vessels have a dull yellow or orange slip and red and black designs. The latter are either geometric or else elaborate and symbolic, suggesting degenerate Maya types. Fragments of obsidian flake knives, a pottery ear plug, and a small green stone celt were found here. At San Marcos, on the Guyape, are large earth mounds with the same ceramic types. Here, by superficial digging, we obtained a large restorable vessel of this polychrome type (see Strong, 1934 a, fig. 54) with manatee lugs on the handle and a "braided" design below the neck. This ware is reminiscent of certain late polychrome types from the Uloa region, the Polychrome II ware from the Bay Islands, and painted sherds at various sites in northern Honduras, from Trujillo south into the interior. At both Dos Quebradas and San Marcos, monochrome pottery, similar to the less elaborate Bay Island monochrome, was even more abundant, and at several other sites in Olancho where earth mounds occurred, only the monochrome ware was noted. Other types of artifacts are rare on the surface at all these sites, but adequate excavations would undoubtedly yield a rich harvest.

North of this region in the pine country there are a number of sites, such as that near Pataste, consisting of long earth mounds forming large rectangular enclosures supplemented by conical mounds, with long stone causeways leading down steep banks to the nearest stream. Potsherds or other artifacts are rare on the surface at these sites. At La Floresta, on the headwaters of the Conquirre River, which is a branch of the Sico, is a large and very impressive enclosure of this type with an elaborate arrangement of earth mounds, large stone monoliths, and a long boulder causeway 25 feet broad, stretching down to the river. Most of the broken pottery picked up at this site was coarse monochrome in type similar to the plainer ware from the Bay Islands. A few sherds were red with simple black geometric designs. Local people said that stone celts and green stone beads had been found here. Farther north on the headwaters of the Bonito

River, in rain-forest country, an impressive three-roomed rectangular enclosure was discovered. This building, or foundation, was 105 feet long by about 40 feet wide and consisted of three rooms surrounded by well-made stone walls about 4 feet in height and thickness. The central room contained five tables or altars consisting of great flat-topped, mushroom-shaped stones, each set on three rounded boulders. These have a general similarity to three altars at Uaxactun (Gann, 1927, pp. 193, 196). In the center of the rear wall was a walled-in pit, and paralleling the west wall a cobbled ditch. Architecturally, this "Temple of the Five Tables" was the most impressive ruin we encountered. In the dense bush to the south and east were long, high mounds of stone and earth. No artifacts were found at this site. All along the upper Bonito occur small earth and rock mounds and stone-walled terraces, and monochrome pottery is abundant. Slightly to the north one comes to the strip back from the coast visited by Spinden, which has already been mentioned.

East of this traverse from Juticalpa to Trujillo is a vast mountainous and jungle-covered region, which is practically unknown. Aside from a small section on the lower Sico, Black, and Paulaya Rivers, the only sites reported on are an offertory on the upper Plantain visited by Spinden (1925, pp. 538-539) and some mound groups on the middle Patuca, which we visited in 1933. Spinden does not describe any ruins but mentions the occurrence of stone bowls with animal and bird heads, and great metates and slabs similar to those at Mercedes in Costa Rica. Local tradition locates the famed "White City" of the Paya in the region of the upper Plantain. In 1933 we discovered a very large mound site about 100 miles up the Patuca River at Wankybila. This consists of a complex arrangement of great mounds, some 100 yards long and 30 feet high, around a series of plazas. Excavation showed that the mounds were of earth with cores of burned red clay. The pottery from this site was mostly monochrome, red to brown in type, consisting of broken bowls with a basal ring and loop handles or vessels with three short, cylindrical or long, curved conical feet. A small proportion of the ware had a dull red slip and simple black line decoration. Elaborate feet and lugs were rare. Other artifacts included three-legged metates, a small green stone bowl (Strong, 1934 a, fig. 52, *c*), several bevelled slate disks (one of which had well-carved heads on it), roller pestles, and crude quartzite scrapers. On the Wampu, and on a branch of the Cuyamel, we found small earth and stone mounds with coarse monochrome pottery. A mace head and a small stone stool with an animal head from the Wampu (Strong, 1934 a, fig. 52, *b*) are of interest.



This immediate region is occupied by the Sumu Indians at the present time.

If we consider the area as a whole at the time of the conquest, Maya and Lenca groups appear to have been interspersed in west-central Spanish Honduras. The Lenca appear to have held the greater part of central Honduras and eastern Salvador, extending around the north side of the Gulf of Fonseca on the Pacific coast. The Jicaque occupied the Atlantic region from just west of the Chemilicon River east to the vicinity of Trujillo. The Paya bordered them to the east and the Sumu reached west just across the Patuca River. Scattered through central and eastern Honduras at this time were a number of apparently immigrant groups speaking Nahuatl languages. The Miskito territory at that time probably extended north only to about the vicinity of Cape Gracias á Dios.

#### WESTERN NICARAGUA AND NORTHERN COSTA RICA

Thanks to the painstaking excavations and publications of Hartman, Bransford, and a few others, the archeological outlines of this region are fairly well known.<sup>35</sup> From the archeological, and to a certain extent from the physiographic, standpoint this province may be divided into two parts, the Pacific and the Highland regions. The Pacific region includes western Nicaragua and the territory around the Gulf of Nicoya in Costa Rica. The Highland region incorporates the northern interior of Costa Rica and stretches eastward to the Atlantic. In the sixteenth century the Pacific region was occupied in order from north to south by peoples of Nahuatl, Maribio (Subtiaban), Chorotegan (Chiapanecan), Nahuatl, and again Chorotegan (Chiapanecan) speech. Of these the Maribio and the Chorotega appear as the oldest occupants, while the Nahuatl peoples seem to have been relatively late comers. In the same period the Highland region was occupied by a number of tribes, commonly designated as the Guetar, speaking Chibchan languages.

Of the major remains of the Pacific region the large stone statues characteristic of the Nicaraguan Lakes are perhaps the most striking. Bovallius figures many of these. The commonest types include human

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<sup>35</sup> Literature cited: Bransford, 1881; Bovallius, 1886; Hartman, 1901, 1907 a, and 1907 b; and Lothrop, 1921 and 1926. The last reference, Lothrop's monumental work, "The Pottery of Costa Rica and Nicaragua", published by the Museum of the American Indian, Heye Foundation, incorporates the results of the earlier studies. Lothrop sums up the historical, linguistic, ethnological, and archeological data, and the present very brief synopsis is for the most part condensed from his masterly presentation.

forms with alligators or animals on their backs or shoulders, seated human figures with an animal head on the shoulders, human figures with an animal on the shoulders whose jaws enclose the human head, a man with a large gorget on the breast or in the hand, a man seated on a tall column with a tenonlike appendage on his head, seated statues with crossed arms, a seated female figure holding a child, and a figure whose lower face is covered by a projection suggesting a bird's bill. Lothrop (1921) has shown that the type centers in Chorotegan territory in Nicaragua and Costa Rica but also occurs, apparently at a very early period, in the highlands of Chiapas and Guatemala and in Honduras, where statues of this type were found in early structures at Copan, and elsewhere in the country. The miniature carving found by Mitchell-Hedges in the Sacrificial Spring on Bonacca (fig. 37, *h*) is of this type. The larger statues find stylistic resemblances in carved jades and decorated pottery of Chorotegan manufacture.

Petroglyphs, ranging from simple linear figures to complex interwoven patterns, occur in this region. Lothrop points out resemblances between these and certain types in northern South America and the West Indies. Flat-topped mounds made up of stones or earth, often surmounted by stone statues, were probably used as places of sacrifice. Low stone and earth mounds served as house foundations, but there are no records of temples occurring on mounds. Circular mounds of earth and stone, from 20 to 40 feet in diameter and not more than 6 feet high, served for burial purposes. Isolated statues or stone slabs with petroglyphs often occur in or around the base of these mounds. Refuse and shell heaps have been reported. Oviedo tells of a shrine on the summit of a volcano where Chorotegan *caciques* went to consult an oracle. There was a heap of excellent pottery deposited at this shrine, mostly broken, but some vessels were complete.

Urn burial was very common in this area. Bransford figures three types of urns, foot-shaped, circular, and boat-shaped. Complete, partial, and cremated human skeletons with simple gifts are found in these urns. On the peninsula of Nicoya inhumation, often in a mound, was practiced. Stone graves and graves marked by slabs occur at certain sites.

The majority of the known artifacts come from graves. Metates are common, and Hartman (1907 a) distinguishes a type with three circular legs and another with three elaborately carved triangular legs often with a projecting animal head at one end. The former are usually decorated with animal figures, the latter with geometric patterns. The excellent carvings and open work on the stone metates of

this general region is exceptional. Manos are usually of greater length than the grinding plate. Carved jade and green stone ornaments are common, and anthropomorphic celt-shaped amulets (like pl. 12, *c*) are extremely abundant. Small effigies, labrets, and long tubular heads of jade or green stone are common. Circular slate disks with central and marginal perforations, rectangular stone gorgets, and stone car spools (like pl. 17, *h*) occur. Stone mace heads are very common, and some of these are very complex, others simple. Hartman (1907 a, pl. 31, fig. *a*) shows a mace head almost identical with the mammiform specimen from the Dixon site on Roatan (pl. 19, fig. 1, *c*). Star-headed types also occur in Nicaragua and Costa Rica. Atlatl pegs (similar to pl. 11, *l*) are very characteristic. A long-handled round bark beater and a discoidal grooved form both occur. A specialized stirrup-shaped rubbing stone is rather unique. T-shaped chipped axes and numerous variants of this type occur. Hartman (1907 a) shows both ovoid and petaloid polished celts. The double-bitted stone ax is another specialized type. Gold ornaments are rather rare and, when found, are often of Chiriqui types. As Lehmann (1910) points out, the range of gold and jade here seem to be rather mutually exclusive. Copper work is apparently rare or lacking.

The ceramics of the Pacific region have been exhaustively analyzed by Lothrop, but it is impossible to go into any detail here. All that can be said is that the Bay Island Polychrome I ware shares characteristic forms, colors, and many of its design motives with the Nicoya Polychrome ware which centers in the Pacific region. Bay Island Polychrome I ware shares numerous details of form and decoration with certain Uloa polychrome types and is also similar to Nicoya Polychrome. Until sufficient Uloa polychrome pieces are on record for visual comparison, the strongest affiliations of Bay Island Polychrome I must be in doubt. Although there are numerous and striking resemblances to certain of the Pacific intermediate wares, and especially to the monochrome types, the Bay Island monochrome ware as a rule finds closer affinities in the Highland monochrome pottery. Pottery whistles and painted figurines from the Pacific region are generally better made than the monochrome examples from the Bay Islands. Certain figurines seated on stools, and various crude or grotesque monochrome figurines, especially those from Zapatero Island, are fairly close to those from the Bay Islands (see Lothrop, 1926, vol. 2, fig. 165 and pl. 132, *c, d*). Cylindrical pottery stamps and pottery labrets (like those of shell, pl. 15, *h-m*) resemble Bay Island forms.

In the central valleys of the Highland region mounds of refuse, often containing cist burials, are the most characteristic signs of aboriginal occupation. On the Atlantic coast mounds are so grouped as to enclose courts or series of courts, which is suggestive of the north. Certain of the latter mounds have been made by filling stone enclosures with earth. Low platform mounds and hut rings of stone occur. The Nicaraguan or Chorotegan types of statue and examples of the Chacmool type are on record for the Highlands. Hartman has shown that these were set on the top of the walls forming the sides of mounds. Stone slabs with elaborately carved edges served as grave markers. Rectangular stone cists are the most characteristic places of burial. These may occur in mounds or within hut rings. Secondary burials in small cists and extended burials in the larger type are common.

Metates are oblong and have four legs with a ridge around the edge, which necessitates a short mano. They are elaborately carved and usually have an animal head and curled tail projecting at respective ends. The type is practically identical with that of the Chiriqui area. Wooden and stone stools also occur. Stone and pottery pot stands are frequently found and a few carved stone bowls are on record. Small standing human figures, human heads, and seated figures with their arms across their knees, carved in stone, are common. In the Highland regions the polished celt is usually diamond-shaped in cross-section, but petaloid forms occur and both single- and double-bitted flaked celts are found.

Highland Polychrome pottery is apparently an offshoot of Nicoya Polychrome, somewhat modified by local traits and by influences from the art of Chiriqui. As such, it shows some similarities to Bay Island Polychrome I but apparently not so many as does Nicoya Polychrome. The Simple Painted Wares of the Highland region share many traits with the Chiriqui. They seem to have form resemblances to Bay Island monochrome ware, but I can see little relation between them and Bay Island polychrome types. It is in the Monochrome and all types of Applique wares from the Highland region that the closest homologies to Bay Island monochrome pottery, both plain and elaborate, appear. In the Highland Applique group, Curridabat, Tripod, Stone Cist, and Handled Wares all show innumerable and close similarities or even identities with Bay Island types. Only the elaborate monochrome vases from the Bay Islands that have decorations of the Uloa marble bowl type are exempt from this obvious relationship. As one examines Hartman's work on Highland sites (1901), ceramic

comparisons with the Bay Islands leap to the fore. Tripod globular bowls with identical conical and short cylindrical feet, goblet and ring-based forms, shallow bowls on long tripods, and closely similar (or identical) types of raised, modeled, incised, punctate decoration, and combinations of these techniques, all occur in both Bay Island monochrome and Highland Applique wares. The modeled alligator motif, which Hartman (1907 b) has shown to be related to the painted alligator motif in Chiriqui, is also present in the Bay Islands. The fully developed annular base is not overly common in the Highland area, but the pottery stands are closely similar to this type. Incensario types; occasional extremely crude vessels; pottery canoe models (with figures, but otherwise like pl. 8, fig. 2, *d*, *e*); large modeled pottery heads; hollow figurines, which are without legs or have only conical projections suggesting legs and with heads covered with grotesque applique adornment (Lothrop, 1926, vol. 2, pl. 190); pottery whistles; and cylindrical pottery stamps occur in the Highland region and in the Bay Islands.

Since the Guetar tribes seem to have been the only historic people known to the Highland region, much of the prehistoric culture of the area can in all probability be ascribed to them.<sup>39</sup> To the south the culture of the Highland Region blends with that of the Chiriqui area, which was likewise occupied by various tribes belonging to the Chibchan linguistic stock of South America. As was true in the north, any exhaustive comparison must extend further, in this case embracing the prehistoric cultures of Chiriqui, Coclé, and northern South America, but here again our scope must be limited.

#### EASTERN NICARAGUA

From south to north, this region was occupied by Chibchan, Mosquitoan (Miskito), and Ulvan (Sumu) tribes. There is a very strong probability that both the Miskito and Sumu languages are related to the Chibchan stock. The true Chibchan tribes occupied only the southeastern corner of Nicaragua, the Miskito held the coast, and the Sumu the greater part of the interior. The terrain here passes from rolling hills eastward to the swampy Mosquito Coast, and most of the dense jungle-covered area has not even been explored from the archeological standpoint.<sup>40</sup>

Le Baron gives a plan of a small ceremonial site on the Prinzapolca River consisting of three rude monoliths set up to form a triangle,

<sup>39</sup> Spinden, 1925, p. 542, disagrees with Lothrop in this regard.

<sup>40</sup> See Le Baron, 1912, and Spinden, 1925. Conzemius, 1932, also gives some archeological data on this region.

which is paved with rocks. One monolith had a crude face incised at the top and others had simple circular or geometric petroglyphs. No artifacts were found. On the Rama River, which enters the Caribbean near Monkey Point, Spinden notes the occurrence of small mounds containing abundant pottery. Painted and modeled ware, including tripod bowls, figurines, whistles, etc., were found here. Cookra Hill, near the south end of Pearl Lagoon, formerly had ancient graves from which gold amulets, a marble mace head of Nicoyan type, abundant pottery, and other artifacts have been removed. Near Bluefields occur large and interesting shell heaps. Pottery from these is usually unslipped but is elaborately modeled. One type, with tripod feet decorated with faces and containing rattles, suggests a local variant of Costa Rican pottery. A small stone figure of a man, and two interesting types of monolithic axes, figured by Lothrop (1926, vol. 1, pl. 12, *c*, *e*), come from here. Spinden calls attention to stone bowls with projecting heads, tripod supports, and a band of interlaced decoration, which come from this area. The well-made metates with animal heads from eastern Nicaragua form a link between Costa Rica and northern Honduras. Spinden also states that small pots with plastic decoration and gold figurines are said to have been found in the Pispis mining district. He observed many elaborate petroglyphs near falls and rapids on these eastern rivers. At the junction of the Yasicá and Tuma Rivers, within the wet belt and in the vicinity of mounds, he found two carvings of the Nicaraguan lake type. One of these depicted a man with an alligator clinging to his back.

From the surveys made by Spinden, it thus appears that eastern Nicaragua forms a cultural link between the Highland region of Costa Rica to the south, and the Bay Islands and the Honduras coast to the north. Too little is yet on record, however, to attempt a more detailed comparison of types.

#### CONCLUSION

Although the foregoing study of Bay Island archeology is very incomplete, owing to the lack of adequate excavations at any large sites, certain interesting correlations are already apparent. The available material indicates that the islands had been occupied by a people of fairly homogeneous culture for a considerable time prior to the visit of Columbus. As to the relative age of this occupation, nothing definite is known, but no conclusive evidences of great antiquity have been reported. Analysis of the collections indicates that although

much of Bay Island civilization was developed *in situ*, this development took place under strong alien influences from different regions at different times. On the basis of site segregation, stylistic sequence and some stratigraphy, an attempt has here been made to suggest the gross sequence of Bay Island prehistory. Acknowledging the shakiness of this structure as at present conceived, it may with caution be employed in gauging the relative periods and the directions from which these different cultural thrusts appeared. There is little in the available evidence to indicate that the Bay Islands were ever an important cultural center but much to indicate their peripheral receptivity.

The outline sketches of adjacent regions have indicated that Bay Island culture was very similar to that of the northern coast of Honduras, although many artifact types from the islands are as yet unreported for the mainland. In mound types and rough stone structures the Bay Islands, the northern coast, and the Uloa region share fundamentally similar types. Suggested correlations between Uloa polychrome pottery types and those of the Bay Islands indicate that the latter wares were relatively late. The same can be said in regard to the Uloa marble vase type of decoration, copper bells, and small, plumed heads of jadeite or green stone, all of which are shared with the Bay Islands. Although there are many other artifact types in the Uloa region which also occur in the Bay Islands, they are as yet undated and cannot help us here.

Between the developed architecture and carved stone technique of the Maya and the rough stone and earth mound complex of Honduras and the regions to the south, there appears to be a complete break. The Bay Islands share this latter complex. Whether the simpler type represents a substratum from which arose the complexity of Maya architectonics is a problem that cannot be entered upon here. However, the assumption sometimes made that the southern complex was merely a crude borrowing from developed Maya styles seems rather illogical in the light of general distribution and the sharp break between the two. Certain similarities between Bay Island and Maya methods of disposal of the dead appear in the cases of urn burial, inhumation in mounds, and rare skull burials, recorded for the Maya; however, Maya practices in this regard are so varied and the Bay Island record so incomplete that any conclusions seem futile.

Maya ceramics, including early types at Holmul and in British Honduras, and some simple types at other sites, show a number of general resemblances to monochrome pottery wares from the Bay

Islands. The same can be said in regard to a number of other rather widely distributed artifact types. Whether these resemblances are more or less fortuitous or are actually generic and derived from some common but as yet undefined cultural substratum, like the Q complex of Lothrop and Vaillant, can only be determined by more exhaustive analysis than is possible here. More specific similarities to Bay Island artifact types occur in the small plumed heads, incised "buttons", and ear spools of jade or green stone, as well as in the delicately retouched flint knives, all of which come from tombs at Copan. This similarity in certain small jade or green stone artifacts, in carved animal teeth, and in cut shell work, holds for other Maya sites both early and late. Similarly the jars holding votive offerings of this type found beneath certain Maya structures resemble votive caches at Bay Island offertories. These more specific similarities between the developed Maya culture and the Bay Islands also occur in the intermediate Uloa region. In the Bay Islands they appear to be late, and there is a strong probability that they were transmitted to the Bay Islanders through intermediate peoples at a relatively late date. The bulk of Bay Island ceramic forms and numerous artifact types such as stone pot rests, carved metates with animal heads, mace heads, petaloid celts, and T-shaped axes are rare or lacking in Maya sites. Thus, aside from certain rather general resemblances in structural, ceramic, and artifact types, which may or may not prove to be generic, the relationship between the Maya proper and the people of the Bay Islands seems to have been indirect and relatively late.

Turning to the prehistoric evidence from western Nicaragua and northern Costa Rica, one searching for Bay Island correspondences finds himself much more at home. Both the Pacific and Highland areas share the same style of stone statues, rough stone and earth mounds, rough stone walls and monoliths, inhumation in mounds, grotesque applique figurines, figurines seated on stools, carved metates with animal heads, carved green stone amulets of more or less conventionalized form, anthropomorphic celts of green stone, stone mace heads, discoidal and cylindrical bark beaters, petaloid celts, and T-shaped axes. All these types occur in the Bay Islands, and many of them, as in the case of mammiform mace heads and anthropomorphic celts, are of identical forms. The urn burials of the Nicaragua lake region are closely similar to those from the Bay Islands.

In ceramics, the Nicoya Polychrome ware of the Pacific area shares numerous traits of form and decoration with Bay Island Polychrome I. Between Pacific area and Bay Island monochrome wares there are



also many resemblances, but these are overshadowed by the more numerous point-for-point correspondences between Bay Island monochrome ceramics and the Highland Applique wares. These are not identical, but there is obviously a very close relationship. If Bay Island ceramics were more fully and accurately classified, comparison with the various Highland Applique subtypes might be profitable, but this cannot be done at present. In the above, and in numerous other traits, there seems to be a much closer correspondence between the Highland area and the Bay Islands than there is between the latter and the Pacific area. However, as a whole, the prehistoric remains from the Bay Islands fit into the archeological patterns of western Nicaragua and northern Costa Rica surprisingly well. Unlike the late traits which the Bay Islands share with the Uloa district, and indirectly with the Maya, these southern traits permeate the whole culture and seem to be early and basic. If they were eliminated from our present picture of Bay Island prehistory, the residue would appear as entirely marginal to relatively late periods in the Uloa region.

Too little is yet on record for central Honduras and eastern Nicaragua to throw much more light on Bay Island connections. All that can be said regarding the interior of Honduras is that the known sites are primarily of "Chorotegan" type. More exact determinations must await excavation. The problem of the exact interrelationship between the various polychrome pottery types of the Bay Islands, the Uloa district, eastern Salvador, the Honduras interior, and the Nicaragua-Costa Rica region can only be solved by others much more intimately acquainted with the latter ceramics than the present writer. In regard to the eastern coast of Nicaragua, Spinden's brief notes suggest that the Highland culture of Costa Rica extends north until it blends with that of the north coast of Honduras. At present the Bay Islands appear as a surprisingly strong northern outpost of the Highland culture. This bears out Lothrop's prediction (1926, vol. 2, pp. 344, 345), based on the observation of three tripod bowls of Costa Rican type from Roatan, that, "were the archeology of the Atlantic coast of Nicaragua and Honduras better known [it would probably appear] that the drift of Isthmian and South American culture to the northward was along the Atlantic coast rather than the Pacific coast of Central America".

This brings us to a consideration of the probable carriers of this culture. In Honduras the term "Chorotegan Culture" is generally employed. This naturally implies that the bearers were of Chiapanecan speech. Granting the probability that the Chorotega proper once occupied a much wider range than they did at the time of the conquest,

I strongly doubt that they were the people who were responsible for the majority of the so-called "Chorotegan" remains in northern Honduras and on the Bay Islands. The chroniclers of Columbus and other early writers describe a native culture on the Bay Islands and the adjacent Honduras mainland that fits the known archeological evidence remarkably well. Jicaque and Paya tribes (with a few immigrant Nahuatl groups) were then in possession of these regions and must have been the people encountered by the early explorers. As Spinden points out, and Conzemius demonstrates at considerable length, the ethnology of these native peoples, along with the Sumu, shows strong affiliations with northern South America. Similarly, most of the archeological remains on the Bay Islands and the adjacent mainland show strong connections with the prehistoric Highland area of Costa Rica, and Lothrop has demonstrated that in this area South American traits are most abundant. In fact the only people of the Highland region at the time of the conquest were the Guetar, who belong to the Chibchan linguistic stock of South America, and to them Hartman and Lothrop ascribe most of the archeological remains. Lehmann, although his evidence is not entirely conclusive, links the Lenca, Jicaque, Paya, Sumu, and Miskito in the Talamancan subdivision of the Chibchan stock, to which the Guetar also belong. Thus, historical evidence, ethnology, archeology, and linguistics all combine to suggest that peoples of South American affiliations must have been responsible for most of the archeological remains on the Bay Islands and probably in northern Honduras as well. For this reason I cannot agree with Spinden that the historic tribes of this region were late immigrants replacing an older population of Chiapanecan speech. The problem as to who were the main originators of the "Chorotegan Culture" in its southern centers, whether Chiapanecan, Subtiaban, or Chibchan, is outside our province, but that peoples of Chibchan or affiliated speech at least served as carriers of the culture seems clearly demonstrable.

As to the age of the "Chorotegan Culture", or as it might be called, "Western Nicaragua-Northern Costa Rica Culture", either in its centers or in the Bay Islands, there are as yet few direct clues. Certain of its manifestations are believed by some to antedate the Maya occupation of Copan, whereas the Highland aspect in Costa Rica seems relatively recent, and the same may be true of its attenuated manifestations in eastern Nicaragua and northern Honduras. As for the Bay Islands, the southern influences apparently antedate the influx of northern traits via the Uloa region. These are matters which can only be satisfactorily determined by future excavations.

The occurrence of this marked prehistoric thrust of South American influence as far to the north and west as the Bay Islands has interesting theoretical connotations. It forms another link in the growing chain of evidence indicating that the answers to many basic problems of Middle American culture history lie buried in the southern continent. The time is hardly ripe, nor is this the place, to attempt to trace out more specific relationships. These will become evident as the nature and sequence of culture horizons in the Chiriqui, Coclé, and adjacent regions of South America are investigated and reported on. Their importance to the entire field of Middle American research is strikingly indicated by Vaillant (Merwin and Vaillant, 1932, p. 65) in discussing the apparent diversity of Maya ceramic origins. "Moreover, those ceramic groups which are Early in southern Central America differ from those in central Mexico, and an examination of Central American ceramics reveals a group of forms that have in essence stronger connections with South America than with Mexico. It also seems evident from our involved discussion that we have not yet begun to scratch the surface of the history of the rise of Central American and South American ceramics".

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